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## New or little-known species of the genus *Tipula* from Chile (Tipulidae, Diptera)

BY

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During the past few years, the writer has undertaken a critical review of the Tipulidae of Chile, the detailed results of which are to be published in another place. Since the revision was completed, additional material has been obtained, collected chiefly by my friend P. Anastase Pirion, in Bio-Bio and Malleco, and by PP. Jaffuel and Pirion at Marga Marga and near Santiago and Concepción. Through the kind interest of Dr. Carlos E. Porter, Mr. C. Silva Figueroa and Dr. J. Chester Bradley, I have been privileged to examine a small series of *Tipula apterogyne* Philippi that had been collected and determined by Philippi. In the present report, I have re-discussed the characters of *T. apterogyne* and *T. subandina* Philippi and added the descriptions of three previously unknown species of this difficult genus of crane-flies. I wish to express my deep gratitude to all of the gentlemen above named who have aided so materially in this study of the Tipulidae of Chile. The types of the novelties are preserved in my collection through the great kindness of P. Anast. Pirion.

All of the very numerous species of the genus *Tipula* so far discovered in Patagonia and southern Chile appear to belong to the *glaphyroptera* group, differentiated chiefly by the details of structure of the male hypopygium. In almost all cases, the eighth sternite bears a median appendage that varies in different species from a small simple projection to a bilobed structure, in the more specialized forms this appendage being conspicuously trilobed. Many of the species may be accurately differentiated by means of this structure alone.



*Tipula apterogyne* PHILIPPI

1865. *Tipula apterogyne* Philippi; Verh. zool.-bot. Ges. Wien, 15: 606-607.

Philippi's types were from Valdivia and near Santiago. In the Philippi collection, I have seen the following material: ♂ Valdivia. ♂ ♂, San Cristobal, October 1880. ♂, Santiago, September 1874, September 20, 1876. Other records include Marga-Marga, September 1927 (Jaffuel and Pirion) and Macul, near Santiago, altitude 1000 meters, October 22, 1927 (Jaffuel and Pirion). From the above, it will be seen that the species is well distributed in the southern parts of Chile, flying in September and October.

*Male*.—Length about 9 - 11 mm.; wing 11 - 13 mm.; antennae about 7 - 8 mm.

*Female*.—Length about 12 - 13 mm.; wing about 1.5 - 1.7 mm.

*Male*.—Frontal prolongation of head pale, restrictedly pruinose above; palpi dark brown. Antennae very long, as shown by the measurements, extending to about three-fourths the length of the abdomen; scapal segments pale brown to black; flagellum brownish black to black; flagellar segments elongate-cylindrical, the basal enlargements of the segments relatively small and inconspicuous, oval, with short verticils that are less than one-third the length of the segments; flagellar segments clothed with a dense erect pale pubescence. Head light grey.

Mesonotal praescutum grey with a very conspicuous median brown stripe that is usually paler medially, vaguely divided in front by a capillary dark brown vitta; lateral stripes poorly indicated to obsolete; posterior sclerites of mesonotum grey, the scutellum more reddish grey; a narrow dusky median line on postnotum and scutellum. Pleura grey. Halteres pale, the knobs infuscated. Legs with the the coxae pale, pruinose; trochanters obscure yellow; femora dark brown, the bases paler, the tips darkened; tibiae brown, the tips blackened; tarsi black. Wings whitish subhyaline, streaked with brown;

stigma pale brown; the pale streaks left by the ground-color include a virtually continuous line from the arculus, through cell *1st M*<sub>2</sub> and *R*<sub>5</sub> to the wing-apex; a pale incomplete post-stigmal band; a pale longitudinal vitta across the base of cell *1st A* and outer end of cell *Cu* to the wing-margin; veins dark brown. Venation: Cell *1st M*<sub>2</sub> relatively short and broad; cell *M*<sub>1</sub> long, subequal to or longer than its petiole.

Abdomen obscure yellow, the tergites narrowly trivittate with brown, the lateral margins pale; sternites brownish yellow, with a narrow brown median line; hypopygium pale. Male hypopygium (fig. 1) relatively small and entirely pale in color. Ninth tergite (fig. 2) extensive, the caudal margin with a very broad emargination, the lateral lobes relatively narrow, divergent; base of the emargination with three small rounded lobules to produce a crenulate appearance. Basistyle complete, without a developed ventro-caudal lobe. Outer dististyle flattened, pale. Inner dististyle bifid at apex, the shorter lobe heavily blackened at apex. Eighth sternite unarmed.

