

sified in Australia, Papua New Guinea, and to a lesser degree in Indonesia. Apart from India, there are many species of Assamiinae-like groups in the Indian subcontinent (Bangladesh, Bhutan, Nepal, Sri Lanka). A few species have been recorded also in Southeast Asia, in Burma and Malaysia.

Relationships: Assamiidae was included by Kury (1993a) in a cladistic analysis of what is now known as Grassatores, and was identified as the sister group of the American Gonyleptoidea. The spiny funnel of the penis has very similar counterparts in Mexican Stygnopsidae, and the outline of the dorsal scutum is typical of Gonyleptoidea (Kury, 1997c). However, more data are needed to test this hypothesis.

Main references:

- **Systematics:** Sørensen (1884, 1886), Roewer (1912b, 1935b, 1940b), Martens (1977, 1986), Staręga (1992).
- **Natural history:** Roewer (1935b), Martens (1977, 1993b), Hillyard (1981), Kauri (1989).

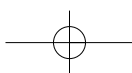
Biantidae Thorell, 1889

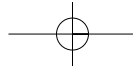
Adriano B. Kury and Abel Pérez-González

Etymology: Biantes, son of Parthenopaeus, was one of the Epigoni who marched against Thebes in Greek mythology.

Characterization:

- **Size:** Body 1.5–5.5 mm long. Legs I–IV: 3–12/4.3–23/3–16/4.5–25 mm long.
- **Dorsum:** Dorsal scutum trapezoid in Biantinae, in Stenostygninae almost rectangular (Figure 4.22i); in Lacurbsinae it has convergent posterior margins (Figures 4.22c,k). Frontal border of the carapace straight with small cheliceral sockets. Common ocularium absent; the placement of the eyes is far backward in the carapace for Biantinae and Stenostygninae, more or less in the middle in Lacurbsinae (Figure 4.22k), and in *Zairebiantes* the eyes are placed close together near the front (Figure 4.22b). Typically with small frontal hump. Sulcus I marked, opisthosomal areas typically unarmed in Biantinae (except in a few species, e.g. *Fageibiantes bispina*, *Hovabiantes* spp., *Biantes parvulus*, and *B. albimanus* from the Seychelles); in many species of Antillean stenostygnids, Lacurbsinae, and Mitraceratinae the areas and free tergites can be armed with a powerful spiniform apophysis.
- **Venter:** Without remarkable features; tracheal spiracles not concealed by bridges, but may be hidden under the fold separating coxa IV from the spiracular area.
- **Chelicerae:** With marked bulla, hypertelic in males of Stenostygninae.
- **Pedipalps:** Enlarged, subchelate tibia-tarsus armed with large setiferous tubercles, patella ventrally with or without a mesoventral setiferous tubercle, thin and almost unarmed femur, commonly with only one ventrobasal small setif-



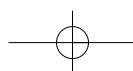


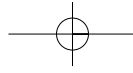
erous tubercle. Zairebiantinae (Figure 4.22d) with pedipalps armed in all segments.

- **Legs:** Commonly without relevant armature (Figure 4.22a) except in some species with strong spiniform apophysis in femur IV of males, such as *Hovabiantes* spp. (Biantinae), and in Lacurbsinae with a leg IV enlarged with incrassate tibia showing strong spiniform ventral apophysis (Figure 4.22c). Without tarsal process and scopula except in Stenostygninae. Metatarsus III spindled only in Stenostygninae.
- **Genitalia:** Typically (as in Nepalese Biantinae, Figure 4.22n) can be distinguished by having a fully retractable capsula interna. The follis is reduced, modified in a pair of soft titillators that almost invert its position when the capsula interna is everted (see Figure 4.22n). Capsula interna formed by a pair of rigid and tubular conductors, stylus simple (without parastylar collar). Truncus without a well-defined ventral plate as in Gonyleptoidea, cylindrical, blunt apically (some species with lamina ventralis developed, e.g., most of the Malagasy Biantinae). In some species the pars distalis is laterally widened. Pars distalis ventrally with small acute setae and subapical *Schwellkörper*; division between pars distalis and pars basalis not evident. Stenostygninae have a pair of well-developed rigid titillators that cover the entire capsula interna and do not invert its position when the capsula interna is exposed; they also have small less developed conductors. *Stenostygnus pusio* has a flattened pars distalis apically divided with small titillators.
- **Color:** Many species have a uniform mahogany background; many are yellow with brownish or blackish mottling.
- **Sexual dimorphism:** Zairebiantinae and Biantinae commonly without remarkable sexual dimorphism. Exceptions in Biantinae: Some species of *Hovabiantes* from Madagascar have heavy armature in the femur to tibia IV of the males (Lawrence, 1959); South African species of *Metabiantes* may have dimorphism in metatarsus II, which is serrated in males, or in trochanter II, which is immensely swollen in males (Lawrence, 1937a). There is a notable sexual dimorphism in size and pattern of the genital operculum in Nepalese Biantinae (Martens, 1978a). Lacurbsinae have a zalmoxiform leg (Figure 4.22c). Stenostygninae have a hypertelic chelicera (except in *Stenostygnus*) and enlarged metatarsus III. The hypertelic condition of the chelicera could be present and absent in males of the same species; for that reason this character needs to be carefully taken when sexing individuals.

