

Tityus asthenes
(Pocock, 1893)

by
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Fig. 1: *T. asthenes* adult couple from Peru, top: ♀, down: ♂ M.A.C. Cozijn © 2008

What's in a name?

Tityus asthenes has no generally accepted common name, but they are sometimes sold under names like “Peruvian black scorpion” or as other species like *Tityus metuendus* (Pocock, 1897).

Etymology:

The name ‘asthenes’ in apposition to the generic name (*Tityus*) literally means weak or sick in ancient Greek, but it refers to ‘a thin or slender habitus’ in this case.



Fig.2: part of South and Central America (modified) © Google maps 2011

Distribution

Colombia, Costa Rica, Ecuador, Panama, Peru (1).

Natural habitat

T.asthenes is a common element of the tropical forests of Eastern Amazonia. *T.asthenes* can be found on tree trunks, but also on the forest floor under fallen logs and other debris, as well as in the rootsystems of large trees. They are more common in rural areas. In Costa Rica the species is considered rare (Viquez, 1999). Most of the specimens in the hobby circuit originate from Peru, leading me to believe it is rather common in that country.

Venom

The LD50 value of the venom is 6.1 mg/ kg, and this value seems rather high when compared to *T.serrulatus* Lutz & Mello 1922 (0.43 Zlotkin et al, 1978) or *T.bahiensis* Perty 1833 (1.38, Hassan 1984). A study in Colombia revealed that systemic effects occurred mostly in children. Eighty patients were studied, of which fourteen sought medical help in a hospital. Symptoms in patients were (from most common to least common): oedema, pain, paresthesia, vomiting, profuse sweating and sialorrhoea. A small percentage of the patients had respiratory problems, tachycardia or abdominal pain (Gómez et al. 2010). Because of this species' medical importance, it should only be kept by experienced keepers.



Fig.3: *T.asthenes* adult ♀ from Peru M.A.C.Cozijn © 2008

Morphological information

The genus *Tityus* C.L.Koch, 1836 comprises more than 180 valid species and subspecies. It is a complex and dynamic genus and the taxonomic position of some of its species is unclear. Earlier described species are frequently synonymised and new species are still being described regularly. *T.asthenes* belongs to the subgenus *Atreus*. It was the first species described in this subgenus, and it has its own subgroup. This subgenus contains mostly large (65-100 mm+) scorpions that have a dark, blackish coloration when adult. Juveniles have a yellowish, variegated pigmentation (see fig. 5). The basal middle lamellae of the females are dilated in most species (Lourenço, 2006). *T. asthenes* has a typical black to dark brown coloration, only the tarsi, tips of the pedipalpal fingers and mesosomal tergites are somewhat lighter than the rest of the body. Total length around 60-75 mm. Pedipalp fingers with 17 rows of granules and both sexes have between 18-22 pectinal teeth (Lourenço, 2002). The species exhibits sexual dimorphism, the adult males having longer and more slender pedipalps and metasomal segments, but this is less marked than in *T.obscurus* (2). Juveniles can be sexed by checking the exuvia for dilated basal middle lamellae (see Fig 6), indicating the females (3). Males mature at instar 6, sometimes at instar 5, and females mature at instar 6.

Keeping in captivity

The following information is based on my own experience and should be regarded as an example. In my opinion the minimum size for keeping a pair of adults is around 30x20x20 cm (12x 8x 8 inch). Juveniles can be kept in all kind of deli cups. I keep my juveniles separate to avoid the risk of cannibalism. I keep adults in pairs, but I separate the male before the female gives

birth. I try to maintain a temperature of 26-30 Celsius (78.8-86 F) in the daytime and around 18-20 C (64,4-68 F) at night. The relative humidity should be around 75-80%, this can be done by keeping ca. one third of the substrate dry (or an occasional misting) and two thirds moist (not wet to prevent mold). I mist the enclosure well once a week or occasionally twice if necessary (depending on temperatures and evaporationrate). When the scorpions are getting close to an ecdysis, make sure the relative humidity is sufficient, to prevent moulting problems. Normally these scorpions moult on a vertical structure facing downwards to the substrate, but occasionally they moult on the substrate.