*Female*.—Characters as in the male, differing as follow: Antennae short, the flagellar segments simple; nasus stout. Wings reduced to pale stubs that are about as long as the halteres. Legs relatively short and stout. Ovipositor with the tergal valves relatively short, each produced ventrad into a sharp blade; when viewed from the side, these valves are a little wider than when viewed from above.

### *Tipula subandina* PHILIPPI

1865. *Tipula subandina* Philippi; Verh. zool.-bot. Ges. Wien, 15: 605.

Philippi's types were from the foothills of the Andes in the Province of Santiago. Abundant material has been taken by PP. Jaffuel and Pirion at Marga-Marga (September) and at Macul, near Santiago, altitude 1000 meters (October 22, 1927). The fly is evidently a characteristic Spring species in the vicinity of Santiago.

*Male*.—Length 10 - 12 mm.; wing 12 - 13 mm.

*Female*.—Length 16 - 20 mm.; wing 13 - 16 mm.

Frontal prolongation of head relatively elongate,



reddish brown; nasus elongate; palpi black. Antennae ( $\delta$ ) relatively short, if bent backward extending to shortly beyond the wing-root; acapal segment obscure yellow; flagellum black, the segments only slightly incised, the longest verticils nearly as long as the segments. Head yellowish grey, the vertex suffused with brown, the posterior vertex clearer grey.

Mesonotal praescutum yellowish grey with four narrow brown stripes, the intermediate pair united at their posterior ends; scutum grey, each lobe with two brown areas; scutellum brownish grey; postnotum grey, the posterior sclerites of mesonotum with a capillary brown median line. Pleura grey, the pteropleurite and pleurotergite pale. Halteres pale, the knobs infuscated. Legs with the coxae pale brown, sparsely pruinose; trochanters brownish yellow; femora obscure yellow, the tips blackened, preceded by a brighter yellow subterminal ring; tibiae and basitarsi brownish yellow, the tips narrowly darkened; terminal tarsal segments dark. Wings whitish subhyaline; cell *C* and *Sc* more yellowish; three dark brown areas in cell *Sc*, the second at the origin of *Rs*, the third at the end of the cell; stigma chiefly pale brown, the ends darker; disk conspicuously marbled with brown, appearing as longitudinal streaks in the cells before the cord; the post-stigmal pale band includes the outer half of cell *Sc*<sub>2</sub>, the basal half of *R*<sub>2</sub> and subbasal areas in cells *R*<sub>3</sub> and *R*<sub>5</sub>; ante-stigmal pale area confluent with a similar marking across cell 1st *M*<sub>2</sub>; conspicuous creamy spots in outer ends of cell *M*<sub>1</sub> to 2nd *A*; veins brown. Venation: *R*<sub>1+2</sub> entire, the distal half without macrotrichiae.

Abdominal tergites obscure yellow, more or less trivittate with brown, the lateral stripes broadly interrupted on the posterior portions of the segments; sternites with a median brown line; terminal abdominal segments pruinose. Male hypopygium (fig. 3) relatively small. Ninth tergite (fig. 5) extensive, the caudal margin with a small Ushaped median notch, the lateral lobes obliquely truncated, the outer lateral angle a little further produced; median area of tergite not membranous. Basistyle (b) complete, the ventro-caudal lobe (vb) very small, oval; mesal lobe (mb) conspicuous, slender, terminating in an



acute spine. Outer dististyle chitinized, irregularly bifid, the dorsal arm longest, slender, at apex expanded into an elongate head. Inner dististyle (id) pale, the bifid apex darkened, the shorter lobe black. Eighth sternite small, the apex produced caudad into a small pale triangular or prow-shaped simple lobe (fig. 4). Aedeagus long and slender, jutting from the genital chamber. Ovipositor (fig. 13) with the basal shield powerfully developed, nitidous; tergal valves broad, conspicuously flattened, the margins smooth, the apex suddenly narrowed to a slender point; sternal valves very high and greatly compressed.

### *Tipula araucania*, sp. n.

Belongs to the *glaphyoptera* group; antennae bicolorous; mesonotal praescutum grey with three brown stripes, the median stripe divided by a grey center and further split by a capillary brown vitta that extends to the abdomen; wings yellowish, the apex infumed; a broad, complete white crossband beyond the cord; male hypopygium with the appendage of the eighth sternite trifid, the lateral lobes very broad, the median lobe longer, the base slender, the apex expanded into a small spatula.

