

**Relationships:** Cosmetidae doubtless belongs to Gonyleptoidea, where it shows a superficial resemblance to Assamiidae. It was hypothesized by Kury (1992a) to be closest to Gonyleptidae, and this placement has not been refuted up to now. The extraordinary similarity of basal gonyleptids such as *Metasarcinae* (Kury, 1994a) and supposedly basal cosmetids such as *Meterginus* reinforces this hypothesis of relationship, mainly based on the saddle-shaped ocularium and penis structures.

**Main references:**

- **Systematics:** Roewer (1912a, 1923), Mello-Leitão (1932), Goodnight & Goodnight (1953a, 1976), González-Sponga (1992b), Kury (1994a, 2003).
- **Natural history:** Parthasarathy & Goodnight (1958), Juberthie (1972), Goodnight & Goodnight (1976), Juberthie & Manier (1977), Cokendolpher & Jones (1991), Pinto-da-Rocha (1995b), Sabino & Gnaspini (1999).

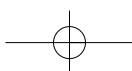
**Cranaidae Roewer, 1913**

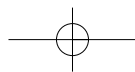
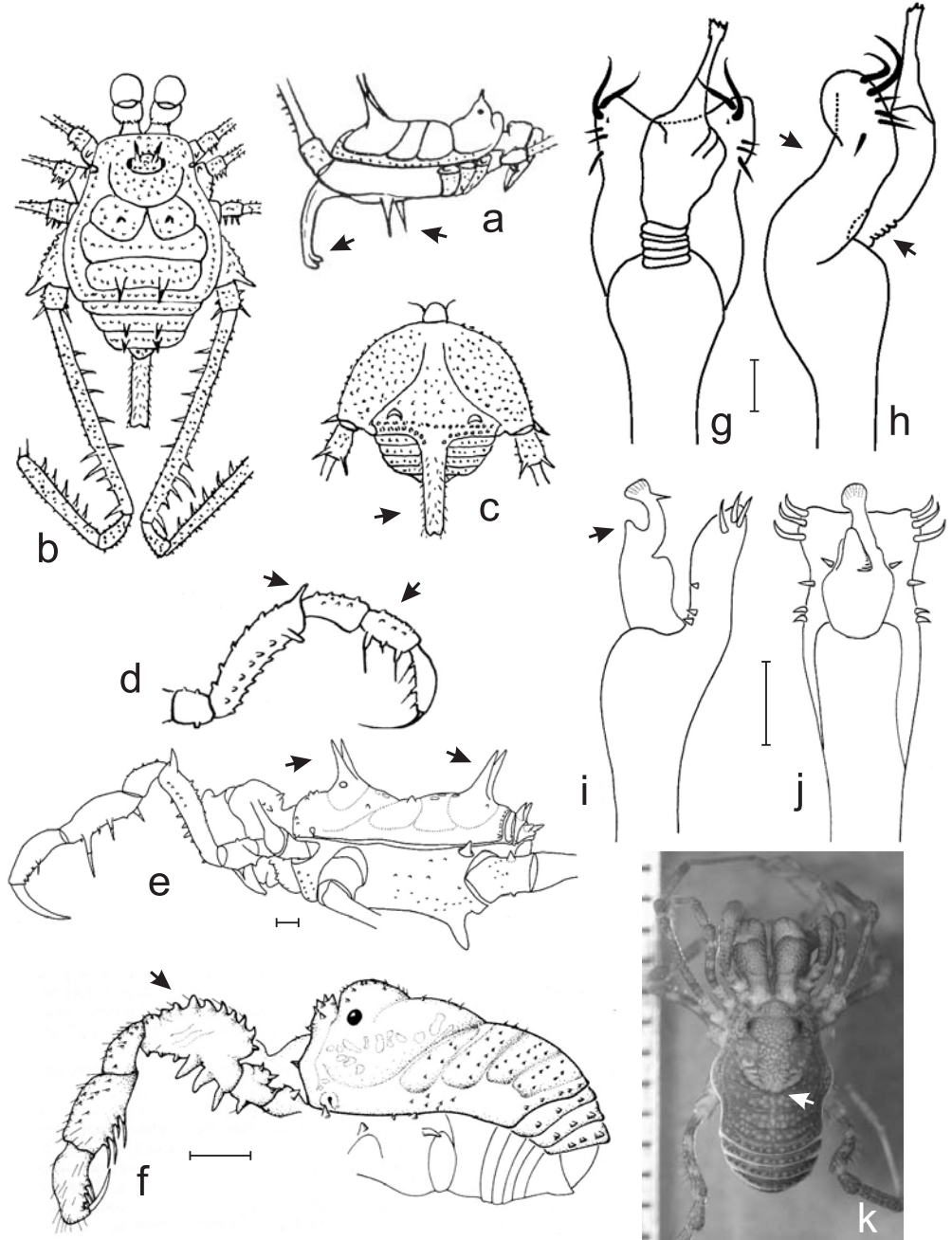
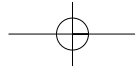
Ricardo Pinto-da-Rocha and Adriano B. Kury

