Studies of Neotropical Caddisflies, XXXIX: The Genus *Smicridea* in the Chilean Subregion (Trichoptera: Hydropsychidae)

OLIVER S. FLINT, JR.

SMITHSONIAN CONTRIBUTIONS TO ZOOLOGY · NUMBER 472

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ABSTRACT

Flint, Oliver S., Jr. Studies of Neotropical Caddisflies, XXXIX: The Genus *Smicridea* in the Chilean Subregion (Trichoptera: Hydropsychidae). *Smithsonian Contributions to Zoology*, number 472, 45 pages, 146 figures, 14 maps, 1989.—The genus *Smicridea* McLachlan is characterized for its adult, larval, and pupal stages, and the species found in the Chilean Subregion are revised.

Fourteen species are recognized in the subgenus *Smicridea*. These are placed in three species groups, with two additional species left unassigned. The *S. annulicornis* species group includes six species: *annulicornis* (Blanchard) (*Rhyacophylax chilensis* Navás, new synonym); *decora* (Navás) (*Antarctopsyche annulicornis* Ulmer and *A. albescens* Navás, new synonyms); *manzanara*, new species; *penai*, new species; *pucara*, new species; and *tregala*, new species. The *S. frequens* species group includes four species: *anticura*, new species; *frequens* (Navás); *mucronata*, new species; and *turgida*, new species. The *S. smilodon* species group includes two species: *redunca*, new species; and *smilodon*, new species. *Smicridea complicatissima*, new species, and *S. matancilla*, new species, are not assigned to a species group.

The subgenus *Rhyacophylax* contains only a single species in the Chilean Subregion: *S. murina* McLachlan, with *Rhyacophylax magnus* Ulmer, *R. mendocensis* Navás, and *Smicridea (R.) zanclophora* Flint as new synonyms.

Descriptions, figures of males and females, distribution maps, and keys are included for all recognized species of *Smicridea* of the Chilean Subregion (except for females of *S. complicatissima* and *S. matancilla*, which are unknown). The possible relationships of the Chilean members of *Smicridea* are discussed, and the morphological similarities of members of the *S. frequens* species group to the Australian genera *Asmicridea* and *Smicrophylax* are noted.

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Contents

FIGURE 1.—Larva of *Smicridea (S.) annulicornis* (Blanchard), lateral.

Studies of Neotropical Caddisflies, XXXIX: The Genus *Smicridea* in the Chilean Subregion (Trichoptera: Hydropsychidae)

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Introduction

The trichopterous fauna of Chile has been extensively studied for over a century. The first few Chilean caddisflies were described in the pioneering entomological studies of Blanchard (1851), Mabille (1888), and McLachlan (1871). In the first half of this century the field was dominated by the works of Banks (e.g., 1903), Navás (1918 through 1934), and Ulmer (1904 through 1913). Their works, typical of the era, were based primarily on external characters, with only slight usage of the genitalia. Beginning with Mosely (1934) in the 1930s, and continuing with Flint (1967 through 1983), Holzenthal (1986), and Schmid (1949), the use of genitalic characters has become standard in species discrimination. The types of many of the older species now have been restudied and their identities made known with modern illustrations of their genitalia. This state of knowledge, combined with extensive collections made in recent decades from throughout the Subregion, has resulted in a fauna that is very well known and quite easily identified.

The hydropsychid genus *Smicridea* McLachlan has remained an outstanding exception to this generalization. Six species of *Smicridea* were proposed between 1851 and 1932; three of these were illustrated by Schmid (1949), but the others remained poorly known. The genus is, however, widespread and very abundant; few collections that I have studied during the past 20 years did not contain representatives of *Smicridea*. Study of the original and subsequent descriptions, primary types, and constantly accumulating material have convinced me that errors of identification were common and that the taxonomic situation in the genus was exceedingly complex. Work was begun on a revision in the late 1970s and has progressed erratically ever since as new material has forced me to change my concepts frequently. For the last few years new material has been referable to known species and the taxonomic situation has seemed to stabilize.

I now recognize four of the preexisting species names as valid, and describe, herein, 11 new species of *Smicridea*. Many of these, especially in the *annulicornis* and *frequens* species groups, are exceedingly similar morphologically. However, after study of, and experience with, specimens, I am confident that other workers will be able to identify their material readily.

This, then, is a straightforward taxonomic revision of the species of the genus *Smicridea* found in the Chilean Subregion of the Neotropical Region. I define the Chilean Subregion (Flint 1983:1–2) as including all of Chile, and Argentina south of the ríos Neuquén and Negro.

LOCALITIES.—In 1975 the Chilean government reorganized their larger administrative units, establishing 12 Regions (generally referred to in Chile as Región I to XII) plus Metropolitana de Santiago and Territorio Chileno Antártico (Map 1). Within these regions are a series of 52 provinces. The country was previously divided into 24 provinces. Many of the province names are the same in both the old and the new systems. However, some old provinces were elevated to regions and divided into three to seven new provinces. Some old provinces did not change at all, but some had their boundaries redrawn, and a few totally disappeared.

This paper uses the new provincial terminology throughout. This means that in many cases the provincial names used differ from those that appear on the specimen labels, which are all labelled using the old provincial system. The appropriate new provincial names were determined by finding localities on a map labelled with the new names.

Locality information listed under the "Material Examined" section is essentially quoted from specimen labels. A number of localities were unknown to me, or the label data were insufficient to locate the site. I have attempted to ascertain the situation of these localities from the collector or a gazetteer

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and, when discovered, have included this or other supplemental data in brackets.

Within the "Type Material" sections, information quoted separately represents information from separate specimen labels.

ABBREVIATIONS.— The location of material examined is identified by the following abbreviations:

AMNH	American Museum of Natural History, New York City, USA
BMNH	British Museum (Natural History), London, England
CAS	California Academy of Sciences, San Francisco, USA
CNC	Canadian National Collection, Ottawa, Canada
DEI	Institut für Pflanzenschutzforschung der Akademie der Landwirtwissenschaften der DDR, Abteilung Taxonomie der Insekten (former Deutsches Entomologisches Institut), Eberswalde, DDR
EEAM	Estacion Experimental Agronomica, Maipu, Chile
HNHM	Hungarian Natural History Museum, Budapest, Hungary
MNHNP	Muséum National d'Histoire Naturelle, Paris, France
MZB	Museo de Zoologia, Barcelona, Spain
NMNH	National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA
UCR	University of California, Riverside, USA
ZMC	Zoologisk Museum, University of Copenhagen, Denmark
ZSZMH	Zoologisches Staatsinstitut und Zoologisches Museum, Hamburg, F.R. Germany

ACKNOWLEDGMENTS.—This study was made possible only by the accumulation of large amounts of material from many localities, often in long series. This was accomplished primarily through the efforts of the eminent Chilean field naturalist, Sr. Luis E. Peña G. of Santiago, Chile. Since the late forties he has collected caddisflies and sent them to specialists for study: the first ten years to Dr. F. Schmid (he and this material now located at the Canadian National Collection, Ottawa), and since 1965 to me at the National Museum of Natural History (NMNH). These collections have been supplemented by those I have made during seven trips to the Subregion and by two made by Dr. D.R. Davis (NMNH). Extensive collections were also received for study from Dr. E.S. Nielsen from the Zoological Museum, University of Copenhagen.

I thank the following curators for allowing me to study primary types in their collections: Dr. P.C. Barnard, British Museum (Natural History), for *S. murina* McLachlan; Mlle S. Kellner-Pillaut, Muséum Nacional d'Histoire Naturelle, for *S. annulicornis* (Blanchard); Dr. F. Español C., Museo de Zoologia, Barcelona, for *S. chilensis* (Navás), *S. decora* (Navás), and *S. frequens* (Navás); and Dr. G. Petersen, Deutsches Entomologisches Institut, for *S. albescens* (Navás).

Mrs. Elaine R.S. Hodges (NMNH) prepared Figure 1, inked all the drawings, prepared the plates, and provided other valuable artistic support. Mr. George L. Venable (NMNH) prepared Figure 17. Drs. R.W. Holzenthal, University of Minnesota, and W.N. Mathis, NMNH, reviewed the manuscript of this paper, correcting many errors and making valuable suggestions. I am indebted to all of these individuals for their indispensable contributions.

Genus *Smicridea* McLachlan

Smicridea McLachlan, 1871:134 [type species: *Smicridea fasciatella* McLachlan, 1871, by Milne, 1936].—Ulmer, 1907b:175.—Mosely and Kimmins, 1953:326.—Fischer, 1963:130.—Flint, 1974a:4–9; 1974b:83, 88.

Rhyacophylax Müller, 1879:140 [type species: *Rhyacophylax brasilianus* Ulmer, 1905c, by Fischer, 1963].—Ulmer, 1907b:174.—Ross, 1947:144.—Fischer, 1963:134.

Pellopsyche Banks, 1903:243 [type species: *Pellopsyche signata* Banks, 1903, monotypic].—Ulmer, 1907b:175.

Antarctopsyche Ulmer, 1907a:30 [type species: *Antarctopsyche annulicornis* Ulmer, 1907a, monotypic]; Ulmer, 1907b:173.—Fischer, 1963:98.

Badallus Navás, 1918a:21 [type species: *Badallus argentinus* Navás, 1918a, by original designation]; Navás, 1920:42.

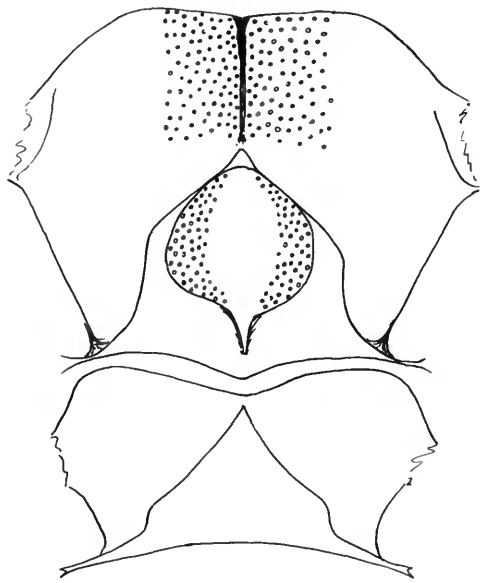
The genus *Smicridea* is found from Colorado and Oklahoma in United States south to 46°S latitude in South America. Further collecting will probably extend its known range at least as far as the Straits of Magellan. *Smicridea*'s apparent absence in northern Chile is probably real, resulting from that area's aridity.

Species of *Smicridea* are also common on the Greater and larger Lesser Antillean islands. Species were described from Australia and Tasmania (Mosely and Kimmins, 1953), but these have now been transferred to *Asmicridea* or *Smicrophylax* (Nebois, 1977, 1986).

The genus is both speciose, with over 100 described species, and very abundant in field collections. The larvae are found in flowing waters, from small spring seeps to the largest rivers. They use trap nets constructed on the substrate to strain out their food of particulate organic matter from the flowing water.

ADULT.—Ocelli absent. Spurs 1, 4, 4, or 1, 4, 2. Maxillary palpus (Figure 4) with first 4 segments short, fifth longer than basal four and multiarticulate, second segment with several rows of stout setae apically. Labial palpus (Figure 5) with first 2 segments short, third longer than first two, and articulate. Antenna no longer than forewing. Head dorsally (Figure 3) lacking well-developed sutures; with anteromesal and posterolateral warts well developed, anterolateral warts present but only weakly delimited. Meso- and metanota (Figure 2) without setal warts (but with areas of setae). Forewing (Figures 6, 7) without specially modified hairs on vein 1A; hind wing with R_{2+3} undivided, M arising from R basally.

LARVA.—Labrum (Figure 8) simple, with large anterolateral brushes, dorsal surface sparsely setate. Mandibles with lateral surface bearing narrow dorsal and ventral flanges, with setae between; mesal face bearing a variable number and form of teeth; left mandible with a brush of setae. Labium (Figure 9) with submentum not deeply cleft apicomesally. Frontoclypeus with lateral margin not, or barely, expanded posterolaterally. Trochantin (Figure 10) a simple conical projection. Prosternum transverse without posterolateral sclerites. Pronotum divided on midline; meso- and metanotum entire. Abdomen without lateral line fringe; eighth and ninth sterna with sclerites bearing numerous setae; body surface with setae flattened and scalelike. Gills consisting of a central stalk generally bearing several whorls of smaller lateral filaments. Mesosternum with 1 pair



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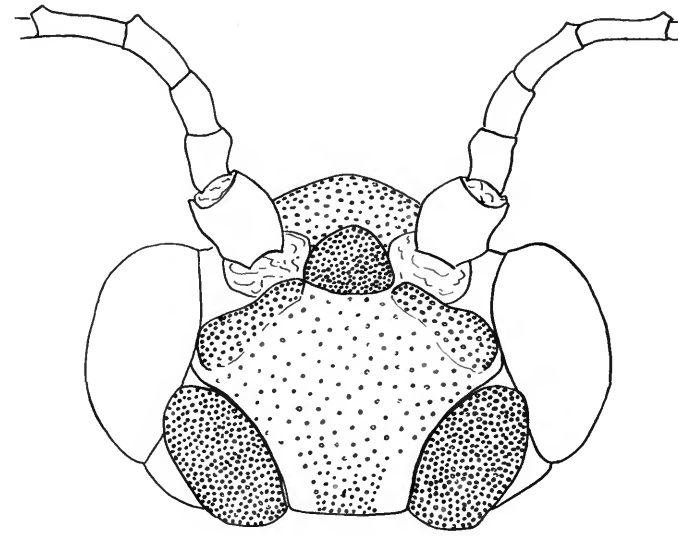

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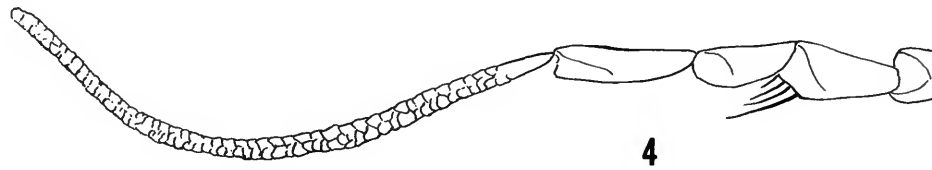

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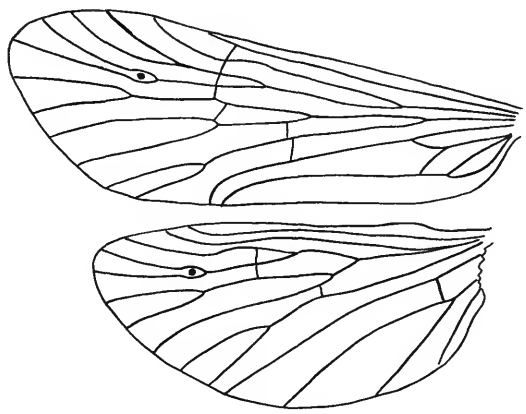

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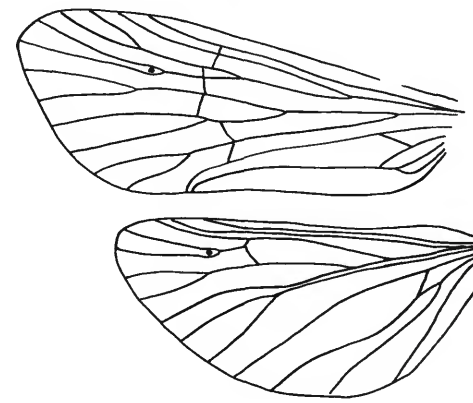

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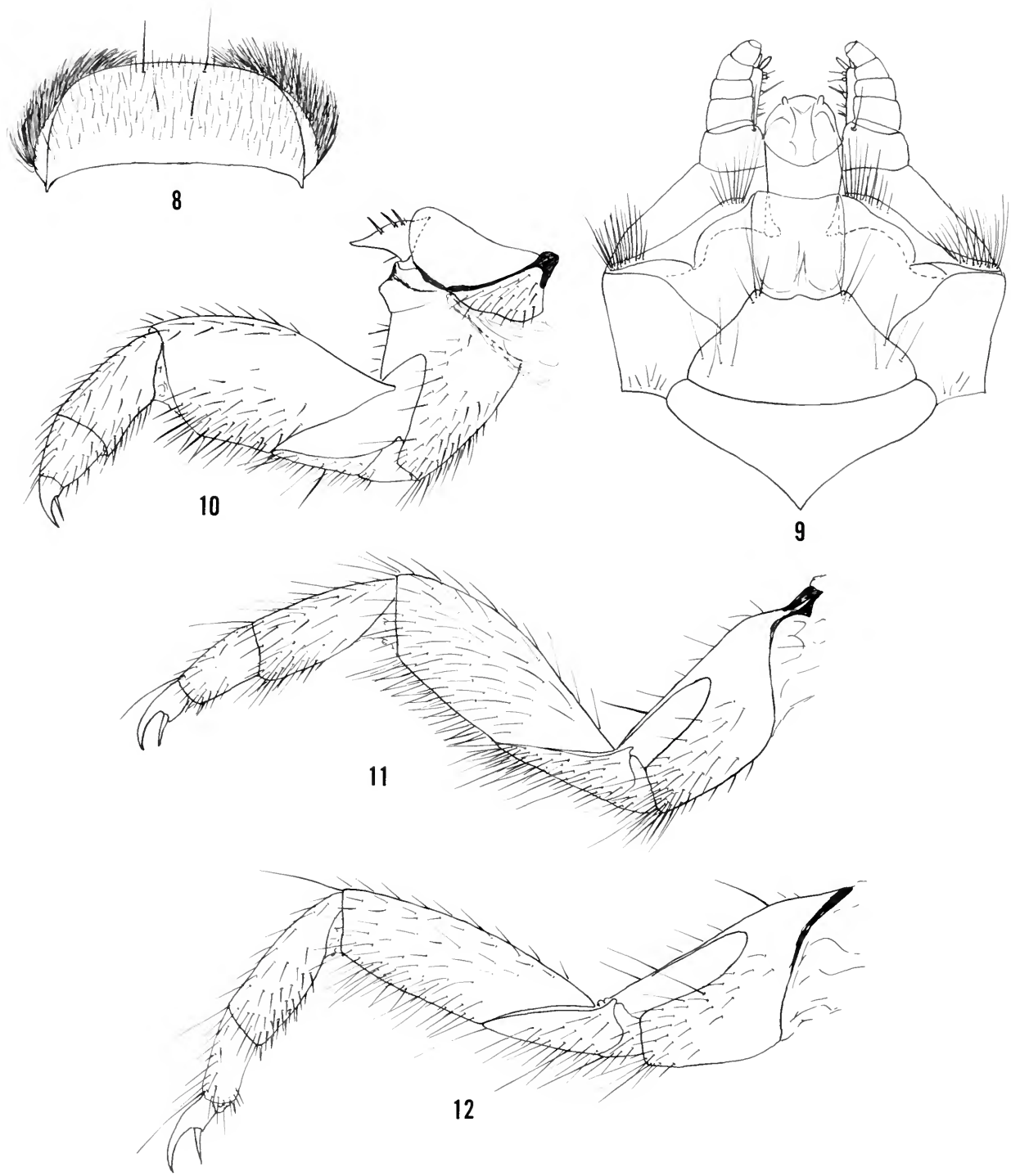
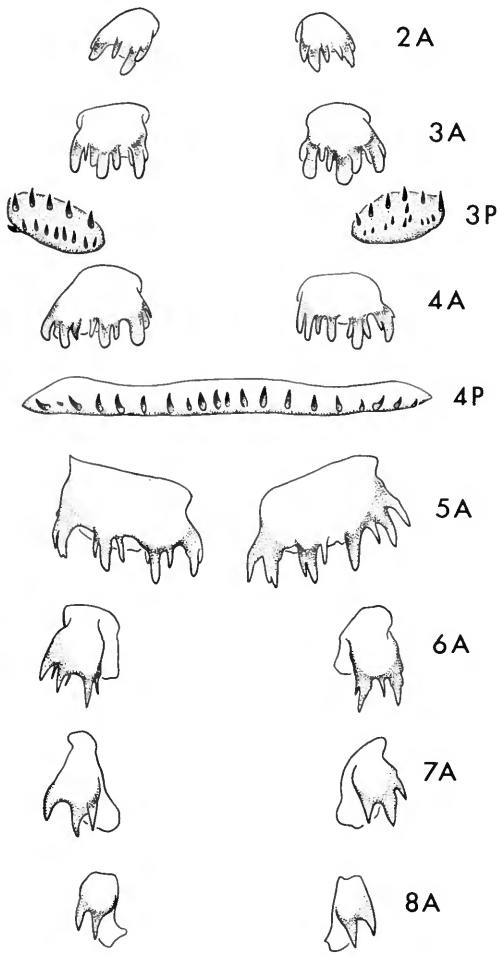
FIGURES 2–7.—Adult structures. *Smicridea (S.) fasciatella* McLachlan: 2, thorax, dorsal, anterior towards top; 3, head, dorsal; 4, left maxillary palpus, lateral; 5, left labial palpus, lateral; 6, wing venation. *Smicridea (R.) signata* (Banks): 7, wing venation.



FIGURES 8–12.—Larval structures. *Smicridea (S.) fasciatella* McLachlan: 8, labrum, dorsal; 9, maxillolabium, ventral; 10, foreleg and propleuron, lateral; 11, midleg, lateral; 12, hindleg, lateral.

of gills, metasternum with 1 or 2 pairs; abdominal segments 1–6 with a pair of ventral gills, segments 1–7 with a more lateral pair of ventral gills that consist of 2 stalks on segments 2–7; with 1 to 3 single, small filaments laterally on each side of segments 3–7. Anal claw without ventral teeth; brush well developed.

PUPA.—Labrum (Figure 14) with distinct basolateral lobes, each bearing 4–5 long setae, anteromesal region with scattered



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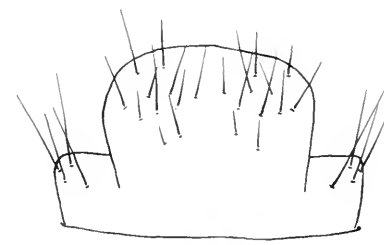

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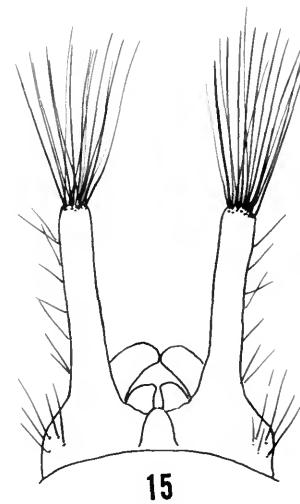

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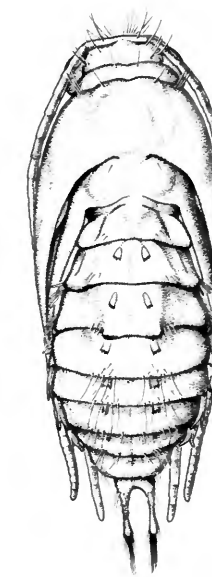

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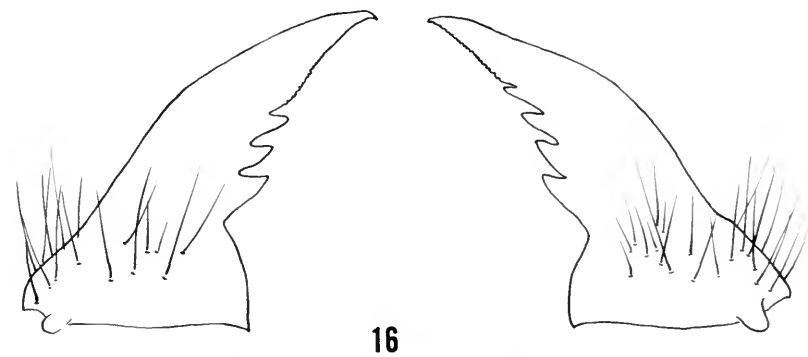

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FIGURES 13–17.—Pupal structures. *Smicridea (S.) annulicornis* (Blanchard): 13, hook plates, dorsal (A=anterior, P=posterior, 2–8=segment number). *Smicridea (S.) fasciatella* McLachlan: 14, labrum, dorsal; 15, apical appendages, dorsal; 16, mandibles, ventral; 17, habitus, dorsal.

setae. Mandibles (Figure 16) inflated basally and bearing setae laterally and posteriorly on this portion; tapering regularly to a pointed apex, inner margin with large teeth near base and minutely serrate beyond. Head anteriorly with numerous setae. Antennae reaching tip of abdomen. Tarsus of midleg broadened and bearing lateral fringes. Thorax and abdomen with sparse setae; lacking lateral line fringe. Abdomen with broad single or bifid lateral gills; ventrally with branched gills. Hook plates (Figure 13) anteriorly on segments 2–8, posteriorly on 3 and usually 4. Apical processes (Figure 15) rodlike, bearing an apical brush of stout setae.

COMMENTS.—The name *Antarctopsyche* is a junior, subjective synonym of subgenus *Smicridea*, whereas *Pellopsyche* and *Badallus* are junior, subjective synonyms of the subgenus *Rhyacophylax*.

The above diagnoses (from Flint, 1974a) are based primarily upon the type species of the genus, *S. fasciatella* McLachlan, but have been emended where necessary to include known divergences in other recently discovered species of the genus.

The immature stages of the species treated herein have not been studied in detail, but those of the species known to me agree with the general diagnoses. However, there are some unusual modifications in certain of the species. Most larvae are quite typical in appearance, although varying considerably in vestiture of the abdomen, color pattern of the head, shape of the anterior margin of the frontoclypeus, etc. The larvae of *redunca* and *smilodon*, new species, have the head concave frontally with this area surrounded by a raised carina. The pupae offer some unusual modifications of the hook plates, although most species have the usual paired plates. The pupae of *annulicornis* (Blanchard) and *manzanara*, new species, have plate 4P fused mesally, forming a single transverse plate (Figure 13). *Smicridea decora* (Navás) has 5A fused also. The various species also differ greatly in the length and setation of their apical processes.

Key to Subgenera of *Smicridea*

Hind wing with R_{2+3} and R_{4+5} parallel for a considerable distance, with *r* present (although rather weak), radiomedial system well separated from Cu_1 [Figure 6] . . . ***Smicridea***

Hind wing with R_{4+5} separating from R_{2+3} at a sharp angle, no *r*, and with basal portion of radiomedial system approximate to Cu_1 [Figure 7] . . . . . ***Rhyacophylax***

Subgenus *Smicridea* McLachlan

The adults of this subgenus are characterized by several venational characteristics. In the forewing the two posterior crossveins (between M and Cu and Cu_1 and Cu_2) are separated from the crossveins connecting R and M by a distance two or more times that of the crossvein *m-cu*. In the subgenus *Rhyacophylax* all crossveins in the forewing are nearly in alignment. In the hindwing of the subgenus *Smicridea*, R_{2+3} and R_{4+5} are subparallel, R_{4+5} is about as long as R_4 or R_5, crossvein *r* is present (although weak), and the basal portion of the radiomedial system is well separated from Cu_1. Subgenus *Rhyacophylax*, in contrast, has R_{4+5} strongly divergent from R_{2+3} basally, R_{4+5} is about half as long as either R_4 or R_5, there is no crossvein *r*, and the basal portion of the radiomedial system is closely approximate to Cu basad of its apical fork. Subgenus *Smicridea* possesses in the male two pairs of internal, reticulate sacs in the subapical abdominal segments. Reticulate sacs are totally lacking in subgenus *Rhyacophylax*. In addition the hindlegs of subgenus *Smicridea* have two pairs of spurs, whereas subgenus *Rhyacophylax* males lack the spurs at midlength.

The species of the subgenus *Smicridea* that are treated here are placed into three species groups, except that two species that clearly do not belong in any currently recognized species group are left unplaced at this time.

The *annulicornis* species group contains *annulicornis* (Blanchard), *decora* (Navás), *manzanara*, new species, *penai*, new species, *pucara*, new species, and *tregala*, new species. These are characterized by the phallus of the male genitalia terminating in paired, lateral sclerites, cuplike mesally, that are longer than high, and the apicodorsal margin of the phallotheca not projecting significantly over the bases of the lateral sclerites. In the female, the eighth sternite does not have the mesal margin sharply constricted, although sometimes it is distinctly concave. The clasper receptacle is always a well developed pocket, often with the mesal face bearing dark reticulations. The species are quite large, with forewing length from 6–13 mm.

The *frequens* species group is very similar to the *annulicornis* species group, and contains *anticura*, new species, *frequens* (Navás), *mucronata*, new species, and *turgida*, new species. The male genitalia are similar to those of the preceeding species group, but the lateral sclerites of the phallus are much shorter, usually as high as long, and the apicodorsal margin of the phallotheca projects, hoodlike, over the bases of the lateral sclerites. The eighth sternites of the female are sharply constricted on the mesal margin, resulting in a distinct, hatchet-like, apical lobe. The clasper receptacle is variable; rarely pocket-like, generally only deeply impressed, or rarely wholly lacking, and never is the cuticle darkly reticulate. The species are small, being 5–8.5 mm in forewing length.

The *smilodon* species group is not obviously related to any other New World group of species. It contains *redunca*, new species, and the closely similar *smilodon*, new species. They agree in having the apex of the phallus greatly modified and bearing paired apical knobs and large ventral hooks. The females are most similar to females of the *annulicornis* species group, but have a rather long eighth sternite with the basolateral angle greatly prolonged. The clasper receptacle is not pocket-like, but is very deeply impressed and the cuticle is not reticulate. The posteriomost of the vaginal sclerties is elongate and pyriform rather than short and transverse. The species of this group are also rather small, the forewings measuring 5.5–6.5 mm.

Smicridea complicatissima, new species, and *S. matancilla*, new species, are not assigned to a species group. They do not clearly fit into any currently recognized New World species group of the genus, nor do they seem related to each other, although they both posses very unusual phalli with processes or spines not seen elsewhere. The females are unknown for both species, thus there is no evidence about placement from this stage. They too are rather small with forewing lengths of 5–7 mm.

Key to Males of Subgenus *Smicridea* in the Chilean Subregion

1. Phallus terminating in a pair of lateral, cuplike sclerites, and small dorsolateral sclerites or lobes [Figure 20] 2
   Phallus more complex apically, with spines, lobes, and hooks [Figures 112, 129, 133] 11
2. Phallus with apicolateral plates at least as long as broad, usually longer, dorsum not produced over base of plates, with a distinct dorsolateral sclerite [Figure 20] 3
   Phallus with apicolateral plates shorter, usually broader than long, with dorsum produced over base of plates, somewhat hoodlike, dorsolateral sclerites lacking or less apparent [Figure 76] 8
3. Eyes in frontal aspect with diameters equal to interocular distance; forewing extensively white with dark marks . . . . . ***S. decora*** (Navás)
   Eyes in frontal aspect with diameters approximately half of interocular distance; forewing basically grayish brown, extensively irrorate 4
4. Apex of phallus extending much ventrad of ventral margin of apicolateral plates [Figure 20] . . . . . ***S. annulicornis*** (Blanchard)
   Apex of phallus with ventral margin more or less continuous with ventral margin of apicolateral plate [Figure 38] 5
5. Apex of phallus ventrally produced into a distinct mesal, keel-like lobe; with ventrobasal lobe of lateral plate well defined in lateral aspect [Figure 66] . . . . . ***S. tregala,*** new species
   Apex of phallus ventrally not produced or only slightly inflated; ventrobasal lobe barely distinguishable in lateral aspect [Figure 38] 6
6. Lateral plate of phallus at least 3 times as long as broad, dorsolateral lobe very long and slender [Figure 38] . . . . . ***S. manzanara,*** new species
   Lateral plate barely longer than broad, dorsolateral lobe short, rather bean-shaped in dorsal aspect [Figure 50] 7
7. Lateral plate of phallus with apex sharply upturned, mesobasal lobe protuberant in ventral aspect [Figures 48, 49] . . . . . ***S. penai,*** new species
   Lateral plate with apex rounded, mesobasal lobe not protuberant, but an obtuse angle in ventral aspect [Figures 58, 59] . . . . . ***S. pucara,*** new species
8. Phallotremal sclerites arising from a ventral lobe beneath lateral plates, erect and hooked posteriad [Figure 87] . . . . . ***S. frequens*** (Navás)
   Phallotremal sclerites rounded, inconspicuous, central in phallus and basad of lateral plates [Figure 78] 9
9. Lateral plate of phallus in ventral aspect with a pointed, basomesal process [Figure 97] . . . . . ***S. mucronata,*** new species
   Lateral plate of phallus in ventral aspect with basomesal lobe not produced to a point, but obliquely truncate [Figure 79] 10

10. Apex of phallus inflated as seen in dorsal aspect; basoventral root of lateral plate short and truncate [Figures 107, 105] . . . . . ***S. turgida,*** new species
Apex of phallus not notably inflated; basoventral root of lateral plate long, slender, threadlike [Figures 80, 78] . . . . . ***S. anticura,*** new species
11. Ninth sternum broadly produced posteriad between base of claspers; phallus with a large, scooplike lobe extending posteriad beneath all processes and lobes [Figures 129, 132] . . . . . ***S. complicatissima,*** new species
Ninth sternum not produced posteriad; lacking a large ventral lobe beneath phallus [Figure 133] 12
12. Phallus subapically with a curled, dorsolateral spine whose base is inserted in a lateral pocket; lacking paired, large apicoventral hooks [Figure 133] . . . . . ***S. matancilla,*** new species
Phallus lacking dorsolateral spines; with paired, large, apicoventral hooks [Figure 112] 13
13. Phallus apically with a pair of lobes bearing a ventral point, with ventral hooks curved strongly basad [Figure 112] . . . . . ***S. redunca,*** new species
Phallus with apical lobes rounded; ventral hooks, long, directed straight ventrad [Figure 121] . . . . . ***S. smilodon,*** new species

Key to Females of Subgenus *Smicridea* in the Chilean Subregion

(Females of *S. complicatissima* and *S. matancilla* are unknown.)

