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A REVISION OF THE *ALLECULIDAE (COLEOPTERA)* OF CHILE

J. M. Campbell*

ABSTRACT

The five genera and 13 species of *Alleculidae* from Chile are revised. Three new genera *(Lycula, Narsodes,* and *Phediodes)* are described. Ten new species are described in the genera *Allecula, Lycula, Narsodes,* and *Phediodes. Allecula fusca* (Solier) and *A. rufa* (Solier) are placed in synonymy with *A. pulchella* (Solier). *Eucaliga pallidicollis* Fairmaire is transferred to the genus *Allecula.* Lectotypes are designated for *Eucaliga (= Allecula) pallidicollis* Fairmaire, *Eucaliga sanguinicollis* Fairmaire and Germain, and *Eucaliga sanguinicollis flavicollis* Pic.

A key is presented for the determination of all the genera and species. All taxa are described and the habitus and male genitalia are illustrated for each species (if known). A brief zoogeographic analysis of the Chilean alleculids is presented.

The family *Alleculidae* is one of the least studied families of Coleoptera of South America. Of the twelve genera recorded from the continent, only *Lystronychus* has been examined in detail (Borchmann 1930). Approximately 300 species of South American alleculids have been described in numerous papers by Pic, Fairmaire, Borchmann, Mäklin, and others, but only a few of these can be recognized from their descriptions. Also, no more than 40% of the species actually occurring in South America have been named. This paper is the first in a series in which I hope to review the alleculid fauna of South America. Although this paper is restricted to the species of Chile, I have examined type material of over 90% of the South American species and at least superficially studied over 600 South American alleculid species, most of which are, as yet, undescribed.

The first Chilean alleculids were described by Solier (1851) who described *Allecula pulchella* (as *Dietopsis*) as well as two synonyms. Fairmaire and Germain (1861) described the genus *Eucaliga* to include the species *sanguinicollis* and later (1863) revised the alleculids of Chile. Philippi (1863) redescribed the latter species as *Upinella cruentata.* Fairmaire (1875) added *Allecula pallidicollis* (as *Eucaliga*) to the fauna. Pic (1929) described *flavicollis* as a color variety of *Eucaliga sanguinicollis.* These are the only papers treating the Alleculidae of the country.

In this paper I describe 3 new genera and 10 new species bringing the total number of alleculid taxa in Chile to 5 genera and 13 species. Four names are placed in synonymy.

The methods and terminology used in this revision are the same as those used in earlier revisions (Campbell 1966, 1971) and one of these papers should be consulted for a description of any unfamiliar terms. Measurements of antennal segments and the maxillary palpi were made at a magnification of 40X and expressed in units (1 unit = .04 mm).

The material used in the study was borrowed from a number of institutions and individuals. I would like to express my appreciation to the following persons for the loan of material in their care. The letters in parentheses are used in the species records to cite the institution from which the material was borrowed.

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*Biosystematics Research Institute Canada Department of Agriculture Ottawa, Canada.

SYSTEMATICS

The classification of the Alleculidae followed in this paper has been described in earlier papers (Campbell 1966, 1971). The five genera occurring in Chile are all representatives of the tribe Alleculini which can be readily distinguished from the Lystronychini (the only other tribe of alleculids found in South America) by having lobes on at least the penultimate segment of the tarsi.

This study is based on an examination of only 120 specimens although I have borrowed material from all sources known to me. Alleculids must be rare in Chile although one species, *Eucaliga sanguinicollis* is moderately abundant. If anyone has even a few specimens of the family from Chile that I have not examined, I would greatly appreciate the loan of the material so that I can verify any identifications and add the locality records to the distribution data for each species. I have examined two broken individuals labeled only "Chile" which are representatives of two undescribed species, but I have excluded these specimens from this study because of their poor condition.

KEY TO CHILEAN GENERA AND SPECIES OF *Alleculidae*

1. Wings fully developed; metasternum of normal length 2
— Wings shortened, no longer than elytra or completely obsolete; metasternum shortened 10
2. Antenna strongly compressed laterally; body triangular in shape (Fig. 10), distinctly compressed dorso-ventrally ..... 11. *Lycula chilensis* n. sp.
— Antenna not compressed laterally; body more elongate or elongate-oval in shape, not dorso-ventrally compressed 3
3. Antenna obconical, segment 5 less than twice as long as wide; elytral striae obsolete; elytra black with yellow to reddish-orange humeral markings ..... 10. *Eucaliga sanguinicollis* Fairmaire et Germain
— Antenna filiform to subfiliform, segment 5 at least 3 times longer than wide; elytral striae impressed; elytra without humeral markings-*Allecula* 4
4. Elytra glabrous 5
— Elytra distinctly pubescent throughout 7
5. Prothorax yellow, elytra black often with violet sheen ..... 6. *A. pallidicollis* (Fairmaire)
— Prothorax and elytra of same color, testaceous to piceous; elytra often with metallic sheen 6
6. Elytra dark brunneous to piceous; elytra (Fig. 1) narrow, strongly widened from base to apical fourth; length at least 11½ mm ..... 1. *A. chilensis* n. sp.
— Elytra testaceous to rufo-brunneous; elytra (Fig. 2) with sides subparallel for basal two-thirds; length less than 10½ mm ..... 2. *A. pulchella* (Solier)
7. Elytra with surface smooth, shining basally, becoming finely granulate, opaque on apical third ..... 7. *A. semiobscura* n. sp.
— Elytra with surface finely granulate, opaque throughout 8
8. Elytra with a transverse yellow band (Fig. 3) ..... 3. *A. penai* n. sp.
— Elytra uniform in color, without pale markings ... 9
9. Tibia distinctly bicolored; elytral setae semierect throughout ..... 5. *A. fragilicornis* n. sp.
— Tibia uniform in color; elytral setae semirecumbent, at least on basal half- ..... 4. *A. coquimbensis* n. sp.
10. Apterous; pronotal punctures coarse, elongate, contiguous; basal half of elytra smooth and shining, apical half with granulate microsculpture, opaque ... . 11. *Phediodes*
— Brachypterous; pronotal punctures finer, circular, distinctly separated; elytra equally granulate and shining throughout ..... 12. *Narsodes*
11. Elytra appearing glabrous except under high magnification; interstices impunctate ... 8. *P. apterus* n. sp.
— Elytra distinctly pubescent throughout; interstices distinctly punctate ..... 9. *P. pubescens* n. sp.
12. Eighth sternal lobes of male (Fig. 21) distinctly curved towards midline; lobes appearing broad laterally; apical piece of male genitalia (Fig. 32) long, narrowly triangular ..... 12. *N. brachypterus* n. sp.
— Eighth sternal lobes of male (Fig. 22) straight; lobes appearing narrow laterally; apical piece of male genitalia (Fig. 33) short, broadly triangular .... 13. *N. brunneus* n. sp.

Allecula Fabricius

Allecula Fabricius, 1801, p. 21 (see Campbell, 1971, p. 64 for additional references).

Dieptosis Solier, 1835, p. 229; Solier, 1851, p. 248; Fairmaire and Germain, 1863, p. 225.

Upinella Mulsant, 1856, p. 17; Jacquelin du Val, 1863, p. 356; Seidlitz, 1896, p. 35.

Body narrowly elongate-oval, widest near base or at middle of elytra (except *chilensis).* Pronotum distinctly narrower than elytra at base. Color variable, usually testaceous to piceous, ocassionally metallic or with transverse markings on elytra; surface varying from smooth and shining to densely punctate-granulate, opaque; either glabrous or pubescent.

Antenna elongate and filiform to subfiliform; third segment more than twice (usually at least 4 times) as long as second segment; segments 4-10 each subequal in length or gradually becoming shorter approaching apex, each at least twice (often 4 times) longer than wide. Apical segment of maxillary palpus very broadly triangular, with outer side varying from slightly shorter to slightly longer than apical side. Eyes variable in size, transverse in position; moderately to deeply emarginate anteriorly; broadly to moderately narrowly convex laterally, either continuous with sides of temples or extending laterally slightly beyond sides of temples.

Pronotum usually varying from about two-thirds as long as wide to nearly quadrate. Surface

varying from impunctate to densely, rugosely punctate with punctures contiguous. Apex truncate, narrower than base; sides usually narrowed from base, occasionally subparallel or slightly constricted in basal half. Disc usually with a pair of distinct basal foveae. Scutellum broadly triangular.

Elytra elongate; sides slightly curved, usually parallel or slightly widened from base to middle, then rounded to apex (sides much more widened towards apex in *chilensis).* Elytral striae (in Chilean species) shallowly to deeply impressed, bearing moderately shallowly impressed, non-setate strial punctures; strial interstices variable, flat to slightly convex; in Chilean species either glabrous or very finely and sparsely setate. Elytral epipleura extending to apex of elytra. Wings fully developed.

Prosternum prolonged anteriad of procoxae, viewed laterally either horizontal or slightly oblique in position; prosternal process convex, with apex usually declivous behind procoxae (apex horizontal in some species from northern South America and Brazil). Mesosternum with a broad, moderately deep "U", "V", or crescent shaped median impression. Metasternum of normal length or very elongate *(chilensis).* Intercoxal process of basal abdominal sternite narrowly triangular.

Pro- and mesotarsi with at least third and fourth segments and metatarsus with penultimate segment distinctly and broadly lobed ventrally.

Male. Eighth and ninth sterna distinctly bilobed. Eighth sternal lobes not highly modified in Chilean species. Apical piece of genitalia triangular, either with or without dentiform setae. Femora not sexually modified in Chilean species; tibiae either unmodified or slightly swollen internally. Basal two tarsal segments of pro- and mesotarsi either lobed or simple.

Female. Similar to male except usually with smaller eyes and fewer teeth on tarsal claws. Basal two segments of pro- and mesotarsi not lobed.

Type species. The type species of *Allecula* Fabricius is *A. morio* Fabricius by subsequent designation (Duponchel 1841, p. 243); the type species of *Dietopsis* Solier is *Allecula (Dieptopsis) solieri* Lacordaire by subsequent monotypy, (Lacordaire 1840, p. 243); and the type species of *Upinella* Mulsant is *Allecula aterrima* Küster (by monotypy).

Remarks. Allecula, as currently constituted, is the largest and certainly the most widely distributed genus of Alleculidae. The species now placed in this genus are extremely heterogeneous and almost certainly polyphyletic. The genus, when revised for a larger faunal region, will undoubtedly be divided into many genera.

Previous authors have recognized the subgenera *Dietopsis* and *Upinella* and distinguished them from the nominate subgenus primarily by differences in the length of the basal segment of the anterior tarsus, the number of teeth on the tarsal claws, and the punctation of the elytral interstices. As there is a great deal of variability in all of these characters, I have considered the two subgenera as synonyms of *Allecula.*

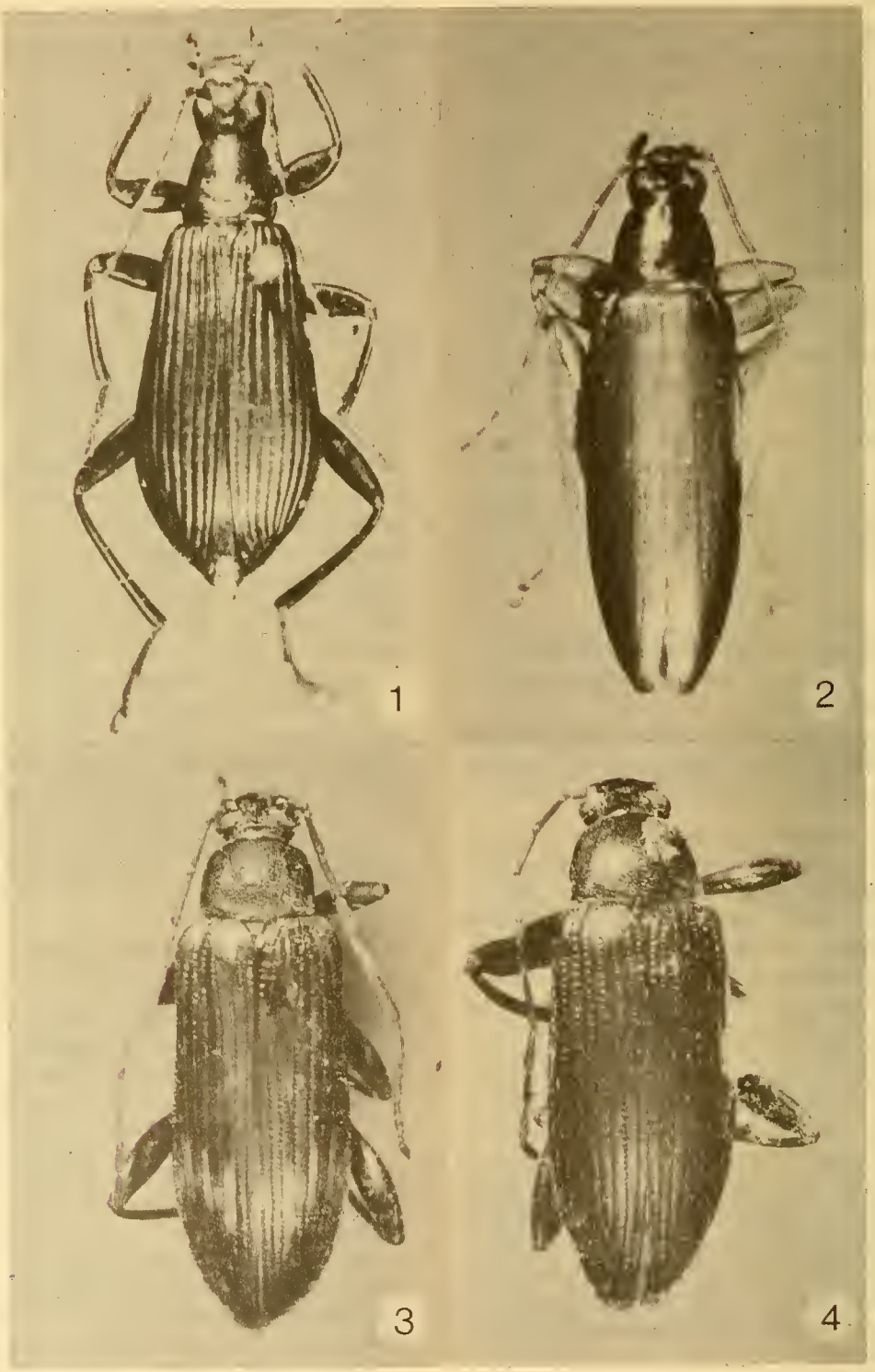
The major characters to distinguish species of this genus from those of other South American genera are the elongate and filiform to subfiliform antenna, the broadly triangular apical segment of the maxillary palpus, the horizontal or slightly oblique prosternum, the fully developed wings, and the presence of distinct membranous lobes on at least the third and fourth segments of the anterior and middle tarsi and the penultimate segment of the posterior tarsi.

