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Taxonomic review of the genus *Thestylus* Simon, 1880 (Scorpiones: Bothriuridae)

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TAXONOMIC REVIEW OF THE GENUS *THESTYLUS* SIMON, 1880 (SCORPIONES: BOTHRIURIDAE)

Humberto Y. Yamaguti & Ricardo Pinto-da-Rocha

Abstract

The genus *Thestylus* Simon, 1880 (Scorpiones: Bothriuridae) was reviewed and two species were recognized, distinguished by characteristics of coloration, hemispermatophore morphology and number of ventral spines on the leg tarsi. *Thestylus glasioui lineatus* Giltay, 1928 is synonymized with *Thestylus glasioui* (Bertkau, 1880) and *Thestylus aurantiurus* sp. n. is described (type locality: Brazil, São Paulo, SP, Parque Estadual da Serra da Cantareira). Lectotype and paralectotype of *Thestylus glasioui* were designated in this paper. *Thestylus signatus* Mello-Leitão, 1945, whose holotype is lost, is considered as a *species inquirenda*.

Key words: Scorpiones, Bothriuridae, *Thestylus*, Brazil, Atlantic rain forest.
Taxonomy: *Thestylus aurantiurus* sp. n.

Revisión taxonómica del género *Thestylus* Simon, 1880 (Scorpiones: Bothriuridae)

Resumen

Se revisa el género *Thestylus* Simon, 1880 (Scorpiones: Bothriuridae) y se reconocen dos especies, diferenciadas por caracteres de coloración, morfología del hemiespermatóforo y el número de espinas ventrales en los tarsos de las patas. *Thestylus glasioui lineatus* Giltay, 1928, se sinonimiza con *Thestylus glasioui* (Bertkau, 1880), y se describe *Thestylus aurantiurus* sp. n. (localidad típica: Brasil, São Paulo, SP, Parque Estadual da Serra da Cantareira). *Thestylus signatus* Mello-Leitão, 1945, cuyo holotipo está perdido, se considera como *species inquirenda*.

Palabras clave: Scorpiones, Bothriuridae, *Thestylus*, Brasil, pluviselva atlántica.
Taxonomía: *Thestylus aurantiurus* sp. n.

Introduction

The systematic of the family Bothriuridae has been studied by many researchers, such as San-Martín (1963, 1956), Maury (1973, 1975, 1980) and Acosta (1990, 1998). However, the genus *Thestylus* Simon, 1880 is still poorly known. The lack of studies is due, partly, to its narrow geographical distribution and low diversity. Its distribution is restricted to the southeast of Brazilian Atlantic Rain Forest, in states of Paraná, São Paulo, Minas Gerais, Rio de Janeiro and Espírito Santo.

Maury (1980) made a work about bothriurid hemispermatophores where he recognizes a pattern for most of the genera, including *Thestylus*. He found that small variations in shape and length of distal lamina and apophyses can be found in some genera. Prendini (2000) does not consider any subfamilies in Bothriuridae, which was earlier been divided in three subfamilies, with two subfamilies currently valid (Lowe & Fet, 2000).

A controversial point on this family systematics is the taxonomic position of the genus *Lisposoma* Lawrence, 1927. Lamoral (1979) considered it a genus of Scorpionidae but Stockwell (1989, unpublished) and Prendini (2000), based on phylogenetic analyses, considered it the basal genus of the Bothriuridae family (*Thestylus* is the second derived branch). Lourenço (2000) put it in a different family (Lisposomidae), so *Thestylus* would be the basal bothriurid genus. Prendini (2003) considered again *Lisposoma* as a bothriurid genus, with *Brandbergia*, a new genus, as the basal genus of the family. So *Lisposoma* is the second and *Thestylus* is the third derived branch. There are many characters justifying the basal position of *Thestylus*, as the type C trichobothrial pattern (Vachon, 1974) with the basic number and pattern (Sissom, 1990) and the absence of secondary sexual characters in males pedipalp (Maury, 1975).



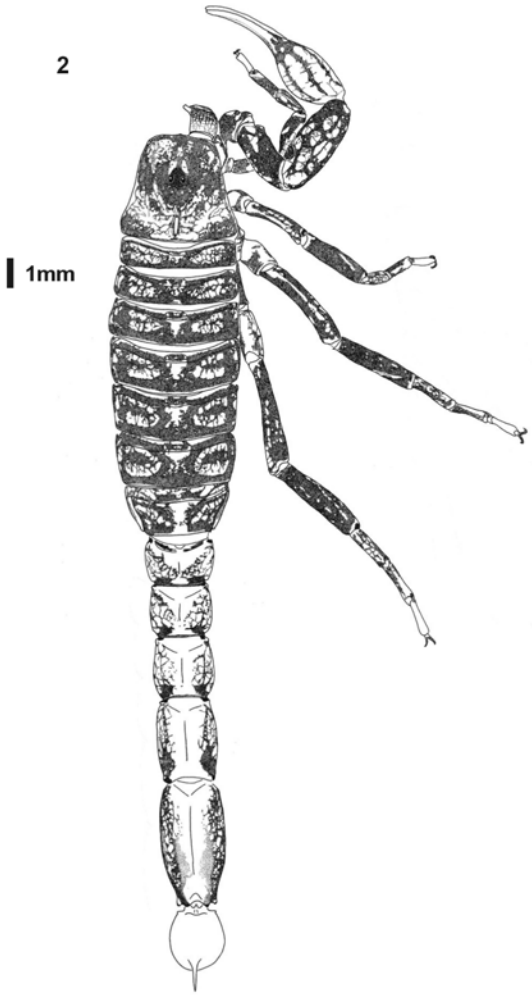


Fig. 1. *Thestylus glasioui*, dorsal view (MNRJ-7108). **Fig. 2.** *Thestylus aurantiurus* (holotype-MZSP), dorsal view.

The genus *Thestylus* was originally described as *Telegonus* C. L. Koch, 1836 (type species: *Telegonus versicolor*), but the latter genus is a homonym of a Lepidoptera taxon. Then it was substituted by the name *Maecocentrus* Karsch, 1880. The name *Thestylus* was introduced in the same year (Simon, 1880), described in *Cercophonius glasioui* Bertkau, 1880 (type species: *Thestylus glasioui*). These genera are considered synonyms and *Maecocentrus* is the senior synonym. However, this name has not been used since 1880, while *Thestylus* was widely accepted. Kraepelin synonymized *Telegonus versicolor* with *Thestylus glasioui* in 1899. Currently, the genus has three recognized species (Lourenço, 2002): *Thestylus glasioui* (Bertkau, 1880), the type species, *Thestylus lineatus* Giltay, 1928 and *Thestylus signatus* Mello-Leitão, 1931. *Thestylus lineatus* was originally described as a *Thestylus glasioui* subspecies (*Thestylus glasioui lineatus*) but Lourenço (2002) considered it a different species.

The original descriptions of those species are very poor and use doubtful characters, making it impossible to identify any specimen through them. The current identification keys for the genus species, as in Mello-Leitão (1945), are not efficient, because they use characters that vary greatly intraspecifically (as the number of pectinal teeth and the presence of some granules and crests). The genus has not been reviewed since Mello-Leitão (1945) (Lowe & Fet, 2000). Therefore, the main goal of this paper is a taxonomic review of the genus *Thestylus*, through comparison of the type materials and available specimens.

Materials and methods

The studied specimens are deposited in Museu de Zoologia da Universidade de São Paulo (MZSP), Instituto Butantan (IBSP) and Museu Nacional do Rio de Janeiro (MNRJ). The two female syntypes of *Thes-*