1. Eighth sternite with mesal margin sharply constricted creating a hatchet-like apical portion [Figure 84] 9
Eighth sternite with mesal margin straight [Figure 26], or concave [Figure 45] 2
2. Inner surface of clasper receptacle and adjacent cuticle with dark reticulations [Figure 41] 3
Inner surface of clasper receptacle and adjacent cuticle lacking dark, reticulations [Figure 23] 6
3. Clasper receptacle as high as long in lateral aspect [Figure 41] 4
Clasper receptacle very shallow in lateral aspect, many times longer than deep [Figure 61] . . . . . ***S. pucara,*** new species
4. Clasper receptacle with a row of hairs across opening [Figure 71] . . . . . ***S. tregala,*** new species
Opening to clasper receptacle lacking hairs [Figure 41] 5
5. Clasper receptacle almost circular in outline in both lateral and dorsal aspects [Figures 41, 42]; internal plate with a pair of anterior, knoblike pouches [Figure 44]; vaginal sclerites lightly sclerotized, barely darkened mesally [Figure 43] . . . . . ***S. manzanara,*** new species
Clasper receptacle more nearly quadrate in outline either in lateral or dorsal aspects [Figures 53, 54]; internal plate without anterior pouches [Figure 51]; vaginal sclerites strongly sclerotized, very dark mesally [Figure 52] . . . . . ***S. penai,*** new species
6. Clasper receptacle pocket-like in lateral aspect [Figure 23]; anterolateral angles of eighth sternite not strongly produced [Figure 26] 7
Clasper receptacle deeply impressed, but not pocket-like [Figure 117]; eighth sternite with anterolateral angles strongly produced [Figure 120] 8
7. Outer surface of clasper receptacle in lateral aspect with a distinct, oblique fold from posterior margin [Figure 23] . . . . . ***S. annulicornis*** (Blanchard)
Outer surface of clasper receptacle unmodified, dorsal margin an even curve [Figure 32] . . . . . ***S. decora*** (Navás)

8. Clasper receptacle with a distinct, dark mark oblique from ventral margin in lateral aspect [Figure 117] . . . . . ***S. redunca,*** new species
   Clasper receptacle lacking any ventral dark mark [Figure 125] . . . . . ***S. smilodon,*** new species
9. Lacking any distinct clasper receptacle [Figure 108] . . . ***S. turgida,*** new species
   With either a pocket-like [Figure 81] or distinctly impressed [Figure 90] clasper receptacle 10
10. Clasper receptacle pocket-like in lateral aspect [Figure 81] . . . . . ***S. anticura,*** new species
    Clasper receptacle deeply impressed, but not pocket-like [Figure 90] 11
11. Pale apex of clasper receptacle in lateral aspect near midlength of dorsal margin of ninth tergum [Figure 90]; posteriormost of vaginal sclerites indistinct, reduced to 2 small lateral sclerotized points [Figure 91] . . . . . ***S. frequens*** (Navás)
    Pale apex of clasper receptacle distinctly posteriad of middle of dorsal margin of ninth tergum [Figure 99]; posteriormost of vaginal sclerites well sclerotized, distinct, with a central opening [Figure 100] . . . . ***S. mucronata,*** new species

Smicridea (Smicridea) annulicornis (Blanchard)

FIGURES 1, 13, 18–26; MAP 2

Hydropsyche annulicornis Blanchard, 1851:140.—Hagen, 1864:821.—Ulmer, 1904:24; 1905a:68; 1905b:18.

Smicridea annulicornis (Blanchard).—Ulmer, 1913:389–390, 406.—Fischer, 1963:131.

Smicridea (S.) annulicornis (Blanchard).—Flint, 1974b:88.

Rhyacophylax chilensis Navás, 1923:23; 1922 [1924]:367; 1928:126; 1930:361; 1932b:83; 1934a:28.—Lestage, 1925:41.—Fischer, 1963:136 [new synonymy].

Smicridea chilensis (Navás).—Schmid, 1949 [1950]:344–345 [sic *Smicridia*].—Flint, 1967:55.—Fischer, 1972:144.

Smicridea (S.) chilensis (Navás).—Flint, 1974b:88.

This, one of the most ubiquitous caddisflies in the Chilean Subregion, appears to be most closely related to *S. decora*. The two are usually easily distinguished by the darker color and smaller eyes of *annulicornis*. The deeply cupped lateral plates of the phallus that lack any mesobasal shoulder and the very small or lacking dorsolateral lobes are diagnostic in the male genitalia of *annulicornis*. The genitalia of the female are similar to that of *decora*, but may be recognized by the shape of the clasper receptacle. In *decora* the outer face is unmodified, but in *annulicornis* there is a distinct, oblique posteroventral fold overhanging the opening slightly and a similar, but smaller, one anteroventrally.

ADULT.—Length of forewing, 6–10 mm. Color brown, appendages slightly paler, antennae annulate; forewings pale brownish, variable, marked with dark brown flecks, often producing a distinct pattern, other times producing a more uniform speckling. Eye of male in frontal aspect with diameter slightly greater than half of interocular distance. Fifth sternum with anterolatereral processes slightly longer than sternum; with 2 pairs of internal sacs, anterior pair as long as its segment, posterior pair distinctly shorter than its segment.

Male Genitalia: Ninth segment with anterior margin nearly vertical. Tenth tergum elongate, tip divided dorsomesally; tergite with apex rounded in dorsal, and enlarged and upturned in lateral aspect. Clasper with basal segment inflated apicad; apical segment elongate, bluntly pointed. Phallus tubular, base at right angles to stem, width of basal opening slightly more than twice diameter of stem, apex distinctly enlarged; lateral plate 1 1/2–2 times longer than broad, ventral margin well above ventral margin of stem, in ventral aspect with mesobasal shoulder lacking, deeply cupped, and with inner margins slightly concave but with ventral margin usually more lateral than dorsal; dorsolateral lobe very small, or sometimes apparently lacking.

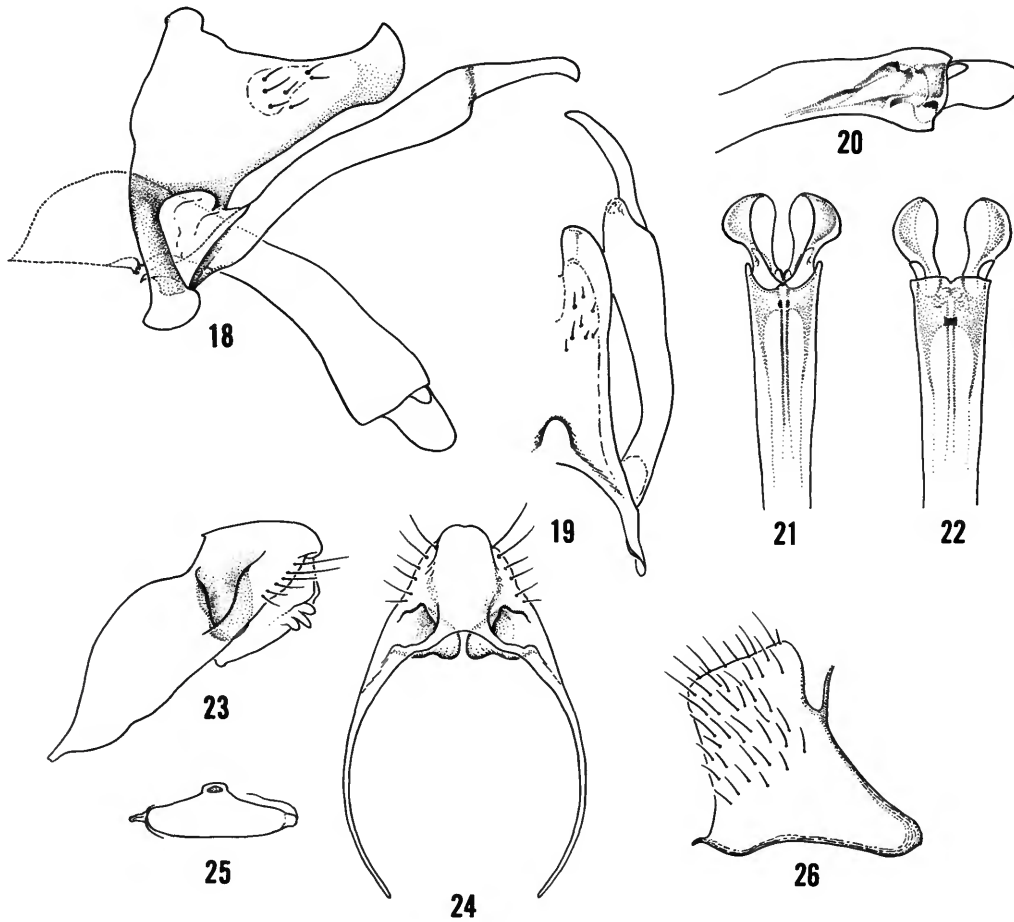
Female Genitalia: Eighth sternite roughly rectangular, with posteromesal angle at about 90°; anterolateral angle produced, rounded. Ninth tergum strongly produced anteroventrally. Clasper receptacle deep, pocket-like, produced ventromesally; in dorsal aspect about 1/2 length of tergum, in lateral aspect with a narrow anterior overhang and a broader, oblique posteroventral overhang. Vaginal sclerite narrow, transversely oval, with a small posteromesal lobe bearing a small opening.

TYPE MATERIAL.—*Hydropsyche annulicornis* Blanchard, type in MNHNP labeled: "MUSEUM PARIS Chili Gay 15–43"; "15–43"; "TYPE"; "Smicridea annulicornis Blanch (Blanchard's Type von Hydropsyche annulicornis Blanch. Ulmer vid. 1913)."

Rhyacophylax chilensis Navás: Type in MZB labeled: "Marga Marga (Chile) 1. 1919"; "Rhyacophylax chilensis Nav. P. Navas S.J., det."; "Typus." The pin is bare except for a balsam mount on the pin with ♂ genitalia. However, both the original description and Schmid (1949) state that the type is a ♀! The ♂ genitalia are *annulicornis* as are most other specimens determined as *chilensis* by Navás, and other examples from Estero Marga Marga at Los Perales. Based on this evidence about the identity of the type, I make this synonymy.

MATERIAL EXAMINED.—ARGENTINA: PCIA. CHUBUT: Lago Puelo, [S] El Bolsón, 220 m, 26 Feb 1979, Nielsen et al., 2 ♂ (ZMC); Arroyo Golondrinas, 6 km N Lago Puelo, 8 Feb 1974, O.S. Flint, Jr., 2 ♀ (NMNH); Cholila, 26 Jan 1965, A. Kovacs, 1 ♂, 1 ♀ (AMNH); Esquel, 1 Jan 1982, Nielsen et al., 2 ♂, 3 ♀ (ZMC); El Sagrario Puerto, Lago Menéndez, [W] Esquel, 600 m, 2–4 Jan 1982, Nielsen et al., 1 ♂ (ZMC); Corcovado, [W] Tecka, 750 m, 17 Feb 1979, Nielsen et al., 3 ♂ (ZMC); 3 km N Trevellín, 28 Jan 1987, C.M. & O.S. Flint, Jr., 2 ♂, 9 ♀ (NMNH).

PCIA. NEUQUÉN: San Martín de los Andes, 2–18 Nov 1959, J.E. Foerster, 3 ♂, 3 ♀ (CNC); same, but Jan 1978, M. Gentili, 1 ♂ (NMNH); Puente Blanco, Cerro Chapelco, San Martín de los Andes, 25 Feb 1978, C.M. & O.S. Flint, Jr., 1 ♂, 1 ♀ (NMNH); tributary Arroyo Trompul, W San Martín de los Andes, 23 Feb 1978, C.M. & O.S. Flint, Jr., 1 ♂ (NMNH); Arroyo Pilpil, near San Martín de los Andes, 22 Feb 1978, C.M. & O.S. Flint, Jr., 1 ♂ (NMNH); Lago Lacar, 5 km E Hua-Hum, 640 m, 25 Nov 1981, Nielsen et al., 4 ♂, 2 ♀ (ZMC); Río Quilquihue at Lago Lolog, 22–23 Jan 1974, O.S. Flint, Jr., 100s ♂♂ ♀♀ (NMNH); Río Quilquihue, Quilquihue, 26 Jan 1974, O.S. Flint, Jr., 100s ♂♂ ♀♀ (NMNH); Arroyo Rosales, near San Martín de los Andes, 22 Jan 1974, O.S. Flint, Jr., 1 ♂, 1 ♀ (NMNH); Aluminé, 20 Jan 1949, F. Monros, 1 ♂ (CNC); same, but 14 Mar 1979, Nielsen et al., 4 ♂, 5 ♀ (ZMC); Río Aluminé, 9 km N Aluminé, 27 Feb 1978, C.M. & O.S. Flint, Jr., 6 ♂, 10 ♀ (NMNH); same, but 5 km N Aluminé, 2 ♂, 2 ♀ (NMNH); same, but 5 km S Pilolil, 2 Feb 1987, 3 ♂, 4 ♀ (NMNH); Río Litrán, 9 km N Lago Aluminé, 3 Feb 1987, C.M. & O.S. Flint, Jr., 5 ♂, 6 ♀ (NMNH); Río Totoral, 24 km NW Villa La Angostura, 20 Feb 1978, C.M. & O.S. Flint, Jr., 5 ♂, 11 ♀ (NMNH); same, but 31 Jan 1987, 2 ♂ (NMNH); Río Ruca Malén, 25 km N Villa La Angostura, 1 Feb 1987, C.M. & O.S. Flint, Jr., 1 ♂, 4 ♀ (NMNH); Río



FIGURES 18–26.—*Smicridea (S.) annulicornis* (Blanchard). Male genitalia: 18, lateral; 19, dorsal. Tip of phallus: 20, lateral; 21, ventral; 22, dorsal. Female genitalia: 23, lateral; 24, dorsal; 25, vagina, ventral; 26, eighth sternite, ventral.

Malleo, 22 km N Junín de los Andes, 2 Mar 1978, C.M. & O.S. Flint, Jr., 20 ♂, 11 ♀ (NMNH); same, but 2 Feb 1987, 6 ♂, 6 ♀ (NMNH); Arroyo del Gato, 8 km S Rahué, 2 Mar 1978, C.M. & O.S. Flint, Jr., 11 ♂, 1 ♀ (NMNH); Lago Rucachoroi, W Aluminé, 1–2 Mar 1978, C.M. & O.S. Flint, Jr., 1 ♂ (NMNH); same, but 15 Mar 1979, Nielsen et al., 1 ♂ (ZMC); Lago Moquehué at Arroyo Marcial, 28 Feb 1978, C.M. & O.S. Flint, Jr., 1 ♀ (NMNH); Río Agrio, N Zapala, 9–11 Dec 1983, L.E. Peña G., 26 ♂, 12 ♀ (NMNH); 5 km SE Lago Huechulafquén, 26 Jan 1974, O.S. Flint, Jr., 5 ♂, 1 ♀ (NMNH); Rodeo Grande, Lago Tromén, 900 m, 1 Jan 1979, Nielsen et al., 14 ♂, 8 ♀ (ZMC); same, but 12 Mar 1979, 2 ♂ (ZMC); Río Nonthué, Estación Forestal Pucará, 28–31 Jan 1974, O.S. Flint, Jr., 24 ♂, 43 ♀ (NMNH); Lago Lacar, Estación Forestal Pucará, 29–30 Jan 1974, O.S. Flint, Jr., 7 ♂, 33 ♀ (NMNH); same, but 2 Dec 1978, Nielsen et al., 1 ♂ (ZMC); same, but 25–26 Dec 1978, 18 ♂, 1 ♀ (ZMC); same, but 28–29 Nov 1981, 5 ♂, 3 ♀ (ZMC) same, but 26–27 Dec 1981, 2 ♂, 2 ♀ (ZMC); Pantano, near Estación Forestal Pucará, 29 Jan 1974, O.S. Flint, Jr., 3 ♂ (NMNH); Río Limay, Neuquén, 17–18 Feb 1978, C.M. & O.S. Flint, Jr., 5 ♂, 13 ♀ (NMNH); Río Limay, Confluencia, 3 Mar 1978, C.M. & O.S. Flint, Jr., 3 ♂, 2 ♀ (NMNH); Piedra de Aguila, 18 Dec 1978, Nielsen et al., 13 ♂, 10 ♀ (ZMC).

PCIA. RÍO NEGRO: El Bolsón, 7 Jan–13 Feb 1961, Topal, 17 ♂, 13 ♀ (HNHM & NMNH); same, but 7 Nov 1961, 1 ♂ (HNHM); Cascada Mallín Ahogado, [N] El Bolsón, 9 Feb 1974, O.S. Flint, Jr., 7 ♂, 4 ♀ (NMNH); General Fernández Oro, Jan–Feb 1976, S. Coscarón, 18 ♂, 19 ♀ (AMNH & NMNH); Río Negro, General Fernández Oro, 17 Feb 1978, C.M. & O.S. Flint, Jr., 13 ♂, 5 ♀ (NMNH); Lago Pellegrini, NE Cipolletti, 17 Feb 1978, C.M. & O.S. Flint, Jr., 1 ♂ (NMNH); Colonia Suiza, Bariloche, 810 m, 20 Nov 78, Nielsen et al., 1 ♂ (ZMC); Ñirihuau, [E] Bariloche, 9 Dec 1978, Nielsen et al., 1 ♂ (ZMC); same, but 2 Jan 1979, 1 ♂, 1 ♀ (ZMC); Río Ñirihuau, Estación Ñirihuau, 11 Feb 1974, O.S. Flint, Jr., 3 ♂, 3 ♀ (NMNH); Puerto Blest, Lago Nahuel Huapí, 18–23 Dec 1978, Nielsen et al., 2 ♂, 5 ♀ (ZMC); 5 km S Río Villegas, 7 Feb 1974, O.S. Flint, Jr., 1 ♂ (NMNH).

CHILE: PCIA. ACONCAGUA: N El Tártaro, Putaendo, 5–6 Feb 1984, L.E. Peña G., 5 ♂, 5 ♀ (NMNH); Curimon (W) Los Andes, 700 m, 28 Mar 1979, Nielsen et al., 1 ♂, 3 ♀ (ZMC).

PCIA. AISÉN: Lago Risopatrón, 17 km N Puyuhuapi, 24 Jan 1987, C.M. & O.S. Flint, Jr., 3 ♂, 11 ♀ (NMNH); Río Cisnes, 10 km E Puerto Cisnes, 25 Jan 1987, C.M. & O.S. Flint, Jr., 1 ♂, 1 ♀ (NMNH).

PCIA. ARAUCO: Estero Peral, Contulmo, 1–2 Jan 1966, Flint & Cekalovic, 21 ♂, 30 ♀ (NMNH); Puente Trongol [~12 km S Curanilahue], 1 Jan 1966, Flint & Cekalovic, 1 ♂ (NMNH); same, but 15–16 Oct 1969, Flint & Barria, 1 ♂ (NMNH).

PCIA. BÍO-BÍO: Santa Bárbara, 6 Feb 1958, L.E. Peña G., 1 ♂ (CNC); Río Queuco, E Santa Bárbara, 17–18 Mar 1984, L.E. Peña G., 58 ♂, 10 ♀ (NMNH); Estero Huequecura, 25 km E Santa Bárbara, 24 Jan 1978, C.M. & O.S. Flint, Jr., 34 ♂, 32 ♀ (NMNH); El Abanico, 1100 m, 17–19 Mar 1984, L.E. Peña G., 4 ♂ (NMNH); 5 km W Tucapel, 28 Dec 1950, Ross & Michelbacher, 87 ♂, 10 ♀ (CAS); Salto de Laja, 17–18 Apr 1966, L.E. Peña G., 10 ♂, 11 ♀ (NMNH); ~4 km N Salto de Laja, ~200 m, 12 Jan 1982, D.R. Davis, 3 ♂, 7 ♀ (NMNH); Rt. 5, 2 km N Río Laja, 16 Jan 1987, C.M. & O.S. Flint, Jr., 4 ♀ (NMNH).

PCIA. CACHAPOAL: La Leonera [15 km E Codegua], 26–28 Dec 1954, L.E. Peña G., 19 ♂, 42 ♀ (CNC); same, but 12–13 Feb 1986, 5 ♂, 8 ♀ (NMNH); Graneros, 4 Mar 1962, L.E. Peña G., 1 ♂ (CNC); Río Peuco, Pilay, ~45 km S Santiago, 800 m, 23–25 Nov 1981, Davis & Peña, 18 ♂, 24 ♀ (NMNH); Río Claro, 5 km N Rengo, 300 m, 23 Jan 1978, C.M. & O.S. Flint, Jr., 1 ♂, 2 ♀ (NMNH); Palmar de Cocolán, NE Las Cabras, 15–16 Dec 1986, L.E. Peña G., 2 ♀ (NMNH).

PCIA. CAUQUENES: Near coastal stream, 17.5 km S Curanipe, 50 m, 25 Jan 1979, Davis et al., 8 ♂, 2 ♀ (NMNH); W Cauquenes, 3 Oct 1983, L.E. Peña G., 1 ♂, 4 ♀ (NMNH); same, but 25 Mar 1984, 1 ♂, 1 ♀ (NMNH); Cayurranquil, W Cauquenes, 400 m, 23–31 Jan 1981, L.E. Peña G., 4 ♂ (NMNH); Alto Tregualemu, ~20 km SE Chovellén, 500 m, 26–27 Jan 1979, Davis et al., 31 ♂, 6 ♀ (NMNH); Tregualemu, 14 Mar 1967, T. Cekalovic K., 11 ♂, 6 ♀ (NMNH).

PCIA. CAUTÍN: Cerro Nielol, Temuco, 200 m, 9 Feb 1979, Davis et al., 33 ♂, 30 ♀ (NMNH); 20 km E Temuco, 8 Jan 1951, Ross & Michelbacher, 34 ♂, 28 ♀ (CAS); Allipén, Feb 1972, L.E. Peña G., 3 ♂, 7 ♀ (NMNH); Río Cautín, Cajón, 3 Jan 1966, Flint & Cekalovic, 4 ♂, 2 ♀ (NMNH); same, but 24 Oct 1969, Flint & Barria, 6 ♂, 1 ♀ (NMNH); Río Cautín, Temuco, 30 Dec 1967, T. Cekalovic K., 1 ♂, 2 ♀ (NMNH); Huife, ~40 km E Pucón, 18 Jan 1987, C.M. & O.S. Flint, Jr., 7 ♂, 9 ♀ (NMNH); near Pucón [Río Minetué, ~12 km E Pucón], 4 Jan 1966, Flint & Cekalovic, 7 ♂, 6 ♀ (NMNH); 10 mi [~16 km] NE Pucón, 12 Jan 1951, Ross & Michelbacher, 6 ♀ (CAS); Villarrica, 4–5 Jan 1966, Flint & Cekalovic, 2 ♀ (NMNH); 30 km NE Villarrica, 1–30 Jan 1965, L.E. Peña G., 11 ♂, 6 ♀ (NMNH); Fundo El Coigue, 27 km NE Villarrica, 500 m, 28 Feb–3 Mar 1979, Davis et al., 100s ♂♂ ♀♀ (NMNH); Fundo Neltume, 2 km N Villarrica, 200 m, 27 Feb 1979, Davis et al., 4 ♂, 3 ♀ (NMNH); Río Toltén, Teodoro Schmidt, 16–17 Mar 1987, L.E. Peña G., 1 ♀ (NMNH).

PCIA. CHACABUCO: Cuesta La Dormida, W Tiltil, 600–800 m, 13–18 Nov 1982, L.E. Peña G., 1 ♀ (NMNH).

PCIA. CHILOÉ: Lago Tepuhueco, 1–3 Mar 1984, L.E. Peña G., 1 ♂ (NMNH); same, but 11–15 Dec 1985, 2 ♂, 4 ♀ (NMNH); Puntra, ~30 air km S Ancud, 50 m, 15 Dec 1985, L.E. Peña G., 18 ♂, 28 ♀ (NMNH); same, but 21–22 Dec 1981, Davis & Peña, 3 ♂, 7 ♀ (NMNH); Huequetrumao, 22 km N Quellón, 26–28 Dec 1981, L.E. Peña G., 1 ♂ (NMNH); Río Butalcura, 21 Oct 1969, Flint & Barria, 35 ♂ (NMNH); Río Cude, Pudguapi, 20 Jan 1987, C.M. & O.S. Flint, Jr., 2 ♂, 4 ♀ (NMNH).

PCIA. CHOAPA: Hacienda Illapel, 29–30 Oct 1954, L.E. Peña G., 14 ♂, 2 ♀ (CNC); Río Choapa, Salamanca, 6 Feb 1986,

L.E. Peña G., 2♂, 10♀ (NMNH); El Naranjo, S Caimanes, 7 Feb 1986, L.E. Peña G., 1♀ (NMNH); Cuesta Cavilolén, NE Los Vilos, 5 Feb 1986, L.E. Peña G., 3♀ (NMNH); Ñague, 11 km N Los Vilos, 20 m, 4–5 Nov 1981, D.R. Davis, 2♂, 1♀ (NMNH).

PCIA. CONCEPCIÓN: Concepción, 26 Nov–10 Dec 1959, light trap, 3♂ (NMNH); same, but 29 Jan 1967, L.E. Peña G., 6♂, 4♀ (NMNH); 20 km E Concepción, 19–20 Mar 1984, L.E. Peña G., 17♂, 6♀ (NMNH); ~20 km S Coelemu, ~50 m, 28 Jan 1979, Davis et al., 21♂, 9♀ (NMNH).

PCIA. COPIAPÓ: Río Jorquera, Cordillera Copiapó, 27 Oct 1967, L.E. Peña G., 8♀ (NMNH); La Junta, E Copiapó, 2 Oct 1980, L.E. Peña G., 26♂, 9♀ (NMNH).

PCIA. CORDILLERA: El Manzano, 9 Feb 1950, L.E. Peña G., 6♂, 4♀ (CNC); El Alfalfal, Cordillera Santiago, 3 Dec 1963, L.E. Peña G., 6♂ (NMNH); Los Maitenes, 2 Mar 1964, L.E. Peña G., 29♂, 18♀ (NMNH); same, but 30 Oct 1964, 32♂, 2♀ (NMNH).

PCIA. CURICO: Estero Potrero Grande, 3 km E Potrero Grande, 8 Feb 1987, C.M. & O.S. Flint, Jr., 9♂, 1♀ (NMNH); Las Tablas, E Curico [13 km E Potrero Grande], 26 Mar 1984, L.E. Peña G., 3♂, 2♀ (NMNH); same, but Feb 1985, 2♂ (NMNH); Río Teno, ~40 km E Curico, 800 m, 25–28 Nov 1981, Davis & Peña, 2♂ (NMNH); El Coigo, 1 Mar 1968, Flint & Peña, 100s ♂♂ ♀♀ (NMNH); Río Los Morongos, Bajo Los Morongos, 653 m, 21–22 Nov 1972, Pescador & Barria, 1♂, 1♀ (NMNH).

PCIA. ELQUI: Rivadavia, 16 May 1952, L.E. Peña G., 1♂, 3♀ (CNC); Quebrada Seca, 16 May 1952, L.E. Peña G., 1♂, 2♀ (CNC); Vicuña, near irrigation ditch, 30 Nov 1976, Gurney & Barria, 7♂, 14♀ (NMNH); 22 mi [~36 km] S La Sirena, 9 Dec 1950, Ross & Michelbacher, 1♀ (CAS).

PCIA. HUASCO: 3 km S Freirina, 13–14 Nov 1981, D. & M. Davis, 1♀ (NMNH); El Tránsito, E Vallenar, 25 Oct 1980, L.E. Peña G., 6♂, 21♀ (NMNH); Río Conai, Cordillera Vallenar, 2 Dec 1967, L.E. Peña G., 9♂, 12♀ (NMNH); Quebrada Pinte, Cordillera Vallenar, 2 Dec 1967, L.E. Peña G., 100s ♂♂ ♀♀ (NMNH).

PCIA. LIMARI: 5 mi [~8 km] W La Junta, 7 Dec 1950, Ross & Michelbacher, 2♂, 1♀ (CAS).

PCIA. LINARES: Hacienda San Manuel [~31 km SE Parral], 14 Jan 1953, L.E. Peña G., 8♂ (CNC); Estero de Leiva [near Hacienda San Manuel], 8 Jan 1953, L.E. Peña G., 8♂, 2♀ (CNC); Rinconada de Parral [36°04′S; 71°46′W], 19–20 Mar 1952, L.E. Peña G., 1♂, 2♀ (CNC); Tranque de Bullileo, 10–12 Jan 1979, Davis et al., 9♂, 11♀ (NMNH); Fundo Malcho, Jan 1958, L.E. Peña G., 1♀ (CNC); Puente Malcho, near Río Longavi, 600 m, 13–15 Jan 1979, Davis et al., 35♂, 21♀ (NMNH); Río Ancoa, 35 km E Linares, 320 m, 23 Jan 1978, C.M. & O.S. Flint, Jr., 6♂, 22♀ (NMNH).

PCIA. LLANQUIHUE: Río Maullín [near Llanquihue], 6 Jan 1966, Flint & Cekalovic, 100s ♂♂ ♀♀ (NMNH); Salto Chamiza, Correntoso, 100 m, 19 Jan 1987, C.M. & O.S. Flint, Jr., 13♂, 40♀ (NMNH); El Chingue, N Correntoso (S Volcán Calbuco), 300 m, 20–25 Jan 1980, L.E. Peña G., 29♂, 62♀ (NMNH); Hornohuinco, near Correntoso, 7–11 Feb 1985, L.E. Peña G., 2♀ (NMNH); Lago Chapo, E Puerto Montt, 20–28 Dec 1985, L.E. Peña G., 11♂, 43♀ (NMNH); Petrohué, Lago Todos Los Santos, 600 m, 1–3 Jan 1982, Davis & Peña, 9♂, 4♀ (NMNH); same, but 28–29 Mar 1968, L.E. Peña G., 2♂, 3♀ (NMNH); same, but Jan 1969, 10♂, 13♀ (NMNH).

PCIA. LOS ANDES: Los Andes, 12 Nov 1957, J. Illies, 1♂ (NMNH).

PCIA. MAIPO: Aculeo, 18 Dec 1986, L.E. Peña G., 1♂ (NMNH); Las Canchas, Aculeo, 8–11 Dec 1983, Yrarrázaval, 1♂ (NMNH); Quebrada El Cepillo, E slope coastal range, SW Aculeo, 26–28 Mar 1981, L.E. Peña G., 2♂ (NMNH).

PCIA. MALLECO: Angol, 13 Mar 1925, D.S. Bullock, 1♀ (NMNH); same, but 1 Feb 1929, 2♂ (NMNH); same, but 26 Mar 1936, 1♂ (NMNH); same, but 6 Jan 1937, 2♂ (NMNH); same, but 17 Feb 1956, L.E. Peña G., 7♂, 2♀ (CNC); Vegas Blancas, 27 km W Angol, 700 m, 17 Jan 1987, C.M. & O.S. Flint, Jr., 1♂ (NMNH); Río Manzanares [~10 km W Purén], 2 Jan 1966, Flint & Cekalovic, 1♂, 1♀ (NMNH); same, but 19 Oct 1969, Flint & Barria, 1♂, 7♀ (NMNH); Victoria, Nov 1979, L.E. Peña G., 1♂, 1♀ (NMNH); 7 km N Victoria, 3 Jan 1966, Flint & Cekalovic, 1♂, 1♀ (NMNH); Tolhuaca, 11 Jan 1962, L.E. Peña G., 2♂ (CNC); same, but 15–20 Jan 1959, 5♂, 1♀ (CNC); Río Blanco, E Curacautín, 5–27 Mar 1950, L.E. Peña G., 7♂, 3♀ (CNC); same, but Feb 1964, L.E. Peña G., 2♂ (NMNH); Curacautín, 15 Dec 1949, L.E. Peña G., 1♂ (CNC); E Lonquimay, 1000 m, 21–23 Dec 1976, L.E. Peña G., 31♂, 30♀ (NMNH); Río Bío-Bío, 17 km E Lonquimay, 4 Feb 1987, C.M. & O.S. Flint, Jr., 3♂, 6♀ (NMNH); Pino Hachado, E Lonquimay, 1600 m, 17–20 Feb 1980, L.E. Peña G., 6♂, 25♀ (NMNH); same, but 6–10 Jan 1959, 5♂, 1♀ (CNC); Laguna Icalma, Cordillera Lonquimay, 2 Jan 1968, L.E. Peña G., 6♂, 4♀ (NMNH); Rucanuco [outlet to Lago Icalma], Cordillera Lonquimay, 9–13 Jan 1959, L.E. Peña G., 2♂ (CNC); same, but 4 Jan 1968, 100s ♂♂ ♀♀ (NMNH); Liucura, 9–11 Jan 1959, L.E. Peña G., 2♂, 2♀ (CNC); Marimenuco, 10–13 Jan 1959, L.E. Peña G., 1♂ (CNC); same, but 10–13 Jan 1964, 6♂, 2♀ (NMNH); El Arco, 2–6 Jan 1959, L.E. Peña G., 5♂, 3♀ (CNC); Cordillera Las Raíces, W Lonquimay, 1700 m, Feb 1980, L.E. Peña G., 1♂, 2♀ (NMNH); same, but 1650 m, 7–8 Feb 1979, Davis et al., 2♂, 4♀ (NMNH); 10 mi [~16 km] N Perquenco, 6 Jan 1951, Ross & Michelbacher, 1♀ (CAS).

