

A new genus of Tricommatinae from Eastern Brazil (Opiliones Laniatores Gonyleptidae)

ADRIANO B. KURY

Departamento de Invertebrados, Museu Nacional, UFRJ, Quinta da Boa Vista, São Cristóvão, 20.940-040, Rio de Janeiro, RJ, Brazil (E-mail: adrik@alternex.com.br)

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The new genus *Caramaschia* from the Brazilian State of Bahia is proposed in the family Gonyleptidae based on the newly described species *Caramaschia singularis*. Although it can be placed in the subfamily Tricommatinae with confidence, its external morphology shows a mixture of extraneous features resembling different families of Gonyleptoidea. Remarkable features of *Caramaschia* include the absence of a common eye mound, a convex and strongly spined pedipal femur and a stout cheliceral apophysis.

KEY WORDS: Arachnida, Opiliones, Gonyleptidae, taxonomy, Neotropics, Bahia.

Introduction	209
Systematic accounts	210
Genus <i>Caramaschia</i> n. gen.	210
<i>Caramaschia singularis</i> n. sp.	210
Affinities of <i>Caramaschia</i>	216
Acknowledgements	217
References	218

INTRODUCTION

Gonyleptidae is the second largest family of the order Opiliones and the largest family of the suborder Laniatores, with more than 800 species (KURY in press), endemic to the Neotropics. There are many undescribed species in South America, noticeably in the Brazilian Atlantic Forest. In this paper, a new species with remarkable features is described, based on eastern Brazilian material, and it is deemed to constitute a new genus of Tricommatinae.

The definition of the genera of Tricommatinae is still unsatisfactory, and even the relationship of this subfamily with other gonyleptids is not yet established. Originally created as a subfamily of Phalangodidae (ROEWER 1912), it has been raised to familial status (KURY 1992) and finally considered to be a subfamily of

Gonyleptidae (KURY in press). The typical genitalia of Tricommatinae (KURY 1992) is not however a synapomorphy for the whole taxon, the basalmost genera (including the type genus *Tricommatus* Roewer 1912, type species *Tricommatus brasiliensis* Roewer 1912 examined) have not yet developed a swollen ventral plate. Other typical features of Tricommatinae, such as fused area I, large trochanteral apophyses in leg IV, stigmatic bridges, femur IV elongate in males, are also absent in those genera. There are some Pachylinae that seem to “bridge the gap” between the classical Gonyleptidae and Tricommatinae. A possible synapomorphy, present in *Tricommatus* and in all other Tricommatinae, is the elongate coxa II, widely surpassing coxa III in situ in ventral view, but the grey zone of the nominal Pachylinae which belong to the tricommatine lineage still has to be studied.

The number of articles of distitarsi I and II follow the total number of articles in parentheses according to the usage started by AVRAM (1973). The calcaneus/astragalus ratio of metatarsi I-IV is obtained by dividing the maximum length of the calcaneus (distal part of the metatarsus) by the maximum length of the astragalus (proximal part of the metatarsus), since the suture between them is often oblique. All measurements are in mm. The Museu Nacional, Federal University of Rio de Janeiro is here abbreviated as MNRJ.

SYSTEMATIC ACCOUNTS

Genus Caramaschia n. gen.

Etymology. The generic name honours the distinguished herpetologist Dr Ulisses Caramaschi (MNRJ) who collected the holotype of *C. singularis* and many other interesting opilionids.

Type species. *Caramaschia singularis* new species.