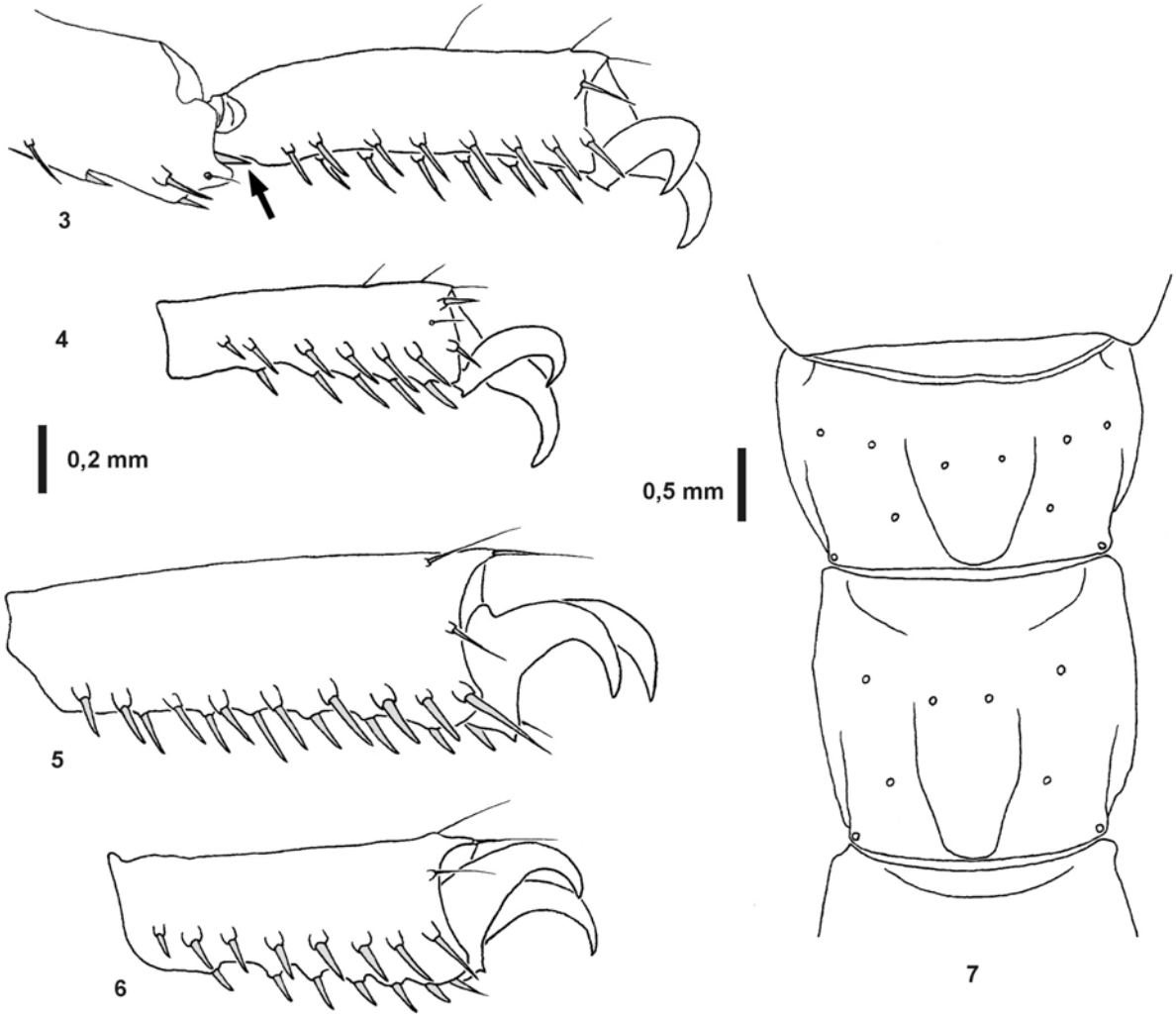


Fig. 3-6. Tarsi of left legs III and IV of *Thestylus* species, prolateral view. **3-4:** *Thestylus glasioui*: **3:** Leg IV, pedal prolateral spur detailled. **4:** Leg III. **5-6:** *Thestylus aurantiurus*: **5:** Leg IV. **6:** Leg III. **Fig. 7.** *Thestylus glasioui* metasomal segments I and II, ventral view.

tylus glasioui (type species) belong to the Muséum National d'Histoire Naturelle de Paris (MNHN) and the holotype of *Thestylus glasioui lineatus* belongs to Institut Royal des Sciences Naturelles de Belgique (IRSB). Eleven adult and numerous juvenile specimens originally composed the type material of *Thestylus glasioui*. However, only two females were found. According to W. Lourenço (pers. com.), the rest of the type material is lost. The holotype of *Thestylus signatus,* that should be at Museu Nacional do Rio de Janeiro, is considered lost according to Kury & Nogueira (1999).

Males were preferentially studied, with subsequent comparison with females. We studied characteristics of external morphology and hemispermatophore morphology (according Maury (1980)). The used measurements of the hemispermatophore are shown in figure 32. Studies using scanning electron microscope were also done (figs. 20 – 32) in Museu de Zoologia de São Paulo (LEO 440).

The trichobothrial nomenclature follows Vachon (1974) and the hemispermatophore structures nomenclature follows San Martin (1963, 1965), Maury (1980) and Acosta (1990, 1998).

The characters common for both species are only mentioned in the genus description. They are not mentioned in the species description because the genus is very uniform.

Results and Discussion

Thestylus Simon, 1880

Thestylus Simon, 1880: 393, 394; type species by original designation *Cercophonius glasioui* Bertkau, 1880; Kraepelin, 1894: 214, 218-219; Laurie, 1896: 130; Lönnberg, 1897: 200, *210;* Kraepelin, 1899: 190, 192; 1908: 185, 195; Ihering, 1915: 55; Birula, 1917a: 163; 1917b: 56, 106; Mello-Campos, 1924a: 290, 292; 1924b: 321, 356, 357-358; Mello-Leitão, 1931: 77, 96-97; 1932:

27; Werner, 1934: 289, 290; Mello-Leitão, 1942: 126; 1945: 135, 208-209; Vachon, 1963: 163; Bücherl, 1969: 769; San-Martín & Cekalovic, 1972: 61; Maury, 1980: 336; Sissom, 1990: 87, 88; Nenilin & Fet, 1992: 14; KovaĺÍk, 1998: 101; Candido 1999: 27; Lowe & Fet, 2000: 38, 39; Prendini, 2000: 20, 28, 29, 41, 52, 57, 59, 60, 62, 65, 66; Lourenço, 2002: 61, 64.

Telegonus C. L. Koch, 1836: 52; type species *Telegonus versicolor* C. L. Koch, 1836, homonym of *Telegonus* Hübner, 1816 (Lepidoptera), synonymized by Kraepelin, 1899: 192; C. L. Koch, 1837: 37, fig. 68; Thorell, 1876: 10; Lankester, 1885: 380.

Maecocentrus Karsch, 1880: 408; Francke, 1985: 10.

Mecocentrus; Simon, 1880: 393, 397; Laurie, 1896: 130; Francke, 1985: 10.

Testylus; Mello-Campos, 1924a: 246; Cekalovic, 1973: 100.

Thestilus; Ihering, 1915: 50.

DIAGNOSIS. Males without secondary sexual characters on pedipalp chela (fig. 20), present on all other bothriurid genera. Metasomal ventrosubmedian carinae (only in segments I and II) converge in the posterior portion of segment, forming a "U" shape (fig. 7), what does not happen in other genera. Tarsi of legs IV with 7 to 8 pairs of ventral spines (figs. 3 and 5), more than in the other genera. Legs with prolateral pedal spurs only as in *Vachonia* Abalos, 1954 and *Phoniocercus* Pocock, 1893. Both retrolateral and prolateral pedal spurs are present in the other genera. Thestylus presents many differences with *Bothriurus* Peters, 1861, as the absence of a ventral transverse carina forming an arc in the ventrodistal aspect of metasomal segment V, larger number of ventral spines in leg tarsi III and IV, metasomal and pedipalp carinae less developed and thinner fingers of pedipalp chela.

DESCRIPTION:

MALE.

Coloration (figs. 1 and 2). Carapace clear, reticulated with brown to dark brown, almost black.

Mesosomal tergites cleary reticulated with darker pigmentation well developed, with only a few clear spaces. Pigmentation pattern with brighter stain (in general triangular) in the anterior dorsal median line of each tergite with coloration varying from yellow to brown. The size and shape of stains can vary, forming a single longitudinal line for the whole dorsal surface in some individuals (it does not depend on the locality). There are also great brighter elliptic stains paired in both sides of each tergite, with darker pigmentation in the center of the stain. Mesosomal ventral surface is yellow except esternite V, which is darker.

Metasomal dorsal surface clear and with darker pigmentation. Some individuals have darker triangular stains in the dorsal face of each segment (it does not depend on the locality). Ventral surface with same coloration of dorsal surface with the darker pigmentation more developed. Telson with an uniform orange coloration. The tip of sting is dark.

Legs and pedipalps with yellowish to orange coloration and well-developed darker pigmentation; leg tarsi yellowish, without reticulated pigmentation; orange pedipalp chela with darker reticulated pigmentation; dentition of pedipalp fingers with darker coloration.

Morphology. Dorsal surface with scattered granulation and a smooth and shiny appearance. Nearly trapezoid carapace (figs. 23 and 27) with rounded borders and a little wider than long. It has a little medium depression in the anterior margin as a single well developed setae. Other smaller sparsed setae are present in the anterior area of the carapace. Longitudinal furrow in the posterior third of the carapace; it does not reach the posterior margin. Small oblique furrows lead from the longitudinal furrow towards the anterior area of carapace. Medium ocular tubercle a little more close to the anterior margin than the posterior one. Medium eyes separate for about a diameter with a single well developed setae behind each eye. There are three pairs of lateral eyes with about half diameter of the medium ones.

Mesosomal length about three times the carapace length. All tergites smooth, without carinae and scattered granulation. There are vestigial carinae in tergite VII.

