

LOS INSECTOS DE LAS ISLAS JUAN FERNANDEZ

5. TIPULIDAE (Diptera)

CHARLES PAUL ALEXANDER

Department of Entomology
University of Massachusetts
Amherst, Massachusetts

En este trabajo se describen 32 nuevas especies de Tipúlidos chilenos de las Islas Juan Fernández, pertenecientes a los géneros *Limonia* (*Dicranomyia*), *Shannonomyia* y *Molophilus* (*Molophilus*), elevándose así a 37 las especies hasta ahora conocidas de estas Islas. El autor presenta además en la Introducción de su trabajo una descripción general de Juan Fernández, adaptada de R. C. Murphy (1936), enumera las estaciones en donde G. Kuschel colectó estos Tipúlidos y discute las características generales de la fauna tipulidológica de estas Islas, terminando con una clave para los géneros comprendidos.

* * *

I n t r o d u c t i ó n

Our knowledge of the Tipulidae of the Juan Fernández Islands, prior to the two expeditions undertaken by Father Guillermo Kuschel, was limited to three species [*Tipula* (*Eumicrotipula*) *backstromi* Alexander, *Limonia* (*Dicranomyia*) *selkirki* Alexander, and *Molophilus selkirkianus* Enderlein], all taken by Bäckström, entomologist on the Skottsberg Expedition 1916-1917. Father Kuschel's collecting has completely revolutionized our knowledge of the insect fauna of the islands in many groups, including the crane-flies. The total number of species of Tipulidae listed in the present report is 37, of which no fewer than 32 are described as new. The types of the novelties have been returned to Father Kuschel and will be preserved in the Entomological Collection of the University of Chile, Santiago. I wish to express my deepest thanks and appreciation to Father Kuschel for the privilege of studying this unusually interesting series of crane-flies.

The following brief account of the islands is adapted from Murphy's more detailed account (1936), as cited in the brief bibliography at the conclusion of these introductory remarks.

«The Juan Fernández Islands are in a latitude slightly south of that of Valparaíso, the inner island, Masatierra, being 667 kilometers from the continent. Masafuera is 167 kilometers farther west and a very little to southward. Masatierra is 22 kilometers in length, narrow, bent like a boomerang, and reaches an altitude of 916 meters. Off its southwestern tip lies the small, waterless island of Santa Clara. Masafuera is smaller than the main island, but higher (1,650 meters), of roughly rect-

angular outline, and cut by very deep, east-west gorge-like valleys. The latter island has been during recent year uninhabited. Masatierra is the seat of a fishery for clawless lobsters (*Palinurus*), which is responsible for regular communication with the mainland.

Many voyagers, such as Scouler (1826) and von Tschudi (1846) have likened Juan Fernández, in form, climate, and the superficial appearance of the original vegetation, to Madeira, or to Flores of the Azores. The islands are built of greatly eroded, Tertiary, volcanic rocks, and from the wild peaks and crests forest-clad valleys descend toward the coast on one or more sides. Many of the seaward faces are, however, extremely precipitous; on the west, Masafuera, for example, drops away in a sheer steep of 1,500 meters, more or less.

The climate of Juan Fernández is moister and milder than that of the opposite coast of Chile. The islands feel the influence of the warm circulation of the Mentor Current rather more than that of the cooler coastal water. The mean annual temperature at Masatierra is 15,5° C., the August and February averages being, respectively, 12,4° and 19°. Rainfall amounts to 1,008,9 millimeters per annum. It is least in January and heaviest in June, and at all seasons is concentrated particularly on the higher eastern and central portions of Masatierra, where the air-currents condense their moisture after rising suddenly from the southerly shore. There are no adequate meteorological data from Masafuera.

The climate, the nature of the vegetation, and doubtless that of the animal life, cannot be discussed entirely in terms of conditions at sea level; the situation is complicated by altitude. The lofty upland of Masafuera for instance, is an alpine tundra where, in 1908, Skottsberg discovered a totally unsuspected Magellanic flora comprising such plants as a sub-antarctic bramble (*Rubus geoides*), a club moss (*Lycopodium magellanicum*), and a mountain aster (*Lagenophora*). *** The flora of Juan Fernández has been studied by Skottsberg, who finds on one or another of the islands both a sub-antarctic and a tropical American element, as well as a strange endemic moiety which offers only doubtful hints of relationship with plants in distant parts of the Pacific. The vertical zones comprise forest, grassy meadows and fern-beds, and mountain heath, with large sterile areas on the precipices and unfavorable exposures. The forests, which ascend to 700 meters or thereabouts, are of sub-tropical type, with evergreen forms predominating; lianas are lacking, their place being taken by ferns with winding rhizomes reaching high up the trunks of the trees. Myrtles, tree ferns (*Dicksonia*), and a large endemic chonta palm (*Juania australis*) are characteristic. The native sandalwood, known nowhere else in the world, has been extirpated, and weeds and continental thicket-plants are winning a slow victory over the aboriginal flora. Toward the upper limit of the dense forest are a number of peculiar miniature trees of endemic genera, belonging to ordinarily non-arborescent families. Some of these also flourish on the grass-grown steppe of Santa Clara.»

References

GOETSCH, WILHELM

1933. *Die Robinson-Insel Juan Fernández und ihre biogeographischen Probleme*. Phoenix, 19: 26-43.

MURPHY, ROBERT CUSHMAN

1936. *Oceanic birds of South America*, I: 1-640, figs. 1-61, 6 col. plates; pls. 1-38; II: 641-1.245, figs. 62-80, 10 col. plates; pls. 39-58; bibliography.

SKOTTSBERG, CARL

1918. *The islands of Juan Fernández*. Geogr. Rev., 5: 362-383, map, figs.
1920-28. *The natural history of Juan Fernández and Easter Island*.

Great popular interest attaches to Juan Fernández from Defoe's novel, *Robinson Crusoe* (1719), where the hero, Alexander Selkirk (or Selcraig), was voluntarily marooned on Masatierra for four years between 1704 and 1708, and whose experiences during this time served as the basis for the fictional character «Robinson Crusoe».

Father Kuschel visited Masatierra in February and March 1951, and collected on all three islands from late December 1951 to February 1952. As stated earlier, his collections are extraordinarily rich and give us our first clear picture of the insect fauna. It is of particular note that he was able to collect at the highest altitudes on both major islands (Los Inocentes, Masafuera, 1.000 - 1.400 meters; El Yunque, Masatierra, 915 meters). Of especial interest was the ascent of El Yunque on February 10, 1952; this unusually rugged and inaccessible peak had been climbed previously on only seven occasions, the earliest in 1795, the last previous ascent in August 1934. It was at the summit of El Yunque that Father Kuschel discovered one of the most striking novelties among the crane-flies [*Limonia* (*Dicranomyia*) *yunqueana*, sp. n.].

Summary of Stations where Tipulidae were collected.

MASATIERRA.

- Bahía Cumberland — 1951-1952.
Alto Francés, 400 meters; 1951.
Quebrada de la Laura - 1951.
Quebrada El Rabanal — 1951.
Quebrada de Villagra, 400 meters; 1951.
Miradero de Selkirk, 300-550 meters — 1951-1952; 500 meters, December 31, 1951.
Plazoleta del Yunque, 1951; 200 meters, January 2-9, 1952.
El Yunque, 915 meters; February 10, 1952.

SANTA CLARA.

- El Corral, January 6, 1952.

MASAFUERA.

- Quebrada de las Casas, January 13-14, 1952.
Quebrada de la Calavera, January 15, 1952.
Quebrada de las Vacas, January 17, 1952.
Las Chozas, 700 meters, January 14, 1952.
La Correspondencia, 1.300 meters, January 20, 1952.
Inocentes Bajos, 1.000 meters, January 27, 1952.
Inocentes Altos, 1.400 meters, January 22, 1952.

General Features of the Tipulid Fauna

As stated earlier, a total of 37 species of crane-flies are now known from Juan Fernández, including one doubtful form (*Molophilus selkirkianus* Enderlein). Only five genera are involved, representing both major subfamilies (Tipulinae and Limoniinae) and three distinct tribes of the latter (Limoniini, Hexatomini and Eriopterini). All of the genera are common and widespread on the Chilean mainland and it is evident that the fauna must have been derived therefrom. The great bulk of the species fall in the two genera *Limonia* (13 species) and *Molophilus* (19 species). Of particular interest are the three species of subapterous crane-flies belonging to the genera *Limonia* and *Shannonomyia*. It is of interest to note that Father Kuschel discovered only three specimens of such subapterous flies and that three distinct species were included. It seems certain that still other subapterous species will be found on the islands, particularly at the higher altitudes, and it further appears that many more fully-winged species should be found in future collecting. There can be little question but that Juan Fernández will be found to support a remarkably rich crane-fly fauna considering the relatively limited extent of the islands.

THE CRANE-FLIES OF JUAN FERNANDEZ

Key to the subfamilies, tribes and genera

1. Subapterous and flightless; wings greatly reduced, less than one-third the length of the body..... 2
Fully-winged in both sexes, the wings subequal in length to the body..... 3
2. Antennae 14-segmented; tibial spurs lacking; claws toothed. (Limoniinae: Limoniini)..... *Limonia* Meigen
Antennae 16-segmented; tibial spurs present; claws simple. (Limoniinae: Hexatomini)
Shannonomyia Alexander
3. Last segment of maxillary palpus elongate, exceeding the remainder; nasus present; antennae 13-segmented; Sc_1 atrophied; $m-cu$ at or close to fork of M_3+4 ; size large (wing 15 mm. or over). (Tipulinae)..... *Tipula* Linnaeus
Last segment of maxillary palpus short; nasus lacking; antennae with either 14 or 16 segments; Sc_1 preserved; $m-cu$ at or close to the fork of M or some distance before the fork of M_3+4 ; size small (wing 12 mm. or less). (Limoniinae)..... 4
4. Antennae 14-segmented; claws toothed; wings with Rs 2-branched. (Figs. 11 - 18). (Limoniinae: Limoniini)..... *Limonia* Meigen
Antennae 16-segmented; claws simple; wings with Rs 3-branched. (Figs. 22 - 24)..... 5
5. Tibial spurs present. (Limoniinae: Hexatomini).....
Shannonomyia Alexander
Tibial spurs lacking. (Limoniinae: Eriopterini)..... 6
6. Vein R_{2+3+4} preserved, cell R_3 thus appearing petiolate; cell 1st M_2 closed. (Fig. 23).....
Erioptera (*Trimicra*) Osten Sacken

Vein R_{2+3} preserved, cell R_3 thus appearing sessile; cell M_2 open by the atrophy of m . (Fig. 24).....*Molophilus* Curtis

TIPULINAE

Tipula Linnaeus

Tipula (*Eumicrotipula*) *bäckströmi* Alexander (figs. 1, 2)

1921 *Tipula bäckströmi* Alexander; in Skottsberg, The Natural History of Juan Fernández and Easter Island, 3, Diptera - Tipulidae from Juan Fernández 3 : 26 — 27

The type, a unique female, was from Masatierra, taken in March by K. Bäckström, entomologist of the Skottsberg expedition, 1916-1917. Several additional specimens were taken by Kuschel.

MASATIERRA: Bahía Cumberland, February 10, 19, March 3, 1951; January 4, 1952. Quebrada el Rabanal, February 27, 1951. Quebrada de Villagra, 400 meters, February 21, 1951. Plazoleta del Yunque, 200 metres, January 2, February 5, 1952, at light. Cerro Alto, 600 meters, February 1, 1952. Yunque, February 12, 1951.

Allotype, ♂, Bahía Cumberland, February 10, 1951 (Kuschel).

Male.—Length about 17 mm.; wing 15 mm.; antenna about 5 mm.

Characters as in the female, differing in the sexual features. Antennae relatively long, about one-third the wing; basal three segments obscure yellow, remainder of flagellum black; flagellar segments with the basal enlargements of moderate size, the longest verticils just exceeding the segments. Male hypopygium (fig. 2) relatively large and conspicuous. Ninth tergite, $9t$, transverse, the posterior border subtruncate without markedly projecting lobes, the most conspicuous being more thickened and polished black lateral ones and a small submedian pair that are separated by a very shallow U-shaped median notch; dorsal surface of tergite back from the central notch with a shallow furrow. Basistyle with the mesal lobe, mb , stout, subcircular in outline, the posterior end with erect yellow setae, the upper outer angle produced into a small knob; on face of lobe with groups of very long setae; ventrocaudal lobe, vb , blackened, cylindrical, approximately five times as long as thick, with unusually long terminal setae that are as long as or longer than the lobe itself. Outer dististyle, d , slender pale club, its outer end weakly dilated. Inner dististyle large; beak obtuse; posterior crest with a series of moderately flattened setae, the outermost long and slender, the intermediate series short, stout, their tips bent, the more basal ones again passing into long normal setae. Gonapophysis, g , large, irregular in outline, the longest outer arm terminating in a flattened subcircular disk. Eighth sternite, $8s$, with the appendage conspicuously trilobed, the lateral pair appearing as flattened paddlelike blades, the basal half darkened, the outer portion pale; median lobe longer but more slender, the outer half particularly narrowed, setiferous, the setae at apex longer and more conspicuous. Wing (fig. 1).

LIMONIINAE

LIMONIINI

Limonia Meigen

The only representative of the tribe is the subgenus *Dicranomyia* of the vast genus *Limonia* Meigen. *Dicranomyia* is represented by thirteen species, distributed on the islands as follows:

MASATIERRA	SANTA CLARA	MASAFUERA
<i>affabilis</i>		<i>affabilis</i>
<i>amphionis</i>		<i>masafuerae</i>
<i>axierasta</i>		<i>pedestris</i>
<i>harpax</i>		<i>selkirki</i>
<i>kuscheliana</i>		<i>veneris</i>
<i>selkirki</i>		
<i>stuardoi</i>		
<i>trituberculata ingloria</i>	<i>trituberculata ingloria</i>	
<i>venatrix</i>		
<i>yunqueana</i>		

Key to the species of *Limonia* (*Dicranomyia*)

1. Nearly apterous. (Fig. 10). (Masafuera, at high altitudes)... *pedestris*, sp. n.
 Fully winged in both sexes..... 2
2. Wings strongly blackened, without conspicuous pattern..... 3
 Wings subhyaline, either patterned with darker or immaculate except for the more darkened stigma..... 4
3. Legs uniformly darkened. (Figs. 14, 20). (Masatierra, Masafuera) *selkirki* (Alexander)
 Femora with the tips abruptly yellow. (Figs. 17, 25). (Masafuera) *veneris*, sp. n.
4. Wings patterned, with darkened clouds along cord or in certain of the cells..... 5
 Wings virtually unpatterned except for the stigma..... 11
5. Size large (wing, female, over 10 mm.); legs, including femora, yellow; wings fulvous, conspicuously patterned with brown, appearing chiefly as broad marginal seams to the veins. (Fig. 18). (Masatierra, at high altitudes)..... *yunqueana*, sp. n.

- Size smaller (wing, female, 8 mm. or less)..... 6
6. Femora with a narrow darkened ring before the white or yellow tips 7
- Femora with the tips narrowly yellow but without a blackened subterminal ring..... 8
7. Wings virtually unpatterned except for the conspicuously darkened stigma and a longitudinal seam in cell *M* adjoining vein *Cu*. (Fig. 16). (Masatierra)..... *venatrix*, sp. n.
- Wings with a more conspicuous darkened pattern, including the stigma, a narrow seam over the cord and, in cases, the costal border in the vicinity of the humeral crossvein; major cream-colored areas before and beyond the stigma. (Figs. 9, 12). (Masatierra)..... *kuscheliana*, sp. n.
8. Darkened wing pattern conspicuous and extensive, the clouds being approximately equal in area to the pale ground; male hypopygium with the dorsal dististyle stout, especially at near midlength. (Figs. 3, 7). (Masatierra, Masafuera)..... *affabilis*, sp. n.
- Darkened wing pattern more restricted and paler; male hypopygium with the dorsal dististyle slender, sickle-shaped... 9
9. Wings yellow with a broad darker band along the cord, extending from the stigma to the posterior border. (Fig. 6). (Masatierra)..... *amphionis*, sp. n.
- Wings with the pattern much less distinct and otherwise distributed..... 10
10. Darkened wing pattern more evident, the major pale areas appearing as prestigmal and poststigmal brightenings and in cell *1st A*. (Figs. 4, 5). (Masatierra)..... *axierasta*, sp. n.
- Darkened wing pattern still fainter, virtually restricted to small clouds over the fork of *Rs*, at end of vein *Cu* and near the outer end of cell *1st A*. (Figs. 13, 19). (Masafuera)..... *masafuerae*, sp. n.
11. General coloration of thorax, especially the pleura, gray. (Masatierra, Santa Clara; Chilean mainland)..... *trituberculata ingloria* Alexander
- General coloration of thorax ochreous to yellow..... 12
12. Thorax yellow, the praescutum with four brown stripes; pleura clear light yellow, without a darkened dorsal stripe; dorsal dististyle of male hypopygium with the apex produced into a point. (Figs. 15, 21). (Masatierra)..... *stuardoi*, sp. n.