*Male*.—Length about 17-18 mm.; wing 18-19 mm.

*Female*.—Length about 20-21 mm.; wing about 22 mm.

Frontal prolongation of head brown, darker and more pruinose dorsally; nasus lacking; palpi brownish black. Antennae with the scapal segments yellowish ochreous; second to fourth flagellar segments obscure yellow with the basal enlargement of each segment conspicuously blackened; outer flagellar segments passing into brown; verticils nearly as long as the segments. Head grey, with a capillary median brown vitta.

Mesonotal praescutum grey, with three dark brown stripes, the median stripe with a pale center except behind, divided by a capillary dark brown vitta; a brownish area in the humeral region; posterior interspaces broad; scutum clearer grey, each lobe with two darker areas; scutellum testaceous yellow, with a median brown

vitta; postnotum grey with a capillary brown vitta. Pleura grey, the dorso-pleural region buffy. Halteres pale, the knobs infuscated. Legs with the coxae grey; trochanters obscure yellow; femora brownish yellow, just before the tips with a narrow black ring; tibiae yellowish brown, the tips narrowly darkened; tarsi passing into black. Wings yellowish, especially cells *C* and *Sc*; distal third of wing strongly infumed; cell *Sc* with three brown spots, the first two more extensively developed in cell *R*; stigma conspicuous, darker at outer end, connected with a large brown area on anterior cord, wing apex uniformly darkened, variegated only by small cream-colored marginal spots in cells *R*<sub>5</sub>, *M*<sub>1</sub> and 2nd *M*<sub>2</sub>; cells *M*, *Cu* and *Anals* with vague grey clouds that are margined with darker; outer end of vein *Cu*<sub>1</sub> and *m-cu* narrowly seamed with dark brown; a complete white crossband beyond the cord, extending from costa in cell *R*, through cell 1st *M*<sub>2</sub>, to the wing-margin in cell *M*<sub>3</sub>; veins dark brown, more yellowish in the costal region. Venation: *R*<sub>1+2</sub> complete, all except the distal end with macrotrichiae; cell *M*<sub>1</sub> deep.

Abdomen obscure brownish yellow, the tergites trivittate with brownish black, more extensive on the subterminal segments. Male hypopygium (fig. 6) large. Ninth tergite (fig. 8) very extensive, chiefly pale in color, the caudal margin nearly transverse, with a scarcely evident V-shaped median notch. Basistyle (*b*) large, complete; ventro-caudal lobe (*vb*) elongate, at least four to five times as long as thick, conspicuously setiferous; mesal lobe (*mb*) appearing as a large compressed orbicular cushion, pale in color, provided with very delicate setulae. Outer dististyle (*od*) very small, pale in color. Inner dististyle (*id*) with a double row of setae, the longer marginal fringe very regular and conspicuous. Ninth sternite with a small pencil of setae on dorso-caudal portion. Eighth sternite (*8s*) with the caudal appendage (fig. 7) trifid; lateral lobes very broad, suboval to suborbicular in outline, pale in color; median lobe much longer than the laterals, very slender, the apex expand into an elongate-oval spatula that is provided on its dorsal face with deli-



cate setulae. Ovipositor with the valves long and slender.

*Hab.* Chile.

*Holotype*, ♂, Macul, near Santiago, altitude 1000 meters, October 22, 1927 (*Jaffuel & Pirion*).

*Allotopotype*, ♀, with the holotype.

*Paratopotypes*, 3 ♂ ♂; *paratypes*, 3 ♂ ♂, September 1927, Marga-Marga, (*Jaffuel & Pirion*); 1 ♂, Perales, Marga-Marga, September 1923 (*A. Pirion*), pinned with a ♀ of *Tipula subandina* Philirpi; 1 ♂. Bío-Bío, January 1928: 1 ♀, Pailahueque, January 1928 (*A. Pirion*).

*Tipula araucania* appears to be a common and conspicuous member of the Spring fauna in the vicinity of Santiago.

### *Tipula Pirioni*, sp. n.

Belongs to the *glaphyoptera* group; antennae of moderate length, bicolored; mesonotal praescutum with the median brown stripe trifid, united behind; wings with the basal two-thirds yellow, the distal third infumed, with a broad complete white crossband beyond the cord; abdomen yellow, the tergites trivittate with dark brown; hypopygium chiefly pale; male hypopygium with the appendage of the eighth sternite appearing as a simple tongue-like flattened lobe.

*Male*.—Length about 16 mm.; wing 17.5 mm.