Allecula, as now defined, contains over 400 species from all major faunal regions. Seven species are known from Chile. These species are extremely divergent in their appearance, ranging from the very elongate and narrow *chilensis* to the moderately broadly elongate-oval *semiobscura.* However, as previously mentioned, I am unable to exclude any of these from *Allecula* although they are almost certainly polyphyletic in origin. Species of *Allecula* are widely distributed in Chile, ranging from the province of Coquimbo in the north to the province of Valdivia in the south.

1. **Allecula chilensis** new species
(Figs. 1, 12, 23)

Body (Fig. 1) very elongate; head narrow, sides of pronotum and elytra continuous, distinctly becoming wider from apex of pronotum to apical fourth of elytra. Color dark brunneous to piceous, tarsi and antennae rufo-brunneous; surface of head and pronotum usually with faint metallic green sheen. Body glabrous dorsally except for labrum and anterior margin of clypeus. Length 11.9-15.2 mm.

Head elongate, distinctly longer than wide; vertex moderately finely and sparsely punctate. Antenna long, narrow, filiform with third segment longest, then following segments rapidly becoming shorter (Table 1); third segment more than five times longer than wide (l/w = 32/6). Apical segment of maxillary palpus elongate-triangular; ratio of lengths of outer, apical and



Figs. 1-4. Dorsal view of *Allecula:* 1, *chilensis;* 2, *pulchella;* 3, *penai;* 4, *coquimbensis.*

Table 1

Relative lengths* of antennal segments of Chilean Alleculidae

Species	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
A. chilensis	11	5	32	30	23	23	21	18	15	15	15
A. pulchella	10	6	28	35	29	28	28	25	22	19	20
A. penai	13	6	30	34	28	28	27	26	24	21	22
A. coquimbensis	12	6	30	31	28	31	31	30	25	24	24
A. fragilicornis	14	8	30	33	30	33	31	31	28	25	26
A. pallidicollis	8	5	20	22	18	16	16	16	13	12	14
A. semiobscura	12	6	24	24	21	24	24	23	21	20	21
P. apterus	11	5	26	26	23	26	25	24	22	20	20
E. sanguinicollis	8	4	15	18	14	14	12	12	11	11	12
L. chilensis	8	4	12	18	17	16	16	16	14	13	14
N. brachypterus	9	5	19	22	18	19	19	18	17	15	16
N. brunneus	9	6	18	23	18	19	18	18	16	15	16

*1 unit equals .04 mm.

Table 2

Ocular and Pronotal Indices of Chilean Alleculidae

	Ocular Index						*Pronotal Index*		
	♂			♀					
Species	*N*	$\overline{X}$	*R*	*N*	$\overline{X}$	*R*	*N*	$\overline{X}$	*R*
A. chilensis	3	41.7	40-43	8	45.9	41-48	11	89.3	84-95
A. pulchella	13	34.3	31-40	8	40.4	38-43	20	87.6	83-93
A. penai	3	30.3	28-32	—	—	—	3	79.0	78-80
A. coquimbensis	3	43.7	42-46	—	—	—	3	74.7	73-77
A. fragilicornis	1	36		—	—	—	1	72	
A. pallidicollis	8	38.8	36-42	2	45.5	45-46	10	80.5	75-84
A. semiobscura	—	—	—	2	56.5	56-57	2	74.5	72-77
P. apterus	4	50.3	47-53	4	54.8	54-58	8	74.9	72-80
P. pubescens	—	—	—	1	58		1	76	
E. sanguinicollis	11	38.5	33-43	10	43.5	40-47	21	67.9	63-72
L. chilensis	1	19		—	—	—	1	68	
N. brachypterus	3	42.0	41-43	5	42.4	41-45	8	85.4	81-87
N. brunneus	1	44		—	—	—	1	81	

basal sides as follows: 24-26-13. Eyes moderately deeply emarginate anteriorly; very broadly rounded laterally, sides almost continuous with very broadly rounded sides of temples.

Pronotum more elongate than usual for *Allecula*, only slightly wider than long (Table 2). Surface finely, sparsely, evenly punctate; usually somewhat rugosely sculptured, often broadly and shallowly impressed along midline. Sides gradually narrowed from base to apex, often slightly sinuate around basal fourth. Disc without basal and median foveae; often with a dense cluster of fine punctures where basal foveae should be.

Elytra elongate, narrow at base, becoming much wider to apical fourth, then abruptly curved to acutely rounded apices; approximately 4 times longer than pronotum and 2 times longer than greatest width. Elytral striae broad, deeply and evenly impressed, becoming obsolete at apex; strial punctures small, closely placed and almost unimpressed within striae. Strial interstices slightly convex; finely, moderately densely, shallowly punctate.

Prosternum elongate, slightly concave if viewed laterally, somewhat oblique in position; surface rugose, impunctate; prosternal spine gradually convex and declivous behind procoxae. Proepisternum rugose, impunctate. Mesosternum with a broad, moderately shallow, V-shaped impression; impression extending posteriad only to level of anterior margin of mesocoxae. Metasternum impunctate, vaguely rugose. Abdomen finely, very sparsely, regularly punctate.

Male. Eyes small, transverse (Table 2). Femora and tibia not sexually modified. Anterior and intermediate tarsi each with basal four segments lobed; ventral surface of basal two segments strongly concave so that lateral and especially apical margins appear as membranous lobes. Anterior tarsal claws each with 7-9 teeth. Eighth sternal lobes (Fig. 12) moderately broad, inner sides concave, lobes only slightly bent medially; dorsal and ventral margins of lobes each with a row of extremely fine dentiform setae; viewed laterally, lobes moderately broad, straight, with apices broadly rounded. Ninth sternal lobes much smaller than those of eighth sternum, extending apically only to level of middle of eighth sternal lobes; apices of lobes narrowly rounded. Apical piece of genitalia (Fig. 23) triangular; ratio of length of apical piece to basal piece 1:2.3; sides straight, evenly converging from base to narrowly rounded apex; viewed laterally, apical piece straight except that apical fourth is slightly deflexed; dorsal surface covered with scattered dentiform setae.

Female. Eyes usually slightly smaller than those of male (Table 2). Anterior and intermediate tarsi each with basal two segments lacking membranous lobes; anterior tarsal claws each with 6 or 7 teeth.

Types. Holotype, male, with labels as follows: Fundo Malcho, Parral, XI-56/L. E. Peña Colector/HOLOTYPE ♂ Allecula chilensis J. M. Campbell. This specimen is in the collection of the Museo Nacional de Historia Natural de Santiago, Chile.

Paratypes, 3 males and 8 females in the British Museum (Natural History), Canadian National Collection, Ottawa (CNC N° 13494); the California Academy of Sciences, San Francisco; the Museum of Comparative Zoology at Harvard University, Cambridge; and the Museo Nacional de Historia Natural de Santiago, Chile.

Two specimens from the MNHNS have been excluded from the paratype series since they are severely damaged and lack labels.

Distribution and Records. Known from the province of Curicó south to Malleco.

Country label only (BMNH, MNHNS, MCZ) 5. *Curicó:* El Coigual, Cord. Curicó, December 1954, M. Rivera (MNHNS) 1. *Linares:* Fundo Malcho, Parral, November 1956 (MNHNS) 2. *Malleco:* Cerros de Nahuelbuta, Angol, Quinteros, 2 December 1950, D. S. Bullock (CAS) 1. *Ñuble:* Fdo. Malcho, Cord. Parral, 11-20 November 1964, M. Rivera (MNHNS) 1; Los Pellines (Recinto), 2 December 1951, L. E. Peña (LEP) 1; Recinto, Cord. Nuble, November 1953, L. Rivera (CNC) 1.

Remarks. Allecula chilensis may be readily distinguished from all other South American Alleculidae by its distinctive, elongate, triangular shape. It is the only species that is long, narrow and distinctly and evenly widened from the head to the apical fourth of the elytra. The greatest width across the elytra is 2 times greater than the width across the middle of the pronotum.

Because of the very distinctive body shape and the somewhat longer apical segment of the maxillary palpus, the species should possibly be placed in a new genus. However, in most respects such as punctation, the presence of a metallic sheen, the shape of the prosternum, and the structure of the male terminalia and anterior tarsus the species seems perhaps most closely related to *A. pulchella.*

2. **Allecula pulchella** (Solier)
(Figs. 2, 13, 24)

Dietopsis pulchella Solier, 1851, p. 248, pl. 20, figs. 12a, b [type locality, Chile northern provinces]; Fairmaire and Germain, 1863, p. 225.

Dietopsis fusca Solier 1851, p. 249, pl. 20, figs. 12c, d, e [type locality, Coquimbo, Chile]; Fairmaire and Germain, 1863, p. 225. NEW SYNONYMY.

Dietopsis rufa Solier, 1851, p. 249, pl. 20, figs. 12f, g [type locality, Coquimbo, Chile]; Fairmaire and Germain, 1863, p. 225. NEW SYNONYMY.

Allecula (Dietopsis) pulchella: Borchmann, 1910, p. 13.

Allecula (Dietopsis) fusca: Borchmann, 1910, p. 11.

Allecula (Dietopsis) rufa: Borchmann, 1910, p. 13.

Body (Fig. 2) narrowly elongate, widest near middle of elytra. Color variable, ranging from

uniformly testaceous to testaceous with head and pronotum piceous and elytra rufo-brunneous; surface with weak to strong metallic green sheen. Body glabrous except for labrum, clypeus, metasternum, and apex of abdomen. Length 8.4-10.2 mm.

Vertex moderately coarsely, sparsely, irregularly punctate. Antenna long, narrow, filiform with fourth segment longest, then following segments becoming gradually shorter (Table 1); third segment more than four times longer than wide (1/w = 28/6). Apical segment of maxillary palpus broadly triangular; ratio of lengths of outer, apical, and basal sides as follows: 18-22-12. Eyes moderately deeply emarginate anteriorly; broadly convex, sides continuous with sides of temples.

Pronotum more elongate than usual, only slightly wider than long (Table 2). Surface coarsely and moderately sparsely, irregularly punctate; usually somewhat rugosely sculptured, especially transversely across middle of disc. Sides subparallel or slightly narrowed from base in basal half then abruptly narrowed to apex. Disc slightly flattened medially near base and apex; with a very small fovea near middle of each side of basal margin.

Elytra elongate, narrow, approximately 5 times longer than pronotum and 2 ½ times longer than wide; sides subparallel for basal two-thirds then evenly narrowed to acutely rounded apices. Elytral striae narrow, moderately impressed basally, becoming more shallowly impressed apically; strial punctures small, closely placed and almost unimpressed within striae. Strial interstices slightly convex; coarsely, moderately sparsely, shallowly punctate.

Prosternum elongate, slightly concave if viewed laterally, somewhat oblique in position; surface with small, inconspicuous rugosities; prosternal spine convex, abruptly declivous behind procoxae. Proepisternum almost impunctate, with a few scattered punctures near coxae. Mesosternum with a broad, moderately deep, crescent shaped impression; impression extending posterial only to level of anterior margin of mesocoxae. Metasternum finely, moderately densely punctate medially, becoming impunctate approaching sides. Abdomen finely, moderately sparsely, regularly punctate.

Male. Eyes moderately small, transverse (Table 2). Femora and tibiae not sexually modified. Anterior and intermediate tarsi each with basal four segments lobed; ventral surface of basal two segments strongly concave so that lateral and especially apical margins appear as membranous lobes. Anterior tarsal claws each with 6 or 7 teeth. Eighth sternal lobes (Fig. 13) rather broad, inner sides deeply concave, apices slightly curved medially; ventral edges of apices with scattered, very small, dentiform setae; viewed laterally, lobes very broad, not curved ventrad. Ninth sternal lobes much smaller that those of eighth sternum, extending apically only to level of middle of eighth sternal lobes; apices of lobes narrowly rounded. Apical piece of genitalia (Fig. 24) triangular; ratio of length of apical piece to basal piece 1:1.9; sides almost straight, evenly converging from base to narrowly rounded apex; viewed laterally, apical piece straight; dorsal and ventral surfaces covered with scattered, short, dentiform setae.

Female. Eyes slightly smaller than those of male (Table 2). Anterior and intermediate tarsi each with basal two segments lacking membranous ventral lobes; anterior tarsal claws each with 5 or 6 teeth.

Types. Allecula pulchella. Holotype, female, with labels as follows: pulchella [green]/Dietopsis pulchella Sol., Chile, [illegible]/Type/Dietopsis pulchella/Dietopsis pulchella Sol. Type [illegible]. The specimen is in the Marseul Collection of the Paris Museum.

Allecula fusca. The type material for this species is presumed lost. I was unable to locate any specimens in the Marseul Collection in Paris that agreed with the original description. One specimen without a head labeled: Chili/Dietopsis fusca Sol. in Gay p. 249, 12 c, d, e, Chile is in the Marseul Collection but it is an undescribed species of *Allecula* that is much smaller and very dissimilar in all respects from the species described as *fusca.*

Allecula rufa. The type material for this species is presumed lost. There are no specimens under this name in the Marseul Collection in Paris.