Thorax light yellow, the praescutum with three nearly confluent dark brown stripes; pleura yellow with a brown dorsal stripe, best indicated at anterior end; dorsal dististyle of male hypopygium narrowly obtuse at apex. (Figs. 8, 11). (Masa-tierra).....

harpax, sp. n.

Limonia (Dicranomyia) affabilis, sp. n. (figs. 3, 7)

Size medium (wing, 8 mm. or less); general coloration brown; antennae black; halteres black; femora black, the tips extensively yellow; wings yellowed, heavily patterned with brown; abdominal segments bicolored, brown basally, the apices paler; male hypopygium with the dorsal dististyle thickest beyond midlength, thence narrowed to the long apex, obtuse at tip; rostral spines two, from a low common tubercle.

Male.—Length about 5,5 — 6 mm.; wing 7 — 7,5 mm.

Female.—Length about 6 — 7 mm.; wing 7 — 8 mm.

Rostrum brownish yellow to brown; palpi black. Antennae black; flagellar segments oval, becoming more elongate-oval outwardly, terminal segment not narrowed apically; longest verticils subequal to the segments. Head dark grayish brown; anterior vertex (male) relatively narrow, about equal to the diameter of the scape.

Pronotum brown. Mesonotum brown, the praescutum paler laterally. Pleura brown, still darker dorsally to form a poorly defined stripe, most conspicuous in front. Halteres black, the base of stem narrowly yellow. Legs with the coxae brownish yellow; trochanters yellow; femora black, the tips extensively and abruptly yellow; tibiae and tarsi brown. Wings (Fig. 3) yellowed, heavily patterned with brown, as follows: Stigma and a confluent seam over the anterior cord; broad marginal seams on virtually all veins, most extensive in the cubital and anal fields, the area in cell *1st A* ending at margin midway between the veins; paler brown washes in cells *R* and *M*; prearcular field more yellowed; in total area, the pale ground and darkened clouds and washes approximately equal; veins brown, more yellowed at wing base. Venation: *Sc*₁ ending approximately opposite origin of *Rs*, *Sc*₂ some distance from its tip, *Sc*₁ alone about one-third *Rs*, the latter one-half longer than the basal section of *R*₄₊₅; *m-cu* some distance before fork of *M*.

Abdominal segments usually bicolored, brown to brownish black basally, the apices more brownish yellow, the pale color more extensive on the sternites; hypopygium blackened; in cases the abdomen, especially the tergites, more uniformly blackened. Male hypopygium (fig. 7) with the tergite, *9t*, transverse, the margin broadly notched, the lobes obtuse, with relatively sparse coarse setae. Basistyle, *b*, with the ventromesal lobe obtuse, with abundant setae, a few much longer and stouter. Dorsal dististyle, *d*, a strongly curved sickle, thickest just beyond midlength, thence narrowed to the long apex, the tip obtuse. Ventral dististyle relatively large and fleshy, its area considerably exceeding that of the basistyle; rostral prolongation relatively slender, with two rostral spines from a low common tubercle, the outermost spine a little shorter and gently curved. Gonapophysis, *g*, with the mesal-apical lobe curved, its tip obtuse. Aedeagus relatively narrow.

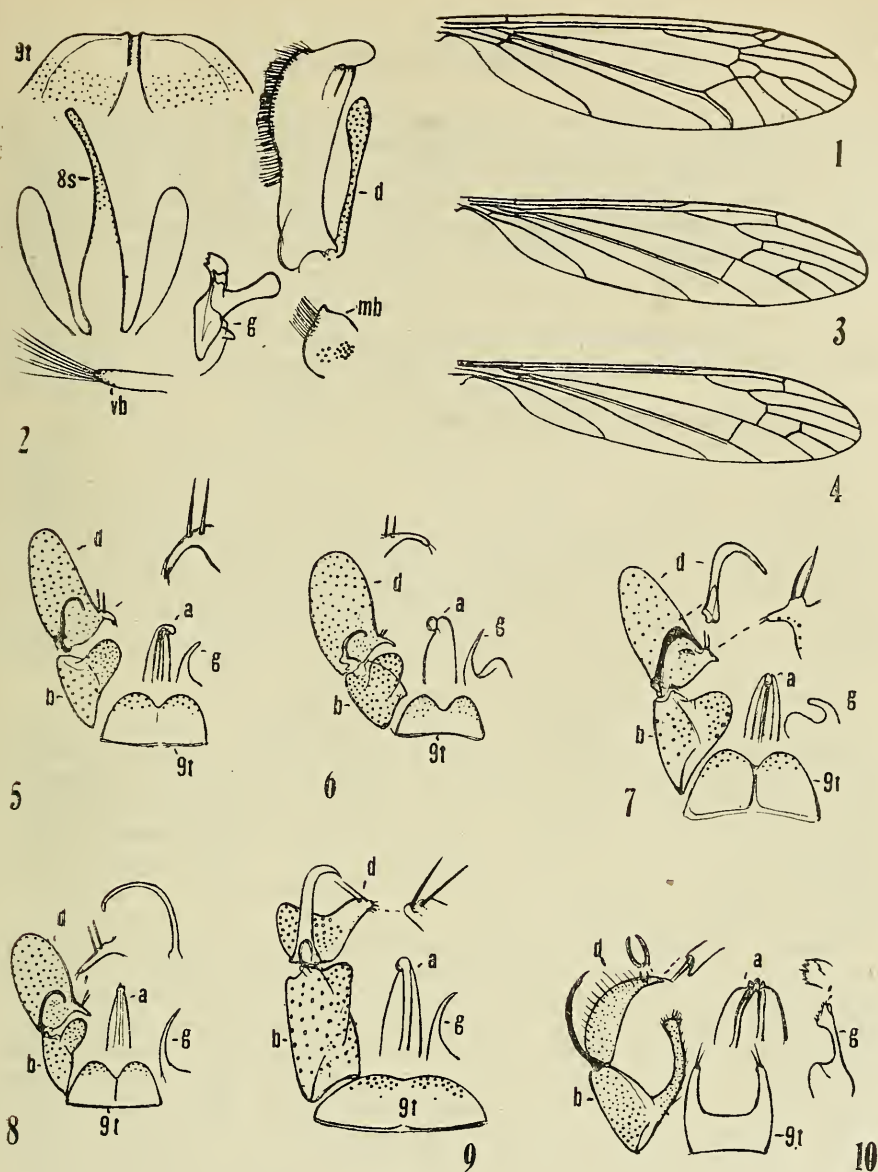


Plate 1

1. *Tipula (Eumicrotipula) bäckströmi* Alexander; venation.
2. *Tipula (Eumicrotipula) bäckströmi* Alexander; male hypopygium.
3. *Limonia (Dicranomyia) affabilis*, sp. n.; venation.
4. *Limonia (Dicranomyia) axierasta*, sp. n.; venation.
5. *Limonia (Dicranomyia) axierasta*, sp. n.; male hypopygium.
6. *Limonia (Dicranomyia) amphionis*, sp. n.; male hypopygium.
7. *Limonia (Dicranomyia) affabilis*, sp. n.; male hypopygium.
8. *Limonia (Dicranomyia) harpax*, sp. n.; male hypopygium.
9. *Limonia (Dicranomyia) kuscheliana*, sp. n.; male hypopygium.
10. *Limonia (Dicranomyia) pedestris*, sp. n.; male hypopygium.

(Explanation of symbols: a, aedeagus; b, basistyle; d, dististyles; g, gonapophysis; mb, mesal lobe of basistyle; s, sternite; t, tergite; vb, ventrocaudal lobe of basistyle).

Holotype, ♂, MASAFUERA: Quebrada de las Casas, January 19, 1952 (Kuschel). Allotype, ♀, MASATIERRA: Miradero de Selkirk, 500 meters, December 31, 1951. Paratopotypes, ♂♀. Paratypes, ♂♀, MASAFUERA: Quebrada de las Vacas, January 5, 1952; La Correspondencia, 1300 meters, January 20, 1952; Inocentes Bajos, 1,000 meters, January 27, 1952; Inocentes Altos, 1,400 meters, on *Dicksonia*, January 22, 1952 (Kuschel).

Allied to *Limonia* (*Dicranomyia*) *amphionis*, sp. n., and *L. (D.) axierasta*, sp. n., differing in the coloration and structure of the male hypopygium.

***Limonia* (*Dicranomyia*) *amphionis*, sp. n. (fig. 6)**

General coloration yellow, the praescutum with three brown stripes, mediotergite with the central part conspicuously darkened; femora brownish yellow, the tips yellow; wings pale yellow, conspicuously patterned with brown, including a broad band along the cord from the stigma to the posterior border; male hypopygium with the small dorsal dististyle obtuse at tip; ventral dististyle large and fleshy, the rostral prolongation slender, with two straight spines near base; gonapophysis with mesal-apical lobe long and slender, nearly straight.

Male.—Length about 6.5 mm.; wing 7.5 mm.

Female.—Length about 6 — 6.5 mm.; wing 7 — 8 mm.

Rostrum ochreous, slightly pendant; palpi relatively short, brownish black. Antennae with scape yellow, darkened at apex, remainder of organ black; flagellar segments (male) oval, becoming more elongate-oval outwardly, the more basal ones subequal to their verticils. Head brownish gray; anterior vertex relatively narrow, about equal to the diameter of scape or a trifle wider; posterior vertex with long pale setae that are directed forward.

Pronotum yellow. Mesonotal praescutum yellow laterally and on the interspaces, the disk with three brown stripes; scutum yellow, each lobe with a single major brown area; scutellum brownish yellow; mediotergite dark brown, sparsely pruinose, the sides yellow; pleurotergite yellow. Pleura yellow, variegated with a pale brown dorsal stripe, extending from the cervical region across the propleura and fore coxae, becoming less evident on the anepisternum; sternopleurite weakly darkened. Halteres with stem yellow, knob infuscated. Legs with the coxae yellow, the fore pair brown, as described; trochanters yellow; femora brownish yellow, the tips paling to yellow; tibiae brown, the tarsi passing into black; claws with a powerful subbasal tooth, with microscopic denticles more basad. Wings with a pale yellow ground, heavily and conspicuously patterned with brown, including the stigma and a broad confluent band over the cord to the posterior border at end of vein *Cu*, more expanded basally in cells *R* and *M*; less evident darkenings at base of cell *Sc*, outer end of cell *1st M*₂, a linear wash in cell *M* adjoining vein *Cu* and near outer end of cell *1st A*; veins brown, those in the prearcular field paler. Venation: *Sc*₁ ending about opposite origin of *Rs*, *Sc*₂ far from its tip, *Sc*₁ alone longer than *m-cu*; *Rs* arcuated, about twice the basal section of *R*₄₊₅; free tip of *Sc*₂ and *R*₂ in transverse alignment; cell *1st M*₂ closed; *m-cu* at or shortly before the fork of *M*; cell *2nd A* widest across base.

Abdominal tergites brown, the posterior borders of the intermediate segments pale; basal sternites yellow, the outer ones darkened, with broad yellow posterior borders; basistyle and outer part of the ventral dististyle of the male hypopygium brownish black, the mesal portions of the latter pale. Ovipositor with the cerci slender, virtually straight. Male hypopygium (fig. 6) with the ninth tergite, *9t*, conspicuously emarginate, the obtuse lobes with rather numerous setae. Dorsal dististyle, *d*, very small, curved, obtuse at tip. Ventral dististyle very large and fleshy, its area much greater than that of the basistyle; rostral prolongation slender, with two spines near its base. Gonapophysis *g*, with the mesal-apical lobe long and slender, almost straight.

Holotype, ♀, MASATIERRA: Plazoleta del Yunque, March 3, 1951 (Kuschel). Allotopotype, a broken ♂. Paratopotype, ♂, 200 meters, January 2, 1952. Paratype, ♀, Quebrada de la Laura, March 1, 1951 (Kuschel).

Most similar to *Limonia* (*Dicranomyia*) *alboapicalis* Alexander, of the Chilean mainland, differing especially in the very heavy and characteristic wing pattern, venation, and the details of structure of the male hypopygium.

***Limonia* (*Dicranomyia*) *axierasta*, sp. n. (figs. 4, 5)**

General coloration of thorax brown, the praescutum with three conspicuous dark brown stripes; pleura chiefly dark brown; femora brownish black, the tips yellowed; wings brown, variegated with paler, including conspicuous prestigmal and poststigmal areas and a major mark in cell *1st A*.

Male.—Length about 5 — 6 mm.; wing 6 — 7 mm.; antenna about 0.8 — 0.9 mm.

Female.—Length about 6 mm.; wing 7 mm.

Rostrum yellow; palpi black. Antennae black; flagellar segments oval, exceeding the verticils. Head brown, more ochreous in front; anterior vertex narrow, about equal to the diameter of the scape.

Pronotum brown. Mesonotum with three conspicuous dark brown praescutal stripes that are confluent or nearly so, the lateral margins broadly yellow; remainder of mesonotum varying from obscure yellow to dark brown; pleurotergite obscure yellow above. Pleura chiefly dark brown with a vague brightening across the dorsal sternopleurite and meral region. Halteres dark brown, the base of stem narrowly yellow. Legs with the fore coxae brownish black, the apex yellow, remaining coxae and all trochanters yellow; femora brownish black, the tips yellowed; remainder of legs brown; claws large, with a conspicuous tooth at near the basal third, with further microscopic denticles nearer base. Wings (fig. 4) with a brownish ground, variegated with paler areas, including marks before and beyond the stigma and most of cell *1st A*, especially near vein *2nd A*; less distinct whitened areas in bases of cells *R* and *M* and less evidently so in some of the outer cells; veins brown. Venation: *Sc* short, *Sc*₁ ending distinctly before the origin of *Rs*, *Sc*₁ alone relatively short, approximately one-half or less *m-cu*, the latter at or before the fork of *M*, in cases to about one-third its length (as shown).

Abdomen, including hypopygium, dark brown. Ovipositor with cerci very slender, only gently upcurved; hypovalvae stout and straight, extend-

ing nearly to the tips of the cerci. Male hypopygium (fig. 5). with the tergal lobes, *9t*, broadly obtuse, with abundant long setae, the emargination much smaller. Basistyle, *b*, much smaller than the large fleshy ventral dististyle, the ventromesal lobe simple. Dorsal dististyle, *d*, a strongly curved slender sickle, its tip obtuse. Ventral dististyle a large fleshy lobe, its area approximately twice that of the basistyle; rostral prolongation slender, more or less pendant beyond the spines, the latter erect, separated at base. Gonapophysis, *g*, with mesal-apical lobe elongate, gently curved. Aedeagus, *a*, narrow, the ducts contiguous.

Holotype, ♂, MASATIERRA: Miradero de Selkirk, 550 meters, February 15, 1951 (Kuschel). Allotopotype, ♀. Paratopotypes, 2 ♂♂, 500 meters, December 31, 1951 (Kuschel).

Most similar to species such as *Limonia (Dicranomyia) masafuerae*, sp. n., differing in slight details of coloration and structure of the male hypopygium, as shown by the key.

***Limonia (Dicranomyia) harpax*, sp. n. (figs. 8, 11)**

General coloration ochreous to yellow, the praescutum with three nearly confluent dark brown stripes; thoracic pleura with a brown dorsal stripe; rostrum yellow; knobs of halteres dark brown; femora brownish yellow, vaguely paler at apices; wings nearly hyaline, the stigma slightly darker; *Sc* relatively short, *Sc*₁ ending a short distance before the origin of *Rs*; male hypopygium with the dorsal dististyle a slender sickle, its tip slightly decurved; ventral dististyle with the rostral spines two; gonapophysis with the mesal-apical lobe long and slender, gently curved.

Male.—Length about 6,5 — 7 mm.; wing 7,5 — 8 mm.

Female.—Length about 7 — 7,5 mm.; wing 8 — 8,5 mm.

Rostrum yellow; palpi black. Antennae with at least the base of the scape yellow, the remainder, with the pedicel, brown, flagellum black; flagellar segments oval, passing into elongate, the basal segments shorter than their verticils; terminal segment only a trifle longer than the penultimate. Head ochreous; anterior vertex narrower than the diameter of the scape.

Cervical sclerites brown. Pronotum paler brown above. Mesonotal praescutum light yellow with three nearly confluent dark brown stripes, the median one broader and more polished; scutal lobes similarly dark brown; median region of scutum and the scutellum testaceous yellow; mediotergite infuscated. Pleura yellow, with a broad and usually conspicuous brown stripe extending from the cervical region backwards, passing above the halteres, becoming paler behind; ventral sternopleurite paler brown. Halteres with stem yellow, knob dark brown. Legs with the coxae and trochanters yellow, the base of the fore coxae a trifle darker; femora brownish yellow, in cases vaguely more yellowed at tip; tibiae and tarsi dark brown to black; claws relatively small, the major outer spine unusually basal in position, the usual microscopic denticles crowded and ill-defined. Wings (fig. 11) nearly hyaline, unpatterned except for the slightly darker stigma; veins brown. Venation: *Sc* relatively short, *Sc*₁ ending some distance before origin of *Rs*, *Sc*₁ alone variable in length, from about one-third to two-thirds *m-cu*, the latter at or just before the fork of *M*.