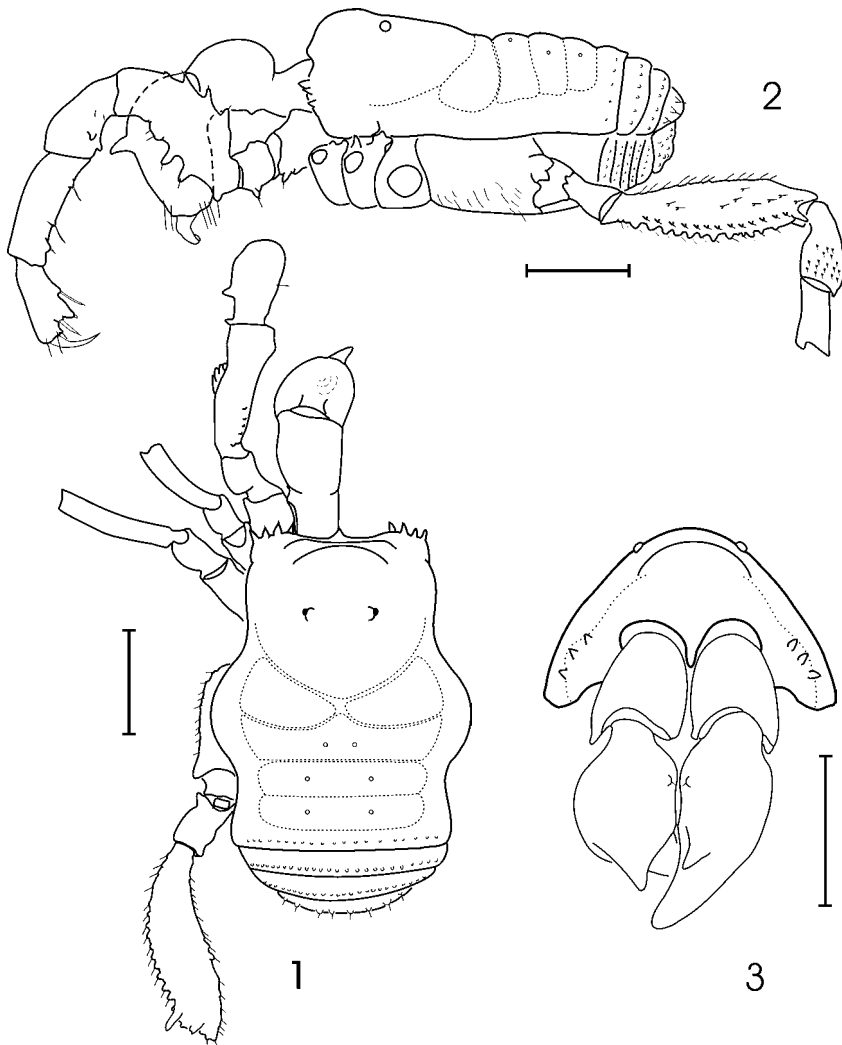
Diagnosis. Tricommatinae without eye mound, eyes sessile and close together. Carapace a little longer than abdominal scute in the middle line. Cheliceral hand with powerful frontal dentiform apophysis. Pedipalpal femur flattened laterally, armed with dorsal and ventral rows of strong teeth. Coxa II with spiniform anterior and trifid posterior dorsal apophyses surrounding opening of scent gland. Coxa IV with two ventro-apical inner spiniform apophyses each side, close to the stigmata but not occluding them. Coxa IV with small bifid dorso-apical apophysis and trochanter IV without noticeable apophyses. Femur IV of male clavate with two ventral rows of tubercles. Tarsal joints 5(3)/7(3)/6/6. Ventral plate of penis without swollen portion, armed with 3 basal + 3 distal setae. Ventral process of glans much reduced, styliform. Not readily related to any other genus.

Caramaschia singularis n. sp. (Figs 1-15)

Etymology. From Latin *singularis* (= unique), in reference to the remarkable mixture of features.

Type material. Brazil, Bahia: Itagibá, Fazenda Pedra Branca, male holotype (MNRJ 4409) 23 January 1975, U. Caramaschi/J. Jim/C.M. Carvalho/S.A. Mioni.

Distribution. Known only from the type locality in eastern Brazil, State of Bahia, Itagibá (14°17'S 39°51'W, elevation 270 m): Fazenda Pedra Branca (Fig. 15).



