

## Data on Coniopterygidae of Argentina, with subgeneric division of *Parasemidalis* Enderlein, 1905

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**ABSTRACT:** In present work 15 coniopterygid species are discussed from Argentina. *Pampoconis glencrosi* sp. n., *P. xerophila* sp. n., *Coniopteryx calileguana* sp. n., *Parasemidalis (Stangesemidalis) enriquei* sp. n., *Incasemidalis pachamama* sp. n., *Semidalis jujuyana* sp. n. and *S. maculosus* sp. n. are described as new ones, while *Coniopteryx (Scotoconiopteryx) chilensis*, *C. (S.) paranana*, *Parasemidalis (Stangesemidalis) principiae*, *Semidalis isabelae* and *S. normani* are new to the fauna of Argentina. In the case of *Coniopteryx (S.) chilensis* and *C. (S.) paranana* data of the specimens determined correctly before, and housed in collection of Fundación Miguel Lillo are published in this occasion. Earlier records of *Coniopteryx (S.) chilensis* and *Incasemidalis chilensis* from Argentina, based on false or uncertain identification respectively, are commented. Taxonomic status of the genus *Stangesemidalis* is lessened to subgenus level, and a subgeneric division of the genus *Parasemidalis* is given.

In spite of the large territory of the country, and great variability of habitats, the number of the coniopterygids hitherto reported from Argentina is surprisingly low. In list of STANGE (1967) 3, while in monograph of MEINANDER (1972) 5 species was mentioned from here. Later on GONZÁLEZ OLAZO (1984) described *Stangesemidalis subandina* as new genus and species from the north-western part of Argentina. NEW (1989) lessened the rank of Brucheiseridae, and placed it as subfamily (containing one Argentine species) in Coniopterygidae. According to the last comprehensive work on dusty wings (MEINANDER 1990) 8 species were known from this land. More recently MONSERRAT (2005) reported two coniopterygid species as new to the fauna of Argentina, but on the basis of false, or uncertain identification.

In October and November of the year 2006 I had possibility to take a collecting trip in north-western part of Argentine, to visit the Miguel Lillo Institution in Tucuman, and investigate the determined Coniopterygidae collection housed here. In present paper the results of working up of the newly collected Coniopterygidae specimens, and of the investigation of elder material are given.

Moreover, a new evaluation of the taxonomic status of *Stangesemidalis*, and a subgeneric division of the genus *Parasemidalis* were necessary for the proper handling of the results.

### Material and methods

The coniopterygid material obtained in course of our trip in 2006 was collected by knocking and netting of the arboreal vegetation (if it is not mentioned in the text), or at light.

Holotype and a number of paratypes of *Stangesemidalis subandina*, as well as specimens of *Coniopteryx chilensis*, *C. callangana* and *C. paranana* determined by E. González Olazo were from the collection of Fundación Miguel Lillo, Tucuman (FML), while the holotype of

*C. paranana* from the Instituto Nacional de Pesquisas de Amazonia, Manaus. The newly identified specimens are deposited in FML and in Hungarian Natural History Museum.

### Taxonomic part

#### ***Pampoconis glencrosi* sp. n.**

Holotype: male, Argentina, Prov. de Jujuy, Dep. Ledesma, Calilegua, S 23° 47.2', W 64° 48.3', 523 m a.s.l., 26. 10. 2006, leg.: GY. SZIRÁKI, E. HORVÁTH, E. GONZÁLEZ OLAZO; deposited in collection of Fundación Miguel Lillo, Tucuman.

Colour of the sclerotized parts of the head capsule is brown. Antennal sockets large, and connected by a rather wide unsclerotized territory on the ventral half of the frons. Eyes large, black; head about 1.6 times higher than eyes. Antennae 1.8 mm, 24 segmented, dark brown. Scape slightly longer than broad, pedicel 1.5 times as long as broad, median flagellar segments about 2 times as long as broad. Segments of palpi rather elongated; maxillar palpi dark, labial palpi light brown.

Thorax and legs dark brown. Femur of the fore leg without spines. Wings with rounded apex, wing membrane brown, along the veins R<sub>1</sub>-Cu<sub>1</sub> somewhat darker than otherwise. Median setae rather small ones. Length and width of fore wing 3.1 and 1.3 mm, of hind wing 2.6 and 1.2 mm respectively. Hind wing with distinct distal M-Cu<sub>1</sub> crossvein, and there is a considerable distance between M and Cu<sub>1</sub> before this crossvein. Abdomen pale ochreous, with well sclerotized genitalia.

Male genitalia as Figs 1-5. The synscleritous ectoproct and hypandrium have a complete anterior apodeme, which has a pair of inner caudal branch on the ventral part of ectoproct. Hypandrium short and slender, with four stright bristles caudally. Ventral part of ectoproct slightly pointed caudally, while dorsal part of its caudal edge bears six stout spines. Penis moderately long; its widened distal part slightly serrated caudally, while the forked proximal part short. Paramere long and slender. Styli are connected to the caudal end of paramere, and slightly hooked in lateral view.

Because of the unspotted wing membrane, the short and slender hypandrium, the stout spines on the caudal edge of ectoproct, and the short, forked proximal, and widened, caudally serrated distal part of penis, the new species is close to the *Pampoconis angustipennis* Meinander, 1990.

The main distinctive features of *Pampoconis glencrosi* sp. n. are:

- the moderately elongated fore wing (in *P. angustipennis* it is much more elongated);
- the ectoproct, which has stout spines only on the dorsal part of its caudal edge (in *P. angustipennis* there is a separate projection, with two serrate spines ventrally of the dorsal ones);
- absence of the hairy lateral knobs on the hypandrium (which are present in the case of *P. angustipennis*).

The habitat of the collecting site was a secondary gallery forest along the Rio San Lorenzo.

Etymology: The new species is dedicated to Ing. SANTIAGO GLENCROS (Ledesma Company, Argentina), who supported generously our work in Calilegua National Park.

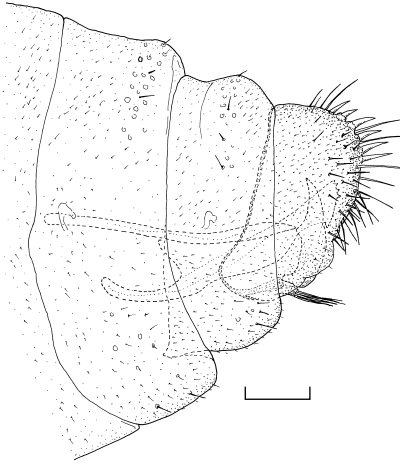


Fig. 1. *Pamponconis glencrosi* sp. n. – male terminalia, lateral view

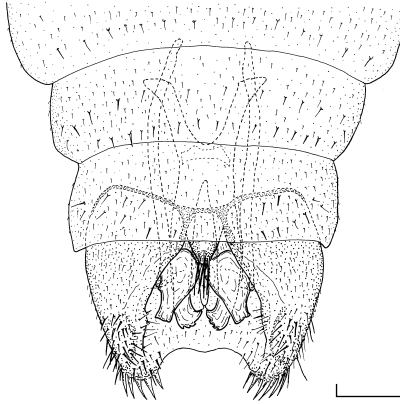


Fig. 2. *Pamponconis glencrosi* sp. n. – male terminalia, ventral view

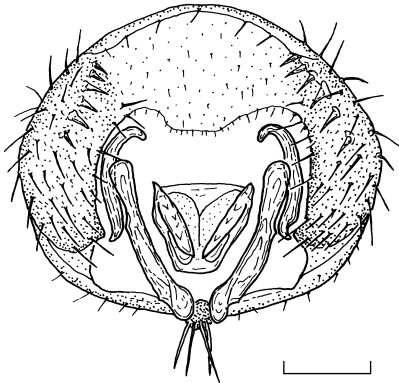


Fig. 3. *Pamponconis glencrosi* sp. n. – male terminalia, caudal view

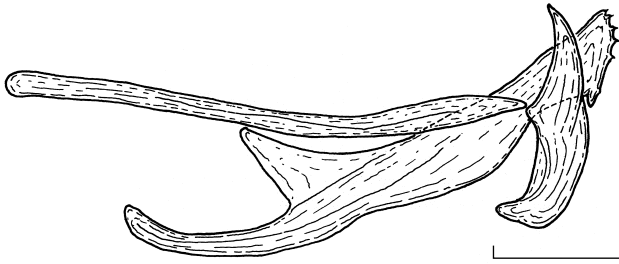


Fig. 4. *Pampoconis glencrosi* sp. n. – male internal genitalia, lateral view

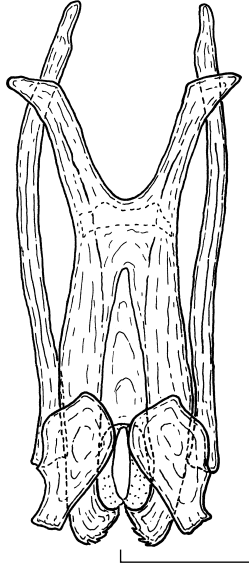


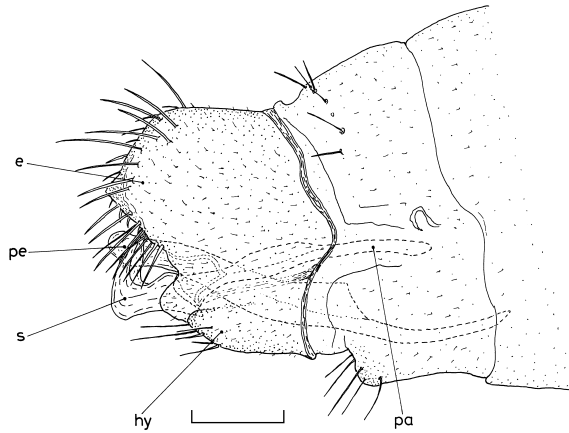
Fig. 5. *Pampoconis glencrosi* sp. n. – male internal genitalia, ventral view

***Pampoconis xerophila* sp. n.**

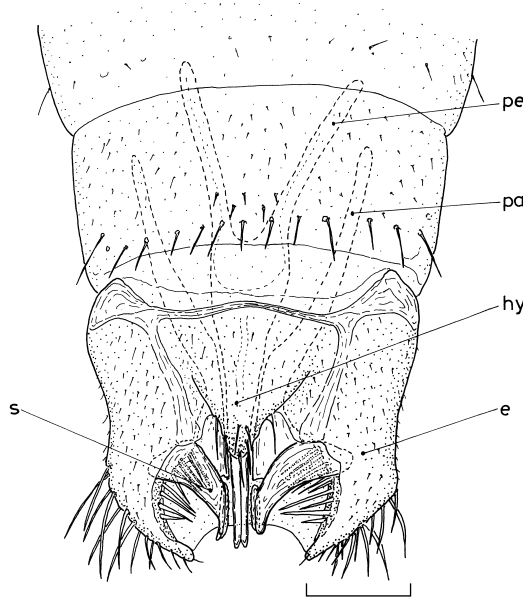
Holotype: male, Argentina, Prov. De Catamarca, El Puesta (Caspinchango), S 26° 44.2', W 65° 56.7', 2223 m a.s.l., 20. 10. 2006, at light, leg.: GY. SZIRÁKI, E. HORVÁTH, S. NUÑEZ CAMPERO; deposited in collection of Fundación Miguel Lillo, Tucuman.

