

- . Carapace without sexual dimorphism, not affecting space of area I. Area II invading area I until touching the scutal groove (Figure 4.25b). Armature of mesotergum mostly present as very high and sharp spine. Ocularium mostly low and depressed in the middle. Area I usually with a pair of short spines. Femur IV with a few distal prolateral spines. 3
2. Tarsal claws III–IV pectinate; rich ornamentation of scutum, mainly with contrasting white granules; all femora substraight and smooth elongate; scutal area III always with a pair of short spines. **Heterocraninae**
- . Tarsal claws III–IV smooth; scutum remarkably smooth; femur IV short and sigmoid with tubercles all along (Figure 4.25k); scutal area III mostly unarmed, paired spines present only in a few species. **Prostygninae**
3. All pedipalpal segments, specially femur and patella, slender and much elongate, tibia/tarsus forming subchela. **Stygnicraninae**
- . Pedipalpal segments short (Figures 4.25d,e), tibia and tarsus not forming subchela. **Craninae**

Distribution: Mainly northern South America (except for two species in Panama and Costa Rica). Most of the diversity in the family (Colombia and Ecuador) seems to be related to the cloud forest, from 500 to 3,500 m high, where it merges with subparamo vegetation. Perhaps cranoids show a high endemism related to small mountain areas, as do gonyleptids. Some species were recorded from paramos between 4,000 and 5,000 m where the soil is sandy and covered with low shrubs and grass, and others from the Amazonian rain-forest lowlands (Peru and Brazil) and upland rain forest (Venezuela and Colombia) where the vegetation is exuberant. Cranoids were also recorded from Peru, Bolivia, Brazil, Venezuela, and the Guyanas.

Relationships: Kury (1994b) transferred Craninae, Heterocraninae, Prostygninae, and Stygnicraninae from Gonyleptidae to Cranidae and proposed it as the sister group to Cosmetidae + Gonyleptidae. He also proposed a close relationship between Craninae and Stygnicraninae on the basis of the large and divergent spines on the ocularium and area II projecting into area I.

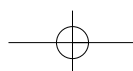
Main references:

- **Systematics:** Roewer (1923, 1932, 1943, 1963), Caporiacco (1951), Pinto-da-Rocha & Kury (2003a).
- **Natural history:** Pinto-da-Rocha & Kury (2003a), Machado & Warfel (in press).

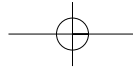
Epedanidae Sørensen, 1886

Adriano B. Kury

Etymology: *Epedanus*, from Greek *êpedanós* (weak, feeble).



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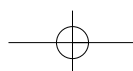


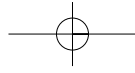
Characterization:

- Size: Body of adults 2–5 mm long, 1.52–3 mm wide. Legs variable, adult legs I–IV: 5–15, 8–28, 5–20, 6–26 mm long.
- Dorsum (Figures 4.26a,b): Opisthosomal scutum with sides straight, only a little wider than prosomatic carapace, posterior border substraight. Common ocularium may be absent (Dibuninae); when present, it is narrow, low, without depression, usually with strong median spine, seldom unarmed. In many species the scutal areas I–II are fused, a unique feature among Laniatores. Scutal areas with varied armature, usually unarmed or with a pair of acute high spines. Free tergites typically smooth and unarmed.
- Venter: Sternum straight, widening and bifurcating a bit near genital operculum. Spiracles clearly visible.
- Chelicerae (Figures 4.26c–o): Heavy with strong teeth in both fingers. Hand much swollen in male.
- Pedipalp (Figures 4.26a,b,o): Coxa very long. Femur usually very elongate, may bear ventral rows of spines and sometimes dorsal tuberculation. Patella may be very long, widening abruptly distally. Tibia and tarsus with powerful ventroectal and ventrodiscal spines. Claw extremely long, at least equal to tarsal length and applied against it.
- Legs: Long and thin, especially tibia and tarsi I–II filiform. Coxa IV barely visible under scutum; femur I without ventral row of spines; IV unarmed, straight; tarsi III–IV with a pair of claws smooth or pectinate and with or without thick scopulae. Distitarsus I two- or three-segmented, II two- to four-segmented. Tarsal claws are extremely diverse: they may be angulated, possess a large basal lobe, or bear secondary mesal processes.
- Genitalia (Figures 4.26p–q): Ventral plate of penis not sharply defined, with distal border concave or entire, setae arranged in a circle around the capsula interna; follis well developed, partially sunken into truncus. Structures of capsula interna more or less fused to each other.
- Color: Most species are light brown with sparse black mottling. A few possess white patches on the scutum.
- Sexual dimorphism: Cheliceral hand in males bulky and swollen, fingers thickened and strongly curved with varied processes. Pedipalps in males much more heavily spined.