Abdominal tergites dark brown, the posterior borders very narrowly pale, sternites yellow; ninth segment yellow; basistyle blackened, the ventral dististyle infuscated. Male hypopygium (fig. 8) with the ninth tergite, *9t*, deeply emarginate, the obtuse lobes darkened at tips, separated by a V-shaped notch. Basistyle, *b*, small, the ventromesal lobe oval, with setae nearly its own length. Dorsal dististyle, *d*, a slender sickle, the tip slightly decurved. Ventral dististyle a large fleshy lobe, its area nearly three times the basistyle; rostral prolongation slender, the two spines black, slender, placed rather close together, the outermost about equal in length to the prolongation beyond it. Gonapophysis, *g*, with mesal-apical lobe long and slender, gently curved. Aedeagus, *a*, narrow.

Holotype, ♂, MASATIERRA: Quebrada de Villagra, 400 meters, February 23, 1951 (Kuschel). Allotype, ♀, Bahía Cumberland, February 15, 1951. Paratopotypes, ♂♀. Paratypes, ♂♀, Alto Francés, 400 meters, March 2, 1951; Quebrada El Rabanal, February 27, 1951; Miradero de Selkirk, 550 meters, February 5, 1951; Plazoleta del Yunque, 200 meters, January 2, 1952 (Kuschel).

The present fly is most similar to species such as *Limonia* (*Dicranomyia*) *stuardoi*, sp. n., differing in the pattern of the thoracic dorsum and pleura, and in the details of structure of the male hypopygium.

***Limonia* (*Dicranomyia*) *kuscheliana*, sp. n. (figs. 9, 12)**

General coloration dark brown; antennae short, black throughout; anterior vertex relatively broad; knobs of halteres brownish black; femora brown to brownish black, the extreme tip whitened, preceded by a more or less distinct blackened rings; wings narrow, tinged with dusky, patterned with darker brown and with cream-colored areas; *Sc* extending to shortly beyond the origin of *Rs*; *m-cu* before the fork of *M*; male hypopygium with the tergite only slightly emarginate; ventral dististyle very small, its rostral prolongation stout, with two straight spines near tip; apex of aedeagus rounded.

Male.—Length about 5 — 5,5 mm.; wing 5,5 — 6 mm.; antenna about 0,8 — 0,9 mm.

Female.—Length about 6 mm.; wing 6 mm.

Rostrum and palpi black. Antennae black throughout, short; flagellar segments subglobular to short-oval, passing through oval to subcylindrical, shorter than the longest verticils except on the outermost segments; terminal segment about one-third to one-fourth longer than the penultimate. Head black, sparsely gray pruinose; anterior vertex relatively broad, about two and one-half times the diameter of the scape.

Thorax almost uniformly dark brown, very sparsely pruinose. Halteres with stem brown, its base narrowly yellow, knob brownish black. Legs with the coxae and trochanters brownish testaceous; femora brown to brownish black, the extreme tip whitened, in cases with a subterminal more blackened ring; tibiae and tarsi blackened; claws long and slender, with a long spine before midlength, the basal denticles reduced. Wings (fig. 12) narrow, with a dusky tinge, vaguely patterned with darker brown and with cream-colored areas; the darker markings includes the costal border near the wing base, stigma, a small seam at origin of *Rs* and very narrowly over the cord; the brightened pattern occurs chiefly

in the radical field as prestigmal and poststigmal areas and before the origin of *Rs*; wing base more yellowed, including the veins which elsewhere are dark brown. Venation: *Sc*₁ ending immediately beyond the origin of *Rs*, *Sc*₂ a short distance from its tip; *Rs* a little longer than vein *R*₃, strongly arcuated to weakly angulated at origin; *m-cu* before the fork of *M*; vein 2nd *A* relatively short.

Abdomen, including the hypopygium, brownish black to black. Ovipositor with the valves elongate, especially the slender gently upcurved cerci. Male hypopygium (fig. 9) with the tergite, *9t*, transverse, the posterior border very gently to scarcely emarginate, the lateral lobes thus very low to scarcely evident, each with about 13 to 14 unusually long setae. Basistyle, *b*, long, the ventromesal lobe stout, with yellow setae of moderate length. Outer dististyle, *d*, a powerful curved rod that narrows to an acute point, the style projecting beyond the level of the ventral dististyle, the latter small, with abundant long coarse setae; rostral prolongation stout, with two long straight spines placed close to the apex. Gonapophysis, *g*, with the mesal-apical lobe long and slender, gently curved. Aedeagus, *a*, narrowed outwardly, the tip narrowly obtuse, apparently with a single aperture.

Holotype, ♂, MASATIERRA: Miradero de Selkirk, 550 meters, February 15, 1951 (Kuschel). Allotopotype, ♀, pinned with type. Paratopotypes, ♂♀. Paratypes, ♂♀, Quebrada de Villagra, 400 meters, February 23, 1951; Alto Francés, 400 meters, March 7, 1951; Plazoleta del Yunque, 200 meters, February 9, 1952 (Kuschel).

This distinct fly is named for the collector, Father Guillermo Kuschel, in appreciation of many favors in the past. The male hypopygium is very different from that of other regional species. Two females have the thorax much paler, more ochreous, and with the legs pale, the femoral blackened ring being very distinct. I am placing these specimens here until more material becomes available.

Limonia (Dicranomyia) masafuerae, sp. n. (figs. 13, 19)

General coloration of thorax fulvous yellow, the praescutum with three brown stripes; rostrum and antennal scape yellow; femora brown, the tips narrowly yellow; wings whitish subhyaline, restrictedly patterned with very pale brown; male hypopygium with the ventral dististyle very large and fleshy, its area more than twice that of the basistyle.

Male.—Length about 6,5 — 7 mm.; wing 7 — 8 mm.; antenna about 1,1 — 1,2 mm.

Female.—Length about 6,5 mm.; wing 7 mm.

Rostrum yellow; palpi black. Antennae with the scape obscure yellow, the remainder dark brown to brownish black; basal flagellar segments short-oval, becoming more elongate outwardly, the outer segments subequal to or a little shorter than the verticils. Head above silvery gray, the occiput and genae paling to brownish yellow; anterior vertex relatively narrow, less than twice the diameter of the scape.

Pronotum obscure yellow. Mesonotum fulvous yellow, the praescutum with a conspicuous median brown stripe that is more or less divided behind, the lateral stripes entire; posterior sclerites of notum chiefly dark brown, the median region of scutum, posterior border of scutellum and the pleurotergite more yellowed. In cases, the central praescutal stripe

more nearly entire and the lateral pair pale to scarcely evident. Pleura obscure yellow, vaguely patterned with reddish brown on the anepisternum and ventral sternopleurite, producing ill-defined stripes. Halteres with stem yellow, knob infuscated. Legs with coxae and trochanters yellow; femora obscure yellow basally, darkened outwardly into brown, the tips narrowly and abruptly yellow; tibiae and tarsi brown to brownish black; claws long and slender, with a long subbasal spine and more basal microscopic denticles. Wings (fig. 13) whitish subhyaline, restrictedly patterned with very pale brown, including small clouds at fork of *R*_s, distal section of *Cu*, and outer end of cell 1st A, all disconnected; basal part of cell *Sc* weakly darkened; stigma oval, slightly darker brown; veins brown, yellowed in the posterior prearcular field. Venation: *Sc* relatively short, *Sc*₁ ending shortly before origin of *R*_s, *Sc*₁ more than one-half *m-cu*, in cases fully equal to it; *m-cu* a short distance before fork of *M*, in cases about equal to one-fourth its own length, more rarely close to the fork.

Abdominal tergites and male hypopygium dark brown, the sternites and eighth and ninth tergites yellow, the subterminal sternites vaguely infuscated. Abdomen relatively short and stout. Ovipositor with the cerci very slender, gently upcurved; hypovalvae stout and straight, extending almost to the tips of the cerci, blackened dorsally at base. Male hypopygium (fig. 19) with the tergite, *9t*, emarginate, the lobes obtuse. Basistyle, *b*, relatively small, its area less than half that of the large fleshy ventral style. Dorsal dististyle, *d*, a slender sickle, its tip obtuse. Ventral dististyle darkened, the mesal face distad of the prolongation pale; rostrum slender, the two spines straight, subequal, slightly separated. Gonapophysis, *g*, with mesal-apical lobe very long and slender. Aedeagus, *a*, with the ducts contiguous.

Holotype, ♂, MASAFUERA: Las Chozas, 700 meters, January 19, 1952 (Kuschel). Allotopotype, ♀. Paratopotypes, ♂♀. Paratypes, ♂♀, Quebrada de las Casas, January 13, 1952; Quebrada de la Calaveras, January 15, 1952; Quebrada de las Vacas, January 17, 1952 (Kuschel).

In its general appearance, the present fly is most similar to *Limonia* (*Dicranomyia*) *harpax*, sp. n., differing in the coloration and in slight details of the male hypopygium.

***Limonia* (*Dicranomyia*) *pedestris*, sp. n. (fig. 10)**

Nearly apterous, the wings stenopterous, about twice as long as the halteres; general coloration of thorax obscure yellowish brown; head dark brown; abdomen black; male hypopygium with the basistyle produced into an unusually long ventromesal lobe; dorsal dististyle a long curved rod that narrows into a straight spine; ventral dististyle oval, narrowed into a trunklike prolongation, the two rostral spines placed close together, small and weak; gonapophysis pale and weak, the apex of the mesal-apical lobe produced into small points or fimbriations; aedeagus unusually broad, the ducts separated.

Male.—Length about 7 mm.; wing 1.9×0.2 mm.; antenna about 1.2 mm.

Leg, femur 7.2 mm.; tibia 8.5 mm.

Rostrum obscure yellow, relatively long, approximately one-third the remainder of head; palpi black. Antennae short; scape and pedicel

brown, flagellum black; flagellar segments short-cylindrical, longer than the verticils. Head dark brown, sparsely pruinose; anterior vertex about one-half wider than the diameter of scape.

Pronotum brown. Mesothorax chiefly ochreous or obscure yellowish brown, without conspicuous pattern; pleura somewhat clearer yellow. Halteres black, short, the knob conspicuous. Wings stenopterous, more than twice the length of the halteres, the basal half obscure yellow, the remainder more infuscated; veins distorted, evident on outer fourth of wing, with long macrotrichia, those at the apex still longer and more conspicuous.

Abdominal tergites and hypopygium black, the more basal sternites a little paler. Male hypopygium (fig. 10) large and conspicuous, relative to the size of the insect. Ninth tergite, *9t*, transverse, each outer lateral angle produced caudad into a long slender lobe that is approximately as long as the length of the tergite itself, bearing two long setae at apex; remainder of tergite unusually glabrous. Basistyle, *b*, small, with a very long and conspicuous ventromesal lobe at extreme cephalic part of the mesal face, the arm with abundant setae, those at apex stouter. Dorsal dististyle, *d*, an unusually long and slender curved rod, its tip extended into a long straight spine. Ventral dististyle about equal in area to the basistyle, the body oval, narrowed into a trunklike prolongation, the apex hollowed out; rostral spines two, placed close together on face of prolongation some distance back from tip; spines relatively small and weak. Gonapophysis, *g*, pale, the mesal-apical lobe very slender, more expanded at apex which is produced into small points or fimbriations. Aedeagus, *a*, unusually broad, the two usual ducts separated but converging at apex into a common median opening.

Holotype, ♂, MASAFUERA: Inocentes Bajos, 1,000 meters, on *Dicksonia externa*, January 27, 1952 (Kuschel).

The fly is readily told from all known regional members of the subgenus by the subapterous condition and, especially, the structure of the male hypopygium.

Subapterism in the genus *Limonia* is less common than in certain other groups of crane-flies, especially in the Tipulinae. This is particularly true in the male sex where the known cases in the genus are only about five in number. The only such instance in the local fauna is the supposedly new genus and species described by Enderlein (1906) as *Zalusia falklandica*, from the Falkland Islands. This is evidently only a highly reduced *Limonia* and from the structure of the male hypopygium seems certainly referable to the subgenus *Dicranomyia*, as in the present fly. In this species the venation is somewhat better preserved though still so distorted as to be unreliable for providing generic characters, as was attempted by Enderlein. From the latter's figure of the male hypopygium it appears that what he considers as being the eighth tergite is actually the ninth while his so-called ninth tergite would seem to be the proctiger. It is very evident that new generic or subgeneric groups of crane-flies should never be proposed on the character of wing reduction alone.

***Limonia* (*Dicranomyia*) *selkirki* (Alexander)**

1921. *Dicranomyia selkirki* Alexander; in Skottsberg, The Natural History of Juan Fernández and Easter Island, 3, Diptera-Tipulidae from Juan Fernández, 3 : 25 — 26.

The types, all females, were from Masatierra, taken in January, July and December, and from Masafuera, taken in February and March

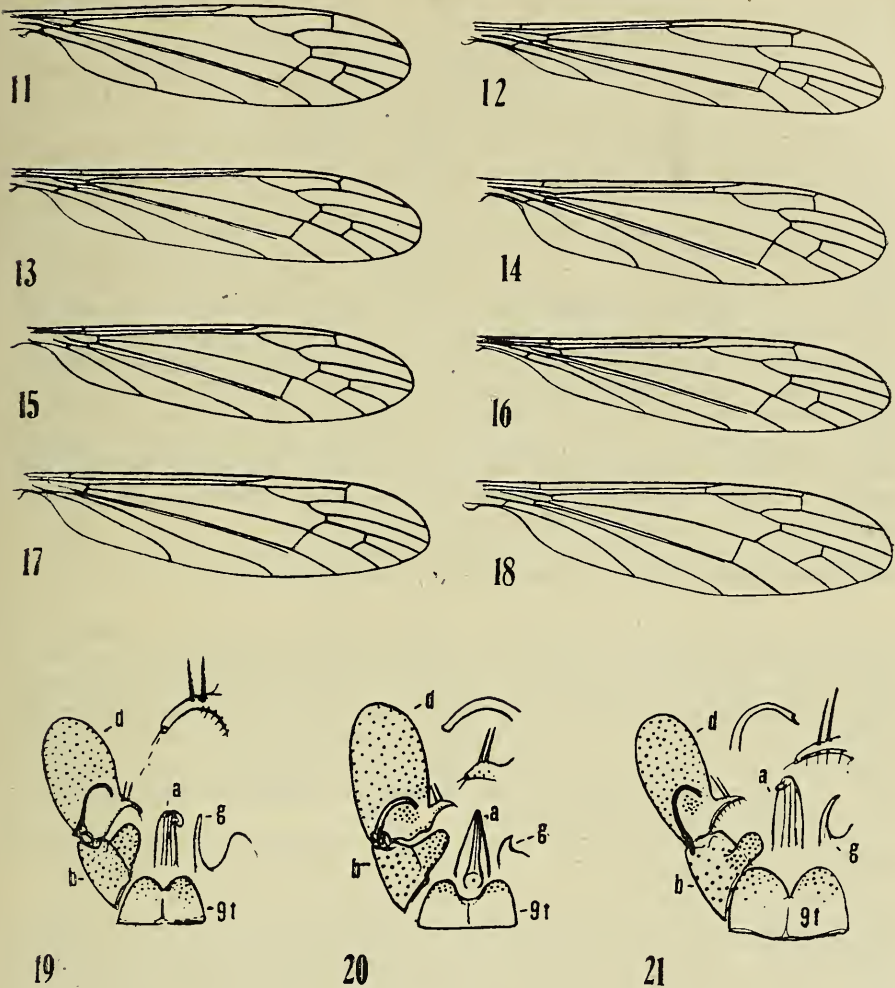


Plate 2

11. *Limonia (Dicranomyia) harpax*, sp. n.; venation.
12. *Limonia (Dicranomyia) kuscheliana*, sp. n.; venation.
13. *Limonia (Dicranomyia) masafuerae*, sp. n.; venation.
14. *Limonia (Dicranomyia) selkirki* (Alexander); venation.
15. *Limonia (Dicranomyia) stuardoi*, sp. n.; venation.
16. *Limonia (Dicranomyia) venatrix*, sp. n.; venation.
17. *Limonia (Dicranomyia) veneris*, sp. n.; venation.
18. *Limonia (Dicranomyia) xunqueana*, sp. n.; venation.
19. *Limonia (Dicranomyia) masafuerae*, sp. n.; male hypopygium.
20. *Limonia (Dicranomyia) selkirki* (Alexander); male hypopygium.
21. *Limonia (Dicranomyia) stuardoi*, sp. n.; male hypopygium.

(Explanation of symbols: a, aedeagus; b, basistyle; d, dististyles; g, gonapophysis; t, tergite).

(1916 — 1917) by K. Bäckström. Additional specimens were taken by Kuschel.

MASATIERRA: Bahía Cumberland, February 10 — 19, March 3, 1951; January 8, February 4, 1952; Alto Francés, 400 meters, March 2 — 7, 1951; Plazoleta del Yunque, 200 meters, February 20, 1951, El Yunque, 975 meters, February 10, 1952 (Kuschel).

MASAFUERA: Quebrada de las Casas, January 14, 1952; Quebrada de la Calavera, January 15, 1952; Quebrada de las Vacas, January 17, 1952 (Kuschel).