Figs 1-3. — *Caramaschia singularis* n. sp., male holotype (MNRJ 4409). Fig. 1, habitus, dorsal view. Fig. 2, habitus, lateral view, including coxa to femur of leg IV. Fig. 3, carapace and chelicerae, frontal view. Scale bars = 1 mm.

Description

Male holotype measurements (in mm). Carapace 1.65 long, 1.70 wide. Abdominal scute 1.47 long, 1.53 (maximum) wide.

Dorsum (Figs 1-3). Dorsal scute subrectangular with rounded sides, constricted twice, at the scutal groove and at area III (Fig. 1). Anterior margin of carapace with three dentiform apophyses in each corner. Eye mound lacking, but eyes not far removed from each other like in Stygnidae and Biantidae. Anterior hump of carapace well developed, smooth (Figs 2-3). Mesotergum divided into four well-defined areas. Area I divided into left and right halves by median groove. Areas II to IV with a paramedian pair of minute granules, much closer together in area II,

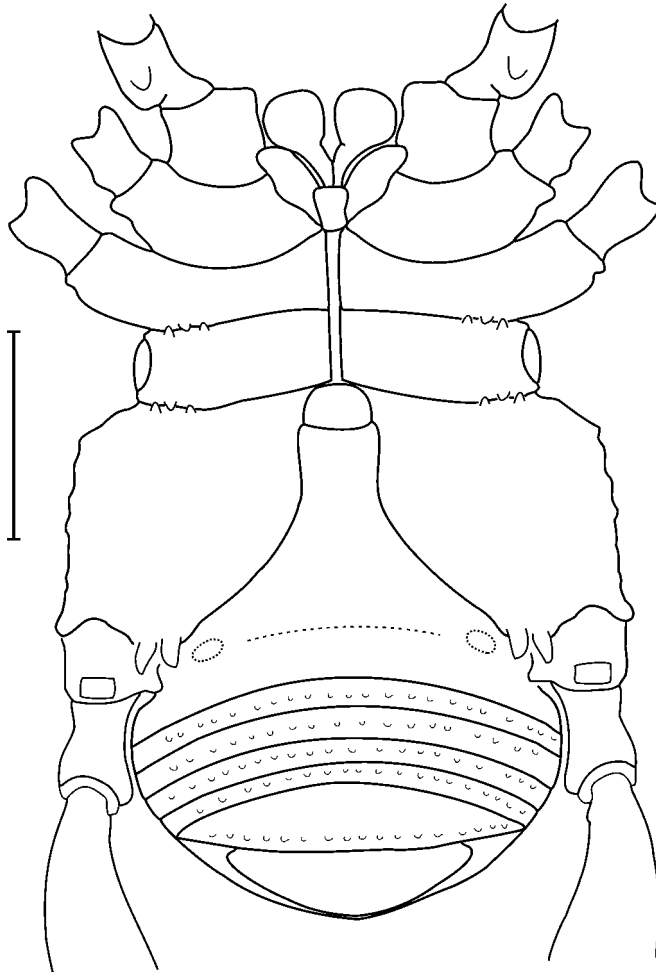


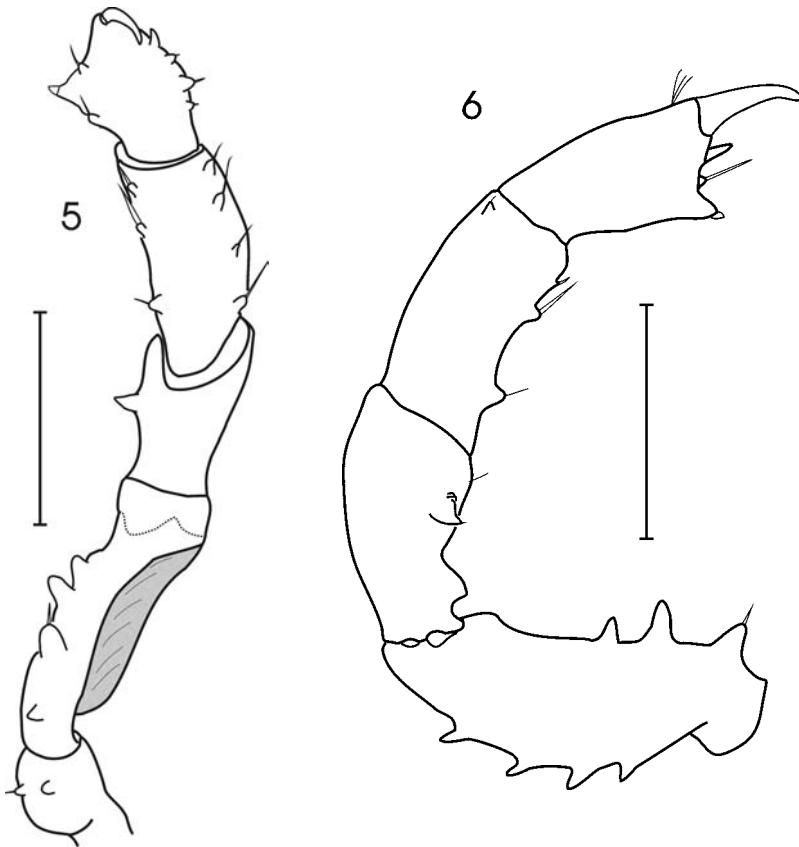
Fig. 4. — *Caramaschia singularis* n. sp., male holotype (MNRJ 4409). Habitus, ventral view. Scale bar = 1 mm.

posterior margin of scute (area V) with a transverse row of tubercles, scutum otherwise smooth. Free tergites I-III each with a transverse row of small setiferous tubercles.

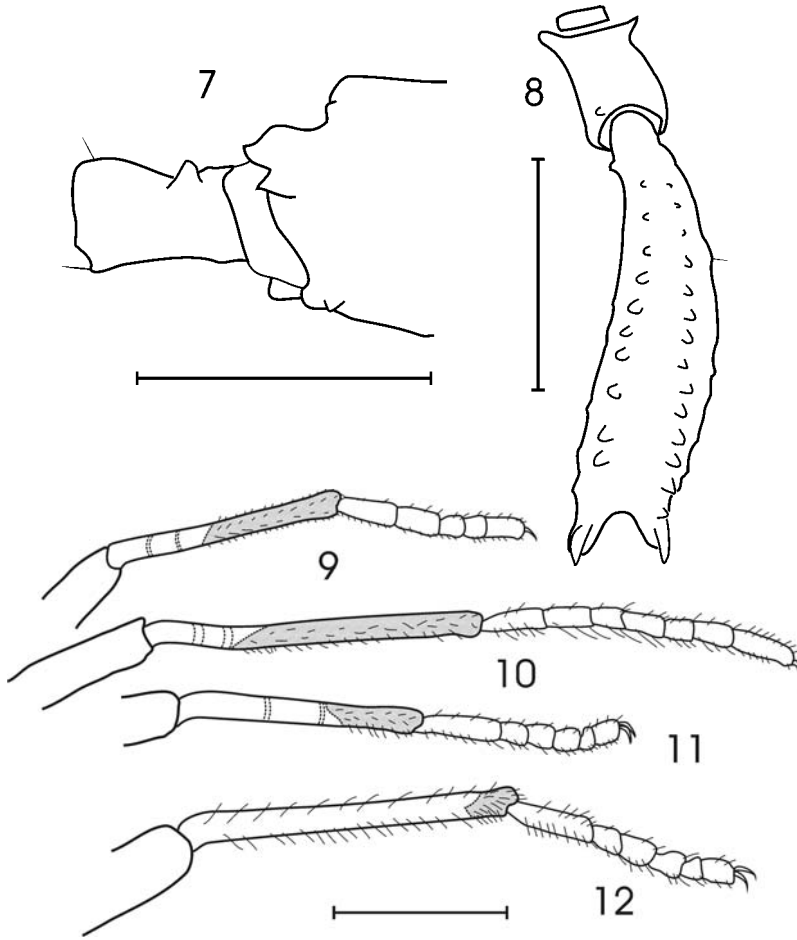
Venter (Fig. 4). Coxae finely granular. Free sternites with one transverse row of granules each. Coxa II in situ surpassing coxa III by 2/5 its length. Coxae II-IV connected by a few interlocking teeth. Coxa IV with lateral borders straight, armed with two ventro-apical inner dentiform apophyses close to the stigmata, but stigmata clearly visible. Stigmatic area T-shaped.

