

THE ANTS OF CHILE (HYMENOPTERA: FORMICIDAE)*

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ABSTRACT

This paper treats the 62 species of Formicidae now known or believed to occur in Chile. Keys are provided to separate the six subfamilies and all the genera. The species in those genera with three or more species are also separated by keys. Most species are represented by line drawings. Detailed distribution data are cited in the text and maps are also provided.

The following new species-group synonymy is proposed: *Ponera opaciceps chilensis* Forel = *Hypoconerops opacior* (Forel); *Pogonomyrmex bispinosus intermedius* Menozzi = *P. b. semistriata* Emery = *P. b. spinolae* Emery = *P. vermiculatus* Emery; *Solenopsis germaini schedingi* Forel = *S. germaini* Emery; *S. latastei hoffmanni* Forel = *S. latastei* Emery; *Melophorus bruchi* Forel = *Lasiophanes picinus* (Roger); *Prenolepis bolivari* Santschi = *M. pilosulus* Emery = *M. uxorius* Emery = *L. valdiviensis* (Forel); *Myrmelachista rectinota* Forel = *M. hoffmanni* Forel; *M. mayri monticola* Mayr = *M. mayri* Forel; *Brachymyrmex giardii nitida* Santschi = *B. giardii* Emery; *Camponotus distinguendus tenuipubens* Santschi = *C. dist. denudatus* Emery = *C. distinguendus* (Spinola); *C. chilensis ruficornis* Emery = *C. spinolae* Roger.

The following new genus-group synonymy is proposed: *Psammomyrma* = *Spinimyrmex* = *Dorymyrmex*; *Ammomyrma* = *Araucomyrmex*; *Neaphomus* = *Hincksidris* = *Myrmelachista*.

SUMARIO

En este trabajo el autor trata las 62 especies de *Formicidae* hasta hoy día conocidas de Chile. La clave las separa en seis subfamilias y se da para los géneros y especies. La gran mayoría de ellas están representadas en dibujos. Se da a la vez datos de distribución en mapas incluidos, y se sinonimizan varias especies.

INTRODUCTION

The ant fauna of Chile has never received a unified taxonomic treatment. The bulk of the earlier work, by such authors as Emery, Forel, Mayr, Menozzi and Spinola, has consisted largely of isolated descriptions of new taxa. Seldom were pertinent illustrations provided and keys were even rarer. Kempf (1970) briefly reviewed the history of myrmecology in Chile and provided a catalog of the known ant fauna of Chile. In this catalog 52 species were listed, several with a number of "subspecies" or varieties, with a total of 65 nominate forms included. One overlooked species was added by Kempf (1972).

Material collected in Chile by Hunt prompted this study when it became apparent that much of it could not be satisfactorily identified. The inadequacy of earlier descriptions was only partially the cause of these difficulties, for it was apparent that some species were undescribed and that other forms had been incorrectly treated as "subspecies" or "varieties". It is the purpose of this paper to review the taxonomy of the Chilean ant fauna by means of modern keys based on morphological characteristics.

REFERENCE COLLECTIONS

The bulk of the material used in this study consists of the collections made by Hunt and now deposited in the Natural History Museum of Los Angeles County (LACM). Substantial collections were received from the California Academy of Sciences (CAS) through the kindness of P. H. Arnaud, Jr. and the University of California, Berkeley (UCB) through E. I. Schlinger. The very important collection of Forel type material, now at the Muséum d'Histoire Naturelle, Geneva (MHNG), was generously loaned by C. Besuchet. Smaller collections belonging to the following institutions were studied: Universidad de Concepción (UCON), through T. Cekalovic; Museum of Comparative Zoology (MCZ), through H. E. Evans; American Museum of Natural History (AMNH), through M. Favreau; Museo Nacional de His-

