

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 = *Hypoponera 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* = *Spinimyрма* = *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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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.

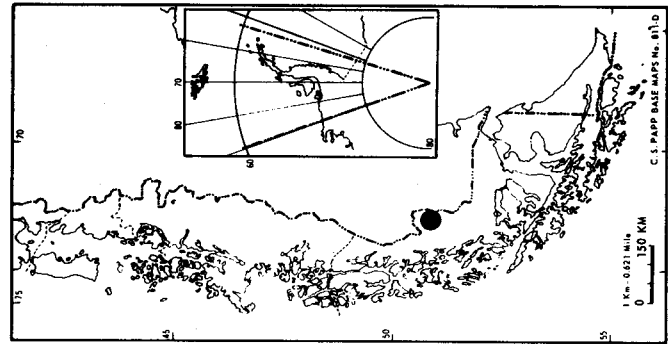
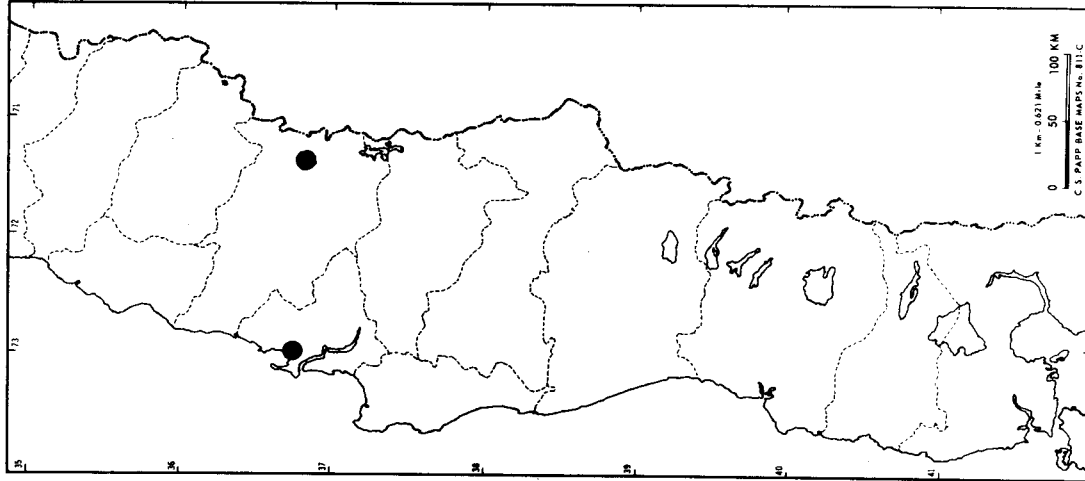
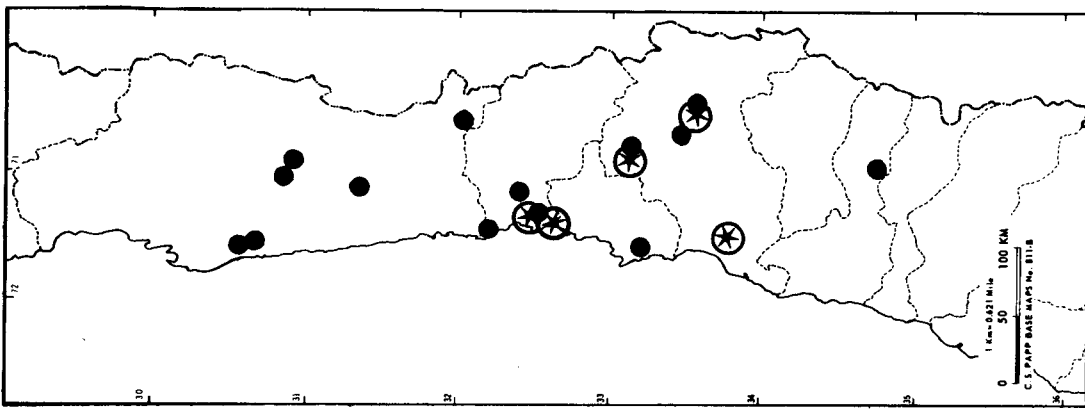
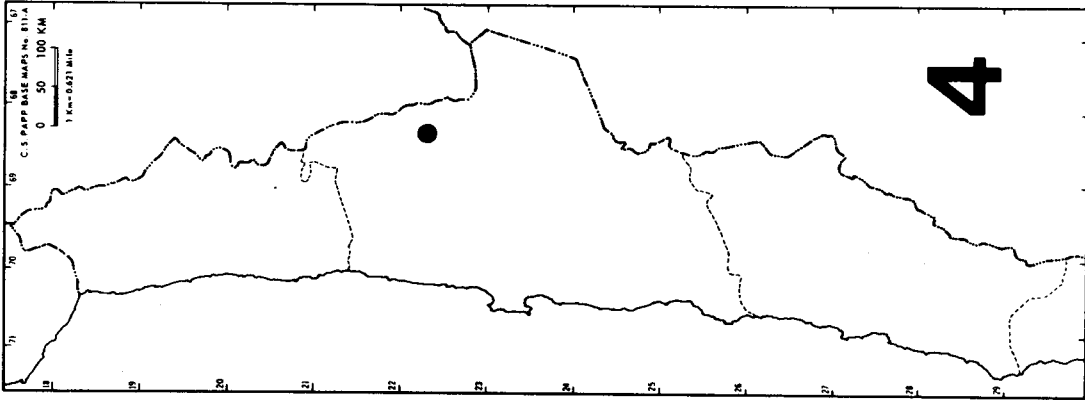
Pogonomyrmex bispinosus var. *semistriata* Emery, 1905:158. ♀; Forel, 1912:16; Gallardo, 1932:131, fig. 19; Goetsch, 1932:6-30; Kempf, 1970:21; Kempf, 1972:207. NEW SYNONYMY.

