

***Leptostygnus leptochirus* Mello-Leitão, 1940: first record of the family Agoristenidae from Colombia (Opiliones: Laniatores: Gonyleptoidea)**

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**Summary**

*Leptostygnus leptochirus* Mello-Leitão, 1940, originally described in Gonyleptidae Prostyginae, is redescribed through study of the holotype and newly referred to Agoristenidae Angelinae, a hitherto monotypic taxon described from Venezuela. The spelling of the latter name is corrected from Angelininae Gonzalez-Sponga, 1987 to Angelinae, since it is based on the generic name *Angela* Gonzalez-Sponga, 1987. *Sabanilla* Roewer, 1913, from Venezuela, is removed from the Gonyleptidae Prostyginae and newly referred to the Agoristenidae Leiosteninae. The subfamilial assignation of *Leptostygnus* Mello-Leitão, 1940 and *Vima* Hirst, 1912 is briefly discussed. This is the first record of the family for Colombia.

**Introduction**

The family Agoristenidae has been described from Guyana (Roewer, 1923 — including an unlikely record from southern Brazil), the West Indies (Silhavy, 1973, 1976; Avram, 1977), Brazilian Amazonia (Roewer, 1949) and Venezuela (Gonzalez-Sponga, 1987; Muñoz-Cuevas, 1975). A restudy of a Venezuelan “gonyleptid” as described by Roewer, as well as other Colombian “Gonyleptidae”, described by Mello-Leitão, indicates they should be assigned to the Agoristenidae, therefore extending the range of the family. The single male used for the original description of *Leptostygnus leptochirus* Mello-Leitão, 1940 has been examined and is here re-described, while *Sabanilla ornata* Roewer, 1913 is discussed, based on the literature. A possible relationship between *Leptostygnus* Mello-Leitão, 1940, *Angela* Gonzalez-Sponga, 1987 and *Vima* Hirst, 1912 is discussed.

All measurements are in mm. Museu Nacional do Rio de Janeiro is abbreviated as MNRJ.

**Genus *Leptostygnus* Mello-Leitão, 1940**

*Leptostygnus* Mello-Leitão, 1940: 305; Soares *et al.*, 1992: 7.

**Diagnosis:** Agoristenidae with eye mound only slightly depressed; spines of area III fused into a single cone; pedipalpus short and thick; truncus penis with a pair of blunt apical stout projections and three pairs of bifid setae. Distinguished from *Angela* by tarsal segmentation 6, 16, 8, 9 (instead of 4–5, 7–9, 5–6, 6), and colour of scute.

***Leptostygnus leptochirus* Mello-Leitão, 1940 (Figs. 1–6)**

*Leptostygnus leptochirus* Mello-Leitão, 1940: 306; Soares, 1945: 383; Soares *et al.*, 1992: 7.

