

UNIVERSIDAD NACIONAL DE TUCUMAN  
FUNDACION E INSTITUTO MIGUEL LILLO

ACTA ZOOLOGICA LILLOANA

TOMO XXV: 5

H. E. EVANS - THE GENUS PSEUDISOBRACHIUM IN ARGENTINA AND CHILE

(págs. 43-66 - 1 fig.)

TUCUMAN  
REPUBLICA ARGENTINA

1969

# THE GENUS PSEUDISOBRACHIUM IN ARGENTINA AND CHILE (Hymenoptera, Bethyilidae) (\*)

by HOWARD E. EVANS

## SUMMARY

El género *Pseudisobrachium* en Argentina y Chile.- El autor describe como nuevas en base a ejemplares machos, las siguientes especies: *tridens*, *ternarium*, *corvinum*, *fusicornis*, *concinnum*, *pauxillum*, *stangei*, *complanatum*, *breviceps*, *tucumanum*, *retusum* y *deplanatum*, todas de la vecindad de la ciudad de San Miguel de Tucumán, *illipum* de la provincia de Catamarca y *chilense* de la provincia de Santiago, en Chile. Hay una clave para las especies del género hasta ahora conocidas de los dos países.

In my Synopsis of the American Bethyilidae (1964, Bull. Mus. Comp. Zool. Harv. 132: 1 - 222) I reported only one species of *Pseudisobrachium* from Argentina from the male sex (three from the female) and none at all from Chile. The recent use of Malaise traps in these countries has uncovered a whole new and rich fauna of these small and poorly understood wasps. The present paper is based on material from several sources, but by far the greater part of it was taken by Lionel Stange in Malaise traps in the province of Tucumán, Argentina. Dr. Stange took 16 species in these traps, and I include two additional species from other sources as well as a single Chilean species taken by Stange in a Malaise trap in Santiago province, Chile, making a total of 19 species. All of these are known from males only, the females in this genus being wingless and hypogaedic, so different from the males that it is necessary for the present to use a separate set of species names.

Fourteen of the nineteen species appear to be new. One was previously described from Brazil, one from Peru, one from Bolivia, one from Panama, and one from Argentina. It is likely that numerous other species will be found to occur in Argentina and possibly in Chile. In addition to a key of species I have also included a tabular summary of some of the more important characters.

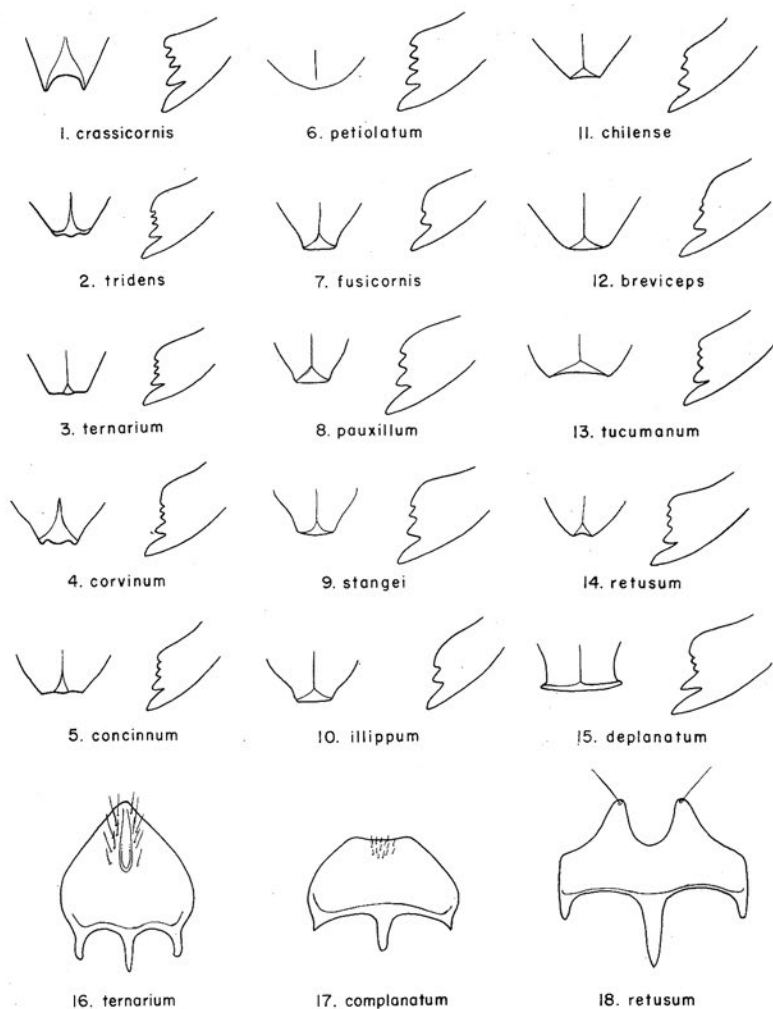
(\*) Part of a taxonomic survey of the American Bethyilidae, supported by a grant from the National Science Foundation, No GB - 1544.

A discussion of the structure and terminology employed will be found in my treatment of the North America *Pseudisobrachium* (1961, Bull. Mus. comp. Zool. Harvard 126: 211 - 318) and in the 1964 Synopsis cited earlier. The abbreviations used are listed again here for the sake of ready reference:

- DAO: diameter of anterior ocellus (transversely)  
HE: height of eye (maximum, lateral view)  
LFW: length of fore wing  
LH: length of head (full frontal view, including clypeus but not mouth parts)  
OOL: ocello - ocular line (minimum distance between lateral ocelli and nearest eye margin)  
WF: width of front (at minimum point, between eyes)  
WH: width of head (full frontal view, including eyes)  
WOT: width of ocellar triangle (including lateral ocelli)

The bulk of the material discussed in this paper is in the collections of the Museum of Comparative Zoology and the Instituto Miguel Lillo, but in some cases parts of series have been distributed to other museums. These museums are abbreviated as follows:

- CAS: California Academy of Sciences, San Francisco, Calif., U.S.A.  
IML: Instituto Miguel Lillo, Universidad Nacional de Tucumán, Argentina.  
MCZ: Museum of Comparative Zoology, Harvard University, Cambridge, Mass., U.S.A.  
MNCN: Museo Nacional de Ciencias Naturales, Buenos Aires, Argentina.  
USNM: United States National Museum, Washington, D.C., U.S.A.



Figs. 1 - 15. Clypeus and mandibles of selected species of *Pseudisobrachium* (males)  
 Figs. 16 - 18. Subgenital plate of selected species of *Pseudisobrachium* (males) (ventral aspect).