Colour of sclerotized parts of head capsule light brown. Antennal sockets large, frons with a triangular, vertically elongated unsclerotized area. Eyes rather small, black; head 2.5 times higher than eyes. Length of the antennae 2.0 mm. The number of antennal segments of holotype 27 (right) and 28 (left). Scape about two times, pedicel 1.5 times as long as broad; median flagellar segments 2.5 times as long as broad. Scape dark, other parts of antennae light brown. Palpi light brown, with normal structure.

Thorax and legs medium brown. Ventral side of first femur with large spines. Wing membrane light brown, without any pattern, median setae small. Wings rather elongated: length and width of fore wing 3.2 and 1.1 mm, of hind wing 2.7 and 1.0 mm. Hind wing with distinct distal M-Cu<sub>1</sub> crossvein, and there is a considerable distance between M and Cu<sub>1</sub> before this crossvein. Abdomen pale ochreous, with dark, strongly sclerotized terminalia.

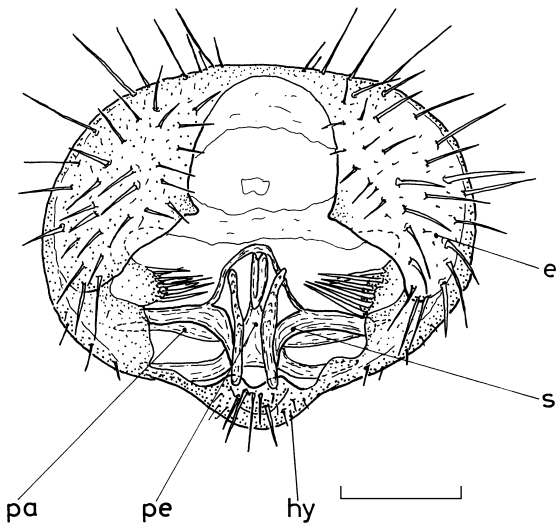


**Fig. 6.** *Pampoconis xerophila* sp. n.– male terminalia, lateral view

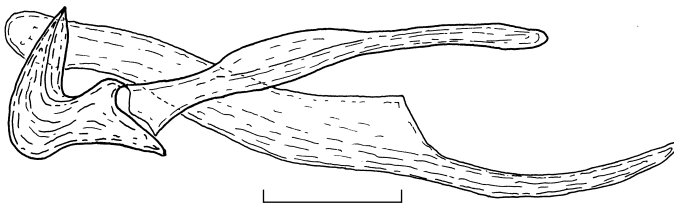


**Fig. 7.** *Pampoconis xerophila* sp. n.– male terminalia, ventral view

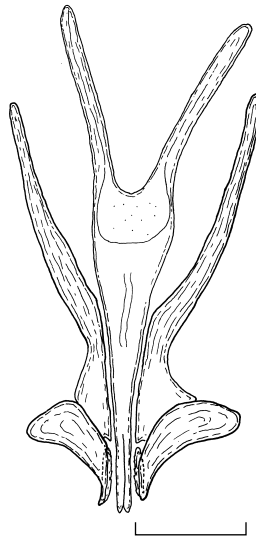
Male genitalia as Figs 6-10. The synscleritous ectoproct and hypandrium have a complete anterior apodeme, which has a pair of inner caudal branch on the ventral part of ectoproct. Hypandrium elongated triangular. Ectoproct pointed slightly caudally, and has an internal bump, with strong, inwards directed spines. Penis long and slender; its distal part very narrow in caudal view. Paramere thin proximally, widened distally. Styli strong, in lateral view hook-like, with slightly serrated inner plate. The two styli are connected to each other by a narrow, dorsal sclerite, and supported anteriorly by the paramere and the ventral apodeme of ectoproct.



**Fig. 8.** *Pampoconis xerophila* sp. n.– male terminalia, caudal view



**Fig. 9.** *Pampoconis xerophila* sp. n.– male internal genitalia, lateral view



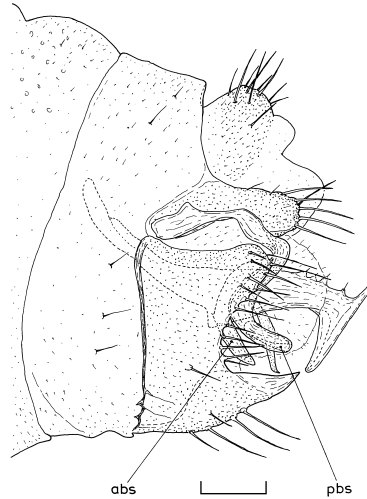
**Fig. 10.** *Pampoconis xerophila* sp. n.– male internal genitalia, ventral view

Because of the unspotted wing membrane, the elongated hypandrium and the hooked styli connected to the parameres, the new species resembles somewhat to *Pampoconis dentifera* Meinander, 1973. However, in *Pampoconis xerophila* the penis much longer, without dentiform structures, while the ectoproct has an inner, setose bump.

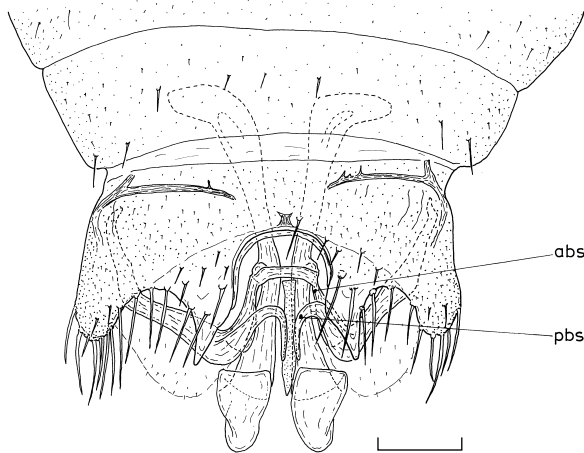
The habitat at the collecting site was a semidesert, with dry scrub near to a creek.

***Coniopteryx (C.) callangana* Enderlein, 1906**

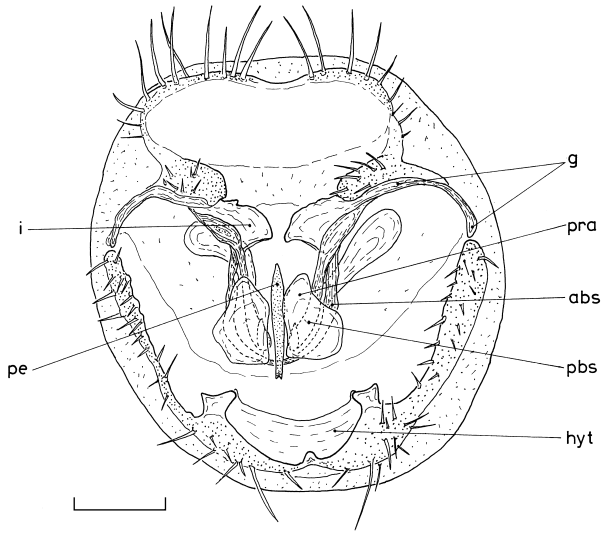
This species is widely distributed in the Neotropic region. First time it was reported by NAVÁS (1928) from Argentina (Buenos Aires). This was regarded as a questionable record by MEINANDER (1972, 1990), however, MONSERRAT (2005) confirmed the presence of *C. callangana* in this country, in Prov. Buenos Aires.



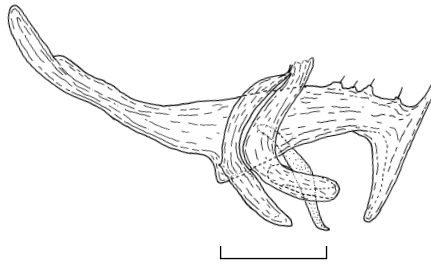
**Fig. 11.** *Coniopteryx (C.) callangana* – male terminalia, lateral view



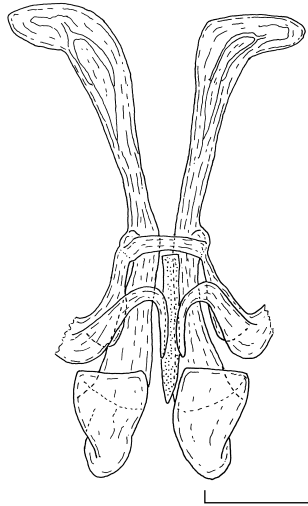
**Fig. 12.** *Coniopteryx (C.) callangana* – male terminalia, ventral view



**Fig. 13.** *Coniopteryx (C.) callangana* – male terminalia, caudal view



**Fig. 14.** *Coniopteryx (C.) callangana* – male internal genitalia, lateral view



**Fig. 15.** *Coniopteryx (C.) callangana* – male internal genitalia, ventral view



Examined material: 1 male, labelled as: „Rep. Argentina, Tucuman, S. M. de Tucuman, 1-16. XII. 1991, P. Martín leg. At light, E González Olazo det., 1. 09. 1992” – hitherto unpublished record; 1 male, Prov. de Catamarca, El Puesto (Caspinchango) S 26° 44.2', W 65° 56.7', 2223 m a.s.l., 20. 10. 2006, semidesert, dry scrub, at light, leg.: GY. SZIRÁKI, E. HORVÁTH, S. NUÑEZ CAMPERO; 1 male, same data as above, but collected by knocking from bushes, on 22. 10. 2006; 1 male, Prov. de Jujuy, Dep. Ledesma, Calilegua National Park, S 23° 44.6', W 64° 51.2', 766 m a.s.l., 28. 10. 2006, subtropical deciduous forest, leg.: GY. SZIRÁKI, E. HORVÁTH, E. GONZÁLEZ OLAZO; 1 male, Prov. de Jujuy, Dep. Ledesma, Calilegua, S 23° 43.6', W 64° 45.9', 523 m a.s.l., 31. 10. 2006, secondary gallery forest next to a large scale fruit orchard, leg.: GY. SZIRÁKI, E. HORVÁTH, E. GONZÁLEZ OLAZO.

As a few minor alterations were found in present material in comparison to the detailed description of the species (MEINANDER 1972), some features of the examined specimens are given below.