PCIA. MELIPILLA: Bollenar, N Melipilla, 15 Feb 1986, L.E. Peña G., 1♂, 1♀ (NMNH).

PCIA. ÑUBLE: Puente Espinal, near Santa Clara, 24 Oct 1969, Flint & Barria, 5♂, 1♀ (NMNH); 50 km E San Carlos, 26 Dec 1950, Ross & Michelbacher, 15♂, 9♀ (CAS); Río Pinto, E Chillán, 24 Oct 1969, Flint & Barria, 30♂, 37♀ (NMNH); Recinto, 30 Nov 1951, L.E. Peña G., 4♂, 2♀ (CNC); same, but 4–6 Mar 1968, Flint & Peña, 5♂, 2♀ (NMNH); same, but 800 m, 22–23 Jan 1979, Davis et al., 24♂, 15♀ (NMNH); Río Chillán, near Recinto, 6 Mar 1968, Flint & Peña, 100s ♂♂

♀♀ (NMNH); Atacalco, near Recinto, 700 m, 28 Nov 1951, L.E.Peña G., 16 ♂ (CNC); same, but 22 Jan 1955, 1 ♂ (CNC); same, but 17–18 Dec 1976, 45 ♂, 9 ♀ (NMNH); Los Cipreces [N Recinto], 25 Nov 1951, L.E. Peña G., 1 ♂, 2 ♀ (CNC); Los Pellines [near Los Cipreces], 2 Mar 1952, L.E. Peña G., 6 ♂, 3 ♀ (CNC); same, but 2 Dec 1951, 22 ♂ (CNC); Cueva de los Pincheira, near Recinto, 17 Dec 1976, Gurney & Barria, 1 ♀ (NMNH); Las Trancas, 21 km E Recinto, 20 Jan 1953, L.E. Peña G., 1 ♂ (CNC); same, but 6–11 Feb 1966, 1 ♂ (NMNH); same, but 14–15 Dec 1976, 11 ♂, 3 ♀ (NMNH); same, but 17–20 Dec 1983, 4 ♂, 4 ♀ (NMNH); same, but 20–23 Mar 1984, 1 ♂ (NMNH); same, but 1260 m, 23–30 Feb 1956, 1 ♂ (CNC); same, but 2 Mar 1968, Flint & Peña, 3 ♂, 1 ♀ (NMNH); same, but near high waterfall, 1300 m, 16–19 Jan 1979, Davis et al., 48 ♂, 41 ♀ (NMNH); same, but Shangri-La, SW side Volcán Chillán, 1600 m, 19–21 Jan 1979, Davis et al., 30 ♂, 27 ♀ (NMNH); same, but 14 Dec 1983, L.E. Peña G., 5 ♂, 5 ♀ (NMNH); Río Niblinto, E Coihueco, 19–20 Jan 1968, L.E. Peña G., 100s ♂♂ ♀♀ (NMNH); Fundo El Roble, E Coihueco, 17 Jan 1968, L.E. Peña G., 58 ♂, 28 ♀ (NMNH).

PCIA. OSORNO: Parque Nacional Puyehue, Anticura, 28–31 Dec 1985, L.E. Peña G., 3 ♂, 3 ♀ (NMNH); same, but 1–5 Jan 1986, 20 ♂, 11 ♀ (NMNH); same, but 350 m, 18 Dec 1981, Nielsen et al., 16 ♂, 1 ♀ (ZMC); same, but Río Anticura, 31 Jan–13 Feb 1978, C.M. & O.S. Flint, Jr., 100s ♂♂ ♀♀ (NMNH); same, but 3 km E Anticura, 3 Feb 1978, 37 ♂, 35 ♀ (NMNH); same, but Río Golgol, 2 Feb 1978, 30 ♂, 35 ♀ (NMNH); same, but Salto del Indio, 1–12 Feb 1978, 1 ♂, 38 ♀ (NMNH); same, but Río Pescadero, 7 Feb 1978, 3 ♂ (NMNH); same, but Lago el Toro, 7–8 Feb 1978, 5 ♂, 2 ♀ (NMNH); same, but Aguas Calientes, 6 Feb 1978, 2 ♂, 47 ♀ (NMNH); same, but 450 m, 12 Nov 1981, Nielsen et al., 1 ♂ (ZMC); same, but Aguas Calientes to 2 km S, 600 m, 10–22 Feb 1979, Davis et al., 3 ♂, 5 ♀ (NMNH); same, but 12– 20 Dec 1981, 1 ♂, 4 ♀ (NMNH); same, but Río Chanleufú, 1 km S Aguas Calientes, 8–9 Feb 1978, C.M. & O.S. Flint, Jr., 1 ♂, 12 ♀ (NMNH); 10 km E Puyehue, 24 Jan 1951, Ross & Michelbacher, 4 ♂, 2 ♀ (CAS); Tril-Tril, S Pucatrihue, 1–10 Feb 1980, L.E. Peña G., 15 ♂ (NMNH); Río Rahue, 20 Oct 1969, Flint & Barria, 1 ♂, 11 ♀ (NMNH); Río Rahue, outlet Lago Rupanco, 31 Oct 1957, J. Illies, 1 ♂ (NMNH); La Picada, W Volcán Osorno, 600 m, 12–22 Jan 1980, L.E. Peña G., 3 ♂, 5 ♀ (NMNH).

PCIA. PALENA: Río Futaleufú, 37 km SW Futaleufú, 27 Jan 1987, C.M. & O.S. Flint, Jr., 5 ♂, 4 ♀ (NMNH); Río Ventisquero, 16 km S Puerto Cardenas, 23–24 Jan 1987, C.M. & O.S. Flint, Jr., 2 ♂ (NMNH).

PCIA. PETORCA: Cuesta El Melón, 14–16 Nov 1985, L.E. Peña G., 44 ♂ (NMNH); E La Ligua, 26 Sep 1980, L.E. Peña G., 1 ♂, 2 ♀ (NMNH); Los Hornos, Guaguen, 2–3 Oct 1986, L.E. Peña G., 1 ♂, 3 ♀ (NMNH).

PCIA. QUILLOTA: Estero Marga-Marga, near Perales, 9 Mar 1968, Flint & Peña, 20 ♂, 6 ♀ (NMNH).

PCIA. TALCA: El Radal, Jan 1950, L.E. Peña G., 1 ♂ (CNC); same, but 23–30 Nov 1957, 10 ♀ (CNC); Tonlemo, 15 Feb 1950, L.E. Peña G., 22 ♂, 13 ♀ (CNC); same, but 14–21 Dec 1984, 21 ♂, 13 ♀ (NMNH); Alto Vilches, 11 Dec 1976, L.E. Peña G., 1 ♂ (NMNH); Molina, 7–8 Mar 1968, Flint & Peña, 1 ♂, 1 ♀ (NMNH); Los Cipreses, 13–15 Jan 1968, L.E. Peña G., 3 ♂, 1 ♀ (NMNH); Constitución, 16 Dec 1976, Gurney & Barria, 5 ♂, 1 ♀ (NMNH); Forel Carrizalillo [near Río Maule, ~25 km E coast], 250 m, 30 Jan–5 Feb 1980, L.E. Peña G., 13 ♂, 7 ♀ (NMNH); Río Pinotalca [8 km N Empedrado], 100 m, 29–30 Jan 1981, L.E. Peña G., 1 ♂, 2 ♀ (NMNH).

PCIA. VALDIVIA: Enco, 26 Feb 1955, L.E. Peña G., 2 ♂, 1 ♀ (CNC); Rincon de Piedra, ~30 km SE Valdivia, 50 m, 24–25 Feb 1979, Davis et al., 2 ♀ (NMNH); same, but 180 m, 24 Sep 1981, Nielsen et al., 3 ♂ (ZMC); same, but 14 Dec 1981, 23 ♂ (ZMC); S Valdivia, 23 Oct 1969, Flint & Barria, 3 ♂ (NMNH); 30 km S Valdivia, 13 Jan 1951, Ross & Michelbacher, 8 ♂, 6 ♀ (CAS); Río Bueno, 16 Feb 1978, L.E. Peña G., 1 ♂ (NMNH); 8 mi [~13 km] E Río Bueno, 15 Jan 1951, Ross & Michelbacher, 1 ♂, 1 ♀ (CAS); Río Bueno (Margen N), W Río Bueno City, 14–17 Feb 1978, L.E. Peña G., 26 ♂, 11 ♀ (NMNH); W Río Bueno, 3–4 Mar 1987, L.E. Peña G., 2 ♂, 3 ♀ (NMNH); Choshuenco, 20 Feb 1978, L.E. Peña G., 1 ♂ (NMNH); Puerto Fuy, 16–19 Feb 1978, L.E. Peña G., 31 ♂, 28 ♀ (NMNH); Lago Calafquén, 10–11 Mar 1984, L.E. Peña G., 5 ♂, 5 ♀ (NMNH); Huilo-Huilo, 9–10 Mar 1984, L.E. Peña G., 4 ♂, 4 ♀ (NMNH); Rinihue, 7–8 Mar 1984, L.E. Peña G., 1 ♂ (NMNH); [Lago] Pellaifa [39°36′S; 71°58′W, ~600 m], mountain brook, 22 Jan 1958, J. Illies, 1 ♂, 4 ♀ (NMNH); Llifen, Lago Ranco, 4–5 Mar 1967, T. Cekalovic K., 4 ♂, 9 ♀ (NMNH); Chollinco, Lago Ranco, 5 Mar 1967, T. Cekalovic K., 5 ♂, 2 ♀ (NMNH); Río Calcurrupe [40°13′S; 72°17′W], 4 Mar 1967, T. Cekalovic K., 2 ♂, 1 ♀ (NMNH).

PCIA. VALPARAÍSO: Cerro Vizcachas, Dec 1982, Madariaga & Escobar, 2 ♂, 5 ♀ (NMNH); Marga-Marga, Colliguay, 14–15 Mar 1964, L.E. Peña G., 1 ♂, 5 ♀ (NMNH); Quilpué, 13–14 Mar 1964, L.E. Peña G., 2 ♂, 1 ♀ (NMNH).

Smicridea (Smicridea) decora (Navás)

FIGURES 27–35; MAP 3

Antarctopsyche annulicornis Ulmer, 1907a:30–32 [secondary homonym of *Hydropsyche annulicornis* Blanchard, 1851]; 1907b:173; 1913:389, 406.—Navás, 1918b:226.—Fischer, 1963:98.

Rhyacophylax decorus Navás, 1930:362–363; 1932b:83; 1933:234; 1934a:28.—Fischer, 1963:136.

Antarctopsyche albescens Navás, 1932a:118–119.—Fischer, 1963:98 [new synonymy].

Smicridea decora (Navás).—Schmid, 1949 [1950]:345–346 [sic *Smicridia*].—Flint, 1967:56.—Fischer, 1972:144.

Smicridea (S.) decora (Navás).—Flint, 1974b:88.

Smicridea (S.) albescens (Navás).—Flint, 1974b:88.

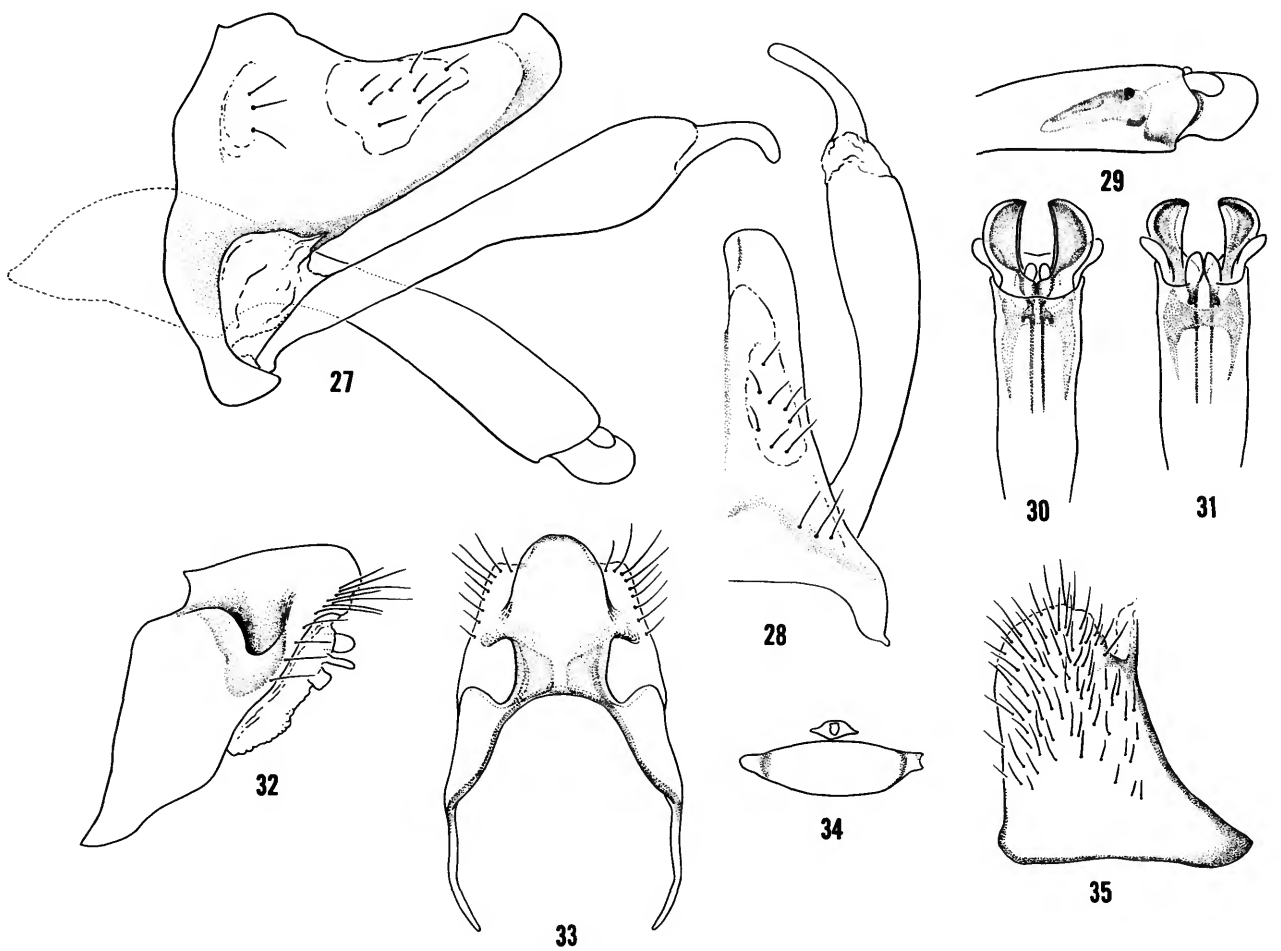
This species appears to be closely related to *annulicornis* by the structure of its genitalia, but is easily recognized by its

generally whiter appearance and very large eyes of the male. The genitalia of the males of the two species are more difficult to distinguish, with *decora* tending to have proportionately broader lateral plates of the phallus with a more well-developed mesobasal shoulder. The female genitalia also show close similarity to those of *annulicornis*. In the latter species there is a distinct oblique lip posteroventrally across the opening of the pocket, but in *decora* there is only the simple curved dorsal margin.

ADULT.—Length of forewing, 8–13 mm. Color pale brown, with much white hair, antennae annulate; forewing mostly whitish with sparse brown marks often forming 2 conspicuous obliquely-transverse dark bands. Eye of male in frontal aspect with diameter almost as large as interocular distance. Anterolateral processes of fifth sternum slightly longer than sternum, with 2 pairs of internal sacs each only slightly longer than half length of segment within which it lies.

Male Genitalia: Ninth segment with anterior margin nearly vertical. Tenth tergum elongate, tip divided apicomesally; tergite rounded in dorsal, and enlarged and upturned in lateral aspect. Clasper with basal segment inflated apicad, apical segment elongate and bluntly pointed. Phallus tubular, basal portion at a 110° angle to stem, width of basal opening 4 times diameter of narrowest part of stem, apex only slightly inflated; lateral plate about as long as wide, ventral margin displaced from ventral margin of stem, in ventral aspect with a well developed mesobasal shoulder, deeply cupped and with mesal margin almost straight, dorsolateral lobe small.

Female Genitalia: Eighth sternite elongate, with posteromesal angle rounded, anterolateral angle produced, apex



FIGURES 27–35.—*Smicridea (S.) decora* (Navás). Male genitalia: 27, lateral; 28, dorsal. Tip of phallus: 29, lateral; 30, ventral; 31, dorsal. Female genitalia: 32, lateral; 33, dorsal; 34, vagina, ventral; 35, eighth sternite, ventral.

angulate. Ninth tergum produced almost totally ventrad. Clasper receptacle deep, pocket-like, produced ventromesally; in dorsal aspect about 1/3 length of tergum; in lateral aspect with a continuous, deeply sinuate anteroventral overhang. Vaginal sclerite narrow, transversely oval, with a small posteromesal sclerite bearing a small opening.

TYPE MATERIAL.—*A. annulicornis* Ulmer, type, in "Berliner Museum," not seen, but description (very large eyes) and figure of ♂ genitalia could only be the species here treated.

Rhyacophylax decorus Navás, lectotype, here designated, in MZB, labeled: "Bio-Bio (Chile) 21.1.28"; "Rhyacophylax decorus ♂ Nav. P. Navas S.J. det."; "Typus"; "Lectotype Rhyacophylax decorus Nav. By Flint 1975." [Labelled as lectotype by Flint in 1975, but not previously published.] The eyes, wings, and body are clearly as here treated, but ♂ genitalia in balsam on a small piece of celluloid pinned with the specimen, are from another species, probably *penai*.

Antarctopsyche albescens Navás, lectotype, here designated, in DEI, labeled: "Bio-Bio: Chile Ruiz coll. 1.28"; "A. Faz": "Chile"; "Antarctopsyche albescens Nav. P. Navas S.J. Det."; "Typus"; "Lectotype ♂ Antarctopsyche albescens Navas By Flint 1975."

MATERIAL EXAMINED.—ARGENTINA: PCIA. CHUBUT: Alto Río Mayo, 30 Nov 1985, L.E. Peña G., 2 ♂, 5 ♀ (NMNH); Río Epuyén, Hoyo de Epuyén, 10 Feb 1974, O.S. Flint, Jr., 2 ♂, 2 ♀ (NMNH); El Sagrario Puerto, Lago Menéndez, [W] Esquel, 600 m, 21 Feb 1979, Nielsen et al., 2 ♂ (ZMC); same, but 2-4 Jan 1982, 1 ♂, 4 ♀ (ZMC); Lago Puelo, [S] El Bolsón, 220 m, 21 Nov 1978, Nielsen et al., 1 ♂ (ZMC).

PCIA. NEUQUÉN: Río Quilquihue at Lago Lolog, 22-23 Jan 1974, O.S. Flint, Jr., 2 ♂, 5 ♀ (NMNH); Río Aluminé, 9 km N Aluminé, 27 Feb 1978, C.M. & O.S. Flint, Jr., 26 ♂, 18 ♀ (NMNH); Río Agrio, N Zapala, 9-11 Dec 1983, L.E. Peña G., 2 ♂, 1 ♀ (NMNH).

PCIA. RÍO NEGRO: El Bolsón, 13-26 Feb 1961, Kovacs, 10 ♀ (NMNH); same, but 4 Mar 1961, 1 ♂, 1 ♀ (NMNH); same, but 2 Mar 1960, 3 ♂, 3 ♀ (NMNH); same, but 18 Jan-11 Mar 1961, Topal, 1 ♂, 11 ♀ (HNHM); Río Ñirihuau at Estación Ñirihuau, 11 Feb 1974, O.S. Flint, Jr., 1 ♂, 3 ♀ (NMNH).

CHILE: PCIA. AISÉN: Puerto Cisnes, Feb. 1961, L.E. Peña G., 1 ♂ (CNC); Las Bandurrias, Coihaique, 1-2 Dec 1985, L.E. Peña G., 36 ♂, 54 ♀ (NMNH).

PCIA. ARAUCO: Caramávida, 3-31 Jan 1967, L.E. Peña G., 26 ♂, 16 ♀ (NMNH).

PCIA. BÍO-BÍO: El Abanico, 17-19 Mar 1984, L.E.Peña G., 4 ♂, 1 ♀ (NMNH); Laguna El Barco, Guallali, 1200 m, 25-28 Feb 1981, L.E. Peña G., 1 ♂ (NMNH); 5 km W Tucapel, 28 Dec 1950, Ross & Michelbacher, 1 ♂ (CAS).

PCIA. CACHAPOAL: La Leonera [15 km E Codegua], 26-28 Dec 1954, L.E. Peña G., 1 ♂ (CNC).

PCIA. CAUTÍN: Huife, ~40 km E Pucón, 18 Jan 1987, C.M. & O.S. Flint, Jr., 1 ♂, 3 ♀ (NMNH); near Pucón [Río Minetué, ~12 km E Pucón], 4 Jan 1966, Flint & Cekalovic, 15 ♂, 19 ♀ (NMNH); 30 km NE Villarrica, 16-31 Dec 1964, L.E. Peña G., 1 ♂ (NMNH); Allipén, Feb 1972, L.E. Peña G., 4 ♂ (NMNH).

PCIA. CHILOÉ: Lago Tepuhueco, 1-3 Mar 1984, L.E. Peña G., 1 ♀ (NMNH).

PCIA. COLCHAGUA: Río Tinguiririca, La Correana, 1400 m, 16-20 Feb 1977, L.E. Peña G., 38 ♂, 40 ♀ (NMNH); same, but E La Correana, 1550 m, 21-22 Feb 1977, 12 ♂, 6 ♀ (NMNH).

PCIA. CORDILLERA: Maipo, 800 m, 9 Nov 1957, J. Illies, 3 ♂, 1 ♀ (NMNH); Río Maipo, Apr 1949, L.E. Peña G., 7 ♂ (CNC); El Manzano, 9 Feb 1950, L.E. Peña G., 2 ♀ (CNC); same, but 26 Oct 1951, 1 ♀ (CNC); Estero del Templo [4 km W El Canelo, Maipo River], 1100 m, L.E. Peña G., 43 ♂, 13 ♀ (CNC); Río Maipo, San José de Maipo, 950 m, 10-11 Feb 1986, L.E. Peña G., 4 ♂, 13 ♀ (NMNH); Los Maitenes, 2 Mar 1964, L.E. Peña G., 3 ♀ (NMNH); same, but 30 Oct 1964, 16 ♀ (NMNH); El Alfalfal, 22 Jan 1978, C.M. & O.S. Flint, Jr., 1 ♂ (NMNH); same, but 29 Feb 1968, Flint & Peña, 29 ♂, 26 ♀ (NMNH); Río Colorado, ~40 km SE Santiago, 1100 m, 29-31 Oct 1981, D. & M. Davis, 2 ♀ (NMNH); near Puente Yeso, ~70 km SE Santiago, 1250 m, 27-28 Oct 1981, D. & M. Davis, 21 ♀ (NMNH).

PCIA. CURICO: El Coigo, 18 Jan 1960, L.E. Peña G., 1 ♂ (CNC); same, but 1 Mar 1968, Flint & Peña, 61 ♂, 48 ♀ (NMNH); Las Tablas, E Curico [13 km E Potrero Grande], 26 Mar 1984, L.E. Peña G., 1 ♀ (NMNH); Estero Potrero Grande, 3 km E Potrero Grande, 8 Feb 1987, C.M. & O.S. Flint, Jr., 2 ♂, 7 ♀ (NMNH); Río Teno, 1200 m, 24-27 Jan 1968, L.E. Peña G., 100s ♂♂ ♀♀ (NMNH & EEAM); same, but 6 km E Los Queñes, 4 Jan 1967, M.E. Irwin, 100s ♂♂ ♀♀ (UCR); same, but ~40 km E Curico, 800 m, 25-28 Nov 1981, Davis & Peña, 2 ♂, 5 ♀ (NMNH).

PCIA. LLANQUIHUE: Hornohuinco, E Puerto Montt, 3-5 Mar 1984, L.E. Peña G., 1 ♂ (NMNH).

PCIA. MALLECO: Lago Icalma, Cordillera Lonquimay, 2 Jan 1968, L.E. Peña G., 4 ♀ (NMNH); Vegas Blancas, 27 km W Angol, 700 m, 17 Jan 1987, C.M. & O.S. Flint, Jr., 4 ♂, 2 ♀ (NMNH).

AREA METROPOLITANA: Quilicura, Oct 1979, L.E. Peña G., 23 ♂, 4 ♀ (NMNH).

PCIA. ÑUBLE: 40 km E San Carlos, 24 Dec 1950, Ross & Michelbacher, 1 ♂ (CAS); Los Pellines [N Recinto], 2 Dec 1951, L.E. Peña G., 9 ♂, 3 ♀ (CNC); Las Trancas [21 km E Recinto], 1260 m, 23-30 Feb 1956, L.E. Peña G., 14 ♂, 4 ♀ (CNC); same, but 16-19 Jan 1979, 1 ♂ (NMNH).

PCIA. PALENA: Río Futaleufú, 37 km SW Futaleufú, 27 Jan 1987, C.M. & O.S. Flint, Jr., 9 ♂, 2 ♀ (NMNH).

PCIA. TALCA: Alto Vilches, 11 Dec 1976, L.E. Peña G., 2 ♂ 11 ♀ (NMNH); Los Cipreses, 13-15 Jan 1968, L.E. Peña G., 1 ♂ (NMNH).

Smicridea (Smicridea) manzanara, new species

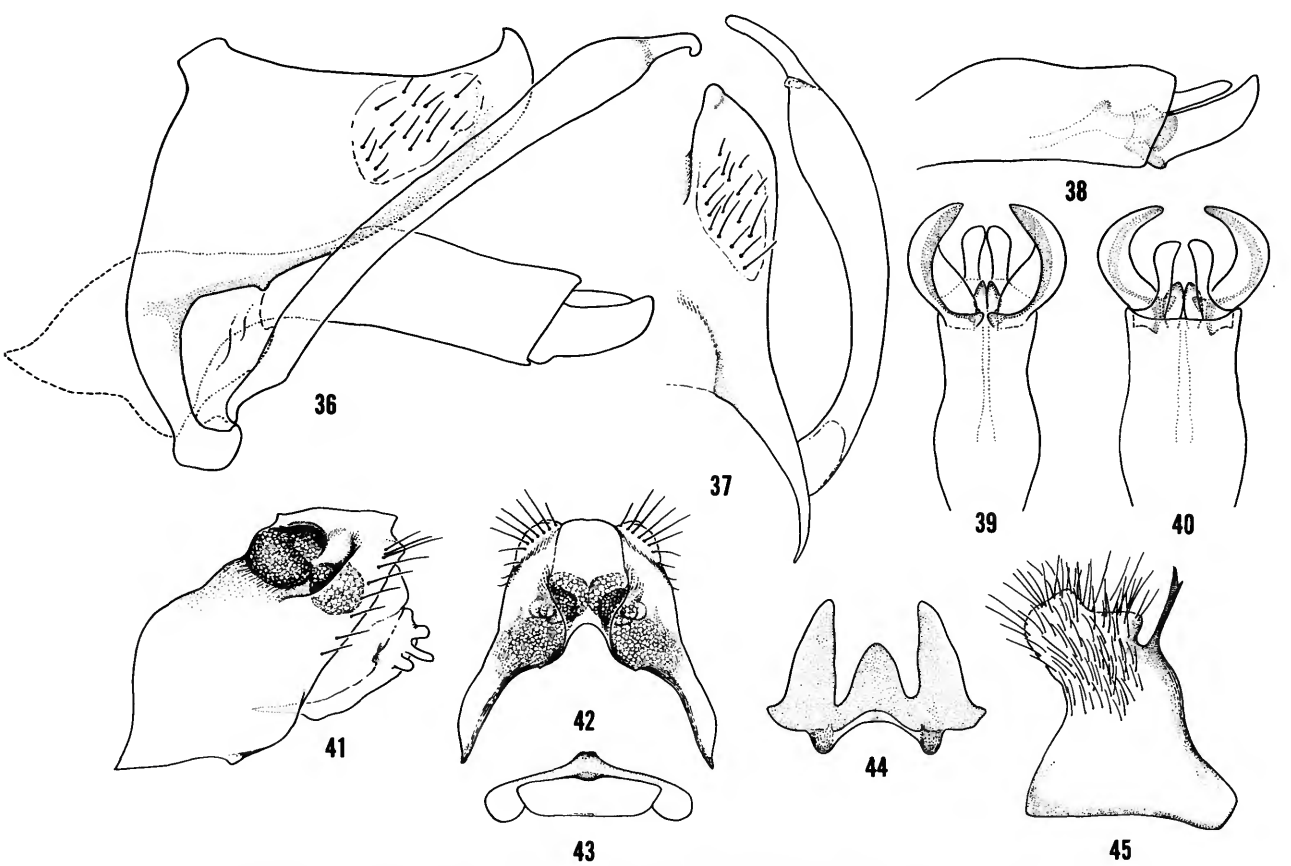
FIGURES 36–45; MAP 4

Although related to *penai* and *pucara,* this species is the most easily recognized of the three. The very long lateral plates of the phallus and, especially, the long slender dorsolateral lobes of the phallus are diagnostic. The differences in the females of the three species are rather slight. The deep, rounded clasper receptacle, with a large, reticulate surface area anteriad in combination with the distinctive anterior knobs of the internal plate offer the best means of identification.

ADULT.—Length of forewing, 10–11.5 mm. Color pale brown; appendages slightly paler, antennae annulate; forewing pale brown marked with darker brown flecks, generally producing an indistinct pattern. Eye of male in frontal aspect distinctly less in diameter than half of interocular width. Anterolateral process of fifth sternum distinctly larger than segment; with 2 pairs of internal sacs, each slightly shorter than segment within which it lies.

Male Genitalia: Ninth segment with anterior margin nearly vertical. Tenth tergum elongate with apex divided apicomesally; tergite with tip rounded in dorsal, upturned and pointed in lateral aspect. Clasper with basal segment slightly inflated apicad, paralled-sided basally; apical segment short, bluntly pointed. Phallus tubular, base at 110° angle to stem, width of basal opening less than 3 times the width of narrowest part of stem, apex inflated; lateral plate at least 3 times as long as broad, ventral margin confluent with venter of stem, in ventral aspect with mesobasal shoulder distinct, shallowly cupped, with dorsal and ventral margins deeply concave, dorsolateral lobe long and slender, nearly attaining apex of lateral plate.

Female Genitalia: Eighth sternite elongate, inner margin sinuate, posteromesal angle produced and truncate, anterolateral angle produced, obliquely truncate. Ninth tergum produced ventrad and anteriad, very broad laterally. Clasper receptacle with inner surface strongly reticulate, produced mesally and posteroventrally, deep and pocket-like, with a



FIGURES 36–45.—*Smicridea (S.) manzanara,* new species. Male genitalia: 36, lateral; 37, dorsal. Tip of phallus: 38, lateral; 39, ventral; 40, dorsal. Female genitalia: 41, lateral; 42, dorsal; 43, vagina, ventral; 44, internal plate, dorsal; 45, eighth sternite, ventral.

large clasper groove anteriad; in lateral aspect with a deep ventral overhang on the surface of which is an oblique dark mark. Vaginal sclerites lightly sclerotized; posterior sclerite, transverse, with a darkened posteromesal lobe, anterior sclerite, transverse, darkened posteromesally. Internal plate darkened, with lateral arms produced posteriad and bearing distinct dark knobs from anterior margin.

MATERIAL EXAMINED.—*Holotype*, male: CHILE: PCIA. MALLECO: Río Manzanares [~10 km W Purén], 2 Jan 1966, Flint & Cekalovic. Type NMNH.