Distribution and Records. Known from coastal areas in the Cerro de Nahuelbuta south to Valdivia.

Country label only (BMNH, HNHM, IRSN, MCZ, MNHNS) 13. *Arauco:* Caramávida, Nahuelbuta (W.), 750 m., 25-31 December 1953, L. E. Peña (LEP) 1; Cerro de Nahuelbuta, Angol, 600 m. 2 December 1950, D. S. Bullock (CAS) 1. *Concepción:* Concepción, October (CAS) 2. *Ñuble:* Nogueche, Costa Ñuble, 15-17 December 1958, L. E. Peña (LEP) 3. *Valdivia:* In environs of Valdivia, along road leading to Caymapu, 25 October 1965, Nr. P-B. 58, Balogh et Mahunka (HNHM) 1; Valdivia, October 1894 (MHNS) 1.

Remarks. Allecula pulchella is extremely variable with respect to color and the development of a green to bronze metallic sheen. Solier (1851) described three species, each having a different color or metallic sheen. Although the type material of two of these three species is lost, there is little doubt that Solier had only one species at hand.

This species may be easily distinguished from *A. chilensis* by its smaller size and more parallel elytra and from *A. penai* by the absence of a transverse yellow elytral band and usually by the presence of a metallic green sheen.

3. **Allecula penai** new species
(Figs. 3, 14, 25)

Body (Fig. 3) narrowly elongate, widest near middle of elytra. Color dark reddish-brown; elytra at apical third with an irregular, transverse yellow band interrupted by suture. Body finely, moderately densely pubescent; pubescence semi-recumbent, yellow; surface with fine, dense microsculpture, opaque. Length 7.9-8.2 mm.

Vertex coarsely, contiguously punctate. Antenna long, narrow, filiform with fourth segment longest, then following segments becoming gradually shorter (Table 1); third segment five times longer than wide (1/w = 30/6). Apical segment of maxillary palpus broadly triangular; ratio of lengths of outer, apical, and basal sides as follows: 15-14-10. Eyes deeply emarginate anteriorly; sides moderately narrowly rounded, extending laterally beyond sides of temples.

Pronotum moderately transverse (Table 2). Surface very coarsely, contiguously punctate over most of disc, punctures elongate; punctures becoming circular, slightly smaller and sparser on sides of disc. Sides subparallel or slightly curved in basal three-fourths; apex truncate. Disc slightly and evenly convex; basal foveae very small.

Elytra elongate, narrow; approximately 4½ times longer than pronotum and 2½ times longer than wide; sides subparallel for basal two-thirds then evenly narrowed to acutely rounded apices. Elytral striae narrow, moderately shallowly impressed; striae slightly more deeply impressed basally than apically; strial punctures small, closely placed and shallowly impressed within striae. Strial interstices flat; setate punctures very small and shallowly impressed, almost obscured by granulate microsculpture.

Prosternum elongate, flat if viewed laterally; surface coarsely, contiguously, rugosely punctate; prosternal spine convex, abruptly declivous behind procoxae. Proepisternum coarsely punctate near prosternum and basally, impunctate laterally. Mesosternum transversely depressed before mesocoxae. Metasternum moderately finely, densely punctate medially, becoming more coarsely punctate laterally. Abdomen finely, moderately densely, uniformly punctate.

Male. Eyes moderately small, transverse (Table 2). Femora and tibiae not sexually modified. Anterior and intermediate tarsi each with only third and fourth segments lobed; posterior tarsus with only penultimate segment lobed. Anterior tarsal claws each with 8 or 9 teeth. Eighth sternal lobes (Fig. 14) moderately broad, inner sides slightly concave, apices evenly convex; lacking distinct dentiform setae; viewed laterally, lobes moderately broad, straight, with apices evenly rounded. Ninth sternal lobes small, extending apically only to level of middle of eighth sternal lobes; apices of lobes narrowly rounded. Apical piece of genitalia (Fig. 25) triangular; ratio of length of apical piece to basal piece 1:2.5; sides slightly sinuate, converging from base to narrowly rounded apex; viewed laterally, apical piece straight; without obvious dentiform setae.

Female. Unknown.

Types. Holotype, male, with labels as follows: PELLUHUE, Costa Maule, 2-Dec-53, 600 m, Coll: L. E. Peña/HOLOTYPE ♂ Allecula penai 1974, J. M. Campbell. The specimen is in the collection of the Museo Nacional de Historia Natural de Santiago, Chile.

One male paratype with the same data as the holotype is in the Canadian National Collection, Ottawa (CNC N° 13495). A second male paratype labeled Alto Caicupil, Nahuelbuta (Occ), 1250 m. 7-8-I-54, Coll. L. E. Peña is in the collection of Mr. Peña.

Distribution and Records. Known from coastal ranges in the provinces of Maule and Arauco.

Arauco: Alto Caicupil, Nahuelbuta (Occ), 1250 m., 7-8 January 1954, L. E. Peña (LEP) 1. *Maule:* Pelluhue, Costa Maule, 2 December 1953, 600 m., L. E. Peña (CNC, MNHNS) 2.

Remarks. Allecula penai may be easily distinguished from all other Chilean Alleculidae by its dark reddish-brown color with a transverse yellow band across the elytra. This species is undoubtedly related to a large group of South American *Allecula* which have similar elytral markings. Of the described species of this group, *penai* is most similar to *A. inlateralis* Pic from Brasil. The latter differs in being smaller, with a lighter red color, in having the transverse

elytral band bordered by black, and in having the pronotum more sparsely punctate.

Of all the Chilean species of *Alleculids* this is the only one with obvious affinities to other South American species of the family.

4. Allecula coquimbensis new species (Figs. 4, 15, 26)

Body (Fig. 4) narrowly elongate, widest across middle of elytra. Color brunneous; tibiae, tarsi, and antennae usually slightly paler. Body finely, moderately densely pubescent; pubescence yellow, recumbent on head and pronotum, semirecumbent to semierect on elytra; surface of elytra with fine, dense microsculpture, opaque; surface of head and pronotum smooth and shining. Length 7.7-9.3 mm.

Vertex moderately coarsely, densely punctate with median impunctate area; clypeus somewhat more sparsely punctate. Antenna long, narrow, filiform; segments 3, 4, 6-8 similar in length, segment 5 shorter, segments 9-11 distinctly shorter (Table 1); third segment 5 times longer than wide (1/w = 30/6); tenth segment approximately 3½ times longer than wide (1/w = =24/7). Apical segment of maxillary palpus broadly triangular; ratio of lengths of outer, apical, and basal sides as follows: 17-17-12. Eyes deeply emarginate anteriorly; sides moderately narrowly rounded, extending laterally beyond sides of temples.

Pronotum moderately transverse (Table 2). Surface coarsely, densely punctate over middle of disc with punctures very narrowly separated; laterally punctures more shallowly impressed, slightly sparser with surface granulate, opaque. Sides widest at base, gradually narrowed, sinuate for basal two-thirds then curved to apex; apex truncate. Disc slightly and evenly convex both transversely and longitudinally; basal fovea small, shallowly impressed.

Elytra elongate, narrow; approximately 4½ times longer than pronotum and 2½ times longer than wide; sides very gradually widened from base for basal half, then evenly narrowed to acutely rounded apices. Elytral striae narrow, shallowly impressed, becoming slightly more deeply impressed apically; strial punctures coarse, circular, deeply impressed on basal half, becoming elongate, fine, and shallowly impressed on apical half. Strial interstices very slightly convex; very sparsely, finely punctate on apical half, punctures obsolete in basal half.

Prosternum elongate; flat and slightly oblique in position when viewed laterally; surface of prosternum and proepisternum densely, coarsely, rugosely punctate; prosternal spine convex, abruptly declivous behind procoxae. Mesosternum with moderately deep, crescent shaped, median impression; impression not extending posteriad beyond level of anterior margin of mesocoxae. Metasternum finely, sparsely punctate medially, punctures becoming much coarser and slightly denser approaching sides. Abdomen finely and moderately sparsely punctate; surface of segments smooth and shining medially, becoming coarsely granulate and opaque laterally.

Male. Eyes small, transverse (Table 2). Outer margins of anterior tibiae and to a lesser degree intermediate tibia finely carinate; internal margins of anterior tibiae slightly swollen near middle; femora not sexually modified. Anterior tarsus with ventral surface of basal two segments strongly concave so that lateral and especially apical margins appear as membranous lobes; intermediate tarsus with only third and fourth segments lobed. Anterior tarsal claws each with 11-13 teeth. Eighth sternal lobes (Fig. 15) broad, inner sides strongly concave, apices narrowly rounded, evenly curved towards midline, dentiform setae minute, visible only under high magnification (160X); viewed laterally lobes moderately broad, straight, with apices broadly rounded. Ninth sternal lobes small, extending apically only to level of middle of eighth sternal lobes; apices of lobes moderately broadly rounded. Apical piece of genitalia (Fig. 26) triangular; ratio of length of apical piece to basal piece 1:3.3; sides nearly straight, converging from base to narrowly rounded apex; viewed laterally, apical piece curved ventrad at apical third, apex slightly widened; moderately densely covered with coarse dentiform setae.

Female. See remarks.

Types. Holotype, male, with labels as follows: CHILE, 50 km. S. of La Serena, XII-1-1950/ leg. Ross & Michelbacher/HOLOTYPE ♂ Allecula coquimbensis n. sp. 1974, J. M. Campbell. The specimen is in the collection of the California Academy of Sciences, San Francisco.

Two paratypes, both males, with same data as the holotype are in the Canadian National Collection, Ottawa (CNC N° 13496) and the California Academy of Sciences.

Distribution and Records. This species has the most northern distribution of the family in Chile.

Coquimbo: 50 km. S. La Serena, 1 December 1950, Ross & Michelbacher (CAS, CNC) 3.

Remarks. I have seen one female which I have provisionally assigned to this species, but have

excluded from the paratype series. This specimen has the same label data as the three males, but it is quite different in size and general appearance. The female is more broadly oval; the color is darker, almost piceous; the length is 11.0 mm; the vertex is more densely punctate and lacks a median impunctate area; the ocular index is larger, 53 (43.7 in males); the pronotal index is slightly smaller, 68; (74.7 in males); the elytra are only 4 times longer than the pronotum and less than 2 times as long as wide; and the basal two segments of the anterior tarsus are not lobed and the tarsal claws each have 8 teeth.

Additional material of this species is needed to clarify the status of this female. Although I have provisionally assigned it to *A. coquimbensis* it could be the female of a related species. If, in fact, it is *coquimbensis,* the female of this species shows a much greater degree of sexual dimorphism than usual for the family or else this individual represents an aberrant example of the species.

Allecula coquimbensis has the same general size and shape as *A. penai,* but differs in a number of respects such as the lack of elytral markings, the smaller eyes, the unevenly impressed elytral striae, the sexually modified male anterior tibiae, and the dissimilar shape and structure of the male terminalia.

5. **Allecula fragilicornis** new species
(Figs. 5, 16, 27)

Body (Fig. 5) moderately narrowly elongate, widest just behind middle of elytra. Color brunneous; tibiae bicolored, yellow medially, gradually changing to brunneous on apical third and near base. Body finely, moderately densely pubescent; pubescence yellow, recumbent on head and pronotum, erect on elytra; surface with fine, dense microsculpture, opaque. Length 9.5 mm.

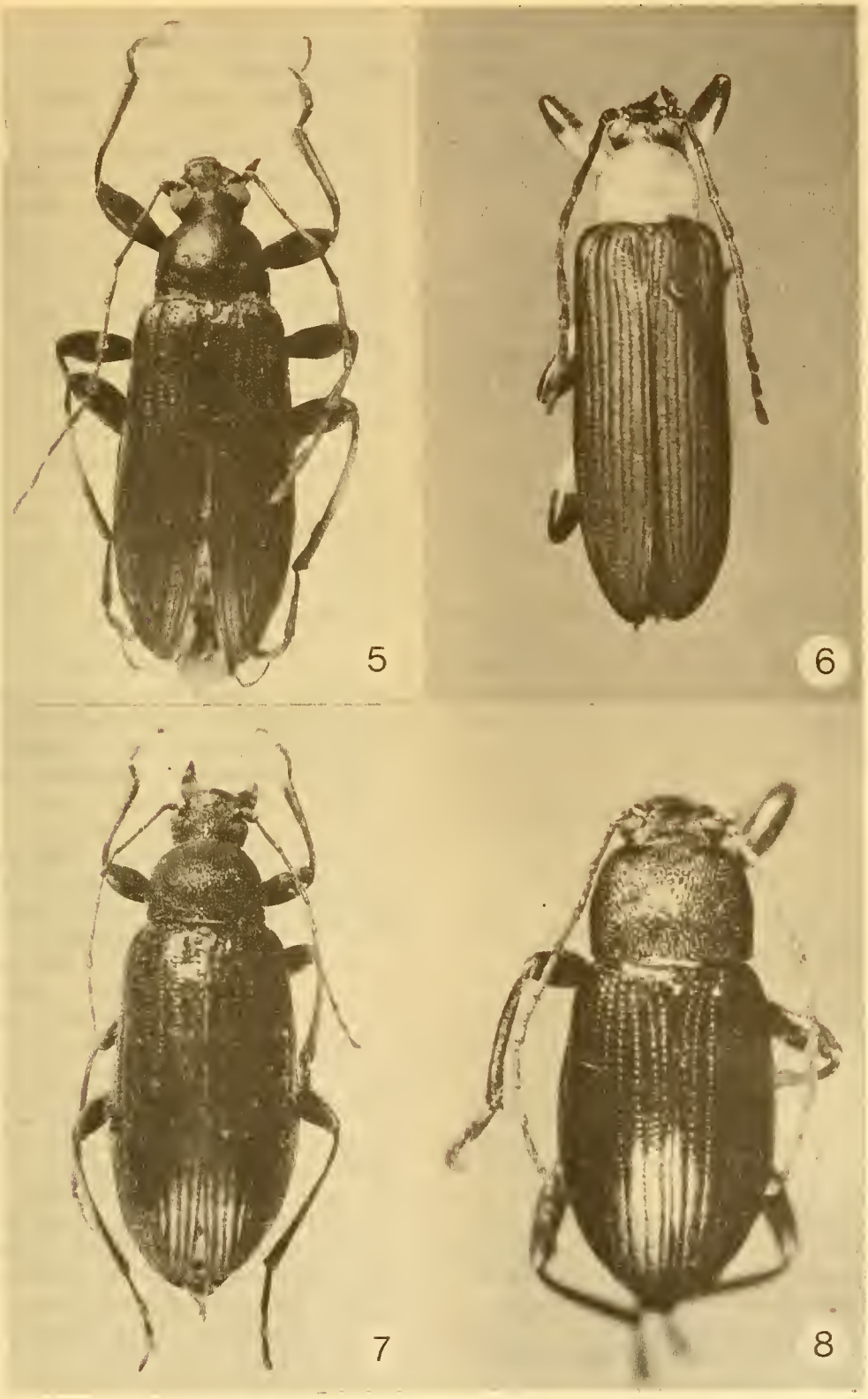
Vertex moderately coarsely, densely punctate; clypeus somewhat more sparsely punctate. Antenna long, narrow, filiform; segments 4 and 6 longest, segments 7-10 gradually becoming shorter approaching apex (Table 1); third segment 5 times longer than wide (1/w = 30/6); tenth segment approximately $3\frac{1}{2}$ times longer than wide (1/w = 25/7). Apical segment of maxillary palpus broadly triangular; ratio of lengths of outer, apical, and basal sides as follows: 15-17-12. Eyes large, deeply emarginate anteriorly; sides moderately broadly rounded, extending laterally well beyond sides of temples.