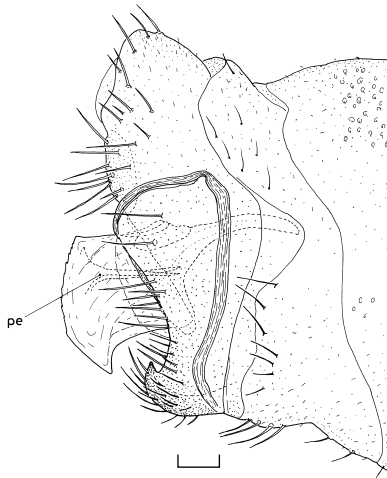
Structure of frons and palpi normal. Colour of head capsule, antennae and palpi light brown. Eyes large, black. Antennae 0.9-1.0 mm, 24-26 segmented. Scape and pedicel about as long as, or slightly longer than broad. Median flagellar segments are variable: 1.3-2.0 times as long as broad. Ordinary hairs of flagellar segments situated irregularly. Scale-like hairs are on the apical part of the flagellar segments and pedicel. Setae rather short.

Thorax and abdomen pale ochreous, but the shoulder spots dark brown, legs medium brown. Wings moderately wide, wing membrane light brown. Length of the fore wing 1.8-2.2 mm, of hind wing 1.4-1.5mm.

Male genitalia (Figs 11-15) as described by MEINANDER (1972), but the anterior branches of the stylus form a belt below the parameres, the posterior branch not serrated, rods of penis fused, the internal projection of gonarcus prominent, and there is a transverse internal plate at the base of the processus terminalis of hypandrium.

### ***Coniopteryx (Scotoconiopteryx) calileguana* sp. n.**

Holotype: male, Argentina, Prov. de Jujuy, dep. Ledesma, Calilegua National Park, S of Abra de Canas, S 23°41.3', W 64° 54.1', 2253 m a.s.l., 30. 10. 2006, leg.: GY. SZIRÁKI, E. HORVÁTH, E. GONZÁLEZ OLAZO; deposited in collection of Foundation Miguel Lillo, Tucuman. Paratypes: 1 male, same data as holotype; 2 males, Argentina, Prov. de Jujuy, dep. Valle Grande, San Francisco, E of the village, S 23° 37.6', W 64° 56.2', 2084 m a.s.l., 29. 10. 2006, leg.: GY. SZIRÁKI, E. HORVÁTH, E. GONZÁLEZ OLAZO. One of the paratypes is deposited in collection of Foundation Miguel Lillo, Tucuman, two others are housed in Hungarian Natural History Museum, Budapest.



**Fig. 16.** *Coniopteryx (S.) calileguana* sp. n. – male terminalia, lateral view

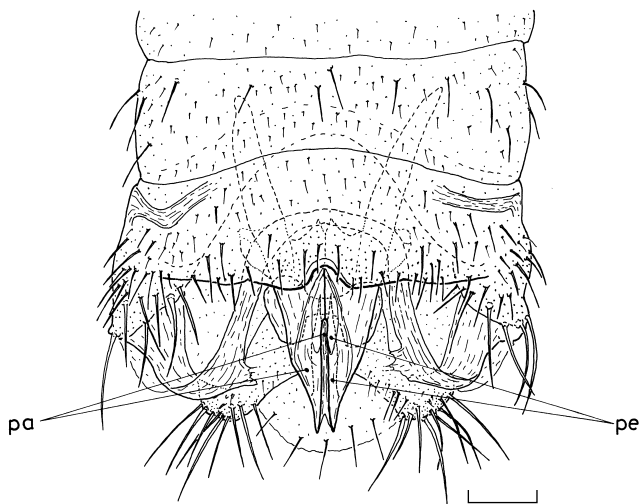


Fig. 17. *Coniopteryx (S.) calileguana* sp. n. – male terminalia, ventral view

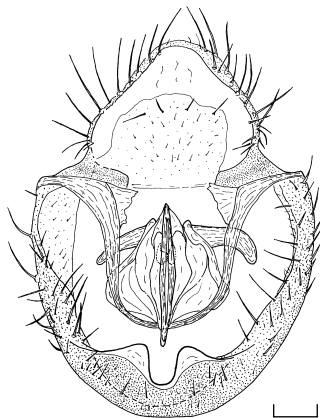


Fig. 18. *Coniopteryx (S.) calileguana* sp. n. – male terminalia, caudal view

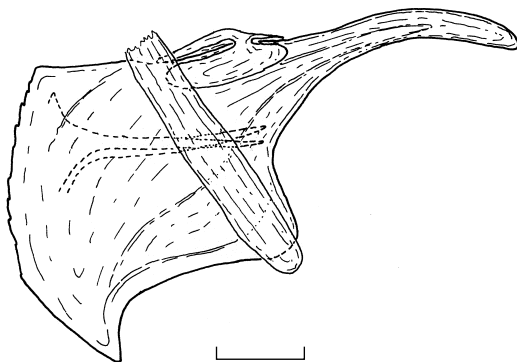


Fig. 19. *Coniopteryx (S.) calileguana* sp. n. – male internal genitalia, lateral view

Most part of the body pale ochreous, genae light brown, sutures of head and thorax and in most cases the thoracal apodemes are medium brown. Shoulder spots are variable from medium brown to black. Length of the body 1.9-2.2 mm. Palpi light brown, Antennae medium, or dark brown, 1.7-1.9 mm, 29-34 segmented. Median flagellar segments and scape slightly longer than broad. Basal flagellar segments are shorter and slightly broader, the apical ones longer and narrower than the others. Pedicel 1.2-1.4 times as long as broad. Ordinary hairs situated in two sparse, but regular whorls, scale-like hairs form a single apical whorl on the flagellar segments. Setae moderately long. Eyes rather small ones: their height about half of the height of the head. Legs medium-, or dark brown, wing membrane and veins light-, or medium brown. Length of the fore wing 2.5-2.7 mm, of hind wing 2.1-2.3 mm.

Male genitalia as Figs 11–14. Hypandrium in lateral view about 2 times as high as long; ventrally distinctly shorter than dorsally. Processus lateralis rounded dorso-caudally, sclerotized processus intermedius absent. Processus terminalis is sclerotized very strongly even on its inner surface; two halves of this organ rounded. Median incision „U”-shaped, and – in caudal view – rather deep. Anterior apodeme of hypandrium ventrally indistinct, as it is fused with the sclerotized inner layer of processus terminalis. Gonarcus synscleritous with hypandrium. Its ventral apodeme distinct, and at the base of styli continued in an inwards directed, short plate, with irregular internal edge. Styli unforked, and form an arch below the parameres. Parameres are connected by a dorsal sclerite near to the middle of their length, while their plate-like caudal parts are fused with each others both dorsally and ventrally, forming a flattened, in lateral view very broad and ventrally hooked, caudally slightly serrated capsule around the penis. The penis consists of two rods, which fused to each other dorso-caudally, and also to parameres caudally.

Because of the widened, and ventrally hooked caudal part of parameres, and as the penis is connected caudally to the parameres, *Coniopteryx (Scotoconiopteryx) calileguana* is close to *Coniopteryx (S.) gonzelezi* Meinander, 1990, which was described as *Coniopteryx (S.) meinanderi* González Olazo, 1987.

The main distinctive features of the new species are:

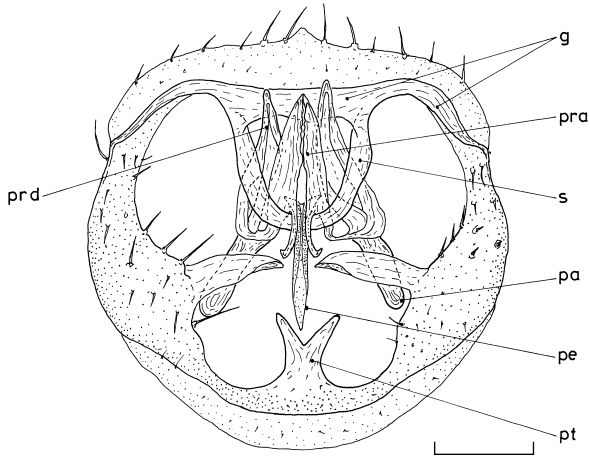
- the distinct, and in caudal view rather deep and narrow median incision of processus terminalis;
- the fused, in lateral view very broad caudal part of parameres;
- the relatively small eyes.

The habitat at the collecting sites were mixed mountain moss forests, with broad leaved and coniferous trees.

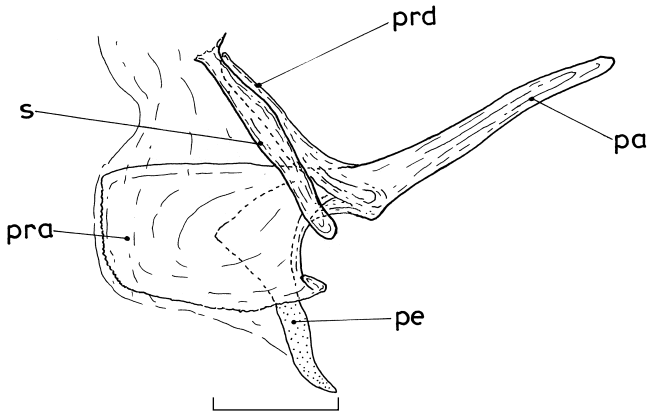
### ***Coniopteryx (Scotoconiopteryx) chilensis* Meinander, 1990**

Examined material: 2 males labelled as: „Rep. Argentina, Salta, Tucil, 16-30. IX. 1969, Stange, Terán & Willink colls. (Malaise); E. González Olazo det. 14. 9. 1992” – collection of Fundación Miguel Lillo, Tucumán; hitherto unpublished record.