Paratypes: CHILE: PCIA. ARAUCO: Butamalal [Nahuelbuta Mountains, 37°51'S; 73°12'W], 23–31 Jan 1954, L.E. Peña G., 1 ♂ (CNC); Caramávida, 25–31 Dec 1953, L.E. Peña G., 1 ♂ (CNC); same, but 17–19 Oct 1969, Flint & Barria, 4 ♂, 10 ♀ (NMNH). PCIA. CACHAPOAL: Pichi-Alhué, 25–27 Nov 1967, L.E. Peña G., 1 ♂, 1 ♀ (NMNH). PCIA. CAQUENES, near coastal stream, 17.5 km S Curanipe, 50 m, 25 Jan 1979, Davis et al., 3 ♂, 1 ♀ (NMNH); Alto Tregualemu, ~20 km SE Chovellén, 500 m, 26–27 Jan 1979, Davis et al., 9 ♂, 4 ♀ (NMNH); same, but 1–3 Dec 1981, D.R. Davis, 1 ♀ (NMNH); same, but 27–28 Jan 1981, L.E. Peña G., 1 ♂ (NMNH); Paso Garcia, ~23 km W Cauquenes, 300 m, 29–30 Nov 1981, D.R. Davis, 1 ♂ (NMNH); Cayurranquil, W Caquenes, 400 m, 23–31 Jan 1981, L.E. Peña G., 1 ♀ (NMNH). PCIA. CONCEPCIÓN: Fundo Pinares [about 10 km E Concepción on south side of Río Bío-Bío], 30 Dec 1965, Flint & Cekalovic, 4 ♂ (NMNH); same, but 18 Dec 1964, T. Cekalovic K., 5 ♂ (NMNH); same, but 18 Feb 1967, 2 ♂ (NMNH); Lirquén, 17 Oct 1965, T. Cekalovic K., 1 ♂ (NMNH); Quebrada Honda, N Lirquén, 31 Dec 1965, Flint & Cekalovic, 7 ♂, 4 ♀ (NMNH); same, but 5 Feb 1966, T. Cekalovic K., 5 ♂ (NMNH); same, but 14–15 Oct 1969, Flint & Barria, 26 ♂, 5 ♀ (NMNH). PCIA. CORDILLERA: El Manzano, 26 Oct 1951, L. E. Peña G., 1 ♂ (CNC); El Alfalfal, 29 Feb 1968, Flint & Peña, 2 ♂ (NMNH). PCIA. CURICO: Estero La Jaula, Los Queñes, 4–18 Jan 1964, L.E. Peña G., 19 ♂, 23 ♀ (NMNH). PCIA. MALLECO: same data as holotype, 16 ♂, 3 ♀ (NMNH); Parque Nacional Contulmo, 2 Jan 1966, Flint & Cekalovic, 1 ♀ (NMNH); same, but 20 Feb 1967, T. Cekalovic K., 4 ♂ (NMNH); same, but 19 Oct 1969, Flint & Barria, 1 ♀ (NMNH); Angol, Los Alpes, 650 m, 17 Mar 1979, Nielsen et al., 2 ♂, 2 ♀ (ZMC); Río Blanco, 5–27 Mar 1950, L.E. Peña G., 6 ♂, 1 ♀ (CNC); same, but 21–24 Feb 1954, 1 ♂ (CNC). AREA METROPOLITANA: Peñalolen, 1 Oct 1950, L.E. Peña G., 3 ♂ (CNC); Quebrada Macul, 2 Mar 1950, L.E. Peña G., 2 ♂ (CNC); Macul, 11 Mar 1949, L.E. Peña G., 1 ♂ (CNC). PCIA. PETORCA: Los Hornos, Guaguen, 2–3 Oct 1986, L.E. Peña G., 2 ♂, 2 ♀ (NMNH). PCIA. QUILLOTA: Estero Marga-Marga, near Perales, 9 Mar 1968, Flint & Peña G., 4 ♂ (NMNH). PCIA. TALCA: Tonlemo, 15 Feb 1950, L.E. Peña G., 27 ♂, 2 ♀ (CNC); same, but 14–15 Dec 1984, 1 ♂(NMNH); Constitución, 16 Dec 1976, Gurney & Barria, 1 ♂ (NMNH); Forel Carrizalillo [near Río Maule, ~25 km E coast], 250 m, 30 Jan–5 Feb 1981, L.E. Peña G., 1 ♂ (NMNH). PCIA. VALPARAÍSO: Cerro Vizcachas, Dec 1982, R. Madariaga, 1 ♀ (NMNH).

Smicridea (Smicridea) penai, new species

FIGURES 46–55; MAP 5

This species, closely related to *pucara* and less so to *manzanara*, is recognized with certainty only by structures of the male phallus. In *penai*, the lateral plates are sharply upturned at the apex and more elongate with a larger mesobasal shoulder in ventral aspect. The females clasper receptacle is large and rounded in lateral aspect in this species, while the vaginal sclerites are distinctly formed and strongly sclerotized mesally.

ADULT.—Length of forewing, 9–11 mm. Color brown, appendages slightly paler, antennae annulate; forewing pale brown generally evenly flecked with dark brown, sometimes showing a distinct pattern. Eye of male in frontal aspect with diameter half that of interocular distance. Anterolateral process of fifth sternum length of sternum; with 2 pairs of internal sacs, each distinctly shorter than sternum.

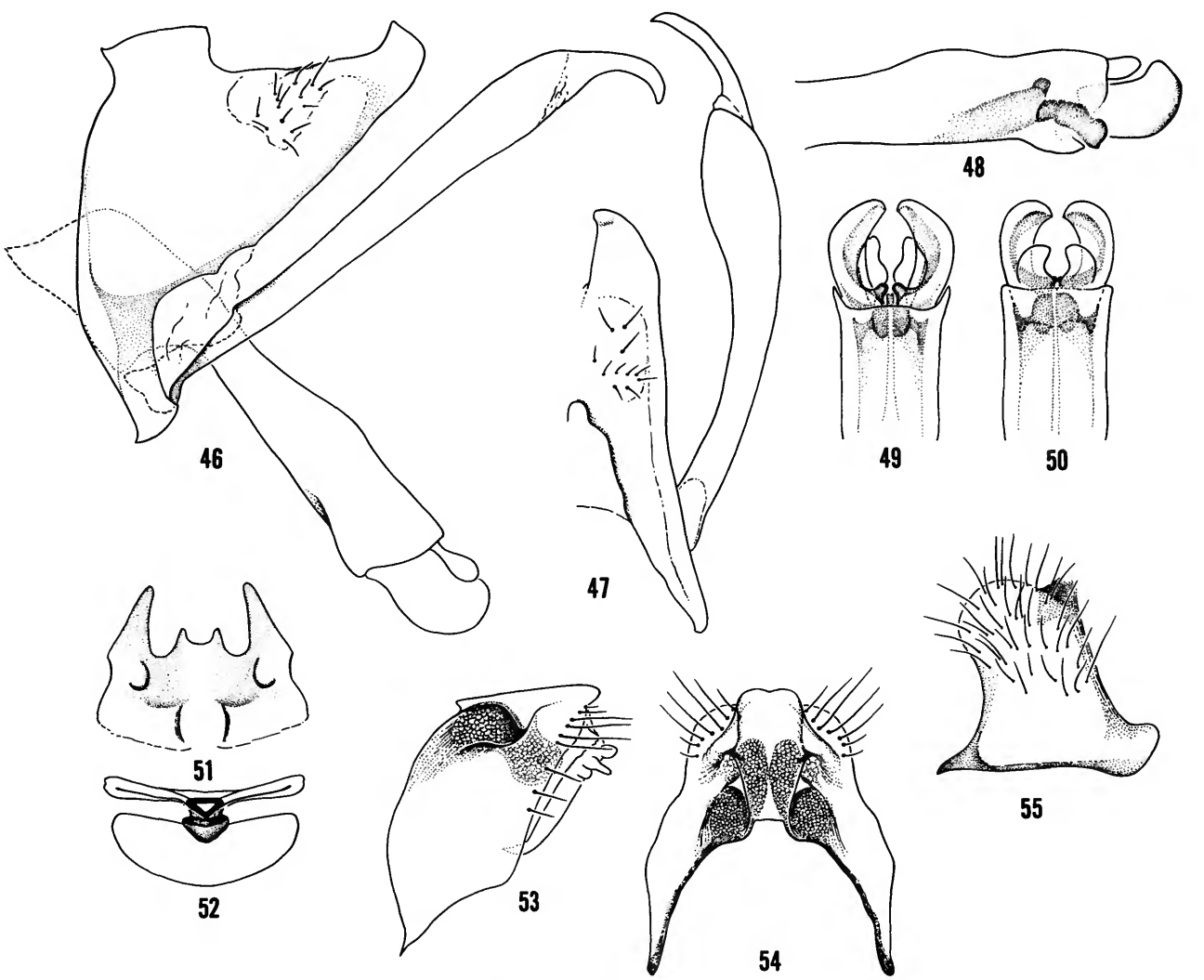
Male Genitalia: Ninth segment with anterior margin nearly vertical. Tenth tergum elongate, tip divided apicomesally; tergite with tip rounded in dorsal, enlarged and upturned in lateral aspect. Clasper with basal segment inflated apicad; apical segment elongate, bluntly pointed. Phallus tubular, base at right angles to stem, width of basal opening 3–4 times width of narrowest part of stem, apex distinctly enlarged, lateral plate slightly longer than wide, ventral margin confluent with ventral margin of stem, tip sharply upturned, in ventral aspect with mesobasal shoulder distinctly produced mesad, shallowly cupped with ventral margin deeply concave, dorsolateral lobe large, about half as long as lateral plate.

Female Genitalia: Eighth sternite elongate, with posteromesal angle rounded, slightly produced; anterolateral angle produced into an apically enlarged lobe. Ninth tergum produced almost directly ventrad, broad laterally. Clasper receptacle deep, pocket-like, with inner surfaces strongly reticulate, produced mesad, and posteroventrally; in lateral aspect with a deep posteroventral overhang. Vaginal sclerites with a narrow posterior bar and a broader, anterior sclerite, connected centrally by a strongly darkened structure bearing a posteromesal opening. Internal plate more strongly sclerotized mesad than laterally, with lateral arms extended posteriad, with a distinct knob-like depression centrally.

MATERIAL EXAMINED.—*Holotype*, male: CHILE: PCIA. OSORNO: Pucatrihue, 24–31 Jan 1966. L.E. Peña G. Type NMNH.

Paratypes: CHILE: PCIA. ARAUCO: Caramávida, 3–31 Jan 1967, L.E. Peña G., 1 ♂ (NMNH); P.B. [Fundo Palo Botado, Nahuelbuta Mountains], 1 Feb 1953, L.E. Peña G., 4 ♂, 2 ♀ (CNC); Estero Peral, Contulmo, 1–2 Jan 1966, Flint & Cekalovic, 2 ♂ (NMNH); near Curanilahue, 1 Jan 1966, Flint & Cekalovic, 1 ♂ (NMNH). PCIA. CAUTÍN: 20 km E Temuco, 8 Jan 1951, Ross & Michelbacher, 1 ♂ (CAS); Puente Huilquilco [S Quepe], 4 Jan 1966, Flint & Cekalovic, 1 ♂, 1 ♀ (NMNH); Villarrica, 19 Feb 1964, T. Cekalovic K., 1 ♂

(NMNH); Fundo La Selva, 48 km NW Nueva Imperial, 700 m, 9–11 Dec 1981, L.E. Peña G., 1 ♂ (NMNH); same, but 11–13 Mar 1984, 9 ♂, 3 ♀ (NMNH). PCIA. CHILOÉ: Ancud, 23 Jan 1952, L.E. Peña G., 3 ♂, 2 ♀ (CNC); Dalcahue, 10–20 Feb 1957, L.E. Peña G., 1 ♂ (CNC); same, but 21–23 Oct 1969, Flint & Barria, 20 ♂, 3 ♀ (NMNH); Guabún, 13–15 Jan 1981, M. Marín, 1 ♂, 1 ♀ (NMNH); Huequetrumao, 22 km N Quellón, 26–28 Dec 1981, L.E. Peña G., 4 ♂, 5 ♀ (NMNH); Puntra, 28–29 Dec 1981, L.E. Peña G., 4 ♂, 1 ♀ (NMNH); 1 km E Lago Tepuhueco, ~40 air km SW Castro, 100 m, 23–25 Dec 1981, Davis & Peña, 2 ♂, 1 ♀ (NMNH). PCIA. CONCEPCIÓN: Quebrada Honda, N Lirquén, 5 Feb 1965, T. Cekalovic K., 1 ♂ (NMNH). PCIA. CURICO: Las Tablas, E Curico [13 km E Potrero Grande], Feb 1985, L.E. Peña G., 2 ♀ (NMNH). PCIA. LINARES: Rinconada de Parral [36°04′S; 71°46′W], 19–20 Mar 1952, L.E. Peña G., 1 ♂ (CNC). PCIA. LLANQUIHUE: 8 mi [~13 km] W Puerto Varas, 18 Jan 1951, Ross & Michelbacher, 37 ♂, 19 ♀ (CAS); Los Muermos, 19 Jan 1951, Ross & Michelbacher, 2 ♂, 1 ♀ (CAS); Puente Gomez [25 km SW Puerto Montt], 6 Jan 1966, Flint & Cekalovic, 1 ♂ (NMNH); Hornohuinco, 11 km SW Lago Chapo, 300 m, 28–31 Dec 1981, D.R. Davis, 4 ♂, 5 ♀ (NMNH); El Chingue, N Correntoso (S Volcán Calbuco), 300 m, 20–25 Jan 1980, L.E. Peña G., 2 ♂, 14 ♀ (NMNH). PCIA. MALLECO: Curacautín, 15 Dec 1949, L.E. Peña G., 2 ♂ (CNC); Vegas Blancas, 27 km W Angol, 700 m, 17 Jan 87, C.M. & O.S. Flint, Jr.,



FIGURES 46–55.—*Smicridea (S.) penai*, new species. Male genitalia: 46, lateral; 47, dorsal. Tip of phallus: 48, lateral; 49, ventral; 50, dorsal. Female genitalia: 51, internal plate, dorsal; 52, vagina, ventral; 53, lateral; 54, dorsal; 55, eighth sternite, ventral.

6 ♂, 2 ♀ (NMNH). PCIA. ÑUBLE: Recinto, 4–6 Mar 1968, Flint & Peña, 2 ♂ (NMNH). PCIA. OSORNO: same data as holotype, 16 ♂, 9 ♀ (NMNH); same, but 26–30 Jan 1978, Flint et al., 26 ♂, 11 ♀ (NMNH); same, but 26–31 Jan 1980, L.E. Peña G., 1 ♀ (NMNH); same, but 12–26 Feb 1985, 23 ♂, 12 ♀ (NMNH); Puente Hermoso, 3 km E Pucatrihue, 29 Jan 1978, C.M. & O.S. Flint, Jr., 2 ♀ (NMNH); Pulamemo, E Bahia Mansa, 30 Jan 1978, C.M. & O.S. Flint, Jr., 1 ♂ (NMNH); La Picada, W Volcán Osorno, 600 m, 12–22 Jan 1980, L.E. Peña G., 4 ♂, 3 ♀ (NMNH); Parque Nacional Puyehue, Aguas Calientes, 450 m, 11 Dec 1981, Nielsen et al., 2 ♂, 2 ♀ (ZMC); same, but Aguas Calientes to 2 km S, 600 m, 10–22 Feb 1979, Davis et al., 5 ♂, 3 ♀ (NMNH); same, but Aguas Calientes to 3 km W, 12–20 Dec 1981, D.R. Davis, 1 ♀ (NMNH); same, but Aguas Calientes to 1 km W, 2–5 Jan 1982, Davis & Peña, 3 ♂ (NMNH); N Popoén, SW Osorno, 4–5 Mar 1987, L.E. Peña G., 2 ♂ (NMNH). PCIA. VALDIVIA: Rincon de Piedra, ~20 km SE Valdivia, 30 m, 24–25 Feb 1979, Davis et al., 6 ♂, 3 ♀ (NMNH); same, but 180 m, 14 Nov 1981, Nielsen et al., 1 ♂ (ZMC); same, but ~23 km SE Valdivia, 200 m, 23 Feb 1979, 2 ♂, 1 ♀ (NMNH); Liquine at [Lago] Pellaifa [39°36′S; 71°58′W], 22 Jan 1958, J. Illies, 2 ♂ (NMNH); Punucapa [39°43′S; 73°18′W, 600 m], 23 Feb 1958, J. Illies, 2 ♀ (NMNH); Fundo Radall, coastal mountains, 21 Dec 1957, J. Illies, 1 ♂ (NMNH); Cudico [40°15′S; 73°09′W], 40 m, 10–11 Nov 1966, Irwin & Schlinger, 2 ♂, 2 ♀ (NMNH); Valdivia, 5 m, 22 Feb 1979, Davis et al., 2 ♂, 1 ♀ (NMNH); 8 mi [~13 km] E Río Bueno, 15 Jan 1951, Ross & Michelbacher, 1 ♂, 2 ♀ (CAS).

Smicridea (Smicridea) pucara, new species

FIGURES 56–65; MAP 6

This and *penai* are most closely related, with *manzanara* less similar. The apex of the phallus offers the most certain identification. In lateral aspect, the lateral plates of *pucara* are more evenly rounded apically and shorter, with a smaller mesobasal shoulder in ventral aspect. The clasper groove and receptacle provide the best means of identifying the female. In *pucara*, the groove is very long and curved, and the receptacle is very shallow in lateral aspect.

ADULT.—Length of forewing, 9.5–11.5 mm. Color grayish brown, appendage paler, antennae annulate; forewing intensely marked with grayish brown flecks, producing a dark pattern. Eye of male in frontal aspect with diameter half that of interocular distance. Anterolateral process of fifth sternum slightly longer than sternum; with 2 pairs of internal sacs as long as segments within which they lie.

Male Genitalia: Ninth segment with anterior margin nearly vertical. Tenth tergum elongate, tip divided apicomesally; tergite with apex somewhat elongate in dorsal, and upturned in lateral aspect. Clasper with basal segment slightly inflated apicad, basal portion parallel-sided; apical segment elongate, bluntly pointed. Phallus tubular, basal portion at right angles to stem, width of basal opening slightly more than 3 times width of narrowest part of stem, apex inflated; lateral plate a bit longer than wide, ventral margin confluent with venter of stem, in ventral aspect with a well developed mesobasal shoulder, shallowly cupped, and with ventral margin deeply concave, dorsolateral lobe large, about half as long as lateral plate.

Female Genitalia: Eighth sternite elongate, posteromesal angle rounded; anterolateral angle produced into an apically enlarged lobe. Ninth tergum produced almost directly ventrad, broad laterally. Clasper receptacle with inner surface strongly reticulate only slightly produced ventromesally, with a long clasper groove; in lateral aspect with a rather shallow posterolateral overhang. Vaginal sclerites very lightly sclerotized, with an indistinct posterior sclerite with a darkened center and a slightly broader, pale anterior sclerite. Internal plate pale, indistinct, with lateral arms indistinctly produced posteriad.

MATERIAL EXAMINED.—*Holotype*, male: ARGENTINA: PCIA. NEUQUÉN: Pantano, near Estación Forestal Pucará [near SW end Lago Lacar], 29 Jan 1974, O.S. Flint, Jr. Type NMNH.

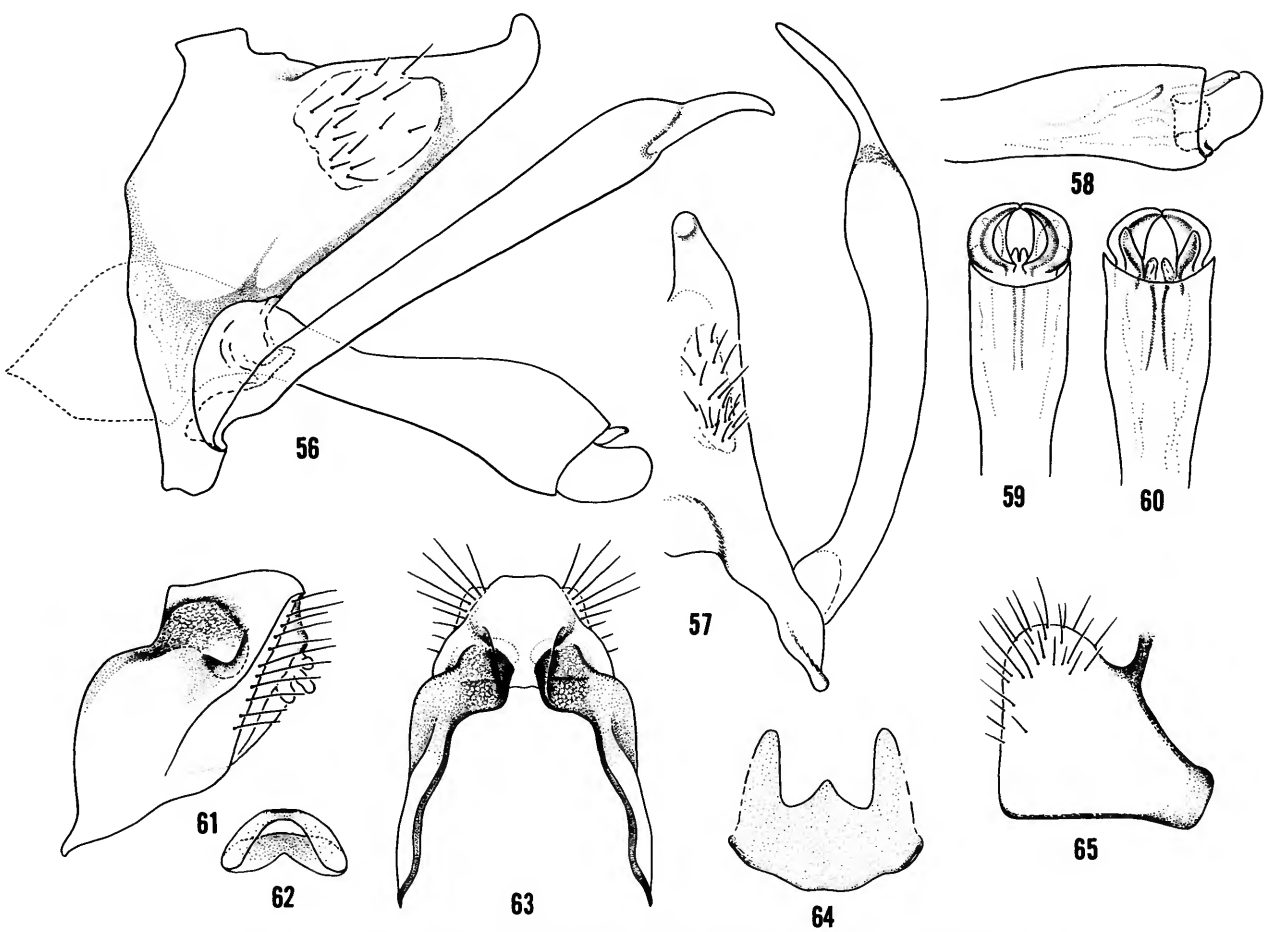
Paratypes: ARGENTINA: PCIA. NEUQUÉN: Same data as holotype, 2 ♂ (NMNH); Lago Lacar, Estación Forestal Pucará, 650 m, 26–27 Dec 1981, Nielsen et al., 1 ♂ (ZMC); Arroyo Trompul, W San Martín de los Andes, 23 Feb 1978, C.M. & O.S. Flint, Jr., 1 ♂, 9 ♀ (NMNH); 7 km NW Lago Lolog, 23 Jan 1974, O.S. Flint, Jr., 1 ♂ (NMNH); 2 km SE Villa La Angostura, 31 Jan 87, C.M. & O.S. Flint, Jr., 1 ♂, 1 ♀ (NMNH). PCIA. RÍO NEGRO, Puerto Blest, Lago Nahuel Huapí, 770 m, 1–2 Mar 1979, Nielsen et al., 1 ♂ (ZMC). CHILE: PCIA. ARAUCO: Pichinahuel [Nahuelbuta Mountains, 37°47′S], 23–31 Nov 1958, L.E. Peña G., 2 ♂, 1 ♀ (CNC); same, but 1–30 Jan 1959, L.E. Peña G., 12 ♂, 1 ♀ (CNC). PCIA: BÍO-BÍO, El Abanico, 1100 m, 17–19 Mar 1984, L.E. Peña G., 2 ♂ (NMNH). PCIA. CAUTÍN: Fundo El Coigue, 27 km NE Villarrica, 500 m, 28 Feb–3 Mar 1979, Davis et al., 16 ♂, 7 ♀ (NMNH). PCIA. CHILOÉ: Lago Coluco, S Ancud, 24–30 Jan 1981, M. Marín, 1 ♂ (NMNH). PCIA. CURICO: El Coigual, Cordillera Curico, 21–25 Jan 1964, L.E. Peña G., 6 ♂ (NMNH). PCIA. LINARES: Tranque Bullileo, 800 m, 10–12 Jan 1979, Davis et al., 1 ♂ (NMNH). PCIA. LLANQUIHUE: El Chingue, N Correntoso (S Volcán Calbuco), 300 m, 20–25 Jan 1980, L.E. Peña G., 2 ♂ (NMNH). PCIA. MALLECO: Curacautín, Río Blanco, Feb 1964, L.E. Peña G., 21 ♂, 15 ♀ (NMNH); same, but 21–24 Feb 1954, 19 ♂, 10 ♀ (CNC); Cordillera de las Raíces, 40 km E Curacautín, 1650 m, Davis et al., 2 ♀ (NMNH); Cabreria, Nahuelbuta National Park, 1200 m, 9–15 Jan 1977, L.E. Peña G., 1 ♂, 2 ♀ (NMNH); same, but 15–20 Jan 1977, 3 ♂, 1 ♀ (NMNH); same, but 4 Feb 1979, Davis et al., 1 ♀ (NMNH); near "Los Gringos" camp, Nahuelbuta National Park, 1300 m, 29 Jan–5 Feb 1979, Davis et al., 9 ♂, 3 ♀ (NMNH). PCIA. ÑUBLE: Los Pellines [N Recinto], 2 Dec 1951, L.E. Peña G., 4 ♂ (CNC); Atacalco [near

Recinto], 28 Nov 1951, L.E. Peña G., 1 ♂ (CNC); Las Trancas, 21 km E Recinto, 1300 m, 6–11 Feb 1966, L.E. Peña G., 30 ♂, 26 ♀ (NMNH); same, but Jan 1967, 1 ♂ (NMNH); same, but 21–30 Nov 1964, 2 ♀ (NMNH); same, but 2 Mar 1968, Flint & Peña, 34 ♂, 6 ♀ (NMNH); same, but 16–19 Jan 1979, Davis et al., 32 ♂, 18 ♀ (NMNH); same, but near high waterfall, 17 Jan 1979, 11 ♂, 5 ♀ (NMNH); same, but Shangri-La, SW side Volcán Chillán, 1600 m, 19–22 Jan 1979, Davis et al., 16 ♂, 10 ♀ (NMNH); same, but El Pulgatorio, near Las Trancas, 20–22 Feb 1983, L.E. Peña G., 1 ♂, 46 ♀ (NMNH); Río Chillán, near Recinto, 6 Mar 1968, Flint & Peña, 1 ♂ (NMNH). PCIA. OSORNO: La Picada, W Volcán Osorno, 600 m, 12–22 Jan 1980, L.E. Peña G., 1 ♂, 2 ♀ (NMNH); Parque Nacional Puyehue, Río Chanleufú, 1 km S Aguas Calientes, 8–9 Feb 1978, C.M. & O.S. Flint, Jr., 1 ♂, 2 ♀ (NMNH); same, but Aguas Calientes to 2 km S, 600 m, Davis et al., 5 ♂, 9 ♀ (NMNH); Bahia San Pedro, W Purranque, 5–7 Mar 1987, L.E. Peña G., 3 ♂, 1 ♀ (NMNH); W Tegualda, 600 m, 8 Mar 1987, L.E. Peña G., 1 ♂ (NMNH). PCIA. TALCA: Los Cipreses, 13–15 Jan 1968, L.E. Peña G., 5 ♂, 1 ♀ (NMNH). PCIA. VALDIVIA: Choshuenco, 20 Feb 1978, L.E. Peña G., 1 ♂, 1 ♀ (NMNH); Río Bueno (N Margen), W Río Bueno City, 14–17 Feb 1978, L.E. Peña G., 1 ♀ NMNH); Rincon de Piedra, ~20 km SE Valdivia, 30 m, 24–25 Feb 1979, Davis et al., 3 ♂, 4 ♀ (NMNH).

Smicridea (Smicridea) tregala, new species

FIGURES 66–75; MAP 7

This distictive new species of the *annulicornis* species group is perhaps most easily confused with *pucara,* new species. The apex of the phallus offers the most distictive characteristics: the midventral keel at the apex of the phallus is distinct, as is the very large and well-defined ventrobasal lobe of the lateral



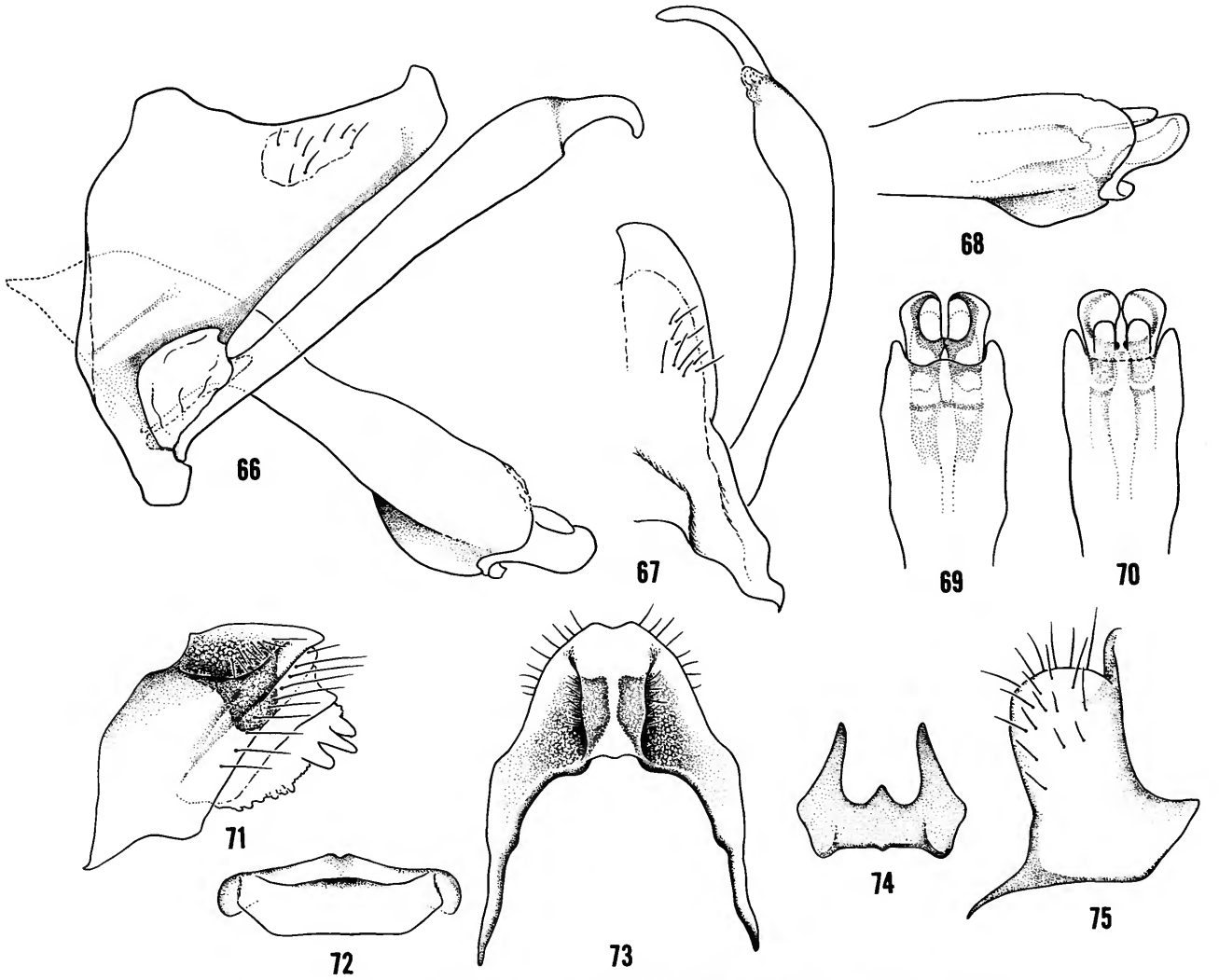
FIGURES 56–65.—*Smicridea (S.) pucara,* new species. Male genitalia: 56, lateral; 57, dorsal; 58. Tip of phallus: 58, lateral; 59, ventral; 60, dorsal. Female genitalia: 61, lateral; 62, vagina, ventral; 63, dorsal; 64, internal plate, dorsal; 65, eighth sternite, ventral.

plates. The female genitalia are less distinctive. The row of setae across the opening of the broad, deep clasper receptacle appears to be the best identifying characteristic.

ADULT.—Length of forewing, 9–10 mm. Color dark gray-brown, appendages paler, antennae annulate; forewing dark gray-brown, with a few scattered pale flecks. Eye of male in frontal aspect with diameter 2/5 that of interocular distance. Anterolateral process of fifth sternum slightly longer than sternum, with 2 pairs of internal sacs, each as long as segment in which it lies.

Male Genitalia: Ninth segment with anterior margin nearly vertical. Tenth tergum elongate; tergite rounded laterally in dorsal, bluntly upturned in lateral aspect. Clasper with basal segment slightly inflated apicad, parallel-sided basally; apical segment elongate, bluntly pointed. Phallus tubular, basal section at 110° angle to stem, basal opening 3 times diameter of narrowest part of stem; apex enlarged, produced into a narrow midventral keel, lateral surfaces produced over base of lateral plate (unless plates are fully everted); lateral plate elongate, with a well-marked ventrobasal lobe in lateral aspect and in ventral aspect cup-like, with ventral margin very concave, dorsal margin straight, mesobasal shoulder well developed; dorsolateral lobe well developed, elongate, lying dorsally over lateral plate.