Chelicerae (Figs 1-3). Well developed, basichelicerite very large, but hand not swollen. Hand with stout frontal dentiform apophysis.

Pedipalpus (Figs 5-6). Length (in mm): femur 1.4, patella 1.0, tibia 0.96, tarsus (+ claw) 1.3. Femur mesally concave, with ventral row of 3-4 blunt dentiform processes and dorsal row of 4 more sharp processes. Patella with median ectal apophysis. Tibia with 4 mesal and 3 ectal very small spines, tarsus with 4 mesal and 3 ectal (middle one with very large socket) small spines.



Figs 5-6. — *Caramaschia singularis* n. sp., male holotype (MNRJ 4409). Fig. 5, right pedipalpus, ventral view. Fig. 6, right pedipalpus, ectal view. Scale bars = 1 mm.



Figs 7-12. — *Caramaschia singularis* n. sp., male holotype (MNRJ 4409). Fig. 7, right coxa IV, ectal view. Fig. 8, left trochanter + femur IV, ventral view. Figs 9-12, metatarsus + tarsus I-IV, lateral view. Scale bars = 1 mm.

Legs (Figs 7-12). Coxa II with spiniform anterior and trifold posterior dorsal apophyses surrounding opening of scent gland. Femora I-IV subsigmoid. Femora III-IV and patella to metatarsus IV densely covered with low granules. Coxa IV with two small geminate apical outer apophyses (Fig. 7). Femur IV clavate, with two ventral longitudinal rows of tubercles and apical outer apophysis (Fig. 8). Calcaneus/astragalus ratio of metatarsi I-IV 1.3/2.0/0.6/0.1. Tarsal claws of legs III-IV without tarsal process (pseudonychium). Tarsal joints 5(3)/7(3)/6/6 (Figs 9-12). Measurements of femora and tibiae I-IV in Table 1.

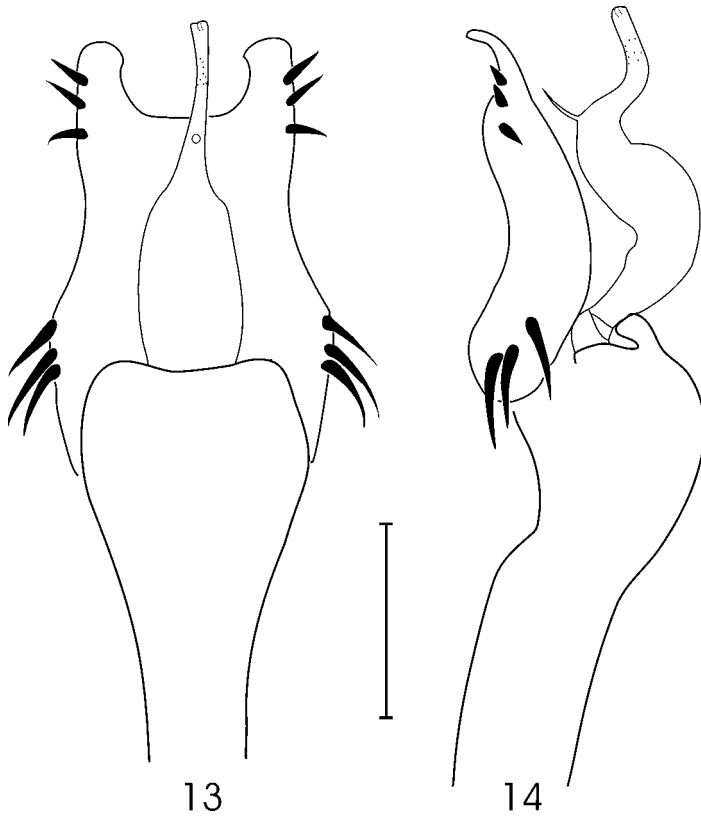
Color. Body and appendages uniform mahogany brown. Femora I-III each proximally with two pale yellow rings.

