On *Adecatomus ciudadus* Karsch 1880, a remarkable spider species from Lima, with comments on South American Sparassidae (Arachnida, Araneae)

Peter Jäger

With 27 figures

Abstract

The 3-holotype of *Adecatomus ciudadus* Karsch 1880 was located in the Zoologisches Museum der Humboldt-Universität Berlin and recognized as a representative of the spider family Sparassidae. A redescription of the holotype is given and the systematic position of the species is discussed. A review on taxonomic work on South American Sparassidae is also given.

Zusammenfassung


Key words: *Adecatomus ciudadus*, Sparassidae, redescription, taxonomy, South America.

Introduction

Huntsman or Giant crab spiders (Araneae: Sparassidae) are diurnal hunting spiders distributed all over the world in tropical and subtropical regions. Representatives of this family are found quite frequently in museum collections. One reason may be the impressive size of larger species (body length up to 40 millimeters, diameter with legs up to 200 millimeters or more). Nevertheless they are neither sufficiently investigated nor revised, inspite of their potential ecological role as predators. Only Australia has a quite well known sparassid fauna (Davies 1994, publications of Hirst e.g. 1990).

When I looked for material of the Sparassidae in the Zoologisches Museum der Humboldt-Universität Berlin, I became aware of a dried and pinned spider, which looked, with its laterigrade legs, like a sparassid. It was recognized during further investigation as a representative of the family Sparassidae by the apomorphy of the family. This is a trilobate membrane which is located at the end of the metatarsi of the legs. Three parts of this structure can be distinguished: one median hook and two lateral projections (Clarke 1984). In *A. ciudadus*, the species redescribed here, the lateral projections are strongly reduced (Fig. 7) as in *Cerbalus pulcherrimus* (Jäger 1998: Fig. 1h), a sparassine species from Africa. Although other characters are not common for representatives of the Sparassidae (e.g. shape of chelicerae), *A. ciudadus* is recognized as a sparassid by additional characters, i.e. its leg spination, presence of scopulae.

Its isolated geographic and systematic position as well as the fact that the female is so far unknown seem to justify a short redescription of the male holotype with some comments on the poorly investigated sparassid fauna of South America. This paper intends to draw attention to this unique species and help to identify conspecific females.

Material and methods

Abbreviations. ALE, PME, AME, PLE refer to anterior lateral eyes, posterior median eyes, etc.; ALE-ALE, ALE-PLE etc. refer to interdistances between the eyes; PJ – running number of the Sparassidae examined by Peter Jäger; I–IV refer to the four pair of legs.

Museum collections. MNHN – Musée national d’ Histoire naturelle Paris, NHMB – Naturhistorisches Museum Basel,
ZMB – Zoologisches Museum der Humboldt-Universität Berlin

Measurements are given in millimetres. Notation of spines follows style in Davies (1994).


Note. The holotype was dried, pinned and recently transferred into alcohol. Some legs are detached, the prosoma and some eyes are broken and the opisthosoma is dried. Not all characters were drawn or measured in order to conserve the type specimen.

Diagnosis. ♂ Tegulum slightly spiral shaped in three dimensions (Fig. 3; not plain as in other representatives of the Sparassidae). Embolus bent two times, tip of embolus hidden behind an apophysis at the base of the embolus, this apophysis proximally with a thin and elongated tooth (Figs 1–4).

Redescription. ♂: carapace length 7.7, maximum carapace width 6.2, anterior width of carapace 4.0, carapace height 1.5, opisthosoma length 5.0, opisthosoma width 3.7, sternum length 3.5, sternum width 3.1, sternum length/sternum width 1.1, sternum broadest between coxa II, labium length 1.47, labium width 1.40, gnathocoxa length 2.87, gnathocoxa width 1.50. Eyes: AME 0.35, ALE 0.36, AME-AME 0.28, AME-ALE 0.14, PME-PME 0.43, Clypeus AME/ALE 0.57. Leg formula: 2143. Spination: palpus 130, 101, 2111, femur I–III 323, IV 321, patella I 101, II–III 001, IV 000, tibia I 2126, II 2226, III–IV 2126, metatarsus I–II 2024, III 2014, IV 3036. Only a small part of subtegulum visible at the proximal part of bulb (Fig. 2: Su), retrolateral tibial apophysis (RTA) short and simple, tibia and cymbium elongated (Figs 1–3), dense scopulae on tarsi and whole metatarsi. Coxae notched prolately, Color: Red-brown, covered with whitish hairs, Chelicerae, gnathocoxae, labium and sternum darker. No distinct pattern can be recognized.

Leg measurements:

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<th>♂ Femur</th>
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<td>11.4</td>
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♂: unkown.

Distribution. Only known from the type locality (Fig. 27).