The series of specimens available shows a considerable range in size (Male — Length 6.5 — 10 mm.; wing 7 — 12 mm.). Wings (fig. 14) strongly blackened, the stigma still darker; no clearly defined paler prestigmal or poststigmal brightenings. Venation: *m-cu* variable in position, from shortly before to beyond the fork of *M*. Male hypopygium (fig. 20) with the ninth tergite, *9t*, deeply and broadly notched, the lobes obtuse. Basistyle, *b*, small, the ventromesal lobe simple. Dorsal dististyle, *d*, a small curved sickle, its apex truncate. Ventral dististyle very large and fleshy, its area about three times that of the basistyle; rostral prolongation small, with two straight black spines. Gonapophysis, *g*, with the mesal-apical lobe unusually small and inconspicuous. Aedeagus, *a*, slender, narrowed to the decurved tip, the ducts contiguous.

Limonia (Dicranomyia) stuardoi, sp. n. (figs. 15, 21)

Size medium (wing less than 8 mm.); general coloration yellow, the praescutum and scutum patterned with brown; scape yellow, flagellum black; halteres infuscated; femora obscure yellow basally, darkened outwardly, deepening to black just before the narrow yellow tips; wings unpatterned except for the pale stigma; male hypopygium with the dorsal dististyle a curved rod, the apex notched and produced; rostral prolongation of the ventral style large, the two spines elongate, the longer inner one subequal to the prolongation.

Male.—Length about 5.5 — 6.5 mm.; wing 6.5 — 7.5 mm.; antenna about 1 — 1.2 mm.

Female.—Length about 5.5 — 6 mm.; wing 6 — 7 mm.

Rostrum pale yellow; palpi black. Antennae with the scape yellow, pedicel a little more infuscated, flagellum black; basal flagellar segments oval, shorter than the verticils, the outer segments more elongate, the terminal one a little exceeding the penultimate. Head weakly infuscated above, paling to yellow behind; anterior vertex relatively narrow, a little less than twice the diameter of the scape.

Pronotum yellow, restrictedly infuscated above. Thorax yellow, the praescutum with four conspicuous brown stripes, the intermediate pair separated by a capillary ground line; scutal lobes with brown centers; scutellum and mediotergite less distinctly darkened. Pleura clear light yellow, the ventral sternopleurite vaguely more darkened. Halteres infuscated, the base of stem narrowly yellow. Legs with the coxae and trochanters yellow; femora obscure yellow, darkened outwardly, deepening to brown just before the narrow yellow tips; tibiae and tarsi brown, the latter darker; claws with a larger outer spine and microscopic basal denticles. Wings (fig. 15) with a weak dusky tinge, the stigma a trifle darker than the ground; prearcular field more yellowed; veins dark brown,

yellow at the base. Venation: Sc_1 ending about opposite the origin of Rs , Sc_1 alone about one-third Rs ; $m-cu$ a short distance before the fork of M . In the holotype the venation of the medial field is abnormal, cell M_2 being open in the left wing by the atrophy of m and the basal section of M_3 , in the right wing by the atrophy of M_3 alone.

Abdominal tergites dark brown, the sternites somewhat paler brown, the posterior borders narrowly yellowed; subterminal segments yellowed; hypopygium brownish black. In the female, tergites more uniformly dark brown, sternites yellow; ovipositor with the cerci very slender, the tips acute. Male hypopygium (fig. 21) with the tergite, $9t$, transverse but relatively long, the lobes conspicuous, separated by a broad notch that are provided with numerous setae of unequal sizes. Basistyle, b , with the ventromesal lobe relatively small, oval, narrowed or subpedunculate proximally; mesal face of style with a concentration of setae. Dorsal dististyle, d , a curved rod, the tip weakly notched, the lower angle farther produced. Ventral dististyle large and fleshy, its area about twice that of the basistyle; rostral prolongation slender, the two spines elongate, the inner one longest, subequal to the entire prolongation. Gonapophysis, g , with the mesal-apical lobe slender, very gently curved. Aedeagus narrow.

Holotype, ♂, MASATIERRA: Miradero de Selkirk, 500 meters, December 31, 1951 (Kuschel). Allotopotype, ♀, pinned with type. Paratopotype, ♂.

I am very pleased to dedicate this species to Carlos Stuardo Ortiz, whose excellent «Catálogo de los Dípteros de Chile», 1946, has proved an invaluable boon to all workers on the Dipterous fauna of Chile. The fly most resembles species such as *Limonia* (*Dicranomyia*) *harpax*, sp. n., differing as shown in the key.

***Limonia* (*Dicranomyia*) *tribuberculata ingloria* Alexander**

1929. *Limonia* (*Dicranomyia*) *trituberculata ingloria* Alexander; Diptera Patagonia and South Chile, 1: 101

Described from Patagonia and Chile. It is the only species of the subgenus that is not restricted to the islands.

MASATIERRA: Bahía Cumberland, in cave, February 17, 1951; at light, January 8, 1952; 1 ♀, March 20, 1951 (Kuschel).

SANTA CLARA: Corral, January 6, 1952 (Kuschel).

***Limonia* (*Dicranomyia*) *venatrix*, sp. n. (fig. 16)**

General coloration of thorax yellow, the praescutum with three conspicuous dark brown stripes that are nearly confluent; femora obscure yellow with a conspicuous dark brown subterminal ring; wings with a yellowish tinge, the oval stigma dark brown, conspicuous.

Female.—Length about 7.5 — 8 mm.; wing 7.2 — 8 mm.

Rostrum brownish yellow; palpi black. Antennae with scape and pedicel brown, flagellum black; flagellar segments oval, with short verticils. Head gray; anterior vertex moderately broad, a little less than three times the diameter of the scape.

Pronotum brown, paler on sides. Mesonotal praescutum yellow laterally, with three conspicuous dark brown stripes, in cases almost confluent by the darkening of the interspaces; scutal lobes, scutellum and mediotergite dark brown, the pleurotergite chiefly yellow. Pleura gray with two narrow brown stripes, the ventral one on the sternopleurite. Halteres dark brown, the base of the stem yellow. Legs with the coxae and trochanters yellow; femora obscure yellow, with a conspicuous dark brown ring from one-third to one-half its own length from the tip, the latter yellow; remainder of legs brownish yellow, the outer tarsal segments blackened; claws with a major tooth at near midlength, with several microscopic basal denticles. Wings (fig. 16) with a yellow tinge, the oval stigma dark brown, conspicuous; elsewhere on wing with a restricted darkened pattern, including most of cell *Sc*, a vague seam at end of *Rs*, and a seam along vein *Cu*, chiefly in cell *M*; veins brown, those in the posterior prearcular field yellow. Venation: *Sc*₁ ending opposite origin of *Rs*, *Sc*₂ some distance from its tip, *Sc*₁ alone exceeding three-fourths *m-cu*, the latter at or shortly before the fork of *M*; cell 1st *M*₂ variable in length, from a little shorter than vein *M*₄ to subequal to it.

Abdominal tergites dark brown, basal sternites yellowed, the intermediate ones more infuscated; subterminal sternite conspicuously yellow. Ovipositor with cerci slender, gently upcurved; hypovalvae long and powerful, straight.

Holotype, ♀, MASATIERRA: Miradero de Selkirk, 500 meters, December 31, 1951 (Kuschel). Paratopotypes, 2 ♀♀.

Readily told from other related regional species by the subterminal darkened femoral rings and the conspicuous brown stigmal area.

***Limonia (Dicranomyia) veneris*, sp. n. (figs. 17, 25)**

General coloration brown, the scutal lobes and dorsal pleural region brownish black; antennae black throughout; femora blackened, the tips narrowly and abruptly light yellow; wings with a strong brown suffusion, the oval stigma still darker brown, preceded and followed by somewhat paler areas; abdomen brownish black; male hypopygium with the dorsal dististyle an unusually slender curved sickle, its tip acute; rostral spines two, slightly separated; gonapophysis with mesal-apical lobe unusually long and slender, almost spinelike.

Male.—Length about 5,5 — 7 mm.; wing 6,5 — 8 mm.; antenna about 1,1 — 1,2 mm.

Female.—Length about 7 — 7,5 mm.; wing 7 — 8,5 mm.

Rostrum and palpi black. Antennae black throughout; flagellar segments suboval, passing into elongate; verticils relatively inconspicuous. Head dark brown; anterior vertex (male) relatively narrow, about equal to the diameter of the scape, a trifle wider in the female.

Thorax brown, the anterior end of the praescutum restrictedly more darkened; scutal lobes brownish black, median region of scutum and the scutellum obscure brownish yellow; mediotergite brownish black, paling to reddish brown on sides. Pleura brown, the dorsal pleurites more blackened to form a longitudinal stripe. Halteres black. Legs with the coxae and trochanters light brown; femora blackened, paler basally, the tips narrowly and abruptly light yellow; tibiae and tarsi black; claws with the outer

spine long and slender, with several microscopic more basal denticles. Wings (fig. 17) with a strong brown suffusion, the oval stigma still darker brown, preceded and followed by somewhat paler areas; cord and outer end of cell *1st M*₂ very narrowly to scarcely seamed with darker; veins brown, the prearcular ones more yellowed. Venation: *Sc*₁ ending approximately opposite the origin of *Rs*, *Sc*₁ alone from one-third to nearly one-half *Rs*, variable in length; *m-cu* at or close to fork of *M*.

Abdomen, including the hypopygium, brownish black, the basal sternites a little paler, the basistyles of the hypopygium more blackened. Male hypopygium (fig. 25) with the tergite, *9t*, transverse, the lobes large, obtuse, separated by a smaller U-shaped notch. Basistyle, *b*, small, the ventromesal lobe oval, simple. Dorsal dististyle, *d*, an unusually slender curved sickle, the tip acute. Ventral dististyle of moderate size, its area somewhat less than three times that of the basistyle; rostral prolongation slender, spines two, slightly separated, as long as the prolongation beyond them. Gonapophysis, *g*, with the mesal-apical lobe unusually long and slender, almost spinelike. Aedeagus, *a*, narrow, the ducts contiguous.

Holotype, ♂, MASAFUERA: Quebrada de las Casas, January 19, 1952 (Kuschel). Allotopotype, ♀, pinned with type. Paratopotypes, ♂♀. Paratypes, ♂♀, Quebrada de la Calavera, January 15, 1952; Quebrada de las Vacas, January 17, 1952; La Correspondencia, 1,300 meters, January 20, 1952; Inocentes Bajos, 1,000 meters, January 27, 1952 (Kuschel).

The naming of the species is for «Friday», faithful servant of Robinson Crusoe. In its general appearance the fly most resembles a small *Limonia* (*Dicranomyia*) *selkirki* (Alexander), differing in the narrow but conspicuous yellow tips of the femora and in the structure of the male hypopygium, particularly both dististyles and the gonapophysis.

***Limonia* (*Dicranomyia*) *yunqueana*, sp. n. (fig. 18)**

Size large (wing, female, over 10 mm.); general coloration of thorax brownish yellow, the praescutum with two darker stripes; rostrum yellow; antennae black, scape yellowed basally; anterior thoracic pleura with a darkened dorsal stripe; halteres yellow; legs yellow, the outer tarsal segments passing into black; wings fulvous, conspicuously patterned with brown, appearing chiefly as broad marginal seams; abdomen fulvous brown, with about six darker pleural spots.

Female.—Length about 10 mm.; wing 10,5 mm.; antenna about 1,4 mm.

Rostrum yellow, palpi passing into black; rostrum about one-fourth the remainder of head. Antennae black, the scape yellow on proximal two-thirds; flagellar segments oval, the outer ones more elongate, exceeding their verticils; terminal segment about one-fourth longer than the penultimate. Head dull fulvous; anterior vertex relatively narrow, about one-half wider than the diameter of the scape.

Pronotum ochreous above, infuscated on sides, the latter continued caudad as a dorsal brown stripe over the dorsal pleurites, ending before the wing-root. Mesonotal praescutum with the ground color brownish yellow, clearest on the margins, with a pair of darker brown stripes that are separated behind, confluent in front; laterals stripes not indicated; anterior interspaces with a line of yellow pollen; scutum medially brow-

nish yellow, each lobe conspicuously patterned with dark brown; scutellum brown, paler medially at base; postnotum reddish brown, more or less infuscated medially. Pleura ochreous yellow, with the darkened stripe above described, the ventral sternopleurite less evidently darkened. Halteres yellow. Legs with the coxae and trochanters yellow; remainder of legs yellow, the outer tarsal segments passing into black; claws only slightly curved, with a strong spine before midlength and about five smaller denticles more basally. Wings (fig. 18) with a fulvous tinge, the prearcular and costal fields more saturated; stigma oval, brown; conspicuous darker brown seams along the outer veins from M_{1+2} to 2nd A , inclusive, the three most posterior ones larger and more clearly defined, appearing as broad marginal seams, those of the medial field paler and more diffuse; vague, less evident clouds on outer half of vein R , at near midlength of cell M adjoining vein Cu_1 , and over the anterior cord; veins yellow, darker in the patterned areas. Venation: Sc_1 ending shortly beyond origin of Rs , Sc_2 just before this origin; cell 1st M_2 about equal in length to distal section of vein M_{1+2} ; $m-cu$ about one-half its length before the fork of M .

Abdomen fulvous brown, the basal segment more darkened; a series of about six dark brown spots along the pleural membrane. Ovipositor with the cerci slender, very gently upcurved to the acute tips; hypovalvae shorter, the tips acute.

Holotype, ♀, MASATIERRA: Summit of El Yunque, 915 meters, February 10, 1952 (Kuschel).

HEXATOMINI

Shannonomyia Alexander

The only representatives of the major tribe Hexatomini so far discovered on Juan Fernández belong to the genus *Shannonomyia*, well represented in Chile and elsewhere in Tropical America, extending far to the northward into the United States and Canada. Three species are included in the present materials, distributed on the islands as follows:

MASATIERRA

masatierrae (subapterous)
selkirkiana

MASAFUERA

kuscheli (subapterous)

It should be emphasized that two of the species are subapterous, the only other known species having the wings comparably reduced being *Shannonomyia minutipennis* Alexander, of Patagonia.

Key to the species of *Shannonomyia*

1. Subapterous species.....

Fully winged species. (Figs. 22, 27). (Masatierra).....

selkirkiana, sp. n.

2. Size large (Length 10 mm.); wings reduced to a small stub that is shorter than the antenna; halteres pale, the knob not or scarcely enlarged; legs long and conspicuous, the tibia subequal in length to the body. (Fig. 26). (Masafuera).....

kuscheli, sp. n.

Size smaller (Length about 8 mm.); wings larger, being nearly equal to the combined head and thorax but incapable of flight; legs shorter, the tibiae less than two-thirds the body. (Masatierra).....

masatierrae, sp. n.

Shannonomyia kuscheli, sp. n. (fig. 26)

Size relatively large (male, length about 10 mm.); wings very reduced, shorter than the antennae, the venation greatly distorted; halteres pale, the knob not or scarcely enlarged; legs long and conspicuous; male hypopygium with the tergal lobes unusually narrow.

Male.—Length about 10 mm.; wing 1,2 mm.; antenna about 1,8 mm. Fore leg, femur 8,5 mm.; tibia 11 mm.; tarsus 9 mm.

Rostrum short, dark brown; palpi brownish black. Antennae short; scape obscure yellowish brown to brown, the remainder brownish black to black; flagellar segments oval, subequal to or a little shorter than the verticils. Head brown, patterned with darker behind the antennal bases, strongly narrowed behind; anterior vertex broad, approximately three times the diameter of the scape.

Pronotum large, brown, the scutellum darker. Mesonotum brown, sparsely yellow pollinose, with a conspicuous median black stripe, broadest in front, narrowed and constricted behind; posterior sclerites brown, with a brownish yellow pollen. Pleura brownish gray. Halteres pale, small, the knob not or scarcely enlarged. Legs brown, the tarsi deepening to black. Wings very reduced, shorter than the antennae, fulvous brown, the costal border blackened. A single powerful vein, evidently *R*, traverses the wing obliquely, extending from the base outwardly, entering costa at near two-thirds the length, provided with about a score of long black trichia on its outer third; costal fringe very long, black; rows of trichia on the remnants of the outer medial veins back from the margin.

Abdomen dark brown, including the hypopygium. Male hypopygium (fig. 26) with the ninth tergite, *9t*, deeply notched, the lobe, unusually narrow and conspicuous. Basistyle, *b*, much longer than the dististyles, the outer style, *d*, unequally bifid at tip, the axial arm stoutest; mesal part of style filled with membrane containing abundant setae; outer surface with unusually long setae; inner dististyle gradually narrowed and curved to the obtuse tip. Gonapophysis, *g*, appearing as a cultrate blade. Aedeagus, *a*, broad based, the penis strongly convoluted within.

Holotype, ♂, MASAFUERA: Inocentes Bajos, 1.000 meters, on *Blechnum cycadifolium*, January 27, 1952 (Kuschel).