## KEY TO SPECIES

1. Clypeus with two sharp processes between which the margin is strongly concave (fig. 1); mesoscutum highly polished, non-alutaceous, the few punctures crowded along the notauli and parapsidal furrows . . . . . 1. *crassicornis* Westwood  
 Clypeus of various forms but without sharp lateral prongs; mesoscutum with the punctures not crowded along the notauli and parapsidal furrows . . . . . 2
2. Clypeus with a small median protuberance and prominent lateral angles, thus somewhat tridentate (figs. 2, 4); mandibles with five teeth . . . . . 3  
 Clypeus not of this form, truncate, rounded, or emarginate apically; mandibles with 3, 4, or 5 teeth (clypeus sometimes weakly produced in *stangei*, a species with 4-toothed mandibles) . . . . . 7
3. Head strongly narrowed behind the very prominent eyes, the vertex crest sharp, the crest a continuation of the occipital carina; ocelli enlarged, DAO about .20 x WF; scutellar groove unusually broad . . . . . 6. *concinnum* n. sp.  
 Head not strongly narrowed immediately behind the eyes, the vertex very broad and without a sharp crest; ocelli small . . . . . 4
4. Head and thoracic dorsum strongly polished, non-alutaceous; antennae smooth, the flagellar pubescence very short, subappressed; LFW at least 3.8 mm . . . . . 5  
 Head and thoracic dorsum dull, alutaceous; antennae roughened by coarse, semierect flagellar pubescence; LFW 2.9 - 3.7 mm . . . . . 6
5. Flagellum dull ferruginous; tibiae and tarsi light brown; front somewhat sparsely punctate; vertex forming a broad arc above eye tops . . . . . 5. *steinbachi* Evans  
 Flagellum very dark brown; tibiae fuscous; front with a great number of rather close punctures; sides of head subparallel behind eyes, then abruptly rounded to weakly arched vertex . . . . . 4. *corvinum* n. sp.
6. Legs bright testaceous beyond coxae; head roundly contracted behind eyes; clypeus weakly tridentate . . . . . 3. *ternarium* n. sp.  
 Femora dark brown, tibiae and tarsi light to medium brown; sides of head subparallel behind eyes, then abruptly rounded to a weakly arched vertex; clypeus more tridentate . . . . . 2. *tridens* n. sp.
7. Clypeus with the median lobe rather broadly, evenly rounded (fig. 6); abdomen with a rather long petiole; discoidal vein arising about half way down on transverse vein . . . . . 7. *petiolatum* Evans  
 Clypeus not of this form, truncate or somewhat emarginate; abdomen not petiolate; discoidal vein not arising far down, or absent . . . . . 8

8. Clypeus with an unusually broad median lobe, the lateral angles of which are less than a right angle (fig. 15) . . . . . 9  
     Clypeus with a much smaller median lobe, the sides of which approach to a narrowly truncate or concave margin (figs. 9, 14) . . . . . 10
9. Legs entirely straw-colored, including coxae; ocelli slightly enlarged; subgenital plate with a median signum (as in fig. 16) . . . . . 18. *deplanatum* n. sp.  
     Legs brownish; ocelli very small; subgenital plate simple, without a median signum . . . . . 19. *porteri* Evans
10. Clypeus notched or arcuately emarginate apically (figs. 13, 14); mandibles with five teeth . . . . . 11  
     Clypeus truncate or gently rounded apically (figs. 11, 12); mandibles with three mandibles with three or four teeth (occasionally five in *pauxillum*) . . . . . 12
11. Clypeus tapering to a narrow apex, which is notched (fig. 14); occipital carina complete; propodeum without a median carina which stands out from other longitudinal carinae . . . . . 17. *retusum* n. sp.  
     Clypeus with a broad, shallowly emarginate apex (fig. 13); occipital carina absent dorsally; propodeum with a well differentiated median carina . . . . 16. *tucumanum* n. sp.
12. Head unusually broad and short, WH more than 1.15 X LH; apical margin of clypeus weakly convex (fig. 12); notauli complete . . . . . 15. *breviceps* n. sp.  
     Head at least as high as wide, WH .88 - 1.00 X LH . . . . . 13
13. Occipital carina complete; median carina of propodeum absent or unusually short . . . 14  
     Occipital carina absent dorsally; propodeum with a median carina which extends nearly to edge of declivity . . . . . 15
14. Notauli complete; propodeum with a short median carina; wing veins colorless; head much longer than wide; antennae relatively short and thick; segment eleven less than twice as long as wide . . . . . 13. *complanatum* n. sp.  
     Notauli very short; propodeum without a median carina, merely depressed and alutaceous medially; head subcircular, barely longer than wide; antennae unusually slender; segment eleven about 3 X as long as wide . . . . . 14. *chilense* n. sp.
15. Ocelli greatly enlarged, DAO at least .18 X WF; OOL much less than WOT . . . . . 16  
     Ocelli of normal size, DAO at most .15 X WF; OOL much greater than WOT . . . . 17
16. Antennae smooth, the flagellar pubescence short and subappressed; ocelli very large, DAO .27 - .30 X WF; OOL .40 - .50 X WOT . . . . . 12. *illipum* n. sp.  
     Antennae rough in appearance, the flagellar pubescence coarse, semierect; ocelli of moderate size, DAO .18 - .26 X WF; OOL .60 - .85 X WOT . . . 11. *argenticum* Evans
17. Mandibles with three teeth (fig. 7); antennae stout, narrowly fusiform, segment

three about 1.3 X as long as wide, segments 4 - 12 barely if at all longer than wide; flagellum light ferruginous ..... 8. *fuscicornis* n. sp.  
 Mandibles with four teeth (rarely 5); antennae more slender, segment three at least 1.7 X as long as wide, following segments distinctly longer than wide .. 18

18. LFW 1.8 - 2.7 mm; coxae and femora brownish; antennal segment eleven about 1.2 X as long as wide ..... 9. *pauxillum* n. sp.  
 LFW 3.0 - 3.8 mm; legs wholly straw - colored; antennal segment eleven 1.5 - 1.8 X as long as wide ..... 10. *stangei* n. sp.

### 1. *Pseudisobranchium crassicornis* (Westwood)

I redescribed this species from the type in 1964. Evidently it is widely distributed in South America, as I have seen specimens from Surinam, Brazil (Amazonas, Mato Grosso), Ecuador, Peru, and extreme northern Argentina. Argentinian males are slightly smaller than the type (LFW about 4 mm) and have the ocelli less far removed from the eye tops (OOL 1,15 - 1,40 X WOT), but they are otherwise very similar indeed. This is a highly distinctive species, although related to *coxalis* (Cameron), described from Panama. (See fig. 1).

*Argentinian specimens examined.*- 2 ♂♂, Orán, Abra Grande, Salta, 29 January - 7 February 1967 (R. Golbach) [IML].

### 2. *Pseudisobranchium tridens* new species

*Holotype.*- ♂, ARGENTINA: Horco Molle, San Javier Mts., Tucuman, 15 - 21 May 1966 (L. Stange) [IML].