*Female*.—Length about 20 mm.; wing 19 mm.

Frontal prolongation of head reddish brown; nasus distinct; palpi brownish black. Antennae (♂) of moderate length, if bent backward extending to the root of the halteres or slightly beyond; basal three segments yellow; flagellar segments two and three obscure yellow, the basal enlargements conspicuously blackened; outer segments passing into uniform brown; flagellar segments moderately incised; verticils elongate, but still scarcely as long as the segments. Head grey, variegated with brown, including a capillary brown median vitta.

Mesonotal praescutum yellowish grey, with three brown stripes, the median stripe divided by a grey line that is again split by a capillary brown vitta, the posterior end of the stripe narrowed but entire; scutum grey, the lobes variegated with brown; scutellum brownish



yellow with a conspicuous brown median line; postnotum grey with a median brown vitta. Pleura greyish brown, the dorso-pleural region buffy. Halteres pale, the knobs infuscated. Legs with the coxae brownish grey; trochanters yellow; remainder of legs broken. Wings with the basal two-thirds yellow, cell *C* and *Sc* more strongly so, the apical third strongly infumed; a broad complete whitish crossband beyond the cord; distal third of cell *R*<sub>5</sub> pale; outer ends of cell *2nd M*<sub>2</sub> and *M*<sub>3</sub> with creamy marginal spots; stigma oval, dark brown, connected with a brown cloud on the anterior cord; three conspicuous brown spots in cell *Sc*, the second the largest, extended over the origin of *Rs*, connected with the first spot and with the marking on the anterior cord by a delicate dark line in cell *R*; a conspicuous darkening in the distal end of cell *M*, variegated by a yellowish spot; cell *M*<sub>4</sub> darkened, especially near veins *m-cu* and *Cu*<sub>1</sub>; outer ends of the Anal cell darkened; cell *Cu* clear except for restricted clouds in outer end. Venation: *R*<sub>1+2</sub> sinuous, with macrotrichiae nearly to the end.

Abdomen yellowish, the tergites trivittate with brownish black; median stripe very broad, entire or nearly so; lateral stripes less conspicuous; subterminal segments blackened; hypopygium chiefly pale; sternites brownish yellow, with a narrow median black vitta. Male hypopygium with the ninth tergite pale, the caudal end produced into a flattened flange, the margin with a very shallow V-shaped notch. Basistyle with the ventro-caudal lobe relatively short and stout, the length approximately four times the greatest diameter, the longest setae subequal to the lobe. Outer dististyle relatively long, cylindrical. Eighth sternite (fig. 9) with a single flattened tongue-like lobe, broadest just beyond base, thence gradually narrowed to the narrow blunt apex, the margin on distal third fringed with short pale setae. Ovipositor with the tergal valves very long and slender.

*Hab.* Chile.

*Holotype*, ♂, Bío-Bío, January 1928 (*A. Pirion*).

*Allotype*, ♀.

*Paratopotype*, ♀.

*Tipula Pirioni* is respectfully dedicated to the collec-



tor, P. Anastase Pirion, who has added most materially to our knowledge of the Tipulidae of Chile.

### *Tipula pallidisignata*, sp. n.

Belongs to the *glaphyoptera* group; antennae bicolorous; thoracic pleura yellow; wings with a bronish suffusion, conspicuously variegated with whitish, including a continuous area in the radial cells before the stigma, extended across cell *1st M*<sub>2</sub> through cell *R*<sub>5</sub> to the wing-margin, sending a broad post-stigmal arm to the costa; outer medial, cubital and anal cells not variegated with pale; male hypopygium with the appendage of the eighth sternite very unequally trifid, the lateral lobes greatly reduced, the long liguliform median lobe pale, provided with short setae.

*Male*.—Length about 13.3 mm.; wing 16 mm.

Frontal prolongation of head reddish brown, darker ventrally; nasus long and slender, tufted with yellow setae; palpi black. Antennae with the first scapal segment pale; second and third segments yellow; fourth segment bicolorous, yellow, the basal enlargement black; remainder of antennae broken. Head brown, discolored in the type.

