

IDIODAMAEIDAE (ACARI, ORIBATEI): A NEW FAMILY OF SOUTH AMERICAN MITES, WITH A RESTATEMENT OF THE GYMNODAMAEIDAE

Adilson D. Paschoal.

RESUMO. O gênero sul-americano *Idiodamaeus* Paschoal (com 3 espécies), é transferido dos *Gymnodamaeidae*, para constituir a família *Idiodamaeidae*, fam. n., aqui caracterizada.

ABSTRACT. The south American genus *Idiodamaeus* Paschoal (with 3 espécies) is removed from the *Gymnodamaeidae*, to constitute the family *Idiodamaeidae*, fam. n., herein characterized.

Family *Idiodamaeidae*, fam. n.

Type-genus: *Idiodamaeus* Paschoal,

Characteristics - Eupheredermes, i.e., nymphs retain exuviae of preceding instars; adults without exuviae. Tracheal system sub-normal, i.e., trachea I missing. Pycnonotics, i.e., without areae porosae on notogaster. Body and legs covered by a thin layer of cerotegument formed by small microtubercles. Notogastral, prodorsal and ventral cuticle smooth, slightly granular. All prodorsal apodemata present, well developed. **le** dorsal, posterior to **ro**; **ro** ventral; **ex**, **in** anterior to bothridium; **in** on strong tubercle, on **apo in**; bothridium dorsal, close to notogaster; **ss** filiform, long, spiny at distal half. Notogaster centro-dorsal setae absent; with four pairs of notogastral setae; **ps1** terminal, at a lower level than **h1**, anterior to its alveolus; **ps2**, **ps3** lower than **ps1**, anterior to **ip**; **h1** close to its homologous seta, being terminal; **r2 (lp)** absent. Dorsal lyrifissures small. Notogaster rounded, anteriorly convex, with transversal apodemata. Notogastral tectum present. Median size species around 500u. **Apo** I complete, without a backturned long bar; other apodemata with apodemata extensions. Epimeral chaetotaxy 2: 2: 4: 2; epimeral setae of equal size. Genitalia almost rounded; anal aperture pyriform; genital and anal apertures close together, not joint, with no ornaments. With seven pairs of genital setae on a sole longitudinal row close to genitalia inner margin; **ag** pilose, postero-lateral to genitalia; three pairs of anal setae; three pairs of adanal setae, **ad3** the furthest away from the sagittal plane. Pedotecta I, II present, auriculiform; pedotectal tooth **p** absent; lateral carenae present; discidium strong, sharp pointed; acetabula I, II integument and cotyloid forming a pointed structure. Leg articulations normal, with no sockets; Tr and Fe - Tr articulations of legs I, II inside acetabula; femora proximal portion after trochantera articulation sinuous; femoral and trochanteral tracheae absent; three claws, the medial one the strongest; leg setae not on tubercles; tarsi fu-

Departamento de Zoologia, Escola Superior de Agricultura Luiz de Queiroz, Universidade de São Paulo, Piracicaba, SP.

siform; tarsi pedicels absent; (**p**) Ts I tactile; **ft''** Ts I not too close to **ft'**; **v'A** Ts I ventral; **p1'** Ts I almost at the level of **v''A**; **pl'** Ts I anterior to (**pv**); **omega 1** Ts I praxial, larger than **omega 2**; **d** Ts I at proximal half, **l'** present, **l''** absent; Tb I clavate; tibial apophysis present bearing two solenidia and a tactile seta; **fil** Tb I long, antiaxial, associated with a tactile seta, **fi2** paraxial, short; femur bulb-shaped, articulated with trochanter by a short pedicel; **sigma** Ge I, II setiform, away from **d**; **v'** Ge I absent; **ft''** Ts II anterior to **ft'**; Ts II with only one solenidium, very long in length; **pl'** Ts II, IV absent; **fi** Tb II very long, away from **d**; **ft'** Ts III, IV present; fi Tb III, IV setiform, away from **d**. Leg chaetotaxy: Ts.19(2) - 16(1) - 16 - 13; Tb.5(2) - 5(1) - 4(1) - 4(1); Ge. 3(1) - 4(1) - 3(1) - 3; Fe.5 - 5 - 3 - 2; Tr.1 - 1 - 2 - 1.

Discussion In the numerical taxonomic revision of the Gymnodamaeidae by Paschoal (1975) and Paschoal & Johnston (1982a,b), the genus **Idiodamaeus** (OTU code NGNO3, in the NT analysis) was firstly placed in this family, although it was considered a class C distant outlier, its position in the phenograms and in the graph analysis being always quite apart from the other Gymnodamaeidae genera. The presence of very unique characters namely: three pairs of anal setae; notogaster convex anteriorly; **le** posterior to **ro**; **ss** filiform; the notogastral apodemes; **ad3** position; **sigma** position on Ge I, II; the presence of only one solenidium **omega** on Ts II; **fi** position on Tb III, IV; **ft'** present on Ts III, IV; and the leg chaetotaxy are now considered sufficient enough to exclude it from Gymnodamaeidae and to erect the new family Idiodamaeidae. Another argument favouring the proposition of the new family is the observed fact that all Gymnodamaeidae species so far described are Palaearctic or Nearctic, while the **Idiodamaeus** species seem to be Neotropical exclusively.