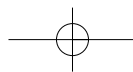
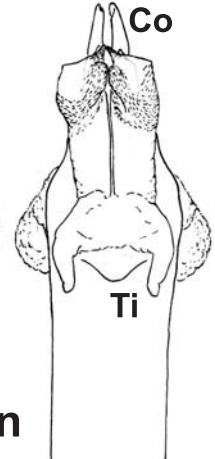
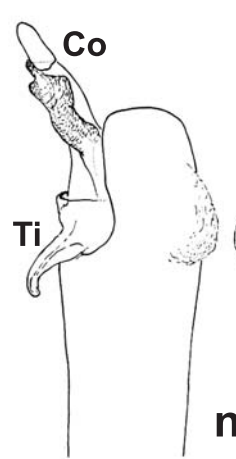
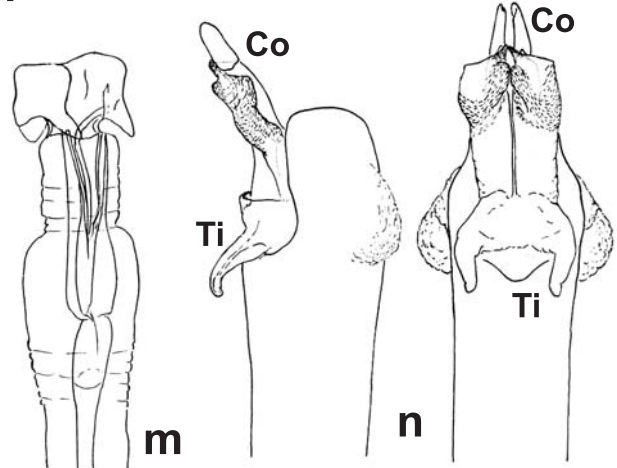
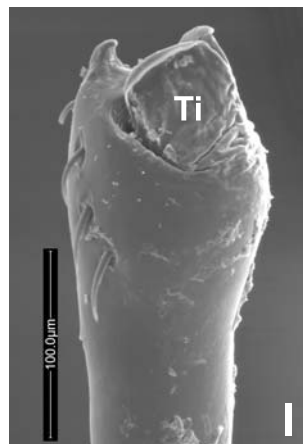
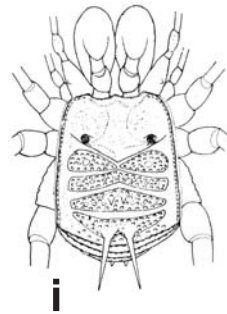
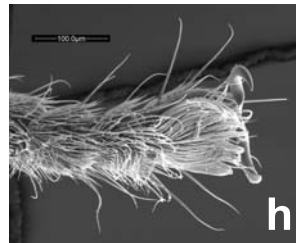
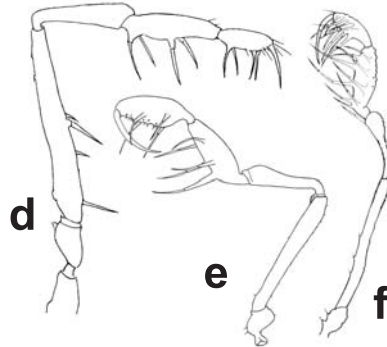
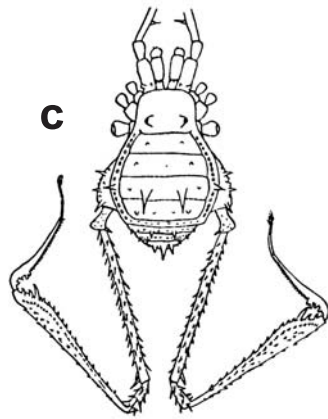
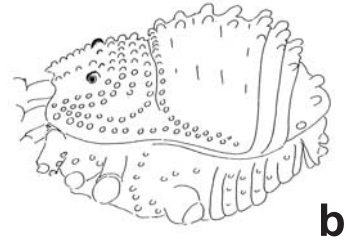
Key to the subfamilies:

1. Opisthosomal scutum much wider in the middle, with acuminate apophyses in the lateral areas. Tibia and metatarsus IV heavily armed and/or swollen in males (Figure 4.22c) **Lacurbsinae**
- . Opisthosomal scutum never wider in the middle, without armature in the lateral areas (Figure 4.22i). Tibia and metatarsus IV slender and cylindrical in both sexes. 2

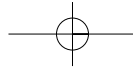




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2. Eyes close together and placed in the anteromedian region of the carapace (Figure 4.22b). Pedipalpal femur tapering distally and armed with strong setiferous tubercles. Tarsi III–IV without scopula. **Zairebiantinae**
 Eyes widely separated and placed in the lateroposterior region of carapace. Pedipalpal femur not tapering and unarmed. Tarsi III–IV with dense scopula (Figure 4.22h). 3
3. Opisthosomal scutum subrectangular. Chelicerae of male mostly inflated. Titillators rigid and completely covering the capsula interna (Figure 4.22l).
 **Stenostygninae**
 . Opisthosomal scutum smoothly growing wider posteriorly. Chelicerae of male never inflated. Titillators soft and folding to outside revealing the capsula interna (Figure 4.22n) **Biantinae**

Distribution: The peak of diversity of typical Biantidae is in the Indian subcontinent—with many species described from Nepal—Madagascar, and nearer Indian Ocean islands, and they barely penetrate in Southeast Asia. Many genera occur in Africa, while Stenostygninae are poorly represented in the northern part of South America, but peak in the Greater Antilles.

Relationships: Biantidae is included in Samooidea, which appears to have undergone a major radiation in the Neotropics, resulting in the diverse and closely related families Kimulidae, Escadabiidae, Stygnommatidae, and Samoidae and other species of uncertain affinities.

Main references:

- **Systematics:** Roewer (1923), Martens (1978a).
- **Natural history:** Martens (1978a), González-Sponga (1992b).

Cladonychiidae Hadži, 1935

Thomas S. Briggs and Darrell Ubick

Etymology: *Cladonychium*, from Greek, branched claw.

Figure 4.22. Biantidae. (a) *Lacurbs* sp. (Cameroon), male, habitus lateral. (b) *Zairebiantes microphthalmus* (Zaire), male, habitus lateral (from Kauri, 1985). (c) *Lacurbs spinosa* (Cameroon), male, habitus dorsal (from Roewer, 1923). (d) *Z. microphthalmus* (Zaire), pedipalpus, lateral (from Kauri, 1985). (e) *Biantes sherpa* (Nepal), pedipalpus, lateral (from Martens, 1978a). (f) *Galibrotus carlotanus* (Cuba), pedipalpus, lateral (from Avram, 1977). (g) *Caribbiantes* sp. (Cuba), male, metatarsus III, ventral. (h) *Caribbiantes* sp. (Cuba), male, last segment of tarsus III showing scopula, ventral. (i) *G. carlotanus* (Šilhavý, 1973) from Cuba, male, habitus dorsal (from Avram, 1977). (j) *Biantes* sp. (India), male, habitus dorsal. (k) *Lacurbs* sp. (Cameroon), male, habitus dorsal. (l) *Caribbiantes* sp. (Cuba), male, distal part of penis, dorsolateral. (m) *Zairebiantes microphthalmus* (Zaire), distal part of penis, dorsolateral (from Kauri, 1985). (n) *Biantes sherpa* (Nepal), distal part of penis expanded, lateral and dorsal (from Martens, 1978a). Photos: a, k by A. B. Kury; g–h, j, l by A. Pérez-González. Abbreviations: Co = conductors, Ti = Titillators.