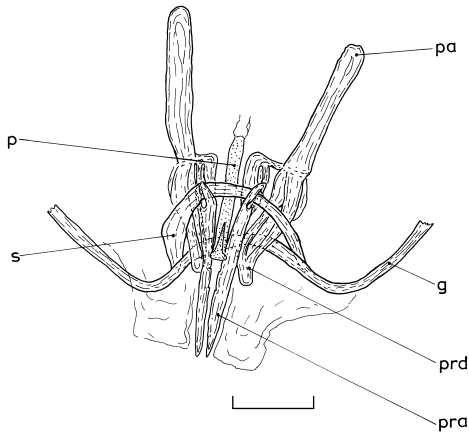
A correctly determined specimen of this species, other than the type material from Chile, was not reported until now. MONSERRAT (2005) identified a coniopterygid specimen from Argentina as *C. (S.) chilensis*, however, he figured and described also the alterations as below: „A single dead and dry male specimen collected in a lamp ceiling... seems to belong to this species..., but some differences must be noted. So the gonarcus seems to be medially interrupted..., terminal process of hypandrium are not small and acute, but blunt



**Fig. 20.** *Coniopteryx (S.) chilensis* – male terminalia, caudal view



**Fig. 21.** *Coniopteryx (S.) chilensis* – male internal genitalia, lateral view

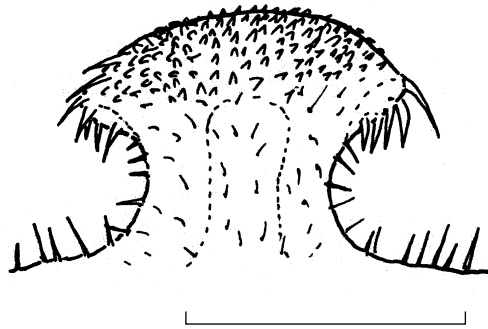


**Fig. 22.** *Coniopteryx (S.) chilensis* – male internal genitalia, ventral view

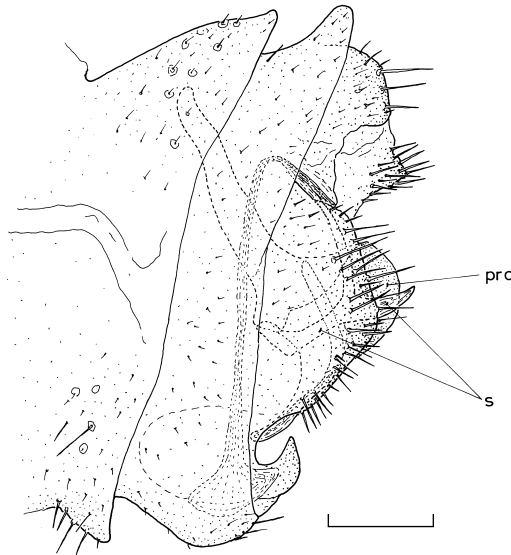
quadrangular...”. Some slight intraspecific variability is possible in the case of processus terminalis, but a quite different shape (blunt and quadrangular instead of small and acute) impossible. Similarly, the basic structure of gonarcus (medially interrupted or synscleritous) is a constant feature within a given species (or even within a subgenus). On the other hand, the two presently examined specimens from Argentina (Figs 20-22) agree very well with the figures of the original description of *C. (S.) chilensis* (MEINANDER 1990: Figs 16 A-D), and differs distinctly from the specimen figured by MONSERRAT (2005: Figs 2-6).

***Coniopteryx (Scotoconiopteryx) paranana* Meinander, 1990 (new subgeneric combination)**

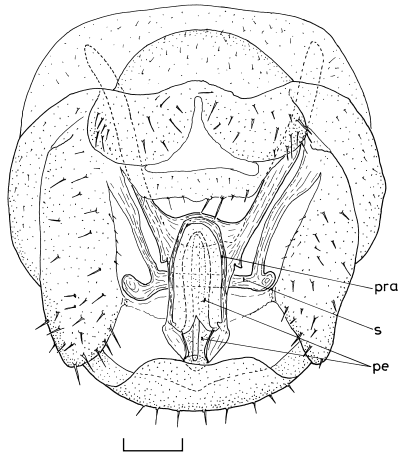
Examined material: 1 male labelled as: „[Argentina, Prov.] Tucumán, S. M[iguel] de Tuc[uman], 1-15. XII. 1991, P. Martin leg., E. González Olazo det. 25. 8. 1992” – collection of Fundación Miguel Lillo, Tucuman, hitherto unpublished record; holotype, male, Brazil, Parana, 1979, A. YAMAMOTU – collection of the Instituto Nacional de Pesquisas de Amazonia, Manaus.



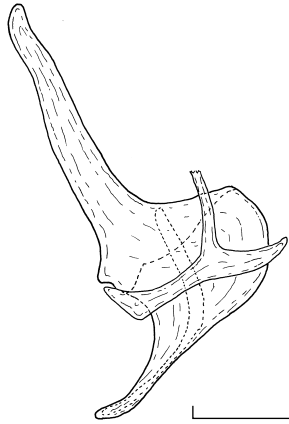
**Fig. 23.** *Coniopteryx (S.) paranana* – tubercle on the anterior edge of the unsclerotized spot on the male head, frontal view



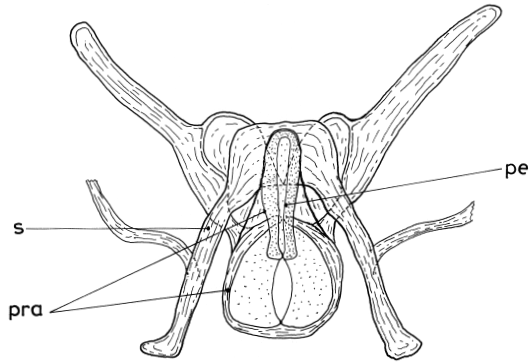
**Fig. 24.** *Coniopteryx (S.) paranana* – male terminalia, lateral view



**Fig. 25.** *Coniopteryx (S.) paranana* – male terminalia, caudal view



**Fig. 26.** *Coniopteryx (S.) paranana* – male internal genitalia, lateral view



**Fig. 27.** *Coniopteryx (S.) paranana* – male internal genitalia, ventral view

The general appearance of the head and of the genitalia of the specimen from Argentina is exactly the same as in original description (MEINANDER 1990). However, some differences were recognized, moreover, a few details of Meinander's figures are not clear enough for correct interpretation. As a result of present examinations it turned out that the Argentine specimen agrees with the holotype in all details. Therefore, some corrections are necessary in description of the species.

In regard to head, there is not a pair of slightly backwards turned tuberculae on the anterior edge of the unsclerotized median area of frons, but only a single tubercle exists, with an apodeme-like structure inside (Fig. 23). Concerning the male genitalia (Figs 24-27), the apodeme along the anterior margin of hypandrium ventrally complete. Lateral part of this apodeme synscleritous with the gonarcus. Inner branches of both styli fused, and ventrally form a bridge below the parameres. Outer branches of styli are pointed in lateral, and slightly clubbed in caudal view (without any other visible structure mentioned by Meinander). Processes apicales of the two parameres dorsally fused. Penis curved, with a thin distal part inserted into the ventral apophysis of processes apicales.

*C. paranana* was described originally into the subgenus *Coniopteryx*. According to drawing of MEINANDER (1990: Fig 23 C), the stylus (with dotted line into the mentioned figure) connected to the base of gonarcus. Therefore, I transferred it (SZIRÁKI 2005) to the subgenus *Xeroconiopteryx*, and established the monotypic „*Xeroconiopteryx paranana*” species group for this species. After examination of the Argentine specimen and the holotype of the species it became clear that stylus originates from the end of the short gonarcus, and – as the base of gonarcus synscleritous with the anterior apodeme of the hypandrium – *C. paranana* belongs to the subgenus *Scotoconiopteryx*. (Consequently, the „*paranana*” species group of the subgenus *Xeroconiopteryx* does not exist.)

Hitherto *C. paranana* was not reported out of Brazil.

### ***Coniopteryx* spp.**

A number of female *Coniopteryx* specimens were collected in provinces de Catamarca, de Jujuy and de Tucuman, belonging apparently to several species, but according to our present knowledge their sure identification on species level is impossible.

### ***Parasemidalis (Stangesemidalis) enriquei* sp. n.<sup>1</sup>**

Holotype: male, Argentina, Prov. De Jujuy, Dep. Ledesma, Calilegua National Park, Mesada de las Colemanas, S 23° 42.1', W 64°52.0', 1280 m a.s.l., 25. 10. 2006, at light, l.: GY. SZIRÁKI, E. HORVÁTH, E. GONZÁLEZ OLAZO, deposited in Hungarian Natural History Museum. Paratypes: 1 male, Argentina, Prov. La Rioja, Chilecito, 1-15. 1. 1969, leg.: WILLINK, TERÁN, STANGE; 3 males, Argentina, Prov. Salta, Cafayate, Yacochcha, 1950 m a.s.l., 1-15. 5. 1976, leg.: WILLINK, TERÁN, STANGE; 7 males, Argentina, Prov de Catamarca, los Nacimientos de Obajo, (collecting time ?), leg.: WILLINK, TERÁN, STANGE. Paratypes deposited in collection of Fundación Miguel Lillo, Tucuman. All the paratypes were designated earlier to paratypes of *Stangesemidalis subandina* González Olazo, 1984.

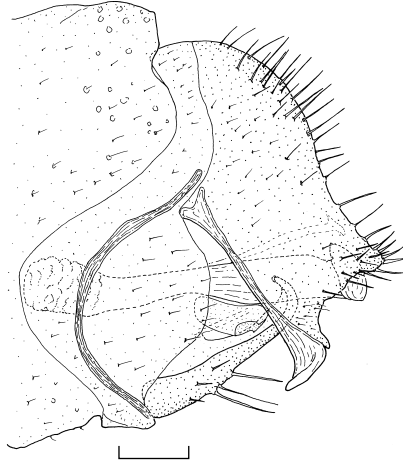
Head 1.3-1.6 times higher than long. Head capsule, palpi and scape light brown, flagellar segments medium brown, pedicel very dark brown. Eyes large, black. Antennae 1.2-1.8 mm, 30-34 segmented. Scape and median flagellar segments about as long as broad. Pedicel rather

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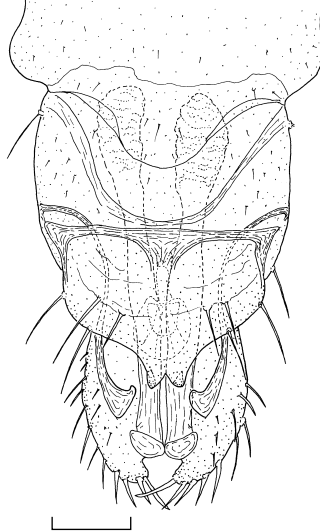
<sup>1</sup> The taxonomic status of *Stangesemidalis* González Olazo, and subgeneric division of *Parasemidalis* Enderlein are discussed below in the present paper.

variable: 1.2-1.8 times as long as broad. Shoulder spots and thoracal apodemes medium brown, sutures black, other parts of thorax light brown. Wing membrane light brown, but along the vein  $R_1$  medium brown. Majority of the veins light brown, but the longitudinal veins Sc and  $R_1$  medium brown, basal third of Sc dark brown, while the thickenings of these veins near the middle of the wing light. Length of the body 1.5-2.3 mm, of the fore wing 1.7-2.9 mm. Hind wing somewhat shorter than fore wing.