Fig.4: *T.asthenes* ♀ from Ecuador with instar I M.A.C.Cozijn © 2010

Humus or ‘coco peat’ is ideal as a substrate. This species does not dig burrows and pieces of cork bark will be accepted as a retreat. Sometimes, a scrape is made under the bark. They hide during the day, but at night they can be observed sitting on top of the cork bark with open pedipalp fingers, or walking around in the enclosure. It does not actively hunt its prey, it rather uses the sit-and-wait tactic. These scorpions typically walk slowly, they almost creep across the substrate, this makes them seem docile, but they can flee or react very fast when startled. They sometimes literally leap of the piece of bark they rest on when startled. Juveniles seem more nervous than the adults. I have never seen any *Tityus* species drink from a source of standing water, like a bottle cap. They drink the drops of water from the sides of the enclosure after misting. It is best to mist their enclosures in the afternoon or early evening, to prevent the drops to evaporate before the scorpions can drink them. Provide adequate ventilation to create airflow. This is very important because of the high relative humidity that *Tityus* species generally need. Insect remains (and exuvia) need to be removed regularly, because they decompose quickly in humid environment, which attracts mould and mites (*Acari*).



Fig. 5: *T. asthenes* instar 2-3 juveniles from Ecuador M.A.C.Cozijn © 2009

Adults can be fed one appropriate sized prey item every seven to ten days. I feed my scorpions housecrickets (*Acheta domestica*) twice a week until they are third instar. Prey is killed by a quick sting, or multiple stings, this depends on the size of the prey. Juveniles can subdue surprisingly large prey for their size, sometimes up to 150% of their own bodysize. Newborn scorpions will readily feed on micro crickets. This species has been bred several times in captivity and *T. asthenes* is known for producing iteroparous litters. On 13-V-2010 male 1 was mated with female 1 and on 18-V 2010 male 1 mated with female 2. On 18-IX-2010 (after 128 days) female 1 gave birth to 12 young and on 21-IX-2010 (after 126 days) female 2 gave birth to 16 young. Because of its medical importance, this species should only be kept by experienced keepers.

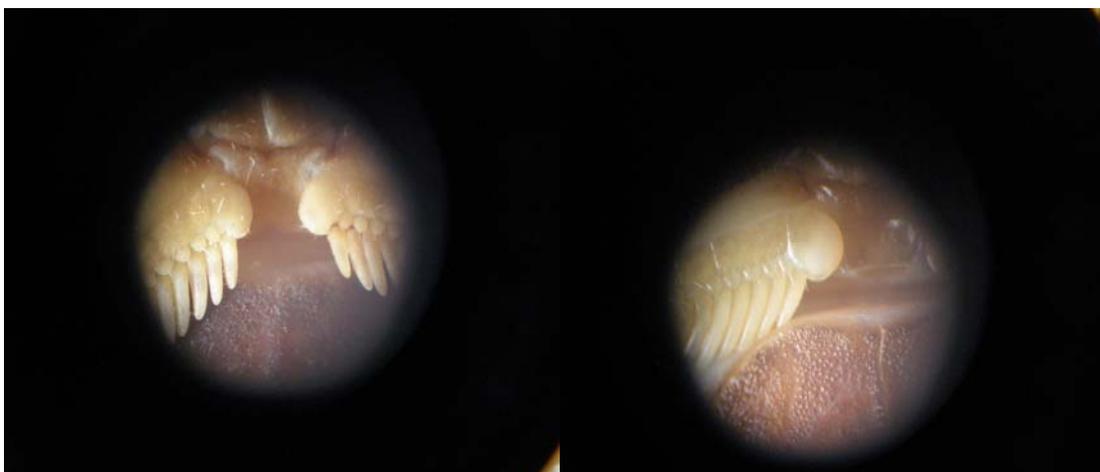


Fig. 6: Dilated basal middle lamellae of the pectines in females of *T. asthenes* (magnification 40x).

Notes

Note 1:

Reports from Venezuela are most probably misidentifications of other species of the subgenus *Atreus*. Fet & Lowe (2000) registered in their Catalog that the species occurs in Brazil, but this is refuted by Lourenço (2002) in his book *The Scorpions of Brazil* (See references).

Note 2:

See Reference 1

Note 3:

I use this method to sex my specimens, but sometimes it is difficult to see the differences (especially in earlier instars) between the basal middle lammellae of the available specimens.

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