Relationships. The genus seems to belong to the subfamily Sparassinae, although this subfamily remains poorly defined (Jäger 1998, 1999). The following characters support the relationship of Aedactonus with this group: two anterior cheliceral teeth, median hook of trilobate

Taxonomy

**Aedactonus Karsch 1880**

Type species: *A. ciudadus* Karsch 1880 (by original designation)


The monotypic genus was described by Karsch (1880) as "nov. gen. Drassoidurum". He stated that it could be related either to Cheiracanthium (recently transferred to the Miturgidae, Ramirez et al. 1997) or to Heteropoda and Sparassus (both Sparassidae; the latter recently synonymised with Micrommata, Jäger 1999). It is listed by Bonnet (1955) and Roewer (1954) under the family Clubionidae (Roewer: in the subfamily Clubioninae). No recent record is listed in the catalogues of Brignoli (1983) and Platnick (1989, 1993, 1998). With the exception of the original line drawing of the palp from a dorsal view by Karsch himself (1880) the genital characters were never previously illustrated.

**Aedactonus ciudadus Karsch 1880**

Figs 1–8, 18

membrane well developed in opposition to reduced lateral projections, and similar eye position. Other characters seem to be unique: shape of chelicerae, structure of embolus including its apophysis. Such characters of similar shape were not found in any other species of the Sparassinae. Moreover, in *A. ciudadus* the 3D-spiral shape of the tegulum, which winds up in a ventral direction, is striking. This character is known only from species of the genus *Micrommata* (pa-
learctic, type genus of the subfamily Sparassinae; Fig. 11), the species "Olios" francoisi (New Caledonia; Fig. 10) and from Olios-species from South America (e.g. Olios furlmanni; Fig. 9). These latter species possesses a proximal embolic apophysis in a similar position to A. ciudadadus (Fig. 4). It is conspicuous that all above mentioned species with the unique shape of tegulum do not have a conductor or a homologous structure as in all other Sparassidae. Comparing other somatic characters of the four species (dentition of chelicerae: Figs 8, 12–14; eye position: Figs 16–18; leg claws and their dentition: Figs 5–6, 21–26, trilobate membrane: Figs 7, 19–20), no closer relationship could be recognized.

From these results no clear systematic position of A. ciudadadus within the Sparassidae can be proposed at present. Some characters support a close relationship to the subfamily Sparassinae, to which the three other mentioned species belong too.

Review on taxonomical work on the Sparassidae in South America

Since the first investigations on South American spiders by Linnaeus (1767) about one hundred species belonging to 18 genera of the family Sparassidae have been described by different authors so far. Some important publications are, among others, those of Mello Leitão (e.g. 1918, 1943, 1949), O. Pickard-Cambridge (1889–1902, 1897–1905), Keyserling (1880, 1887, 1891), Caporaiaco (1947, 1948, 1955) and Simon (e.g. 1880, 1887, 1903). One revision of the genus Polybetes (incl. Leptosparassus and Streptaedoea) has been published by Gerschman & Schiapelli (1965).

In South America representatives of three subfamilies can be recognized: Sparianthinae, Sparassinae and Heteropodinae. The latter is represented only by Heteropoda venatoria, a spider most likely introduced by human activity. American representatives of the Sparianthinae are distributed in the northern parts of South America (Fig. 27) up to Florida in the north. Two tribes of the Sparassinae are present: Sparassini and Polybetini. Järvi (1912) recognized the tribus Polybetini (sub Polybetidae; in a sense of a subfamily) with the following genera included: Leptosparassus, Polybetes, Streptaedoea; probably Origes and Paenula. The first three genera are mainly distributed in the southern part of South America roughly up to 40° S (Fig. 27). Most of the marked localities of the Polybetini are taken from Gerschman & Schiapelli (1965). Polybetes delfini Simon 1904 is described from Punta Arenas (see "?" below in Fig. 27). It is doubtful, whether a sparassid lives in such cold habitats as Tierra del Fuego. There is a second "Punta Arenas" at the western coast of Chile, which is situated north of Antofagasta (see "?" below in Fig. 27). One collector of the material, which was described by Simon (1904), was at least in Santiago and Valparaíso. Confusion probably exists between these localities. The Sparassini are also recorded from the northern parts as well as from the southern parts of the subcontinent. Some species cannot be associated with a subfamily at present (Fig. 27: other Sparassidae).

It is astonishing that the type locality of A. ciudadadus is somewhat isolated in comparison to the ranges of other sparassids (Fig. 27). This gap in sparassid ranges may be explained by orographical conditions (westside of the Andes) and the lack of sufficient humidity. Lack of investigations in these areas may be another explanation: compare southern areas included in a revision (Gerschman & Schiapelli 1965: mainly Argentina) and the northern parts of South America.

Fig. 27. Distribution of Sparassidae in South America based on literature evaluated (sampling plots of Heteropoda venatoria omitted). For "?" and further information see text.
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