Male genitalia as Figs 28-32. Anterior apodeme of ninth segment laterally distinct, ventrally diffuse. Hypandrium strengthened by proximal, lateral, and a wide median apodemes. Caudal part of hypandrium hooked, with a deep, „v”-shaped median incision. Gonarcus narrow, but



**Fig. 28.** *Parasemidalis (S.) enriquei* sp. n. – male terminalia, lateral view



**Fig. 29.** *Parasemidalis (S.) enriquei* sp. n. – male terminalia, ventral view



strongly widened proximally. Styli bent slightly downwards and inwards, with broad, lanceolate ending. Parameres clubbed and wrinkled proximally, truncated apically. Penis moderately sclerotized, oval in lateral, rounded subtriangular, with narrow caudal part in dorsal view. Ectoproct well sclerotized; its caudal projection with several subequal bristles.

*Parasemidalis (S.) enriquei* is related closely to the two other species of the subgenus *Stangesemidalis*. The main distinctive features of the new species are:

- caudally hooked hypandrium, with deep, „v” shaped icision;
- distinct proximal, lateral, and wide median apodemes of hypandrium (in *P. (S.) subandina* proximal and median apodemes narrow, lateral ones absent);
- caudally truncated paramere in lateral view (while in *P. (S.) subandina* paramere slightly hooked and gradually widened);
- presence of several subequal bristles on the caudal projection of ectoproct (while in *P. (S.) principiae* only a single, but very strong bristle is in the same position);
- the colour of pedicel, which is much more dark than the flagellar segments (in the two other species of the subgenus the pedicel and flagellum unicolorous);
- the caudally narrowed penis.

Holotype of the species was collected in a subtropical mountain forest.

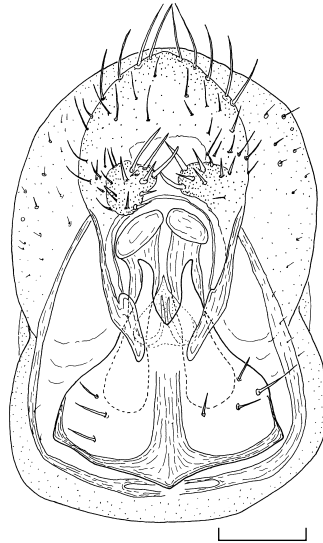


Fig. 30. *Parasemidalis (S.) enriquei* sp. n. – male terminalia, caudal view

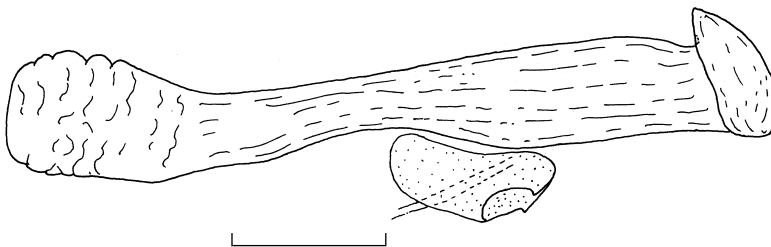


Fig. 31. *Parasemidalis (S.) enriquei* sp. n. – paramere and penis, lateral view

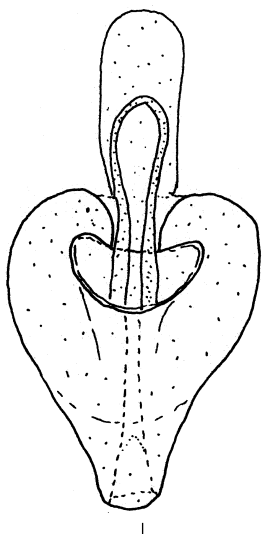


Fig. 32. *Parasemidalis (S.) enriquei* sp. n. – penis, dorsal view

Remark: Because of the caudally hooked hypandrium, with deep median incision, the truncated paramere, the caudally narrowed penis, and the several subequal bristles on the caudal projection of the ectoproct, figures 12 A-D of MEINANDER (1990) refer with high probability to *P. (S.) enriquei* and not to *P. (S.) subandina*.

Etymology: I dedicate this new species friendly to Prof. Dr. ENRIQUE GONZALEZ OLAZO, the well known neuropterologist of the Miguel Lillo Institution, Tucuman.

***Parasemidalis (Stangesemidalis) principiae* Sziráki et Greve, 2001**

Examined material: 1male, Argentina, Prov. de Salta, Alemania, bank of Rio las Conchas, S 25° 37.8', W 65° 38.4', 1225 m a.s.l., 1, 11, 2006, leg.: GY. SZIRÁKI, E. HORVÁTH, E. GONZÁLEZ OLAZO.

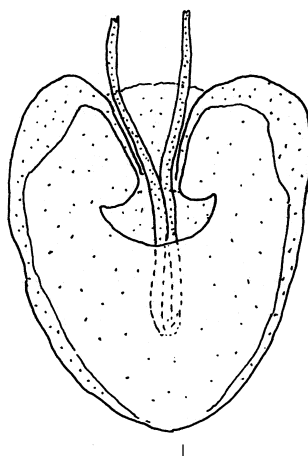


Fig. 33. *Parasemidalis (S.) principiae* – penis, dorsal view

The newly collected Argentine specimen agree entirely in all important features with the described holotype of the species from Chile. Comparing it to the holotype, the following slight alterations may be recognized: the wing membrane light brown (and not hyaline), length of antennae 1.7 mm, (somewhat longer than in holotype), and the penis somewhat more sclerotized, thus visible that it is elongated oval in lateral, and broadly rounded subtriangular in ventral view (Fig. 33). The slight alterations regarding the wing membrane and penis may be a result of the fact that now a more fresh, and perhaps more ripe specimen was examined.

The examined specimen was collected from trees along the river running in a dry semi-desert environment.

*Parasemidalis (Stangesemidalis) principiae* is new to the fauna of Argentina.

***Parasemidalis (Stangesemidalis) subandina* González Olazo, 1984**

Examined material: holotype, male, Argentina, Prov. La Rioja, Chilecito, 1-15. I. 1969, leg.: WILLINK, TERÁN, STANGE; paratypes, 6 males, same data as holotype, housed in collection of Fundación Miguel Lillo, Tucuman.

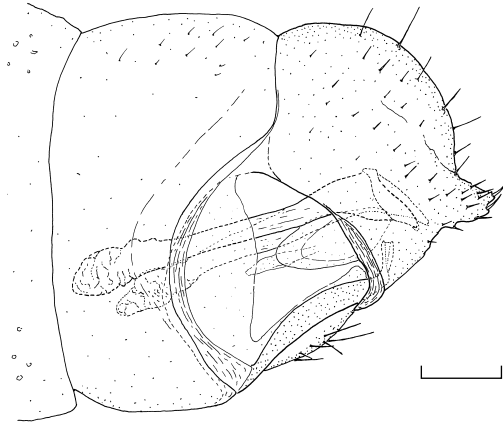


Fig. 34. *Parasemidalis (S.) subandina* – male terminalia, lateral view

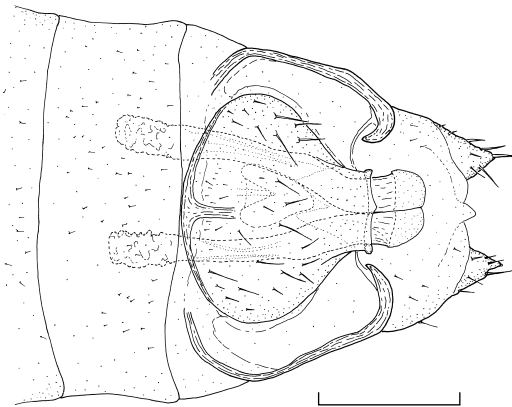
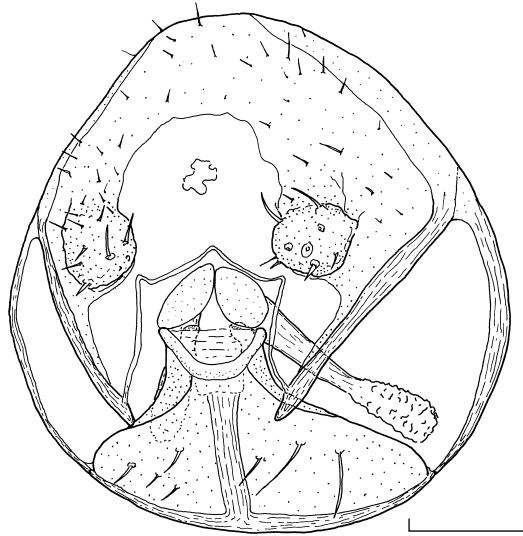
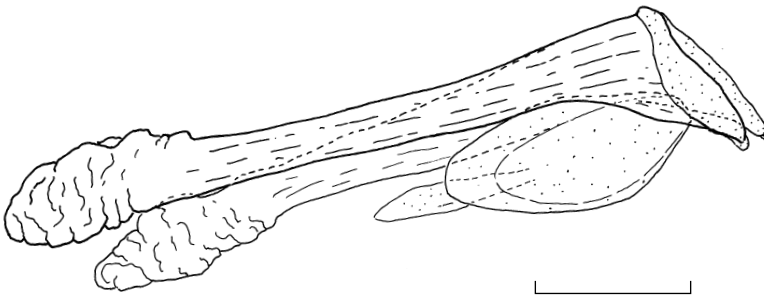


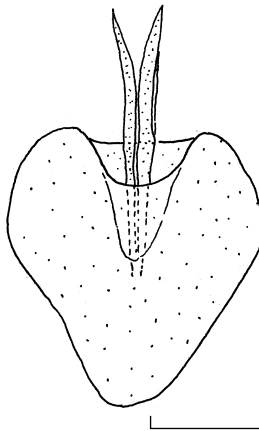
Fig. 35. *Parasemidalis (S.) subandina* – male terminalia, ventral view



**Fig. 36.** *Parasemidalis (S.) subandina* – male terminalia, caudal view



**Fig. 37.** *Parasemidalis (S.) subandina* – parameres and penis, lateral view



**Fig. 38.** *Parasemidalis (S.) subandina* – penis, dorsal view

From courtesy of Prof. ENRIQUE GONZÁLEZ OLAZO I had possibility to examine the holotype and 17 designed paratypes of the species. According to the present investigation 6 of the examined paratypes are identical with the holotype. On the basis of the holotype and the 6 paratypes regarded by me conspecific with the holotype, the following completion may be given to the description of the species:

Antennae 1.2-1.4 mm, 27-32 segmented. Flagellar segments about as long as broad, pedicel 1.3-1.7 times as long as broad. Length of the body 1.2-1.9 mm, of fore wing 1.5-2.1 mm, of hind wing 1.4-1.9 mm.