**Etymology:** *Cranaus*, from the Greek anthroponym Cranaus, the successor of Cecrops as king of Attica.

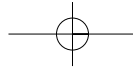
**Characterization:**

- **Size:** Body length 6–16 mm, leg IV 21–95 mm long.
- **Dorsum** (Figures 4.25a,b,e,f,k): Widest at area II or groove III. Ocularium placed in the middle of the prosoma; rounded and high, with or without (some Prostygninae) median depression, small-tuberculate or with two high spines. Ozopores slitlike, one opening partially covered by a tubercle of coxa II. Area I divided (sometimes area II “invades” area I in the middle, as in Stygnicranainae and most Cranainae genera), normally with one tubercle on each side (most cranainae), and more elevated (Cranainae, except *Puna*); area II tuberculate; III with two spines upward or backward, rarely two round tubercles (*Allocranus*). Tergite I normally small-tuberculate, with two spines (some *Santinezia*); II small-tuberculate, with two tubercles or one (*Tripilatus*); III normally with two spines, one large (*Licornus* and *Thaumatocranus*) or small-tuberculate.
- **Venter:** Coxa IV small-tuberculate or with two tubercles or spines close to the spiracular area in males (cranainae: *Phareicranus*, *Spinivunus* and *Santinezia*, Figures 4.25a–f). Posterior margin of spiracular area with large unpaired apophyses in males of some cranainae (e.g., *Alausius*, *Ventrifurca*, Figures 4.25a,c).
- **Chelicerae:** Segment I with few tubercles or densely tuberculate.
- **Pedipalps** (Figure 4.25d,f): Short and heavy or elongate and thin (Stygnicranainae); pedipalp dorsally coarsely tuberculate from trochanter to tibia (except *Cutervolus*, *Peladoius*, Stygnicranainae). Femur small-tuberculate, with a row of dorsal tubercles (as in most Prostygninae), or with a dorsoapical stout





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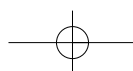


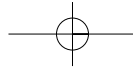
- tubercle (as in *Phareicranaus* and *Santinezia*). Setal sockets of tibia longer than setae; tarsus with two ventral rows of short and wide setae (Stygnicranainae).
- Legs (Figures 4.25b,k): With a few tubercles or spines (except prostygnines *Cutervolus*, *Prostygnus* and *Yania*). Coxa IV tuberculate, with a short and straight external apophysis. Femur IV straight or slightly S curved. Tarsal process strong, claws smooth or pectinate (Heterocranainae).
  - Genitalia (Figures 4.25g–j): Stylus long and slender, straight with apex slightly swollen, ventral process of glans absent, dorsal process of glans rarely present. Ventral plate oblique in relation to the axis of the truncus, usually rectangular and robust, sometimes guitar shaped, apical border with V cleft or straight, rarely thin (*Cutervolus*); with distal group of one to six setae on each side and one to five median, no basal setae (except *Cutervolus*).
  - Color: Normally brown to black greenish, legs sometimes lighter to yellowish. Some with white stripes on the lateral border (*Acanthocranaus*, *Tryferus*), on the scutal areas (*Digalistes*, *Prostygnus*), or on the median region, or with white circles on mesotergum and tergites (some *Phareicranaus* and *Santinezia*). White tubercles on lateral margin and areas (*Cranaus*, *Neocranaus*, some *Phareicranaus*).
  - Sexual dimorphism: Carapace may be much larger in males of Prostygnae (Figure 4.25k) and Heterocranainae, reducing the size of area I and with a greater development of ocularium. Male chelicerae may be enlarged. Femur of pedipalps in males may be laterally flattened and with a dorsal (also ventral) spiny keel, while it is cylindrical and less spiny in females. Coxa IV of male may bear a pair of stout ventral apophyses near the spiracles in a few genera of Cranainae such as *Santinezia*. Armature of leg IV more conspicuous on males.

#### Key to subfamilies:

1. Carapace with strong sexual dimorphism (Figure 4.25k), better developed in male, squeezing space of area I. Area II not invading area I. Armature of mesotergum usually weak or absent, at most consisting of a pair of low spines in area III. Ocularium usually highly convex (Figures 4.25f,k). Area I unarmed. Femur IV never with distal prolateral spines. . . . . 2

**Figure 4.25.** Cranainae. (a) *Ventrivomer ancycrophorus* from Ecuador, male habitus in lateral view, showing the apophyses both of stigmatic area and of coxa IV (arrows). (b–c) *Ventrisudis mira* from Colombia, male habitus in dorsal and ventral views, showing the columnar apophysis of the stigmatic area and the straight femur IV with scattered spines. (d) *Spinicranaus diabolicus* from Ecuador, male pedipalp in mesal view, showing the dorsoapical apophysis and the coarse granulation of the patella and tibia (arrows). (e) *Santinezia hermosa* from Peru, male habitus in lateral view, showing the high and sharp spine on the ocularium and the mesotergal area III (arrows). (f) *Yania metatarsalis* from Ecuador, male habitus in lateral view, showing the strong dorsal and ventral spiny carinae of pedipalpal femur (arrow). (g–h) *Tryferos elegans* (male) from Ecuador, distal part of penis in dorsal and lateral views, showing the oblique ventral plate and the basal folds of the glans (arrows). (i–j) *Prostygnus vestitus* (male) from Venezuela, distal part of penis in lateral and dorsal views, showing the clearly marked dorsal process of glans (arrow) and the nonoblique ventral plate. (k) *Yania* sp. (Ecuador), male habitus in dorsal view, showing the greatly developed carapace squeezing the area I (arrow). Sources: a, d, Roewer (1923); b–c, Roewer (1963); e, Pinto-da-Rocha and Kury (2003b); f, Kury (1994b).





- . 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).