Metasoma (figs. 28 and 29) robust. The segments are of a similar width. Carinae very reduced with some granules next to the laterosupramedian and dorsolateral carinae. In the segments I and II the ventrosubmedian carinae converge in posterior portion, forming an "U" shape (fig. 7). Segments I and II with the ventrosubmedian, lateromedian, laterosupramedian and dorsolateral carinae; III with vestigial ventrosubmedian carinae, lateromedian, laterosupramedian and dorsolateral carinae; IV with laterosupramedian and dorsolateral carinae; V with only a vestigial dorsolateral carinae (the other carinae absent) with sparse granules and posterior margin with denticles. The distribution of macrochetae in metasomal surface follows a pattern for the whole genus. The position of some macrochetae was determined through comparison with other segments due to the absence of some carinae: segments I and II with 3 pairs of ventral, 2 pairs of lateral and 1 pair of dorsal macrochetae; III with 2 pairs of ventral, 2 pairs of lateral and 1 pair of dorsal macrochetae; IV with 3 pairs of ventral, 6 pairs of lateral and 1 pair of dorsal macrochetae; V with 7 pairs of ventral and 4 pairs of lateral macrochetae.

Telson presents a sparse granulation, flat dorsal surface, rounded ventral surface and sparse setae concentrated in the ventral surface. Telson one and a half times longer than wide. Sting curved with the length about a half the length of vesicle.

Genital opercula (figs. 24 and 25) with a triangular shape closely together; the gonopore opens up in the anterior margin of the opercula. Pectines with 6 – 9 medium lamella and 13 – 19 pectinal teeth.

Legs smooth with sparse granules and no carinae, with rounded borders. Legs without tibial and retrolateral pedal spurs; only prolateral pedal spurs are present (fig. 3). Leg tarsi (figs. 3 – 6) with two rows of ventral

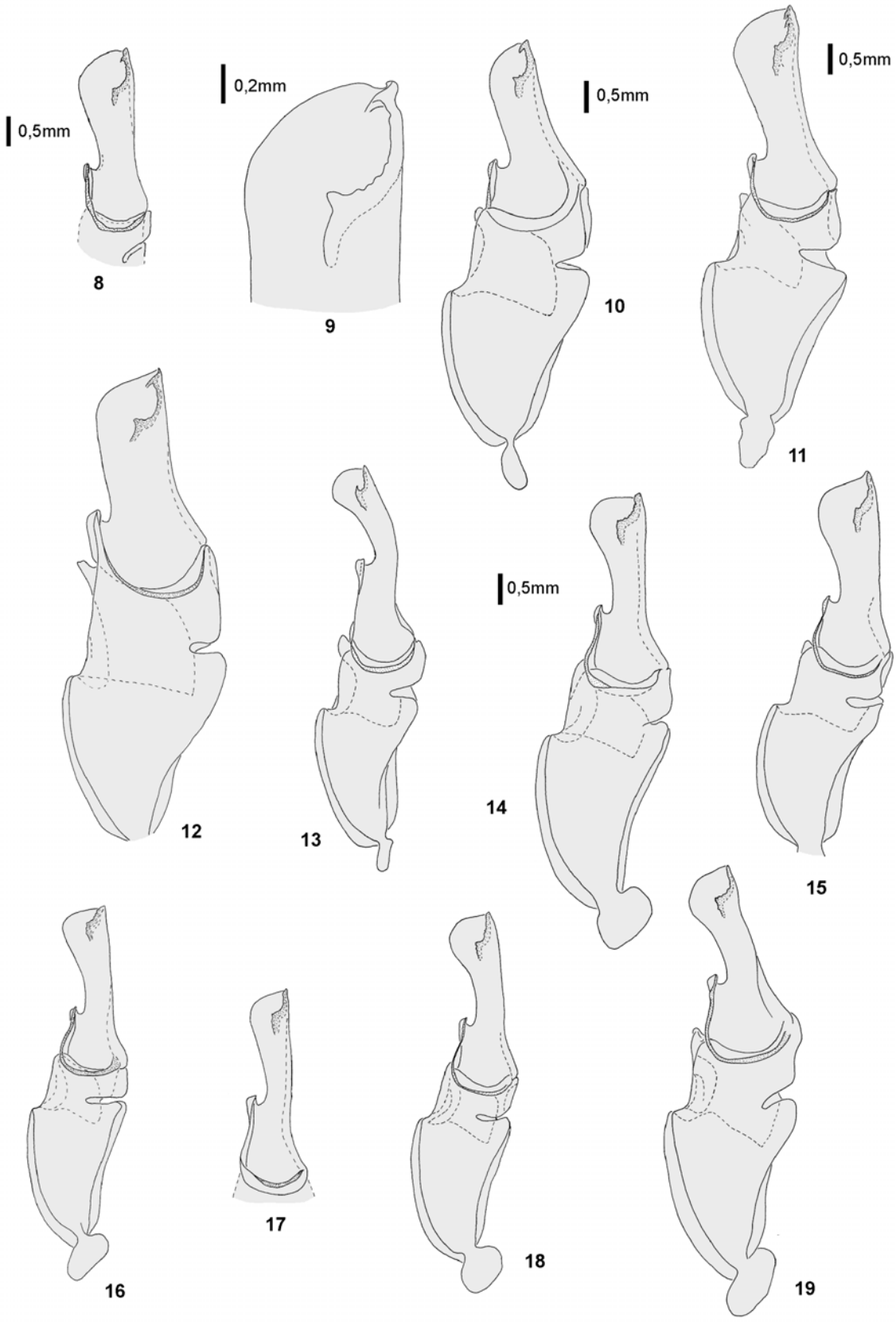


Fig. 8-12. Left hemispermatophore of *Thestylus glasioui*: **8:** Rio de Janeiro – RJ (MZSP-19095). **9:** Ilha da Marambaia – RJ (MNRJ-7305), distal end of lamina with the distal crest tooth. **10:** Ilha da Marambaia – RJ (MNRJ-7305). **11:** Maricá – RJ (MNRJ-7108). **12:** Magé – RJ (MNRJ-7083). **Fig. 13.** Left hemispermatophore of *Thestylus* sp., Nova Friburgo – RJ (MZSP-19034). **Fig. 14-19.** Left hemispermatophore of *Thestylus aurantiurus*: **14:** Holotype, P. E. Serra da Cantareira – SP (MZSP). **15:** E. B. Paranapiacaba - SP (DZ-8645). **16:** Camanducaia – MG (IBSP-1391). **17:** P. N. Serra da Bocaina – SP (MNRJ-7086). **18:** Monte Verde – MG (IBSP-1635). **19:** Campo Verde – MG (IBSP-2077).

spines. The prolateral row has one more spine than the retrolateral row. Rows of tarsi I with 2 – 4 spines, rows of tarsi II with 3 – 6 spines, rows of tarsi III with 6 – 8 spines and rows of tarsi IV with 7 – 9 spines. There are 3 – 4 little ventral spines next to the base of leg tarsi. Leg tarsi I and II with a single row of little spines between the two rows of ventral spines. In tarsi I this row has 5 or more little spines and in tarsi II this row has 2 – 3 little spines. In tarsi III a single little spine can be found but there is not a row. Tarsi IV without little spines.

Pedipalps are (figs. 20 – 22) smooth with sparse granules. Femur with borders less round than in the other segments. Chela dilated and round, one and a half times longer than wide; fingers thin and curved a little longer than the chela length. Fingers granulation in oblique rows of 5 denticles each. On each side of the base of the oblique row a larger denticle exists. There is also a larger denticle in the end of the finger. Trichobothrial pattern type C without accessory trichobothria or trichobothrial loss.

Hemispermatophore morphology (figs. 8 – 13 and 30 – 32). Hemispermatophore with a clear separation of basal portion, lobular portion and distal lamina. Distal lamina with a well-developed frontal crest and with the distal crest which has a strong curvature. Distal lamina two to three times longer than wide. Distal end of the lamina curved in the side of the frontal crest and forming an angle with the other side (D angle, fig. 32). Lobular portion with a well-developed basal fold. Internal lobe well developed but it does not move forward very outside. Basal lobe smaller than the internal lobe and a little less salient. External lobe with a little accentuated curvature and not projected upward. Basal portion varying in form and size between the species. It has a light curvature and an evident membranous margin.

FEMALE. Females are similar to males, with an evident sexual dimorphism of their pectines. Basal middle lamellae more developed than the other middle lamellae. Teeth therefore are located more distally. Males have a smaller basal middle lamellae, following the size of the other lamellae, with the teeth located at the base of the pectines. Number of pectinal teeth in females (11 – 16) is smaller than in males. Shape of genital opercula is a little different, forming a straight line in its posterior margin. Females are a little larger than males (table I) and present a little brighter coloration on tergites.

