



ARTÍCULO:

**On the dubious identity of  
*Bastioides* Mello-Leitão, 1931  
(Eupnoi, Sclerosomatidae,  
Gagrellinae)**

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ARTÍCULO:

**ON THE DUBIOUS IDENTITY OF *BASTIOIDES*  
MELLO-LEITÃO, 1931 (EUPNOI,  
SCLEROSOMATIDAE, GAGRELLINAE)**

Ana Lúcia Tourinho-Davis

**Abstract**

The monotypic genus *Bastioides* Mello-Leitão, 1931, and its type species, are here considered *nomina dubia*. The early juvenile holotype of *Bastioides coxopunctatus* Mello-Leitão, 1931, does not bear diagnostic characters allowing its recognition and attribution to any gagrelline taxon, although its position in the Gagrellinae is confirmed. The holotype is redescribed and detailed figures are given for the first time.

**Key words:** Harvestmen, Sclerosomatidae, Gagrellinae, *Bastioides*, systematics, taxonomy, Brazil, Atlantic forest.

**Taxonomy:** *Bastioides* Mello-Leitão, 1931, *nomen dubium*

**Sobre la identidad dudosa de *Bastioides* Mello-Leitão, 1931  
(Eupnoi, Sclerosomatidae, Gagrellinae)**

**Resumen**

En el presente trabajo el género monotípico *Bastioides* Mello-Leitão, 1931, y su especie tipo son considerados *nomina dubia*. El holotipo de *Bastioides coxopunctatus* Mello-Leitão, 1931 es un ejemplar extremadamente juvenil que no proporciona ningún carácter diagnóstico útil que permita atribuir la especie a algún taxón dentro de los Gagrellinae a no ser su ubicación subfamiliar. Se redescrive el holotipo, proporcionando por primera vez figuras detalladas del mismo.

**Palabras clave:** Opiliones, Sclerosomatidae, Gagrellinae, *Bastioides*, sistemática, taxonomía, Brasil, selva atlántica.

**Taxonomía:** *Bastioides* Mello-Leitão, 1931, *nomen dubium*

**Introduction**

The Gagrellinae of the Atlantic forest of Brazil have been revised as part of a taxonomic project on the New World species (Tourinho, 2000; Tourinho & Kury, 2001; Tourinho-Davis & Kury, submitted). This rich gagrelline fauna includes species currently attributed to seven genera: *Prionostemma* Pocock, 1903, *Holcobunus* Roewer, 1910, *Geaya* Roewer, 1910, *Pectenobunus* Roewer, 1910, *Garleppa* Roewer, 1912, *Bastioides* Mello-Leitão, 1931 and *Jussara* Mello-Leitão, 1935. However, it should be noted that many of these species are misplaced. For example, of the three species of *Garleppa* recorded to this region, one has been transferred to *Jussara* (Tourinho-Davis & Kury, submitted) and the other two belong to *Pectenobunus*. Also, some 70 % of the species referred to *Prionostemma* should be transferred to *Pectenobunus*, and the remainder, along with the species placed in *Geaya*, constitute a natural group representing a new genus not yet formally described (Tourinho-Davis, unpublished data).

The single species of the genus *Bastioides*, *B. coxopunctatus*, was described by Mello-Leitão (1931), on the basis of a juvenile holotype. There is very few information about the juveniles morphology and instars development in Sclerosomatidae, Cokendolpher (1980) has contributed with the idea of describing both adults and immature of Leiobuninae, improving the morphological knowledge of juveniles species of the genus *Eumesosoma* Cokendolpher, 1980.

The juveniles of most species of Gagrellinae, as in *B. coxopunctatus*, have very similar morphology. Color pattern, shape, size, and some diagnostic characters are not developed depending of the early instars (Tourinho & Kury, 2001). They generally have spines, apophyses, lobes and processes, usually present in the eye mound, basal segments of legs, genital operculum, supracheliceral lamina, and sometimes in the penis at the stylus area (Tourinho-Davis & Kury, submitted). These spines, apophyses, lobes and process are usually longer in the adults than it is in the juveniles (sometimes twice as long), as the sharp spines in the eye mound

of both *Prionostemma farinosum* Mello-Leitão, 1938 and *Prionostemma u-sigillatum* Mello-Leitão, 1938, the tibial and patellar apophyses of several species of *Jussara*, and type species of *Holcobunus*, *Holcobunus nigripalpis* Roewer, 1910 (all of these characters are twice longer in the adults). Sometimes when the spine, apophyses, lobes and process are very small in the juveniles they can be absent in the adult, it can be observed in many species of *Jussara* and *Pectenobunus*. They often have irregular markings and shiny white spots arranged in pairs on the dorsal scute and free tergites. In alcohol the markings tend to be beige and the spots vanish.