Pronotum moderately transverse (Table 2). Surface coarsely, moderately densely punctate over middle of disc with punctures separated by distance about half as great as their diameters; on sides punctures distinctly sparser and shallower. Sides subparallel in basal half, then evenly narrowed to apex; apex truncate. Disc slightly and evenly convex both transversely and longitudinally; basal foveae small, shallowly impressed.

Elytra elongate, narrow; length slightly more than 4 times length of pronotum and 2 times longer than wide; sides very gradually widened from base for basal half, then evenly narrowed to rounded apices. Elytral striae very shallowly impressed and moderately broad on basal half, much narrower on apical half; strial punctures coarse, circular, deeply impressed on basal half, becoming elongate, fine, and shallowly impressed on apical half. Strial interstices moderately convex basally, almost flat apically; moderately coarsely, densely punctate on apical half, punctures almost obsolete basally.

Prosternum elongate; slightly concave and oblique in position when viewed laterally; surface of prosternum and proepisternum densely and coarsely asperate, microsculpture coarsely granulate; prosternal spine convex, abruptly declivous behind procoxae. Mesosternum with broad, moderately deep, crescent-shaped median impression; impression not extending posteriad beyond level of anterior margin of mesocoxae. Metasternum finely, shallowly, sparsely punctate medially; punctures becoming coarser and asperate laterally. Abdomen with surface finely, sparsely, evenly punctate.

Male. Eyes moderately large, transverse (Table 2). Outer margins of anterior tibiae finely carinate; internal margins of anterior tibiae slightly swollen near middle; femora not sexually modified. Anterior tarsus with ventral surface of basal two segments strongly concave so that lateral and especially apical margins appear as membranous lobes; intermediate tarsus with only third and fourth segments lobed. Anterior tarsal claws each with 16-18 teeth. Eighth sternal lobes (Fig. 16) moderately broad, inner sides slightly concave, apices narrowly rounded, gradually and evenly curved towards midline; dentiform setae minute, visible only under moderately high magnification (80X); viewed laterally lobes moderately broad, straight, with apices obliquely truncate. Ninth sternal lobes narrow, extending apically slightly beyond level of middle of eighth sternal lobes; apices of lobes acutely rounded. Apical piece of genitalia (Fig.



Figs. 5-8. Dorsal view of Alleculidae: 5. *Allecula fragilicornis;* 6, *A. pallidicollis;* 7, *A. semiobscura;* 8, *Phediodes apterus.*

27) triangular; ratio of length of apical piece to basal piece 1.3.3; sides slightly sinuate, narrowed from base for basal three-fourths then only gradually narrowed to acutely rounded apex; viewed laterally, apical piece slightly curved ventrad at apical third, apex slightly widened; moderately densely covered with coarse dentiform setae.

Female. Unknown.

Type. Holotype, male, with labels as follows: Hungarian Soil- Zool. Exp. CHILE, Prov. Coquimbo, Fray Jorge, 12.XI.1965/Nr. P-B. 116, leg. Balogh, Loksa, Mahunka et Zicsi/HOLOTYPE ♂ Allecula fragilicornis 1974, J. M. Campbell. The specimen is in the collection of the Hungarian Natural History Museum, Budapest.

Distribution and Records. This species is known only from the province of Coquimbo.

Coquimbo: Fray Jorge, 12 November 1965, leg. Balogh, Loksa, Mahunka and Zicsi (HNHM) 1.

Remarks. Allecula fragilicornis is very similar to *A. coquimbensis.* Males differ primarily by the slightly different shape of the terminalia, by the greater number of teeth on the tarsal claws, by the slightly greater expansion of the anterior tibiae, by the larger eyes, the bicolored tibiae, and by the short, erect setae on the basal half of the elytra.

6. Allecula pallidicollis (Fairmaire)
NEW COMBINATION
(Figs. 6, 17, 28)

Eucaliga pallidicollis Fairmaire, 1875, p. 200 [type locality, Valdivia, Chile].

Body (Fig. 6) narrowly elongate, subparallel, widest across elytra. Color piceous to black; prothorax and basal two-thirds of femora yellow; surface of elytra occasionally with a faint sheen under certain lighting. Pronotum and elytra glabrous; head finely and moderately densely covered with short, recumbent pubescence. Length 9.4-11.4 mm.

Vertex moderately finely, very densely punctate. Antenna long, narrow, filiform with fourth segment longest, then following segments becoming gradually shorter (Table 1); third segment 4 times longer than wide (1/w = 20/5). Apical segment of maxillary palpus broadly triangular, ratio of lengths of outer, apical, and basal sides as follows: 19-19-12. Eyes deeply emarginate anteriorly; sides moderately narrowly rounded, extending laterally beyond sides of temples.

Pronotum moderately transverse (Table 2). Surface impunctate, opaque with very fine, dense, granulate microsculpture. Sides subparallel, slightly sinuate, or slightly narrowed in basal half then evenly narrowed to apex. Disc somewhat uneven, usually slightly convex, somewhat flattened medially with basal fourth somewhat impressed; basal foveae obsolete.

Elytra elongate, narrow; approximately 4½ times longer than pronotum and 2½ times longer than wide; sides subparallel for basal three-fourths then evenly rounded to acutely rounded apices. Elytral striae narrow, moderately and evenly impressed; strial punctures small, almost unimpressed within striae. Strial interstices almost flat; surface finely rugose, impunctate.

Prosternum moderately elongate, flat if viewed laterally, oblique in position; surface shallowly, rugosely punctate; prosternal spine convex, abruptly declivous behind procoxae. Proepisternum smooth, almost impunctate except along base and adjacent to prosternum. Mesosternum with a broad, moderately deep, crescent shaped impression; impression extending posteriad only to level of anterior margin of mesocoxae. Metasternum finely, shallowly, almost contiguously punctate medially, becoming sparsely punctate and shining laterally with scattered coarse punctures along lateral margins. Abdomen finely, very densely and uniformly punctate.

Male. Eyes small, transverse (Table 2). Femora and tibiae not sexually modified. Anterior tarsus with basal four segments lobed; ventral surface of basal two segments strongly concave so that lateral and especially apical margins appear as membranous lobes; intermediate tarsus with only third and fourth segments distinctly lobed, second segment obsoletely lobed. Anterior tarsal claws each with 7-9 teeth. Eighth sternal lobes (Fig. 17) broad, inner sides deeply concave; lobes straight, not curved medially; apices narrowly rounded; viewed laterally, lobes moderately broad; straight, with apices narrowly rounded. Ninth sternal lobes much smaller than those of eighth sternum, extending apically only to level of middle of eighth sternal lobes; apices of lobes narrowly rounded. Apical piece of genitalia (Fig. 28) narrowly triangular; ratio of length of apical piece to basal piece 1:2.1; sides evenly narrowed from base to near apex then subparallel to narrowly rounded apex; viewed laterally, apical piece bent ventrad from about middle; dorsal surface with scattered, short, dentiform setae.

Female. Eyes slightly smaller than those of male (Table 2). Anterior and intermediate tarsi each with basal two segments lacking membranous lobes; anterior tarsal claws each with 5 or 6 teeth.

Types. Only one specimen is known from the type series of this species. This specimen is a male in the British Museum (Natural History) with labels as follows: Syntype/Type/Chile, Reed/Eucaliga pallidicollis Fairm. n. sp./Eucaliga pallidicollis Type Fairm./F. Bates, 81-19. /Described ex an undescribed no. of specimens.

It is not known whether Fairmaire had more than one specimen at hand when he described the species. Therefore, to insure stability I have designated this specimen as lectotype and have added the following label LECTOTYPE ♂, Eucaliga pallidicollis Fairmaire, des. 1974, J. M. Campbell.

Distribution and Records. Known from coastal areas in the Cerro de Nahuelbuta and Valdivia. Country label only (BMNH, CNC, MNHNS, ZSM) 7. *Arauco:* Caramavida, Nahuelbuta (W.), 750 m., 1-10 January 1954, L. E. Peña (LEP) 1; Pichinahuel, Cord, Nahuelb., January 1959 G. Barria (LEP) 1. *Valdivia:* Valdivia (BMNH) 1.

Remarks. Allecula pallidicollis was described in the genus *Eucaliga* because of its close superficial resemblance to *E. sanguinicollis.* However, on closer examination, the species must be transferred to the genus *Allecula* based on the shape of the antenna, the striation of the elytra, the shape of the pronotum and elytra, and the lack of fine, silky pubescence on the pronotum. *A. pallidicollis* may be readily distinguished from all other Chilean *Allecula* by its distinctive black and yellow color pattern.

7. **Allecula semiobscura** new species
(Fig. 7)

Body (Fig. 7) moderately broadly elongate-oval, widest just behind middle of elytra. Color dark brunneous; elytra, tarsi and antennae slightly paler; surface strongly shining except slightly opaque on apical third of elytra. Body with moderately long, yellow setae; setae recumbent on head and pronotum, erect on elytra. Length 9.4-9.7 mm.

Vertex very coarsely, densely, deeply punctate; punctures elongate, confluent. Clypeus more sparsely punctate with punctures distinctly separate. Antenna long, narrow, filiform, with segments 3, 4, 6, 7 subequal in length, segment 5 slightly shorter, segments 8-10 becoming slightly shorter approaching apex (Table 1); third segment almost 5 times longer than wide (1/w = 24/5); tenth segment over 3 times longer than wide (1/w = 20/6). Apical segment of maxillary palpus broadly triangular; ratio of lengths of outer, apical, and basal sides as follows: 16-16-11. Eyes moderately shallowly emarginate anteriorly; sides narrowly convex, extending laterally beyond sides of temples.

Pronotum moderately transverse (Table 2). Surface very coarsely, deeply, confluently punctate throughout; punctures elongate, often connected longitudinally to form irregular longitudinal rows of punctures. Sides subparallel for basal half then evenly narrowed to apex. Disc evenly convex both transversely and longitudinally; basal foveae very small and shallowly impressed.

Elytra elongate, moderately broad; approximately 4 times longer than pronotum and 2 times longer than wide; sides gradually and evenly widened from base to just behind middle then evenly convex to acutely rounded apices. Elytral striae moderately narrow at base, becoming much narrower on apical third; striae almost unimpressed basally, slightly more deeply impressed apically; strial punctures moderately coarse, circular, deeply impressed on basal half, becoming fine, elongate, almost unimpressed on apical half. Strial interstices almost flat; finely, shallowly, moderately sparsely punctate; surface smooth, shining on basal two-thirds, finely granulate, slightly opaque on apical third.

Prosternum moderately elongate, flat and slightly oblique in position if viewed laterally; surface densely, coarsely, rugosely punctate; prosternal spine convex, evenly declivous behind procoxae. Proepisternum coarsely, densely, rugosely punctate throughout. Mesosternum with a broad, moderately deep, crescent-shaped impression; impression extending posteriad only to level of anterior margin of mesocoxae. Metasternum coarsely, moderately densely, rugosely punctate throughout. Abdomen moderately finely and sparsely punctate; punctures slightly denser near sides; intercoxal process of basal segment moderately broad, with apex rounded; surface moderately deeply, broadly impressed in middle.

Male. Unknown.

Female. Eyes small, transverse (Table 2). Anterior and intermediate tarsi each with basal two segments lacking membranous ventral lobes; anterior tarsal claws each with 8 or 9 teeth.

Types. Holotype, female, with labels as follows: Hungarian Soil-Zool. Exp., CHILE: Prov.

Santiago, Curacaví, Los Cerrillos, 15.I.1966/ Nr. P-B. 304, leg. Loksa/HOLOTYPE ♀ Allecula semiobscura n. sp. 1974, J. M. Campbell. The specimen is in the collection of the Hungarian Natural History Museum, Budapest.

Paratype, one female, with same label data as the holotype. This specimen is in the Canadian National Collection, Ottawa (CNC N° 13497).

Distribution and Records. This species is known only from the province of Santiago.

Santiago: Curacaví, Los Cerrillos, 15 January 1966, leg. Loksa (CNC, HNHM) 2.

Remarks. Allecula semiobscura may be readily distinguished from all other Chilean *Allecula* by the microsculpture of the elytra. In *semiobscura* the basal two-thirds of the elytra are strongly shining and completely lack microsculpture; in the apical third the surface is finely granulate and slightly opaque. In addition, the more broadly oval shape, the very coarsely and confluently punctate pronotum, the smaller eyes, and the rounded apex of the intercoxal process of the basal abdominal segment will readily distinguish this species. *Allecula semiobscura* resembles the species of *Phediodes* (see remarks under this genus) but is winged with the metasternum longer.