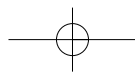
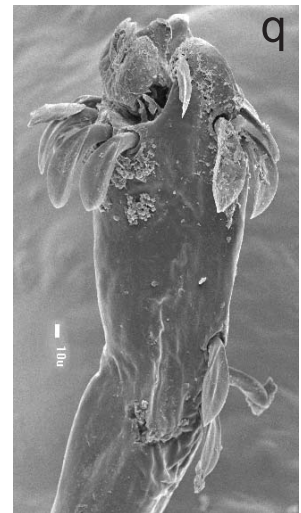
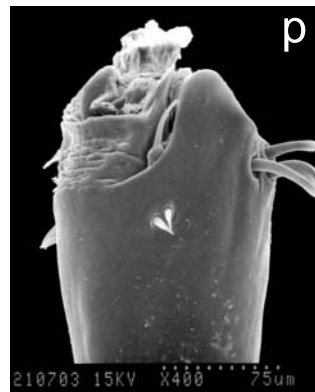
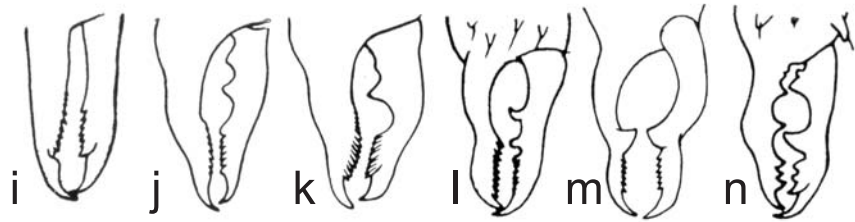
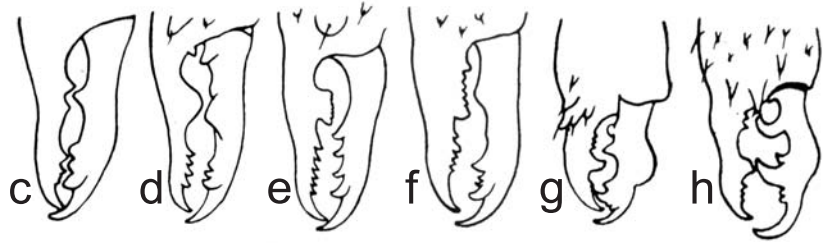
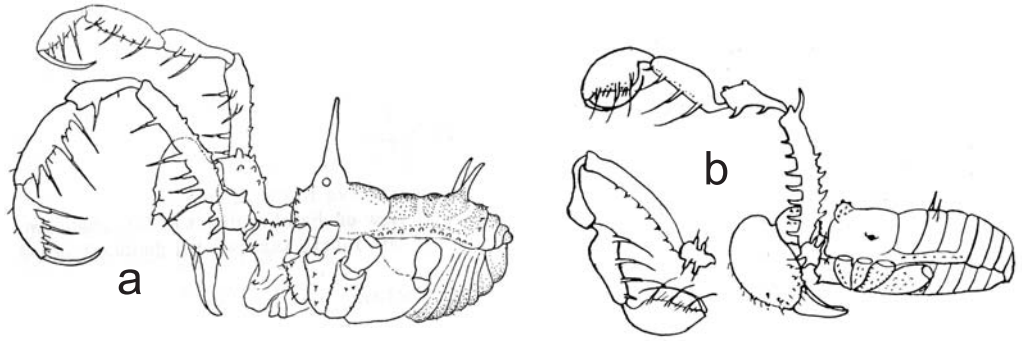
Key to subfamilies:

1. Common ocularium lacking; eyes sessile, far removed from each other (Figure 4.26b). **Dibuninae**
 . Eyes placed laterally at the base of a well-marked common ocularium (Figure 4.26a). 2
2. Tarsi III–IV with dense scopula. **Acrobuninae**
 . Tarsi III–IV without scopula. 3

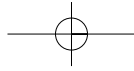




A. Kury - Epedanidae



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3. Distitarsus I with three tarsomeres..... **Sarasinicinae**
 . Distitarsus I with two tarsomeres..... **Epedaninae**

Distribution: Epedanidae is endemic to Asia. Dibuninae is one of the dominant components of the opilionofauna of the Philippines. The other three subfamilies are more abundant in Indonesia, Thailand, and Malaysia. They also occur in Myanmar (Burma) and highlands of Nepal. There are a few records from Japan, southern China, and Vietnam.

Relationships: Epedanidae was identified as the sister group of Gonyleptoidea in a cladistic analysis of Grassatores (Kury, 1993a). The loose structure of the glans and follis seems to support this view. Internal relationships of the four subfamilies have not been investigated.

Main references:

- **Systematics:** Roewer (1938), Suzuki (1969), Kury (1993a, 2003).
- **Natural History:** Miyosi (1941).

Escadabiidae Kury and Pérez in Kury, 2003

Adriano B. Kury and Abel Pérez-Gonzalez

Etymology: *Escadabius*, from type locality Escada, Pernambuco, Brazil, and Greek *bios* (living).

Characterization:

- Size: Dorsal scutum 2.5–3.5 mm long.
- Dorsum (Figure 4.27a): Dorsal scutum campaniform, with sides straight, hourglass shaped in a few species. Ocularium small, with a few granules and sometimes a median spine. Mesotergum divided into four areas by straight transverse grooves, without relevant armature, area I longer than the others.
- Venter: Sternites may be smooth and unarmed or with huge lateral projections (in *Escadabius* and *Jim*, Figure 4.27c).
- Chelicerae (Figure 4.27a): Weak and not sexually dimorphic. Basichelicerite short, with well-marked bulla.
- Pedipalps (Figures 4.27a,c): More or less as long as dorsal scutum. Without special modifications. Femur with two to three ventral spines, patella with one

Figure 4.26. Epedanidae. (a) *Pasohnus bispinosus* from Malaysia, male, habitus lateral (from Suzuki, 1976c). (b) *Dibunus albitarsus* from Philippines, male, habitus, lateral view, and detail of pedipalpus, mesal view (from Roewer, 1927). (c–n) Left chelicerae, frontal view, sample of diversity in the family (all from Roewer, 1938). (o) *Takaoia* sp. from Malaysia, pedipalpus and chelicerae, lateral. (p) *Takaoia* sp. from Malaysia, distal part of penis, dorsolateral. (q) *Dibunus* sp. from Philippines, distal part of penis, dorsolateral.