**Material examined:** Male holotype (MNRJ 0134), Cúcuta, Colombia, leg. Niceforo Maria.

**Male holotype:** Cephalothorax 1.97 wide, 1.39 long; abdominal scute 2.67 wide, 2.30 long. **Dorsum** (Figs. 1–2):

Body outline rectangular, slightly widened at area II. Dorsal scute divided into four ill-defined areas, plus posterior margin (=area V); area I divided by longitudinal median groove. All areas provided with a few pointed tubercles, which form rows in areas II, V and free tergites. Area III armed with a stout median spine formed by two fused spines, with base densely and coarsely granular. Anterior margin of scute smooth, with sides projected forwards. Eye mound low, slightly concave in middle, with a few tubercles on each lateral swelling. Cephalothorax with only a few granules behind eye mound, otherwise smooth. Lateral areas delicately wrinkled. **Venter:** Coxae densely covered with granules, much stouter on coxa I. Genital opercle and stigmatic area finely granular. **Chelicera** (Figs. 1–2): First segment with granular dorsal hump; second segment dorsally swollen. Tegument glossy. **Pedipalpus** (Fig. 3): All segments short and thick, not flattened. Trochanter with a ventral spine; femur with a row of four ventral spines (IIIi) and a stout distal mesal spine; patella with a stout mesal spine; tibia with four ectal (IIi) and three mesal spines (IIi); tarsus with two ectal (II) and three mesal (III) spines. Measurements: Tr 0.54, Fe 0.86, Pa 0.40, Ti 0.75, Ta 0.64, claw 0.52. **Legs:** Leg I filiform, finely granular. Trochanters II–IV with pointed setiferous tubercles. Femora II–IV with longitudinal rows of denticles. Coxa IV stouter than others, extending beyond dorsal scute in dorsal view. Patella IV armed with three short apical spines (Fig. 4). Tarsi III–IV with smooth double claws, without tarsal process or scopula. Tarsal segmentation: 6, 16, 8, 9. Distitarsi I–II three-segmented. Measurements in Table 1. **Colour:** Body and appendages tan brown, with black reticulation open on cephalothorax and dense on lateral margins. Mesotergum light yellow, with a dark brown spot around each tubercle. Pedipalpi and chelicerae with light mottling. Spine of area III dark brown. **Genitalia** (Figs. 5–6): Distal portion of truncus swollen, armed with three pairs of bifid setae. Apical part with a lateral projection on each side, ending in a blunt hook, and with a ventral pair of small setae. Truncus without definite ventral plate. Stylus long, curved apically, with a membranous dorsal fold, and without accessory structures.

**Discussion**

The valid character states present in Mello-Leitão’s description (1940: 305–307) and some others described here are listed below and used to assess the systematic position of *Leptostygnus*.

(1) [Tarsal process (=“pseudonychium”)]. Not actually stated, but implicit, since the genus was placed in the Gonyleptidae. Other authors have shown that Mello-Leitão did not work carefully in the appreciation of

	Tr	Fe	Pa	Ti	Mt	Ta
Leg I	0.34	3.56	0.64	2.04	4.32	1.44
Leg II	0.62	7.90	1.14	5.71	8.38	2.07
Leg III	0.95	5.68	0.79	3.18	5.61	1.90
Leg IV	1.00	9.31	1.85	5.00	9.38	2.38

Table 1: Appendage measurements of male holotype of *Leptostygnus leptochirus*.

this character. As an example may be cited the case of *Bacigalupo tenax* Mello-Leitão, 1933, described in the Phalangodidae but later transferred by Ringuelet (1959: 379) to the Gonyleptidae. More astonishing is the case of *Brasiloctis bucki* Mello-Leitão, 1938, described in the Podoctidae but shown by Soares & Soares (1979) to belong to the Triaenonychidae. The presence of a tarsal process is the only derived character state which could relate *Leptostygnus* with the Gonyleptidae, but examination of the holotype revealed that a tarsal process is lacking on legs III-IV.

(2) "Legs I very slender, much weaker than the others" (Mello-Leitão, 1940: 306). This is a unique derived feature of the Agoristenidae.

(3) "Distitarsus of leg I slightly swollen." This has been described only once in Gonyleptidae, where frequently the basitarsus is swollen. The agoristenine *Vampyrostenus kratochvili* Silhavy shows distitarsus I swollen: "apical segment [of first distitarsus] bulky" (Silhavy, 1976: 57, see also his fig. 4). As a basic character of Gonyleptidae, Cosmetidae and Stygnidae, the male basitarsus I is swollen, but this has not been reported in Agoristenidae. I cannot confirm the statement by Mello-Leitão — there is no appreciable difference between distitarsus and basitarsus of leg I in the holotype of *L. leptochirus*.

(4) "Eye mound low, slightly depressed in its median portion." This is characteristic of Cosmetidae (not of Gonyleptidae) and is widely present in Agoristenidae (cf. Silhavy, 1973: 111; Gonzalez-Sponga, 1987).