The position of *Bastioides* in Gagrellinae is confirmed by the presence of nodules on the femora of the legs, a diagnostic character for this subfamily (Roewer, 1910; SEM photo in Tourinho & Kury, 2001). This genus was erected by Mello-Leitão (1931) on the basis of its unique arrangement of femoral nodules, 0/5/0/1. This follows Roewer's (1910, 1923, 1953) system of using the number of nodules as the main criterion for species assignment to genera in Gagrellinae. In his concept the species grouped in the same genus must share the same number of nodules in the femora I-IV. The flaws of Roewer's methodology were discussed by different authors (Martens, 1987; Cokendolpher & Hunt, 1993; Tourinho, 2000; Tourinho & Kury, 2001), and it is now widely known that the number of femoral nodules is highly variable, with many possible combinations, even within a species.

The use of the number of femoral nodules as the main diagnostic character supporting gagrelline genera has led to the creation of many artificial genera in both the New and Old World. The nodular combination system has hindered the study of the richer morphological features offered by genital morphology, plus detailed examination of the external morphology in this subfamily (Tourinho & Kury, 2001).

## Material and methods

Terminology of external morphology followed Tourinho & Kury (2001) and Tourinho-Davis & Kury (submitted).

Acronyms of depositories are MNRJ = Museu Nacional/UFRJ. Rio de Janeiro, Brazil. Curator: Dr Adriano B. Kury.

## Systematic accounts

### *Bastioides* Mello-Leitão, 1931 *nomen dubium*

*Bastioides* Mello-Leitão, 1931: 116; 1938: 332; Roewer, 1953: 253; Ringuelet, 1954: 287, Crawford, 1992: 13.

#### TYPE SPECIES.

*Bastioides coxopunctatus* Mello-Leitão, 1931 by monotypy and original designation.

*Bastioides coxopunctatus* Mello-Leitão, 1931 *nomen dubium*

*Bastioides coxopunctata* Mello-Leitão, 1931: 116; 1932: 437; 1938: 332; Roewer, 1953: 253; Ringuelet, 1954: 287;

*Bastioides coxopunctatus* Crawford, 1992: 13.

**TYPE MATERIAL.** MNRJ 1360, 1 juvenile holotype, Brazil, Bahia, Ilhéus, E. May leg.

#### REDESCRIPTION:

**Holotype.** Body: 6.3 mm, carapace: 1.9 mm, dorsal scute: 3.6 mm, chelicerae: 2.2 mm, pedipalps: 3.5 mm, undeveloped penis: 1.8 mm.

**Color.** Body light chestnut; apical portion of patella and tarsus white. Pedipalps and chelicerae pale yellow.

**Dorsal view** (Fig 1). Surface granular. Anterior margin of carapace almost straight. Supra-cheliceral lamina unarmed. Eye mound unarmed.

**Ventral view** (Fig 2). Surface granular. *Arculi genitales* III unarmed.

**Chelicerae** (Fig 4). Ventrobasal spine of basichelicerite with an irregular outline and four small processes.

**Pedipalps** (Fig 5). Trochanter, femur, patella, tibia and tarsus unarmed. Inner apophysis of patella unarmed, longer than wide, as long as patella. Inner apophysis of tibia unarmed, three times shorter than patella.