DISTRIBUTION (fig. 33). The genus occurs in the southeast of Brazilian Atlantic Rain Forest, in states of Espírito Santo, Rio de Janeiro, Minas Gerais, São Paulo and Paraná. It occurs from the coast to the interior of Brazil and can be found from the sea level to 1600 meters of altitude.

DISCUSSION. The studied characteristics are the trichobothrial pattern, the distribution of metasomal macrochetae, the number of pectinal teeth, the body morphometry, the morphometry and morphology of the hemispermatophore, the number of ventral spines and little spines of leg tarsi, the body coloration and the pigmentation pattern. The trichobothrial pattern and the distribution of metasomal macrochetae can be used only for the genus diagnosis; it is the same for both species. The number of pectinal teeth is not very significant due to its great variability but the mean number differs betwen species. Little differences in body morphometry can be found only in the mean values of telson ratio between height and length. The hemispermatophore morphology varies inside the genus but it follows a pattern inside each species. The basal portion and the lobular portion do not have taxonomic importance but its distal lamina has significant differences between the species as Maury (1980) has observed. The number of ventral spines of leg tarsi I and II has a great variation inside the species but the number of ventral spines of leg tarsi III and IV is constant and very important to the genus taxonomy. The number of little spines in the intermediate rows of tarsi has great individual variation inside the species. The body coloration and the pigmentation pattern of metasoma are also important for the classification.

Thestylus glasioui (Bertkau, 1880)

Figs. 1, 3, 4, 7 and 8 – 12.

Cercophonius glasioui Bertkau, 1880: 10-15, pl. I, fig. 1. Syntypes, 11 adults and numerous juvenile, Pedra Açu, Rio de Janeiro, Brazil, 2 females, lectotype and paralectotype here designated, deposited on Muséum National d'Histoire Naturelle, Paris, the rest of material is lost.

Telegonus versicolor C. L. Koch, 1836: 52, fig. 207 (synonymized by Kraepelin, 1894: 219). Lost types; Brazil. C. L. Koch, 1837: 37, fig. 68; C. L. Koch, 1850: 88; Thorell, 1876: 10; Karsch, 1879: 22.

Maecocentrus versicolor: Karsch, 1880: 408.

Thestylus glasioni; Simon, 1880: 393, 394

Thestylus glasioui: Kraepelin, 1894: 219-220, pl. III, figs. 105, 114; 1899: 193, fig. 61; Mello-Campos, 1924a: 255, 292-293, pl. 12, fig. 40; 1924b: 321, 358, pl. 12, fig. 40; Werner, 1927: 358; Mello-Leitão, 1931: 96, 97; 1932: 34; Werner, 1934: 290, fig. 381; Candido 1999: 27; Lowe & Fet, 2000: 39; Prendini, 2000: 41; Lourenço, 2002: 61, 64, figs. 101-105.

Thestilus glasiouvi; Ihering, 1915: 50.

Thestylus glasiouvi; Ihering, 1915: 50, 52, 54.

Testylus glasioui; Pavlovsky, 1925: 200.

Thestylus glazioui; San-Martín, 1972: 54, pl. II, fig. 11; San-Martín & Cekalovic, 1972: 61, pl. III, fig. 13; Vachon, 1974: 918, fig. 85, 205; Maury, 1975: 767, fig. 1D; KovaÍík, 1998: 102.

Thestylus glasioui typicus; Giltay, 1928: 81.

Thestylus glazioui glazioui; Mello-Leitão, 1945: 209-211, figs. 87-88; Armas, 1977:3.

Thestylus glasioui glasioui: Bücherl, 1959: 272; Lowe & Fet 2000: 39.

Thestylus glasioui lineatus Giltay, 1928: 81-82; Mello-Leitão, 1931: 96, 97; Giltay, 1930: 232-234; Bücherl, 1959: 272; KovaÍick, 1998: 102; Lowe & Fet 2000: 39. **New syn**.

Thestylus glasioui bilineatus; Mello-Leitão, 1932: 35.

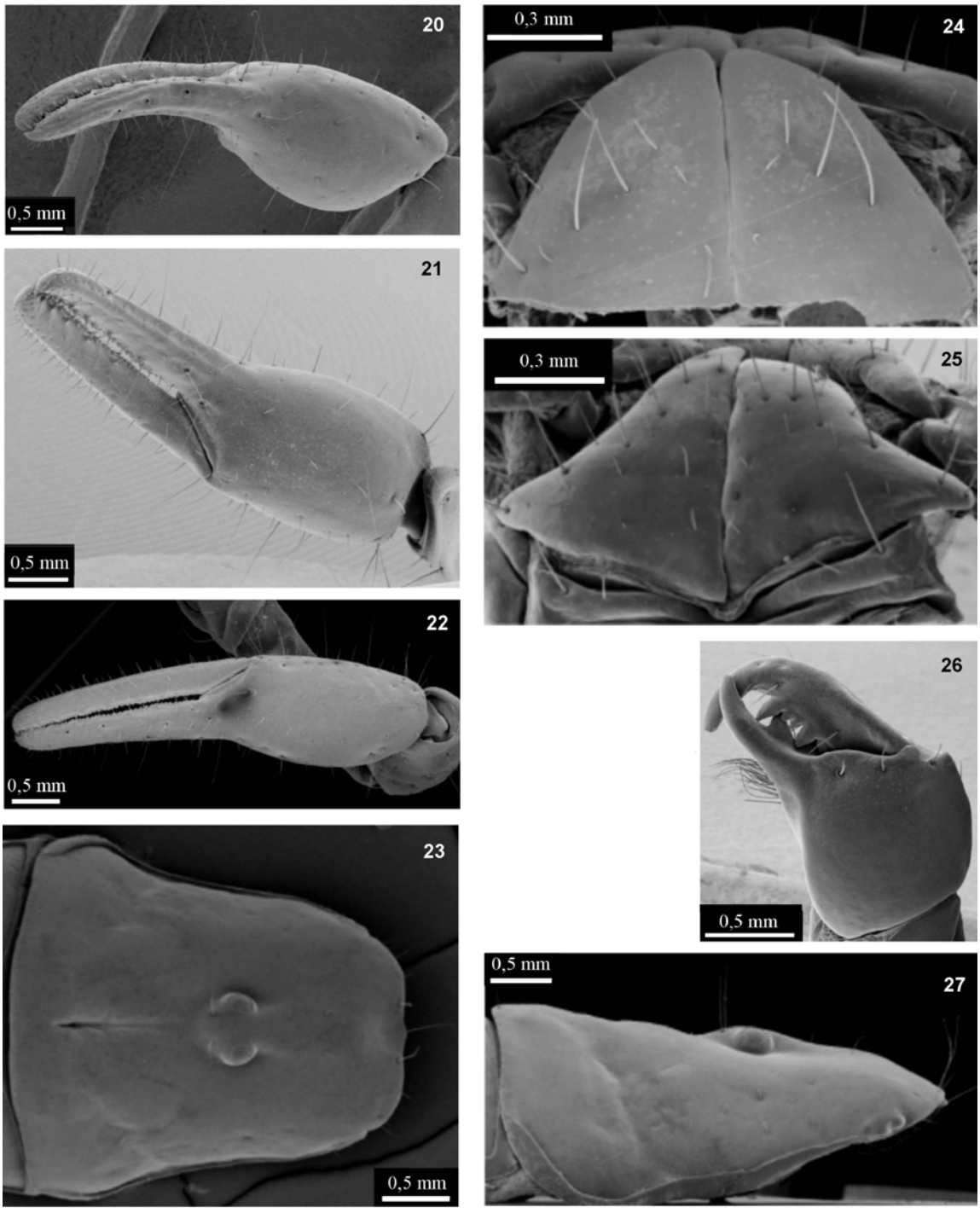


Fig. 20-22. Right pedipalp chela of male of *Thestylus aurantiurus*: **20:** Dorsal view. **21:** External view. **22:** Internal view. **Fig. 23.** Carapace, dorsal view. **Fig. 24.** Female genital opercula. **Fig. 25.** Male genital opercula. **Fig. 26.** Right chelicerae, dorsal view. **Fig. 27.** Carapace, lateral view.

Thestylus glazioui lineatus; Mello-Leitão, 1945: 211.
Thestylus lineatus; Lourenço, 2002: 63, 64.

DIAGNOSIS. *Thestylus glasioui* differs from *Thestylus aurantiurus* on hemispermatophore distal lamina morphology (figs. 8 – 12), which is shorter and a little wider, with one or two little teeth between the distal crest and the lamina surface. The body coloration is a little brighter and the metasomal coloration is similar to the mesosomal coloration. The metasoma is more pigmented than the *Thestylus aurantiurus*'s one (fig. 1). The number of ventral spines on leg tarsi III and IV (figs. 3 and 4) is smaller than the *Thestylus aurantiurus*'s one: tarsi III with 7 spines in the prolateral row and 6 spines in the retrolateral row, tarsi IV with 8 spines in the prolateral row and 7 spines in the retrolate-

ral row. The mean number of pectinal teeth is smaller than the *Thestylus aurantiurus*'s one, and its telson is a little longer and thinner.