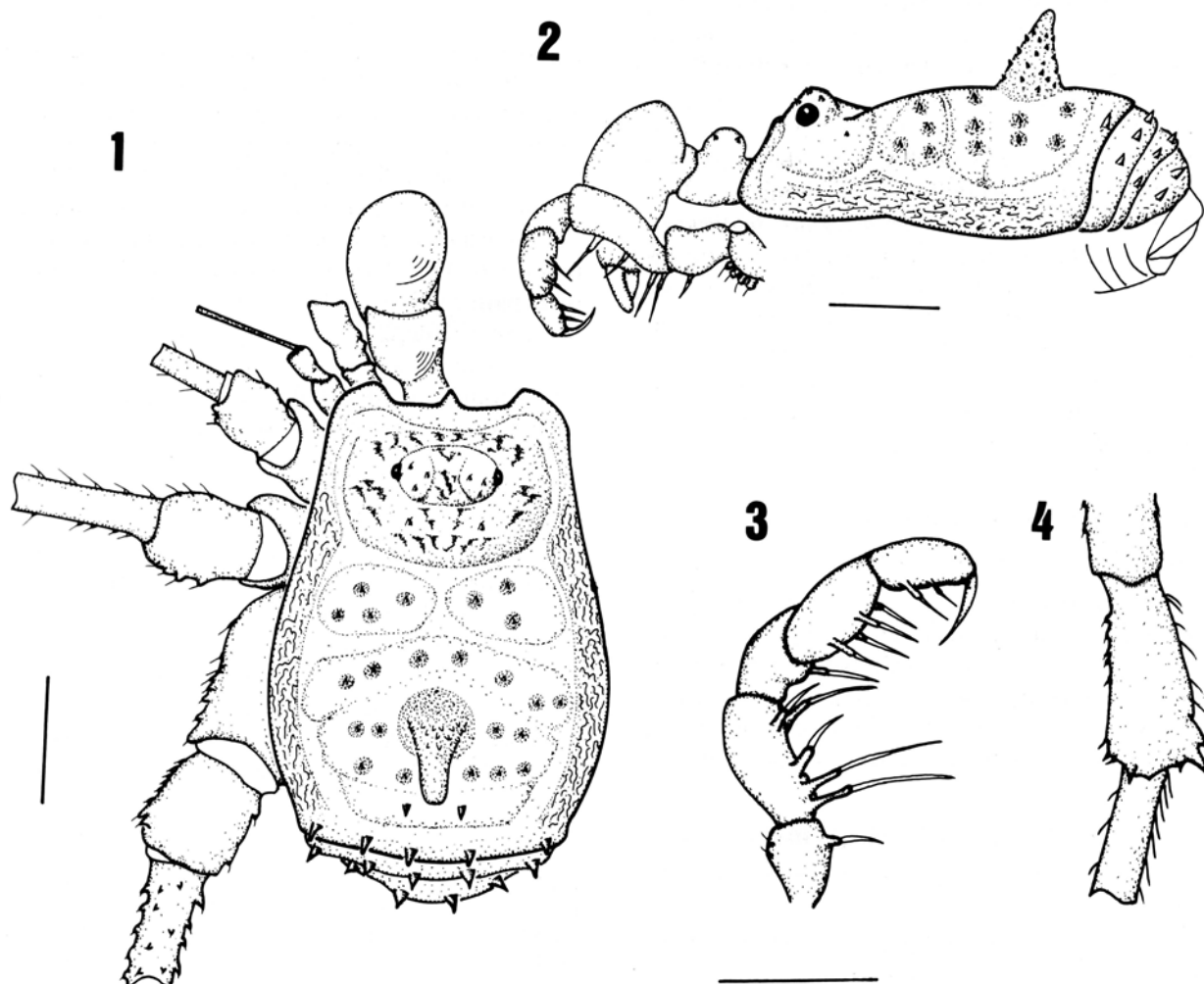
(5) "Area III with erect median spine, formed by two geminate spines in the apex of a robust cone." This character has been used by Gonzalez-Sponga to define the monotypic subfamily Angelinae, and it is probably synapomorphic at this level.

(6) "Pedipalps short and robust." The spination agrees with that of *Angela marchantiarum* Gonzalez-Sponga and *Agoristenus cubanus* Silhavy, but not with most Prostyginae.