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5. Monomorphic; antennal scape usually not extending beyond occipital margin, and never by more than one-sixth its length; mesonotal profile uniform 6
— Dimorphic, major with head disproportionately large and with occiput cleft in middle (figs. 33, 36); scape of minor, but not of major, exceeding occipital margin by about one-third its length (fig. 36); mesonotum, in profile, with two distinct faces sharply angular to one another (fig. 34) *Pheidole*
6. Mid and hind tibiae without apical spur; median lobe of clypeus large, extending beyond apical margin of clypeus (figs. 29, 31) *Antichthonidris*
— Mid and hind tibia each with a distinct apical spur; median lobe of clypeus not extending beyond clypeal margin (figs. 38, 40, 42) *Nothidris*

Pogonomyrmex

This genus includes several common and widely distributed species which may be locally abundant. One species, *vermiculatus*, is especially common. It is morphologically variable, and several of the more distinct forms have been named as varieties. The Chilean *Pogonomyrmex* all belong to the subgenus *Ephebomyrmex* as defined by Cole (1968). Two very distinct groups are represented. The two species which comprise the *bispinosus* group are large ants, the body abundantly marked with ferruginous, the head relatively large, and seeds form a prominent part of the diet. The smaller, brownish to blackish species, with relatively small heads, belong to the *angustus* group. Members of this group are general feeders which do not gather significant quantities of seeds.

KEY TO CHILEAN POGONOMYRMEX

1. Ventral surface of head with an arcuate row of long ammochetae which extend mesially over gular area; gular area smooth and shiny, sharply differentiated from lateral sculptured areas, larger species (*bispinosus* group) 2
— Ventral surface of head with scattered, irregularly spaced hairs over entire area; gular area not sharply differentiated from rest of ventral surface; smaller species (*angustus* group) 3
2. Scape, at base, strongly thickened, about as thick as apical width; postpetiole without transverse striae on dorsal surface; first gastric tergum never longitudinally striate *bispinosus* (Spinola)
— Scape narrowed at base, its greatest thickness at bend no more than half apical width; dorsum of postpetiole conspicuously transversely striate; firsts gastric tergum often longitudinally striate *vermiculatus* Emery
3. Occiput and thoracic dorsum smooth and shiny 4
— Entire head, including occiput, longitudinally striate interspaces dull, closely punctulate; thorax coarsely rugulose, with dull, punctulate interspaces *angustus* (Mayr)
4. Frontal striae moderately coarse; head, thorax and gaster black *laevigatus* Santschi

— Frontal striae very fine; head and thorax reddish, gaster brownish apically *odoratus* Kusnezov

Pogonomyrmex angustus Mayr

(Fig. 23)

Pogonomyrmex angustus Mayr, 1870:970. ♀; Mayr, 1887:609, 612-613. ♀ ♀ ♂; Berg. 1890:10, Emery, 1905:158; Forel, 1907:4.

Ephebomyrmex angustus, Kusnezov, 1959: 353-354 (*biology*); Kempf, 1970:21; Kempf, 1972:106.

Type locality. Valdivia, CHILE.

This is the only one of the small *Pogonomyrmex* that is at all common. It is easily recognized by its all black color, coarsely striate and punctulate head, and rugulose, closely punctulate thorax.

Localities (Map 3). CHILE. *Aconcagua*: 90 km S Illapel (CAS). *Valparaíso*: Los Perales, río Marga-Marga, 330 m. elev. (UCB). *Santiago*: cuesta La Dormida, 1000 m. elev. (UCB, LACM); cerro El Roble, ca 2000 m elev. (LACM); El Manzano (MSTO). *Colchagua*: 3 km N Callejones (UCB). *Curicó*: cajón de Río Claro, SE Los Queñes, 1000 m elev. (UCB). *Nuble*: 50 km E San Carlos (CAS). *Arauco*: 20 km W Caramávida, 750 m elev. (UCB). *Malleco*: Parque Nac. Nahuelbuta (LACM). *Cautín*: 12.3 km N Loncoche, 280 m elev. (UCB); 20 km E Temuco (CAS); [cerro Ñielol, 23 Nov. 1967 (W. W. Kempf); Kempf, 1970]; 10 mi NE Pucón, (CAS). *Valdivia*: [Valdivia; type series, Mayr, 1870]; same locality (AMNH); [puerto Corral; Forel, 1907]. *Osorno*: Pucatrihue (UCB). *Llanquihue*: Petrohué, lago Todos los Santos (LACM). *Chiloé*: Dalcahue (MSTO).