DESCRIPTION:
MALE.
Coloration (fig. 1). Carapace and mesosomal tergites coloration vary from yellowish to brown, reticulated with dark brown. Metasoma with same coloration of mesosoma, with well developed pigmentation. In many individuals the triangular tergite stains may form a brighter longitudinal line on the whole dorsal surface.

Morphology. Leg tarsi III with 7 ventral spines in the prolateral row and 6 spines in the retrolateral row, leg tarsi IV with 8 spines in the prolateral row and 7 spines in the retrolateral row (figs. 3 and 4). Pectines with 15 – 18 teeth (mean: 16,8 teeth). Ratio between length and height of males telson (excluding the sting) varying between 2,8 and 3,5.

Morphology of distal lamina of hemispermatophore (figs. 8 – 12). One or two little teeth can be found uniting the distal crest to the surface of the lamina (fig. 9). The angle of the distal end in the lateral straight line of the lamina (angle D) smaller than 90º. Ratio between height (A distance) and width in the level of the distal end of frontal crest (C distance) equal to or smaller than 3,5. Ratio between the C distance and the height of frontal crest (B distance) equal to or larger than 1,2. B distance always smaller than the C distance. All the studied hemispermatophore distal laminas have some differences of morphology among themselves, but they always follow the presented pattern.

FEMALE. It has little morphometry differences (table I) with males and a little brighter coloration of tergites, with smaller variation. Pectines with 13 – 15 teeth (mean: 13,6 teeth).

VARIABILITY. Total length. Males: 18.5 – 33.5 mm; females: 27.0 – 39.5.
Number of pectinal teeth. Males (*n*=16 pectines): 16 (6 pectines), 17 (7), 18 (3); females (*n*=14 pectines): 13 (9), 14 (1), 15 (4).
Telson. Length (excluding the sting). Males (*n*=7 individuals): 3.5 – 5.3 mm; females (*n*=7 individuals): 3.2 – 4.2 mm. Height. Males (*n*=7 individuals): 1.0 – 1.9 mm; females (*n*=7 individuals): 1.1 – 1.8 mm.
Hemispermatophore distal lamina (*n*=5 individuals). Height (A distance): 8.3 – 10.8 mm. Frontal crest height (B distance): 2.0 – 2.8 mm. Width in the level of the distal end of frontal crest (C distance): 2.8 – 3.9 mm.

DISTRIBUTION (fig. 33). *Thestylus glasioui* occurs in the southeast of Brazilian Atlantic Rain Forest, in states of Rio de Janeiro and Espírito Santo. Its distribution is restricted to a narrow area which follows the coast of these states, limited by the Serra da Bocaina in the south and by the Serra da Mantiqueira in the west; it does not occur in the interior of Brazil. The northest occurrence is the type locality of *Thestylus glasioui lineatus*, the Serra do Caparaó (Espírito Santo). The Serra da Bocaina is the only place where this species occurs in sympatry with *Thestylus aurantiurus*. *Thestylus glasioui* occurs from the sea level (Maricá and Rio de Janeiro) to an altitude of 1500 meters (Serra da Bocaina).

NOTE: The two syntypes available are without metasoma. We designated here as the lectotype that one with all legs.

EXAMINED MATERIAL. BRAZIL, *Rio de Janeiro*: Cachoeiras de Macacu (Régua), 08-12.XI.2001, A. Giupponi, A. Gonzalez, D. Pedroso & D. Frota leg., 4 %% (MNRJ-7338); Itatiaia, 16.VIII.1985, R. Pinto Filho leg., 1 & (IBSP-1964); Magé, 28.IX.1981, 1 % (MNRJ-7083); Maricá (Ponta Negra), IX.2001, D. Nascimento leg., 1 % (MNRJ-7108); Nova Friburgo (Serra de Macaé), XI.1909, E. Garbe leg., 1 % (MZSP-8705); Petrópolis, 1 % (MNRJ-7081); Rio de Janeiro (Floresta da Tijuca), 12.I.1998, A. P. L. Giupponi leg., 1 & (MNRJ-7334); (Ilha da Marambaia), 17.IX.2001, Xerez *et al*. leg., 2 %% (MNRJ-7305); (Parque da Pedra Branca), F. O. C. leg., 1 % (MNRJ-7080); (Pedra-Açu), 2 &&, lectotype and paralectotype here designated (MNHN); (Tijuca), X.1950, C. F. Buys leg., 1 % (MZSP-19095); 1 % (MNRJ-7085); 25.X. 1911, C. Mendonça leg., 1 % (MNRJ-7084); 1 & (MNRJ-7109); São José do Barreiro (Serra da Bocaina), 30.III.1948, Gustavo M. D. C. F. leg., 1 & (MNRJ-7082); Teresópolis (Parque Nacional da Serra dos Órgãos), 18-23.VII.2001 leg., 1 & (IBSP-3258). *Espírito Santo*: Iúna (Serra do Caparaó), P. Brien leg., 1 & (IRSB).

***Thestylus aurantiurus* sp. n.**
Figs. 2, 5, 6, 14 – 19 and 20 – 32.

Thestylus glazioui; Machado & Vasconcelos-Neto, 2000: 64, fig. 1.

TYPE MATERIAL: Holotype %, São Paulo (Serra da Cantareira), São Paulo, Brazil, 19-27.X.2000, S. Favorito *et al.* leg. (MZSP). Paratypes: *São Paulo*: Iporanga (Fazenda Intervales), XII.1997, R. J. Sawaya leg., 1 % (MZSP-16955); São José do Barreiro (Serra da Bocaina), 01.X.1956, A. Lemos de Castro, Paulo and A. Feio leg., 1 % and 1 & (MNRJ-7086); São Paulo (Serra da Cantrareira), S. Favorito *et al*. leg., I.2000, 1 % (MZSP); 7.VII-15.VIII.2000, 1 % (MZSP); 21-30.IX.2000, 1 % (MZSP); 21-30.IX.2000, 1 % (MZSP); 19-30.X.2000, 1 % (MZSP); 19-30.X.2000, 1 % (MZSP); 22-30.XI. 2000, 1 % (MZSP); XII.2000, 1 % (MZSP). *Minas Gerais*: Campo Verde, 10.I.1985, V. Gessert leg., 1 % (IBSP-2077). Monte Verde, 24.IX.1998, R. F. Conrad leg., 1 % (IBSP-2425).

ETYMOLOGY. The species name is a combination of the Latin words aurantius (= orange) and urus (= tail) due to the brighter coloration of the males contrasting with the dark brown coloration of the rest of body dorsal surface.

DIAGNOSIS. *Thestylus aurantiurus* differs from *Thestylus glasioui* on the body coloration (fig. 2), wich is



Fig-. 28-29. *Thestylus aurantiurus* metasoma: **28:** Dorsal view. **29:** Lateral view. **Fig. 30-32**. Left hemispermatophore of *Thestylus aurantiurus*: **30:** External view. **31:** Internal view. **32:** Distal lamina with measurements used in taxonomy.

darker. The males have a metasoma with orange coloration, similar to the color of the mesosomal triangular stains and brighter than the rest of the dorsal surface, unlike *Thestylus glasioui*. The metasomal pigmentation is more spread out than the *Thestylus glasioui* metasoma. The females are darker than the *Thestylus glasioui* females, but they have the metasoma with same coloration as mesosoma. The hemispermatophore distal lamina (figs. 14 – 19 and 30 – 32) is longer and thinner than the *Thestylus glazioui*'s one and it does not have teeth in the distal crest. The morphology of *Thestylus aurantiurus* distal lamina has less morphological variation than the *Thestylus glasioui*'s one. The number of ventral spines on leg tarsi III and IV (figs. 5 and 6) is larger: tarsi III with 8 spines in the prolateral row and 7 spines in the retrolateral row, tarsi IV with 9 spines in the prolateral row and 8 spines in the retrolateral row. The mean number of pectinal teeth is larger than in *Thestylus glasioui* and its telson is a little shorter and wider.

DESCRIPTION:

MALE.

Coloration (fig. 2). Carapace and mesosomal tergites coloration are brown, reticulated with dark brown. In many individuals, the coloration is as dark as the reticulated pigmentation, hiding the oval stains pattern. Coloration of mesosomal median triangular stains is orange, brighter than the paired oval stains. Metasomal coloration orange, similar to the mesosomal median triangular stains, reticulated with dark brown less developed.

Morphology. Leg tarsi III with 8 ventral spines in the prolateral row and 7 spines in the retrolateral row, leg tarsi IV with 9 spines in the prolateral row and 8 spines in the retrolateral row (figs. 5 and 6). Pectines with 13 – 19 teeth (mean: 15.4 teeth). Ratio between length and height of male's telson (excluding the sting) varying between 2.6 and 3.0.