Penis (Figs 13-14). Ventral plate rounded subrectangular, wider at base and with bowl-shaped cleft on distal margin. Six setae arranged in basal and distal

Table 1.

Caramaschia singularis n. sp., male holotype (MNRJ 4409). Measurements (in mm) of the length of the femur and tibia of legs I-IV.

	Femur	Tibia
Leg I	1.4	0.8
Leg II	1.6	1.1
Leg III	1.4	1.2
Leg IV	1.9	1.4



Figs 13-14. — *Caramaschia singularis* n. sp., male holotype, distal portion of penis (MNRJ 4409). Fig. 13, dorsal view. Fig. 14, lateral view. Scale bar = 100 μ m.

groups of three setae, separated by a long gap. Stylus cylindrical, without remarkable features, ventral process of glans reduced to a small and slender spiniform process.

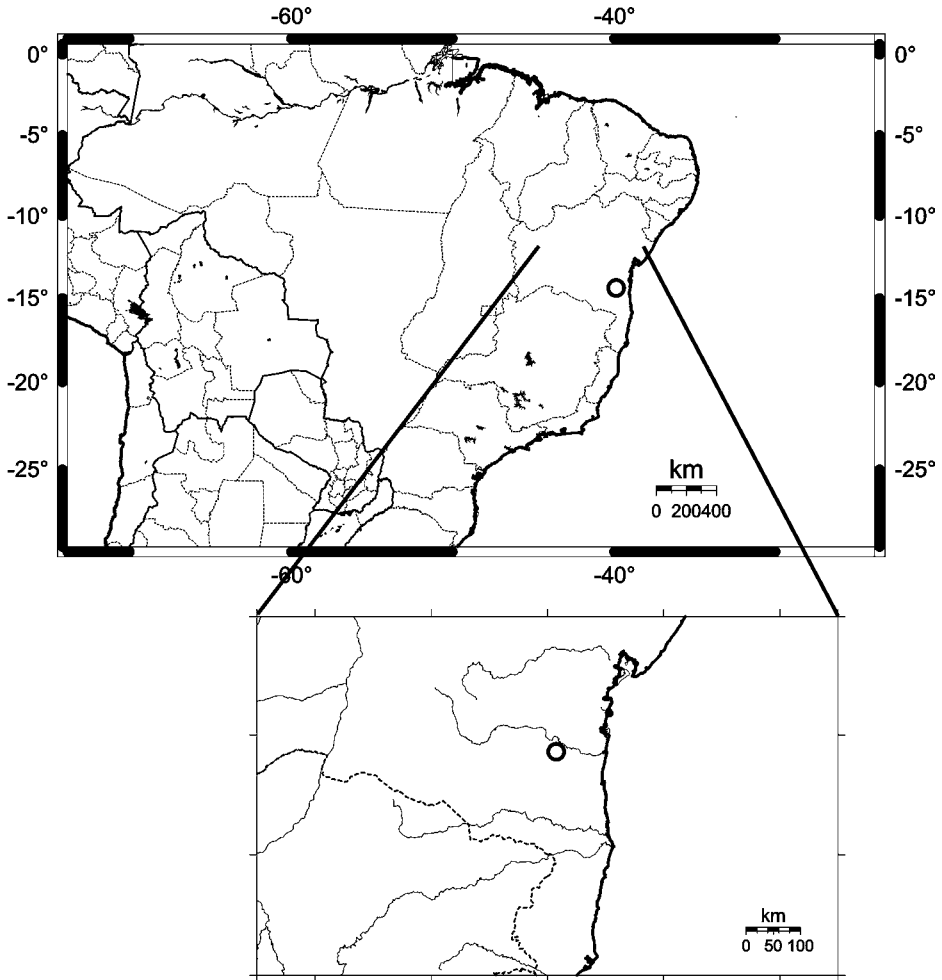


Fig. 15. — Portion of South America, showing type locality of *Caramaschia singularis* n. sp. as a circle. Below, Bahia State enlarged.