Male genitalia as Figs 34-38. Apodeme of ninth segment present only laterally. Hypandrium has an anterior, and a moderately wide median apodeme. Anterior apodeme is not continuing laterally. Caudal part of hypandrium seems to be truncated in ventral view, as its ending turned up abruptly, and – as it may be to see in caudal view – it forms a wide, „u” shaped sclerite, with a membranous plate between the lateral sides. Consequently, no distinct median incision. Proximal part of gonarcus extremely narrow in lateral view, styli bent downwards and inwards, with narrowing ending. Parameres wrinkled, and moderately clubbed proximally, while their caudal part slightly hooked, and in lateral view gradually widened ventrally. Penis elongated oval in lateral, rounded subtriangular in dorsal view. Ectoproct well sclerotized; its caudal projection with several subequal bristles.

Remark: Identity of paratype specimens are not included in present paper, as well as of the specimens, which were determined, but not figured by MEINANDER (1990), or were identified by MONSERRAT (2005) as *Stangesemidalis subandina* seems to be uncertain.

### **Taxonomic status of *Stangesemidalis* Gonzalez Olazo, 1984, and subgeneric division of the genus *Parasemidalis* Enderlein, 1905**

*Stangesemidalis subandina* was described as a new genus and new species on the basis of a rather large number of coniopterygid specimens collected in north western part of Argentina. The new genus was compared to *Semidalis* Enderlein, 1905, and separated from it on the basis of the length of the pedicel, and the structure of the male genitalia (GONZÁLEZ OLAZO 1984). MEINANDER (1990) gave an additional description of the genus *Stangesemidalis*, and figured the genitalia and wing venation of a specimen, which was regarded by him as *Stangesemidalis subandina*. In this work *Stangesemidalis* was stated to be a sister group of the Australian genus *Neosemidalis* Enderlein, 1930.

The position of the crossvein M-Cu<sub>1</sub> is an important distinctive feature of many coniopterygid genera. In the genus *Semidalis* this crossvein originates from the hind branch of M, or from the fork of M on both wings, while in *Stangesemidalis* from the stem of M, well before of fork, and bits the longitudinal veins in right angle – exactly as in all species of the genus *Parasemidalis* Enderlein, 1905. In *Neosemidalis* the crossvein M-Cu<sub>1</sub> more or less oblique, and originates from, or near to the fork of M.

An unusual feature of the wing venation of *Stangesemidalis* that the branching off of the Rs in the hind wing situated at, or before the basal 1/5 part of the wing. Within the subfamily Coniopteryginae this character status present only in some *Parasemidalis* species (*Parasemidalis alluaudina* group sensu MEINANDER 1972, and in the related *Parasemidalis principiae*) (MEINANDER 1962, Fig 3, SZIRÁKI et GREVE 2001, Fig. 1), as well as in *Incasemidalis* Meinander, 1972. (In latter case the crossvein M-Cu<sub>1</sub> is more or less oblique, and situated near to the fork of M.)

As the general structure of the male genitalia regards, in *Semidalis*, *Neosemidalis* and *Incasemidalis* the ninth abdominal tergite and sternite form an evenly sclerotized ring, while in *Stangesemidalis* – similarly to *Coniopteryx*, *Parasemidalis* and *Thecosemidalis* – the dorsal and ventral parts of ninth segment are separated. Besides, there is a distinct gonarcus + styli complex in *Stangesemidalis*, which feature shared only with *Coniopteryx* and *Parasemidalis*. (The genus *Coniopteryx* may be separate easily from all the other Coniopteryginae eidonomically because of its unforked vein M in the hind wing.)

As the female terminalia regards, presence of darkened, and somewhat more sclerotized territories on the eight abdominal tergites, and the stronger sclerotization of the eight sternite (while the other abdominal segments are without distinct sclerotization, or dark pigmentation) is characteristic feature of *Stangesemidalis*. This pattern of sclerotization of the female terminalia present only in coniopterygid species described as *Parasemidalis* (MEINANDER 1972, Fig. 185) and in *Stangesemidalis* (Fig. 39).

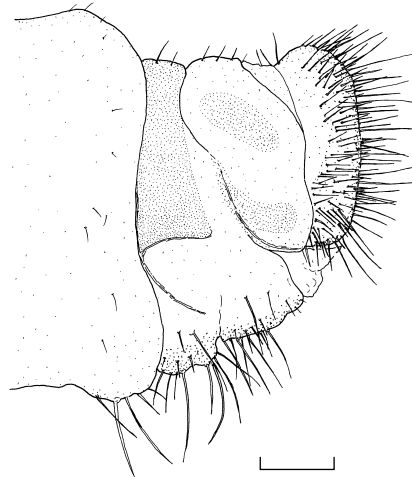


Fig. 39. *Parasemidalis (S.)* sp. – female terminalia, lateral view

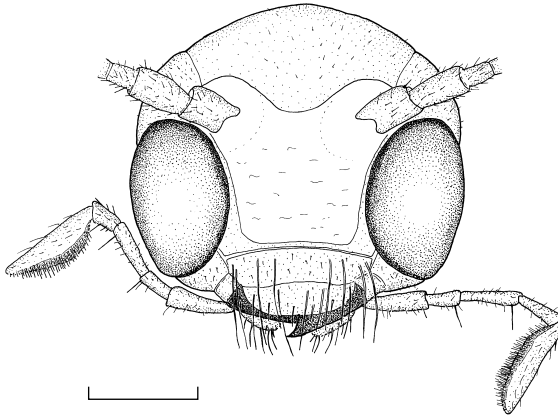


Fig. 40. *Parasemidalis (S.)* sp. – female head, frontal view

Regarding the above mentioned facts, *Stangesemidalis* clearly differs from all the other described coniopterygid genera, with the exception of *Parasemidalis*, while there is not any important eidonomical difference between *Parasemidalis* and *Stangesemidalis*. Moreover, their male genitalia and female terminalia also have the same basic features. Consequently, no reason to regard these genus group taxa as different genera.

On the other hand, the two hitherto accepted species groups of *Parasemidalis*, i. e.: the *Parasemidalis fuscipennis* group and *Parasemidalis alluaudina* group (MEINANDER 1972) differs from each other, and equally from *Stangesemidalis* species in some details of their male genitalia. As in some other coniopterygid genera (e. g.: *Helicoconis* and *Coniopteryx*) the minor differences in the structure of male genitalia serve as a base of the separation of subgenera, it seems to be reasonable to regard the two *Parasemidalis* species groups and the taxon *Stangesemidalis* as three subgenera of the genus *Parasemidalis* as below:

#### Subgenus *Parasemidalis* sensu stricto Enderlein, 1905

Head capsule about as high, or slightly higher than long. Frons of male weakly, of female strongly sclerotized. Antennae 29-34 segmented. Branching off of Rs in hind wing is about at the basal 1/3 of the wing. In male genitalia the hypandrium and the ventral part of ninth abdominal segment synsclerotized. Anterior part of paramere slender, with smooth surface. Distribution: western Palaearctic territories and North America. Species included: *Parasemidalis (Parasemidalis) fuscipennis* (Reuter, 1894), *Parasemidalis (Parasemidalis) similis* Ohm, 1986 and *Parasemidalis (Parasemidalis) triton* Meinander, 1976. Type species by original designation: *Parasemidalis annae* Enderlein, 1905.

#### Subgenus *Canarisemidalis* subgen. nov.

Head capsule much more high as long. Frons of male weakly sclerotized. Large part of the frons of female strongly sclerotized, but antennal sockets are connected by a narrow membranous strip. Antennae 41-56 segmented. Branching off of Rs in the hind wing is near to the basal 1/5 of the wing, or situated before this point. In male genitalia the hypandrium is separated from the ninth segment both laterally and ventrally. Anterior part of paramere slender, with smooth surface. Distribution: Canary Islands and northwestern part of Africa. Species included: *Parasemidalis (Canarisemidalis) alluaudina* (Navás, 1912) and *Parasemidalis (Canarisemidalis) fusca* Meinander, 1963. Type species by present designation *Parasemidalis alluaudina* (Navás, 1912).

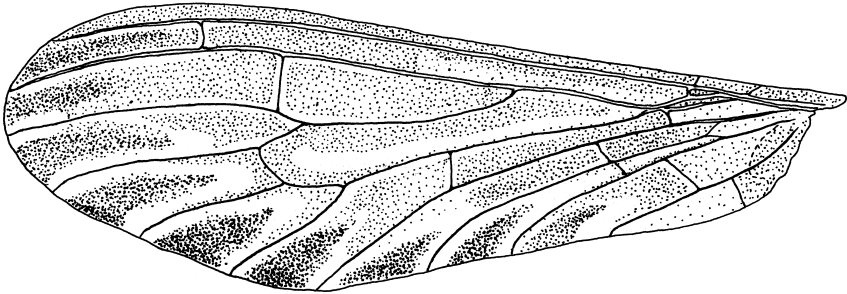
#### Subgenus *Stangesemidalis* González Olazo, 1985 (status nov.)

The ratio of the height to the length of the head capsule is variable between 1.2 and 1.7. Frons of both genders is weakly sclerotized (Fig. 40). Antennae 27-34 segmented. Branching off of Rs in the hind wing is near to the basal 1/5 of the wing, or situated before this point. In male genitalia the hypandrium is separated from the ninth segment both laterally and ventrally. Anterior part of paramere swollen, with wrinkled surface. Distribution: Argentina and Chile. Species included: *Parasemidalis (Stangesemidalis) enriquei* sp. n., *Parasemidalis (Stangesemidalis) principiae* Sziráki et Greve, 2001 and *Parasemidalis (Stangesemidalis) subandina* (González Olazo, 1985). Type species by original designation and monotypy: *Stangesemidalis subandina* González Olazo, 1984.

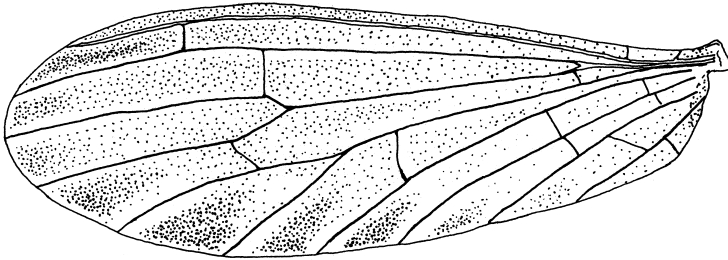
***Incasemidalis pachamama* sp. n.**

Holotype: female, Argentina, Prov. de Catamarca, El Puesta (Caspinchango), S 26° 44.2', W 65° 56.2', 2223m a.s.l., 20. 10. 2006, at light, leg.: GY. SZIRÁKI, E. HORVÁTH, S. NUÑEZ CAMPERO; deposited in collection of Fundación Miguel Lillo, Tucuman.