Mesonotum discolored, the praescutum striped; scutellum pale, with a median brown vitta. Pleura yellow, the dorso-pleural membrane concolorous; dorsal portion of the ventral pleurotergal region darkened. Halteres brownish yellow, the knobs infuscated. Legs with the coxae and trochanters yellow; remainder of legs broken. Wings with a brownish suffusion, the stigmal region darker, confluent with an extensive cloud on the anterior cord; cell *Sc* with three large brown clouds, the first two extended into cell *R*, the last confluent with the stigmal area; conspicuous whitish areas before and beyond the stigma, confluent through cell *1st M*<sub>2</sub>, the post-stigmal arm extended to the wing-apex in cell *R*<sub>5</sub>; a large whitish area in cell *R* before the origin of *R*<sub>5</sub>; cell *Cu*<sub>1</sub> uniformly darkened; outer medial, cubital and anal cells pale greyish or brownish, without pale markings; veins darker brown; obliterative areas extensive. Venation: *R*<sub>1</sub> + 2 pale on

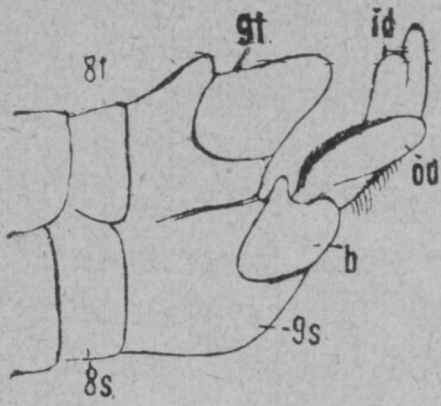


Fig. 1

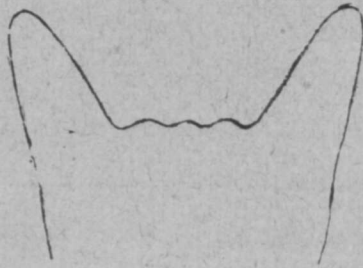


Fig. 2

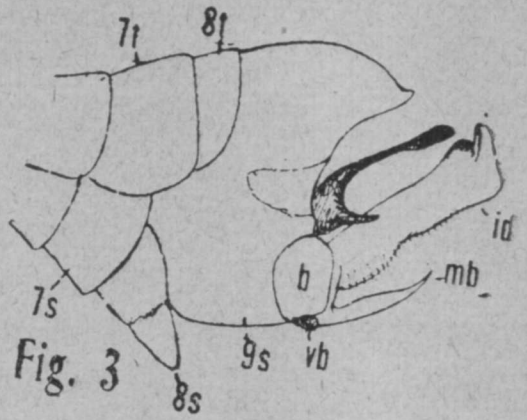


Fig. 3

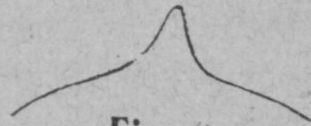


Fig. 4

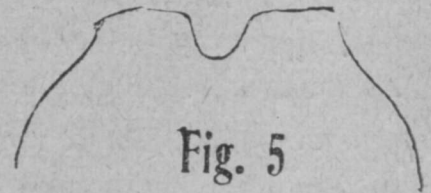


Fig. 5

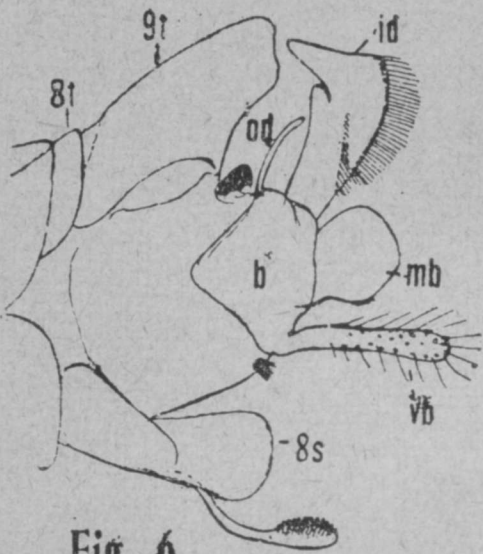


Fig. 6



Fig. 7

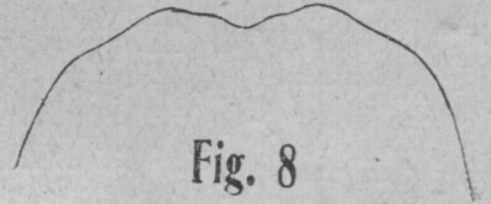


Fig. 8

Fig. 11

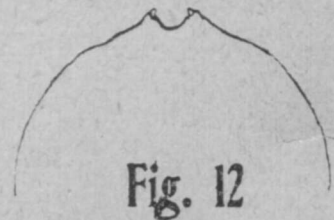
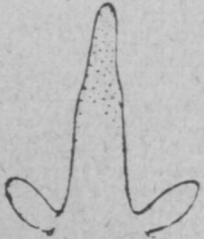