Phediodes new genus

Body broadly elongate-oval, widest across middle of elytra. Pronotum slightly narrower than elytra at base. Color piceous to black, without metallic sheen; surface shining anteriorly, becoming opaque on apical half of elytra; densely and coarsely punctate; distinctly or finely pubescent dorsally.

Antenna elongate, subfiliform; third segment 5 times longer than second; segments 3-8 similar in length, each longer than segments 9-11; apical segments gradually becoming less filiform and more obconical, each almost three times as long as wide or longer. Apical segment of maxillary palpus broadly triangular, with apical and outer sides subequal in length. Eyes small, transverse in position; moderately deeply emarginate anteriorly; strongly and narrowly convex laterally, extending laterally well beyond sides of temples.

Pronotum moderately transverse. Surface shining; very coarsely, densely, rugosely punctate; punctures with tendency to coalesce to form indistinct longitudinal grooves. Apex truncate, only slightly narrower than base; sides widest near middle, slightly curved to base and apex. Disc strongly convex in cross section; with a pair of very small, shallow, basal foveae. Scutellum broadly triangular.

Elytra broadly oval in outline, narrow at base, arcuately widened to middle or just beyond then evenly curved to narrowly rounded apices. Elytral striae moderately to shallowly impressed, bearing coarse, deeply impressed punctures on basal half which rapidly change near middle to very fine, shallowly impressed punctures on apical half; strial punctures glabrous; strial interstices almost flat, surface finely punctate or impunctate, strongly shining, smooth on basal half, then abruptly changing to coarsely granulate, opaque on apical half. Elytral epipleura moderately narrow, extending to apex of elytra. Apterous without trace of wing lobes. Prosternum moderately short anteriad of procoxae; viewed laterally, flat or slightly concave, horizontal in position; prosternal process strongly convex, with apex strongly declivous behind procoxae. Mesosternum with a broad, shallow, transverse median impression. Metasternum very short, length between meso- and metacoxae slightly less than length of mesocoxae. Intercoxal process of basal abdominal sternite very broad with apex subtruncate.

Pro- and mesotarsi with at least third and fourth segments and metatarsus with penultimate segment broadly lobed ventrally.

Male. Eighth and ninth sterna distinctly bilobed. Eighth sternal lobes simple. Apical piece of genitalia triangular, with dentiform setae. Tibiae and femora not sexually modified. Basal two segments of protarsus lobed ventrally.

Female. Eyes slightly smaller than in male and tarsal claws with fewer teeth than those of male. Basal two segments of pro- and mesotarsi not lobed ventrally.

Type species. Phediodes apterus new species.

Remarks. This genus does not resemble any other South American genus of Alleculidae. It differs by being completely apterous, by having the intercoxal process of the abdomen broadly triangular with the apex subtruncate, and by the broadly elongate-oval body shape. The two species of the genus resemble *Allecula semiobscura,* also from Chile, in having the basal half of the elytra smooth and strongly shining with the apical half coarsely granulate and opaque.

Species of *Phediodes* closely resemble species of the Mexican genus *Phedius.* Both have the same general body shape, both are densely punctate, both are flightless and have greatly shortened metasterna. *Phediodes* differs from *Phedius* in having the intercoxal process of the abdomen broadly triangular with the apex subtruncate and in lacking even a trace of hind wings. The

similarity of *Phedius* and *Phediodes* is probably due to convergence and adaptation for arid habitats.

Phediodes contains two species, both known only from Chile.

8. Phediodes apterus new species
(Figs. 8, 18, 29)

Body (Fig. 8) broadly elongate-oval, widest across middle of elytra. Color piceous to black, elytra varying from brunneous to piceous; surface smooth, shining anteriorly; posterior half of elytra coarsely granulate, opaque. Length 7.9-9.5 mm.

Vertex and clypeus very densely and coarsely, contiguously punctate; punctures irregularly oval, very deeply impressed, each bearing a fine, short yellow seta. Antenna elongate, subfiliform, with third and fourth segments long, subequal, fifth segment slightly shorter followed by slightly longer sixth segment; segments 7-11 becoming slightly shorter approaching apex (Table 1); third segment almost 5 times longer than wide ($1/w = 26/5\frac{1}{2}$); fifth segment almost 4 times longer than wide ($1/w = 23/6$); and tenth segment $2\frac{1}{2}$ times longer than wide ($1/w = 20/8$). Apical segment of maxillary palpus broadly triangular; ratio of lengths of outer, apical, and basal sides as follows: 32-39-28.

Pronotum moderately transverse (Table 2). Surface very coarsely, densely, contiguously punctate; punctures elongate-oval, deeply impressed, usually arranged to form irregular longitudinal rows of contiguous punctures. Sides slightly convex, widest near middle, slightly narrowed to base and apex. Disc strongly convex both transversely and longitudinally.

Elytra broadly oval; approximately 3 to $3\frac{1}{3}$ times longer than pronotum and 1.8 times longer than wide; sides only slightly wider at base than base of elytra, evenly widened to near middle then abruptly narrowed to acutely rounded elytral apices. Elytral striae wide, moderately shallowly impressed basally, abruptly changing near middle and becoming narrow and shallowly impressed apically; strial punctures coarse, deeply impressed, circular on basal half and very fine, shallowly impressed, linear on apical half. Strial interstices almost flat, impunctate; with very fine, scattered setae visible under magnification of 32X.

Prosternum and proepisternum densely, coarsely, rugosely punctate. Mesosternal impression transverse, shallow, crossing mesosternum at level just before mesocoxae. Metasternum with faint median line; surface densely, rugosely punctate between meso- and metacoxae, more sparsely punctate medially. Abdomen with surface finely granulate, opaque, especially near sides; punctation moderately fine and moderately dense medially, becoming more densely and rugosely punctate laterally.

Male. Eyes small (Table 2). Femora and tibiae not sexually modified. Anterior tarsus with basal four segments lobed ventrally. Anterior tarsal claws each with 8-10 teeth. Eighth sternal lobes (Fig. 18) straight, broad, shallowly concave on internal sides; apices broadly rounded; surface without obvious dentiform setae (minute, scattered dentiform setae visible with magnification of 80X); viewed laterally, lobes straight, narrow, with apices narrowly rounded. Ninth sternal lobes moderate in length, narrow; apices reaching to level of middle of eighth sternal lobes; apices of lobes narrowly rounded. Apical piece of genitalia (Fig. 29) short, triangular; ratio of length of apical piece to basal piece 1:4.3; sides curved, evenly narrowed from base to near apex then abruptly constricted to narrowly rounded apex; viewed laterally, apical piece slightly curved ventrad, constricted just before apex; apex broadly convex; surface with scattered, dorsal dentiform setae.

Female. Eyes slightly smaller than those of male (Table 2). Basal two segments of anterior tarsus not lobed ventrally. Anterior tarsal claws each with 8 or 9 teeth.

Types. Holotype, male, with labels as follows: Chile/coll. R. Oberthür ex coll. Deyrolle/Allecula/HOLOTYPE ♂ Phediodes apterus n. gen. n. sp., 1974, J. M. Campbell. This specimen is in the Hungarian Natural History Museum, Budapest.

Paratypes, 4 males and 4 females in the British Museum (Natural History), London, Canadian National Collection, Ottawa (CNC N° 13498), the Museo Nacional de Historia Natural de Santiago, and the collection of Mr. L. E. Peña.

Distribution and Records. Known only from the provinces of Curicó and O'Higgins but probably more widely distributed. Country label only (HNHM) 1; square green label denoting Chile (MNHNS, CNC) 6. *Curicó:* La Jaula, Los Queñes, January 1964, M. Rivera and. L. E. Peña (LEP) 1. *O'Higgins:* Rancagua, Germain (BMNH) 1.

Remarks. Phediodes apterus is very similar to *P. pubescens*. See the remarks under the latter to distinguish these species.

9. Phediodes pubescens new species

This species is similar to *Phediodes apterus,* but differs as follows:

Length 7.4 mm. Punctation of clypeus and vertex even denser, so that punctures coalesce with individual punctures not discrete; setation slightly longer, more conspicuous. Antennae missing. Apical segment of maxillary palpus with ratio of lengths of outer, apical, and basal sides as follows: 34-39-25. Pronotal index 76. Pronotal punctation denser, punctures coalesce to form irregular, longitudinal grooves of impressed punctures; pubescence distinct, readily visible under low magnification (8X). Sides of pronotum more convex, evenly rounded from base to apex. Elytra 3.3 times longer than pronotum and 1.7 times longer than wide. Elytral striae very shallowly impressed basally, becoming almost obsolete on apical half; strial interstices moderately coarsely and moderately sparsely punctate; each puncture with a distinct, short, erect, yellow seta. Metasternum densely, coarsely, rugosely punctate throughout.

Male. Unknown.

Female. Ocular index 58. Anterior tarsal claws each with 8 teeth.

Type. Holotype, female, with labels as follows: Lag. Aculeo, Santiago, 4-Nov.-1958, Leg. L. Zapata/L. E. Peña Colector/HOLOTYPE ♀ Phediodes pubescens n. sp. 1974, J. M. Campbell. The specimen is in the collection of the Museo Nacional de Historia Natural de Santiago.

Distribution and Records. This species is known only from the province of Santiago. *Santiago.* Lag. Aculeo, 4 November 1958, L. Zapata and L. E. Peña (MNHNS) 1.

Remarks. This species is similar in most respects to *P. apterus,* but may readily be distinguished by the denser and coarser punctation of the head and pronotum, by the distinctly punctate and setate elytral intervals and by the more convex sides of the pronotum.

Both antennae are missing from the holotype.

Eucaliga Fairmaire and Germain

Eucaliga Fairmaire and Germain, 1861, p. 5; 1863, p. 225.

Body narrowly elongate. Pronotum distinctly narrower than elytra at base. Bicolored with a combination of black and yellow to reddish-orange; surface opaque; pronotum covered with very fine, silky pubescence; elytra glabrous.

Antenna thick; third segment almost 4 times longer than second segment; segment 4 longer than 3; following segments becoming gradually shorter approaching apex, each less than twice as long as wide. Apical segment of maxillary palpus broadly triangular with outer side slightly longer than apical side. Eyes moderately small, transverse in position; moderately deeply emarginate anteriorly; moderately narrowly convex laterally, extending laterally slightly beyond sides of temples.

Pronotum transverse, about two-thirds as long as wide. Surface impunctate. Apex truncate, narrower than base; sides constricted basally. Disc irregular, convex both longitudinally and transversely; lacking distinct basal foveae but disc broadly depressed before base. Scutellum broadly triangular.

Elytra elongate, sides slightly inflated posteriorly, widest at apical third. Elytral striae obsolete; strial punctures very fine and shallowly impressed; strial interstices flat, impunctate. Elytral epipleura extending to apex of elytra. Wings fully developed.

Prosternum prolonged anteriad of coxae, viewed laterally slightly oblique in position; prosternal process moderately narrow, convex, with apex strongly declivous behind procoxae. Mesosternum with a broad, moderately shallow "V"-shaped median impression. Metasternum of normal length. Intercoxal process of basal abdominal sternite narrowly triangular.

Pro- and mesotarsi with at least third and fourth segments and metatarsus with penultimate segment distinctly and broadly lobed ventrally.

Male. Eighth and ninth sterna distinctly bilobed. Eighth sternal lobes simple. Apical piece of genitalia narrowly triangular, with dorsal dentiform setae. Tibiae and femora not sexually modified. Basal two segments of protarsus lobed ventrally; second segment of mesotarsus with a small apical lobe.

Female. Similar to male except with smaller eyes and fewer teeth on tarsal claws. Second segments of pro- and mesotarsi narrowly lobed, basal segments not lobed.

Type Species. Eucaliga sanguinicollis Fairmaire and Germain (by monotypy).

Remarks. Eucaliga is one of the most distinctive genera of alleculids known to me. In general appearance, it resembles some Cantharidae or Pyrochroidae. It can not be confused with any other genus of Chilean alleculids because of its coarse, obconical antennal segments, its lack of elytral striae, its silky yellow pubescence of

the pronotum, and its strongly contrasting black and yellow to reddish-orange color pattern.

This genus contains only the type species and is restricted to Chile. Fairmaire and Germain (1863, p. 226) placed this genus near *Cteisa* which is now placed in the tribe Lystronychini, but based on the structure of the tarsi and male eighth and ninth sterna, it is undoubtedly a member of the tribe Alleculini.

10. Eucaliga sanguinicollis Fairmaire and Germain (Figs. 9, 19, 30)

Eucaliga sanguinicollis Fairmaire and Germain, 1861, p. 5; 1863, p. 226 [type locality, "Forêts subandines de Chillan et du Maule"].

Upinella? cruentata Philippi, 1863, p. 132, pl. 3, fig. 1 a-g [type locality, Colchagua, Chillan]; placed in synonymy by Borchmann, 1910, p. 46.

Eucaliga sanguinicollis flavicollis Pic, 1929, p. 18 [type locality, Chile]. NEW SYNONYMY.

Body (Fig. 9) narrowly elongate, widest across apical third of elytra. Color black, prothorax (except narrow median black vitta on pronotum) yellow to reddish-orange (usually orange); each elytron with a short, longitudinal yellow to reddish-yellow vitta just behind humeral angles. Body, except elytra, pubescent; pubescence short, semirecumbent, piceous except on prothorax; pubescence of prothorax finer, short, yellow. Length 9.4-12.9 mm.

Vertex deeply, coarsely, contiguously punctate. Antenna moderately long, coarse, with fourth segment longest, then following segments becoming gradually shorter approaching apex (Table 1); third segment $2\frac{1}{2}$ times longer than wide (1/w = 15/6); segments 4-11 strongly obconical, fifth segment with length less than 2 times as great as width (1/w = 14/8), tenth segment only slightly longer than wide (1/w = = 11/8). Apical segment of maxillary palpus broadly triangular; ratio of lengths of outer, apical, and basal sides as follows: 21-19-13.