Female Genitalia: Eighth sternite elongate, posteromesal angle rounded; anterolateral angle very broad, obliquely



FIGURES 66–75.—*Smicridea (S.) tregala*, new species. Male genitalia: 66, lateral; 67, dorsal. Tip of phallus: 68, lateral; 69, ventral; 70, dorsal. Female genitalia: 71, lateral; 72, vagina, ventral; 73, dorsal; 74, internal plate, dorsal; 75, eighth sternite, ventral.

truncate. Ninth tergum produced almost directly ventrad, broad. Clasper receptacle with inner surface strongly reticulate, deep, pocket-like, produced ventromesally, broadly open dorsally with a row of setae from inner face; in lateral aspect with a broad ventral overhang. Vaginal sclerites lightly sclerotized with a transverse posterior sclerite bearing a darkened central area, and a transversly rectangular anterior sclerite slightly darkened posteromesally. Internal plate lightly sclerotized with lateral arms produced posteriad and with anterolateral thickening.

MATERIAL EXAMINED.—*Holotype*, male: CHILE: PCIA. ARAUCO: Puente Trongol [~12 km S Curanilahue], 15–16 Oct 1969, Flint & Barria. Type NMNH.

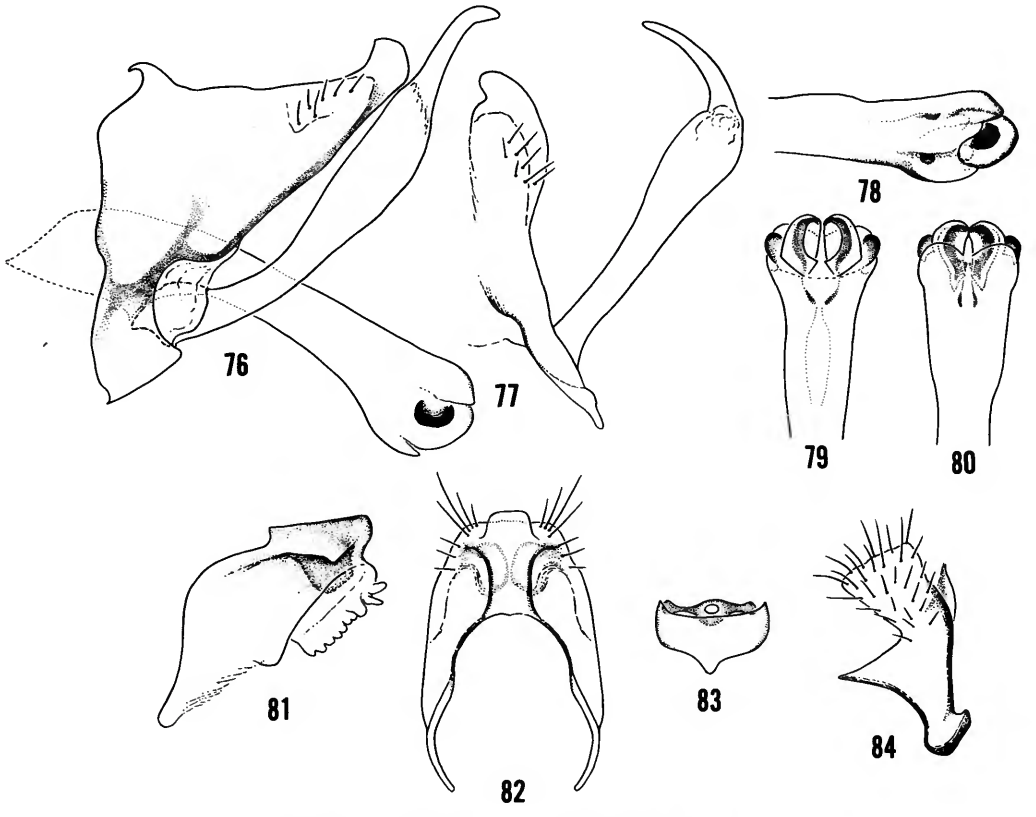
Paratypes: CHILE: PCIA. ARAUCO: Carámavida, 25–31 Dec 1953, L.E. Peña G., 2 ♂ (CNC); Chacay [Nahuelbuta Mountains, 37°48′S; 73°08′W], 11 Feb 1953, L.E. Peña G., 1 ♂, 1 ♀ (CNC). PCIA. CAUQUENES: Alto Tregualemu, ~20 km SE Chovellén, 500 m, 26–27 Jan 1979, Davis et al., 5 ♂, 1 ♀ (NMNH); same, but 1–3 Dec 1981, D.R. Davis, 1 ♂ (NMNH). PCIA. MALLECO: Parque Nacional Contulmo, 19 Oct 1969, Flint & Barria, 1 ♀ (NMNH); Nahuelbuta National Park, "Los Gringos" Camp, 1300 m, 29 Jan–5 Feb 1979, Davis et al., 2 ♂ (NMNH). PCIA. VALDIVIA: Rincon de Piedra, ~20 km SE Valdivia, 30 m, 24–25 Feb 1979, Davis et al., 1 ♂, 5 ♀ (NMNH); same, but ~23 km SE Valdivia, 200 m, 23 Feb 1979, 5 ♂, 4 ♀ (NMNH).

Smicridea (Smicridea) anticura, new species

FIGURES 76–84; MAP 8

This species is quite similar to *mucronata* and *turgida*. From *mucronata*, it is to be recognized by a basoventral root and the absence of the ventral tooth of the lateral plate. From *turgida*, *anticura* is distinguished by the basoventral root being threadlike, the apex of the phallus being narrower, and the very large anterolateral processes of the fifth sternum.

ADULT.—Length of forewing 5.5–8 mm. Color white, antennae annulate; forewing mostly white, marked conspicuously with scattered dark flecks. Eye of male in frontal aspect with diameter half that of interocular distance. Anterolateral process of fifth sternum very long, 2–2½ times length of



FIGURES 76–84.—*Smicridea (S.) anticura*, new species. Male genitalia: 76, lateral; 77, dorsal. Tip of phallus: 78, lateral; 79, ventral; 80, dorsal. Female genitalia: 81, lateral; 82, dorsal; 83, vagina, ventral; 84, eighth sternite, ventral.

sternum; with 2 pairs of internal sacs, each slightly longer than sternite within which it lies.

Male Genitalia: Ninth segment with anterior margin nearly vertical. Tenth tergum elongate; tergite with tip produced slightly and directed mesad in dorsal, and upturned and pointed in lateral aspect. Clasper with basal segment inflated apicad; apical segment elongate and bluntly pointed. Phallus tubular, base evenly curved into stem, basal opening slightly more than twice width of stem, apex distinctly inflated; apex of phallotheca produced into a trilobed plate over lateral plates, in ventral aspect with phallotheca apically broader than lateral plates; lateral plates rounded, cup-like in ventral aspect with a slight development of mesobasal angle, basoventral root large and thread-like; dorsolateral lobe small but distinct, lying laterally near base of lateral plates.

Female Genitalia: Eighth sternite with mesal margin sharply constricted; posteromesal angle nearly at 90°. Ninth tergum produced anteroventrally, broad laterally. Clasper receptacle deep, pocket-like, produced ventromesally; in lateral aspect with receptacle toward posterior third of tergum, with pocket clearly visible beneath broad, vertical overhang. Posterior vaginal sclerite dumbell-shaped with a central opening, anterior sclerite transverse, almost semicircular.

MATERIAL EXAMINED.—*Holotype*, male: CHILE: PCIA. OSORNO: Parque Nacional Puyehue, Río Anticura, 31 Jan–13 Feb 1978, C.M. & O.S. Flint, Jr. Type NMNH.

Paratypes: ARGENTINA: PCIA. RÍO NEGRO: Puerto Blest, Lago Nahuel Huapí, 770 m, 2 Dec 1978, Nielsen et al., 1 ♀ (ZMC); same, but 16 Dec 1978, 12 ♂, 4 ♀ (ZMC & NMNH); same, but 23 Dec 1978, 1 ♂ (ZMC); same, but 26–27 Dec 1978, 7 ♂, 1 ♀ (ZMC & NMNH); same, but 3–8 Dec 1981, 1 ♂ (ZMC). CHILE: PCIA. BÍO-BÍO: El Abanico, 30 Dec 1950, Ross & Michelbacher, 1 ♀ (CAS). PCIA. LLANQUIHUE: El Chingue, N Correntoso (S Volcán Calbuco), 300 m, 20–25 Jan 1980, L.E.Peña G., 1 ♂ (NMNH). PCIA. ÑUBLE: Fundo El Roble, E Coihueco, 17 Jan 1968, L.E. Peña G., 32 ♂ (NMNH); Las Trancas [21 km E Recinto], 1300 m, 16–19 Jan 1979, L.E. Peña G., 5 ♂, 4 ♀ (NMNH); same, but 14–15 Dec 1976, 2 ♂, 3 ♀ (NMNH); same, but 17–20 Dec 1983, 11 ♂, 1 ♀ (NMNH); same, but near high waterfall, 17 Jan 1979, Davis et al., 7 ♂, 6 ♀ (NMNH); Atacalco, near Recinto, 700 m, 17–18 Dec 1976, L.E. Peña G., 6 ♂ (NMNH); same, but 28 Nov 1951, 7 ♂, 7 ♀ (CNC). PCIA. OSORNO: Same data as holotype, 2 ♂ (NMNH).

Smicridea (Smicridea) frequens (Navás)

FIGURES 85–93; MAP 9

Rhyacophylax frequens Navás, 1930:362; 1932b:83; 1934c:28.—Fischer, 1963:136.

Smicridea frequens (Navás).—Schmid, 1949 [1950]:347–348 [sic *Smicridia*].—Flint, 1967:55.—Fischer, 1972:144.

Smicridea (S.) frequens (Navás):—Flint, 1974b:88.

This species and *mucronata*, new species, are very similar in appearance. Both are generally nearly white with dark flecks in coloration. They may only be distinguished with certainty by the structure of the male genitalia, and in particular by the apex of the phallus. In *frequens* there is, beneath the lateral plates, a small posteroventral plate that bears from its dorsal surface the erect phallotremal sclerites. In *mucronata* this plate is lacking and the phallotremal sclerites are rounded and central in position. The lateral plates of the phallus in *mucronata* bear a distinct, mesal tooth basally that is lacking in *frequens*. The females of these two species are even more difficult to tell apart. The apex of the clasper groove is near the middle of the ninth segment in *frequens*, but posteriad of the middle in *mucronata*. The posteriomost of the vaginal sclerites is very indistinct in *frequens* and usually represented by a pair of small sclerotized points laterally, but in *mucronata* it is strongly sclerotized, transverse, and bears a central pore.

ADULT.—Length of forewing, 5–8 mm. Color white, antennae annulate; forewings covered with white hairs, usually with a few pale brown spots, sometimes with 2 obliquely transverse pale brown bands. Eye of male in frontal aspect with diameter about half of interocular distance. Anterolateral process of fifth sternum slightly longer than length of sternum; with 2 pairs of internal sacs, each almost 1 1/2 times length of segment in which it lies.

Male Genitalia: Ninth segment with anterior margin nearly vertical. Tenth tergum elongate, tergite obliquely truncate in dorsal view, upturned and pointed in lateral aspect. Clasper with basal segment inflated apically; apical segment elongate and bluntly pointed. Phallus tubular, base at 110° angle to stem, width of basal opening 4 times that of narrowest part of stem; apex slightly enlarged, ventral surface produced into a lip-like lobe beneath lateral plates bearing a pair of erect dark phallotremal sclerites from dorsal surface near center; lateral plate rounded apically with dorsobasal angle produced into a narrow lobe; dorsolateral lobes apparently absent.

Female Genitalia: Eighth sternite with mesal margin deeply constricted, posteromesal angle at about 90°, anterolateral angle greatly produced. Ninth tergum produced mostly anteriad, very broad. Clasper receptacle deeply impressed, produced mesad; in lateral aspect with deepest impression at level of center of tergum, without any visible pocket ventrad of opening. Vaginal sclerites with posterior one reduced to two small, inconspicuous lateral plates, anterior sclerite transverse with anterior margin broadly produced mesally.

TYPE MATERIAL.—*R. frequens* Navás: lectotype, here designated, in MZB, labeled: "Talca (Chile)"; "3"; "Rhyacophylax frequens Nav. P. Navás S.J. det."; "LECTOTYPE Rhyacophylax frequens Nav. By Flint 1975." [Labelled by Flint in 1975 but not previously published.] The pin is bare, but carries the male genitalia mounted in balsam on a small piece of celluloid.

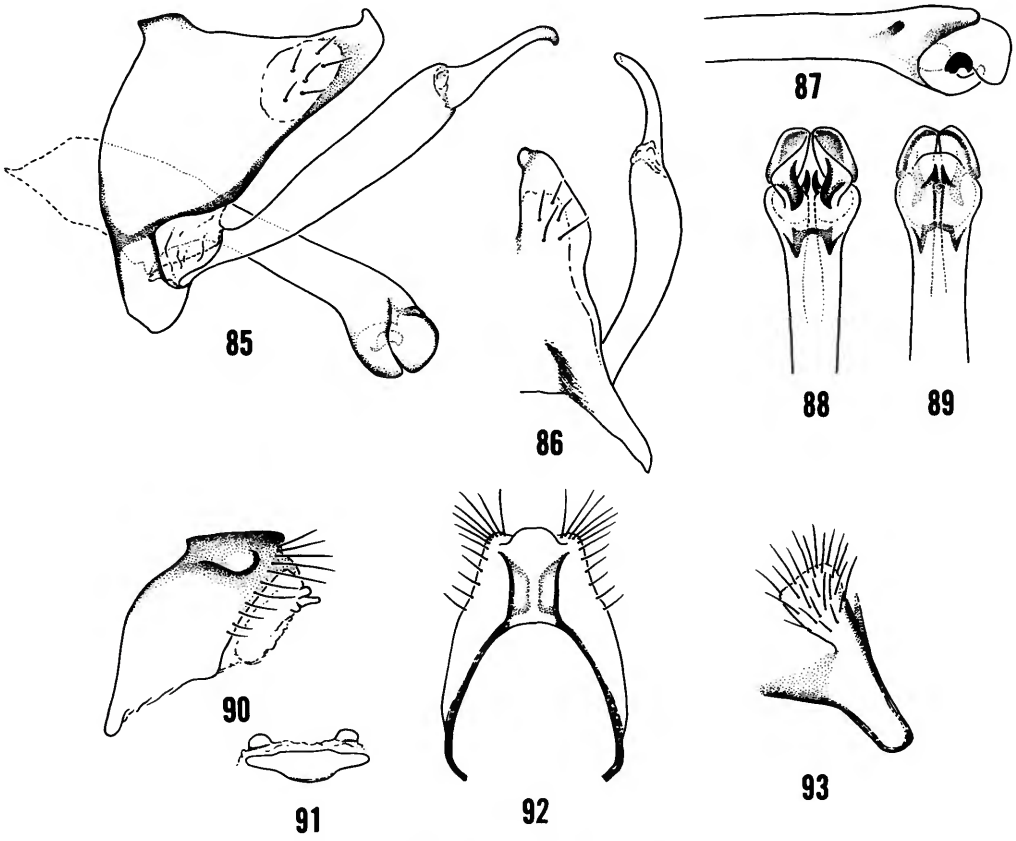
MATERIAL EXAMINED.—ARGENTINA: PCIA. CHUBUT: Esquel, 550 m, 1 Jan 1982, Nielsen et al., 1 ♂ (ZMC); Arroyo Irigoyen, Parque Nacional Los Alerces, 29 Jan 1987, C.M. &

O.S. Flint, Jr., 1 ♂ (NMNH); Río Epuyén, Hoyo de Epuyén, 10 Feb 1974, O.S. Flint, Jr., 100s ♂♂ ♀♀ (NMNH); Arroyo Golondrinas, 6 km N Lago Puelo, 8 Feb 1974, O.S. Flint, Jr., 100s ♂♂ ♀♀ (NMNH); Lago Puelo, [S] El Bolsón, 250 m, 22–23 Oct 1981, Nielsen et al., 1 ♂ (ZMC).

PCIA. NEUQUÉN: Arroyo Córdoba Grande, Caleufú, 3 Feb 1974, O.S. Flint, Jr., 6 ♂ (NMNH); Río Nonthué, Estación Forestal Pucará, 28–31 Jan 1974, O.S. Flint, Jr., 4 ♂, 3 ♀ (NMNH); Lago Lacar, Estación Forestal Pucará, 29–31 Jan 1974, O.S. Flint, Jr., 6 ♂, 3 ♀ (NMNH); same, but 26–27 Dec 1981, Nielsen et al., 2 ♂ (ZMC); same, but 26 Dec 1978, 2 ♂, 3 ♀ (ZMC); Quilquihue, San Martín de los Andes, 750 m, 15–24 Nov 1981, M.O. Gentili, 3 ♂, 6 ♀ (ZMC); Río Quilquihue at Quilquihue, 26 Jan 1974, O.S. Flint, Jr., 100s ♂♂ ♀♀ (NMNH); Río Quilquihue at Lago Lolog, 22–23 Jan 1974, O.S. Flint, Jr., 100s ♂♂ ♀♀ (NMNH); Río Aluminé, 5 km N Aluminé, 27 Feb 1978, C.M. & O.S. Flint, Jr., 1 ♂ (NMNH); same, but, 9 km N Aluminé, 5 ♂ (NMNH); same, but 5 km S Pilolil, 2 Feb 1987, 1 ♂, 2 ♀ (NMNH); Río Litrán, 9 km N Lago Aluminé, 3 Feb 1987, C.M. & O.S. Flint, Jr., 2 ♀ (NMNH); Río Totoral, 24 km NW Villa La Angostura, 20 Feb 1978, C.M. & O.S. Flint, Jr., 7 ♂, 6 ♀ (NMNH); Río Agrio, N Zapala, 9–11 Dec 1983, L.E. Peña G., 13 ♂, 7 ♀ (NMNH).

PCIA. RÍO NEGRO: El Bolsón, 2 Mar 1960, Kovacs, 4 ♂, 3 ♀ (NMNH); same, but 10–13 Feb 1961, 114 ♂, 9 ♀ (NMNH); same, but 26 Feb–4 Mar 1961, 29 ♂, 11 ♀ (NMNH); same, but 11 Feb 1962, 6 ♂, 1 ♀ (NMNH); same, but 7 Jan–15 Mar 1961, Topal, 28 ♂, 14 ♀ (HNHM & NMNH); same, but 30 Oct–4 Nov 1961, 16 ♂, 12 ♀ (HNHM); Río Azul, S El Bolsón, 7 Feb 1974, O.S. Flint, Jr., 4 ♂, 2 ♀ (NMNH); Cascada Mallín Ahogado, N El Bolsón, 9 Feb 1974, O.S. Flint, Jr., 43 ♂, 7 ♀ (NMNH); 5 km S Río Villegas, 7 Feb 1974, O.S. Flint, Jr., 2 ♀ (NMNH); Ñirihuau, [E] Bariloche, 11 Dec 1978, Nielsen et al., 10 ♂, 23 ♀ (ZMC); Río Ñirihuau, Estación Ñirihuau, 11 Feb 1974, O.S. Flint, Jr., 100s ♂, ♂, ♀♀ (NMNH); Puerto Blest, Lago Nahuel Huapí, 770 m, 18 Dec 1978, Nielsen et al., 13 ♂, 1 ♀ (ZMC); same, but 23 Dec 1978, 14 ♂, 12 ♀ (ZMC); same, but 30 Dec 1978, 1 ♂ (ZMC); same, but 22 Dec 1981, 1 ♂ (ZMC).

CHILE: PCIA. ACONCAGUA: N El Tártaro, Putaendo, 5–6



FIGURES 85–93.—*Smicridea (S.) frequens* (Navás). Male genitalia: 85, lateral; 86, dorsal. Tip of phallus: 87, lateral; 88, ventral; 89, dorsal. Female genitalia: 90, lateral; 91, vagina, ventral; 92, dorsal; 93, eighth sternite, ventral.

Feb 1984, L.E. Peña G., 2 ♂, 1 ♀ (NMNH).

PCIA. AISÉN: Mañihuales, 26–28 Jan 1961, L.E. Peña G., 4 ♂, 4 ♀ (CNC); Las Bandurrias, Coihaique, 1–2 Dec 1985, L.E. Peña G., 22 ♂, 55 ♀ (NMNH); Lago Risopatrón, 17 km N Puyuhuapi, 24 Jan 1987, C.M. & O.S. Flint, Jr., 2 ♂, 15 ♀ (NMNH); 20 km S La Junta, 26 Jan 1987, C.M. & O.S. Flint, Jr., 5 ♂, 2 ♀ (NMNH).

PCIA. ARAUCO: Estero Peral, Contulmo, 1–2 Jan 1966, Flint & Cekalovic, 11 ♂, 6 ♀ (NMNH); Puente Trongol [~12 km S Curanilahue], 15–16 Oct 1969, Flint & Barria, 1 ♀ (NMNH).

PCIA. BÍO-BÍO: ~4 km N Salto de Laja, ~200 m, 12 Jan 1982, D.R. Davis, 2 ♂, 1 ♀ (NMNH); Río Queuco, E Santa Bárbara, 17–18 Mar 1984, L.E. Peña G., 13 ♂, 6 ♀ (NMNH); Estero Huequecura, 25 km E Santa Bárbara, 24 Jan 1978, C.M. & O.S. Flint, Jr., 19 ♂, 13 ♀ (NMNH); 5 km W Tucapel, 28 Dec 1950, Ross & Michelbacher, 2 ♂, 1 ♀ (CAS).

PCIA. CACHAPOAL: La Leonera [15 km E Codegua], 26–28 Dec 1954, L.E. Peña G., 27 ♂, 19 ♀ (CNC); same, but 12–13 Feb 1986, 2 ♂, 6 ♀ (NMNH); Río Peuco, Pilay, ~45 km S Santiago, 800 m, 23–25 Nov 1981, Davis & Peña, 4 ♂, 9 ♀ (NMNH).

PCIA. CAUQUENES: W Cauquenes, 3 Oct 1983, L.E. Peña G., 10 ♂ (NMNH); Alto Tregualemu, ~20 km SE Chovellén, 500 m, 26–27 Jan 1979, Davis et al., 1 ♂ (NMNH).

PCIA. CAUTÍN: Río Cautín, Cajón, 24 Oct 1969, Flint & Barria, 1 ♂, 2 ♀ (NMNH); Villarrica, 25–29 Nov 1963, L.E. Peña G., 6 ♂, 8 ♀ (NMNH); 30 km NE Villarrica, 1–30 Jan 1965, L.E. Peña G., 1 ♂ (NMNH); Fundo El Coigue, 27 km NE Villarrica, 500 m, 28 Feb–3 Mar 1979, Davis et al., 40 ♂, 5 ♀ (NMNH); near Pucón [Río Minitué, ~12 km E Pucón], 4 Jan 1966, Flint & Cekalovic, 100s ♂, ♂, ♀♀ (NMNH).

PCIA. CHILOÉ: Puntra, 19–22 Dec 1981, L.E. Peña G., 1 ♂, 1 ♀ (NMNH); Lago Tepuhueco, 23–26 Dec 1981, L.E. Peña G., 2 ♂, (NMNH); same, but 11–15 Dec 1985, 4 ♂, 10 ♀ (NMNH); Río Cude, Pudguapi, 20 Jan 1987, C.M. & O.S. Flint, Jr., 3 ♂, 1 ♀ (NMNH).

PCIA. CHOAPA: Hacienda Illapel, Río Illapel, 600–900 m, 19 Oct 1966, Schlinger & Irwin, 29 ♂ (NMNH).

PCIA. CONCEPCIÓN: Concepción, 29 Jan 1967, L.E. Peña G., 1 ♂ (NMNH); 20 km E Concepción, L.E. Peña G., 30 Jan 1967, 5 ♂, 2 ♀ (EEAM & NMNH); same but 29 Feb 1967, 11 ♂, 1 ♀ (NMNH); same, but 19–20 Mar 1984, 8 ♂, 8 ♀ (NMNH); ~20 km S Coelemu, ~50 m, 28 Jan 1979, Davis et al., 38 ♂, 16 ♀ (NMNH).

PCIA. CURICO: Estero Potrero Grande, 3 km E Potrero Grande, 8 Feb 1987, C.M. & O.S. Flint, Jr., 2 ♂, 9 ♀ (NMNH); Las Tablas, E Curico [13 km E Potrero Grande], 26 Mar 1984, L.E. Peña G., 18 ♂, 16 ♀ (NMNH); Río Teno, 800 m, 25–28 Nov 1981, L.E. Peña G., 2 ♂, 1 ♀ (NMNH); El Coigo, 1 Mar 1968, Flint & Peña, 33 ♂, 17 ♀ (NMNH); same, but 20–31 Dec 1959, L.E. Peña G., 4 ♀ (CNC).

PCIA. ELQUI: Las Hediondas, 10 Jan 1966, L.E. Peña G., 1 ♀ (NMNH).

PCIA. LIMARI: 5 mi [~8 km] W La Junta, 7 Dec 1950, Ross & Michelbacher, 8 ♂, 3 ♀ (CAS).

PCIA. LINARES: Río Ancoa, 35 km E Linares, 320 m, 23 Jan 1978, C.M & O.S. Flint, Jr., 5 ♂, 24 ♀ (NMNH); Río Ancoa, 13 Oct 1951, L.E. Peña G., 1 ♂ (CNC); Puente Malcho, near Río Longavi, 600 m, 13–15 Jan 1979, Davis et al., 29 ♂, 52 ♀ (NMNH); Tranque de Buillileo, 800 m, 10–12 Jan 1979, Davis et al., 31 ♂, 6 ♀ (NMNH).

PCIA. LLANQUIHUE: Río Maullín [near Llanquihue], 6 Jan 1966, Flint & Cekalovic, 100s ♂♂ ♀♀ (NMNH); 8 mi [~13 km] W Puerto Varas, 18 Jan 1951, Ross & Michelbacher, 1 ♂ (CAS); El Chingue, N Correntoso (S Volcán Calbuco), 300 m, 20–25 Jan 1980, L.E. Peña G., 3 ♂, 10 ♀ (NMNH); Lago Chapo, E Puerto Montt, 20–28 Dec 1985, L.E. Peña G., 2 ♂, 40 ♀ (NMNH); Salto Chamiza, Correntoso, 19 Jan 1987, C.M. & O.S. Flint, Jr., 10 ♂, 7 ♀ (NMNH); Petrohué, 600 m, 1–3 Jan 1982, Davis & Peña, 16 ♂, 1 ♀ (NMNH).

PCIA. MAIPO: Las Canchas, Aculeo, 8–11 Dec 1983, Yrarrázaval, 3 ♂ (NMNH).

PCIA. MALLECO: Angol, 17 Feb 1956, L.E. Peña G., 7 ♂, 2 ♀ (CNC); Río Manzanares [~10 km W Purén], 2 Jan 1966, Flint & Cekalovic, 3 ♂ (NMNH); near Los Gringos Camp, Parque Nacional Nahuelbuta, 1300 m, 29 Jan–5 Feb 1979, Davis et al., 1 ♂, (NMNH); E Lonquimay, 1000 m, 21–23 Dec 1976, L.E. Peña G., 26 ♂, 20 ♀ (NMNH); Río Bío-Bío, 17 km E Lonquimay, 4 Feb 1987, C.M. & O.S. Flint, Jr., 6 ♀ (NMNH); Rucanuco [outlet to Lago Icalma], Cordillera Lonquimay, 4 Jan 1968, L.E. Peña G., 100s ♂♂ ♀♀ (NMNH); Marimenuco, Cordillera Lonquimay, 4 Jan 1968, L.E. Peña G., 56 ♂ (NMNH); Termas Manzanar, 29 Dec 1967, T. Cekalovic K., 2 ♂, 1 ♀ (NMNH).

PCIA. ÑUBLE: 50 km E San Carlos, 26 Dec 1950, Ross & Michelbacher, 40 ♂, 20 ♀ (CAS); Recinto, 4–6 Mar 1968, Flint & Peña, 2 ♀ (NMNH); same, but 800 m, 22–23 Jan 1979, Davis et al., 5 ♂ (NMNH); Río Chillán, near Recinto, 6 Mar 1968, Flint & Peña, 100s ♂♂ ♀♀ (NMNH); Atacalco, near Recinto, 700 m, 17–18 Dec 1976, L.E. Peña G., 70 ♂, 41 ♀ (NMNH); Las Trancas [21 km E Recinto], 1260 m, 23–30 Feb 1956, L.E. Peña G., 4 ♂, 5 ♀ (CNC); same, but 14–15 Dec 1976, 2 ♂, 2 ♀ (NMNH); same, but 16–19 Jan 1979, 3 ♂ (NMNH); same, but 2 Mar 1968, Flint & Peña, 2 ♂ (NMNH); same, but near high waterfall, 1300 m, 17 Jan 1979, Davis et al., 4 ♂ (NMNH); Río Pinto, E Chillán, 24 Oct 1968, Flint & Peña, 5 ♂, 8 ♀ (NMNH); Río Niblinto, E Coihueco, 19–20 Jan 1968, L.E. Peña G., 11 ♂, 6 ♀ (NMNH); Fundo El Roble, E Coihueco, 17 Jan 1968, L.E. Peña G., 100s ♂♂ ♀♀ (NMNH).

PCIA. OSORNO: Tril-Tril, S Pucatrihue, 1–10 Feb 1980, L.E. Peña G., 75 ♂, 25 ♀ (NMNH); Parque Nacional Puyehue, Río Pescadero, 7 Feb 1978, C.M. & O.S. Flint, Jr., 1 ♂, 1 ♀ (NMNH); same, but Lago El Toro, 7–8 Feb 1978, 12 ♂, 7 ♀ (NMNH); same, but Río Anticura, 31 Jan–13 Feb 1978, 6 ♂, 1 ♀ (NMNH); same, but Río Golgol, 2 Feb 1978, 3 ♂ (NMNH); same, but Aguas Calientes to 2 km S, 600 m, 10–22 Feb 1979, Davis et al., 1 ♂, (NMNH); same, but Aguas Calientes, 400 m, 12–17 Dec 1981, L.E. Peña G., 1 ♂ (NMNH).

PCIA. PALENA: Río Futaleufú, 37 km SW Futaleufú, 27 Jan 1987, C.M. & O.S. Flint, Jr., 4 ♂, 4 ♀ (NMNH); Río Ventisquero, 16 km S Puerto Cardenas, 23-24 Jan 1987, C.M. & O.S. Flint, Jr., 2 ♂, 1 ♀ (NMNH).

PCIA. TALCA: El Radal, Jan 1951, L.E. Peña G., 63 ♂ (CNC); same, but Jan 1950, L.E. Peña G., 1 ♂ (CNC); Alto Vilches, 11 Dec 1976, L.E. Peña G., 1 ♂ (NMNH); Los Cipreses, 13-15 Jan 1968, L.E. Peña G., 18 ♂ (NMNH).

PCIA. VALDIVIA: Río Las Cruces, Lanco, 5 Jan 1966, Flint & Cekalovic, 2 ♂ (NMNH); Rincon de la Piedra, 20 km S Valdivia, 180 m, 4 Nov 1981, Nielsen et al., 34 ♂, 4 ♀ (ZMC); 30 km S Valdivia, 13 Jan 1951, Ross & Michelbacher, 47 ♂, 14 ♀ (CAS); Enco, 200 m, 24-26 Feb 1978, L.E. Peña G., 9 ♂, 10 ♀ (NMNH); Río Llancahue at Lago Pellaifa [39°36′S; 71°58′W], 20 Jan 1958, J. Illies, 3 ♂, 3 ♀ (NMNH).

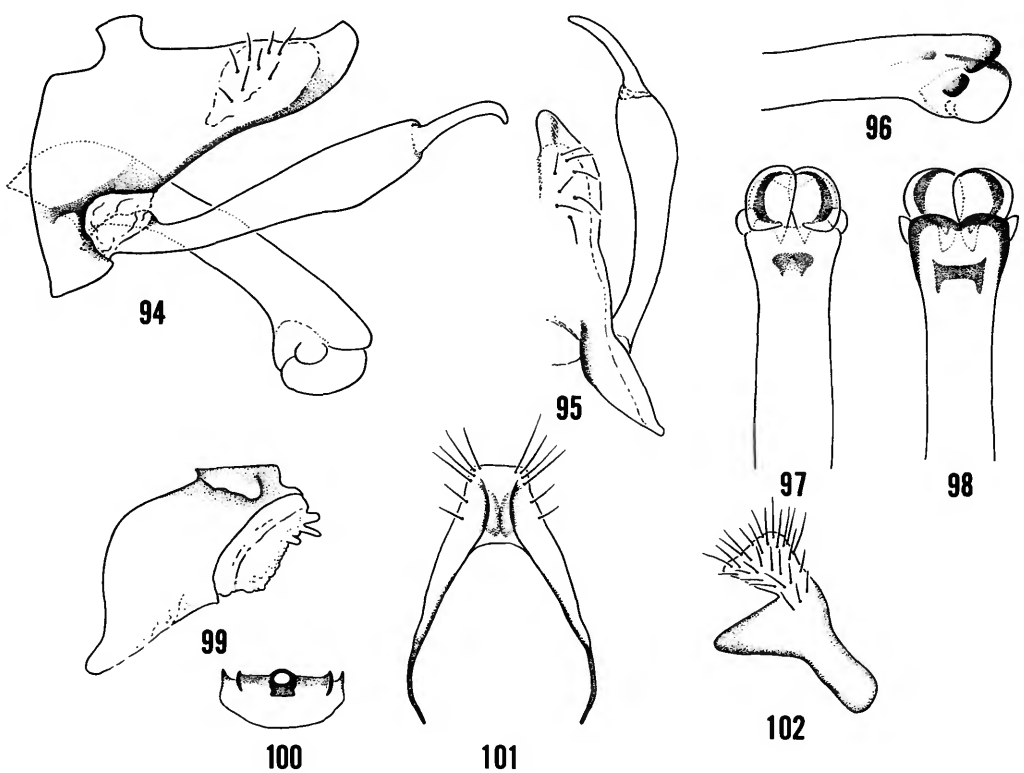
Smicridea (Smicridea) mucronata, new species

FIGURES 94-102; MAP 10

As discussed more fully under *frequens*, these two species are very similar in structure and color. Most material of *mucronata* tends to be more strongly marked with dark flecks, and it will rarely be entirely infuscate, a condition never seen in *frequens*. Differences between the species in males are found in structures at the apex of the phallus, and in females in the position of the clasper receptacle and the vaginal sclerites.