AFFINITIES OF *CARAMASCHIA*

The pedipalpal femur of *Caramaschia* strongly resembles that of Cranidae of the subfamily Prostygyninae, being strongly convex and provided with strong dorsal and ventral spines. The other articles, with the reduced setiferous tubercles and tarsal apophysis are definitely not cranaid-like, not being very similar to any other family of Gonyleptoidea (Figs 5-6). The carapace is also unlike that of other genera or families, strongly arched, with the eyes sessile and placed close together (Figs 1-3). The absence of a common eye mound is synapomorphic for Stygnidae, and it also appears in Biantidae and Stygnommatidae. The only other gonyleptid sharing

this feature is *Nanophareus* Roewer 1929, currently in the Stygnidae, but which belongs to a specialised group of species from western South America (KURY unpubl. data).

In spite of the dissonant features of the pedipalpus and the shape of the carapace, the genital morphology of *Caramaschia* is undoubtedly gonyleptid because of the presence of a ventral process of glans and the shape of the ventral plate (Figs 13-14). The strong teeth of the frontal margin of the carapace, dorso-apical bifid apophysis of coxa IV and the divided area I are also reminiscent of many Gonyleptidae.

Tricommatine affinities are: coxa II in ventral view far surpassing coxa III in situ (Fig. 4), which is the only synapomorphy for the subfamily, present even in the basalmost genera (*Tricommatius* Roewer 1912 and *Pseudophalangodes* Roewer 1912, type species of both examined by me), the clavate femur IV with two parallel longitudinal ventral rows of tubercles, like *Cryptogeobius* Mello-Leitão 1935, and the carapace a little longer than abdominal scute in the middle line, typical of tricommatines such as *Camarana* Mello-Leitão 1935, *Heteromeloleptes* Mello-Leitão 1931 and *Simonoleptes* Soares & Soares 1954. The absence of the tarsal process of legs III-IV (pseudonychium of Roewer) should be noted. This structure was critical to determination of the families in the Roewerian scheme. Examples of the critical use of the tarsal process can be cited the separation of Assamiidae versus Trionyxellidae and Gonyleptidae versus Phalangodidae (ROEWER 1923, MELLO-LEITÃO 1949); the discussion ROEWER (1929) used to place *Bissula* Roewer 1929 in Pachylinae instead of Tricommatinae; the assignment of *Galanomma* Juberthie 1970 to Gonyleptidae (JUBERTHIE 1970) based solely on this character. Other authors who followed Roewer's paradigm also regarded the presence of a single seta in the position of the tarsal process as of paramount importance in the decision whether a given species should be assigned to Phalangodidae or Gonyleptidae (H.E.M. SOARES pers. comm. 1988, and M.L. GOODNIGHT pers. comm. 1992). The tarsal process is now hypothesised to have appeared and disappeared independently many times among and within the families (KURY 1993). Most Tricommatinae do not possess a tarsal process, although this loss is not synapomorphic for the subfamily, and thus the importance of this character is much reduced in the systematics of Gonyleptoidea, as noted before (CANALS 1933, MUÑOZ-CUEVAS 1973, GONZÁLEZ-SPONGA 1987, KURY 1993).

Caramaschia has plenty of presumable autapomorphies such as the stout cheliceral apophysis, the powerful pair of inner ventral apical teeth in coxa IV and the trifid dorsal posterior apophysis of coxa II (Fig. 2). There is therefore a large morphological gap between *Caramaschia* and the other genera of Tricommatinae.

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