Pronotum transverse (Table 2). Surface impunctate, finely granulate, opaque. Sides convex, widest at basal third, distinctly narrowed to base and apex; apex narrower than base. Disc strongly convex; impressed along basal margin.

Elytra elongate, narrow; approximately $4\frac{1}{2}$ times longer than pronotum and 2 times longer than wide; sides slightly and evenly widened from base for basal 2/3 then rapidly converging to acutely rounded apices. Elytral disc slightly, unevenly convex transversely. Elytral striae obsolete; strial punctures very fine and shallowly impressed. Strial interstices flat, impunctate.

Prosternum and proepisternum impunctate. Mesosternal impression moderately shallow; apex of impression extending posteriad only to

Figs. 9-11. Dorsal view of Alleculidae: 9, *Eucaliga sanguinicollis;* 10, *Lycula chilensis;* 11, *Narsodes brunneus.*

level of anterior margin of mesocoxae. Metasternum finely rugose, surface with fine, evenly scattered punctures. Abdomen finely, moderately densely, rugosely punctate; punctures distinctly denser laterally.

Male. Eyes moderately small, transverse (Table 2). Femora and tibiae not sexually modified. Anterior tarsus with ventral surface of basal four segments lobed apically; intermediate tarsus with segments 2-4 lobed apically. Anterior tarsal claws each with 7 or 8 teeth. Eighth sternal lobes (Fig. 19) moderately narrow, only slightly concave internally; apices distinctly curved medially; with fine, short dentiform setae internally; viewed laterally, lobes broad, straight, with apices broadly rounded. Ninth sternal lobes much smaller than those of eighth sternum, extending apically only to level of middle of eighth sternal lobes; apices of lobes narrowly rounded. Apical piece of genitalia (Fig. 30) narrowly triangular; ratio of length of apical piece to basal piece 1:2.2; sides evenly narrowed from base to near apex then slightly widened to narrowly rounded apex; viewed laterally, apical piece straight; dorsal surface with scattered, dentiform setae.

Female. Eyes slightly smaller than those of male (Table 2). Second segment of anterior and intermediate tarsi narrowly lobed apically. Anterior tarsal claws each with 7 or 8 teeth.

Types. Eucaliga sanguinicollis Fairmaire and Germain. The British Museum (Natural History) has two syntypes from the type series of this species. I have selected one of these, a male with labels as follows, as lectotype of the species: Syntype/28301/TYPE/Germain/Chile, Chillán/Fry Coll. 1905.100/28301 = Eucaliga sanguinicollis F. & G. 1863, Type, Chile, Chillán, Germain/LECTOTYPE Eucaliga sanguinicollis Fleut. & Germ. des. 1974, J. M. Campbell. The second specimen is a female paralectotype labeled: Syntype/Type/Germain/Chile, Chillán/Fry Coll. 1905.100/Eucaliga sanguinicollis Fair. & Ger. Chile.

The Muséum National d'Histoire Naturelle, Paris has one male paralectotype with labels as follows: Type [red]/Eucaliga sanguinicollis n. g., n. sp./Eucaliga sanguinicollis Fair. & Germ., det. J. M. Campbell, 1972.

Upinella cruentata Philippi. I have seen no specimens for this species that can, with certainty, be considered type material. One male in the British Museum (Natural History) is labeled as follows: Chile/Eucaliga ruficollis/Upinella? cruentata Philippi Stett. 1863, p. 132, pl. III, Fig. 1/F. Bates, 81-19. Philippi's collection is presumably in the Museo Nacional de Historia Natural de Santiago.

There can be no doubt about the validity of this synonymy because of Philippi's (1863) excellent description and colored illustration.

Eucaliga sanguinicollis flavicollis Pic. The Muséum National d'Histoire Naturelle, Paris has the male holotype in the Pic Collection with the following labels: Chile/ex Bodemeyer/Type [red]/v. flavicollis Pic/Eucaliga sanguinicollis Fair. & Germ., det. J. M. Campbell 1972.

Distribution and Records. Known from the province of Curicó south to Malleco.

Country label only: (BMNH, MCZ, MNHNS, PMNH) II. *Curicó:* El Coigo, Cord. Curicó, November-December 1959, L. E. Peña (USNM) 3. *Linares:* Fundo Malcho, Andean Region, December 26.1956, Peña N° 29 L. E. Peña (USNM) 1; Fundo Malcho, Cord. Parral, January 1958, M. Rivera (MNHNS) 2; Fundo Malcho, Cord. Parral, February 1958, Peña N° 36, L. E. Peña (USNM) 9; Villega, Cord. Parral, 1-8 December 1960, L. E. Peña (USNM) 1. *Malleco:* Cerros de Nahuelbuta, Angol, 2 December 1950, D. S. Bullock (CAS) 1; Curacautín, 17 December 1959, L. E. Peña (USNM) 1. *Nuble:* Chillán (BMNH) 2; Cord. Chillán, Germain 1899 (MNHNS) 1; 50 km. E. San Carlos, 26 December 1950, Ross and Michelbacher (CAS) 3. *Talca:* El Radal, Talca Andes reg. el 1,100 m., Peña N° 34, 22-30 November 1957, L. E. Peña (USNM) 1.

Remarks. Eucaliga sanguinicollis somewhat resembles *Allecula pallidicollis* by its general shape and the similarity of color patterns. However, a superficial examination easily distinguishes the species by the presence of the pale humeral markings, the obsolete elytral striae, the silky pubescence of the pronotum and the much coarser antennae.

Pic (1929) described the variety *flavicollis* based on the paler color of the prothorax and the humeral markings. However, an examination of long series shows that there are all degrees of variation between the yellow color of *Flavicollis* and the reddish-orange color of other specimens. I suspect that some of this variation is the result of the method used to kill the specimens.

Lycula new genus

Body narrowly triangular in shape, flattened dorso-ventrally, widest near apex of elytra. Pronotum, at base, slightly narrower than base of elytra. Color black with yellow markings; surface densely punctate, opaque; pubescent.

Antenna moderately long, stout, strongly ›mpressed dorso-ventrally; third segment most 3 times longer than second, distinctly ıorther than fourth segment; segments 4-10 ıch becoming gradually shorter approaching ɔex, each less than 2 times longer than wide. pical segment of maxillary palpus relatively nall, broadly triangular; outer side slightly ıorter than apical side. Eyes moderately large, blique in position; deeply emarginate anterior-; broadly convex laterally, continous with sides f temples.

Pronotum transverse, approximately .7 as ɔng as wide. Surface coarsely, densely, irregu-ırly punctate. Apex truncate, much narrower ıan base; sides straight, strongly and evenly ohverging from base to apex. Disc broadly attened; without distinct basal foveae. Scutel-ım narrowly triangular; densely punctate.

Elytra narrowly elongate; sides slightly sinu-te, distinctly widened from base nearly to apex, hen curved to broadly rounded apex. Elytral triae deeply impressed, bearing shallowly im-ɔressed, non-setate strial punctures; strial inters-ices very densely, coarsely punctate; setate. Elytral :pipleura extending from apex of elytra. Wings ully developed. Prosternum prolonged anteriad ɔf procoxae; viewed laterally, slightly concave, almost horizontal in position; prosternal process narrow, convex, with apex strongly declivous behind procoxae. Mesosternum without obvious impression; mesosternal process strongly raised above level of anterior portion of mesosternum. Metasternum more elongate than usual. Inter-coxal process of basal abdominal sternite narrowly triangular.

Pro- and mesotarsi with at least third and fourth segments and metatarsus with penulti-mate segment distinctly and broadly lobed ventrally.

Male. Eighth and ninth sterna distinctly bilobed. Eighth sternal lobes simple. Apical piece of genitalia narrowly elongate, with den-tiform setae. Tibiae and femora not sexually modified. Second segment of protarsus narrowly lobed apically.

Female. Unknown.

Type species. Lycula chilensis new species.

Remarks. This remarkable new genus closely resembles a lycid in appearance, both in respect to its triangular shape and also in respect to its yellow and black color pattern. In addition, the elytra are thinner and more flexible than in most alleculids which further enhances its lycid-like appearance.

Lycula does not resemble any other genus of New World Alleculidae. Its lycid-like appearance, the strongly compressed antennae, the triangular shape of the pronotum and elytra, the dorso-ventral compression of the body, and the deeply impressed elytral striae will readily distinguish species of the genus.

Lycula is a member of the tribe Alleculini based on the lobed tarsal segments and the structure of the male terminalia. Only one species, *chilensis,* is known.

The name *Lycula* was derived from a combination of the generic names *Lycus* and *Allecula.*

11. Lycula chilensis new species (Figs. 10, 20, 31)

Body (Fig. 10) narrowly triangular, widest near apex of elytra; flattened dorso-ventrally. Color black, elytra with an elongate yellow fascia extending from humeral angle to apical fourth of elytra, fascia narrowly separated from side of elytra for basal half then extending to side for remainder of fascia; pronotum with a vague longitudinal, yellow fascia narrowly separated from each side; base of femora and posterior tarsi yellow. Body densely and coarsely setate; setae black or yellow depending on color of surface; setae erect. Length 7.5 mm.

Vertex densely, coarsely, contiguously punctate. Antenna moderately long; with fourth segment longest, then following segments becoming gradually shorter approaching apex (Table 1); third segment 2 times longer than wide (1/w = 12/6); segments 4-11 obconical; fifth segment with length less than 2 times as great as width (1/w = 17/10), tenth segment narrower, at least twice as long as wide (1/w = 13/7); viewed laterally, antenna very compressed, e.i. depth of fifth segment 1/3rd of width (= 3/10). Apical segment of maxillary palpus broadly triangular; ratio of lengths of outer apical, and basal sides as follows: 9-10-7.

Pronotum transverse (Table 2). Surface very coarsely, deeply, contiguously punctate with narrow longitudinal, median impunctate band; impunctate band coarsely granulate, opaque. Sides almost straight, narrowed from acute basal angles to apex; apex distinctly narrower than base. Disc broadly flattened medially, convex laterally; not impressed basally.

Elytra narrowly elongate; 6.6 times longer than pronotum and 3.4 times longer than greatest width; sides widened from base nearly to apex, then curved to broadly rounded apex. Elytral disc flattened transversely. Elytral striae deeply and evenly impressed; strial punctures moderately coarse, shallowly impressed, almost

contiguous within striae. Strial interstices almost flat; very densely, coarsely, contiguously punctate.

Prosternum and proepisternum finely, sparsely punctate, surface shining. Metasternum elongate, with a narrow, median, slightly impressed line; surface finely, sparsely punctate. Abdomen finely, sparsely, evenly punctate.

Male. Eyes moderately large (Table 2). Femora and tibiae not sexually modified. Anterior tarsus with second segment narrowly lobed apically; intermediate tarsus with only third and fourth segments lobed. Anterior tarsal claws each with 15 teeth. Eighth sternal lobes (Fig. 20) narrow, inner sides only slightly concave; apices slightly curved medially; moderately densely covered with short, dentiform setae; viewed laterally, lobes slightly curved ventrally, lobes moderately broad, with apices evenly rounded. Ninth sternal lobes moderately short and broad; reaching to just beyond middle of eighth sternal lobes; apices of lobes broadly rounded. Apical piece of genitalia (Fig. 31) narrowly elongate; ratio of length of apical piece to basal piece 1:2.1; sides almost parallel for basal 2/3rds then narrowed to acutely rounded apex; viewed laterally, apical piece sharply curved ventrad at apical third; surface with scattered dentiform setae.

Female. Unknown.

Type. Holotype, male, with labels as follows: CHILE, Llanquihue, Puerto Varas, 5-II-1959, J. F. G. Clarke/HOLOTYPE ♂ Lycula chilensis n. gen., n. sp., J. M. Campbell, 1974. The holotype is in the collection of the United States National Museum (Natural History), Washington.

Distribution and Records. This species is known only from the province of Llanquihue. It has the most southern distribution of any known Chilean alleculid.

Llanquihue: Puerto Varas, 5 February 1959, J. F. G. Clarke (USNM) 1.

Remarks. Lycula chilensis is known only from the holotype. This may be an indication of its rarity, or, more likely, it so closely resembles a lycid in appearance that it is misplaced in most collections.

As indicated under the generic remarks, there can be no confusion regarding the identification of this distinctive species.

Narsodes new genus

Body (Fig. 11) narrowly elongate-oval, widest near apical third of elytra. Pronotum subequal or slightly narrower than elytra at base. Color brunneous, often with faint metallic sheen; surface shining, but with coarse, granulate microsculpture; glabrous dorsally except labrum, clypeus, and extreme apical margin of elytra.

Antenna very elongate, subfiliform; third segment 3 times longer than second segment; segments 4-10 gradually becoming shorter and less filiform approaching apex, each at least 3 times longer than wide. Apical segment of maxillary palpus broadly triangular, with apical side slightly longer than outer side. Eyes small, transverse in position; shallowly emarginate anteriorly; broadly convex laterally, continous with sides of temples.

Pronotum only slightly longer than wide, appearing nearly quadrate. Surface moderately coarsely, densely, rugosely punctate. Apex truncate, almost as wide as base; sides widest near middle, slightly curved to base and apex. Disc evenly convex in cross section, unimpressed except for a pair of very small, shallow basal foveae. Scutellum broadly triangular.