ADULT.—Length of forewing, 6–8.5 mm. Color varying from nearly white to dark gray-brown, appendages stramineous, antennae annulate; forewing varying from almost pure white with a few dark flecks to almost totally gray-brown with a faint pattern of pale flecks. Eye of male in frontal aspect with diameter half that of interocular distance. Anterolateral process of fifth sternum 1 1/2 times length of sternum; with 2 pairs of internal sacs, each slightly longer than segment within which it lies.

Male Genitalia: Ninth segment distinctly produced dorsolaterally. Tenth tergum elongate, tergite slightly produced mesally in dorsal, upturned and pointed in lateral aspects. Clasper with basal segment inflated apicad; apical segment elongate, bluntly pointed. Phallus tubular, base curving into stem, width of basal opening barely twice diameter of narrowest part of stem; apex enlarged ventrad, dorsal surface



FIGURES 94-102.—*Smicridea (S.) mucronata*, new species. Male genitalia: 94, lateral; 95, dorsal. Tip of phallus: 96, lateral; 97, ventral; 98, dorsal. Female genitalia: 99, lateral; 100, vagina, ventral; 101, dorsal; 102, eighth sternite, ventral.

produced slightly over lateral plates; lateral plates ovoid in lateral aspect, in ventral aspect distinctly cupped with ventral angle produced as a point directed mesad; dorsolateral lobe small but distinct, lying laterally near base of lateral plate.

Female Genitalia: Eighth sternite with mesal margin deeply angulate; posteromesal angle slightly less than 90° anterolateral angle strongly produced. Ninth tergum produced strongly ventrad, broad laterally. Clasper receptacle deeply impressed, produced mesad; in lateral aspect with deepest impression toward posterior third of tergum, without any visible pocket beneath posteroventral angle. Posterior vaginal sclerite with lateral parenthesis-like marks and a central pore; anterior sclerite transverse, anterior margin curved.

MATERIAL EXAMINED.—*Holotype,* male: CHILE: PCIA. CHILOÉ: Dalcahue, 21–23 Oct 1969, Flint & Barria. Type NMNH.

Paratypes: ARGENTINA: PCIA. NEUQUÉN: San Martín de los Andes, 640 m, 26 Nov 1981, Nielsen et al., 1 ♂, 1 ♀ (ZMC); Puente Blanco, Cerro Chapelco, San Martín de los Andes, 25 Feb 1978, C.M. & O.S. Flint, Jr., 1 ♂, 1 ♀ (NMNH); Arroyo Pilpil, S San Martín de los Andes, 25 Jan 1974, O.S. Flint, Jr., 1 ♂ (NMNH); same, but 22 Feb 1978, C.M. & O.S. Flint, Jr., 40 ♂, 2 ♀ (NMNH); 13 km E Quila Quina, 27 Jan 1974, O.S. Flint, Jr., 1 ♀ (NMNH); Lago Lacar, Estación Forestal Pucará, 750 m, 26 Dec 1978, Nielsen et al., 3 ♂ (ZMC); same, but 26–27 Dec 1981, 4 ♂, 1 ♀ (ZMC); same, but Río Nonthué, 28–31 Jan 1974, O.S. Flint, Jr., 3 ♂, 1 ♀ (NMNH); same, but Pantano, near the Estación, 29 Jan 1974, 3 ♂, 1 ♀ (NMNH). CHILE: PCIA. AISÉN: Puerto Cisnes, Feb 1961, L.E. Peña G., 2 ♂, 4 ♀ (CNC). PCIA. ARAUCO: Pichinahuel [Nahuelbuta Mountains, 37°47′S], 1–30 Jan 1959, L.E. Peña G., 2 ♂, 1 ♀ (CNC); same, but 23–31 Dec 1958, 1 ♂ (CNC); Estero Peral, Contulmo, 1–2 Jan 1966, Flint & Cekalovic, 1 ♂ (NMNH). PCIA. BÍO-BÍO: Caledonia, E Mulchén, 700–900 m, 6–15 Feb 1981, L.E. Peña G., 2 ♂, 2 ♀ (NMNH). PCIA. CAUQUENES: near coastal stream, 17.5 km S Curanipe, 50 m, 25 Jan 1979, Davis et al., 1 ♂, 1 ♀ (NMNH); Alto Tregualemu, ~20 km SE Chovellén, 500 m, 26–27 Jan 1979, Davis et al., 3 ♂, 1 ♀ (NMNH); same, but 1–4 Jan 1981, L.E. Peña G., 10 ♂ (NMNH). PCIA. CAUTÍN: 30 km NE Villarrica, 1–30 Jan 1965, L.E. Peña G., 24 ♂,(NMNH); Huife, ~40 km E Pucón, 18 Jan 1987, C.M. & O.S. Flint, Jr., 7 ♂, 2 ♀ (NMNH). PCIA. CHILOÉ: same data as holotype, 5 ♂, 7 ♀ (NMNH); same, but 10–20 Feb 1957, L.E. Peña G., 6 ♂, 6 ♀ (CNC); Aucar, 6 Jan 1952, L.E. Peña G., 2 ♂ (CNC); 1 km E Lago Tepuhueco, ~40 air km SW Castro, 100 m, 23–25 Dec 1981, Davis & Peña, 3 ♂, 3 ♀ (NMNH); Pio-Pio, 15 km NW Queilén, 10–11 Mar 1987, L.E. Peña G., 3 ♀ (NMNH). PCIA. CONCEPCIÓN: Quebrada Honda, N Lirquén, 14–15 Oct 1969 Flint & Barria, 3 ♂, 8 ♀ (NMNH). PCIA. LINARES: Estero de Leiva [near Hacienda San Manuel, ~31 km S Parral], 8 Jan 1953, L.E. Peña G., 6 ♂, 4 ♀ (CNC); Tranque de Bullileo, 800 m, 10–12 Jan 1979, Davis et al., 8 ♂, 11 ♀ (NMNH). PCIA. LLANQUIHUE: Hornohuinco, 11 km SW Lago Chapo, 300 m, 29–31 Dec 1981, Davis & Peña, 17 ♂, 2 ♀ (NMNH); same, but 3–5 Mar 1984, L.E. Peña G., 1 ♀ (NMNH); El Chingue, N Correntoso (S Volcán Calbuco), 300 m, 20–25 Jan 1980, L.E. Peña G., 5 ♂, 11 ♀ (NMNH). PCIA. MALLECO: Nahuelbuta National Park, near "Los Gringos" camp, 1300 m, 29 Jan–5 Feb 1979, Davis et al., 8 ♂, 2 ♀ (NMNH); Cordillera Nahuelbuta, Cabreria, 1100 m, 15–20 Jan 1977, L.E. Peña G., 2 ♀ (NMNH); Vegas Blancas, 27 km W Angol, 700 m, 17 Jan 1987, C.M. & O.S. Flint, Jr., 5 ♂, 2 ♀ (NMNH); Curacautín, 15 Dec 1949, L.E. Peña G., 2 ♂, 2 ♀ (CNC); Termas Manzanar, 29 Dec 1967, T. Cekalovic, K.,4 ♂, 1 ♀ (NMNH); Pino Hachado, 6–10 Jan 1959, L.E. Peña G., 1 ♂, 1 ♀ (CNC); Termas Tolhuaca, 46 km N Curacautín, 15 Mar 1986, L.E. Peña G., 1 ♂ (NMNH). PCIA. ÑUBLE: Fundo El Roble, E Coihueco, 17 Jan 1968, L.E. Peña G., 22 ♂ (NMNH); Recinto, 30 Nov 1951, L.E. Peña G., 3 ♂, 1 ♀ (CNC); same, but 800 m, 22–23 Jan 1979, Davis et al., 10 ♀ (NMNH); Los Pellines [N Recinto], 2 Dec 1951, L.E. Peña G., 49 ♂, 21 ♀ (CNC); Río Chillán, near Recinto, 6 Mar 1968, Flint & Peña, 8 ♂ (NMNH); Atacalco, near Recinto, 700 m, 17–18 Dec 1976, L.E. Peña G., 2 ♂ (NMNH); Cueva de los Pincheira, near Recinto, 17 Dec 1976, Gurney & Barria, 14 ♂, 6 ♀ (NMNH); Las Trancas, 21 km E Recinto, 1300 m, 16–19 Jan 1979, Davis et al., 30 ♂, 48 ♀ (NMNH); Shangri-La, SW side Volcán Chillán, 1600 m, 19–22 Jan 1979, L.E. Peña G., 6 ♂, 2 ♀ (NMNH). PCIA. OSORNO: Pucatrihue, 26–30 Jan 1978, C.M. & O.S. Flint, Jr., 2 ♂, 2 ♀ (NMNH); same, but 1–12 Feb 1980, L.E. Peña G., 1 ♀ (NMNH); same, but 12–26 Feb 1985, 1 ♂ (NMNH); Puente Hermoso, 3 km E Pucatrihue, 29 Jan 1978, C.M. & O.S. Flint, Jr., 1 ♂, 4 ♀ (NMNH); Parque Nacional Puyehue, Río Anticura, 31 Jan–13 Feb 1978, C.M. & O.S. Flint, Jr., 16 ♂, 1 ♀ (NMNH); same, but 3 km E Anticura, 3 Feb 1978, 6 ♂, 6 ♀ (NMNH); same, but Lago El Toro, 7–8 Feb 1978, 4 ♂, 4 ♀ (NMNH); same, but Río Golgol, 2 Feb 1978, 2 ♀ (NMNH); same, but Aguas Calientes, 6 Feb 1978, 6 ♂, 14 ♀ (NMNH); same, but 400 m, 12–17 Dec 1981, L.E. Peña G., 2 ♂ (NMNH); same, but 4–5 Jan 1982, 2 ♂, 4 ♀ (NMNH); same, but 5–7 Mar 1984, 18 ♂, 5 ♀ (NMNH); same, but 11 Dec 1981, Nielsen et al., 6 ♂, 3 ♀ (ZMC); same, but Río Chanleufú, 1 km S Aguas Calientes, 8–9 Feb 1978, C.M. & O.S. Flint, Jr., 11 ♂, 12 ♀ (NMNH); same, but 600 m, 12 Feb 1979, Davis et al., 59 ♂, 27 ♀ (NMNH); same, but Aguas Calientes to 2 km S, 600 m, 10–22 Feb 1979, Davis et al., 73 ♂, 84 ♀ (NMNH); La Picada, W Volcán Osorno, 600 m, 12–22 Jan 1980, L.E. Peña G., 3 ♀ (NMNH). PCIA. PALENA: Río Amarillo, 28 km S Chaitén, 23 Jan 1987, C.M. & O.S. Flint, Jr., 1 ♂, 5 ♀ (NMNH); Termas Amarillo, 30 km S Chaitén, 22 Jan 1987, C.M. & O.S. Flint, Jr., 9 ♂, 4 ♀ (NMNH); Camping Arraynes, 5 km NW Chaitén, 21 Jan 1987, C.M. & O.S. Flint, Jr., 1 ♂, 4 ♀ (NMNH). PCIA. TALCA: El Radal, Jan 1950, L.E. Peña G., 5 ♂, 2 ♀ (CNC); Los Cipreses, 13–15 Jan 1968, L.E. Peña G., 5 ♂ (NMNH). PCIA. VALDIVIA: Enco, 26 Feb 1955, L.E. Peña G., 18 ♂, 1 ♀ (CNC); Rincon de Piedra, ~20 km SE Valdivia, 30 m, 24–25 Feb 1979, Davis et al., 2 ♀ (NMNH).

Smicridea (Smicridea) turgida, new species

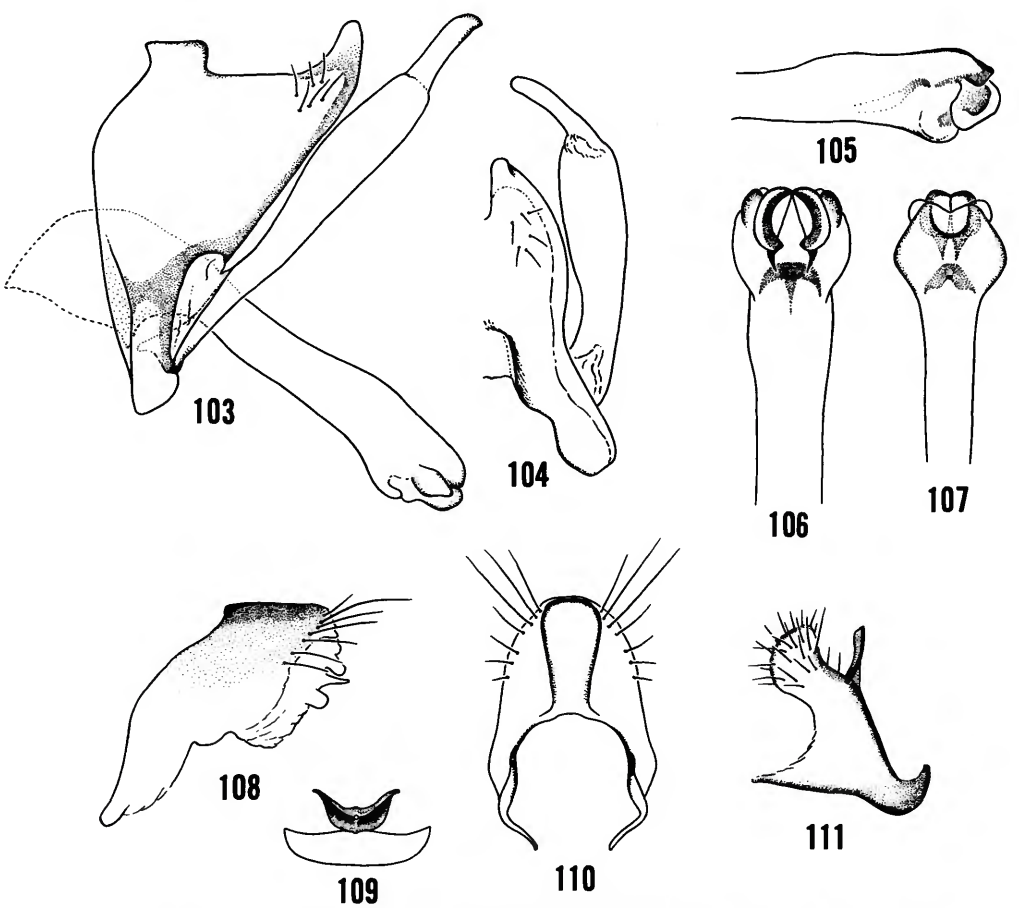
FIGURES 103-111; MAP 11

This species seems the most closely related to *anticura*, new species, but differs in coloration and structure of the apex of the phallus. The color is dark with whiter spots in this species, but in all other species of the group it is basically white with dark flecks. The apex of the phallotheca is distinctly inflated in dorsal aspect in *turgida*, but nearly parallel-sided in the other species, and the basoventral root of the lateral plate in *turgida* is short and truncate, but slender and threadlike in *anticura*. The female of *turgida* is very easily recognized because the clasper groove is not impressed at all, whereas in all other species it is at least impressed or more commonly pocket-like.

ADULT.—Length of forewing, 6–8 mm. Color brown, appendages paler, antennae annulate; forewing brown, marked with white producing a mottled effect. Eye of male in frontal aspect with diameter half that of interocular distance. Anterolateral process of fifth sternum length of sternum; with 2 pairs of internal sacs, very large, $1\frac{1}{4}$ to $1\frac{1}{2}$ times length of segment within which they lie.

Male Genitalia: Ninth segment with anterolateral margin slightly produced dorsad. Tenth tergum elongate; tergite with tip produced slightly in dorsal, produced and upturned in lateral aspect. Clasper with basal segment inflated apicad; apical segment short, blunt. Phallus tubular with base at right angles to stem; basal opening 3 times width of narrowest part of stem; apex enlarged especially in dorsal and ventral aspects; lateral plates deflected somewhat ventrad by development of a bilobed dorsal projection of stem, in ventral aspect with stem much broader than plates; lateral plates rounded, cup-like in ventral aspect with only slight development of mesobasal angle; with basoventral root short and truncate; dorsolateral lobe small but distinct, lying laterally near base of lateral plate.

Female Genitalia: Eighth sternite with mesal margin deeply sinuate, posteromesal angle rounded. Ninth tergum



FIGURES 103-111.—*Smicridea (S.) turgida*, new species. Male genitalia: 103, lateral; 104, dorsal. Tip of phallus: 105, lateral; 106, ventral; 107, dorsal. Female genitalia: 108, lateral; 109, vagina, ventral; 110, dorsal; 111, eighth sternite, ventral.

produced anteroventrally. Clasper receptacle absent; with a shallow dorsolateral clasper groove whose dorsal margin projects slightly in dorsal aspect. Vaginal sclerites with posterior one narrow, dark, strongly curved, with a minute central pore; anterior sclerite broad, anterior margin curved.

MATERIAL EXAMINED.—*Holotype*, male: CHILE: PCIA. ARAUCO: Caramávida, 3–31 Jan 1967, L.E. Peña G. Type NMNH.

Paratypes: CHILE: PCIA. ARAUCO: Same data as holotype, 4 ♂, 74 ♀ (NMNH); Pichinahuel [Nahuelbuta Mountains, 37°47′S], 1–30 Jan 1959, L.E. Peña G., 11 ♂, 8 ♀ (CNC); Chacay [Nahuelbuta Mountains, 37°48′S; 73°08′W], 11 Feb 1953, L.E. Peña G., 1 ♂, 1 ♀ (CNC). PCIA. MALLECO: Nahuelbuta National Park, Cabreria, 1100 m, 9–15 Jan 1977, L.E. Peña G., 2 ♀ (NMNH); same, but 15–20 Jan 1977, L.E. Peña G., 2 ♂ (NMNH); same, but 4 Feb 1979, Davis et al., 1 ♀ (NMNH); Nahuelbuta National Park, near "Los Gringos" camp, 1300 m, 29 Jan–5 Feb 1979, Davis et al., 14 ♂, 14 ♀ (NMNH); Vegas Blancas, 27 km W Angol, 700 m, 17 Jan 1987, C.M. & O.S. Flint, Jr., 1 ♂ (NMNH); Tolhuaca, 15–20 Jan 1959, L.E. Peña G., 1 ♂, (CNC).

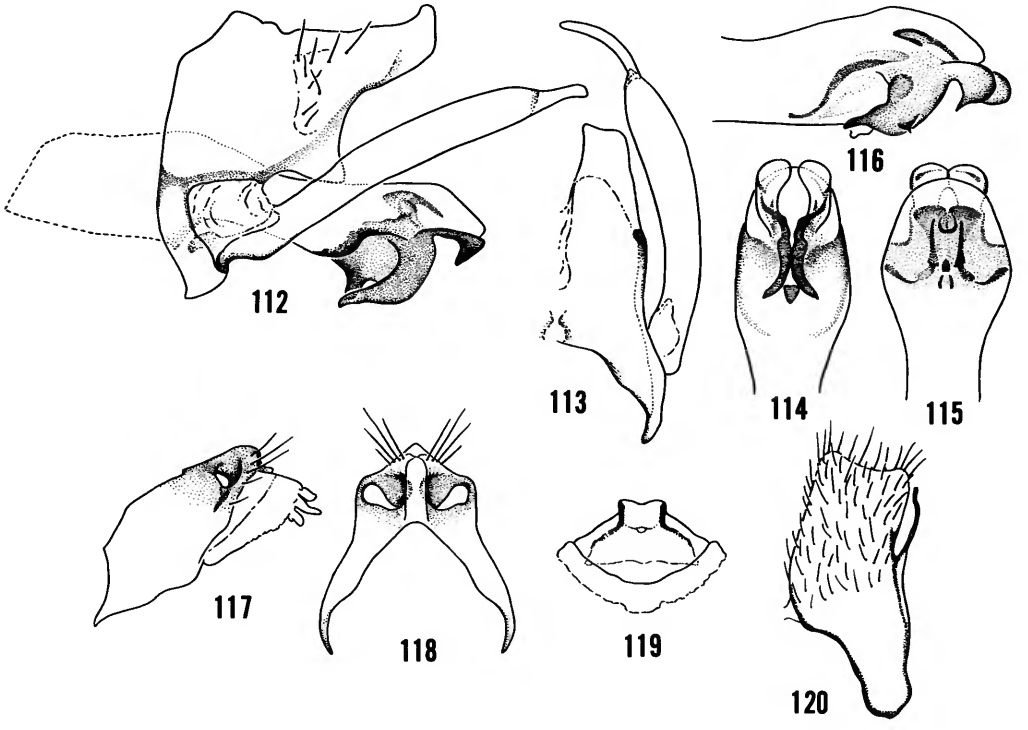
Smicridea (Smicridea) redunca, new species

FIGURES 112–120; MAP 12

This species and *smilodon*, new species, are closely related. They are readily told apart by the male phallus and less confidently by the female clasper receptacle. The male phallus bears a pair of apical lobes that have a ventral point and the ventral hooks are directed basally in *redunca;* in *smilodon* the apical lobes lack ventral points and the ventral hooks point directly ventrad. The females of the two species are exceedingly similar; the venter of the clasper receptacle in *redunca* bears a dark process that is lacking in *smilodon.*

ADULT.—Length of forewing 6–6.5 mm. Color generally gray-brown, appendages paler; antennae annulate; forewing with ground color pale brown, heavily irrorate with dark brown. Eye of male in anterior aspect with diameter one-half that of interocular distance. Anterolateral process of fifth sternum slightly longer than sternum; with 2 pairs of internal sacs, small, each slightly shorter than segment in which it lies.

Male Genitalia: Ninth segment with anterior margin vertical. Tenth tergum deeply divided dorsomesally, tergite



FIGURES 112–120.—*Smicridea (S.) redunca*, new species. Male genitalia: 112, lateral; 113, dorsal. Tip of phallus: 114, ventral; 115, dorsal; 116, lateral of paratype from Pichinahuel. Female genitalia: 117, lateral; 118, dorsal; 119, vagina, ventral; 120, eighth sternite, ventral.

almost truncate posteriorly in dorsal and sharply upturned in lateral aspect; ventral margin with a large thin lobe basad. Clasper with basal segment slender, parallel-sided; apical segment short. Phallus with basal opening at right angles to stem, apex enlarged; tip dorsally extending hood-like over ventral complex that consists of a compressed mesal ridge with a single ventral process, a pair of more lateral plates that extend as large ventral hooks that are appressed mesally and bear a more lightly sclerotized process apicodorsally that ends in a small ventral hook; internally with a pair of heavily sclerotized spines directed posteriad; lateral surface of central tube produced as narrow sigmoid flap basolaterally over ventral hooks.

Female Genitalia: Eighth sternite elongate, rectanguloid, with anterolateral angle strongly produced anteriad. Ninth tergum produced anteroventrad. Clasper receptacle shallow, barely pocket-like, slightly developed mesad; in lateral aspect with barely any overhang, with an oblique, dark mark from ventral margin. Posterior vaginal sclerite elongate, darkened sublaterally; anterior sclerite a crescentic band of nearly uniform width.

MATERIAL EXAMINED.—Holotype, male: CHILE: PCIA. CONCEPCIÓN: Fundo Pinares [about 10 km E Concepción on south side of Río Bío-Bío], 30 Dec 1965, Flint & Cekalovic. Type NMNH.

Paratypes: CHILE: PCIA. ARAUCO: Pichinahuel [Nahuelbuta Mountains, 37°47′S], 23–31 Jan 1954, L.E. Peña G., 14 ♂, 1 ♀ (CNC); Butamalal [Nahuelbuta Mountains, 37°51′S; 73°12′W], 23–31 Jan 1954, L.E. Peña G., 4 ♂ (CNC); Caramávida, 17–19 Oct 1969, Flint & Barria, 20 ♂, 12 ♀ (NMNH). PCIA. CAUQUENES: Alto Tregualemu, ~20 km S Chovellén, 500 m, 26–27 Jan 1979, Davis et al., 1 ♀ (NMNH). PCIA. CONCEPCIÓN: Same data as holotype, 1 ♂ (NMNH); same, but 18 Dec 1964, T. Cekalovic K., 1 ♀ (NMNH). PCIA. LINARES: Hacienda San Manuel [~31 km SE Parral], 14 Jan 1953, L.E. Peña G., 2 ♂ (CNC). PCIA. MALLECO: Río Manzanares [~10 km W Purén], 2 Jan 1966, Flint & Cekalovic, 1 ♀ (NMNH).

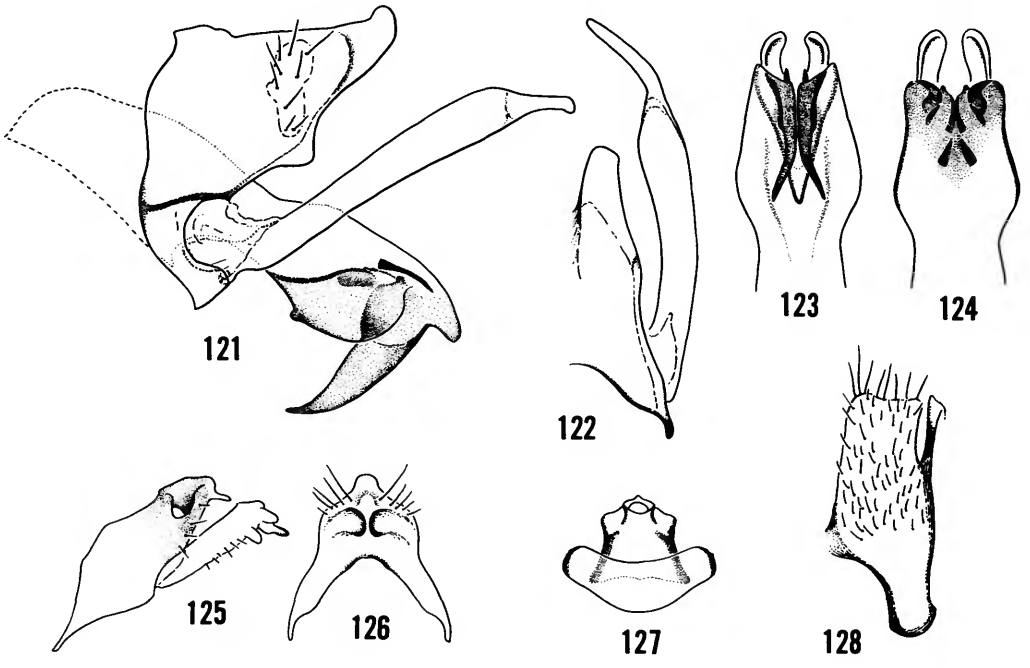
Smicridea (Smicridea) smilodon, new species

FIGURES 121–128; MAP 12

Differences between this species and the closely related *redunca*, found in the apex of the phallus in the male and in the clasper receptacle of the female, are more fully discussed under the latter species.

ADULT.—Length of forewing, 5.5–6 mm. Color generally gray-brown, appendages paler, antennae annulate; forewing with ground color pale brown heavily irrorate with dark brown. Eye of male in frontal aspect with diameter 1/2 that of interocular distance. Anterolateral process of fifth sternum about 1 1/4 times length of sternum; with 2 pairs of internal sacs each distinctly shorter than segment within which it lies.

Male Genitalia: Ninth segment with anterior margin



FIGURES 121–128.—*Smicridea (S.) smilodon*, new species. Male genitalia: 121, lateral; 122, dorsal; Tip of phallus: 123, ventral; 124, dorsal. Female genitalia: 125, lateral; 126, dorsal; 127, vagina, ventral; 128, eighth sternite, ventral.

vertical. Tenth tergum deeply divided dorsomesally; tergite obliquely truncate in dorsal, and sharply upturned in lateral aspect; ventral margin with a small thin lobe basad. Clasper with basal segment slender, parallel-sided; apical segment very short. Phallus with basal opening at right angles to stem, apex enlarged; apicoventral complex consisting of a compressed basal area with a small ventral tubercle, a pair of more lateral plates, appressed mesally, that extend as long pointed processes almost directly ventral and bearing apically a small rounded lobe, internally with a pair of spines directed posteriad, lateral surface of central tube narrowly produced into a sigmoid flap basolaterally over apicoventral complex.

Female Genitalia: Eighth sternite elongate, rectanguloid with anterolateral angle strongly produced anteriad. Ninth tergum produced anteroventrally. Clasper receptacle shallow, barely pocket-like, slightly developed mesad; in lateral aspect with barely any overhang. Posterior vaginal sclerite elongate, darkened laterally, with a posteromesal opening, anterior sclerite transverse, anterior margin curved.

MATERIAL EXAMINED.—*Holotype*, male: CHILE: PCIA. ÑUBLE: Recinto, 4–6 Mar 1968, Flint & Peña. Type NMNH.

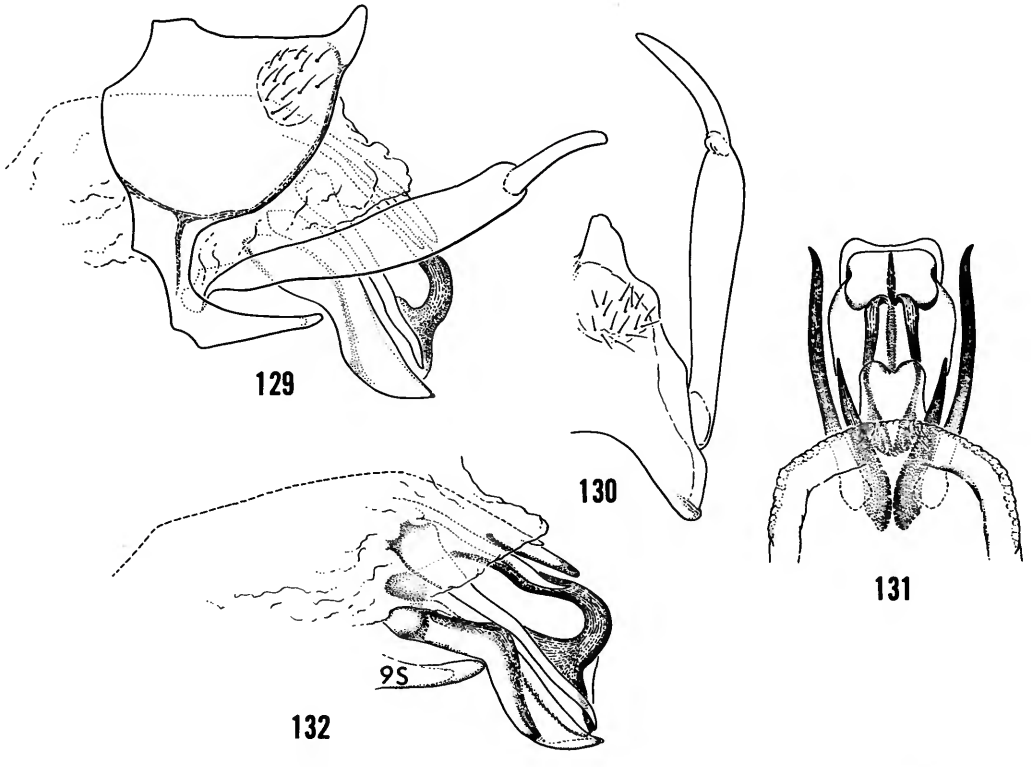
Paratypes: CHILE: PCIA. BÍO-BÍO: Caledonia, E Mulchén, 700–900 m, 6–15 Feb 1981, L.E. Peña G., 1 ♂ (NMNH). PCIA. CHILOÉ: Puntra, 28–29 Dec 1981, L.E. Peña G., 1 ♂, (NMNH); Ancud, 23 Jan 1952, L.E. Peña G., 2 ♂, 1 ♀ (CNC). PCIA. LINARES: Tranque de Bullileo, 800 m, 10–12 Jan 1979, Davis et al., 2 ♂, 1 ♀ (NMNH). PCIA. ÑUBLE: Same data as holotype, 3 ♂, 5 ♀ (NMNH); same, but 800 m, 22–23 Jan 1979, Davis et al., 1 ♂ (NMNH). PCIA. OSORNO: Parque Nacional Puyehue, spring-fed brooklet, 2 km S Aguas Calientes, 8–9 Feb 1978, C.M. & O.S. Flint, 4 ♂, 2 ♀ (NMNH).

Smicridea (Smicridea) complicatissima, new species

FIGURES 129–132; MAP 13

This morphologically distinct species is of unknown relationship. Unique features include the ventromesal projection of the ninth sternum and the very large phallus that is membranous anteroventrally, lacks any ventral articulation with the clasper bases, and bears numerous spines and a large convoluted median lobe. Although suggestive of some species of the *S. nigripennis* species group, such as *S. tarasca* Flint, I believe this resemblance is convergent. All species of the *nigripennis* species group are black, sometimes with a pair of transverse, white lines, and the phallus is sclerotized anteroventrally and is distinctly articulated with the clasper bases. But *complicatissima* is a mottled brown color and the entire basoventral region of the phallus is membranous.