*Description of the type.*- Length 4.5 mm; LFW 3.5 mm. Head and thorax black, abdomen piceous, irregularly stained with light brown; apical half of mandibles testaceous, the teeth dark red; scape fuscous, flagellum dark brown; front coxae black, other coxae and all femora dark brown, tibiae and tarsi medium brown; wings subhyaline, with dark setulae, veins and stigma dark brown. Mandibles 5-toothed, third and fourth teeth small, basal tooth broad; clypeus with a broad median lobe possessing three rounded apical teeth, the median tooth the strongest (fig. 2). First four antennal segments in a ratio of about 24 : 5 : 12 : 10, segment three twice as long as wide, segment eleven 1.4 X as long as wide; flagellar pubescence coarse, subappressed, the flagellum also with a few short erect setae and scattered elongate sensoria. Eyes strongly hairy, protruding slightly from sides of head; distance from eye tops to vertex crest subequal to HE, the vertex very broadly rounded; WH .92 X LH; front broad, WF 1.6 X HE; ocelli not enlarged, in a compact triangle, front angle less than a right angle, OOL 1.4 X WOT; anterior ocellus located slightly above level of eye

tops, posterior ocelli far below vertex crest. Front dull, strongly alutaceous, punctures strong although shallow, separated for the most part by about their own diameters. Thoracic dorsum alutaceous and punctate like the front except center of scutellar disc more shining; notauli linear, present on anterior .4 of mesoscutum; propodeum short, 1.3 X as long as wide, median carina reaching almost to edge of declivity, disc reticulate toward base, elsewhere irregularly transversely striate. Mesopleurum coarsely punctate except callus smooth and shining. Fore wing with the discoidal cell weakly outlined by pigmented streaks. Abdomen broad, depressed; subgenital plate truncate, with a weak median signum; genitalia with the aedoeagus and the two arms of the parameres rather slender.

*Paratypes.*- ARGENTINA: 112 ♂♂, same data as type except various dates, Jan., March - July 1966, 1967 (L. Stange) [CAS, IML, MCZ, MNCN, USNM], 1 ♂, Horco Molle, Tucumán, 25 March - 30 Apr. 1966 (C. C. Porter) [MCZ], 1 ♂, Amaicha del Valle, Tucumán, 9 March 1966 (Porter, Garcia) [MCZ]; 2 ♂♂, Orán, Abra Grande, Salta, 29 Jan. - 7 Feb. 1967 (R. Golbach) [IML].

*Variation.*- The 116 paratypes show little variation in color and only a moderate amount of size variation (LFW 2.6 - 3.7 mm). WH varies from .88 to .94 X LH, WF from 1.5 to 1.7 X HE, OOL from 1.4 to 1.7 X WOT. In some specimens the propodeum is somewhat longer than in the type, measuring up to 1.5 X as long as wide.

*Remarks.*- The species has many features in common with Kieffer's species *distans* and *brasiliense*; the mandibles and clypeus being especially similar, *P. tridens* has darker legs and antennae, somewhat shorter antennae, and a generally more strongly punctate head and thorax.

### 3. *Pseudisobranchium ternarium* new species

*Holotype.*- ♂, ARGENTINA: Horco Molle, Tucumán, 3 - 10 April 1966 (L. Stange) [IML].

*Description of type.*- Length 4.0 mm; LFW 3.1 mm. Head and thorax black; abdomen castaneous, first two tergites bordered with testaceous, venter light brown, genitalia straw-colored; mandibles testaceous except base fuscous, teeth dark rufous; scape dark brown, second segment testaceous, remainder of antenna dull brown; legs bright testaceous except front and hind coxae brown, middle coxae weakly suffused with brown; wings hyaline, with dark setulae, veins and stigma brown. Mandibles with five teeth in a nearly straight series; clypeus truncate, the apical margin thickened, polished, indistinctly tridentate



(fig. 3). First four antennal segments in a ratio of about 19 : 5 : 10 : 9, segment three twice as long as wide, segment eleven 1.7 X as long as wide; flagellar pubescence coarse, subappressed, the flagellum also with numerous fully erect setulae, some of them about two-thirds the width of the flagellum, as well as numerous elongate sensoria. Eyes small, strongly hairy, bulging from sides of head; head roundly narrowed behind eyes, distance from eye tops to vertex crest subequal to HE; WH .96 X LH; WF 1.4 X HE; ocellar triangle compact, front angle less than a right angle, situated slightly above level of eye tops, well below vertex crest; ocelli barely enlarged, DAO about .15 X WF; OOL 1.3 X WOT. Front strongly alutaceous, dull, punctures shallow, separated by 1 - 2 X their own diameters. Thoracic dorsum alutaceous and punctate like the front; notauli impressed only on anterior .2 of mesoscutum; propodeum elongate, 1.5 X as long as wide, median carina almost reaching crest of declivity, disc otherwise irregularly reticulate, side-pieces striolate. Mesopleurum coarsely punctate anteriorly, the callus shining, weakly alutaceous. Fore wing with the discoidal cell weakly outlined by pigmented streaks. Subgenital plate narrowly rounded apically, with a strong median signum (fig. 16); genitalia as in preceding species.

*Paratypes.* - ARGENTINA: 22 ♂♂, same data as type except various dates in Jan., March - June, 1966, 1967 (L. Stange) [IML, MCZ, MNCN, USNM]; 1 ♂, La Solidar, 11 km W of Las Cejas, Tucumán, 13 - 27 May 1967 (L. Stange) [IML].

*Variation.* - The paratypes show no important color variation and vary only slightly in size (LFW 2.9 - 3.7 mm). WH varies from .92 to .97 X LH, WF from 1.4 to 1.5 X HE, OOL from 1.3 to 1.55 X WOT. In some specimens the tridentate condition of the apical margin of the clypeus is barely perceptible.

*Remarks.* - This species differs from *tridens* in having the legs of much paler coloration, the propodeum more elongate, the head roundly contracted behind the eyes. It differs from *distans* Kieffer in having the coxae partially infuscated, the front more distinctly punctate, the clypeus more narrowly truncate apically.

#### 4. *Pseudisobrachium corvinum* new species

*Holotype.* - ♂, ARGENTINA: La Solidar, 11 km of Las Cejas, Tucumán, 15 Jan. - 14 Feb. 1967 (L. Stange) [IML].

*Description of type.* - Length 5.5 mm; LFW 4.5 mm. Black, except first two abdominal segments streaked with brown laterally; apical third of mandibles testaceous, the teeth rufous; broad, measuring 1.25 X as long as wide, median carina strong, disc otherwise with strong reticulations; side-pieces polished and weakly sculptured. Mesopleurum strongly punctate except on the large, strongly

polished callus. Discoidal vein of fore wing a strongly pigmented streak. Subgenital plate rounded apically, with a weak signum; aedoeagus somewhat broadened apically.