This noteworthy crane-fly is named in honor of Father Kuschel, outstanding student of the Curculionid beetles and collector of the great series of specimens upon which the present report is based. The only other nearly apterous species of *Shannonomyia* so far made known include *S. masatierrae*, sp. n., and *S. minutipennis* Alexander, of Patagonia. Both of these latter are much smaller flies, with all details of structure distinct.

***Shannonomyia masatierrae*, sp. n.**

Subapterous; general coloration dark brown; antennae black; knobs of halteres distinctly enlarged; legs relatively short but slender; wings subatrophied but relatively large, nearly as long as the combined head and thorax.

Female.—Length about 8 mm.; wing 2,1 mm.

Leg, femur 4,2 mm.; tibia 4,5 mm.; tarsus 4,1 mm.

Rostrum and palpi black. Antennae with the scape and pedicel brownish black, basal flagellar segments black, oval (outer segments broken). Head dark brown, sparsely grayish yellow pollinose; anterior vertex broad, the eyes correspondingly small.

Thorax above brown, the praescutum with indications of still darker stripes; pleura gray pruinose. Halteres obscure yellow, the knobs distinct. Legs relatively short but slender; coxae brown, gray pruinose; trochanters brownish yellow; remainder of legs dark brown to black; tibial spurs distinct; claws simple. Wings subatrophied but much larger than in *kuscheli*, nearly as long as the combined head and thorax, infuscated, the prearcular region paler. Venation visible but much distorted and unreliable for taxonomic purposes.

Abdomen black. Ovipositor with the cerci pale horn yellow, very gently upcurved to virtually straight.

Holotype, ♀, MASATIERRA: Miradero de Selkirk, 500 meters, December 31, 1951 (Kuschel).

There can be no question of the correct placing of the present fly in *Shannonomyia*.

***Shannonomyia selkirkiana*, sp. n. (figs. 22, 27)**

General coloration of mesonotum yellowish gray, the praescutum with three darker brown stripes; antennae brownish black; legs light brown, the outer tarsal segments passing into black; wings weakly tinged with brown, the oval stigma dark brown; male hypopygium with the tergite conspicuously emarginate; outer dististyle small, its outer apical angle extended into a slender straight spine, the lower angle rectangular.

Male.—Length about 9 — 10 mm.; wing 9 — 10 mm.; antenna about 1,5 — 1,6 mm.

Female.—Length about 10 — 11 mm.; wing 10 — 11 mm.

Rostrum and palpi dark brown or brownish black. Antennae brownish black; flagellar segments oval, the outer ones more elongate; basal segments shorter than their verticils. Head brownish gray, narrowed behind; anterior vertex about three to three and one-half times the diameter of the scape.

Pronotum brownish gray. Mesonotal praescutum yellowish gray, with three darker brown stripes, the median one more distinct, especially in front; scutum brownish gray, the centers of the lobes a little darker; scutellum brownish gray; postnotum brownish gray, the pleura clearer gray. Halteres with stem yellow, knob infuscated. Legs with the coxae yellowish brown, sparsely pruinose; trochanters brownish yellow; remainder of legs light brown, the outer tarsal segments passing into black. Wings (fig. 22) weakly tinged with brown, in cases the axilla restrictedly more infuscated; stigma oval, dark brown, conspicuous; veins pale brown

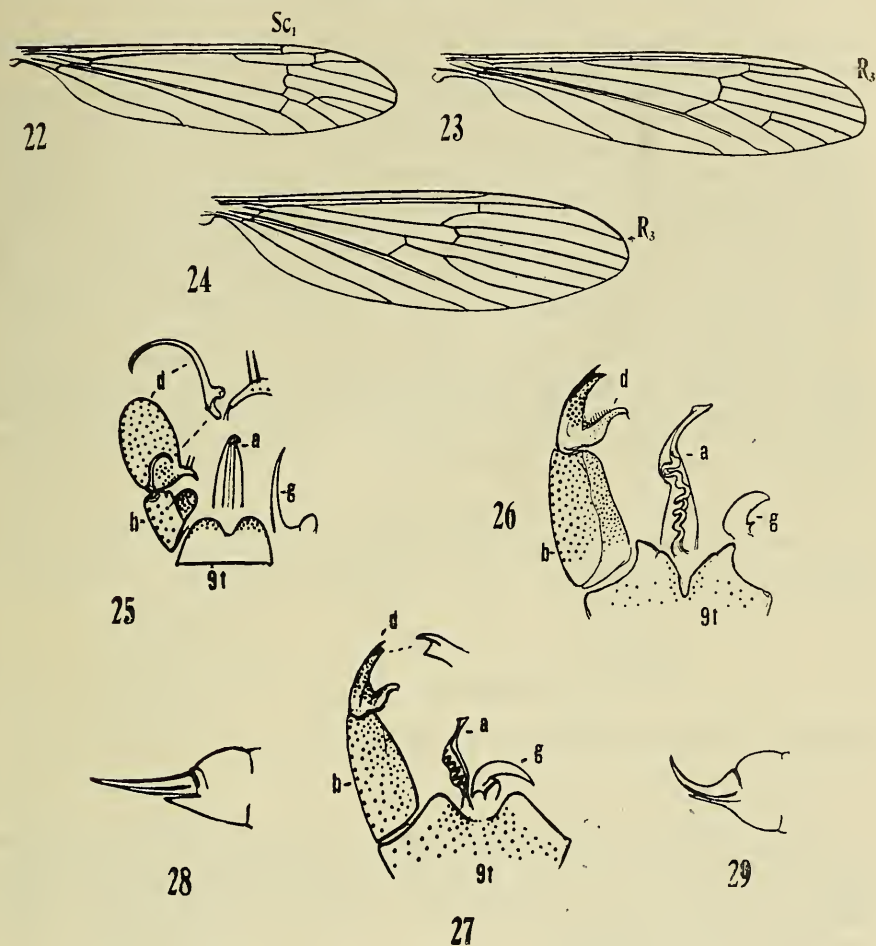


Plate 3

22. *Shannonomyia selkirkiana*, sp. n.; venation.
 23. *Erioptera (Trimicra) pilipes* (Fabricius), var.; venation.
 24. *Molophilus (Molophilus) multifidus*, sp. n.; venation.
 25. *Limonia (Dicranomyia) veneris*, sp. n.; male hypopygium.
 26. *Shannonomyia kuscheli*, sp. n.; male hypopygium.
 27. *Shannonomyia selkirkiana*, sp. n.; male hypopygium.
 28. *Molophilus (Molophilus) filiulus*, sp. n.; ovipositor.
 29. *Molophilus (Molophilus) filius*, sp. n.; ovipositor.

(Explanation of symbols: a, aedeagus; b, basistyle; d, dististyles; g, gonapophysis; t, tergite).

to brown. Venation: *Sc* moderately long, *Sc*₁ ending just before the level of the fork of *Rs*, *Sc*₂ near its tip; *R*₂ subequal to or a little shorter than *R*₁₊₂; *m* normal, or in cases reduced in length or even lost by the fusion of adjacent veins (as shown), in this case cell 2nd *M*₂ short-petiolate; *m-cu* about opposite one-fourth to one-fifth cell 1st *M*₂.

Abdomen, including hypopygium, dark brown. In female, the genital segment obscure fulvous; cerci slender, fulvous; hypopygium blackened basally. Male hypopygium (fig. 27) with the tergite, *9t*, conspicuously emarginate, the notch broader than the lobes. Dististyles, *d*, small, the outer style less than one-half as long as the basistyle, conspicuously setiferous, including the membrane; apex of style unequally bidentate, including a slender straight outer spine and a nearly rectangular lower tooth; inner style about two-thirds as long. Gonapophysis, *g*, appearing as a narrow flattened blade, the tip acute. Aedeagus, *a*, elongate, corrugated and convoluted within.

Holotype, ♂, MASATIERRA: Bahía Cumberland, February 15, 1951 (Kuschel). Allotype, ♀, Plazoleta del Yunque, 200 meters, February 20, 1951. Paratopotypes, 2 ♂♂, February 15, 19, 1951. Paratypes, ♂♀, with the allotype, February 20, 1951, January 9, 1952; 1 ♀, Miradero de Selkirk, 300 meters, March 9, 1951 (Kuschel).

The present fly is very close to *Shannonomyia barilochensis* Alexander, of Patagonia and South Chile, differing in slight details of coloration of the body, legs and wings, and in the structure of the male hypopygium, particularly the tergite and outer dististyle.

ERIOPTERINI

Erioptera Meigen

Erioptera (*Trimicra*) *pilipes* (Fabricius), var. (fig. 23)

1787. *Tipula pilipes* Fabricius; Mantissa Ins., 2: 324

This virtually cosmopolitan species apparently has as synonyms *obscurata* Blanchard (1852), *trichopus* Philippi (1865) and *apoecila* Philippi (1865), as well as very many others in different regions of the world. I cannot attempt to separate the present materials from the slight variety occurring on the mainland.

MASATIERRA: Bahía Cumberland, February 12, 24, March 1, 6, 1951; January 2, February 2, 1952.

Plazoleta del Yunque, 200 meters, January 2, 1952.

El Yunque, February 12, 1951.

SANTA CLARA: El Corral, January 6, 1952.

MASAFUERA: Quebrada de las Casas, January 13, 1952.

As is almost invariably the case wherever the species is found there is a great range in the size of the specimens, particularly in the males. In the present series the range is as follows:

Male.—Length about 4.5 — 7.5 mm.; wing 5.5 — 10 mm. The wing is shown to facilitate determination (fig. 23).

It is of interest to note that an almost wingless representative of the subgenus has recently been discovered in the inhospitable Antipodes Islands, south of New Zealand.

Molophilus Curtis

Fully one-half of all the species included in the present report fall in this genus which includes a host of small to medium-sized densely hairy-winged flies. While certain of the species are represented by single or few specimens others are in small series and it appears that all or virtually so of the species herein discussed will prove valid. All of the species so far discovered on Juan Fernández fall in the so-called *plagiatus* group and all in the more restricted section having the phallosome of the male hypopygium a setiferous plate, usually with the outer end emarginate. On the Chilean mainland there are representatives of three distinct groups, including the *plagiatus* group, and this latter shows a considerable range in phallosomic structure. The uniformity of this condition in the present series indicates that as far as these islands are concerned that the entire abundant fauna may have originated from few or single invasions from the mainland in the far distant past. The local species show a considerable range in size and in color, from pale yellow forms, through brown, to black.

The nineteen species discussed herewith are distributed on the islands as follows.

MASATIERRA

amphacanthus
antimenus
appressospinus
canopus
distifurcus
filiolus
filius
multifidus
neptunus
pectiniferus
rectispinus
selkirkianus
tridens
yunquensis

MASAFUERA

antimenus
arciferus
defoeanus
masafuerae
styx
variatus

Key to the species of *Molophilus*

(Based primarily on the structure of the male hypopygium, particularly the basal dististyle).

1. Male hypopygium with the basal dististyle bearing two arms or spines (Figs. 31, 32, 34, 36, 37, 38, 43, 44).....

2

Male hypopygium with the basal dististyle with three or more arms or spinous points. (Figs. 30, 33, 35, 39, 40, 41, 42, 45, 46, 47).....

11

2. Axial arm of style near apex provided with numerous spinulose points. (Fig. 44). (Masafuera)..... *stylx*, sp. n.
 Axial arm of style a smooth rod or spine..... 3
3. Lateral arm of style minutely split or toothed at apex..... 4
 Lateral arm of style simple..... 5
4. Axial arm of style a long slender spine, the lateral arm conspicuously and symmetrically forked; thoracic pleura and mesonotum concolorous, dark brown. (Fig. 47). (Masatierra)... *yunquensis*, sp. n.
 Axial arm of style stouter, a little expanded before tip, lateral arm weakly and asymmetrically forked, sometimes virtually simple; thoracic pleura reddish yellow, brighter than the dark brown mesonotum. (Fig. 34). (Masatierra)..... *canopus*, sp. n. (in part)
5. Lateral arm of style leaving the axis at almost a right angle, the axial arm beyond this point stout. (Fig. 43). (Masatierra). *rectispinus*, sp. n.
 Arms of the style more appressed..... 6
6. Basal dististyle forking beyond midlength, the base longer than either arm. (Figs. 34, 36, 38)..... 7
 Basal dististyle forking beyond midlength, the base stout, shorter than the longest arm. (Figs. 31, 32, 37)..... 9
7. Arms of style appressed. (Fig. 36). (Masatierra)..... *distifurcus*, sp. n.
 Arms of style more divergent..... 8
8. General coloration of body dark brown; apex of phallosome emarginate. (Fig. 34). (Masatierra)..... *canopus*, sp. n. (in part)
 General coloration fulvous yellow; phallosome entire or virtually so. (Fig. 38). (Masatierra)..... *filius*, sp. n.
9. Lateral arm of style strongly appressed to the axial one. (Fig. 32). (Masatierra)..... *appressospinus*, sp. n.
10. Arms of style more divergent..... 10
 Arms of style strongly divergent; general coloration of mesonotum reddish brown, pleura yellow. (Fig. 37). (Masatierra) *filiolus*, sp. n.
 Axial arm of style curved at apex toward the lateral one; general coloration of mesonotum brown, sparsely pruinose, the pleura still darker brown. (Fig. 31). (Masafuera, Masatierra)..... *antimenus*, sp. n.

11. Basal dististyle bearing three arms or points. (Figs. 33, 35, 39, 41, 45, 46)..... 12
- Basal dististyle with four or more arms or points. (Figs. 30, 39, 40, 42)..... 17
12. Basal style terminating in three not markedly unequal points, forming a trident. (Figs. 41, 45)..... 13
- Basal style with the points unequal. (Figs. 33, 35, 39, 46).... 14
13. Base of style elongate, exceeding the longest spine; phallosome entire; general coloration of thorax brownish black; size small (wing, male, less than 4,5 mm.). (Fig. 41). (Masatierra).... *neptunus*, sp. n.
- Base of style short and stout, subequal to the longest pair of spines; phallosome emarginate; general coloration of thorax medium brown, the posterior pleurites more yellowed; size larger (wing, male, over 4,5 mm.). (Fig. 45). (Masatierra)... *tridens*, sp. n.
14. General coloration of mesonotum reddish brown..... 15
- General coloration of mesonotum brownish black or plumbeous 16
15. Male hypopygium with the basal dististyle with two short separate lateral spines. (Fig. 35). (Masafuera)..... *defoeanus*, sp. n.
- Basal dististyle with a single strongly arcuated lateral spine, the axial arm with a strong spine at or before midlength. (Fig. 33). (Masafuera)..... *arciferus*, sp. n.
16. Lateral arm of style fused basally, forking at tip; size very small (wing, 3,5 mm. or less). (Fig. 46). (Masafuera)..... *variatus*, sp. n.
- Lateral arm of style a simple curved spine; size larger (wing, 4,5 mm. or more). (Fig. 39). (Masafuera)..... *masafuerae*, sp. n. (in part)
17. Basal dististyle appearing as a one-sided comb, with three or four long spines on outer margin but without armature on inner face. (Fig. 42). (Masatierra)..... *pectiniferus*, sp. n.
- Basal dististyle not as above, provided with a spine or arm on inner face..... 18
18. Spine of inner face of basal style at or before midlength, slender, those of outer margin three or four in number, all beyond the level of the inner spine; a group of spiculose points on inner face before apex. (Fig. 30). (Masatierra)..... *amphacanthus*, sp. n.

Spine of inner face about at midlength of style, strong and powerful; no outer spiculose points, as described.....

19

19. General coloration of thorax orange or yellowish orange; both arms or the basal style bearing points. (Fig. 40). (Masatierra).....

multifidus, sp. n.

General coloration of thorax dark plumbeous; axial arm of basal style with two or three straight appressed spines. (Fig. 39). (Masafuera).....

masafuerae, sp. n. (in part)

Molophilus (Molophilus) amphacanthus, sp. n. (fig. 30)

Belongs to the *plagiatus* group; size medium (wing, 4,5 mm. or more); general coloration dark brown to plumbeous; antennae short, flagellum testaceous; halteres yellow; legs yellow, appearing darker because of vestiture; wings yellow, the anal angle darkened; abdomen dark brown, hypopygium yellow; male hypopygium with the basal dististyle appearing as a powerful rod, the outer margin with four strong subappressed spines that gradually decrease in size outwardly, on inner margin nearer base with a single strong spine; surface of outer half of style with abundant appressed spicules; phallosome hairy, emarginate.

Male.—Length about 3,7 — 4 mm.; wing 4,5 — 4,8 mm.; antenna about 1,1 mm.

Female.—Length about 4 — 4,3 mm.; wing 4,8 — 5,1 mm.

Rostrum and palpi brownish black to black. Antennae short, pale brown to testaceous; flagellar segments long-oval, with very long verticils. Head grayish brown.

Thorax dark brown to plumbeous, the prætergites yellow. Pleura infuscated above, paling to yellow on the lower sides and beneath. Halteres yellow. Legs with all coxae and trochanters yellow; femora yellow, the vestiture darker, more or less obscuring the color; outer segments passing into dark brown. Wings yellow, the anal angle conspicuously infuscated; veins and trichia yellow, darker in the infuscated areas. Venation: R_2 lying shortly beyond the level of $r-m$; petiole of cell M_3 about one-half longer than $m-cu$; vein $2nd\ A$ relatively long, ending about opposite midlength of the petiole of cell M_3 .