Pogonomyrmex bispinosus (Spinola)

(Fig. 24, 27, 28)

Atta bispinosa Spinola in Gay, 1851:244-246. ♀. (not ♀ ♂).

Pogonomyrmex bispinosus, Mayr, 1870: 971-972; Gallardo, 1932:133; Goetsch; 1933: 311-312 (*biology*); Menozzi, 1935:332; Cekalovic, 1964: s.p.; Kempf, 1970-20; Kempf, 1972: 207.

Type locality. Santa Rosa de Los Andes, CHILE.

This large species is easily recognized by the basally thickened scape and lack of transverse striae on the node of the postpetiole. Workers also differ from those of northern populations of *vermiculatus* by the lack of

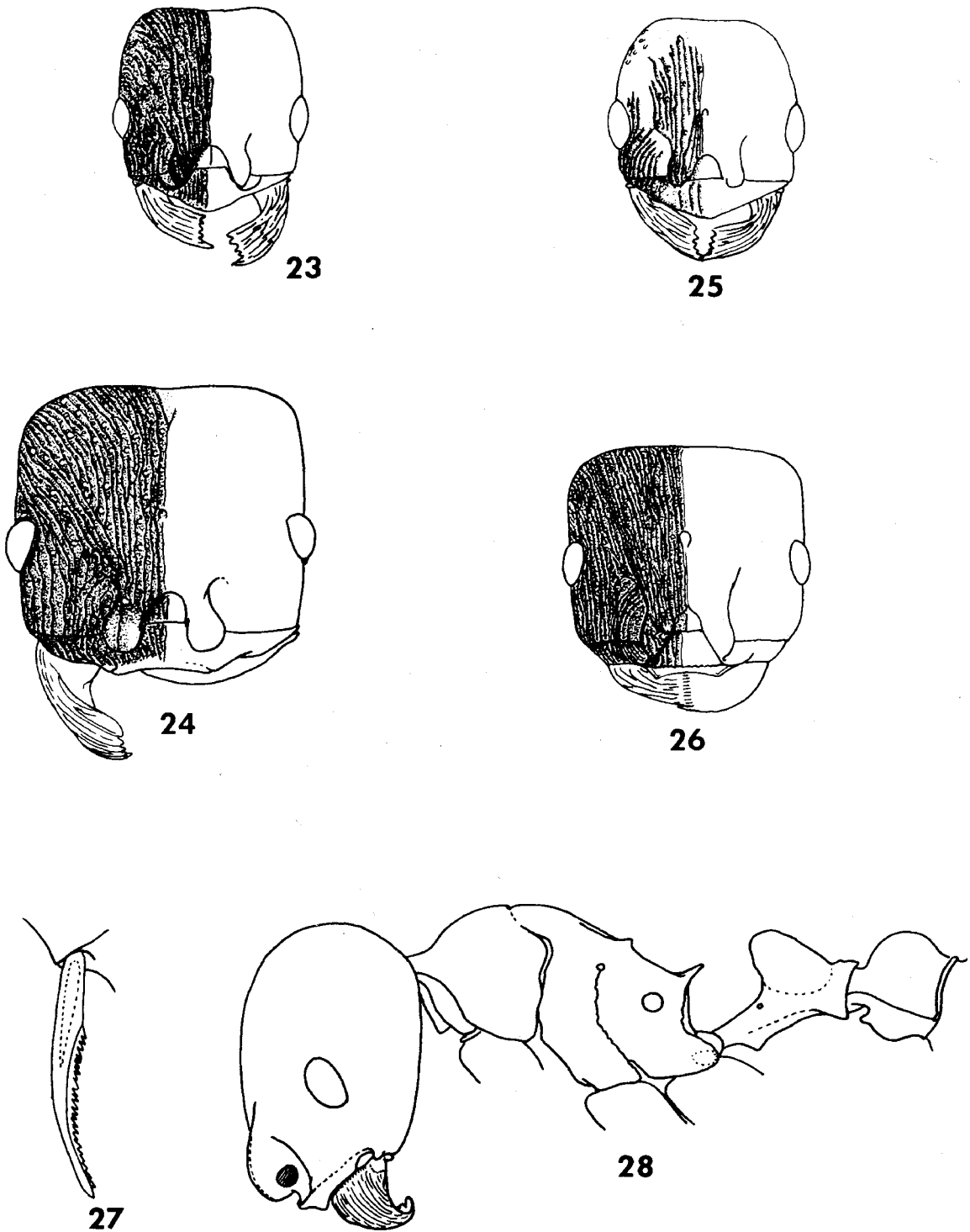
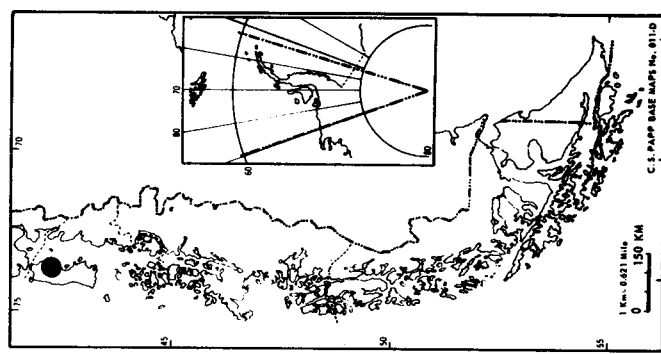
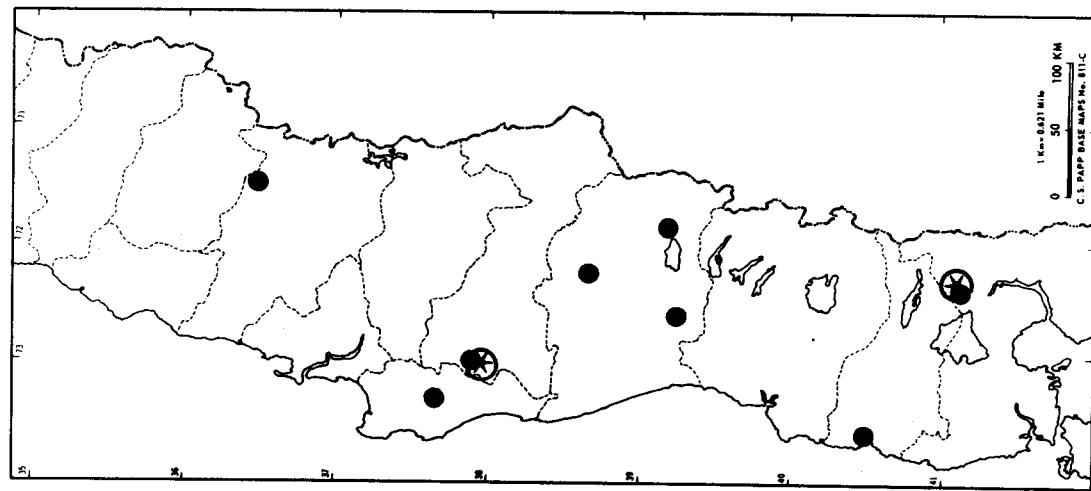
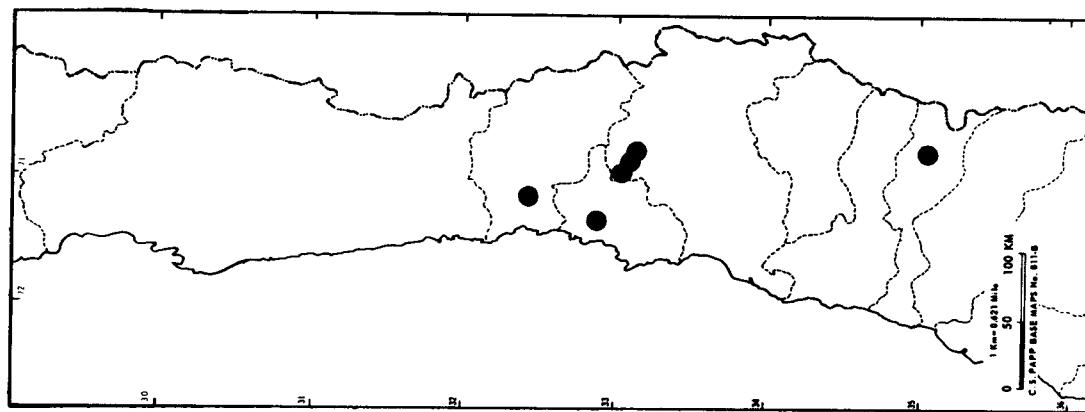
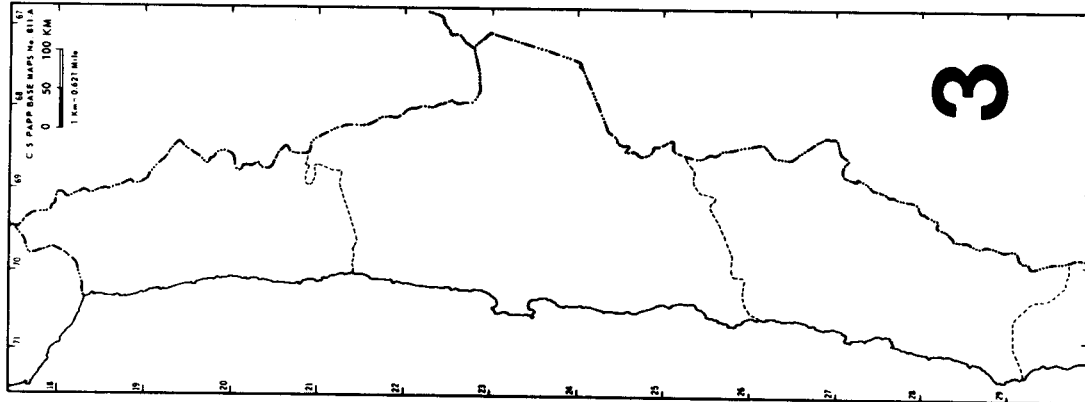