*Paratypes*.- ARGENTINA: 5 ♂♂, same data as type except dated Dec. 1966 and March 1967 (L. Stange) [IML, MCZ]; 1 ♂, Horco Molle, Tucumán, 4 - 12 Jan. 1966 (L. Stange) [IML].

*Variation*.- The six paratypes are all very darkly colored like the type. LFW varies from 3.8 to 4.7 mm, WF from 1.5 to 1.6 X HE, OOL from 1.2 to 1.3 X WOT.

### 5. *Pseudisobrachium steinbachi* Evans, 1966

This species has been known from Santa Cruz, Bolivia, and Sao Paulo, Brazil. One specimen from Tucumán appears to belong to this species. Unlike the type (but like some of the paratypes) the head is higher than wide (WH .92 X LH) and the ocellar triangle well removed from the eyes (OOL 1.25 X WOT). This species is very similar to *corvinum*, but differs in having the antennal flagellum dull ferruginous instead of dark brown, the tibiae and tarsi light brown, the sides of the head more rounded behind the eyes, and the front much more weakly and sparsely punctate.

*Argentinian specimen examined*.- 1 ♂, Villa Nougues, Tucumán, 22 - 24 March (C. C. Porter) [MCZ].

### 6. *Pseudisobrachium concinnum* new species

*Holotype*.- ♂, ARGENTINA: Horco Molle, San Xavier Mts., Tucumán, 4 - 12 Jan. 1966 (L. Stange) [IML].

*Description of type*.- Length 4.5 mm; LFW 3.8 mm. Head black, except clypeus ferruginous; thorax ferruginous, irregularly blotched with fuscous, especially ventrally; propodeum dark castaneous; abdomen light ferruginous, center of first tergite black, sides of other tergites somewhat infuscated; mandibles largely testaceous; antennae medium brown, segments 2 - 4 and apex of scape somewhat paler; legs entirely testaceous; wings subhyaline, with brown veins and stigma. Mandibles with 5 teeth; clypeus with a weak, rounded median prominence on each side of which it is slightly notched, the margin thus weakly tridentate (fig. 5). First four antennal segments in a ratio of about 25 : 7 : 13 : 10, segment three 3 X as long as wide, segment eleven 2.3 X as long as wide; flagellar pubescence moderately coarse, semierect. Eyes unusually prominent, the sides of the head contracted immediately behind the eyes to a very narrowly rounded vertex;

distance from eye tops to vertex crest subequal to eye height. WH .95 X LH; WF 1.25 X HE; ocelli in a compact triangle slightly above level of eye tops, well below top of vertex; ocelli somewhat enlarged, DAO .20 X WF; OOL and WOT subequal. Vertex crest sharp, subcarinate, the ridge continued laterally and ventrally as the occipital carina. Front alutaceous, weakly shining, with small, shallow punctures. Thoracic dorsum also alutaceous and weakly punctate; notauli weakly impressed on anterior .4 of mesoscutum; scutellar groove very wide, only 3 X as long (in a transverse direction) as wide. Propodeum elongate, about 1.7 X as long as wide, median carina reaching nearly to edge of declivity. Mesopleurum alutaceous, except the callus barely so. Discoidal vein well developed, arising well down on transverse median vein. Abdomen depressed. subgenital plate rounded apically, without a signum.

*Paratypes*.- 6 ♂♂, same data as type, but some dated April, May 1966 and March 1967 (L. Stange [IML, MCZ]).

*Variation*.- LFW varies from 2.9 to 3.9 mm. There is little variation in sculpture or standard measurements, but considerable color variation. In the smaller specimens the thorax is mostly infuscated, only the pro- and mesonota being ferruginous: in these specimens, also, the front coxae are brownish and the abdomen slightly darker than in the type.

*Remarks*.- This species has many features in common with *elegantulum* Ogloblin, described from Sao Paulo, Brazil, but it lacks well - defined carinae above the propodeal spiracles and has longer notauli.

## 7. *Pseudisobrachium petiolatum* Evans

I described this unusual species from Panama in 1961, then recorded it from Ecuador in 1966. Six Argentinian males appear to belong to this species, agreeing well with the type except for consistently larger size (LFW 2.4 - 3.0mm), complete notauli, and very slender antennae (third segment about 3 X as long as wide). The mandibles and clypeus are shown in fig. 6.

*Argentinian specimens examined*.- 6 ♂♂, Horco Molle, Tucumán, April - July 1966 (L. Stange) [IML, MCZ].

## 8. *Pseudisobrachium fusicornis* new species

*Holotype*.- ♂, ARGENTINA: Horco Molle, San Xavier Mts., Tucumán, 4 - 12 Jan. 1966 (L. Stange) [IML].

*Description of type*.- Length 4.0 mm; LFW 3.1 mm. Head and thorax black, abdomen dark castaneous suffused with light castaneous basally and apical

ly; apical half of mandibles testaceous, the teeth dark rufous; antennae wholly rufo-testaceous, the first two segments somewhat shining, the remainder dull; legs testaceous except front coxae partially infuscated; wings hyaline, with dark setulae, the veins and stigma light brown. Mandibles rather slender, tridentate, the uppermost tooth broad and blunt; clypeus with a truncate median lobe (fig. 7). First four antennal segments in a ratio of about  $19 : 5 : 8 : 7$ , segment three about  $1.3 \times$  as long as wide, segments 4 - 12 barely longer than thick; segment three much expanded from the base to apex, the flagellum tapered toward the apex, the entire flagellum elongate - fusiform, with a row of sensoria toward the apical margin of each segment; flagellar setulae coarse, subappressed, erect setae short, the longest ones only about one third the width of the flagellum. Eyes small, hairy, bulging only slightly from sides of head; distance from eye tops to vertex crest nearly equal to HE, the sides of the head behind the eyes subparallel before converging abruptly to a broadly rounded vertex; WH  $.90 \times$  LH; WF  $1.5 \times$  HE; ocelli not enlarged, situated slightly above level of eye tops, OOL  $1.2 \times$  WOT. Front alutaceous, weakly shining, punctures small, shallow, separated by  $1 - 3 \times$  their own diameters. Thoracic dorsum punctate like the front, but somewhat shining and less strongly alutaceous; notauli strong on anterior half of mesoscutum; center of scutellar disc shining, impunctate; propodeum of moderate length,  $1.35 \times$  as long as wide, the median carina stopping short of the declivity, the surface reticulate toward the base; side-pieces shining, weakly striolate. Mesopleurum coarsely punctate anteriorly, the callus very large, convex, polished. Discoidal vein of fore wing very lightly pigmented, interstitial with media. Subgenital plate rounded apically, slightly elevated medially but without a distinct signum.