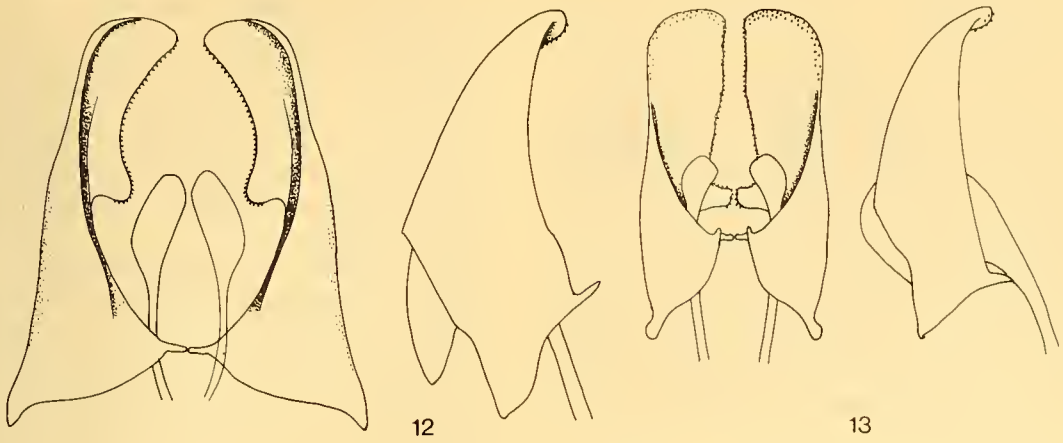
Elytra narrowly oval in outline, narrow at base, arcuately widened to apical third, then evenly curved to broadly rounded elytral apices. Elytral striae shallowly impressed over most of disc, unimpressed near sides and on apex, bearing moderately coarse and moderately deeply impressed, non-setate strial punctures; strial interstices almost flat, very finely, moderately sparsely, evenly punctate. Elytral epipleura moderately broad, extending to near apex of elytra. Wings reduced in size; when fully extended, not reaching beyond apices of elytra.

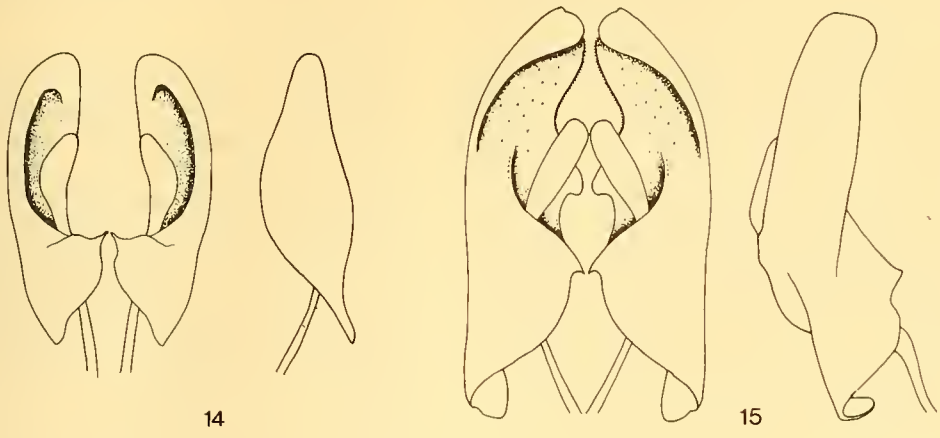
Prosternum prolonged anteriad of procoxae; viewed laterally, flat, slightly oblique in position; prosternal process convex, with apex strongly declivous behind procoxae. Mesosternum with a broad, shallow, V-shaped median impression. Metasternum moderately short. Intercoxal process of basal abdominal sternite narrowly triangular with apex rounded.

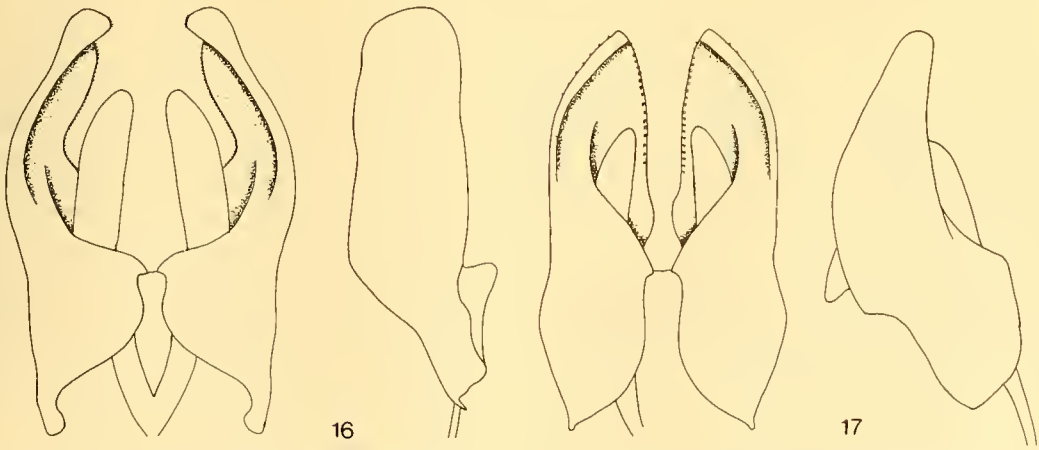
Pro- and mesotarsi with at least third and fourth segments and metatarsus with penultimate segment broadly lobed ventrally.

Male. Eighth and ninth sterna distinctly bilobed. Eighth sternal lobes simple. Apical piece of genitalia triangular, with dentiform setae. Tibiae and femora not sexually modified. Basal two segments of pro- and mesotarsi with surface strongly concave so that lateral and specially apical margins appear as membranous lobes.

Female. Eyes of same size and tarsal claws with same number of teeth as those of male.







Figs. 12-17. Male eighth and ninth sternal lobes (left, ventral view; right, lateral view): 12, *Allecula chilensis;* 13, *A. pulchella;* 14, *A. penai;* 15, *A. coquimbensis;* 16, *A. fragaricornis;* 17, *A. pallidicolis.*

Basal two segments of pro- and mesotarsi not lobed ventrally.

Type Species. Narsodes brachypterus new species.

Remarks. This genus does not resemble any other genus of Alleculidae in South America. *Narsodes* and *Phediodes* are the only flightless genera of the tribe Alleculini known from South America. *Narsodes* closely resembles the genus *Narses* Champion described to include *N. subalatus* Champion from high elevations in Guatemala. *Narsodes* differs from the latter genus in having the antennae more filiform; the metasternum longer, the pronotal disc lacking a transverse basal impression, and the basal two tarsal segments of the male with a different structure.

If additional specimens of this genus are discovered from high elevations at localities intermediate between Guatemala and Chile, it may be necessary to combine the two genera. However, I believe the similarities shown are due to convergence. Both genera have probably evolved from two different *Allecula*-like ancestral species. The apomorphic characters of reduction of wing size, reduction or less of pubescence, and reduction of eye size are frequently encountered in diverse genera of alleculids living at high elevations (e. g. *Isomira, Charisius,* and the subgenus *Glabrilobopoda).* Except for the apomorphic characters already mentioned, *N. brachypterus* is similar in most other respects to *A. pulchella.*

Narsodes contains two species, both known only from Chile.

12. Narsodes brachypterus new species (Figs. 21, 32)

Body narrowly elongate-oval, widest just behind middle of elytra. Color brunneous; head and prothorax often darker, occasionally piceous; basal half of femora obscurely paler; surface shining, often with vague metallic sheen. Length 6.8-8.5 mm.

Vertex coarsely, densely, rugosely punctate; usually with a small round or transverse impunctate impression between eyes at base of clypeus. Antenna long, narrow, subfiliform with fourth segment longest, then segments 5-8 subequal, segments 9-10 slightly shorter (Table 1); third segment almost 4 times longer than wide (1/w = 19/5) fifth segment $3\frac{1}{2}$ timer longer than wide (1/w = 18/5); and tenth segment $2\frac{1}{2}$ times longer than wide (1/w = 15/6). Apical segment of maxillary palpus broadly triangular; ratio of lengths of outer, apical, and basal sides as follows: 15-17-11.

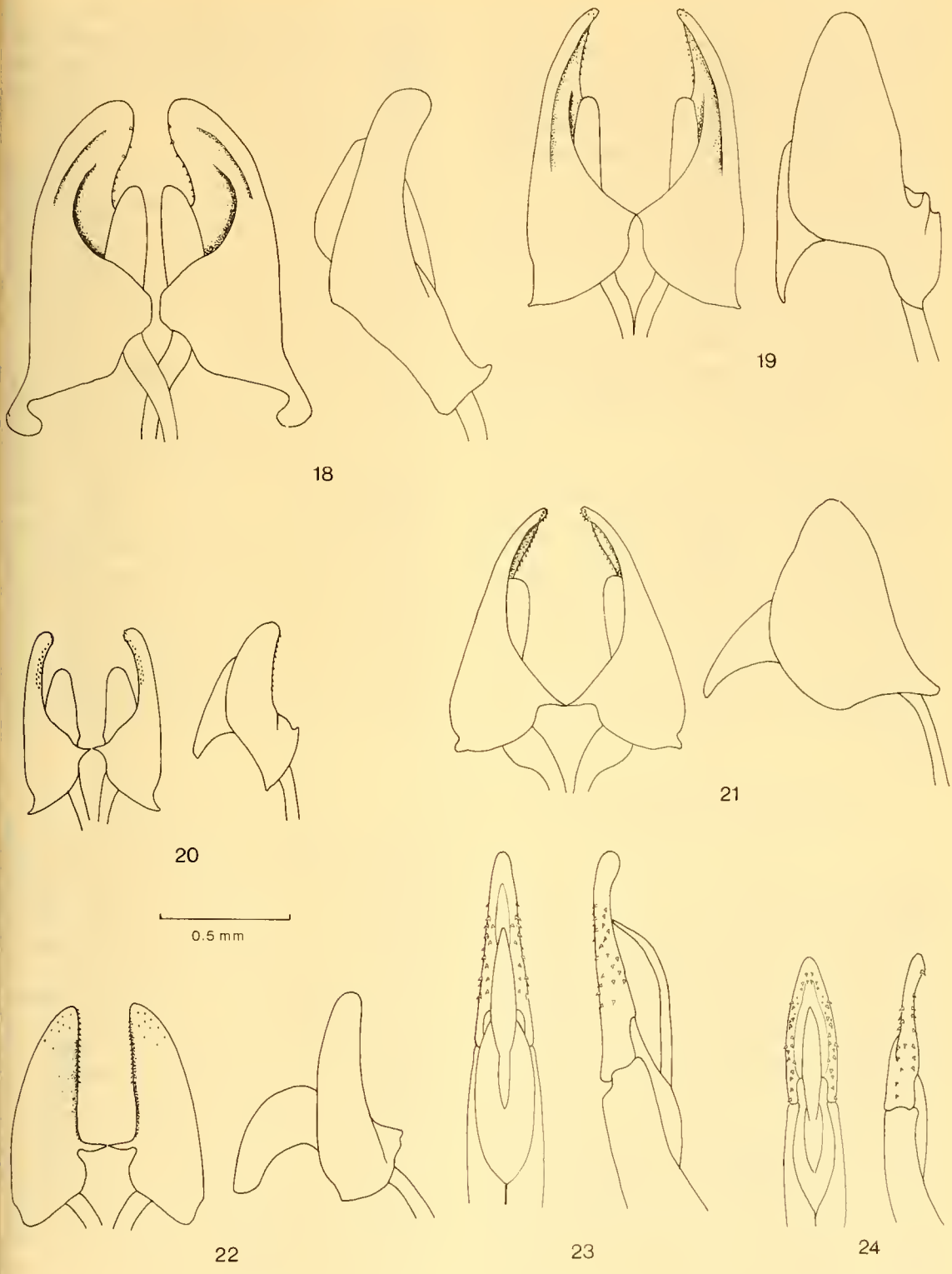
Pronotum only slightly elongate, appearing subquadrate (Table 2). Surface coarsely, moderately densely, rugosely punctate. Sides slightly convex, widest at middle, slightly narrowed to base and apex. Disc broadly convex transversely; unimpressed except for pair of very small, shallow, basal foveae.

Elytra narrowly oval; approximately $3\frac{1}{2}$ times longer than pronotum and 2 times longer than wide; sides only slightly wider at base than base of pronotum, then evenly widened to apical third of elytra; apices broadly rounded. Elytral striae obsolete on sides and apex, shallowly impressed on remainder of disc; strial punctures moderately coarse, deeply impressed, narrowly separated within striae. Strial interstices almost flat; moderately sparsely, finely and evenly punctate.

Prosternum and proepisternum impunctate; prosternum with long, coarse, transverse rugosities; proepisternum with rugosity in concentric circles around procoxae. Mesosternal impression moderately shallow; apex of impression extending posteriad only to level of anterior margin of mesocoxae. Metasternum with impunctate median line, line slightly raised anteriorly near mesocoxae; surface coarsely granulate, with fine, sparse, evenly distributed punctation. Abdomen with surface smooth, shining, very sparsely, regularly punctate.

Male. Eyes small (Table 2). Femora and tibiae not sexually modified. Anterior and intermediate tarsi each with basal four segments lobed (see generic description). Anterior tarsal claws each with 6 or 7 teeth. Eighth sternal lobes (Fig. 21) moderately broad, inner sides broadly and deeply concave; apices distinctly curved medially; dorsal and ventral margins moderately densely covered with short dentiform setae; viewed laterally, lobes straight, moderately broad, with apices broadly rounded. Ninth sternal lobes moderately long, narrow; apices narrowly rounded, reaching to beyond middle of eighth sternal lobes. Apical piece of genitalia (Fig. 32) narrowly triangular; ratio of length of apical piece to basal piece 1:2.2; sides slightly sinuate near middle, almost evenly narrowed from base to rather broadly rounded apex; viewed laterally, apical fourth distinctly curved ventrad; surface with scattered dentiform setae.

Female. Almost identical with male except for tarsal lobes. Eyes small (Table 2). Basal two segments of anterior and intermediate tarsi not



Figs. 18-24. Figs. 18-22, Male eighth and ninth sternal lobes (left, ventral view; right, lateral view): 18, *Phediodes apterus;* 19, *Eucaliga sanguinicollis;* 20, *Lycula chilensis;* 21, *Narsodes brachypterus;* 22, *N. brunneus.* Figs. 23-24, Apical piece of male genitalia (left, ventral view; right, laterial view); 23, *Allecula chilensis;* 24, *A. pulchella.*

lobed ventrally. Anterior tarsal claws each with 6 teeth.