Table I

Measurements (in mm) of *Thestylus glasioui*, *Thestylus aurantiurus* and *Thestylus* sp. males and females.

	Thestylus glasioui			*Thestylus aurantiurus*		*Thestylus* sp.
	Male MNRJ 7108	Female MNRJ 7082	Female Lectotype MNHN	Male Holotype MZSP	Female Paratype MZSP	Male MZSP 19034
Total length	32.9	34.5	*	33.6	36.5	28.2
Carapace:						
length	4.2	3.8	4.6	3.9	4.5	3.3
anterior width	2.5	2.2	2.7	2.6	3.1	2.0
posterior width	4.5	4.2	5.1	4.1	5.0	3.5
Mesosomal length	9.5	13.5	11.7	10.3	11.3	9.0
Metasomal segment I:						
length	1.4	1.3	*	1.5	1.7	1.1
width	2.8	2.4	*	2.6	3.0	2.0
Metasomal segment II:						
length	1.6	1.6	*	1.7	1.7	1.5
width	2.5	2.0	*	2.2	2.7	1.7
Metasomal segment III:						
length	2.0	1.9	*	2.0	2.0	1.6
width	2.5	2.0	*	2.2	2.7	1.6
Metasomal segment IV:						
length	3.1	2.5	*	2.7	2.7	2.4
width	2.5	2.0	*	2.2	2.7	1.6
Metasomal segment V:						
length	5.4	4.5	*	4.6	4.7	4.2
width	2.5	2.2	*	2.4	2.7	1.7
height	2.1	1.8	*	1.7	2.0	1.4
Telson length	5.9	4.7	*	5.0	5.4	4.5
Vesicle:						
width	1.8	1.8	*	2.0	2.3	1.4
height	1.3	1.5	*	1.6	1.8	1.2
Pedipalp:						
femur length	3.4	3.1	3.6	2.9	3.0	2.9
femur width	1.1	1.1	1.2	1.0	1.1	0.8
patella length	3.9	3.7	4.8	3.7	4.1	3.4
patella width	1.5	1.4	1.7	1.4	1.6	1.2
chela length	6.6	5.5	7.1	5.8	5.6	5.4
chela width	1.8	1.3	1.7	1.6	1.6	1.4
chela height	1.9	1.2	1.7	1.6	1.7	1.3
movable finger length	4.3	3.2	4.4	3.5	3.5	3.5

*Lectotype without metasoma

Morphology of distal lamina of hemispermatophore (figs. 14 – 19 and 30 – 32). Distal crest and the surface of distal lamina without teeth between them. Angle of distal end in the lateral straight line of the lamina (D angle) equal to 90º. Ratio between height (A distance) and width in the end of frontal crest (C distance) equal to or larger than 4.4. Ratio between the C distance and the height of frontal crest (B distance) equal or smaller than 0,8. B distance always larger than the C distance.

FEMALE. Presents small morphometry differences (table I) with males and a sexual dimorphism in the coloration: mesosomal coloration similar to the metasomal, unlike in the males. Pectines with 11 – 16 teeth (mean: 12.5 teeth).

VARIABILITY. Total length. Males: 21.5 – 35.0 mm; females: 16.5 – 37.5.

Number of pectinal teeth. Males (*n*=37 pectines): 13 (1 pecten), 14 (8), 15 (15), 16 (7), 17 (2), 18 (2), 19 (2); females (*n*=32 pectines): 11(1 pecten), 12 (17), 13(12), 14 (1), 16 (1).

Telson. Length (excluding the sting). Males (*n*=10 individuals): 3.3 – 4.8 mm; females (*n*=7 individuals): 2.6 – 4.5 mm. Height. Males (*n*=10 individuals): 1.2 – 1.7 mm; females (*n*=7 individuals): 1.1 – 1.7 mm.

Hemispermatophore distal lamina (*n*=8 individuals). Height (A distance): 8.0 – 9.8 mm. Frontal crest height (B distance): 2.2 – 3.9 mm. Width in the end of frontal crest (C distance): 1.5 – 2.2 mm.

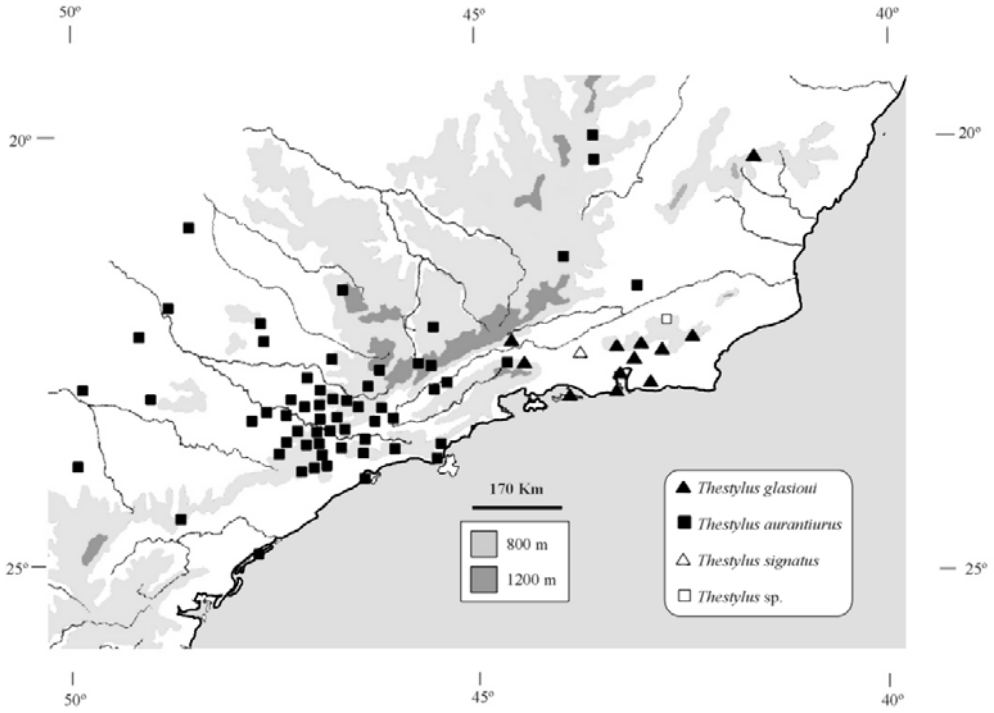


Fig. 33. Records of distribution of *Thestylus* species.

DISTRIBUTION (fig. 33). *Thestylus aurantiurus* occurs in the southeast of Brazilian Atlantic Rain Forest, in states of Minas Gerais, São Paulo and Paraná. Its distribution is much broader than *Thestylus glasioui*, occurring from the north of Paraná state and south of São Paulo state to the Serra da Bocaina (São Paulo), where both species occur in simpatry, and until the north and west of Minas Gerais state. Its distribution goes to the interior of Brazil, unlike *Thestylus glasioui*, but it does not occur in the coast. It can be found in higher localities, as Campos do Jordão, at 1600 meters of altitude.