*Paratypes*.- ARGENTINA: 108 ♂♂, same data as type except various date Jan., March, Apr., May 1966, 1967 (L. Stange) [CAS, IML, MCZ, MNCN, USNM]; 1 ♂, same locality but 23 Jan. - 4 Feb. 1966 (C. C. Porter) [MCZ]; 2 ♂♂, La Solidar, 11 km W Las Cejas, Tucumán, 17 June - 12 July 1967 (L. Stange) [IML]; 4 ♂♂, Abra Grande, Salta, 29 Jan. - 15 Feb. 1967 (R. Golbach) [IML].

*Variation*.- The paratypes vary slightly in size (LFW 2.3 - 3.6 mm) but show little variation in color or sculpture. WH varies from  $.88$  to  $.95 \times$  LH. WF from  $1.4$  to  $1.6 \times$  HE, OOL from  $1.15$  to  $1.35 \times$  WOT. In some specimens (including the four from Salta) flagellar segments 4 - 12 appear slightly wider than long. In some specimens the pronotum and sides of the mesoscutum are rather strongly alutaceous. This species is easily recognizable on the basis of the characteristic antennae and the tridentate mandibles.

## 9. *Pseudisobrachium pauxillum* new species

*Holotype*.- ♂, ARGENTINA: Horco Molle, San Xavier Mts., Tucumán, 10 - 31 July 1966 (L. Stange) [IML].

*Description of type*.- Length 2.7 mm; LFW 2.2 mm. Head and thorax black; abdomen dark castaneous, irregularly banded with lighter brown; mandibles testaceous except black at extreme base, the teeth rufous; antennae medium brown except second segment testaceous; coxae dark brown, femora medium brown, legs otherwise testaceous; wings hyaline, with dark setulae, veins and stigma brown. Mandibles moderately broad, with four apical teeth; clypeus truncate (fig. 8). First four antennal segments in a ratio of about 15 : 4 : 6 : 5, segment three about 1.7 X as long as wide, segment eleven only 1.2 X as long as wide; flagellar pubescence very coarse, erect setae numerous, about half as long as width of flagellum, sensoria elongate, prominent, mostly along apical margins of segments. Eyes hairy, bulging only slightly from sides of head, distance from eye tops to vertex crest subequal to eye height; WH .96 X LH; WF 1.5 X HE; ocelli not enlarged, located well above level of eye tops, OOL 1.45 X WOT. Front strongly alutaceous, covered with shallow punctures which are separated by 1 - 2 X their own diameters. Thoracic dorsum strongly alutaceous; pronotum somewhat elongate, punctures strongest toward sides of disc; mesoscutum with irregular shallow punctures, notauli well developed on anterior .6; center of scutellar disc shining; propodeum 1.6 X as long as wide, median carina strong, disc otherwise irregularly reticulate, side-pieces polished, somewhat swollen. Mesopleurum alutaceous and shallowly punctate except for the strongly polished callus. Fore wing with discoidal vein strongly pigmented for a distance greater than length of basal vein. Subgenital plate shallowly emarginate, without a median signum.

*Paratypes*.- 43 ♂♂, same data as type except various dates, Jan., March - July 1966, 1967 (L. Stange) [IML, MCZ, MNCN, USNM]; 2 ♂♂, La Solidar, 11 km W Las Cejas, Tucumán. 15 Jan. - 14 Feb. 1967 (L. Stange) [MCZ].

*Variation*.- LFW varies from 1.8 to 2.7 mm, WF from 1.4 to 1.6 X HE. In some specimens the antennae and legs are of a darker shade of brown than in the type. In about a third of the paratypes there are five mandibular teeth, the third and fourth teeth being small and close together.

## 10. *Pseudisobrachium stangei* new species

*Holotype*.- ♂, ARGENTINA: Horco Molle, Tucumán, 3 - 10 Apr. (L. Stange) [IML].

*Description of type*.- Length 4.0 mm; LFW 3.4 mm. Head and thorax black,

abdomen castaneous, with irregular transverse banding with light brown; mandibles testaceous, the teeth dark rufous; antennae light castaneous, except second segment and apex of first testaceous; legs wholly straw-colored, including all coxae; wings subhyaline, with dark setulae, veins and stigma brown. Mandibles slender, with four teeth; clypeus with its sides approaching gradually to a truncate apex (fig. 9). First four antennal segments in a ratio of about 20 : 5 : 11 : 10, segment three twice as long as wide, segment eleven 1.7 X as long as wide; flagellar pubescence moderately coarse, erect setae sparse, mostly about .4 as long as width of flagellum; flagellar sensoria mostly crowded toward apices of segments. Eyes small, bulging from sides of head, hairy; distance from eye tops to vertex crest about equal to HE, the head weakly contracted behind the eyes, then abruptly rounded at vertex. WH .98 X LH; WF 1.6 X HE; OOL 1.45 X WOT; ocelli not enlarged, the triangle situated well above level of eye tops, front angle less than a right angle. Front alutaceous, weakly shining, covered with shallow punctures which are separated by 1.5 - 3 X their own diameters. Pronotum somewhat elongate; pro- and mesonota alutaceous except the latter somewhat shining medially; mesoscutum wholly covered with small punctures, the notauli strong on anterior half; side-pieces shining and weakly sculptured. Mesopleurum smooth and shining along the posterior third, anteriorly somewhat alutaceous and with coarse punctures. Discoidal vein of fore wing present as a long, pigmented streak. Subgenital plate strongly elevated along the midline, with a weak signum, its apex subangularly produced; genitalia in no way distinctive.

*Paratypes*.- 23 ♂, same data as type except various dates Jan. - June 1966, 1967 (L. Stange) [IML, MCZ, MNCN, USNM]; 3 ♂, Villa Nougues, Tucumán, 22 - 24 March 1966 (C. C. Porter) [MCZ].

*Additional specimens* (not designated paratypes).- 9 ♂, Orán, Abra Grande, Salta, Jan. - Feb. 1967 (R. Golbach) [IML, MCZ].

*Variation*.- The 26 males from the province of Tucumán show little color variation and only minor size variation (LFW 3.0 - 3.8 mm). WH varies from .95 to .98 X LH, WF from 1.5 to 1.65 X HE. In the majority of specimens the midpoint of the apical margin of the clypeus is very weakly produced. The nine males from Salta agree in most details, but differ as follows; front coxae fuscous; head about as wide as high (WH .96 - 1.02 X LH); front somewhat narrower (WF 1.3 - 1.45 X HE); ocelli less far removed from eyes (OOL 1.1 - 1.3 X WOT). Considering the close similarity in sculpturing, flagellar setae and sensoria, and shape of the subgenital plate, it seems to me highly probable that the Salta males are conspecific with those from Tucumán.

### 11. *Pseudisobrachium argentinicum* Evans, 1964

This species was described by Kieffer as *flaviventris*, a junior homonym. It has been known from the type only, a male collected in Mendoza, Argentina, in 1906. This species is well represented in the material before me, and these specimens agree very well indeed with the type. The range in size is considerable (LFW 2.5 - 4.2 mm); three very small specimens from La Solidar (LFW 2.0 - 2.4 mm) also appear to belong here. The ocelli are enlarged throughout the series (DAO .18 - .26 X WF; OOL .60 - .85 X WOT) suggesting that this is a nocturnal species.