**Legs.** Femoral formula 0/5/0/1.

**Penis.** Underdeveloped, not bearing diagnostic characters.

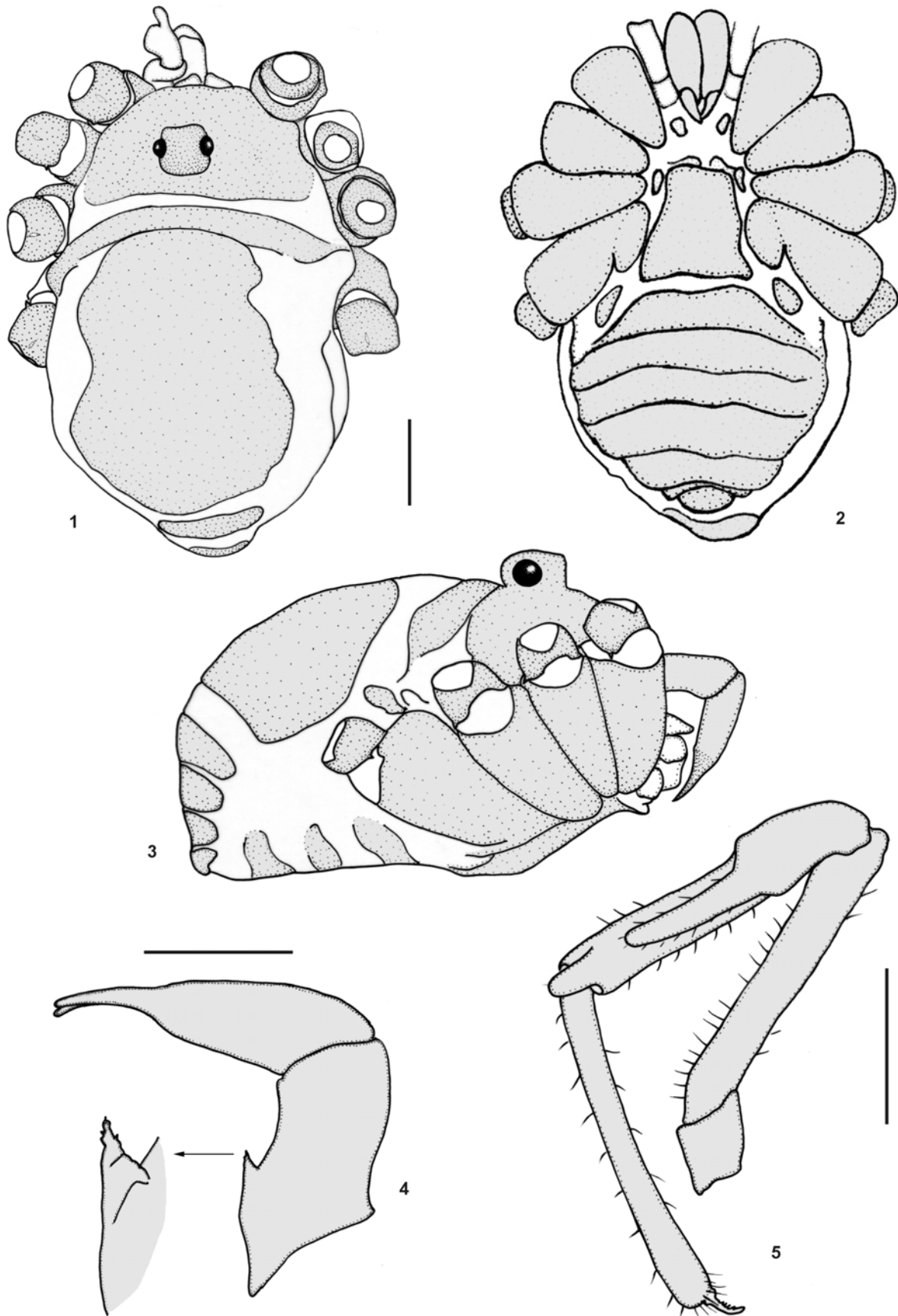
**Type locality:** Brazil; Bahia; Ilhéus.

**Distribution:** known only from the type locality.

## Discussion

*B. coxopunctatus* was collected at Ilhéus, the most important city of the cacao farming area in southeastern Bahia. The traditional cacao plantations are cultivated amidst the Atlantic forest that covers most of the region. Although almost all of the understory of the forest is replaced by cacao trees, many of the highest trees are kept for shade. So, at least part of the original fauna and flora are preserved in the cacao farming area. This region has been continuously explored for cacao farming since the last decade of the nineteenth century. The gagrelline fauna of Bahia, the most southern of the Northeastern states, is poorly known and has scanty representation in scientific collections when compared to the South and Southeastern region. However, at least four different gagrelline species have been collected at the cacao farming region where *B. coxopunctatus* is found: two species of *Jussara* and three species belonging to two, as yet undescribed, genera (Tourinho, 2000). The species from the northeastern Brazil, as it is the case of *B. coxopunctatus*, are usually larger in size than almost all the species from the southeast, one exception is *Jussara obesa* (the female), juveniles of this species are of course larger than the juveniles of the same stage of smaller Southeast species.