Fig. 12

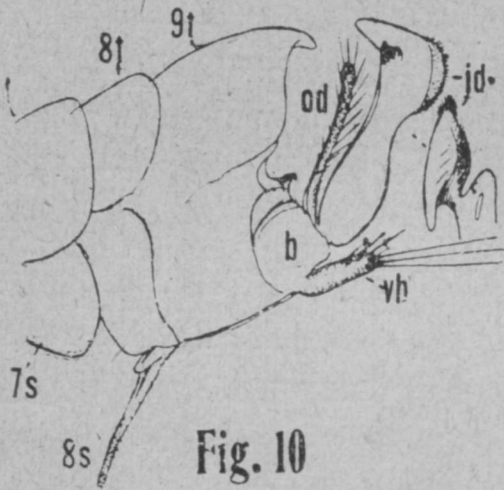


Fig. 10

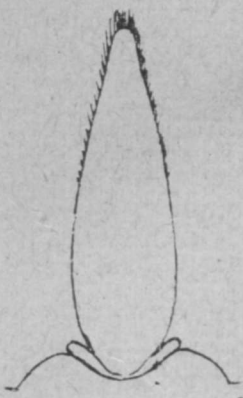


Fig. 9

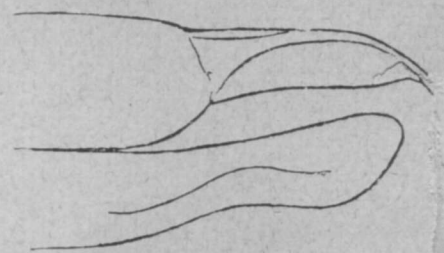


Fig. 13

FOR EXPLANATION OF PLATE SEE PAGE 286.



distal half; cell *1st M*<sub>2</sub> short-pentagonal; petiole of cell *M*<sub>1</sub> longer than *m*.

Abdominal tergites yellow, narrowly trivittate with dark brown; outer segments more uniformly infuscated; hypopygium dark, the ninth tergite and appendage of eighth sternite pale. Male hypopygium (fig. 10) with the ninth tergite (fig. 12) extensive, very slightly narrowed beyond midlength, the caudal margin with a small U-shaped median notch. Basistyle (b) with the ventro-caudal lobe (vb) black, relatively short and stout, about four times as long as thick, at apex with a few setae, including about three very long setae that are much longer than the lobe itself; mesal lobe of basistyle of moderate size, tumid, irregularly bilobed, the larger lobule with a dense brush of long yellow setae on mesal face. Outer dististyle (od) cylindrical, slightly thicker on distal half, provided with long conspicuous setae. Inner dististyle (id) complex in structure, the caudal portion of the apex with a setiferous cushion. Eighth sternite (fig. 11) small, the median appendage trifid, the long median lobe pale in color, narrowed to the obtuse apex, the surface with numerous punctures that bear small inconspicuous setae; lateral lobes reduced to very small, scarcely apparent, lateral lobules.

*Hab.* Chile.

*Holotype*, ♂, Malleco, January 1928 (*A. Pirion*).

#### Explanation of the figures on Lám. XV:

*Symbols:* b = basistyle; id = inner dististyle; mb = mesal lobe of basistyle; od = outer dististyle; s = sternites; t = tergites; vb = ventro-caudal lobe of basistyle.

- Fig. 1. *Tipula apterogyne* Philippi; male hypopygium lateral aspect.  
 2. *T. apterogyne*; male hypopygium, ninth tergite, dorsal.  
 3. *T. subandina* Philippi; male hypopygium, lateral aspect.  
 4. *T. subandina*; male hypopygium, eighth sternite, ventral.  
 5. *T. subandina*; male hypopygium, ninth tergite, dorsal.  
 6. *T. araucania*; male hypopygium, lateral aspect.  
 7. *T. araucania*; male hypopygium, eighth sternite ventral.  
 8. *T. araucania*; male hypopygium, ninth tergite, dorsal.  
 9. *T. Pirioni*; male hypopygium, eighth sternite ventral.  
 10. *T. pallidesignata*; male hypopygium, lateral aspect.  
 11. *T. pallidesignata*; male hypopygium, eighth sternite, ventral.  
 12. *T. pallidesignata*; male hypopygium, ninth tergite, dorsal.  
 13. *T. subandina* Philippi; ovopositor, lateral aspect.