Idiodamaeus is described on detail by Paschoal (1975, 1984). Up to the present time the family is monogeneric comprising the species **Idiodamaeus illecebrosus** Paschoal, from Brazil; **Idiodamaeus elegantulus** (Hammer), from Argentina; and **Idiodamaeus trisetosus** (Balogh & Mahunka), from Bolivia.

Family Gymnodamaeidae Grandjean

Gymnodamaeidae Grandjean, 1954: 204; 1953: 434; Paschoal, 1975: 76; Paschoal & Johnston, 1982a: 439; 1982b: 463; Paschoal, 1979: 342.

Type Genus: **Gymnodamaeus** Kulczynski, 1902.

Characteristics - Eupheredermes, i.e., nymphs retain exuviae of preceding instars; adults without exuviae. Tracheal system sub-normal, i.e., trachea I missing. Pycnonotics, i.e., without areae porosae on notogaster. Body and legs covered by a thin layer of cerotegument formed by microtubercles. Notogastral, prodorsal and ventral cuticle smooth generally, reticula present on some cases. Prodorsal apodemata present. **le** dorsal, dorso-lateral or lateral, anterior or at the level of **ro**; **ro** ventral, distant from the tip of rostrum; **ex** minute, on tubercle; **in** short, on tubercle, anterior or between bothridia; **bothridium** dorsal; **ss** fusiform, forming a distal club, with microsetae. Centro-dorsal setae absent on adult notogaster; with six, five, four or three pairs of postero-lateral notogastral setae; **ps1** terminal or sub-terminal, anterior to **h1** alveolus; **ps2**, **ps3** at a lower level than **ps1** generally; **ps3** anterior to **r2**; **h1** close to its homologous seta, being terminal or sub-terminal; **r2** (**lp**), **r3** (**lm**) present or absent; **r2** dorsal, between **ip** lyrifissures; **r3** dorsal, between **im**, **ip**. Dorsal lyrifissures small to large. Notogaster flat, rounded or ovate, slightly or heavily sclerotized. Notogastral tectum present. Small to large size mites, ranging from 250u to 870u. **Apo** I complete, with no backturned long bar; other apodemata with or without apodematic extensions. Epimeral chaetotaxy 3 : 1 : 3 : 3 (normal), 2 : 2 : 3 : 3 (**la** on ep. II), 2 : 2 : 4 : 2 (**la** on ep. II, **4a** on ep. III); epimeral setae of equal size.

Genitalia almost square to slightly circular; anal aperture pyriform; genital and anal apertures contiguous, joint or not joint, with or without ornaments. With seven or six pairs of genital setae on a sole longitudinal row close or not to the genitalia inner margin; **ag** smooth, lateral or postero-lateral to genitalia; with two pairs of anal setae; with two or three pairs of adanal setae (any of the three pairs may be missing). Petions; pedotectal tooth **p** absent; lateral carenal present; discidium present or absent; acetabula I, II integument and cotyloid forming a pointed structure. Leg articulations with or without proximal sockets; Tr and Fe after - Tr articulations of legs I, II inside acetabula; proximal femora sinuous articulation with trochantera; femoral and trochanteral tracheae absent; three claws, the medial one the strongest; leg setae not on tubercle; tarsi fusiform; tarsi pedicels absent; (**p**) Ts I tactile; Ts I famulus enclosed, **ft''** Ts I not too close to **ft'**; **v'A** Ts I medial, between **IA (v''A)** and **pl'**; **omega** 1 Ts I paraxial, larger than **omega** 2, close to it; **d** Tb I at proximal half of the segment, **l'** present, **l''** absent; tibial apophysis with two solenidia and a tactile seta; **fil** I

Discussion - The Gymnodamaeidae, revised by Paschoal (1975) and Paschoal & Johnston (1982a, b), is now composed of the following genera; **Gymnodamaeus** Kulczynski, Europe, U.S.A. and Canada; **Odontomaeus** Paschoal, U.S.A.; **Plesiodamaeus** Paschoal, U.S.A. and Canada; **Jacotella** Banks, U.S.A. and Canada; **Joshuella** Wallwork, U.S.A.; **Nortonella** Paschoal, U.S.A., Canada; **Johnstonella** Paschoal, U.S.A.; **Adrodamaeus** Paschoal, U.S.A.; **Arthrodamaeus** Grandjean, Europe; **Plesiodamaeus** Grandjean, Europe.

REFERENCES

- Grandjean, F., 1953. Essai de classification des oribates (Acariens). **Bull. Soc. zool. France** 78(5-6): 421-446.
- Grandjean, F., 1954 observations sur les oribates (28e. série). **Bull. Mus. Hist. nat. Paris** (2) 26(2): 204-211.
- Paschoal, A. D., 1984. **Idiodamaeus** (Acari, Oribatei), a new genus of Gymnodamaeidae from South America. **Revta bras. Ent.**
- Paschoal, A. D. & D. E. Johnston, 1982a. A numerical taxonomic revision of the Gymnodamaeidae (Acari, Oribatei). **Revta bras. Biol.** 42(2): 439-459.
- Paschoal, A. D. & D. E. Johnston, 1982b. Revised classification of the Gymnodamaeidae (Acari, Oribatei) with a key to the genera. **Ibid.** 42(2) 461-466.