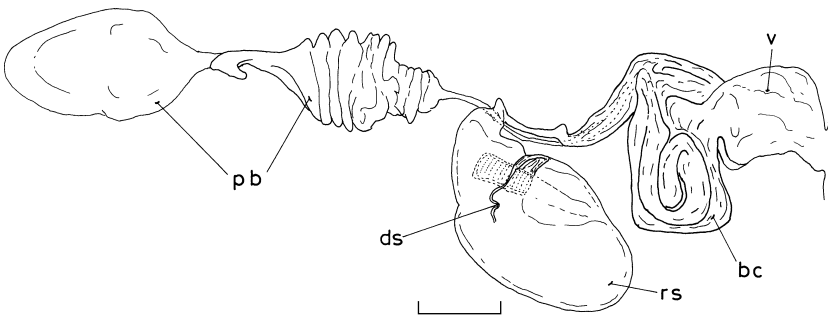
Antennae, palpi and sclerotized parts of the head capsule dark brown. Antennal sockets are very large, and connected by a broad unsclerotized belt on the frons. Antennae 2 mm, 32 segmented. Scape about as long as broad, pedicel slightly, median flagellar segments two times longer than broad. Hairs situated irregularly on the flagellar segments. Eyes moderately large, black. Sutures of head and thorax black; abdomen and most part of the thorax pale ochreous. Thoracal apodemes medium brown, shoulder spots and legs dark brown.



**Fig. 41.** *Incasemidalis pachamama* sp. n. – fore wing



**Fig. 42.** *Incasemidalis pachamama* sp. n. – hind wing



**Fig. 43.** *Incasemidalis pachamama* sp. n. – female internal genitalia



Length of the body 3.1 mm, of fore wing 3.3 mm, of hind wing 2.9 mm. Most parts of the membrane of fore wing (Fig. 41) medium brown, with elongated, proximally pointed, subtriangular dark brown spots between the endings of the longitudinal veins. Hyaline strips are along the longitudinal veins Sc-Cu<sub>2</sub>, at least at their distal parts, and also at the crossveins Sc-R<sub>1</sub>, R<sub>1</sub>-R<sub>2+3</sub>, M-Cu<sub>1</sub>, Cu<sub>1</sub>-Cu<sub>2</sub> and An<sub>1</sub>-An<sub>2</sub>. Membrane of fore wing is hyaline also proximally of most of the dark distal spots, before the stem of M, and between Cu<sub>2</sub>-An<sub>1</sub>. Hind wing (Fig. 42) has similar, but not so dark, and less distinct patterns as fore wing.

Outer parts of female terminalia same as in *Incasemidalis meinanderi* Adams, 1973, figured by MEINANDER (1990), with fused gonapophyses laterales. Female internal genitalia as Fig. 43. Vagina moderately sclerotized, and about as high as long in lateral view. Bursa copulatrix trapezoid in lateral view, strongly sclerotized, distinctly higher as long, with a whirled, vertically elongated structure. Caudal part of the duct of receptaculum seminis wide. Receptaculum seminis well sclerotized, bladder like, with a short, cylindrical, strongly sclerotized internal pumping structure situated dorsally. Ductus seminalis thin and short. Postbursal accessory gland has a long and thin duct, a moderately sclerotized, spindle-shaped median part, with transverse folds, and a weakly sclerotized, elongated bladder-like distal (anterior) part.

Because of the dark pattern of the wings *Incasemidalis pachamama* probably is close to *Incasemidalis chilensis* Meinander, 1990, which hitherto was the single species of the genus with patterned wings. The main distinctive features of the new species are:

- large part of the fore wing medium brown evenly, without a light, transverse band distally of M-Cu<sub>1</sub> crossvein, while in *I. chilensis* this band is present;
- there are light strips at the crossveins, while in *I. chilensis* distinct dark spots surrounded mostly by hyaline membrane are on R<sub>1</sub>-R<sub>2+3</sub>, R<sub>4+5</sub>-M<sub>1+2</sub> and M-Cu<sub>1</sub> crossveins of fore wing, and on R<sub>1</sub>-R<sub>2+3</sub> and R<sub>4+5</sub>-M<sub>1+2</sub> of hind wing.

The habitat at the collecting site of *I. pachamama* is a semidesert, with dry scrub near to a creek.

Etymology: Pachamama (=Earth Mother) was one of the goddess of Quechua Indians, and she is very popular even nowadays in the Andean Northwest, where the collecting site of the new species situated.

Remark: MONSERRAT (2005) determined a female(?) *Incasemidalis* specimen collected „in very bad condition” in Argentina as *I. chilensis*, exclusively „due to the fact that it also has spotted wings”. Finding of the second *Incasemidalis* species with spotted wings emphasises the uncertainty of this determination.

### ***Semidalis isabelae* Monserrat, 1981**

Examined material: 1 male, Argentina, Prov. de Jujuy, Dep. Ledesma, Calilegua National Park, Sendero la Herradura, S 23° 45.5', W64° 51.3', 605 m a.s.l., subtropical deciduous forest, 27. 10. 2006, leg.: GY. SZIRÁKI, E. HORVÁTH, E. GONZÁLEZ OLAZO; 1 male, same data, but Sendero Tataupa, S 23° 44.6', W 64° 51.2', 766 m a.s.l., 28. 10. 2006; 1 male, Argentina, Prov. de Jujuy, Dep. Ledesma, Calilegua, secondary gallery forest along Rio San Lorenzo, S 23° 47.2', W 64° 48.3', 5233 m a.s.l., 2. 11. 2006, leg.: GY. SZIRÁKI, E. HORVÁTH, E. GONZÁLEZ OLAZO.

New to the fauna of Argentina, and the first record out of Paraguay.

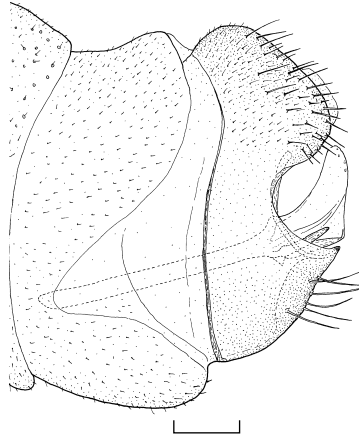
### ***Semidalis jujuyana* sp. n.**

Holotype: male, Argentina, Prov. de Jujuy, Dep. Ledesma, Calilegua National Park, Sendero la Lagunita, S 23° 45.1', W64° 51.1', 753 m a.s.l., 2. 11. 2006, leg.: GY. SZIRÁKI, E. HORVÁTH, E. GONZÁLEZ OLAZO; deposited in collection of Foundation Miguel Lillo, Tucuman. Paratype: male, Argentina, Prov. de Jujuy, Dep. Ledesma, Calilegua, on the bank of Rio San Lorenzo, S 23° 47.2', W64° 48.3', 753 m a.s.l., 2. 11. 2008, leg.: GY. SZIRÁKI, E. HORVÁTH, E. GONZÁLEZ OLAZO; deposited in Hungarian Natural History Museum, Budapest.

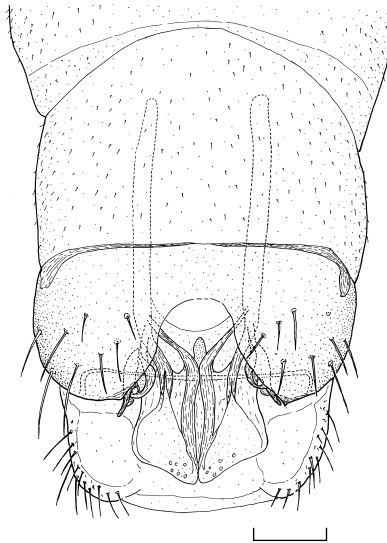
Length of the body 1.6-2.0 mm. Structure of the head capsule and palpi normal, their colour light brown. Eyes large, black. Antennae 2.0 mm, 41 segmented. Scape 1.3 times as long as broad, light brown; pedicel 1.8 times as long as broad, dark brown. Large part of flagellum dark brown also, but apically lightened gradually. Median flagellar segments about as long as broad. Hairs of the flagellar segments in two dense whorls.

Abdomen and large part of thorax pale ochreous. Thoracal apodemes light brown, sutures and dorsal part of pterothorax dark brown. Legs and veins of the wings light brown, wing membrane hyaline. Length of the fore wing 2.5-2.8 mm, of hind wing 1.8-2.0 mm.

Male genitalia as Figs 44-47. Ectoproct short, without any process. Hypandrium higher than long, with a pair of small, strongly sclerotized rim caudally. The two sides of hypandrium



**Fig. 44.** *Semidalis jujuyana* sp. n. – male terminalia, lateral view



**Fig. 45.** *Semidalis jujuyana* sp. n. – male terminalia, ventral view

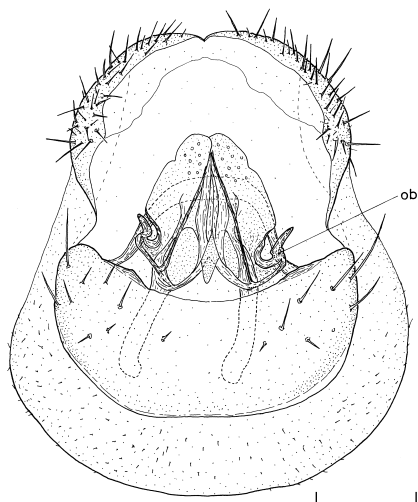


Fig. 46. *Semidalis jujuyana* sp. n. – male terminalia, caudal view

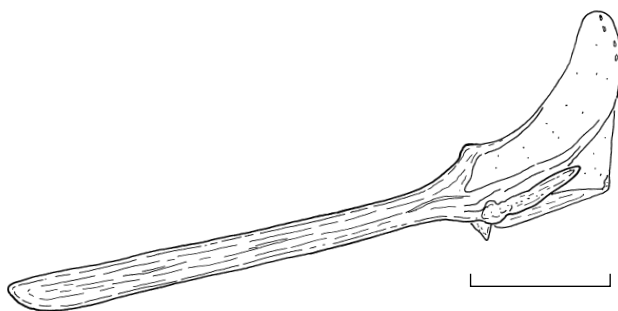


Fig. 47. *Semidalis jujuyana* sp. n. – paramere, lateral view

connected to each other by a dorsal arch above parameres. Parameres long and slender. Processus apicalis forked; the larger inner branch blunt, weakly sclerotized and curved upwards, the smaller outer branch has a strongly sclerotized caudal tooth. No distinct uncini, but the two parameres are connected ventrally by a fascicle of caudally acute sclerites.

Because of the short ectoproct without any process, the absence of the distinct uncini, the long and slender paramere, the similarity between the inner branch of processus apicalis of the new species and of *Semidalis peruviansis* Meinander, 1974, *Semidalis jujuyana* resembles the latter species.

The main distinctive features of the new species are:

- the forked processus apicalis of paramere, in which the outer branch has a caudal tooth;
- presence of a connecting arch between the two sides of hypandrium dorsally of parameres;
- absence of a short transverse rod at the proximal end of the paramere, which is present in *S. peruviansis*.