The highly variation of nodules is observed in many genera of Gagrellinae. Distinct species belonging to the same genus usually have different number of



**Figs. 1-5.** *Bastioides coxopunctatus*. juvenile holotype (MNRJ 1360), **1:** dorsal view; **2:** ventral view; **3:** lateral view; **4:** right chelicerae showing ventrobasal spine in the detail, lateral view; **5:** right pedipalp, lateral view. Scale bars = 1.0 mm for Figs 1-3; = 0.5 mm for Fig 4,5.

femoral nodules that vary from one to two in the same leg. The variation shown here is of the femoral formula of the studied species: *Holcobunus* 2/5-6/2/2-3, *Jussara* 1-2/3-5/1/1-2, *Pectenobunus* 0-1/2-4/0-1/0-1 and the undescribed genus 0-1/3/0-1/0-1. The variation may also occur at intra-specific level, representing a secondary sexual dimorphism. Females of a new species (Tourinho-Davis & Kury, submitted) from the Southeast region, and *Prionostemma minimum* Roewer, 1910, occurring at the cacao-farming region, have one more femoral nodule on the leg III (new species) and IV (*P. minimum*).

Mello-Leitão, as also did Roewer, misidentified the gender of several species; he also mistakenly stated the number of nodules of many others (see Cokendolpher and Hunt, 1993 and Tourinho & Kury, 2001). They both stated the holotype of *Holcobunus nigripalpis* Roewer, 1910 and *Tamboicus silvicola* Mello-Leitão, 1932, junior synonym of the first, was a male, when it is instead a female redescribed and illustrated together with the male in Tourinho & Kury (2001). Because of their insufficient perception of the sexual dimorphism present in Gagrellinae (marked by the sclerites, the shape of dorsal scute, the pattern color and the presence of one more nodule in some species as it is discussed above in this paper) both Mello-Leitão and Roewer described male and female of the very same species under different taxonomic entities, for example: *Munequita pulchra* Mello-Leitão, 1941, described based on a male and *Holcobunus albianus* Mello-Leitão, 1944 described based on the female of the same species (Tourinho-Davis, unpublished data) but in his publications Mello-Leitão said that both are males.

Mello-Leitão regarded *B. coxopunctatus* as female, however the penis in this juvenile can be recognized, as it can be in others, because of the presence of two symmetric lateral expansions of the tegument at the distal half (underdeveloped winglets of penis), and narrow apex (underdeveloped glans of penis). The ovipositor has no lateral expansions, the body is a straight tube and has the same shape and size, narrowing twice at its anterior portion: the proximal narrowing marks the furca and the second one marks the sensorial lobes. Even during the developmental stages, it is possible to assert the sex of this specimen of *B. coxopunctatus* because of these features present on the genitalia.

There is no sclerotization in the holotype of *B. coxopunctatus* other than the segmental furrows as shown in the illustrations (Figs 1-3). The same happens with the juvenile holotype of *Holcobunus bicornutus* (Mello-Leitão, 1940), the single specimen known (Tourinho & Kury, 2001).

Modern authors use as diagnostic to Gagrellinae the combination of the following morphological characters: shape of dorsal scute, pedipalp femora, spine in the leg's trochanter, position of the nodules, color pattern and design and the characters of the penis. Judging by the shape of dorsal scute, *B. coxopunctatus* could be a *Jussara* (by the way, *Bastioides* would have priority over *Jussara* by four years). In *Bastioides*, the dorsal scute is rounded, whereas in *Jussara* it is sub-hexagonal with curved sides in males and much more rounded in females (Tourinho-Davis & Kury, submitted). But as species of the other two undescribed Gagrellinae genera also have rounded dorsal scutes as *Jussara* and *Bastioides* (Tourinho, 2000), the dorsal scute shape does not contribute to the diagnosis of *Bastioides*. The only Atlantic Forest genus bearing a dorsal scute with a different shape is *Pectenobunus*, where the lateral sides of the scute are parallel, but species of this genus were not found in the Northeast area.

The presence of small processes showing irregular outline on the ventrobasal cheliceral spine could be a useful character for this species. However, the small processes in the basal spine could be very reduced or absent in the adult, as usually happens with the apophysis present in the patella and tibia, and the processes and spines in the eye mound of juveniles. Juveniles have a very soft tegument that can be deformed, folded or injured very easily; therefore these are other possibilities for the irregular outline and the spine's features present in the chelicerae of *B. coxopunctatus*. Though, considering that *B. coxopunctatus* is represented by one single immature, the three hypotheses discussed above, for the irregular outline and the presence of small process in the basal spine of chelicerae, cannot be properly verified by comparison with other specimen of this species.

The nodular combination and the other morphological characters examined do not add support to *Bastioides* as a separate genus or to its inclusion in any of the Gagrellinae groups known to occur in the Atlantic Forest. For the reasons described above, *Bastioides*, and its type species *B. coxopunctatus*, are considered here as *nomina dubia*.

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