*Specimens examined.*- ARGENTINA: 26 ♂♂, La Solidar, 11 km W of Las Cejas, Tucumán, Jan. - May, Oct., Dec. 1966 - 67 (L. Stange) [IML, MNCN, MCZ] PARAGUAY: 13 ♂♂, Carumbé, 1 Feb. - 8 March 1966 (R. Golbach) [IML, MCZ].

### 12. *Pseudisobrachium illippum* new species

*Holotype.*- ♂, ARGENTINA: Frias, Catamarca, 5 Feb. 1951 (Ross and Michelbacher) [CAS].

*Description of type.*- Length 3.8 mm; LFW 3.0 mm. Head piceous; thorax dark castaneous; abdomen light ferruginous except center of first tergite darker, most segments with irregular testaceous markings; mandibles testaceous, darker at extreme base and apex; scape testaceous, flagellum dull rufo-testaceous; legs straw-colored except front coxae brown; wings hyaline, veins and stigma light brown. Mandibles slender, tridentate; clypeus truncate (fig. 10). First four antennal segments in a ratio of about 17 : 5 : 7 : 6, segment three about 1.4 X as long as wide, segment eleven barely longer than wide; flagellum much smoother than *argentinicum*, the pubescence short, appressed, erect setae sparse and short. Eyes large and prominent, hairy; vertex evenly rounded off a short distance above eye tops; WH .98 X LH; front narrow, WF and HE subequal; ocelli very large, DAO .30 X WF, OOL only .40 X WOT; ocelli in about a right triangle, anterior ocellus wholly below level of eye tops. Front wholly alutaceous, covered with shallow punctures which are separated by 1 - 2 X their own diameters. Thoracic dorsum strongly alutaceous, with an abundance of rather weak punctures; notauli weakly developed on anterior half of mesoscutum; propodeum of moderate length, with weak surface sculpturing except for the median carina and some weak, irregular carinae paralleling it. Mesopleurum weakly alutaceous, with shallow punctures, except the callus impunctate, barely alutaceous, not strongly convex. Discoidal vein of fore wing barely pigmented. Subgenital plate narrowly rounded apically, the median line strongly elevated, with a weak signum.



*Paratypes*.- 8 ♂♂, same data as type [CAS, MCZ, IML].

*Variation*.- LFW varies from 2.4 to 3.2 mm, WH from .96 to 1.00 X LH, WF from .90 to 1.10 X HE, OOL from .40 to .50 X WOT. Little variation in color or sculpture can be noted in this series. This species and *argentanicum* differ from *uruguayense* Ogloblin, another species with enlarged ocelli, in having the mandibles 3-toothed instead of 5-toothed, also in their generally smaller size and narrower front.

### 13. *Pseudisobrachium complanatum* new species

*Holotype*.- ♂, ARGENTINA: La Solidar, 11 km W of Las Cejas, Tucumán, 13 - 27 May 1967 (L. Stange) [IML].

*Description of type*.- Length 3.8 mm; LFW 2.9 mm. Head and thorax black; abdomen dark brown, indistinctly banded with lighter brown; apical half of mandibles testaceous except the teeth dark; scape dark brown, flagellum dull castaneous; front coxae dark brown, remaining coxae and all femora medium brown, legs otherwise testaceous; wings hyaline, with pale setulae, wing veins almost colorless. Mandibles with four teeth (much as in fig. 8); median lobe of clypeus truncate, the midline strongly elevated (much as in fig. 9). First four antennal segments in a ratio of about 20 : 5 : 11 : 8, segment three twice as long as wide, segment eleven 1.4 X as long as wide; flagellar pubescence very short, appressed, erect setae sparse and very short. Head elongate, WH only .88 X LH; eyes large, hairy; sides of head behind eyes subparallel, then abruptly rounded to a nearly straight vertex; distance from eye tops to vertex crest equal to about three-fourths the eye height. Front narrow, WF 1.1 X HE; ocelli in about a right triangle, slightly enlarged, DAO .20 X WF, anterior ocellus slightly above level of eye tops; OOL 0.9 X WOT. Front strongly alutaceous, uniformly covered with shallow punctures which are separated by 1.5 - 2.5 X their own diameters. Thorax depressed, the dorsum flattened; pronotum elongate, the disc truncate in front, its surface alutaceous and punctate like the front. Mesoscutum also alutaceous, but with smaller punctures, the notauli linear, complete; scutellar disc alutaceous and with small punctures. Propodeum of moderate length, with strong, reticulate surface sculpturing, the median carina short, extending only about a third the length of the disc. Mesopleurum wholly alutaceous, including the callus. Transverse median vein of fore wing strongly oblique; discoidal vein indistinct. Subgenital plate truncate, with a signum (fig. 17).

*Paratypes*.- 5 ♂♂, same data as type except July - Sept. 1967 (L. Stange) [IML, MCZ]; 1 ♂, Oran, Abra Grande, Salta, 29 Jan. - 7 Feb. 1967 (R. Golbach) [IML].



*Variation.*- The paratypes vary slightly in size (LFW 2.4 - 3.1 mm) but all agree well with the type except that in several the eyes and ocelli are barely enlarged (DAO .15 - .20 X WF; OOL 1.1 - 1.3 X WOT; WF 1.1 - 1.3 X HE); in smaller-eyed individuals the distance from the eye tops to the vertex crest exceeds HE. The very pale wings suggest that this is a nocturnal species.

#### 14. *Pseudisobrachium chilense* new species

*Holotype.*- ♂, CHILE: Queb. de la Plata, Rinconada Maipú, Santiago Prov., 510 meters, 26 Dec. 1966 (L. Stange) [IML].

*Description of type.*- Length 2.5 mm; LFW 2.2 mm. Head and thorax piceous; abdomen dark castaneous, irregularly banded with light brown; basal half of mandibles fuscous, apical half testaceous, teeth rufous; antennae wholly dark brown except scape partially suffused with black; legs brown, fading to light brown beyond apical two-thirds of tibiae; wings hyaline, with dark setulae, veins and stigma brown. Mandibles with four teeth; clypeus truncate apically, the mid line elevated but abruptly cut off just before the apex, which is broadly triangular as seen from below (fig. 11). Antennae very slender, first four segments in a ratio of about 13 : 4 : 8 : 7, segments three and eleven both about 3 X as long as wide; flagellar pubescence and erect setae rather short, flagellum without conspicuous elongate sensoria. Eyes hairy, protruding somewhat from sides of head; vertex broadly rounded, distance from eye tops to vertex crest nearly equal to eye height; WF .97 X LH. Front broad, WF 1.33 X HE; ocelli small, situated well above eye tops, front angle of ocellar triangle less than a right angle; OOL 1.1 X WOT. Occipital carina complete. Front moderately alutaceous although rather strongly shining, punctures small, separated 1 - 3 X their own diameters. Thorax elongate, somewhat depressed; thoracic dorsum strongly shining, mostly non-alutaceous; pronotum irregularly punctate; mesoscutum uniformly covered with small punctures; notauli absent except on anterior .1 of scutum. Propodeum elongate, about 1.7 X as long as wide, its dorsal surface alutaceous, depressed medially, but without a median carina. Mesopleurum somewhat alutaceous, shining, the callus poorly defined. Discoidal vein of fore wing strongly pigmented for a considerable distance.