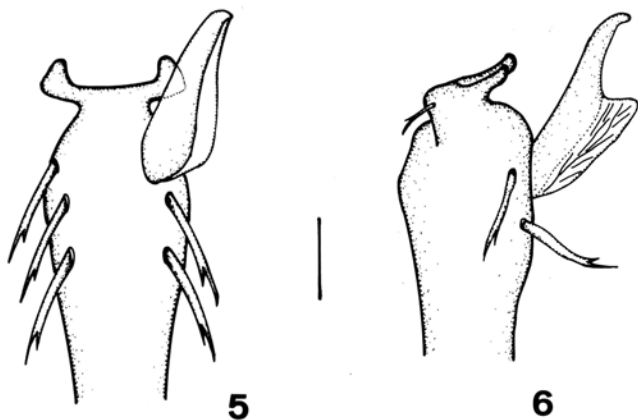
(7) "Body with margins almost parallel; coxae IV slightly more robust than the others; distal segment of chelicerae very swollen." This is present in the ground-plan of both Agoristenidae and Gonyleptidae (in the latter all three conditions are further highly modified).

(8) Not cited by Mello-Leitão, but characteristic (synapomorphic?) of the Agoristenidae are the stout tubercles on coxa I, present in *L. leptochirus*.

(9) Finally, the male genitalia are typical of Agoristenidae, very different from those of Gonyleptidae, without defined ventral plate, truncus with lateral apical projections and bifid setae.



Figs. 1-4: *Leptostygnus leptochirus*, male holotype. 1 Habitus, dorsal view; 2 Habitus, lateral view; 3 Right pedipalpus, ectal view; 4 Left patella IV, dorsal view. Scale lines = 1 mm.



Figs. 5–6: *Leptostygnus leptochirus*, male holotype. **5** Distal part of penis, dorsal view; **6** Ditto, lateral view. Scale line = 0.1 mm.

Similarly, some characters extracted from Roewer's descriptions can be used to evaluate the systematic position of *Sabanilla ornata*.

(1) In this case also, the tarsal process is the main evidence against placing *Sabanilla* in Agoristenidae. This evidence is weakened, if one takes into account the numerous incorrect appreciations of this character by Roewer.

(2) The drawing by Roewer (1923: fig. 567), although showing only part of femur I, is clear enough to show a major synapomorphy for Agoristenidae — the filiform leg I.

(3) In *Sabanilla ornata* the basitarsus I is not swollen as it is in most Prostyginae.

(4) Pedipalpal spination is characteristic of Agoristenidae, very different from that of Prostyginae.

(5) The body outline, scutal grooves, dimensions and colour pattern suggest a relationship with the species of *Barlovento* Gonzalez-Sponga, 1987 (Leiosteninae), also from Venezuela.

#### Subfamilial position

Since there remains no doubt about referring *Leptostygnus* to the Agoristenidae, its subfamilial position should be evaluated next. Of the three subfamilies hitherto described, the Agoristeninae do not show any synapomorphic character uniting its genera. Only the other two subfamilies occur in Continental America. The Leiosteninae are defined by two possible synapomorphies, absent in *Leptostygnus*. Only one of the diagnostic characters for the monotypic Angelinae may be regarded as a synapomorphy — the fused spines of area III (which occur also in *Vima insignis* Hirst, 1912). It is obvious that *Leptostygnus* is closely related to *Angela*, not only by this character, but also by somatic and appendicular proportions and by the remarkable wrinkled surface of lateral margins of scute, exclusive to both genera. Furthermore, their type localities are adjacent, in the Cordillera de Merida, which stretches between Venezuela and Colombia.

The subfamily name Angelinae, as used by Gonzalez-Sponga (1987), must be changed to Angelinae, as it is based on the genus *Angela*.

#### The problems with *Vima*

According to the description in Roewer (1923: 128), *Vima insignis* could well be regarded as a relative of *Angela* and *Leptostygnus*. Although Goodnight & Goodnight (1949) doubtfully assigned their species *Vima plana* to the genus established by Hirst, this relationship has not been questioned, and subsequent authors have described many “*Vima plana*-like” species of *Vima*. Rambla (1978), still including *Vima* in the Tricommatinae, described 3 other species, while Gonzalez-Sponga (1987) added many new species and transferred some from other genera. Using a typological approach, the species described by Goodnight, Rambla and Gonzalez-Sponga constitute a natural assemblage, but only if the type species is excluded. There are at least three available generic names for the “non-*insignis* species of *Vima*”, and it is probable that one of them will have to be used, if a future examination of the types of *Vima insignis* provides evidence to support its transfer to Angelinae, as here suspected.

#### Acknowledgements

I am grateful to Dr A. Timotheo da Costa (MNRJ) for the loan of the material examined.

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