Plate 4. Figs. 23-28. Myrmicinae, *Pogonomyrmex* workers: 23, *P. angustus*, frontal view of head; 24, *P. bispinosus*, same; 25, *P. odoratus*, same; 26, *P. vermiculatus*, same; 27, *P. bispinosus*, hind tibial spur; 28, *P. bispinosus*, lateral view.



● *Pogonomymex*
angustus

⊗ *Pogonomymex*
odoratus

dense punctulae and striae on the first gastric tergum.

The present ant accords more closely with Spinola's original description of the *bispinosus* worker than does the usual interpretation which was always vague. The difficulties begin with the type series, for Spinola had workers from Santa Rosa de Los Andes, Aconcagua, and females and males from Tucapel, Ñuble. Emery (1905), convinced that two different forms were represented in the type series, proposed to call the Tucapel specimens var. *spinolae*, thus automatically restricting the type locality to Santa Rosa de Los Andes and making the worker the type. The worker was described as all red, with the first gastric tergum smooth and shiny. Subsequent investigators saw various samples, some bicolored, some with the first tergum variously sculptured, but, apparently, none which were wholly red and with a smooth gaster. These were described as varieties of *bispinosus*, even though there was no clear idea of the identity of "typical" *bispinosus*.

A few samples from Aconcagua and Santiago are available which do meet the crucial criteria for *bispinosus*: they are from the right area, they are uniformly red, and the first gastric tergum is smooth and shiny. This species is, in our opinion, the true *bispinosus*. The several forms attributed to *bispinosus* (i.e., *intermedia*, *semistriata* and *spinolae*) are conspecific with one another, but not with *bispinosus*. They are much more closely related to *vermiculatus* and are here removed to the synonymy of that species.

Localities (Map 4). CHILE. Aconcagua: 10 km E Papudo (CAS); 3 km N Zapallar (LACM); [Santa Rosa de Los Andes; types of *bispinosus* Spinola, 1851]. Santiago: El Coipo (MSTO); El Peumo; río Maipo (MSTO); cuesta La Dormida (LACM).

Pogonomyrmex laevigatus Santschi

Pogonomyrmex (*Ephebomyrmex*) *laevigatus* Santschi, 1921:97 ♀; Goetsch, 1933:331-332 (biology).

Ephebomyrmex laevigatus, Kusnezov, 1959: 354 (distr., biology); Kempf, 1970:22; Kempf, 1972:106.

Type locality: Cayutué, CHILE.

No specimens of this ant have been seen. It is most similar to *odoratus* in that the head and thorax are largely smooth and shiny. The body, however, is wholly blackish and the striae on the lower part of the head are said to be coarser

than is *odoratus*. All recorded localities are from Llanquihue: Cayatué, Puerto Montt, Puerto Varas.

Pogonomyrmex odoratus Kusnezov

(Fig. 25)

Pogonomyrmex (*Ephebomyrmex*) *odoratus* Kusnezov, 1949:298-299, 302-307. ♀ ♀ ♂.

Ephebomyrmex odoratus, Kusnezov, 1959: 354; Kempf, 1970:22; Kempf, 1972:106.

Type locality. None designated. Kusnezov (1949:299) lists six localities in northwestern Patagonia, ARGENTINA. Of these, we here select the first listed, Hua Hum, as the type locality.

The wholly ferruginous color and smooth head and thorax will readily separate this from other species of *Pogonomyrmex*.

Localities (Map 3). CHILE. Malleco: Parque Nac. Nahuelbuta (LACM). Llanquihue: Petrohué, lago Todos los Santos (LACM).

Pogonomyrmex vermiculatus Emery

(Fig. 26)

Pogonomyrmex vermiculatus Emery, 1905: 157-158. ♀; Cekalovic, 1964: s.p.; Kempf, 1970:21; Kempf, 1972:209.

Pogonomyrmex bispinosus var. *semistriata* Emery, 1905:158. ♀; Forel, 1912:16; Gallardo, 1932:131, fig. 19; Goetsch, 1932:6-30; Kempf, 1970:21; Kempf, 1972:207. NEW SYNONYMY.

Pogonomyrmex bispinosus var. *spinolae* Emery, 1905:158. ♀ ♂; Santschi, 1925:223. ♀; Kempf, 1970:21; Kempf, 1972:207. NEW SYNONYMY.

Pogonomyrmex bispinosus var. *intermedia* Menozzi, 1935:320. ♀; Kempf, 1970:21; Kempf, 1972:207. NEW SYNONYMY.

Type locality. *vermiculatus*: Río Santa Cruz, ARGENTINA; *semistriata*: Talca, CHILE; *spinolae*: Tucapel, CHILE; *intermedia*: Volcán de Chillán, CHILE.

We are using *vermiculatus* as the name for the common, widely distributed species more usually called *bispinosus*. There are no appreciable differences between Patagonian *vermiculatus* and the several Chilean infraspecific forms usually assigned to *bispinosus*. There are so many populations of indeterminate status that recognition of any of these nominate forms is impossible, hence the above synonymy.