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.



⊗ *Pogonomyrmex bispinosus*

● *Pogonomyrmex vermiculatus*

The true *bispinosus* is another matter, however. The types came from Santa Rosa de Los Andes, Prov. Aconcagua. For the most part, Spinola's description can be applied to *vermiculatus*. Spinola does, however, state that the first gastric tergum is smooth and shiny. All material of *vermiculatus*, as here understood, from Aconcagua, has the first gastric tergum closely covered with very fine longitudinal striations and the surface densely, finely punctulate. The resultant surface has a very characteristic dull, satiny sheen. There exists, in Aconcagua, another species of *Pogonomyrmex* which, in our opinion, better matches the description of *bispinosus*, and it is to that species that we assign Spinola's name.

Several Argentinian forms have been described as varieties of *vermiculatus*: *atratus* Santschi, *chubutensis* Forel, *joergenseni* Forel and *variabilis* Santschi. We have not seen sufficient material of any of these to form definite opinions about them, but we suspect that the last three, at least, will prove to be synonyms of *vermiculatus*.

Northern populations of *vermiculatus* usually are wholly ferruginous and most, or all, of the dorsum of the first gastric tergum is closely punctulate and striolate. Specimens from Prov. Ñuble have the thorax black. The sculpture of the first tergum is present over the basal one-third, or less, of the segment. In the few specimens seen from Prov. Magallanes, the thorax, gaster and appendages are blackish; only the head is ferruginous. The fine punctulae and striolae of the first tergum are usually confined to the basal one-fourth or less, but may cover half, or more, of the segment. There is so much variation within populations that we see no value to recognizing these populations as subspecies.

Males of this species have been taken between the period 21 November to 29 January, mostly in Prov. Santiago.

Localities (Map 4). CHILE. *Antofagasta*: Turi (MSTO). *Coquimbo*: Fray Jorge, 5 km W Pachingo, 550 m elev. (UCB); Parque Nac. Fray Jorge, 15 km SW Pachingo, 100-200 m elev. (UCB); Bosque Fray Jorge (CAS); 30 km N Illapel, 5000 ft. elev. (CAS); 28 mi N Combarbalá (CAS); 35 mi S Ovalle (CAS). *Aconcagua*: Los Molles (LACM); E entrance to tunnel, 90 km S Illapel (CAS); 10 km E Papudo (CAS). *Valparaíso*: [Valparaíso; Santschi, 1925; Gallardo, 1932; Goetsch, 1932]; [Viña del Mar; Goetsch, 1932]; 8 km SE Quintay, 150 m elev. (UCB). *Santiago*: [Santiago; Menozzi, 1935]; El Canelo (UCB, MSTO); Rinconada-Maipo (UCH); El Peumo-Río Maipo (MSTO);

[cerro San Cristóbal; Maipo; Peñaflores; cuesta de Pudahuel; San Antonio; Goetsch, 1932]; El Manzano (MSTO); San José de Maipo (MSTO); cajón del Maipo (MSTO); quebrada El Peumo (MSTO). *Curicó*: Curicó, 1300 ft. elev. (USNM). *Talca*: Talca (Silvestri; co-types of *semistriatus* Emery, 1905). *Ñuble*: Las Trancas rd., near Termas de Chillán, 1350 m elev. (UCB); [Volcán de Chillán, 1700 m elev.; types of *intermedia* Menozzi, 1935]; [Tucapel; types of *spinolae* Emery, 1905]. *Concepción*: Penco (USNM). *Magallanes*: Río Bagues, Estancia Cerro Guido (UCON).

Antichthonidris

The two species of *Antichthonidris* have been traditionally associated with the monomoriines. Described as species of *Monomorium*, they were assigned to the subgenus *Notomyrmex* by Emery (1915), accompanied by another Chilean species, *latastei*. These three species were removed from *Notomyrmex* to the new genus *Nothidris* by Ettershank (1966), which had as its type, *latastei*. Snelling (1975) proposed to remove *bidentatus* and *denticulatus* from *Nothidris*, based principally upon characteristics of the males which required their exclusion from *Nothidris*; the new genus *Antichthonidris* was proposed, with *bidentatus* as type species.

The affinities of *Antichthonidris* are uncertain, but the genus seems most closely allied to such pheidoline genera as *Stenammina*. Male thoracic structure and wing venation are suggestive of that genus as are worker clypeal structure and the lack of apical spurs on the middle and hind tibiae. The worker differs from that of *Stenammina* by the large, multifaceted eyes and the barely depressed metanotum.

Antichthonidris bidentatus (Mayr)

(Fig. 29-30)

Monomorium bidentatum Mayr, 1887:616. ♀ ♀; Berg, 1890:9.

Monomorium (*Notomyrmex*) *bidentatum*, Emery, 1915:190; Kusnezov, 1949:431-434.

Monomorium (*Notomyrmex*) *bidentatum* subsp. *piceonigrum* Borgmeier. 1949:468-469, figs. 16, 17. ♀.

Notomyrmex bidentatus, Kusnezov, 1959: 345-347, fig. 2, 3b.

Nothidris bidentatus, Ettershank, 1966:106, 107; Kempf, 1970:22; Kempf, 1972:165.