Abdomen dark brown, the hypopygium yellow. Male hypopygium (fig. 30) with the beak of the basistyle, b , stout, blackened, angularly bent. Outer dististyle with the arms very unequal, the outer flattened. Basal dististyle, bd , distinctive, appearing as a powerful rod, with about four strong subappressed spines along the outer margin, these progressively smaller toward the small weakly bifid apical spine; on opposite or inner margin nearer base with a single strong subappressed spine; surface of outer half of style with abundant appressed spicules. Phallosome, p , conspicuously setiferous, emarginate at apex. Aedeagus elongate, slender.

Holotype, ♂, MASATIERRA: Alto Francés, 400 meters, February 7, 1951 (Kuschel). Allotopotype, ♀, pinned with type, wings lost. Paratopotypes, ♂♀.

The most similar species include *Molophilus (Molophilus) appressus* Alexander, *M. (M.) perfidus* Alexander, *M. (M.) monoctenus* Alexander, and others, all differing in the structure of the male hypopygium.

***Molophilus (Molophilus) antimenus*, sp. n. (fig. 31)**

Belongs to the *plagiatus* group; size medium (wing 4,5 — 5 mm.); general coloration of thorax brown, the praescutum a little more reddened, the remainder dark brown; male hypopygium with the beak of the basistyle relatively deep, darkened, cleaverlike; basal dististyle a powerful short-stemmed rod that forks into two unequal spines, the inner longer and stouter, its apex curved toward the smaller lateral spine; phallosome an emarginate setiferous cushion.

Male.—Length about 3,6 — 3,8 mm.; wing 4,5 — 5 mm.; antenna about 1 — 1,2 mm.

Female.—Length about 4 mm.; wing 5 mm.

Rostrum and palpi black. Antennae brownish black; flagellar segments suboval to subcylindrical, the verticils of the more proximal segments elongate. Head dark brown.

Thorax almost uniformly brown, sparsely pruinose, the lateral region of the praescutum a little more reddened; posterior sclerites of notum and the pleura still darker brown. Halteres pale yellow. Legs with the coxae and trochanters yellow or testaceous yellow; remainder of legs brownish yellow, with darkened vestiture, the outer segments darker. Wings with a weak grayish tinge; veins darker, macrotrichia dark brown. Venation: *Rs* elongate; *R*₂ nearly in transverse alignment with *r-m*; petiole of cell *M*₃ about one-third longer than *m-cu*; vein 2nd *A* sinuous, ending about opposite midlength of the petiole of cell *M*₃.

Abdomen brown, the hypopygium a little brightened. Male hypopygium (fig. 31) with the beak of the basistyle, *b*, darkened, relatively deep, cleaverlike. Outer dististyle with the arms very unequal. Basal dististyle, *bd*, a powerful short-stemmed rod that forks into two unequal spines, the inner longer and stouter, its apex curved inward toward the smaller lateral spine. Phallosome, *p*, a setiferous cushion, its apex emarginate. Aedeagus long and slender, not conspicuously expanded at near midlength.

Holotype, ♂, MASAFUERA: Quebrada de las Vacas, January 17, 1952 (Kuschel). Allotopotype, ♀, MASATIERRA: Bahía Cumberland, February 15, 1952. Paratopotype, ♂, Paratype, ♂, with the allotype.

In the structure of the male hypopygium the present fly is most like *Molophilus (Molophilus) junquensis*, sp. n., differing in the details, as the simple inner spine of the basal dististyle and the stout beak of the basistyle.

***Molophilus (Molophilus) appressospinus*, sp. n. (fig. 32)**

Belongs to the *plagiatus* group; size medium (wing, male, 5 mm.); mesonotum dark brown, the pleura and pleurotergite yellowed; wings yellowed, the veins a little darker than the ground, very difficult to see; male hypopygium with the basal dististyle a strong blackened blade, at near midlength on outer margin bearing a spine that is strongly appressed to the axis; phallosome a setiferous cushion, the apex emarginate.

Male.—Length about 4,2 mm.; wing 5 mm.; antenna about 0,9 mm.

Rostrum light brown; palpi brownish black. Antennae with scape and pedicel pale brown, flagellum darker; flagellar segments suboval, more elongated outwardly, the basal segments with the usual longer verticils. Head dark brown.

Thoracic dorsum dark brown, the lateral praescutal borders more yellowed. Pleura and pleurotergite yellow. Halteres yellow. Legs with the coxae and trochanters yellow; remainder of legs yellow with darker vestiture, the outer tarsal segments brownish black. Wings yellowed, the veins a little darker but very inconspicuous and difficult to see against the ground; macrotrichia darker, especially the dense costal fringe.

Abdomen light brown, the hypopygium brownish yellow. Male hypopygium (fig. 32) with the beak of the basistyle, *b*, relatively deep, straight. Outer dististyle with the arms unequal, the flattened outer one with its angle produced. Basal dististyle, *bd*, a strong blackened blade, at near midlength on outer margin bearing a spine that is directed outward and thus strongly appressed to the axis; axial spine stout on basal half, the sinuous outer part narrowed into a spine. Phallosome, *p*, a setiferous cushion, the apex shallowly emarginate. Aedeagus relatively short.

Holotype, ♂, MASATIERRA: Alto Francés, 400 meters, February 7, 1951 (Kuschel). Paratopotype, ♂. Paratype, ♂, Bahía Cumberland, February 15, 1951 (Kuschel).

In its general appearance, the present fly is most like *Molophilus* (*Molophilus*) *canopus*, sp. n., differing in the structure of the male hypopygium, particularly the basal dististyle.

***Molophilus* (*Molophilus*) *arciferus*, sp. n. (fig. 33)**

Belongs to the *plagiatus* group; size medium (wing, male, under 5 mm.); general coloration of mesonotum reddish brown, the posterior sclerites darker; male hypopygium with the basal dististyle bearing three spines, including a strongly arcuated or bowed lateral spine, the longer axial arm with a strong spine at near midlength; phallosome an emarginate setiferous cushion.

Male.—Length about 3,6 — mm.; wing 4,5 — 4,8 mm.; antenna about 1 — 1,1 mm.

Female.—Length about 4,5 mm.; wing 5 mm.

Rostrum and palpi dark brown. Antennae with scape yellow, the remainder pale brown; basal flagellar segments with long verticils but these somewhat shorter than in allied species. Head gray.

Pronotum and pretergites testaceous yellow. Mesonotum light to medium reddish brown, the posterior sclerites, specially the mediotergite, darker. Pleura and pleurotergite reddish brown. Halteres yellow. Legs with the coxae and trochanters pale yellow; remainder of legs yellow with darker vestiture; outer tarsal segments dark brown. Wings pale yellow, the veins a little darker; macrotrichia brown. Venation: *Rs* relatively long; *R*₂ lying shortly beyond the level of *r-m*; petiole of cell *M*₃ only a little longer than *m-cu*; vein 2nd *A* ending about opposite one-third the length of the petiole of cell *M*₃.

Abdomen brown, the hypopygium a little more yellowed. Male hypopygium (fig. 33) with the beak of the basistyle, *b*, relatively slender,

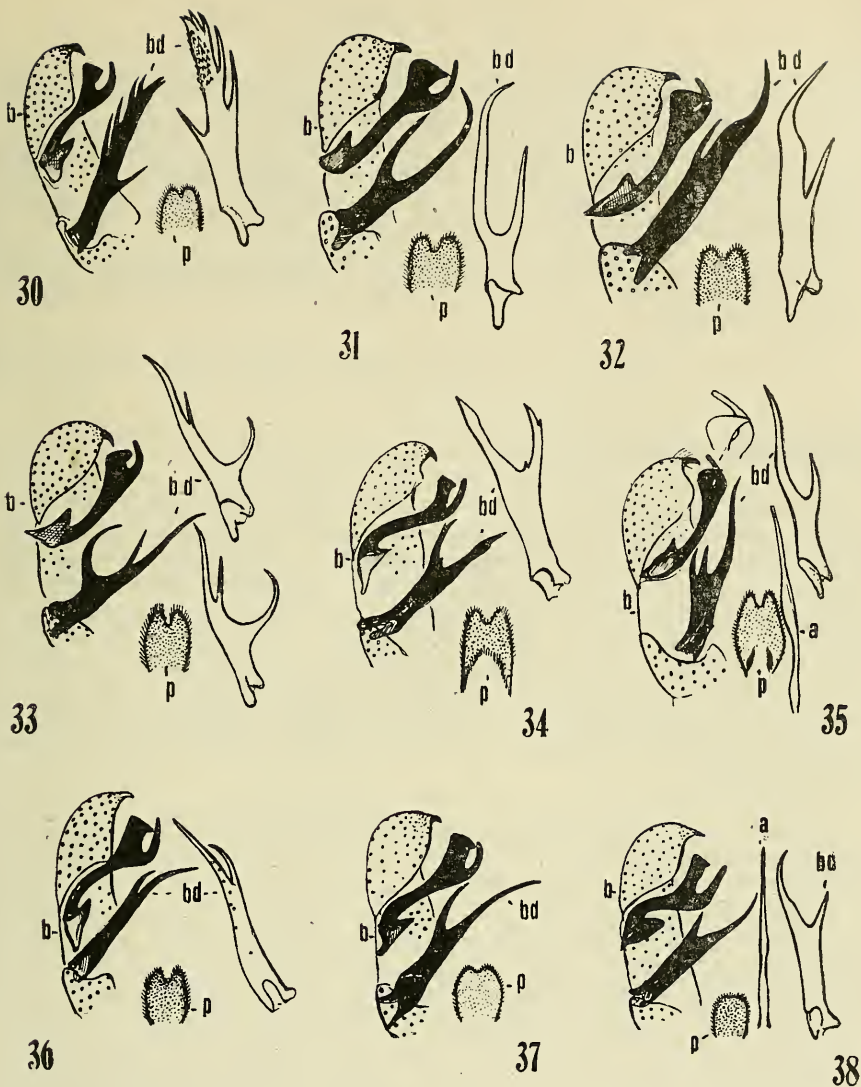


Plate 4

30. *Molophilus* (*Molophilus*) *amphacanthus*, sp. n.; male hypopygium.
 31. *Molophilus* (*Molophilus*) *antimenus*, sp. n.; male hypopygium.
 32. *Molophilus* (*Molophilus*) *appressospinus*, sp. n.; male hypopygium.
 33. *Molophilus* (*Molophilus*) *arciferus*, sp. n.; male hypopygium.
 34. *Molophilus* (*Molophilus*) *canopus*, sp. n.; male hypopygium.
 35. *Molophilus* (*Molophilus*) *defoeanus*, sp. n.; male hypopygium.
 36. *Molophilus* (*Molophilus*) *distifurcus*, sp. n.; male hypopygium.
 37. *Molophilus* (*Molophilus*) *filiolus*, sp. n.; male hypopygium.
 38. *Molophilus* (*Molophilus*) *filius*, sp. n.; male hypopygium.

(Explanation of symbols: a, aedeagus; b, basistyle; bd, basal dististyle; d, outer dististyle; p, phallosome).

blackened, acutely pointed. Outer dististyle with the arms very unequal. Basal dististyle, *bd*, a powerful blackened structure bearing three branches, the stem short; axial arm longest, bearing a short to longer spine at or before midlength; lateral spine strongly arcuated or bowed, variable in length, shortest in the paratype (as shown in upper right hand figure). Phallosome, *p*, a setiferous cushion, the apex deeply emarginate. Aedeagus long and slender, a trifle dilated at near midlength.

Holotype, ♂, MASAFUERA: Quebrada de las Vacas, January 17, 1952 (Kuschel). Allotopotype, ♀. Paratype, ♂, Quebrada de las Casas, January 13, 1952 (Kuschel).

In its general appearance, most like *Molophilus (Molophilus) defoeanus*, sp. n., differing in the structure of the male hypopygium.

Molophilus (Molophilus) canopus, sp. n. (fig. 34)

Belongs to the *plagiatus* group; size small (wing, male, under 4,5 mm.); general coloration of mesonotum dark brown, the pleura reddish yellow; head gray; legs yellow, with dark vestiture; wings yellow, the axillary region infuscated; petiole of cell *M*₃ short; abdomen dark brown, the hypopygium more brownish yellow; ovipositor with cerci long and slender; male hypopygium with the basal dististyle a relatively narrow rod that forks beyond midlength into two spines, the stouter axial one a little expanded before the acute tip, the lateral spine simple or with a weak tooth before tip; phallosome a setiferous cushion, the apex emarginate.

Male.—Length about 3,3—3,4 mm.; wing 4—4,2 mm.; antenna about 0,9 mm.

Female.—Length about 3,5 mm.; wing 4 mm.

Rostrum and palpi brownish black. Antennae with the basal segments light brown, the outer ones darker brown; verticils of the more proximal segments very long. Head gray.

Pronotal scutum brown, the scutellum and pretergites more whitened. Mesonotum dark brown, sparsely pruinose, the humeral and lateral regions yellowed. Pleura more reddish yellow. Halteres yellow. Legs with the coxae and trochanters yellow; legs yellow, the vestiture dark; outer segments passing into black. Wings yellow, the veins deeper yellow, macrotrichia dark brown; axillary region, including the basal third of the anal cells, weakly infuscated. Venation: *Rs* moderately long; *R*₂ lying shortly beyond the level of *r-m*; petiole of cell *M*₃ relatively short, only a little longer than *m-cu*; vein 2nd *A* long and sinuous, ending about opposite midlength of the petiole of cell *M*₃.

Abdomen dark brown, the hypopygium more brownish yellow. Ovipositor with the cerci horn-colored, long and slender, gently upcurved, the long slender hypovalvae blackened. Male hypopygium (fig. 34) with the beak of the basistyle, *b*, blackened, relatively slender, decurved. Outer dististyle with the arms very unequal. Basal dististyle, *bd*, a relatively narrow rod that forks beyond midlength into two spines, the stouter axial one a little expanded before the acute tip; lateral spine shorter and more slender, simple or unequally forked or toothed near tip, in cases with a weak point at the fork. Phallosome, *p*, a setiferous cushion, the apex emarginate, the degree somewhat variable, sometimes very shallow.

Aedeagus moderately long, constricted near base, widest at about one-third the length, thence narrowed to the very slender point.

Holotype, ♂, MASATIERRA: Plazoleta del Yunque, 200 meters, January 2, 1952 (Kuschel). Allotype, ♀, Miradero de Selkirk, 550 meters, February 15, 1951. Paratopotype, 1 ♂, with the type; ♂, February 20, 1951. Paratype, ♂, Bahía Cumberland, March 4, 1951 (Kuschel).

Most like *Molophilus* (*Molophilus*) *yunquensis*, sp. n., differing in the coloration of the body and in the structure of the male hypopygium, particularly the basal dististyle.

***Molophilus* (*Molophilus*) *defoeanus*, sp. n. (fig. 35)**

Belongs to the *plagiatus* group; size relatively large (wing, 5 mm. or more); general coloration of mesonotum reddish brown, the postnotum darker; antennal scape yellow, the remainder of antenna black; wings yellow, the veins darker yellow; abdomen dark brown, the hypopygium obscure brownish yellow; hypopygium with the basal dististyle powerful basally, the axial spine long, sinuous, with one or two smaller outer spines; aedeagus relatively short, somewhat expanded at near midlength.

Male.—Length about 4 — 4.5 mm.; wing 5 — 5.5 mm.; antenna about 1.2 — 1.3 mm.

Female.—Length about 4.5 — 4.8 mm.; wing 5 — 5.5 mm.

Rostrum and palpi black. Antennae with the scape yellow, the remainder of the organ dark brown; flagellar segments subcylindrical, with very long verticils, particularly on the more proximal segments. Head dark gray.

Pronotum and pretergites testaceous yellow. Mesonotal praescutum and scutum reddish brown, the posterior sclerites darker. Pleura and pleurotergite obscure yellow, the dorsal pleurites darker. Halteres yellow. Legs with the coxae yellowish testaceous; trochanters yellow; femora and tibiae obscure yellow, more darkened by vestiture; tarsi deepening to brown. Wings yellow, the veins darker yellow; macrotrichia brown. Venation: R_2 lying slightly distad of $r-m$; petiole of cell M_3 relatively short, about one-third to one-half longer than $m-cu$; vein 2nd A sinuous, ending about opposite one-third the length of the petiole of cell M_3 .

Abdomen dark brown, the hypopygium obscure brownish yellow. Male hypopygium (fig. 35) with the beak of the basistyle, b , decurved at tip. Outer dististyle unequally bifid at tip, the inner arm long and slender. Basal dististyle, bd , with the powerful base relatively short and stout, the inner or axial spine long, gently sinuous; one, or in cases (as shown) two shorter outer spines. Phallosome, p , setiferous, deeply emarginate, the notch broader than the lobes. Aedeagus, a , relatively short, somewhat expanded at near midlength.

Holotype, ♂, MASAUFERA: Inocentes Altos, 1,400 meters, January 22, 1952 (Kuschel). Allotopotype, ♀, pinned with type. Paratopotypes, ♂♀.