*Paratypes.*- 2 ♂♂, same data except one collected 1 Jan. 1967 (L. Stange) [MCZ, USNM].

*Remarks.*- This is the only member of the genus known from Chile, and it possesses several unusual features, particularly the lack of a median carina on the propodeum, the complete occipital carina, the lack of a well-formed mesopleural callus, and unusually slender legs and antennae.

**15. *Pseudisobrachium breviceps* new species**

*Holotype*.- ♂, ARGENTINA: La Solidar, 11 km W of Las Cejas, Tucumán, 15 Jan. - 14 Feb. 1967 (L. Stange) [IML].

*Description of type*.- Length 3.5 mm; LFW 3.2. Head and thorax piceous; abdomen dark castaneous, irregularly banded with light brown; mandibles light ferruginous, basal half infuscated; first two antennal segments pale; legs testaceous except front coxae dark brown, other coxae somewhat brownish; wings sub hyaline, with dark setulae, veins and stigma dark brown. Mandibles broad, with two sharp teeth above which is a small tooth followed by a broad cutting edge; clypeus with a trapezoidal median lobe which is weakly rounded apically; median line roundly elevated (fig. 12). First four antennal segments in a ratio of 19 : 5 : 9 : 7, segment three 2.2 X as long as wide, segment eleven 1.5 X as long as wide; flagellar pubescence long and suberect, fully erect setae numerous but not much longer than pubescence, flagellum also with silvery, scale-like sensoria in considerable abundance. Eyes prominent, hairy, head broadly rounded off a short distance above eye tops; head unusually broad and short, WH 1.18 X LH. Front very broad, WF 1.65 X LH; front angle of ocellar triangle less than a right angle, OOL 1.2 X WOT. Front alutaceous, weakly shining, covered with large but very shallow punctures which are separated by about their own diameters. Occipital carina strong and subtending a row of foveae on sides of head, terminating dorsally at a rounded posterior prominence at each side of the vertex. Pronotum short, alutaceous, covered with small punctures; mesoscutum somewhat more shining, shallowly punctate, the notauli strong, complete. diverging anteriorly. Propodeum of moderate length, median carina well developed. Mesopleurum coarsely punctate anteriorly, smooth and shining along posterior margin, callus large but not strongly convex. Discoidal vein of fore wing strong, arising well down on transverse median vein. Subgenital plate truncate, without a suture; genitalia without unusual features.

*Paratype*.- 1 ♂, same data as type [IML].

*Variation*.- The paratype is smaller (LFW 3.0 mm) but very similar to the type; WF is 1.6 X HE, OOL 1.3 X WOT.

**16. *Pseudisobrachium tucumanum* new species**

*Holotype*.- ♂, ARGENTINA: Horco Molle, San Xavier Mts., Tucumán, 4 - 12 Jan. 1966 (L. Stange) [IML].

*Description of type*.- Length 3.4 mm; LFW 2.7 mm. Head and thorax piceous; abdomen castaneous, irregularly mottled with testaceous; mandibles tes

taceous, the teeth rufous; first two antennal segments light brown, remainder dark brown; legs testaceous except coxae partially suffused with brownish; wings tinged with brownish, the setulae dark, veins and stigma brown. Mandibles with five teeth; clypeus short and broad, the apical margin weakly concave, median line elevated on basal half, then terminating at top of a broadly triangular surface (fig. 13). First four antennal segments in a ratio of about 19 : 6 : 9 : 6, segment three 2.5 X as long as wide, segment eleven about twice as long as wide; flagellar pubescence unusually coarse, suberect, both setulae and erect setae nearly as long as width of flagellum. Eyes hairy, protruding considerably from sides of the rather broad head; sides of head behind eyes nearly parallel, then abruptly rounded to a straight vertex; distance from eye tops to vertex crest nearly equal to eye height. WH 1.07 X LH; WF 1.7 X HE; ocelli not enlarged, in a very compact triangle well above level of eye tops, OOL 1.5 X WOT. Front wholly alutaceous, weakly shining, wholly covered with very shallow punctures which are separated by 1 - 2 X their own diameters. Pronotum short, its surface alutaceous and roughened by shallow punctures; mesoscutum alutaceous and shallowly punctate, somewhat more shining medially, notauli linear, complete except on posterior .2 of scutum; scutellar disc polished, punctate. Propodeum rather short, with an abrupt declivity, median carina distinct for most of dorsal surface, which is otherwise somewhat reticulate. Mesopleurum alutaceous and coarsely punctate except the callus shining, very weakly alutaceous. Discoidal cell of fore wing faintly outlined. Subgenital plate shallowly emarginate, without a signum (much as in fig. 17).

*Paratype.*- 1 ♂, same data except 3 - 10 Apr. 1966 (L. Stange) [IML].

*Variation.*- The paratype is larger (LFW 3.3 mm) and has OOL only 1.4 X WOT. Otherwise there are no noteworthy differences.

#### 17. *Pseudisobrachium retusum* new species

*Holotype.*- ♂, ARGENTINA: Horco Molle, San Xavier Mts., Tucumán, 4 - 12 Jan. 1966 (L. Stange) [IML].

*Description of type.*- Length 3.2 mm; LFW 2.4 mm. Head and thorax piceous; abdomen dark castaneous, sides of first tergite lighter; apical .4 of mandibles testaceous except teeth rufous; scape fuscous, flagellum dark brown; legs, dark brown except tarsi light brown; wings hyaline, with dark setulae and brown veins and stigma. Mandibles with five teeth; clypeus with the sides approaching to a narrow apical margin which is notched (fig. 14). First four antennal segments in a ratio of about 16 : 5 : 8 : 6, segment three 1.6 X as long as wide, segment eleven 1.4 X as long as wide; flagellar pubescence rather short, subappressed,

erect setae numerous, especially on basal segments, the longest ones about half as long as width of flagellum. Eyes large, hairy, protruding slightly from sides of head; vertex broadly rounded, distance from eye tops to vertex crest much less than eye height; head broad, WH 1.04 X LH. WF 1.25 X HE; ocelli not enlarged, in a right triangle well above level of eye tops; OOL 1.05 X WOT. Front strongly beaded, somewhat shining, obscurely punctate. Thoracic dorsum strongly alutaceous, the punctures very small; pronotal disc relatively long and flat; notauli strong on anterior third of mesoscutum, absent behind. Propodeum unusually short, only 1.1 X as long as wide, the disc without a median carina but with a number of coarse reticulations on the basal part. Mesopleurum wholly alutaceous, including the callus. Discoidal vein of fore wing absent. Abdomen broad, depressed; subgenital plate with a large, U-shaped apical emargination (fig. 18); genitalia of unusual form, the aedoeagus complex, the dorsal arms of the parameres about as wide as the ventral arms.