EXAMINATED MATERIAL. BRAZIL, *Paraná*: Wenceslau Braz, 28.IX-11.X.2002, D. Pavan leg., 1 % (MZSP). *São Paulo*: Araçariguama (Fazenda São Joaquim), 24.X.2001, A. Parra leg., 1 & (IBSP-2895); Araçariguama, 30.IX.2002, V. Amado leg., 1 & (IBSP-3127); 29.X.1996, D. Andrade leg., 1 & (IBSP-1629); Arujá, 28.II.2002, O. Gonzales leg., 1 & (IBSP-2920); 13.XI.2000, S. Alavance leg., 1 % (IBSP-2593); 27.X.1988, E. Y. Pinto leg., 1 % (IBSP-2550); IX.1986, L. F. de Abreu leg., 1 & (IBSP-2561); 27.III.1985, C. A. Cardoso leg., 2 %% (IBSP-2078); X.1976, P. Lago leg., 1 % (IBSP-1045); Atibaia, 05.IX.1985, W. A. Gluck leg., 2 && (IBSP-1967); Avaré, 29.XII.1986, F. Giulian leg., 1 % (IBSP-2090); Bariri, I.1957, K. Lenko leg., 2 && (IBSP-673); Boituva, 20.IX.1989, L. C. Pacheco leg., 1 % (IBSP-2110); Cabreúva, 26.XI.1984, R. Mentone leg., 1 & (IBSP-2152); Caieiras, 11.X.2001, B. F. Sidou leg., 1 & (IBSP-2899); 09.XI.1948, A. Hans leg., 1 % and 1 & (IBSP-138); Cajamar, 19.XI.2002, V. M. Vidigal leg., 1 & (IBSP-3227); 29.IX.1997, C. P. de Oliveira leg., 1 % (IBSP-1913); 02.X.1995, E. C. Francisco leg., 1 & (IBSP-1619); 16.XI.1988, L. J. Lemos leg., 1 % (IBSP-2101); 1987, C. P. de Oliveira leg., 2 %% and 2 && (IBSP-2093); Campinas (Fazenda Santa Eliza), 29.VIII.1952, 1 & (IBSP-448); Campinas, 22.X.1990, S. D. Pena leg., 1 % (IBSP-1728); Campo Limpo Paulista, 27.XI.1996, L. A. Vedovatto leg., 1 % (IBSP-1594); 23.X.1996, A. C. Marçon leg., 1 & (IBSP-1627); Campos do Jordão (Pedra do Baú), 20.III.2001, H. Novelli leg., 1 & (IBSP-2680); Campos do Jordão, 13.X.2000, J. R. Comodo leg., 1 & (IBSP-2872); 27.X.1999, J. A. B. da Cruz leg., 2 && (IBSP-2520); 21.XI. 1995, R. del Puente leg., 1 % (IBSP-3126); 06.XI.1992, J. Allievi leg., 1 & (IBSP-2137); 30.X.1989, I. A. B. Muller leg., 1 % (IBSP-2114); 12.XII.1988, O. Moral leg., 2 %% (IBSP-2104); 06.VII.1988, A. R. Paes leg., 2 %% (IBSP-2096); 02.IX.1986, A. M. de Oliveira leg., 1 & (IBSP-1978); 31.VIII. 1983, C. Ligaud leg., 1 & (IBSP-2067); XII.1980, W. A. do Nascimento leg., 1 & (IBSP-1224); 24.X.1978, V. Guerreiro leg., 1 % and 1 & (IBSP-1137); VII.1957, K. Lenko leg., 2 %% and 2 && (IBSP-672); Caraguatatuba, 08.VIII.1990, R. V. de Mello leg., 2 %% (IBSP-2119); Corumbataí, 13.X.1933, S. Burian leg., 1 % and 1 & (IBSP-9); Cotia (Caucaia do Alto), 21.XI.1983, R. Trombim leg., 1 % (IBSP-1954); Cotia, 08. X.2001, F. Kwasriewski leg., 1 & (IBSP-2992); 08.X.2001, F. Kwasriewski leg., 1 % (IBSP-2915); 10.XI.1997, O. M. Monteiro leg., 1 % (IBSP-1613); 16.XI.1988, C. M. R. Marques leg., 1 % (IBSP-2102); 20.XI.1985, W. Neumann leg., 1 & (IBSP-2082); 10.V.1985, Escola Agrícola Batista leg., 1 % (IBSP-1960); 12.VII.1977, J. F. I. Junior leg., 1 & (IBSP-1074); Embu-Guaçu, 16.XII.1996, E. Bibiano leg., 1 % (IBSP-1597); Francisco Morato, 03.XI.1983, 1 & (IBSP-1952); 13.X.1981, A. Kucinskas leg., 1 & (IBSP-1387); Franco da Rocha, 28.III.2003, Serviço de Assistência Médica de Francisco Morato leg., 2 && (IBSP-3309); X.1980, S. S. Silva leg., 1 & (IBSP-1213); Guaianazes (Chavantes), 21.VIII. 1934, Abragio, Maciel, Titagawa and Burian leg., 1 & (IBSP-17); Guarujá, 04.XI.1999, T. H. Magalhães leg., 1 % and 1 & (IBSP-2507); 22.X.1999, Prefeitura Municipal do Guarujá leg., 3 %% (IBSP-2521); Guarulhos, 25.XI.2002, Prefeitura Municipal de Guarulhos - Zoonoses leg., 1 & (IBSP-3228); 25.X.2000, Divisão Técnica de Controle de Zoonoses leg., 1