Named for Daniel Defoe, author of the great classical work, «Robinson Crusoe». The species is most readily told from the allied regional forms by the characters given in the key.

Molophilus (Molophilus) distifurcus, sp. n. (fig. 36)

Belongs to the *plagiatus* group; size below medium (wing, male, about 4.5 mm.); general coloration brownish gray; halteres yellow; wings yellowish gray, the base and costal region clearer yellow, the bases of the anal cells weakly darkened; male hypopygium with the basal dististyle a relatively slender rod that forks beyond midlength into two unequal spines, the longer axial one about two-thirds as long as the base; phallosome a setiferous cushion, the apex emarginate.

Male.—Length about 3.8 mm.; wing 4.6 mm.; antenna about 1.0 mm.

Rostrum and palpi black. Antennae with scape obscure yellow, the large pedicel a trifle darker, flagellum brown; segments subcylindrical, the more proximal ones with very long verticils, these shorter on the outer segments. Head dark brownish gray.

Pronotum brownish testaceous, the pretergites more whitened. Mesonotum brownish gray, the humeral and lateral parts of the praescutum more yellowed. Pleura brown. Halteres yellow. Legs with the coxae and trochanters yellow, the fore coxae darker; remainder of legs darkened. Wings yellowish gray, the base and costal region more yellowed, the basal half of the anal cells weakly infuscated; veins yellow, macrotrichia brownish black, conspicuous, especially the long dense outer costal fringe and the long fringe of the posterior border. Venation: *Rs* of moderate length; *R*₂ and *r-m* about in transverse alignment; petiole of cell *M*³ about one-fourth longer than *m-cu*; vein 2nd *A* long, ending just beyond the cephalic end of *m-cu*.

Abdomen brown, the hypopygium more yellowed. Male hypopygium (fig. 36) with the beak of the basistyle, *b*, straight, its tip slightly decurved. Outer dististyle with the outer arms very dissimilar. Basal dististyle, *bd*, appearing as a relatively slender rod that forks beyond midlength into two unequal spines, the axial one longer, about two-thirds the base; lateral spine about one-half as long as the axial one and more slender; surface of style with a few scattered punctures, as shown. Phallosome, *p*, a setiferous cushion, the apical emargination slightly narrower than the lobes. Aedeagus long, not evidently expanded.

Holotype, ♂, MASATIERRA: Plazoleta del Yunque, 200 meters, January 2, 1952 (Kuschel). Paratopotype, ♂, March 3, 1951.

Readily told from other regional dark-colored species by the structure of the male hypopygium, particularly the basal dististyle, which forks farther distad than in any of the related forms.

Molophilus (Molophilus) filiulus, sp. n. (figs. 28, 37)

Belongs to the *plagiatus* group; size medium (wing, male, about 4.5 mm.); general coloration reddish brown, the pleura yellow; wings grayish yellow; ovipositor with cerci long and nearly straight; male hypopygium with the basal dististyle a powerful black rod that forks into two unequal spines, the axial one longest, about as long as the enlarged base, lateral spine about two-thirds as long; phallosome a setiferous cushion, the apex shallowly emarginate.

Male.—Length about 3.5 mm.; wing 4.5 mm.; antenna about 1.1 mm.

Female.—Length about 4 mm.; wing 4.5 mm.

Rostrum brown; palpi black. Antennae short, testaceous yellow basally, the outer segments passing into brown; basal flagellar segments subcylindrical, with unusually long verticils, the outer segments more elongate with shorter verticils. Head dark brownish gray.

Pronotum and pretergites whitened. Mesonotal praescutum reddish brown, the humeri more yellowed, the posterior sclerites somewhat darker. Pleura yellow. Halteres yellow. Legs brownish yellow, the subbasal tibial ring extensive but feebly differentiated in color. Wings grayish yellow, the prearcular and costal regions clearer yellow; veins yellow, the macrotrichia darker. Venation: R_s relatively long; R_2 lying distad of level of $r-m$; petiole of cell M_3 only a little longer than $m-cu$; vein 2nd A sinuous, ending about opposite the cephalic end of $m-cu$.

Abdomen brown, the sternites and hypopygium more brownish yellow. Ovipositor (fig. 28) with the cerci long and nearly straight, acute at tips. Male hypopygium (fig. 37) with the beak of the basistyle, b , relatively slender, darkened, gently curved to the acute point. Outer dististyle with the arms very dissimilar, the outer a spine, the inner expanded, its angle slightly produced. Basal dististyle, bd , a powerful black rod that forks into two unequal spines, the axial one longest, about equal in length to the enlarged base; lateral spine about two-thirds as long and a little more slender. Phallosome, p , a setiferous cushion, the apex shallowly emarginate. Aedeagus long and slender, a trifle dilated just before midlength.

Holotype, ♂. MASATIERRA: Miradero de Selkirk, 500 meters, December 31, 1951 (Kuschel). Allotopotype, ♀. Paratopotypes, ♂♀. Paratypes, ♂♀, El Yunque, 915 meters, February 10, 1952 (Kuschel).

In its general appearance much like *Molophilus* (*Molophilus*) *filius*, sp. n., differing most evidently in the structure of the ovipositor and of the male hypopygium.

***Molophilus* (*Molophilus*) *filius*, sp. n. (figs. 29, 38)**

Belongs to the *plagiatus* group; size below medium (wing, male, 4,2 mm. or less); general coloration fulvous yellow, the pleura yellow; ovipositor with the cerci strongly upcurved; male hypopygium with the basal dististyle a flattened rod that forks beyond midlength into two unequal spines; phallosome a setiferous cushion, its apex scarcely emarginate.

Male.—Length about 3,3 — 3,4 mm.; wing 4 — 4,2 mm.; antenna about 0,8 — 0,85 mm.

Female.—Length about 3,5 mm.; wing 4,3 — 4,5 mm.

Rostrum and palpi light brown. Antennae with scape and pedicel light yellow, the flagellum pale brown; flagellar segments subcylindrical to long-oval, the verticils of the more proximal segments very long. Head brownish gray.

Mesonotal praescutum fulvous yellow, weakly more infuscated in front, the remainder of notum brighter fulvous. Pleura yellow. Halteres yellow. Legs with the coxae and trochanters yellow; remainder of legs obscure yellow, with a darkened vestiture; outer tarsal segments passing into black. Wings relatively narrow, yellowish, including the veins, the macrotrichia darker. Venation: R_s moderately long; R_2 very faint, about opposite $r-m$; petiole of cell M_3 about one-half longer than $m-cu$; vein 2nd A long and sinuous, ending about opposite $m-cu$.

Abdomen yellow, including the hypopygium. Ovipositor (fig. 29) with the cerci heavily sclerotized and darkened, very strongly upcurved; hypovalvae very pale, extended caudad into membranous points. Male hypopygium (fig. 38) with the beak of the basistyle, *b*, slender and unusually straight, pale. Outer dististyle with the arms very unequal, the expanded outer one relatively narrow, its angle produced into a point. Basal dististyle, *bd*, a flattened rod that forks beyond midlength into two unequal spines, the inner longer and more slender, the shorter lateral spine straight. Phallosome, *p*, a setiferous plate, the apex not or scarcely emarginate. Aedeagus weakly darkened on about the basal half, slightly dilated beyond base and again at near midlength, the tip very slender, almost pointed.

Holotype, ♂, MASATIERRA: Miradero de Selkirk, 500 meters, December 31, 1951 (Kuschel). Allotopotype, ♀, pinned with type. Paratopotypes, ♂♀, with the types. Paratypes, ♂♀, Plazoleta del Yunque, 200 meters, January 9, 1952; Alto Francés, 400 meters, February 7, 1951 (Kuschel).

This small pale fly is most similar to *Molophilus* (*Molophilus*) *filiolus*, sp. n., differing especially in the structure of the ovipositor and male hypopygium.

***Molophilus* (*Molophilus*) *masafuerae*, sp. n. (fig. 39)**

Belongs to the *plagiatus* group; size medium (wing, male, about 5 mm.); general coloration plumbeous, the pronotum and dorsopleural membrane obscure yellow; male hypopygium with the basal dististyle a short-stemmed massive blackened structure, the axis forking into two or three straight appressed spines, with an additional long lateral spine; phallosome a setiferous cushion, the apex emarginate.

Male.—Length about 4.2 — 4.3 mm.; wing 4.8 — 5 mm.; antenna about 1.1 — 1.2 mm.

Female.—Length about 5.5 mm.; wing 5 mm.

Rostrum dark brown; palpi black. Antennae brownish black; flagellar segments suboval to subcylindrical, the verticils of the more proximal segments very long. Head dark brownish gray.

Thorax plumbeous, the pronotum, pretergites and dorsopleural membrane obscure yellow. Halteres pale yellow. Legs with the coxae and trochanters yellow, the fore coxae darker; remainder of legs yellow with dark vestiture, outer tarsal segments blackened. Wings with a weak dusky suffusion, the base and prearcular field more yellowed; veins a little darker than the ground; macrotrichia dark brown. Venation: *R*₃ of moderate length; *R*₂ lying distad of level of *r-m*; petiole of cell *M*₃ about one-half longer than *m-cu*; vein 2nd *A* long, ending about opposite one-fourth the length of the petiole of cell *M*₃.

Abdomen dark brown to brownish black, the hypopygium a trifle more brightened. Male hypopygium (fig. 39) with the beak of the basistyle, *b*, blackened, strongly decurved. Outer dististyle with the arms very unequal, the inner one slender. Basal dististyle, *bd*, a short-stemmed massive blackened structure, the axis forking into two or three straight appressed spines, with a long slender lateral spine, in cases with a small axial spinule or point; margin of stem generally smooth or strongly roughened by two or three tubercles. Phallosome, *p*, a setiferous cushion,

broadest just beyond midlength, the apex with a U-shaped notch, the lobes slender. Aedeagus long and narrow, a trifle expanded at near midlength.

Holotype, ♂, MASAFUERA: Quebrada de las Vacas, January 17, 1952 (Kuschel). Allotopotype, ♀. Paratopotypes, ♂♂.

The most similar species is *Molophilus (Molophilus) defocanus*, sp. n., which is separable by the characters given in the key.

***Molophilus (Molophilus) multifidus*, sp. n. (figs. 30, 40)**

Belongs to the *plagiatus* group; size large (wing, male, over 5 mm.; general coloration obscure orange to yellowish orange; male hypopygium with the basal dististyle deeply forked, the stem stout, the arms bearing lateral spines; phallosome setiferous, very deeply emarginate; aedeagus relatively short.

Male.—Length about 4 — 4.5 mm.; wing 5 — 5.5 mm.; antenna about 1.1 — 1.2 mm.

Female.—Length about 5 mm.; wing 6 mm.

Rostrum brownish yellow; palpi black. Antennae dark brown, relatively short; verticils of the more proximal segments very long. Head dark brown.

Mesonotum chiefly obscure orange to yellowish orange, the pretergites clearer yellow; posterior sclerites of notum, in cases, a little darker; pleura yellow. Halteres yellow. Legs with the coxae and trochanters light yellow; remainder of legs obscure yellow, darkened by vestiture, the outer tarsal segments brownish black. Wings (fig. 30) grayish yellow, the veins yellow; trichia, especially the costal fringe, darker brown. Venation: R_2 lying just distad of the level of $r-m$; petiole of cell M_3 variable in length, from only slightly longer than $m-cu$ to nearly twice this length (in holotype, as shown).

Abdominal tergites brownish yellow, the sternites and hypopygium clearer yellow. Male hypopygium (fig. 40) with the beak of the basistyle, *b*, blackened, relatively slender, the outer margin slightly angulated. Outer dististyle with the arms very unequal, the outer one slender. Basal dististyle, *bd*, deeply forked, the stem stout, the two arms longer, subequal, both bearing lateral branches; in types, the outer arm forks at tip into two strong spines, with other points more basad; inner or axial arm a little more slender, extended into a long powerful spine, with smaller lateral points. Phallosome, *p*, setiferous, the apex very deeply emarginate, the notch broader than the lobes. Aedeagus, *a*, relatively short, slightly dilated at near midlength.

The allotype female is somewhat larger and more brightly colored than the type but appears to be conspecific.

Holotype, ♂, MASATIERRA: Bahía Cumberland, February 15, 1951 (Kuschel). Allotype, ♀, Plazoleta del Yunque, 200 meters, March 3, 1951. Paratopotypes, ♂♂. Paratype, ♂, Quebrada de Villagra, 400 meters, February 21, 1951 (Kuschel).

This fly is most similar to species such as *Molophilus (Molophilus) appressus* Alexander, *M. (M.) fortidens* Alexander, and *M. (M.) perfidus* Alexander, differing in the structure of the male hypopygium, particularly the basal dististyle.

Molophilus (Molophilus) neptunus, sp. n. (fig. 41)

Belongs to the *plagiatus* group; size medium (wing, male, under 4,5 mm.); general coloration brownish black; wings narrow, weakly infuscated; hypopygium brownish black; basal dististyle relatively small, beyond midlength produced into three strong appressed spines, the inner one longest; phallosome setiferous, the apex rounded or weakly truncate.

Male.—Length about 3,3 — 3,4 mm.; wing 4 — 4,2 mm.; antenna about 0,8 mm.

Female.—Length about 4,2 mm.; wing 4,8 — 5 mm.

Rostrum and palpi black. Antennae short, dark brown; flagellar segments suboval with truncate ends, the verticils of the more proximal segments very long. Head dark brown.

Thorax brownish black with a sparse bloom, the pretergites restrictedly pale yellow. Halteres yellow. Legs with the coxae and trochanters testaceous yellow; remainder of legs brown, becoming darker outwardly. Wings narrow, weakly infuscated, the base more yellowed; veins and macrotrichia pale brown. Venation: *Rs* very long; *R*₂ lying a short distance beyond the level of *r-m*; petiole of cell *M*₃ about one-half longer than *m-cu*; vein 2nd *A* long and sinuous, ending a short distance beyond the level of *m-cu*.

Abdomen, including hypopygium, brownish black. Male hypopygium (fig. 41) with the beak of the basistyle, *b*, nearly straight, darkened, the tip subacute. Outer dististyle with the arms very unequal. Basal dististyle, *bd*, relatively small, its area less than that of the outer style, forking beyond midlength into three strong appressed spines that are separated by narrow incisions having approximately the same outline as the spines themselves; spines slightly unequal, the innermost one longest; in cases, the outer pair shortened by basal fusion. Phallosome, *p*, setiferous, the apex rounded or weakly truncate. Aedeagus dusky, strongly dilated at near midlength.

Holotype, ♂, MASATIERRA: Miradero de Selkirk, 550 meters, December 31, 1951 (Kuschel). Allotopotype, ♀, pinned with the type. Paratopotype, ♂.

In its general appearance most similar to *Molophilus (Molophilus) variatus*, sp. n. and *M. (M.) yunquensis*, sp. n., which similarly are almost uniformly blackened flies of small size, differing in the structure of the hypopygium, particularly the basal dististyle.

Molophilus (Molophilus) pectiniferus, sp. n. (fig. 42)

Belongs to the *plagiatus* group; size medium (wing, male, about 4,5 mm.); general coloration brownish yellow; legs yellow, with pale vestiture; wings grayish; male hypopygium with the basal dististyle a stout blackened rod, the outer margin with three or four strong spines, additional to the apical one, forming a conspicuous one-sided comb; no outer scabrous points, as in *amphacanthus*; phallosome setiferous, the apex with a very small emargination.

Male.—Length about 3,8 mm.; wing 4,6 mm.; antenna about 1 mm.

Rostrum dark brown; palpi black. Antennae with scape and pedicel

yellow, flagellum pale brown; flagellar segments long-oval, the more proximal ones with long verticils. Head brownish gray.

Thorax brownish yellow, the mediotergite slightly darker. Halteres yellow. Legs yellow, with pale setae, the outer two tarsal segments brownish black. Wings grayish, more yellowed at base; veins a little darker; macrotrichia brown, the conspicuous costal fringe brownish black. Venation: R_s long; R_2 lying nearly opposite $r-m$; petiole of cell M_3 about three-fourths longer than $m-cu$; vein 2nd A long, ending about opposite two-thirds the length of the petiole of cell M_3 .

Abdomen brown, the hypopygium more yellowish brown. Male hypopygium (fig. 42) with the beak of the basistyle, b , darkened, slightly decurved, varying in degree of stoutness. Outer dististyle with the flattened outer arm less expanded at apex than in some allied species. Basal dististyle, bd , a stout blackened rod, the outer margin with three or four strong spines, additional to the apical one, these forming a conspicuous one-sided comb; no outer scabrous points as in *amphacanthus*. Phallosome, p , setiferous, the apex with a very small and shallow notch. Aedeagus relatively short, broadened shortly before midlength.

Holotype, ♂, MASATIERRA: Miradero de Selkirk, 300 meters, February 13, 1951 (Kuschel).

The most similar species is *Molophilus* (*Molophilus*) *amphacanthus*, sp. n., which differs especially in the structure of the male hypopygium, particularly the basal dististyle. In this latter species the spines are not entirely secund in arrangement and there are scabrous points before the apex.