*Paratypes*.- ARGENTINA: 7 ♂♂, same data as type but one dated 1 - 7 May 1966, two dated 7 - 26 March 1967 (L. Stange) [IML, MCZ]; 1 ♂, Villa Nougues, Tucumán, 26 - 28 Nov. 1964 (C. Porter) [MCZ].

*Variation*.- LFW varies from 2.0 to 2.9 mm, WH from 1.00 to 1.05 X LH, WF from 1.2 to 1.3 X HE. In the larger specimens the propodeal sculpturing tends to be more coarse and more extensive than in the type, especially along the crest of the declivity, where there may be an irregular transverse vein.

### 18. *Pseudisobrachium deplanatum* new species

*Holotype*.- ♂, ARGENTINA: Horco Molle, San Xavier Mts., Tucumán, 1 - 7 May 1966 (L. Stange) [IML].

*Description of type*.- Length 5.0 mm; LFW 4.0 mm. Head and thorax black; base of first abdominal segment black, abdomen otherwise dark castaneous with irregular banding with light brown; mandibles testaceous, black at extreme base, the teeth dark rufous; antennae uniformly dark brown; legs entirely straw-colored, including coxae; wings tinged with brownish, with abundant dark setulae, the veins and stigma dark brown. Mandibles broadened apically, the lower margin not strongly curved, apical margin with five teeth, the apical two sharp, the basal three rounded; clypeus unusually broad, truncate, its lateral angles less than a right angle (fig. 15). First four antennal segments in a ratio of about 24 : 5 : 14 : 13, segment three 2.8 X as long as wide, segment eleven 2.5 X as long as wide; flagellum with three types of setulae: appressed scale-like sensoria, short, semi erect setulae, and sparse, fully erect setae which measure .7 - .9 as long as width of flagellum. Eyes densely hairy, protruding slightly from sides of head; distance

from eye tops to vertex crest slightly less than HE; head as wide as high; front wide, WF 1.4 X HE; ocelli in a compact triangle, well above eye tops and below vertex crest, slightly enlarged, DAO .16 X WF; OOL 1.4 X WOT; front angle of ocellar triangle less than a right angle. Front shining, surface sculpturing weak and irregular, punctures small, separated by 2 - 3 X their own diameters. Pronotum short, strongly expanded from front to rear; mesoscutum strongly alutaceous, wholly covered with small punctures, notauli linear, impressed on anterior .4 only; propodeum 1.6 X as long as wide, median carina nearly reaching crest of declivity surface otherwise finely, irregularly transversely striate; sides of propodeum swollen, highly polished, impunctate. Fore wing with the discoidal cell outlined by pigmented lines; transverse median vein very strongly sloping. Abdomen sessile, depressed; subgenital plate weakly emarginate, with a median signum; genitalia without unusual features.

*Paratypes.*- ARGENTINA: 167 ♂♂, same data as type except various dates, Jan., March - July, 1966, 1967 (L. Stange) [CAS, IML, MCZ, MNCN, USNM]. PARAGUAY: 10 ♂♂, Carumbé, 1 Feb. - 8 March 1966 (R. Golbach) [IML].

*Variation.*- The smallest specimen in the series from Horco Molle has LFW 2.4 mm, the largest 4.5 mm. There is remarkably little variation in color or sculpturing, and no variation in standard measurements worthy of note. The Paraguay males are all small (LFW 2.3 - 2.8 mm) but are so strikingly similar to those from Argentina that there seems no question of their conspecificity; some of these males have the head slightly longer than wide (WH 0.95 - 1.00 X LH), and the ocelli are barely enlarged (DAO .14 - .16 X WF).

## 19. *Pseudisobrachium porteri* Evans, 1966

I described this distinctive species from six males from Machu Picchu and Tingo Maria, Peru. Several Argentinian males agree closely with type series, but are larger than average (LFW 3.5 - 4.00mm) and have the head rather elongate (WF .93 - .97 X LH). This species is strikingly like *deplanatum* with respect to the mandibles, clypeus, and antennae—even to the arrangement and length of the flagellar setulae and sensoria. However, there is a sharp discontinuity in several features; *porteri* has smaller eyes and ocelli, conspicuously darker legs, a much more polished propodeal side-pieces, and a simple subgenital plate.

*Argentinian specimens examined.*- 4 ♂♂, Horco Molle, Tucumán, 4 - 12 Jan. and 3 - 10 Apr. 1966 (L. Stange) [IML, MCZ].

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## SUMMARY OF SOME CHARACTERS OF ARGENTINIAN AND CHILEAN PSEUDISOBRACHIUM

<u>Species</u>	<u>Form of clypeus</u>	<u>No. teeth mandibles</u>	<u>Ocelli enlarged</u>	<u>Occipital carina complete</u> <sup>2</sup>	<u>Propodeal carina developed</u> <sup>3</sup>	<u>Notauli complete</u> <sup>4</sup>
1. crassicornis	bidentate	5	no	+	-	+
2. tridens	tridentate	5	no	-	+	-
3. ternarium	tridentate	5	no	-	+	-
4. corvinum	tridentate	5	no	-	+	-
5. steinbachi	tridentate	5	no	-	+	-
6. concinnum	tridentate	5	slightly	+	+	-
7. petiolatum	rounded	5	slightly	+	-	+
8. fusicornis	truncate	3	no	-	+	-
9. pauxillum	truncate	4-5	no	-	+	-
10. stangei	truncate	4	no	-	+	-
11. argentinicum	truncate	3	greatly	-	+	-
12. illippum	truncate	3	greatly	-	+	-
13. complanatum	truncate	4	slightly	+	+	+
14. chilense	truncate	4	slightly	+	-	-
15. breviceps	rounded	3	no	-	+	+
16. tucumanum	emarginate	5	no	-	+	+
17. retusum	emarginate	5	no	+	-	-
18. deplanatum	expanded	5	slightly	-	+	-
19. porteri	expanded	5	no	+	+	-

2. If continuous with a sharp crest on the vertex, it is considered complete.

3. That is, there is a median carina strongly differentiated from other sculpturing.

4. That is, running for at least .8 the length of the mesoscutum.

Terminóse de imprimir el 29 de  
agosto de 1969 en Fundación e  
Instituto Miguel Lillo, San Miguel  
de Tucumán (R.A.).