The holotype of *Semidalis jujuyana* was collected in subtropical deciduous forest, while paratype in a secondary gallery forest, with dense bush layer.

***Semidalis maculosus* sp. n.**

Holotype: male, Argentina, Prov. de Jujuy, Dep. Ledesma, Calilegua National Park, Sendero Tataupa, S 23° 44.6', W 64° 51.2', 753 m a.s.l., 28. 10. 2006, leg.: Gy. SZIRÁKI, E. HORVÁTH, E. GONZÁLEZ OLAZO; deposited in collection of Fundación Miguel Lillo, Tucuman. Paratypes: 4 males, same data as holotype, 2 males, Argentina, Prov de Jujuy, Dep. Ledesma, Calilegua National Park, Sendero Tataupa, S 23° 44.6', W 64° 51.2', 766 m a.s.l., 27. 10. 2006, leg.: Gy. SZIRÁKI, E. HORVÁTH, E. GONZÁLEZ OLAZO, 1 male, Argentina, Prov de Jujuy, Dep. Ledesma, Calilegua National Park, Sendero la Junta, S 23° 44.3', W 64° 51.1', 770 m a.s.l., 5. 11. 2006, leg.: Gy. SZIRÁKI, E. HORVÁTH, E. GONZÁLEZ OLAZO. Paratypes are deposited in collection of Fundación Miguel Lillo, Tucuman and in Hungarian Natural History Museum, Budapest.

Length of the body 1.8-2.0 mm. Structure of the head capsule and palpi normal, their colour medium brown. Eyes rather large, black. Antennae 1.6-2.0 mm, 33-37 segmented, bent downwards between scape and pedicel. Scape, pedicel and large part of flagellum dark brown, while the apical part of antennae lightened gradually. Scape and median flagellar segments are about as long as broad, pedicel 1.3-1.5 times longer than broad. Most of the hairs on the flagellar segments arranged in two whorls, but some of them situated between these whorls irregularly.

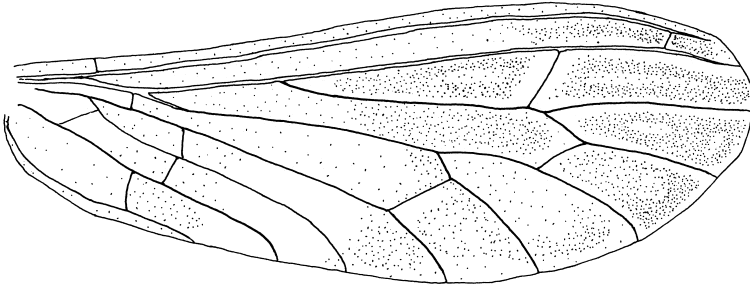


Fig. 48. *Semidalis maculosus* sp. n. – fore wing

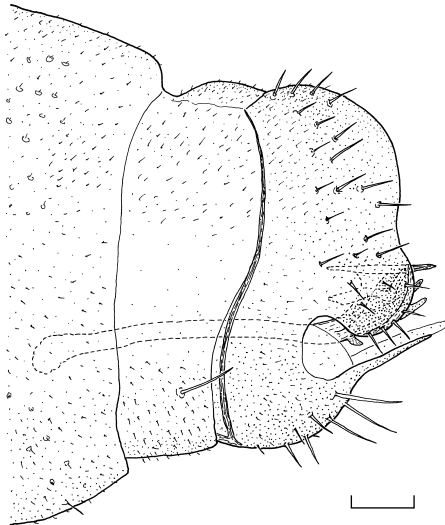


Fig. 49. *Semidalis maculosus* sp. n. – male terminalia, lateral view

Thorax light brown laterally and ventrally, rather dark brown dorsally. Legs and thoracal apodemes light brown, sutures dark brown, Membrane of fore wing, with large, distinct, fuscous territories between the veins distally, and – in some cases – with light spots in some of these dark fields (Fig. 48). However, the pattern of the fore wing may be rather indistinct in some specimens. Membrane of hind wing dark brown, veins of both wings light brown. Length of the fore wing 2.3-2.8 mm, of hind wing 1.8-2.3 mm.

Male terminalia as figs 49-53. Sternite of the eight abdominal segment has a pair of unusual, long bristles. Ectoproct short, without any process, however, there is a broad apodeme in its inner side. Hypandrium longer than high; its caudal part thin and acute in lateral view. Paramere long and slender, having a clubbed proximal end with granular surface. Processus apicalis forked. One of its branches directed caudally and bent upwards moderately only, while the other consists of a stem directed upwards, and of an acute, horizontal stick. There is a separate sclerite laterally of the processus apicalis, which sinuous in lateral, curved in ventral view, and shortly bifid caudally. The caudal part of the two parameres are connected ventrally by a medial sclerite, with two acute endings.

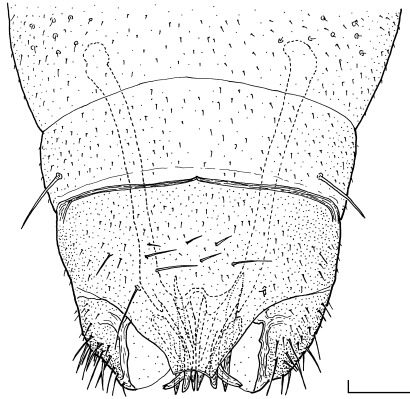


Fig. 50. *Semidalis maculosus* sp. n. – male terminalia, ventral view

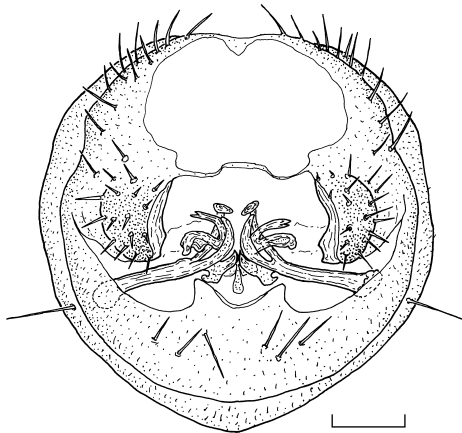


Fig. 51. *Semidalis maculosus* sp. n. – male terminalia, caudal view

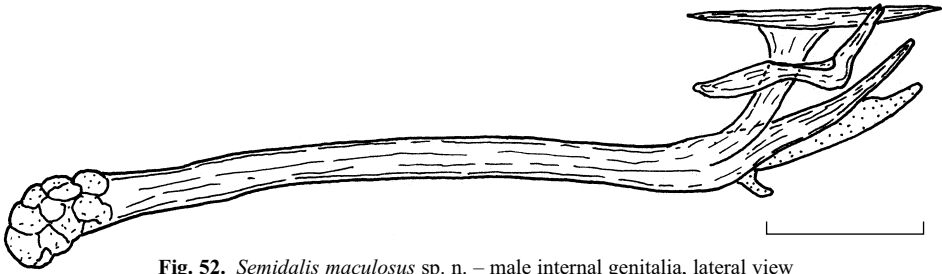


Fig. 52. *Semidalis maculosus* sp. n. – male internal genitalia, lateral view

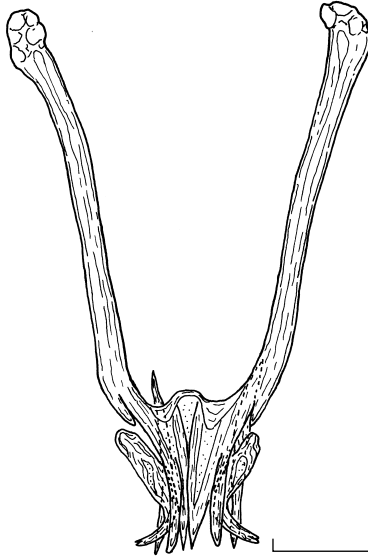


Fig. 53. *Semidalis maculosus* sp. n. – male internal genitalia, ventral view

On the basis of the structure of male genitalia *Semidalis maculosus* belongs to the *Semidalis boliviensis* species group. Because of the forked processus apicalis, the presence of a ventro-medial connecting sclerite, with two acute caudal endings between the parameres, as well as the curved, caudally bifid lateral sclerite in the internal genitalia, and the distinct inner apodeme of the ectoproct it is similar to *Semidalis amazonica* Meinander, 1980.

The main distinctive features of the new species are:

- the elongated, in lateral view acute terminal process of hypandrium;
- the unique structure of the dorsal branch of processus apicalis in the paramere;
- the unusual presence of a pair of long bristles on the eight abdominal sternite.

All specimens of the type material were collected in subtropical deciduous forest.

### ***Semidalis normani* Meinander, 1982**

Examined material: 1 male, Argentina, Prov. de Jujuy, Dep. Ledesma, Calilegua National Park, Sendero Tataupa, S 23° 44.6', W 64° 51.2', 766 m a.s.l., subtropical deciduous forest, 28. 10. 2006, leg.: GY. SZIRÁKI, E. HORVÁTH, E. GONZÁLEZ OLAZO.

New to the fauna of Argentina and first record out of Brasil.

## ***Semidalis* spp.**

A number of female *Semidalis* specimens were collected in provinces de Jujuy and de Tucuman, belonging apparently to several species, but according to our present knowledge their sure identification on species level is impossible.

**Abbreviations:** abs = anterior branch of stylus; bc = bursa copulatrix; ds = ductus seminalis; e = ectoproct; g = gonarcus; hy = hypandrium; hyt = transverse internal plate of hypandrium, i = internal projection of gonarcus; ob = outer branch of processus apicalis of paramere; pa = paramere; pb = postbursal accessory gland; pbs = posterior branch of stylus; pe = penis; pra = processus apicalis of paramere; prd = dorsal projection of paramere; pt = processus terminalis of hypandrium; rs = receptaculum seminis; s = stylus; v = vagina

Scale = 0.13 mm in Fig. 40; = 0.07 mm in Figs 1-10, 28-31, 34-37, 39; = 0.04 mm in Figs 11-27, 32-33, 38, 43-47, 49-53

**Acknowledgements:** The author is indebted to Prof. Dr. ENRIQUE GONZÁLEZ OLAZO (Fundation Miguel Lillo, Tucuman) and Dr. AUGUSTO HENRIQUE (Instituto Nacional de Pesquisas de Amazonia, Manaus) for letting investigate the material belonging to their institute, to Ledesma Company (Argentina), and personally to Ing. SANTIAGO GLENCROS for the support of our work in Calilegua National Park, and again to E. GONZÁLEZ OLAZO for his friendly cooperation in the organizing of our study tour and collecting trip in Argentina. The study was financially supported by the National Scientific Research Fund of Hungary (OTKA) No. T-049130.

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