***Molophilus* (*Molophilus*) *rectispinus*, sp. n. (fig. 43)**

Belongs to the *plagiatus* group; size above medium (wing, male, 5 mm. or less); general coloration ochre yellow; male hypopygium with the basal dististyle a powerful rod, at near midlength on the outer margin with a slender arm that arises almost at a right angle, axial spine stout; phallosome a setiferous cushion, the apex entire or very shallowly emarginate.

Male.—Length about 3.6 — 4 mm.; wing 4.5 — 5 mm.; antenna about 0.9 — 1 mm.

Rostrum light yellow; palpi brownish yellow. Antennae light brown, the proximal segments still paler; flagellar segments suboval to more elongate, the verticils of the more proximal segments very long. Head ochreous.

Thorax ochreous yellow, the pronotal scutellum, pretergites and humeral region of praescutum light yellow; vestiture of mesonotal praescutum long and erect. Halteres light yellow. Legs with the coxae and trochanters yellow; remainder of legs yellow, with slightly darkened vestiture; outer tarsal segments blackened. Wings yellow, the veins a little darker; macrotrichia, especially the costal fringe, still darker, conspicuous. Venation: R_s moderately long; R_2 beyond the level of $r-m$; petiole of cell M_3 short, subequal to or a little longer than $m-cu$; vein 2nd A long and sinuous, ending about opposite midlength of the petiole of cell M_3 .

Abdomen yellow, the hypopygium a trifle darker. Male hypopygium (fig. 43) with the beak of the basistyle, b , relatively stout, blackened,

nearly straight. Outer dististyle with the arms unequal, the outer a flattened dilated blade. Basal dististyle, *bd*, a powerful rod, at near midlength on outer margin with a slender, gently curved arm that arises almost at a right angle; axial spine stout. Phallosome, *p*, a setiferous cushion, the apex entire or very shallowly emarginate. Aedeagus of moderate length, a little dilated just before midlength.

Holotype, ♂, MASATIERRA: Miradero de Selkirk, 550 meters, February 15, 1951 (Kuschel). Paratype, ♂, Bahía Cumberland, March 4, 1951 (Kuschel).

In its general yellow color the present fly most resembles species such as *Molophilus* (*Molophilus*) *filiolus*, sp. n., *M. (M.) filius*, sp. n., *M. (M.) multifidus*, sp. n., and others, differing conspicuously in the structure of the male hypopygium, particularly the basal dististyle.

***Molophilus* (*Molophilus*) *selkirkianus* (Enderlein)**

1940. *Archimolophilus Selkirkianus* Enderlein; in Skottsberg, The Natural History of Juan Fernández and Easter Island, Zool. 3, Fasc. 5 : 669 — 670, fig. 40 (wing)

Described from a single female, taken on Masatierra in 1917 by Backstrom. For this Enderlein proposed the new generic group *Archimolophilus* (l. c., p. 669), based upon exceedingly slight venational characters, that, in my opinion, have no possible generic or subgeneric value.

The species is described as being very pale brownish, with the thorax a little darker. Eyes oval, black. Legs unusually long and slender (as in *appendiculatus* Staeger). Wings whitish, scarcely infuscated, with veins *C*, *Sc* and *R*₁ slightly darkened; *R*₂₊₃ arcuated; cells *M* and *Cu* unusually broad; veins *M*₄ and *Cu*₁ deflected slightly cephalad at their ends, *M*₃ straight. Ovipositor chitin-yellow, 0,75 mm. in length. Female.—Length, including ovipositor, about 5,25 mm.; wing 4,5 mm.

The figure of the wing shows a perfectly normal *Molophilus*, except for the slightly longer *Rs*, this being nearly six times as long as *R* alone. Although various other regional species have *Rs* fully as long, I have not been able to find a species agreeing satisfactorily with Enderlein's description and for the time being, at least, must regard it as being unrecognizable. Isolated females in this vast and monotonous genus are scarcely determinable. In some respects the fly suggests *Molophilus* (*Molophilus*) *multifidus*, sp. n., yet does not fully agree.

***Molophilus* (*Molophilus*) *styx*, sp. n. (fig. 44)**

- Belongs to the *plagiatus* group; size above medium (wing, male, 5 mm.); General coloration brownish black, sparsely pruinose to appear plumbeous; antennae and legs black; wings grayish, macrotrichia long and conspicuous; *Rs* long; male hypopygium with the basal dististyle a powerful blackened rod, at near midlength bearing a strong lateral branch, the main axis at and near apex roughened and spiculose; phallosome an emarginate setiferous cushion.

Male.—Length about 4,5 mm.; wing 5 mm.; antenna about 1,2 mm.

Rostrum and palpi black. Antennae black throughout; flagellar segments long-oval to subcylindrical, the verticils of the basal segments very long. Head dark gray.

Entire thorax dark brownish black, the surface sparsely pruinose to appear plumbeous; pretergites very restrictedly obscure yellow. Halteres broken. Legs with the coxae and trochanters dark brown; remainder of legs dark brown to brownish black. Wings grayish, the prearcular and costal fields a trifle more yellowed; veins pale brown, the macrotrichia a little darker. Venation: *Rs* very long; *R*₂ lying just beyond the level of *r-m*; petiole of cell *M*₃ about one-half longer than *m-cu*; vein 2nd *A* sinuous, ending about opposite midlength of the petiole of cell *M*₃.

Abdomen, including hypopygium, brownish black. Male hypopygium (fig. 44) with the beak of the basistyle, *b*, black, powerful. Outer dististyle with the arms very unequal, the outer a triangular blade. Basal dististyle, *bd*, distinctive, appearing as a powerful blackened rod, at near midlength with a strong lateral arm or branch that bears setae or microscopic points; main axis roughened and spiculate on outer portion; on one side, a strong further spine beyond the primary branch, indicating variability in the structure. Phallosome, *p*, a setiferous emarginate cushion, the slender lobes separated by a deep notch that is broader than either lobe. Aedeagus, *a*, unusually long and slender.

Holotype, ♂, MASAFUERA: Inocentes Altos, 1,400 meters, January 22, 1952 (Kuschel).

This fly is readily distinguished by the almost uniformly dark color, including the legs, and by the structure of the male hypopygium, particularly the basal dististyle.

Molophilus (Molophilus) tridens, sp. n. (fig. 45)

Belongs to the *plagiatus* group; size medium (wing, male, just under 5 mm.); general coloration of thorax medium brown, the posterior pleurites more yellowed; wings grayish subhyaline, the fringes brownish black, conspicuous; male hypopygium with the basal dististyle a short-stemmed rod that forks into three appressed spines, the outer pair longer than the central one; phallosome a setiferous cushion, its apex emarginate.

Male.—Length about 4 mm.; wing 4.8 mm.; antenna about 1 mm.

Rostrum and palpi brown. Antennae pale brown; flagellar segments oval, the basal ones with very long verticils. Head brownish gray.

Thorax medium brown, the pronotal scutellum, pretergites and humeral region of praescutum yellowish white, the posterior sclerites of pleura and the pleurotergites more yellowed. Halteres yellow. Legs with the coxae and trochanters yellow; femora yellow with darkened vestiture, outer, tarsal segments darker. Wings grayish subhyaline, narrowly brightened at base; veins slightly darker than the ground; macrotrichia, especially the fringe, brownish black. Venation: *Rs* of moderate length; *R*₂ slightly distad of level of *r-m*; petiole of cell *M*₃ relatively short, subequal to or a little longer than *m-cu*; vein 2nd *A* sinuous, ending shortly beyond *m-cu*.

Abdomen, including the hypopygium, dark brown. Male hypopygium (fig. 45) with the beak of the basistyle, *b*, relatively slender, blackened, the tip acute. Outer dististyle with the arms unequal. Basal dististyle, *bd*, a powerful short-stemmed rod that forks into three sharp appressed

spines, the outer two longest and subequal, the central spine about two-thirds as long. Phallosome, *p*, a setiferous cushion, its apex emarginate.

Holotype, ♂, MASATIERRA: Bahía Cumberland, March 4, 1951 (Kuschel).

The three-spined basal dististyle of the male hypopygium suggests the condition in the smaller *Molophilus* (*Molophilus*) *neptunus*, sp. n., which has the details of coloration and structure of the male hypopygium quite distinct.

***Molophilus* (*Molophilus*) *variatus*, sp. n. (fig. 46)**

Belongs to the *plagiatus* group; size very small (wing, male, 3,5 mm. or less); general coloration brownish black, almost unpatterned; antennae and legs brownish black; halteres yellow; male hypopygium with the basal dististyle unequally trifold, including a long simple inner spine and an outer arm that divides into two shorter spines of varying lengths; phallosome a setiferous cushion, more or less emarginate at apex.

Male.—Length about 2,8 — 3 mm.; wing 3,3 — 3,5 mm.; antenna about 0,8 — 0,9 mm.

Female.—Length about 3 mm.; wing 3,5 mm.

Rostrum and palpi black. Antennae dark brown; flagellar segments oval. Head dark brown.

Thorax almost uniformly brownish black, the pretergites very restrictedly brightened. Halteres yellow. Legs brownish black, the femoral bases narrowly paler. Wings grayish subhyaline, more yellowed in costal region and at base; veins pale brown, yellow in the brightened fields. Venation: *Rs* moderately long; *R*₂ almost in transverse alignment with *r-m*; petiole of cell *M*₃ about one-third longer than *m-cu*; vein 2nd *A* moderately elongate, ending opposite *m-cu*.

Abdomen, including hypopygium, black. Male hypopygium (fig. 46) with the beak of the basistyle, *b*, slender. Outer dististyle with the outer arm relatively small, the inner one subspinous. Basal dististyle, *bd*, unequally trifold, including a long simple inner spine and a stouter arm that divides into two spines, the relative proportions of these two spines to their fused base variable, in cases the outer spines very short, the base correspondingly long. Phallosome, *p*, a setiferous cushion, the apex usually emarginate, in cases more nearly entire. Aedeagus, *a*, long and slender, a trifle dilated at near midlength.

Holotype, ♂, MASAFUERA: Inocentes Bajos, 1.000 meters, January 27 1952 (Kuschel). Allotype, ♀, Inocentes Altos, 1.400 meters, January 22, 1952. Paratopotypes, ♂♂, with the types. Paratypes, ♂♀, La Correspondencia, 1.300 meters, January 20, 1952 (Kuschel).

The present fly is readily told from other small blackened species by the structure of the male hypopygium.

***Molophilus* (*Molophilus*) *yunquensis*, sp. n. (fig. 47)**

Belongs to the *plagiatus* group; size small (wing 4,5 mm. or less); general coloration of thorax dark brown; halteres yellow; legs brown, the outer tarsal segments blackened; wings grayish yellow, the axilla restrictedly more infuscated; male hypopygium with the basal dististyle

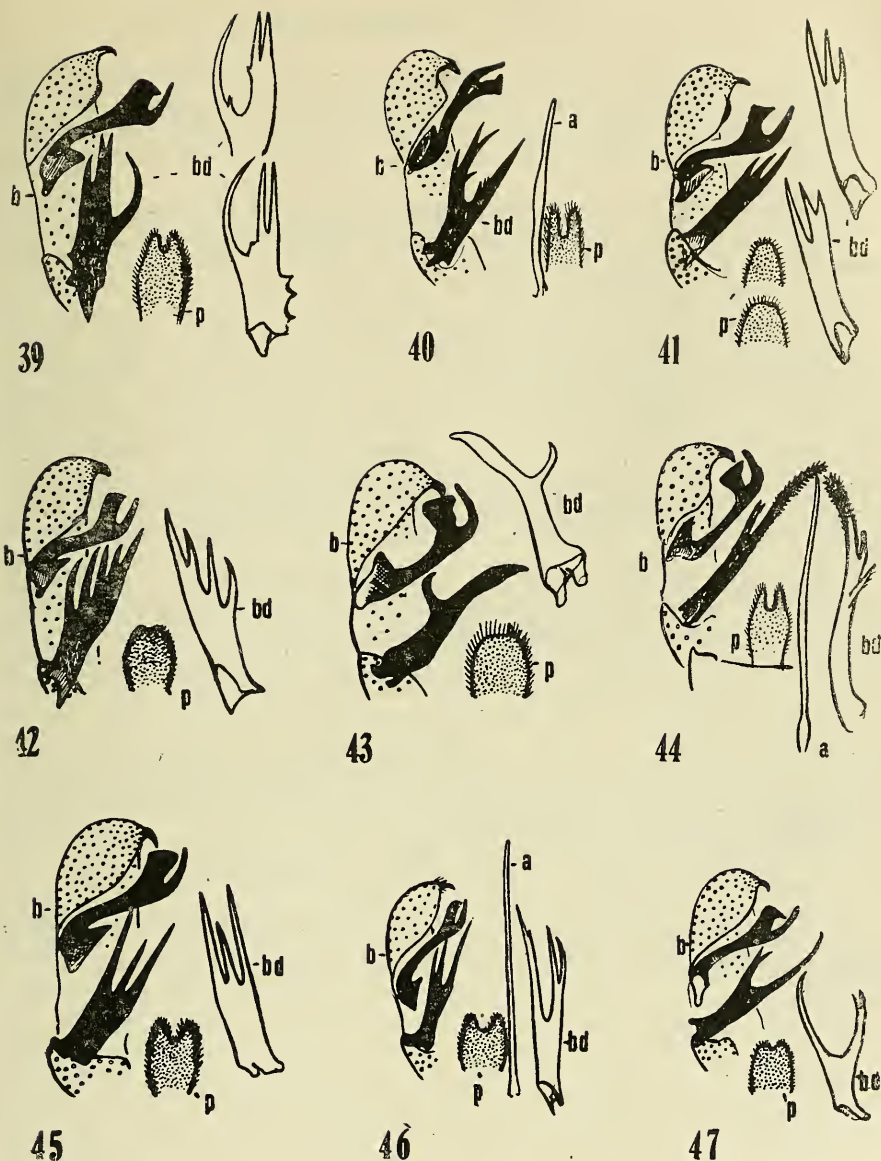


Plate 5

39. *Molophilus* (*Molophilus*) *masafuerae*, sp. n.; male hypopygium.
 40. *Molophilus* (*Molophilus*) *multifidus*, sp. n.; male hypopygium.
 41. *Molophilus* (*Molophilus*) *neptunus*, sp. n.; male hypopygium.
 42. *Molophilus* (*Molophilus*) *pectiniferus*, sp. n.; male hypopygium.
 43. *Molophilus* (*Molophilus*) *rectispinus*, sp. n.; male hypopygium.
 44. *Molophilus* (*Molophilus*) *styx*, sp. n.; male hypopygium.
 45. *Molophilus* (*Molophilus*) *tridens*, sp. n.; male hypopygium.
 46. *Molophilus* (*Molophilus*) *variatus*, sp. n.; male hypopygium.
 47. *Molophilus* (*Molophilus*) *yinquensis*, sp. n.; male hypopygium.

(Explanation of symbols: a, aedeagus; b, basistyle; d, outer dististyle; bd, basal dististyle; p, phallosome).

a powerful broad-based rod that forks into two arms, the inner a long slender spine, the shorter outer arm forking at tip, the depth of the split somewhat variable; phallosome setiferous, its apex slightly emarginate.

Male.—Length about 3,4 — 3,6 mm.; wing 4 — 4,3 mm.; antenna about 1,0 mm.

Female.—Length about 4 mm.; wing 4,5 mm.

Rostrum and palpi brownish black. Antennae brown; flagellar segments subcylindrical to long-oval, the verticils of the more proximal segments very long. Head gray.

Pronotum obscure yellow. Mesonotum dark brown, the praescutal humeri vaguely brightened. Pleura dark brown, the dorsopleural membrane more yellowed. Halteres yellow. Legs with the coxae and trochanters yellow; remainder of legs brown, the outer tarsal segments blackened. Wings grayish yellow, the base and costal region clearer yellow; axilla restrictedly more infuscated; veins brownish yellow, macrotrichia dark brown. Venation: R_s long; R_2 lying slightly distad of level of $r-m$; petiole of cell M_3 variable in length, from about one-third longer to nearly twice $m-cu$; vein $2nd\ A$ ending about opposite the basal fourth of petiole of cell M_3 .

Abdomen, including hypopygium, dark brown. Male hypopygium (fig. 47) with the beak of the basistyle, b , blackened, strong. Outer dististyle with the arms very unequal, the outer flattened, its angle extended into a point, inner arm a cylindrical spine, the tip obtuse. Basal dististyle, bd , a powerful broad-based rod that widens outwardly, forking into two arms, the inner a long slender spine, its apex gently curved to an acute point; outer arm shorter, shallowly forked at tip, the depth of the split slightly variable, even on the two sides of a single specimen. Phallosome, p , setiferous, the apex shallowly emarginate. Aedeagus elongate, only slightly dilated at near midlength.

Holotype, ♂, MASATIERRA: Plazoleta del Yunque, 200 meters, February 20, 1951 (Kuschel). Allotopotype, ♀. Paratopotypes, ♂♂.

The most similar regional species is *Molophilus* (*Molophilus*) *canopus*, sp. n., which differs in coloration and in the structure of the male hypopygium, particularly the basal dististyle.