ADULT.—Length of forewing, 7 mm. General color dark



FIGURES 129–132.—*Smicridea (S.) complicatissima*, new species. Male genitalia: 129, lateral; 130, dorsal. Tip of phallus: 131, dorsal; 132, lateral (9S = apex of ninth sternum).

brown, appendages paler, antennae annulate; forewing dark brown with scattered pale flecks producing an obscure irroration. Eye of male in frontal aspect with diameter half that of interocular distance. Anterolateral process of fifth sternum slightly shorter than sternum; with 2 pairs of internal sacs each distinctly shorter than the segment within which it lies.

Male Genitalia: Ninth segment with anterior margin vertical; sternum produced posteriad as a broad thin lobe between claspers. Tenth tergum divided apicomesally; tergite short, narrow, and upturned in lateral, and narrow apicad in dorsal aspect; in lateral aspect very broad basally. Clasper with basal segment slightly inflated apicad; apical segment elongate. Phallus with usual sclerotized anteroventral margin and articulation with clasper bases lost and area membraneous (ninth sternal process seeming to serve as a support or have an articulatory function with phallus midventrally); apical region non-tubular, composed of a broad ventral scoop-like lobe, two pairs of lateral spines, dorsalmost being much the smaller, a paired, complex central structure whose parts are compressed mesally and has the ventral area produced slightly posteriad and bears a darkened, ribbon-like dorsal sclerotization, and a short, thin dorsal lobe whose apex is weakly bilobed; apical region partially covered by a membranous connection from tenth tergum.

Female Genitalia: Unknown.

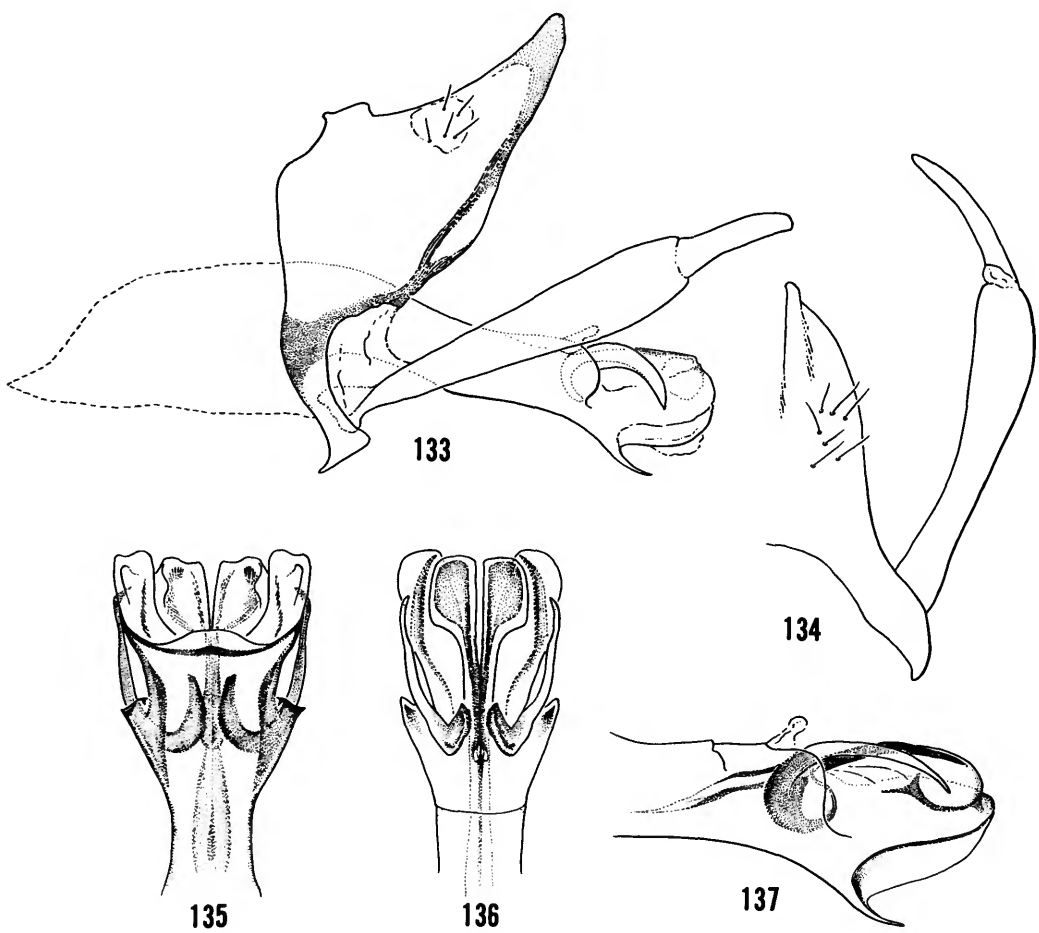
MATERIAL EXAMINED.—*Holotype*, male: CHILE: PCIA. MALLECO: Parque Nacional Contulmo, 24 Oct 1969, Flint & Barria. Type NMNH.

Paratype: CHILE: PCIA. MALLECO: Same data as holotype, 2 ♂ (NMNH).

Smicridea (Smicridea) matancilla, new species

FIGURES 133–137; MAP 13

The male genitalia of this species do not suggest a close relationship to any other known species of the genus. The curled, lateral spine near the apex of the phallus, the lateral and dorsal elongate lobes, and thin ventral projection, all are unique



FIGURES 133–137.—*Smicridea (S.) matancilla*, new species. Male genitalia: 133, lateral; 134, dorsal. Tip of phallus: 135, ventral; 136, dorsal; 137, lateral.

ADULT.—Length of forewing, 5 mm. Uniformly pale gray, but completely denuded. Eye of male in frontal aspect with diameter 1/2 that of interocular distance. Anterolateral process of fifth sternum as long as sternum; with 2 pairs of internal sacs, each ~3/4 the length of the segment in which it lies.

Male Genitalia: Ninth segment with anterior margin nearly vertical. Tenth tergum elongate; tergite slightly upturned in lateral aspect and produced posteriad in a small apicomesal lobe in dorsal aspect. Clasper with basal segment narrowing slightly basad; apical segment elongate, bluntly pointed. Phallus tubular, base at right angles to stem, basal opening about 4 times diameter of stem; subapically with a curled lateral spine whose base is enclosed in a shallow lateral pocket; apex with an elongate lateral plate concave mesally and a dorsolateral elongate lobe whose apex is knobbed, and a thin, transverse, ventral lip.

Female Genitalia: Unknown.

MATERIAL EXAMINED.—*Holotype*, male: CHILE: PCIA. CACHAPOAL: Cerro La Matancilla, Cordillera Costa, 1750 m, 8–10 Jan 1982, L.E. Peña G. Type NMNH.

Paratype: CHILE: PCIA. CACHAPOAL: Same data, 1 ♂, (NMNH).

Subgenus *Rhyacophylax* Müller

As discussed under "Genus *Smicridea* McLachlan" (and see Flint 1974a), the two subgenera are easily characterized in the adult stage, but not in their immature stages. The manner of separation of the veins R_{2+3} and R_{4+5} and the proximity of the the radiomedial system basally to the cubital system in the hindwing are sufficient for the recognition of the two subgenera. In addition, the males in *Rhyacophylax* lack the reticulate, internal sacs in the terminal abdominal segments that are present in the subgenus *Smicridea*. The males of *Rhyacophylax* lack the two preapical spurs on the hindlegs rather than having the full complement of four spurs as in the nominate subgenus.

The only species of subgenus *Rhyacophylax* known from the Chilean Subregion was placed in the *magna* species group (Flint 1974a). Now, with the synonymy of *magna*, this becomes the *murina* species group. The only other known species that shares the paired apicodorsal processes and lack of an apicoventral lobe on the phallus is *S. (R.) appendiculata* Flint, which is herein placed in the *murina* species group. These two species are mostly allopatric, with *murina* extending north to south along the Pacific Rim from Nicaragua to Chile, and *appendiculata* extending east and west from Brazil into Paraguay. An area of potential overlap exists along the eastern foothills of the Andes in Bolivia and northwestern Argentina.

Smicridea (Rhyacophylax) murina McLachlan

FIGURES 138–146; MAP 14

Smicridea murina McLachlan, 1871:137–138.—Fischer, 1963:134.—Kimmins, 1957:106.

Rhyacophylax magnus Ulmer, 1909:120–124; 1913:391, 407, 412.—Fischer, 1963:136–137.—Weidner, 1964:95 [new synonymy].

Rhyacophylax mendocensis Navás, 1920:42; 1922 [1924]:368; 1934b:170 [new synonymy].

Synoestropsis mendocensis (Navás).—Lestage, 1925:41, 42.—Fischer, 1963:210.

Rhyacophylax murina (McLachlan).—Flint, 1967:55.

Smicridea (R.) zanclophora Flint, 1974a:39–40 [new synonymy].

Smicridea (R.) murina McLachlan.—Flint, 1974b:88.

Smicridea (Rhyacophylax) magna (Ulmer).—Flint, 1975:570.

This is probably the most widespread species in the genus. With the above synonymy established, it is known from Nicaragua south along the Andes to west central Argentina and Chile. I have specimens from Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Ecuador, Peru, Bolivia, Argentina, and Chile (only those from the Chilean Subregion are listed in the "Material Examined," below). There seem to be some rather stable size differences between populations. Specimens from the Province of Mendoza, Argentina, are the largest, the forewing length being 7–8 mm. Chilean specimens are rarely as large, and are commonly about a millimeter smaller. Those from Salta, Argentina, north to Central America are the smallest, with forewing lengths of ~5 mm. The structure of the male genitalia remains very constant throughout its range, however. The pair of hornlike lobes apically from the top of the phallus are distinctive; the internal sclerites are rather simple and linear. The morphology of the male genitalia is very distinctive, being approached to some degree only by *appendiculata*. Both species have similar internal sclerites in the phallus, but the phallus of *appendiculata* is greatly enlarged apically, and its paired processes are longer and more slender than those of *murina*.

ADULT.—Length of forewing, 5.5–7 mm. Color grayish brown, body fuscous, appendages stramineous; forewing grayish brown, with darker marks over crossveins of chord, and a paler subterminal band (paler areas may have a yellowish cast). Eye of male in frontal aspect with diameter about half that of interocular distance. Fifth sternum with anterolateral processes 1 1/2 times as long as sternum; lacking internal sacs.

Male Genitalia: Ninth segment with anterolateral margin produced upward and angulate. Tenth tergite in lateral aspect with tip barely upturned and produced, with ventrolateral margin heavily sclerotized, forming a distinct rim; in dorsal aspect with tip slightly produced and rounded, broad laterally. Clasper with basal segment long, parallel-sided; apical segment with tip pointed in dorsal aspect. Phallus tubular, with basal and apical sections meeting at about 90° apical section slightly enlarged apicad, tip with a pair of hooked processes directed dorsomesad; internal sclerites long, slender enlarged apically, with a ventral curved plate.

Female Genitalia: Internal plate in posterodorsal aspect with lateral arms parallel, anterior bridge transverse. Vagina with anterior bar bearing posterolateral processes about 1/3 as long as bar; centrally with a small, dark pore.

TYPE MATERIAL.—*Smicridea murina* McLachlan, lectotype in BMNH, labeled: "Chili"; "Type"; "McLachlan Coll., B.M.

1938-674"; "Smicridea murina McL"; "Lectotype, D.E. Kimmins det. 1956."

Rhyacophylax magnus Ulmer, Lectotype in ZSZMH, labeled: "Mendoza 20.10.08 P. Jorgensen"; "Type"; "Coll. Ulmer Eing. Nr 6-63"; "Rhyacophylax magnus Ulm." The species was described from many syntypes, but I accept Weidner's statement (1964:95) of "♂, Holotypus..." to serve as a lectotype designation.

Smicridea zanclophora Flint, holotype in NMNH, labeled: "Panama: C.Z. Pipeline Rd. Río Agua Salud 8-12 July 1967 Flint & Ortiz"; "Holotype 72711 USNM"; "Holotype♂, Smicridea (R.) zanclophora Flint."

MATERIAL EXAMINED.—ARGENTINA: PCIA. MENDOZA: 4 km E Potrerillos, 20-22 Dec 1973, C.M. & O.S. Flint, Jr., 3♂, 44♀ (NMNH); same, but 4 km SW Potrerillos, 18 Dec 1973, 1♂ (NMNH); same, but Río Blanco 8 km SW Potrerillos, 18 Dec 1973, 3♂, 2♀ (NMNH); 3 km E Cacheuta, 20 Dec 1973, C.M. & O.S. Flint, Jr., 1♀ (NMNH); Río Mendoza, 1600 m, 5-6 Dec 1983, L.E. Peña G., 2♂, 12♀ (NMNH).

PCIA. NEUQUÉN: Río Agrio, N Zapala, 9-11 Dec 1983, L.E. Peña G., 9♂, 17♀ (NMNH).

PCIA. RÍO NEGRO: General Fernández Oro, Jan-Feb 1976, S. Coscarón, 2♂ (AMNH & NMNH).

CHILE: PCIA. CACHAPOAL: Pilay, Río Peuco, ~45 km S Santiago, 800 m, 23-24 Nov 1981, D.R. Davis, 1♀ (NMNH); Palmar de Cocolán, NE Las Cabras, 15-16 Dec 1986, L.E. Peña G., 3♂, 6♀ (NMNH).

PCIA. CHOAPA: Hacienda Illapel, 29-30 Oct 1954, L.E. Peña G., 57♂ (CNC).

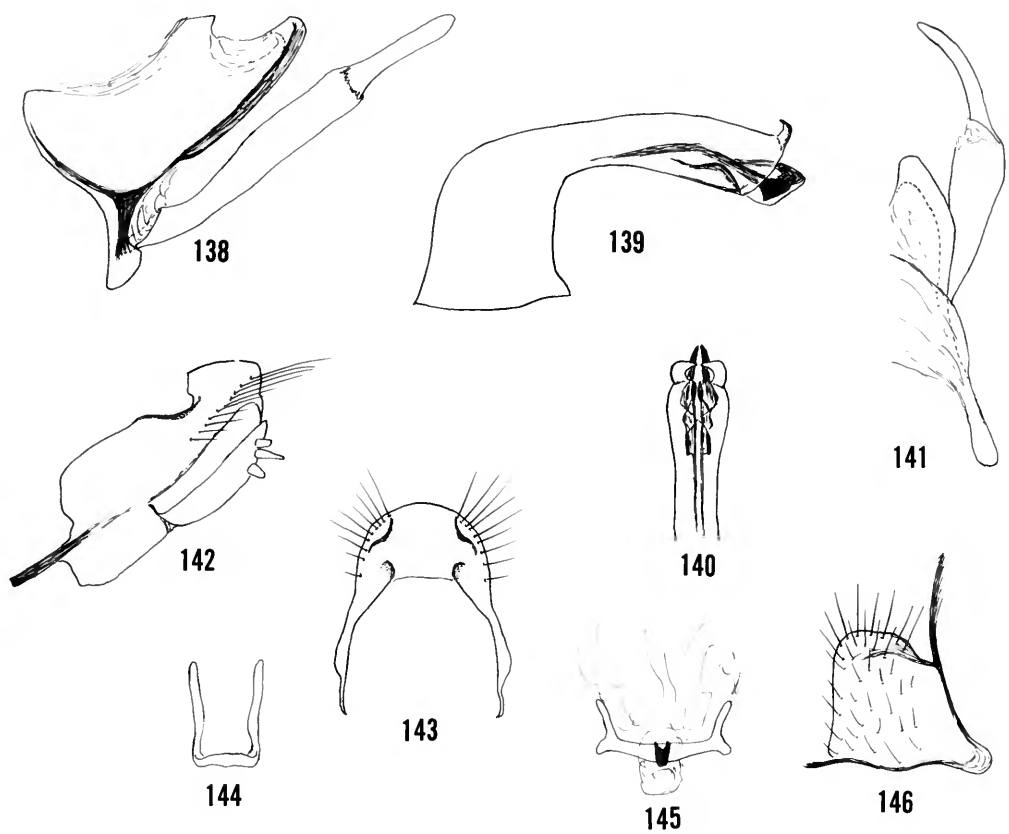
PCIA. CORDILLERA: El Manzano, near San José de Maipo, 19 Dec 1976, Gurney & Barria, 1♀ (NMNH); El Peumo [near El Canelo], near river [Río Maipo], 18 Dec 1976, Gurney & Barria, 12♀ (NMNH).

PCIA. CURICO: El Coigo, 1 Mar 1968, Flint & Peña, 19♂, 12♀ (NMNH); Estero Potrero Grande, 3 km E Potrero Grande, 8 Feb 1987, C.M. & O.S. Flint, Jr., 1♀ (NMNH); Río Teno, 7 Mar 1962, L.E. Peña G., 2♀ (CNC).

PCIA. LINARES: Rinconada de Parral [36°04′ 71°46′W], 19-20 Mar 1952, L.E. Peña G., 2♂, 58♀ (CNC).

PCIA. MAIPO: Aculeo, 18-20 Dec 1983, Yrarrázaval, 1♂, 28♀ (NMNH); El Patagual, Aculeo, 5-8 Dec 1983, Yrarrázaval, 77♀ (NMNH).

PCIA. MALLECO: Río Blanco, 5-27 Mar 1950, L.E. Peña G., 3♂, 1♀ (CNC).



FIGURES 138-146.—*Smicridea (R.) murina* McLachlan. Male genitalia: 138, lateral; 141, dorsal. Phallus: 139, lateral. Tip of phallus: 140, dorsal. Female genitalia: 142, lateral; 143, dorsal; 144, internal plate, dorsal; 145, vagina, ventral; 146, eighth sternite, ventral.

PCIA. MELIPILLA: Bollenar, N Melipilla, 15 Feb 1986, L.E. Peña G., 1 ♂, 8 ♀ (NMNH).

AREA METROPOLITANA: Rinconada Maipú, Apr 1963, R. Charlin, 4 ♀ (EEAM & NMNH); same, but 29 Dec 1965, light trap, 1 ♀ (EEAM).

PCIA. ÑUBLE: Las Trancas, 1260 m, 23–30 Feb 1956, L.E. Peña G., 2 ♂, 2 ♀ (CNC).

PCIA. TALCA: Forel Carrizalilo [near Río Maule, ~25 km E coast], 250 m, 30 Jan–5 Feb 1981, L.E. Peña G., 2 ♀ (NMNH); Tonlemo, 15 Feb 1951, L.E. Peña G., 12 ♂, 2 ♀ (CNC); same, but 14–21 Dec 1984, 2 ♀ (NMNH); Río Maule [Rt. 5, 15 km S Talca], 6 Feb 1957, L.E. Peña G., 5 ♂, 110 ♀ (NMNH).

PCIA. TALGANTE: Isla de Maipo, station VII, 13 Mar 1958, J. Illies, 10 ♂, 2 ♀ (NMNH).

PCIA. VALPARAÍSO: Quilpué, 13–14 Mar 1964, L.E. Peña G., 1 ♂ (NMNH).

Systematic Relationships

The *annulicornis* and *frequens* species groups of *Smicridea* seem to be most closely related to each other with no other New World species of subgenus *Smicridea* remotely approaching them in appearance. Although some of the subgenus *Rhyacophylax* species, e.g., *S. dithyra* Flint or *S. mesembrina* (Navás), seem to show a condition whereby the apex of the phallus is closed by a pair of plates, these species are true members of the subgenus *Rhyacophylax* exhibiting all the diagnostic characteristics of the subgenus. However, these plates are differently formed and articulate from different points, thus I believe that they are analagous not homologous.

The Australian genera *Smicrophylax* and *Asmicridea* (Neboiss 1977, 1986), show great similarity in general appearance and especially in the apices of the phallus to the *frequens* species group of subgenus *Smicridea*. Both of the Australian genera do have the internal abdominal sacs and short lateral filaments from the fifth sternum as do the species of the subgenus *Smicridea*. I have cleared specimens of *Smicrophylax ulmeri* (Banks) and *Smicridea frequens* (Navás) and compared them side by side and find most differences noted by Neboiss (1977:68) are due to differences in interpretations of figures and words. The only real differences apparent between the two genera are a small, second spur on the foreleg and a much larger anal area of the hind wing in *Smicrophylax*; in all other areas they are virtually identical. The apicolateral phallic lobes of *Smicrophylax* are not concave mesally as they are in the *frequens* species group of the subgenus *Smicridea*, but convex; otherwise the genitalia are nearly identical. I believe that the Australian genus *Smicrophylax* and/or *Asmicridea* are most likely the sister group of the *frequens* species group, but probably the more pleisiomorphic of the two due to the presence of the second apical spur of the foreleg. Probably the *annulicornis* species group is derived from the *frequens* species group by a further development of the apicolateral plates of the phallus.

This suggests that the genus *Smicridea* is paraphyletic. However, because the resolution of this and other problems of phylogeny of *Smicridea* requires a thorough analysis of this and related genera, beyond the scope of this paper, I am leaving the basic nomenclatorial status as it currently exists. The relationships of the *smilodon* species group and the unplaced species are totally problematic. There is some possibility of a relationship between *complicatissima* and members of the *nigripennis* species group (Flint 1974a), but even this is questionable (see the section "*Smicridea (Smicridea) complicatissima*, new species"). The genitalia of these species are so different from anything known to me that no close relationship anywhere within the genus is apparent.

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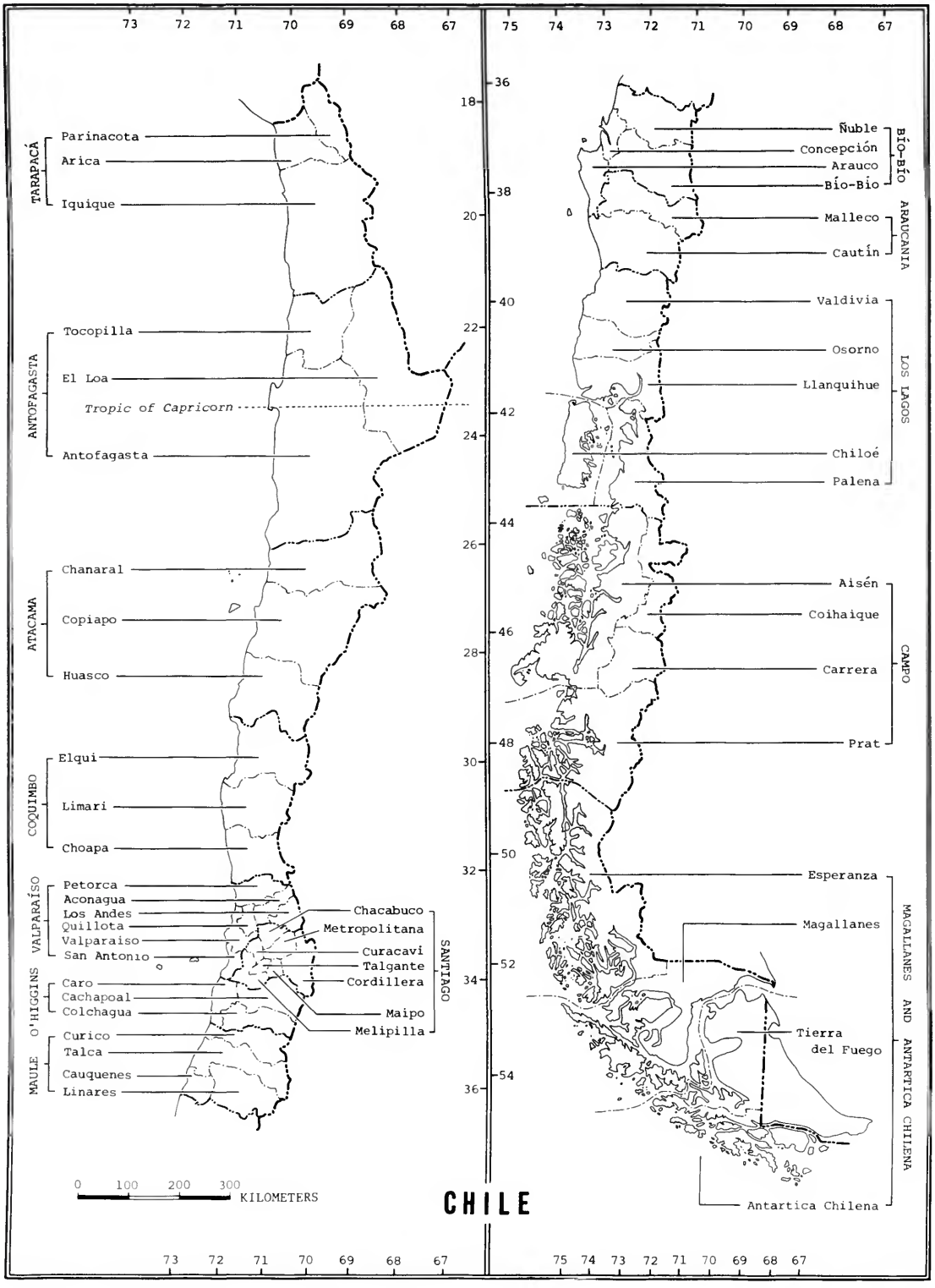
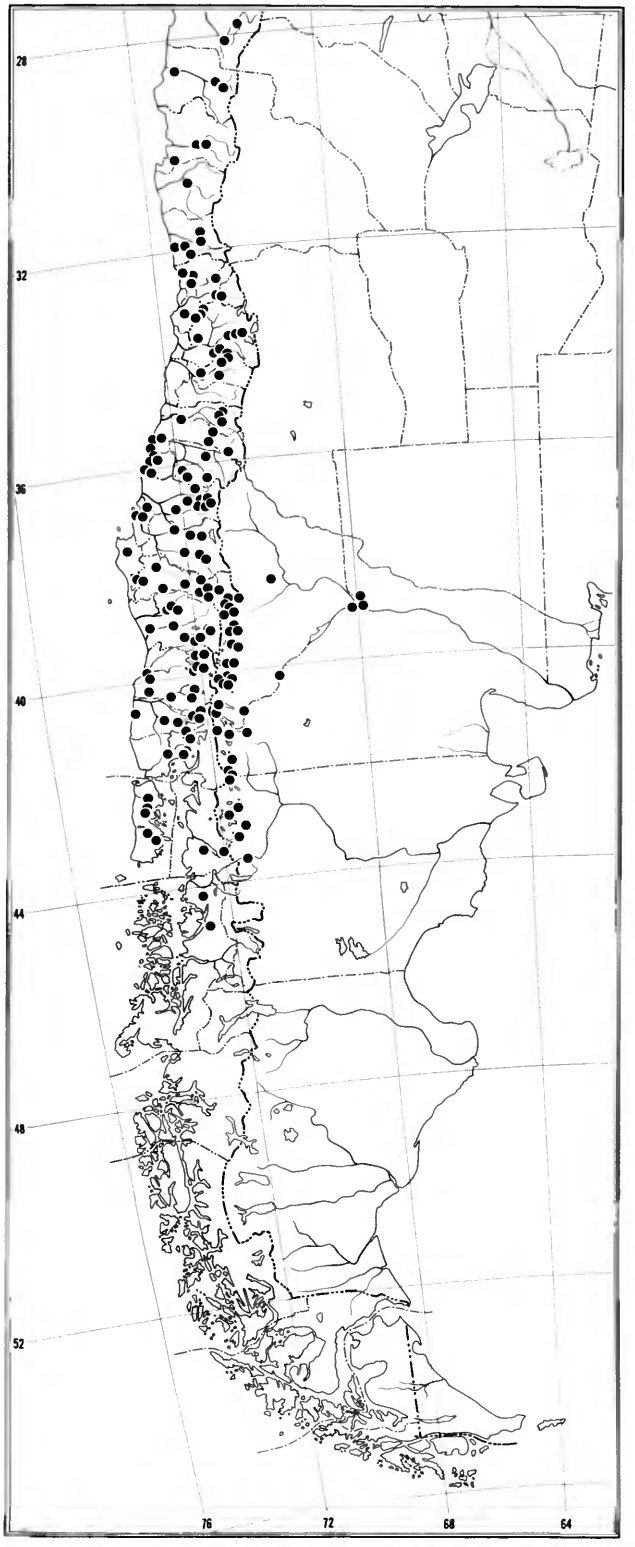
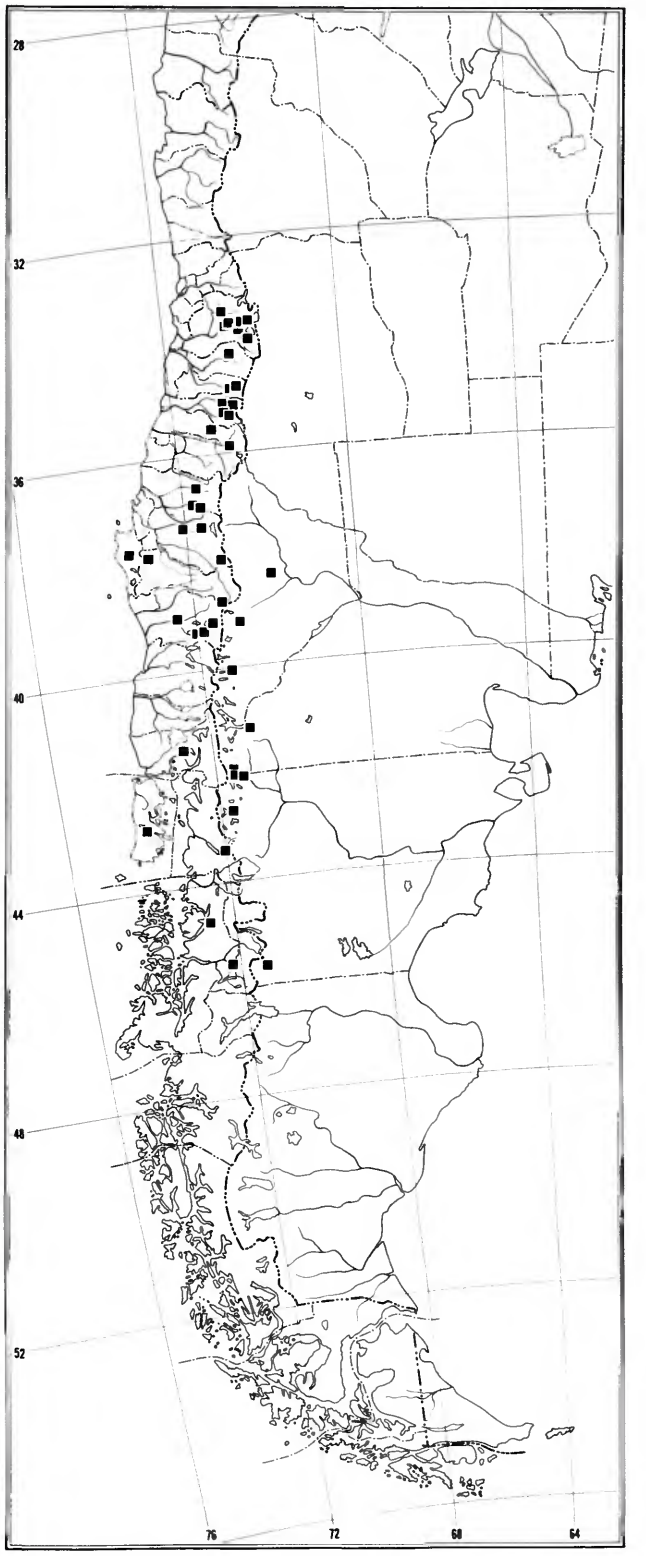


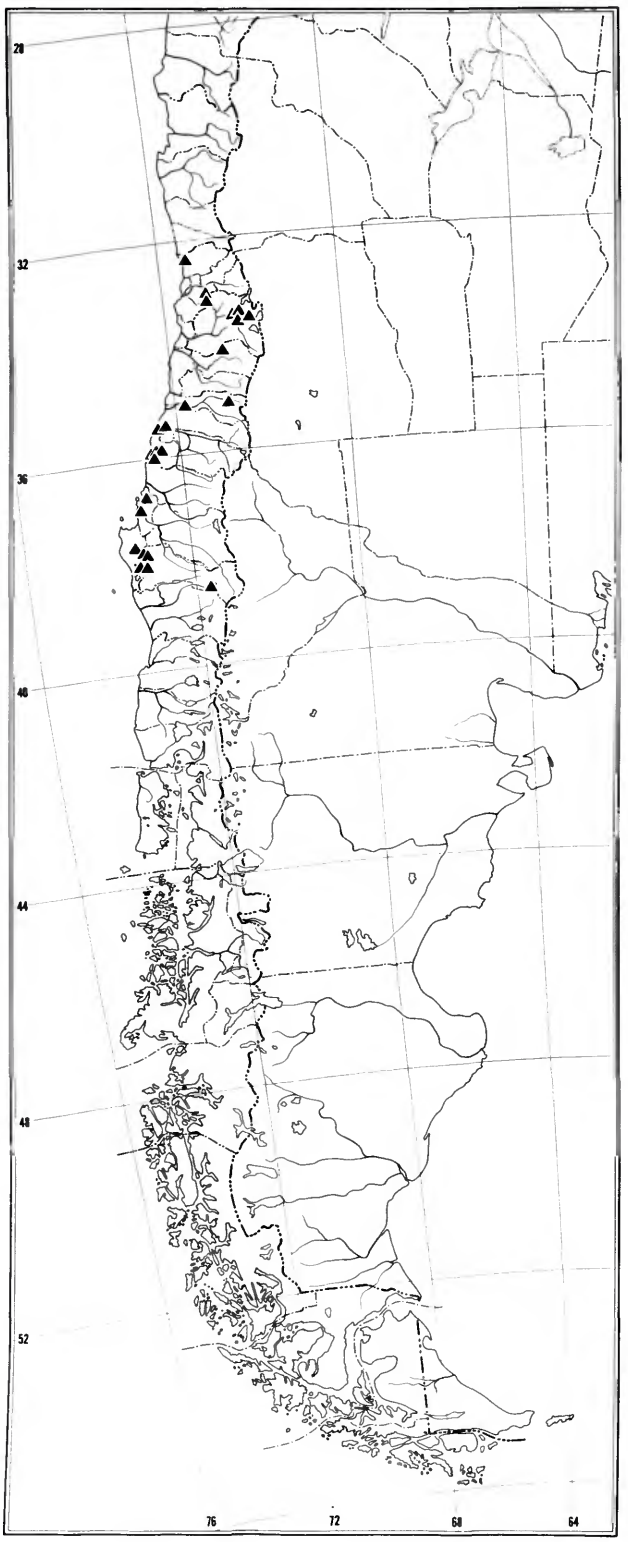
MAP 1.—The current regions and provinces of Chile, as used in this study.