% (IBSP-2564); 28.IX.2000, Divisão Técnica de Controle de Zoonoses leg., 1 & (IBSP-2913); 26.XI.1990, N. D. Souza leg., 1 & (IBSP-2122); 09.IX.1986, A. H. dos Santos leg., 1 & (IBSP-1976); IX.1983, J. C. da Silva leg., 1 % (IBSP-2553); 17.XI.1982, M. L. Brugnhola leg., 1 & (IBSP-1380); IX.1982, F. A. da Costa leg., 1 % (IBSP-1388); IX.1980, S. L. dos Santos leg., 1 & (IBSP-1210); Ibiúna (Cocais), 25.VIII.1990, P. Pedrosa leg., 1 % (IBSP-2537); Ibiúna, 07.X.2002, M. A. R. Montero leg., 1 % (IBSP-3129); 04.X.1982, S. M. Klofens leg., 1 & (IBSP-1294); Igaratá, 17.X.1986, W. S. Chersone leg., 4 %% and 3 && (IBSP-2088); Ilha Comprida, 29.VII. 1980, 1 & (IBSP-1249); Indaiatuba, 16.XII.1991, S. F. Polido leg., 1 % (IBSP-2129); Itapecirica da Serra, 15.VI.1992, A. A. Massetti leg., 1 & (IBSP-2132); 18.X.1979, L. Alves leg., 1 & (IBSP-1140); Itapevi, 08.IV.1999, R. Sales leg., 2 %% (IBSP-2484); 06.II.1998, 1 % (IBSP-1611); 22.X.1991, J. A. de Almeida leg., 1 % (IBSP-2128); Itatiba, 11.IX.1989, Z. M. Leite leg., 1 % (IBSP-2109); Itu (Estrada do Pinheirinho), VIII.1980, H. Nalin leg., 2 && (IBSP-3006); Itu, 14.XI.2001, Prefeitura Municipal de Itu leg., 1 & (IBSP-2858); 06.XI. 2001, F. V. Lomaco leg., 1 & (IBSP-2896); 04.X.2001, Prefeitura Municipal de Itu leg., 1 % (IBSP-2914); 04.X.2001, Prefeitura Municipal de Itu leg., 1 % (IBSP-2854); 16.X.1998, R. D'avila leg., 1 % (IBSP-2470); 30.X.1996, R. D'avila leg., 1 % (IBSP-1632); 02.X.1996, R. D'avila leg., 1 & (IBSP-1624); 12.IX.1994, Prefeitura Municipal de Itu leg., 1 & (IBSP-3124); 23.III.1994, R. D'avila leg., 1 & (IBSP-2408); 05.X.1990, R. D'avila leg., 1 & (IBSP-1805); 22.X.1986, R. D'avila leg., 1 % (IBSP-1981); 11.X.1984, R. D'avila leg., 1 & (IBSP-2150); X.1981, H. Valin leg., 1 % (IBSP-1394); Itupeva, 17.IX.1985, R. A. Brusco leg., 1 % (IBSP-2079); 27.I.1984, W. Domingues leg., 1 & (IBSP-2072); Jacareí, 17.VI.1999, R. Kluger leg., 1 % (IBSP-2489); Jandira, 28.XII.1985, J. R. Angelo leg., 1 & (IBSP-1972); 01.VII. 1951, A. Yamanaka leg., 1 & (IBSP-358); Jaraguá, 19.X.1984, J. B. Fernandes leg., 1 & (IBSP-1714); Jarinu, 24.XI.1997, M. Marli leg., 1 % (IBSP-1612); 16.VII.1987, M. R. Nascimento leg., 1 % (IBSP-2092); Joanópolis, 16.I.2003, S. R. Costa leg., 1 % (IBSP-3267); Jundiaí, 05.IX.2001, A. Falcão leg., 1 & (IBSP-2867); 30.X.1996, Prefeitura Municipal de Jundiaí leg., 1 % (IBSP-1631); 24.IX.1990, G. S. Vaquero leg., 1 % (IBSP-2120); 04.XI.1982, J. C. Caffagni leg., 1 & (IBSP-1384); 18.X.1982, A. Paulo Filho leg., 1 & (IBSP-1379); Juquitiba, 13.XII.2002, C. Mesa leg., 1 & (IBSP-3247); 02.V.1996, E. A. Nogueira leg., 1 & (IBSP-1638); 05.XI.1991, J. A. Franco leg., 1 % (IBSP-1741); 04.IV.1983, W. Bolognani leg., 1 & (IBSP-1439); Louveira, 17.X.2001, Prefeitura Municipal de Louveira leg., 1 % (IBSP-2892); Mairinque (Condomínio Porta do Sol), 17.X.2000, G. Piva leg., 1 % (IBSP-2563); Mairinque, 11.XII.2000, A. D. Freitas leg., 1 & (IBSP-2597); 06.XII.1977, A. Amaral Filho leg., 1 & (IBSP-1097); 20.IX. 1977, M. A. A. Graças leg., 1 % (IBSP-1088); 27.X.1987, A. A. de Campos leg., 1 & (IBSP-1993); 05.XII.1983, P. H. Capuano leg., 1 % (IBSP-2071); Mairiporã, 14.XI.2002, L. A. de Castro leg., 1 % (IBSP-3243); 19.X.2001, A. S. Couto leg., 1 % (IBSP-2894); 14.IX.2001, R. Bernucci leg., 1 % (IBSP-2891); 28.IX.1998, F. Alves leg., 1 & (IBSP-2428); 31.X. 1997, R. M. R. Manso leg., 1 % (IBSP-1610); 20.X.1996, N. de Prado leg., 1 % (IBSP-1630); 13.X.1995, M. A. Sales leg., 1 % (IBSP-2407); 09.X.1992, R. D. de Lima leg., 1 % (IBSP-2136); 05.XI.1990, SUCEN - Mairiporã leg., 1 & (IBSP-1729); 22.XI.1989, R. Pereira leg., 1 & (IBSP-2117); 07.XI.1989, S. S. Girondi leg., 1 & (IBSP-2116); 31.X.1989, Laboratório de Artrópodes - Instituto Butantan leg., 3 && (IBSP-2115); 23.X.1989, R. M. E. de Carvalho leg., 1 % (IBSP-2112); 16.I.1989, Parque Petrópolis leg., 1 % (IBSP-2105); 30.IX.1988, V. Baier leg., 1 % (IBSP-2098); 30.IX. 1988, A. A. da Costa leg., 1 % (IBSP-2097); 03.XII.1985, J. R. Albertini leg., 1 & (IBSP-1971); 23.VIII.1985, J. S. Palamina leg., 1 & (IBSP-1965); V. Baier leg., 1 % and 1 & (IBSP-2068); Mauá, 08.I.2003, Prefeitura Municipal de Mauá leg., 1 % (IBSP-3263); 13.XII.2002, Prefeitura Municipal de Mauá leg., 1 % (IBSP-3248); 28.XI.2001, Prefeitura Municipal de Mauá leg., 1 % (IBSP-2903); 22.X.1993, R. S. da Silva leg., 1 & (IBSP-2540); 08.IV.1992, S. Pandovani leg., 1 & (IBSP-2131); 19.II.1991, Prefeitura Municipal de Mauá leg., 1 & (IBSP-2124); 30.VII.1990, A. N. da Silva leg., 1 & (IBSP-1802); XII.1985, C. M. T. da Rocha leg., 1 & (IBSP-2557); 25.IX.1984, Secretaria de Saúde de Mauá leg., 1 & (IBSP-2074); Nazaré Paulista, 30.IX.1992, C. Gonzalez leg., 1 % (IBSP-2134); 25.X.1989, E. Faltus leg., 1 & (IBSP-2113); 31.X.1984, M. L. Vital leg., 1 % (IBSP-2076); Osasco (Cerâmica Industrial de Osasco), 28.VIII.1959, 1 & (IBSP-755); Osasco (Chacára São Jorge), 24.IX.1982, A. D. Rosa leg., 1 & (IBSP-1381); Osasco, 23.XI.1999, Centro de Controle de Zoonoses leg., 1 & (IBSP-2508); 12.IX.1994, C. de Oliveira leg., 1 % (IBSP-3123); Pedra Branca, X.1987, S. C. King leg., 2 %% (IBSP-2536); Piedade, 04.XI.1996, A. C. Batista leg., 1 % (IBSP-1633); 11.X.1984, M. Toebmann leg., 1 & (IBSP-1713); XI.1980, F. F. Wallaglio leg., 1 & (IBSP-1226); Pindamonhangaba, 19.XI.1984, A. Prestes leg., 1 % (IBSP-1719); Piracicaba, 26.IX.1984, S. C. C. Filho leg., 1 & (IBSP-1711); Pirapora do Bom Jesus, 16.XI.1988, J. E. Máximo leg., 1 % (IBSP-2103); 26.VIII.1977, F. M. C. Park leg., 1 % (IBSP-1082); Porto Feliz (Fazenda Monções), 15.IX.1977, N. T. Martingo leg., 1 % (IBSP-1083); Porto Feliz, 05.VIII.2002, M. H. Natalino leg., 1 % (IBSP-3065); X.1998, 1 % (IBSP-2492); 06.X.1992, P. F. Carone leg., 1 % (IBSP-2135); 25.X.1982, O. Knewbuhler leg., 1 % (IBSP-1385); Ribeirão Pires, 04.X.1990, L. A. Manoel leg., 1 & (IBSP-2545); 09.X.1985, S. dos Santos leg., 1 % (IBSP-2081); 27.IX.1948, H. Faleick leg., 1 & (IBSP-113); Rio Claro, 04.XI.1997, 1 % (IBSP-1615); Rio Grande, 22.VI. 1949, J. Data leg., 1 % and 1 & (IBSP-239); Salesópolis (Estação Biológica de Boracéia), 14.IX.1986, O. Frochlid leg., 2 %% (IBSP-2427); 17.VIII.1966, P. de Biasi leg., 1 & (MZSP-8714); Salto, 16.XI.2001, P. Nicolau leg., 1 & (IBSP-2863); 09.IX.1992, M. S. Bolcchi leg., 2 && (IBSP-2133); Santa Izabel, 18.X.1989, E. W. Zompere leg., 1 & (IBSP-2138); 29.IX.1977, M. Fernandes leg., 1 & (IBSP-1087); Santana de Parnaíba (Cururuquara), 14.I.1980, J. Rongett leg., 1 % (IBSP-1382); Santana de Parnaíba, 09.X.1991, P. de Oliveira leg., 1 & (IBSP-2127); 14.IX.1991, E. S. Duarte leg., 1 & (IBSP-2544); 05.XI.1990, I. J. Vívolo leg., 1 % (IBSP-2548); 04.XII.1989, L. E. de Melo leg., 1 % and 1 & (IBSP-2118); IX.1980, W. 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***Thestylus* sp.**

Fig. 13.

There is only one known individual (male, Sítio de David Miller, Nova Friburgo, Rio de Janeiro, Brazil, 20-22.X.1999, G. Machado & S. Koehler leg. (MZSP-19034)), which presents external morphology similar to *Thestylus glasioui*. It differs from this species only by its peculiar hemispermatophore morphology (fig. 13). Its distal lamina is very thin and long, with an accentuated curvature in the level of the distal end of frontal crest. This characteristic is not found in any other studied hemispermatophore. It does not have teeth between the distal crest and the surface of the distal lamina. The angle of the distal end in the lateral straight line of the lamina (D angle) is larger than 90º. Ratio between height (A distance) and width in the level of the distal end of frontal crest (C distance) is 5.8. Ratio between the C distance and the height of the frontal crest (B distance) is 0.4.

Thestylus sp. differs from *Thestylus glasioui* only on its hemispermatophore morphology. It differs from *Thestylus aurantiurus* on the hemispermatophore morphology, by the coloration of the body (brighter, metasoma with same mesosoma coloration), on the more developed pigmentation of metasoma and on the smaller number of ventral spines on leg tarsi. Leg tarsi III with 7 ventral spines in the prolateral row and 6 spines in the retrolateral row, leg tarsi IV with 8 spines in the prolateral row and 7 spines in the retrolateral row. The prolateral row of right tarsus of leg IV has only 7 spines because one of them is broken. Pectines with 15 and 16 teeth (right and left, respectively). Telson length is 3.7 mm (excluding the sting) and telson height 1.2 mm (ratio between length and height of telson is 3.1). There are other body measurements in table I.

As only one individual is known, just differentiated by its hemispermatophore morphology, there is no certainty that it is a different species from *Thestylus glasioui* or it is just a variation.

Species inquirenda

***Thestylus signatus* Mello-Leitão, 1931**

Thestylus glasioui signatus Mello-Leitão, 1931: 97-98, 108-110; 1932: 35; Kovaĺík: 1998: 102. Female holotype, Museu Nacional do Rio de Janeiro, Rodeio, Rio de Janeiro, Brazil, lost.

Thestylus signatus; Mello-Leitão, 1945: 211-213; Bücherl, 1959: 272; Kury & Nogueira, 1999: 12; Lowe & Fet 2000: 40; Lourenço, 2002: 63, 64.

Thestylus signatus was described with only one character, the presence of a medium furrow in the medium ocular tubercle. This character was not found in any other studied individual from other areas close to

Thestylus signatus type locality. It leads us to believe in a possible mistake in the description of this species. The other characters described by Mello-Leitão are not exclusive of this species, as the distance of more than a diameter among the medium eyes, number of pectinal intermediate plates and position and distribution of some crests and granules. Possibly it is only a synonym of *Thestylus glasioui*, since its description is very similar to females of that species and its type locality is close to other places where were collected *Thestylus glasioui*. Therefore, a comparison with *Thestylus signatus* holotype would be necessary to elucidate this problem. Unfortunately, according to Kury & Nogueira (1999), the *Thestylus signatus* holotype, that should be deposited at Museu Nacional do Rio de Janeiro, was considered lost.

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