Types. Holotype, male, with labels as follows: Fray Jorge, Coquimbo, 4, 5-Nov-1957, Coll: L. E. Peña/HOLOTYPE ♂ Narsodes brachypterus n. gen., n. sp., 1974, J. M. Campbell. The specimen is in the collection of the Museo Nacional de Historia Natural de Santiago, Chile.

Paratypes, 2 males and 6 females in the Canadian National Collection, Ottawa (CNC N° 13449), the collection of Mr. L. E. Peña, and the Museum of Comparative Zoology at Harvard University, Cambridge.

Distribution and Records. Known from the northern provinces of Coquimbo and Valparaíso. Country label only (MNHNS) 1. *Coquimbo:* Fray Jorge, 4-5 November 1957, L. E. Peña (CNC, LEP, MNHNS) 6. *Valparaíso:* Zapallar, 30 December 1963, L. E. Peña (MCZ) 2.

Remarks. Narsodes brachypterus may be readily distinguished from all other South American Alleculidae except the following species by its short wings, the glabrous body dorsally, the less elongate pronotum, the somewhat shortened metasternum, the almost unimpressed pronotal disc, and the fact that the base of the elytra is only slightly wider than the base of the pronotum.

This species is almost identical with *N. brunneus* except for the differences in the male terminalia.

13. Narsodes brunneus new species (Figs. 11, 22, 33)

This species is similar to *Narsodes brachypterus,* differing only as follows:

Length 7.0 mm. Antenna with ratio of lengths of segments 1-11 as in Table 1; ratio of length/width of third segment 18/5; of fifth segment 18/5; and of tenth segment 15/6. Maxillary palpus with ratio of lengths of outer, apical and basal sides as follows: 14-17-10. Pronotal index 81 (Table 2).

Male. Eyes with ocular index 44 (Table 2). Anterior tarsal claws each with 6 teeth. Eighth sternal lobes (Fig. 22) moderately narrow, inner sides not concavely impressed; lobes straight, not curved medially; only ventral margins with dense dentiform setae; viewed laterally lobes straight, moderately narrow, with apices narrowly rounded. Ninth sternal lobes moderately short, narrow; apices not surpassing middle of eighth sternal lobes. Apical piece of genitalia (Fig. 33) broadly triangular; ratio of length of apical piece to basal piece 1:2.8; sides straigh gradually narrowed from base to broadly roun ed apex; viewed laterally, entire apical pie slightly curved ventrad from base; surface wit scattered, fine, dentiform setae.

Female. Unknown.

Type. Holotype, male, with labels as follow Bosque Fray Jorge, Ovalle, Chile, XII-11-50 Ross and Michelbacher Collectors/HOLOTYP ♂ Narsodes brunneus n. sp., 1974, J. M. Camp bell. The specimen is in the collection of th California Academy of Sciences, San Francisco.

Distribution and Records. Known only fro the province of Coquimbo.

Coquimbo: Bosque Fray Jorge, Ovalle, 1 December 1950, Ross and Michelbacher (CAS) 1.

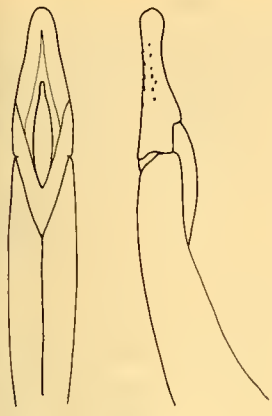
Remarks. The status of this species is ques tionable. It is indistinguishable from *N. brachyp terus* except on the basis of differences in th male terminalia. I have seen only 3 males o *brachypterus,* but the male terminalia of thes specimens show almost no variation even thoug they are from two separate localities. As can b seen by comparing figures 21 with 22 and 3 with 33, the terminalia of *brunneus* are quit different both in the shape and structure of th eighth sternal lobes and in the shape of the geni talia. It is possible that the specimen of *brunneu* is aberrant, but this does not seem likele for both the genitalia and the eighth sternum

ZOOGEOGRAPHY

The flora and fauna of Chile probably have th highest percentage of endemism of any conti nental country in the world. They are almos totally isolated from the rest of South Americ in the north by the large, very arid Atacama Desert, on the east by the continuous chain o the Andes, and in the south by cold climate.

The Alleculidae of Chile certainly suppor this description. Of the 13 species known, al are endemic. Furthermore, 12 of these are s specialized that it is difficult to speculate o the origin of their ancestral species. Only on species, *Allecula penai* is obviously related t other South American species. No obvious relationship was noted between the alleculids of Chile and those of New Zealand as has been proposed for other groups. This is not surprising as most distributions with Chilean — New Zealand relationships are found in taxa with more southern distributions than found in the family Alleculidae.

The uniqueness of the Chilean alleculids is probably due, with the exception of *A. penai,*



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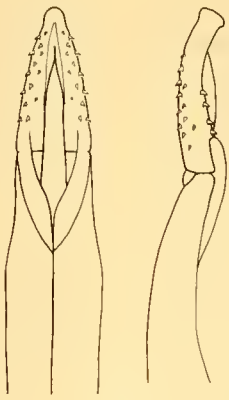

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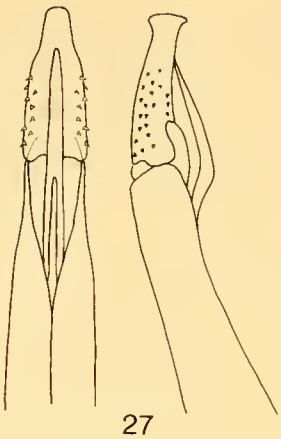

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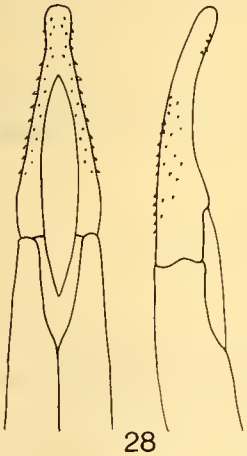

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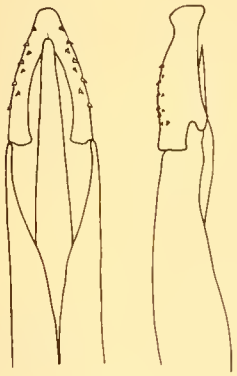

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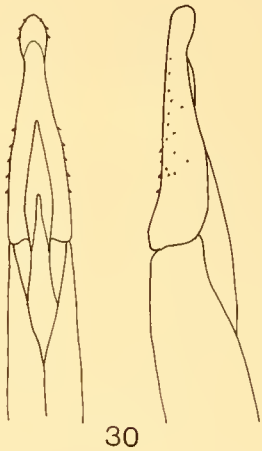

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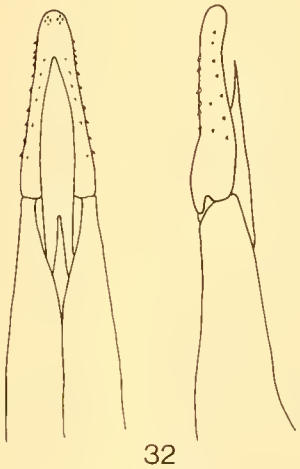

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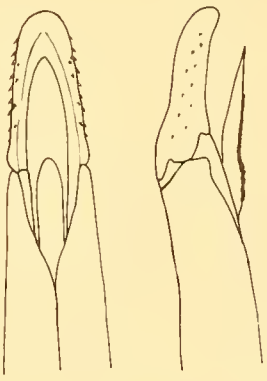

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Figs. 25-33. Apical piece of male genitalia (left, ventral view; right, lateral view); 25, *A. penai;* 26, *A. coquimbensis;* 27, *A. fragilicornis;* 28, *A. pallidicollis;* 29, *Phediodes apterus;* 30, *Eucaliga sanguinicollis;* 31, *Lycula chilensis;* 32, *Narsodes brachypterus;* 33, *N. brunneus.*

to immigration of several species into Chile before the Andes became an effective barrier. Following the rise of the Andes, the alleculids radiated into arid and semiarid habitats not normally occupied by alleculids in other parts of South America. Subsequent specialization for these habitats has undoubtedly contributed to the high degree of morphological dissimilarity with most other alleculids. *Allecula penai* is probably the result of a more recent successful invasion from other parts of South America. The Andes now form a very effective barrier against further invasion from other areas of South America. Species density of alleculids in the Neotropical Region is highest at elevations of 500 to 1.000 meters with only a few species living at elevations above 2.000 meters. (In South America, the only species living above 2.000 meters is a group of *Allecula* restricted to northern South America in Colombia and Venezuela). Species of the family do not extend far enough south into the temperate zones to allow introduction of species into Chile from this region.

Another important characteristic of the Chilean Alleculidae is the absence of most of the dominant groups of South American Alleculidae. There are three large groups of Alleculidae in South America: (1) the tribe Lystronychini *(Lystronychus, Prostenus, Xystropus, Cteisa,* and *Microprostenus),* (2) *Lobopoda* and related genera *(Blepusa* and *Orchesiolobopoda),* and (3) *Allecula* and the related genus *Omocula.* Of these three groups, only *Allecula* and related endemic genera are represented in Chile.

Alleculidae are found in Chile between Coquimbo (about 30°S) and the province of Llanquihue (about 42°S). They occur at elevations ranging from sea level to 1,250 meters.

Chile has been divided into a number of faunal regions by various workers (see Peña 1966, O'Brien 1971). Although the alleculids do not inhabit the variety of habitats or have the broad climatic limits necessary to study zoogeographic provinces of a region, they do support the papers by Peña and O'Brien. The regions proposed by Peña are particularly appropriate for the alleculids. This is not surprising as Peña based his regions on the distribution of the Tenebrionidae which are closely related to the Alleculidae (many recent authors have considered the Alleculidae as a subfamily of Tenebrionidae e.i. Watt 1966, Doyen 1972) whereas O'Brien based his regions primarily on the distribution patterns of Curculionidae and Fulgoroidea.

Five species of Alleculidae are found in th Coquimban Desert. These are *Allecula coquim bensis, A. fragilicornis, A. penai, Narsode brunneus,* and *N. brachypterus.* Of these specie only *Allecula penai* is known from anothe region (the northern Valdivian forest).

The central valley also has five species c Alleculidae. These are *Allecula chilensis, A semiobscura, Eucaliga sanguinicollis, Phediode apterus,* and *P. pubescens.* All of these specie are apparently endemic to this region.

The species *Allecula pulchella* has a wid distribution in Chile and is found in the north ern Valdivian forest, the Pehuenar region, an the Valdivian region. The only other alleculi occuring in the northern Valdivian forest is *A penai* which also is found further north in th more arid Coquimban Desert.

In addition to *A. pulchella,* the Valdivia region also contains the endemic *Lycula chilensi* and *A. pallidicollis* which also occurs in th Pehuenar region.

For further details on these regions the paper of Peña (1966) and O'Brien (1971) should b consulted.

REFERENCES

Borchmann, F. 1910. Pars 3, Alleculidae. *In* W. Junk and S Schenkling, Coleopterorum Catalogus. Berlin.

Borchmann, F. 1930. Die gattung *Lystronychus* Latr. (Col Alleculidae). *Deutsche ent. Zeitsch.* 1930:81-121.

Campbell, J. M. 1966. A revision of the genus *Lobopod* (Coleoptera: Alleculidae) in North America and th West Indies. *Illinois biol. Monogr.* 37. University o Illinois Press, Urbana.

Campbell, J. M. 1971. A revision of the Alleculidae (Coleop tera) of the West Indies. *Mem. ent. Soc. Can.,* N° 81 140 pp.

Doyen, J. T. 1972. Familial and subfamilial classificatio of the Tenebrionoidea (Coleoptera) and a revised generi classification of the Coniontini (Tentyriidae). *Quaest ent.* 8:357-376.

Duponchel, P. A. J. 1841. *In* Charles d'Orbigny, Diction naire universal d'Histoire Naturelle, Vol. 1. Paris.

Fabricius, J. C. 1801. Systema eleutheratorum, Vol. 2, 68 pp. Kiliae.

Fairmaire, L. 1875. Revision des Hétéromères du Chili. *Ann. Soc. entom. France* 5:191-200.

Fairmaire, L. and P. Germain, 1861. *Coleoptera Chilensi* 2:1-8.

Fairmaire, L. and P. Germain, 1863. Revision des Coléop tères du Chili. *Ann. Soc. entom. France* 3:225-284.

Jacquelin du Val, P. N. C. 1859-1863 (1863). Genera de Coléoptères . . . , Vol. 3, pp. 1-464. Paris.

Lacordaire, J. T. 1840. Histoire naturelle des insectes Coléoptères, Vol. 2. Paris.

Mulsant, E. 1856. Notes relatives à quelques insectes Coléoptères de la tribu des Pectinipèdes. *Opuscules entomologiques* 7:17-59.

O'Brien, C. W. 1971. The biogeography of Chile through entomofaunal regions. *Ent. news* 82:197-207.

Peña, L. E. 1966. A preliminary attempt to divide Chile into entomofaunal regions, hased on the Tenebrionidae (Coleoptera). *Postilla* N° 97, 17 pp.

Philippi, E. A. 1863. Zwei neue Käfer aus Chile. *Stettiner Ent. Zeitung* 24:132-135.

Pic, M. 1929. Nouveautés diverses. *Mél. Exot.-Ento.* 53:1-36.

Seidlitz, G. von. 1896. Naturgeschichte der Insecten Deutschlands. Alleculidae. Band 5 (pt. 2).

Solier, M. 1835. Prodome de la famille des Xystropides. *Ann. Soc. entom. France* 4:229-248.

Solier, M. 1851. Orden III. Coleopteros. *In* Gay, Historia fisica y politica de Chile, vol. 5, pp. 1-285.

Watt, J. C. 1966. A review of classifications of Tenebrionidae (Coleoptera). *Entomologists mon. Mag.* 102:80-88.