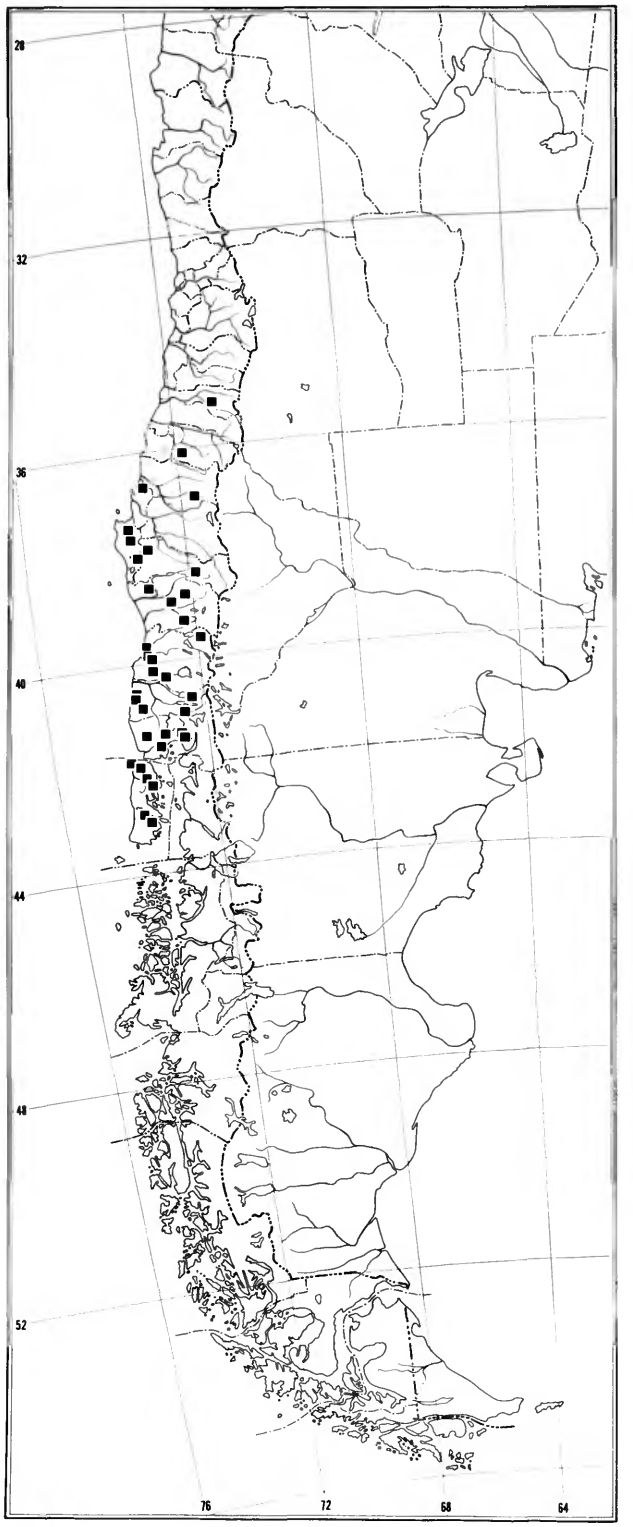
MAP 2.—Known distribution of *Smicridea (S.) annulicornis* (Blanchard).



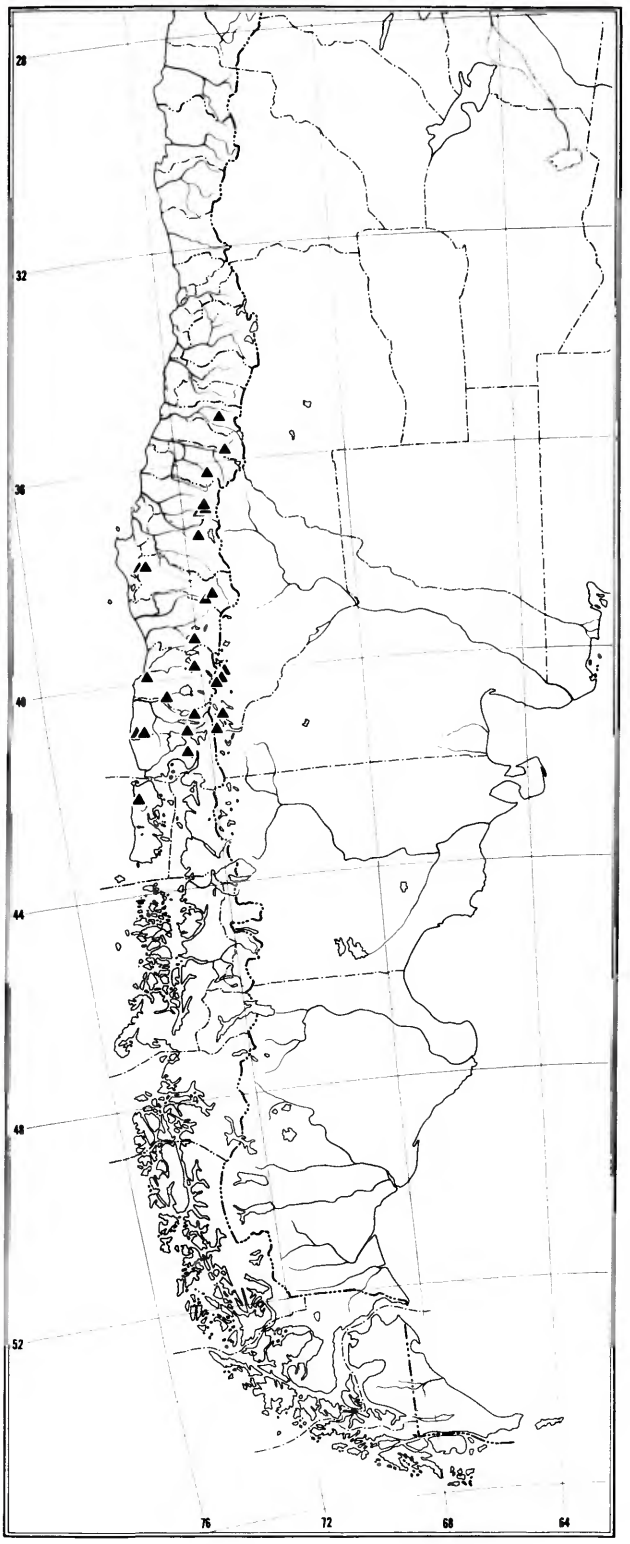
MAP 3.—Known distribution of *Smicridea (S.) decora* (Navás).



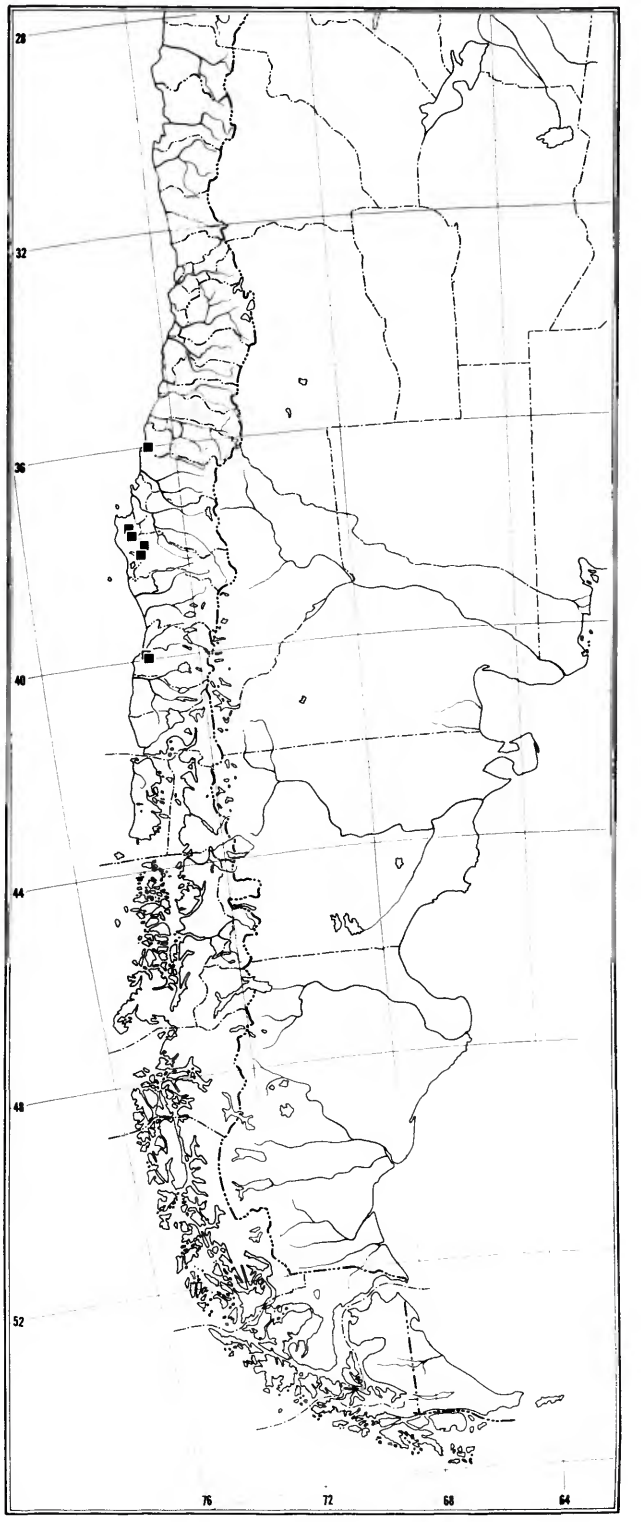
MAP 4.—Known distribution of *Smicridea (S.) manzanara*, new species.



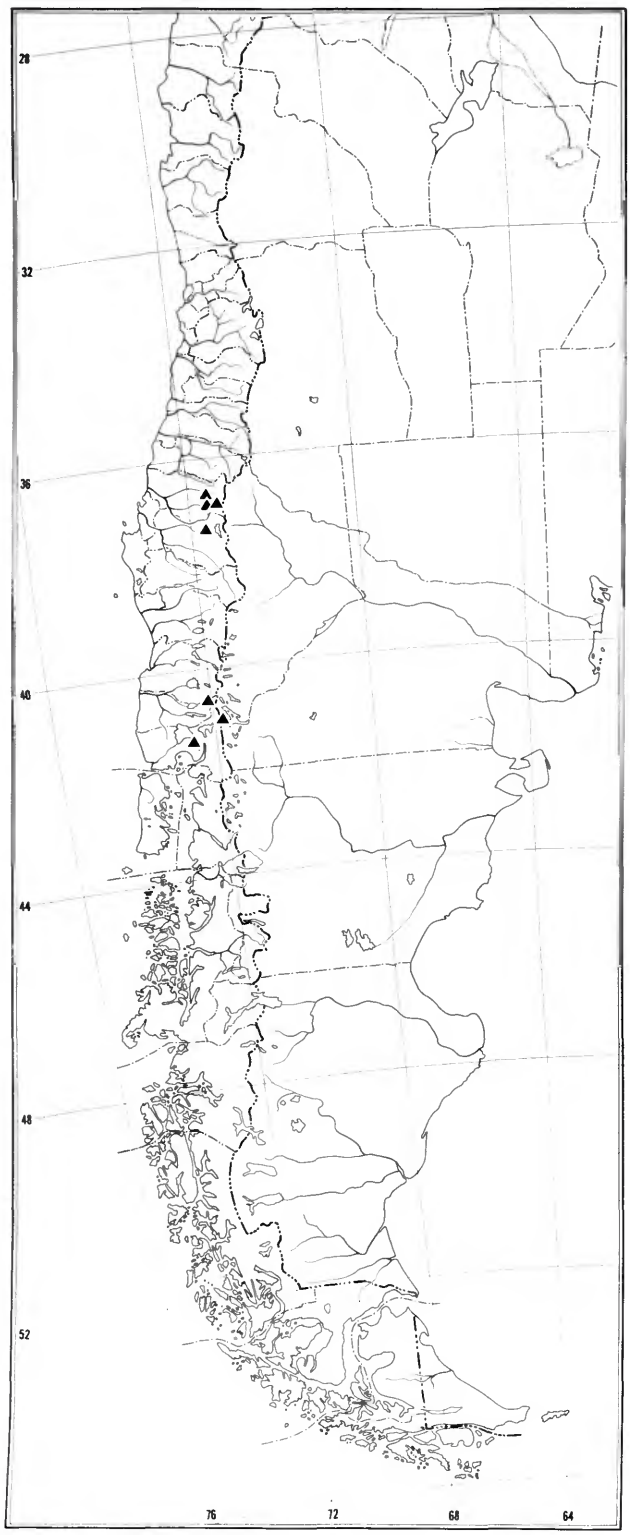
MAP 5.—Known distribution of *Smicridea (S.) penai*, new species.



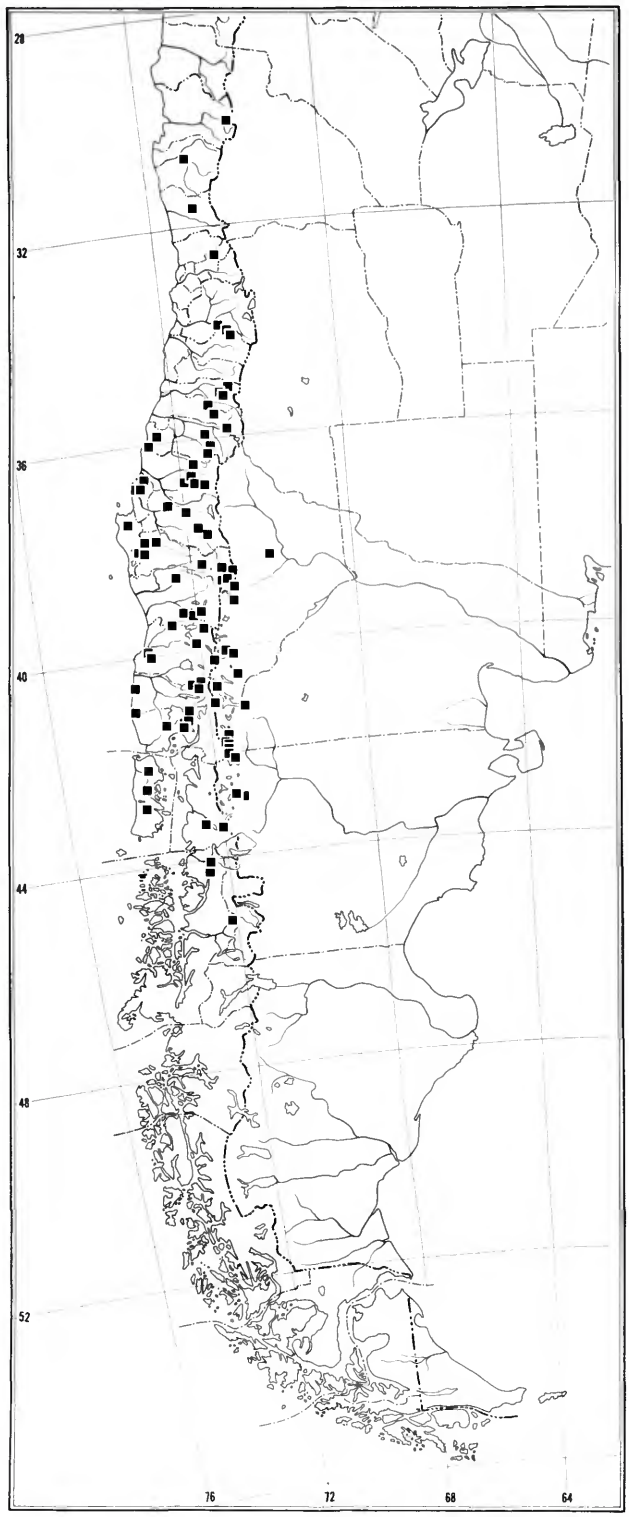
MAP 6.—Known distribution of *Smicridea (S.) pucara*, new species.



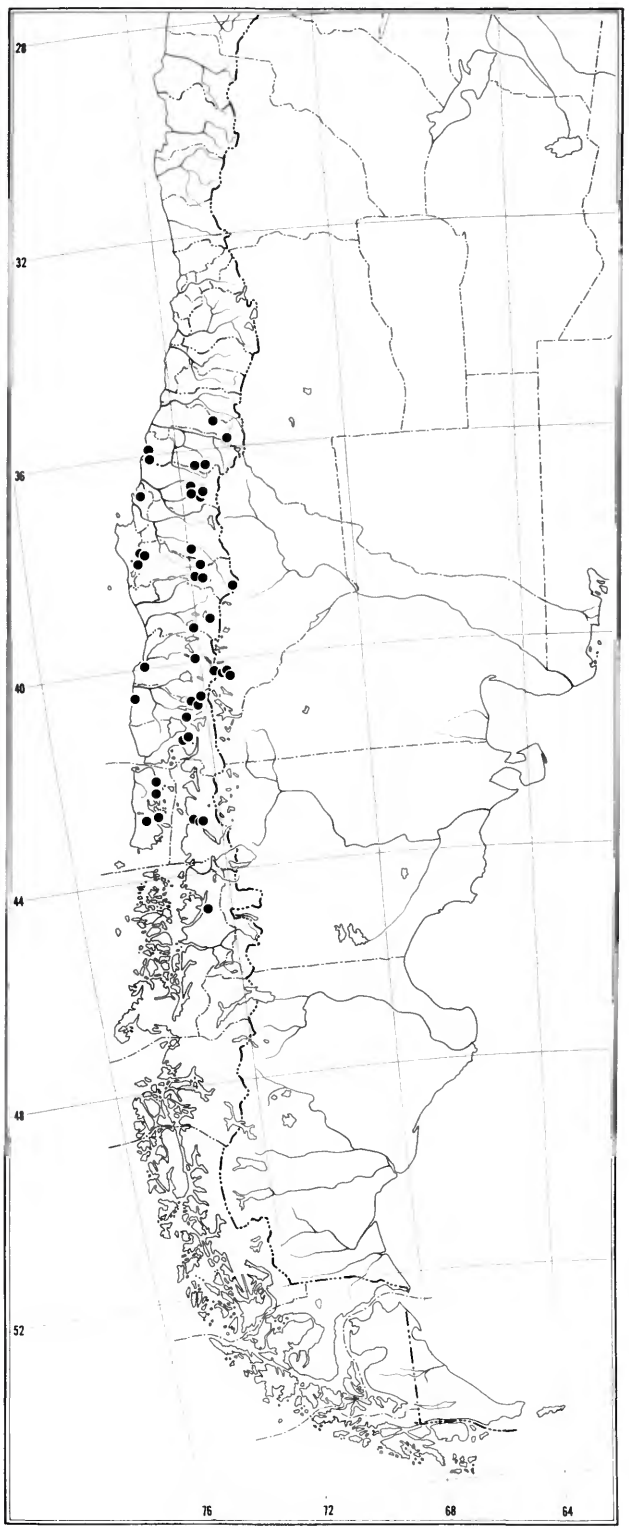
MAP 7.—Known distribution of *Smicridea (S.) tregala*, new species.



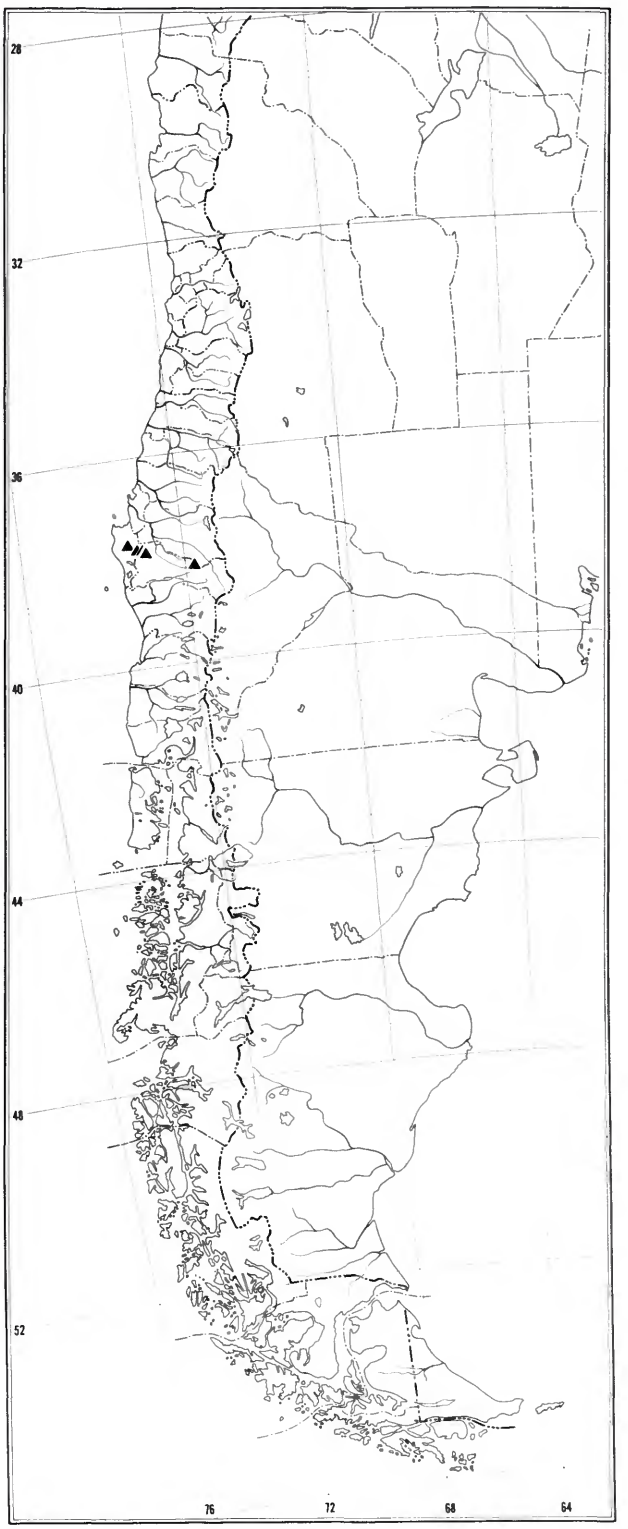
MAP 8.—Known distribution of *Smicridea (S.) anticura*, new species.



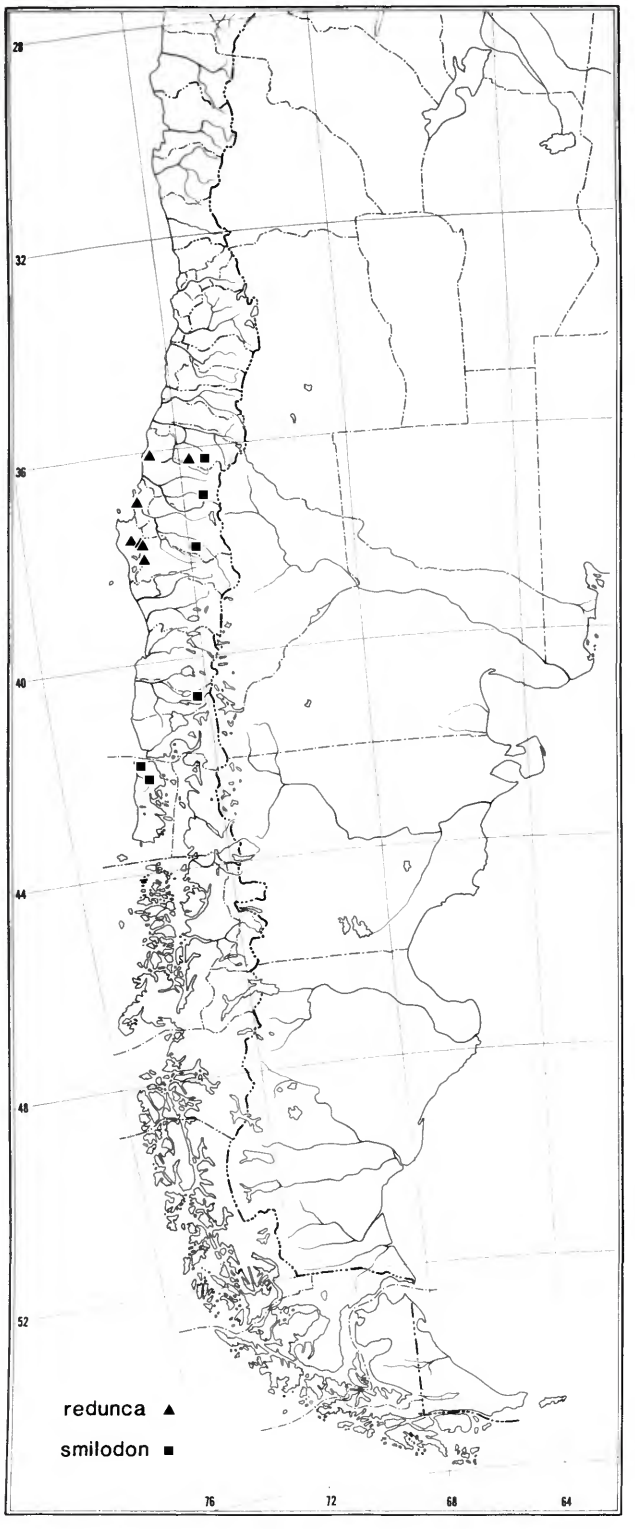
MAP 9.—Known distribution of *Smicridea (S.) frequens* (Navás).



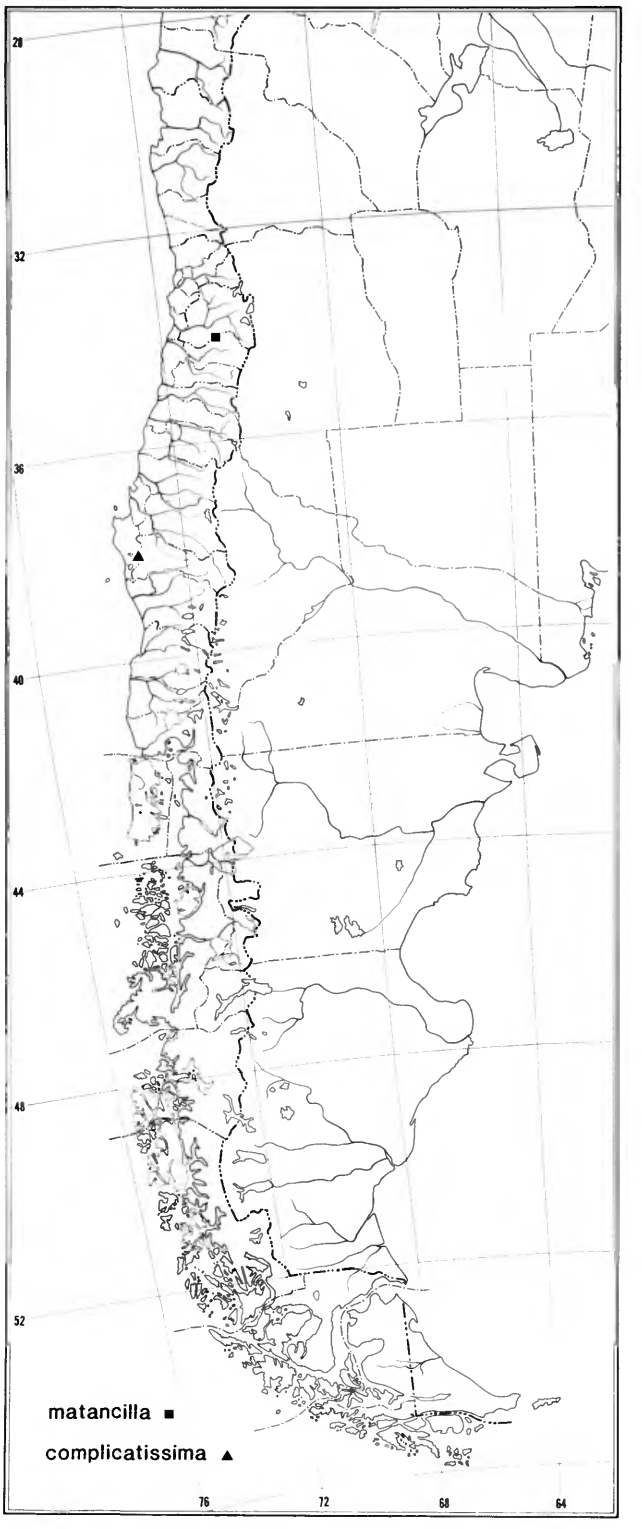
MAP 10.—Known distribution of *Smicridea (S.) mucronata*, new species.



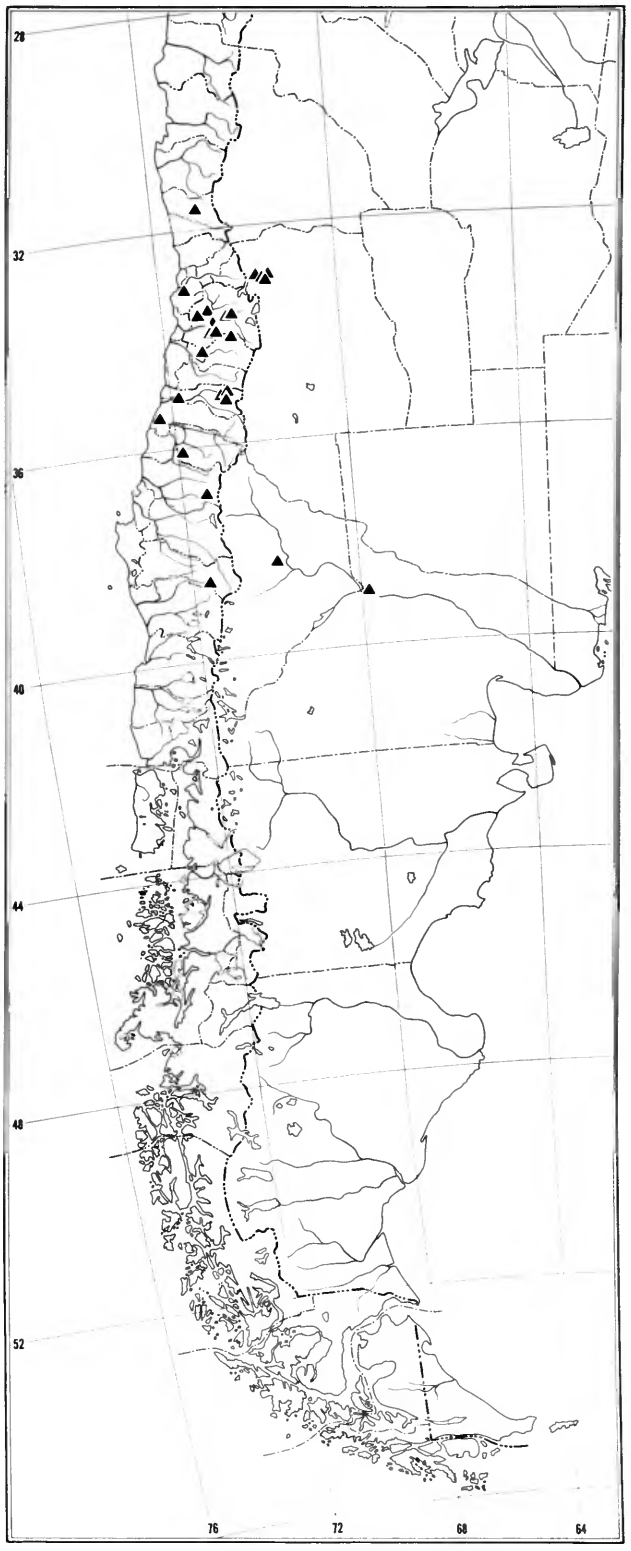
MAP 11.—Known distribution of *Smicridea (S.) turgida*, new species.



MAP 12.—Known distributions of *Smicridea (S.) redunca*, new species, and *S. (S.) smilodon*, new species.



MAP 13.—Known distributions of *Smicridea (S.) complicatissima*, new species, and *S. (S.) matancilla*, new species.



MAP 14.—Known distribution of *Smicridea (R.) murina* McLachlan.

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