

## First record of the myrmicine ant genus *Paedalgus* Forel, 1911 (Hymenoptera: Formicidae) from the Western Hemisphere

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### Abstract

FERNÁNDEZ F. 2002. First record of the myrmicine ant genus *Paedalgus* Forel, 1911 (Hymenoptera: Formicidae) from the Western Hemisphere. *Entomotropica* 17(2):181-182.

The myrmicine ant genus *Paedalgus* Forel, 1911 (Hymenoptera: Formicidae) is recorded for the first time in the Western Hemisphere, based upon several undescribed species collected in Colombia, Peru and Brazil. The genus was previously known only from Africa and Sri Lanka.

**Additional key words:** Faunistics, Pheidologetonini, taxonomy.

### Resumen

FERNÁNDEZ F. 2002. Primer registro de hormigas Myrmicinae del género *Paedalgus* Forel, 1911 (Hymenoptera: Formicidae) del Hemisferio Occidental. *Entomotropica* 17(2):181-182.

El género de hormigas *Paedalgus* Forel, 1911 (Hymenoptera: Formicidae: Myrmicinae) se registra por primera vez para el Hemisferio Occidental con base en varias especies no descritas de Colombia, Perú y Brasil. Hasta el momento el género sólo se conocía de África y Sri Lanka.

**Palabras clave adicionales:** Faunística, Pheidologetonini, taxonomía.

### Introduction and Methods

The use of Winkler is highly effective for sampling leaf litter arthropods, particularly ants (Agosti et al. 2002). Thanks to the use of these traps in the insect surveys of the Humboldt Institute in Colombia, we have obtained rich soil and leaf-litter faunas of ants and other arthropods, some of them with great taxonomic and biogeographic relevance, as the ants reported in this paper.

Here I report for first time the myrmicine ant genus *Paedalgus* for the Western Hemisphere. The material examined comes from the insect collections of Humboldt Institute, Villa de Leyva, Colombia (IAvH), Museu de Zoologia, Universidade de São Paulo, Brasil (MZSP) and the Los Angeles County Museum of Natural History; California (LACM).

### Results and Discussion

*Paedalgus* Forel (Myrmicinae: Pheidologetonini)

#### Material examined:

*Paedalgus* sp. 1 & sp. 2

COLOMBIA. Putumayo, Kofanes Territory, Winkler trap, 9 workers (IAvH).

*Paedalgus* sp. 3

COLOMBIA. Norte de Santander, Tamá National Park, Winkler trap, E.L. Gonzalez leg., 1 worker (IAvH).

*Paedalgus* sp. 4

COLOMBIA. Putumayo, La Paya National Park, Winkler trap, 2.x.2000, D. Campos leg. (IAvH).

*Paedalgus* sp. 5

BRAZIL: Nova Teutonia, 27°11'S 52°23'W, F. Plaumann leg., 3 workers (MZSP).

*Paedalgus* sp. 6

PERÚ. Madre de Dios, Cocha Cashu, wet forest, 7.oct.99, D.W. Davidson leg., 8 workers (LACM).

The members of *Paedalgus* are minute ants comprising 10 species from Africa and Sri Lanka (Bolton and Belshaw 1993). All studied specimens represent undescribed species. Besides representing new generic records for Colombia, Brasil, and Peru, *Paedalgus* is also a new record for the Western Hemisphere.

Because all workers were collected in pristine forest, or at least forest with little disturbance, and all are new species, we can assume they are native to the Neotropics. The discovery of the presence in America of a genus previously known only from the Old World can be explained by their minute size (*Paedalgus* is one of the ant genera with the smallest species in the World) and the collection system (Winkler bags), implemented relatively recently for soil ants. The Brazilian and Peruvian ants were misidentified as *Carebara* Westwood.

*Paedalgus* and *Carebara* share several traits: minute size, reduction in antennal segments, antennal club of two segments, formula palpal 2,2, eyes reduced to a few ommatidia or absent and propodeum unarmed (Bolton and Belshaw 1993). The female and males are quite larger; the major worker caste probably was dropped in the evolution of both genera (Wilson 1971). The two genera are differentiated by weak characters (e.g. eyes absent in *Carebara*, reduced in *Paedalgus*; reduced propodeum in *Paedalgus*), so both taxa could be congeneric (Bolton and Belshaw 1993). The closeness between both genera can explain why all samples from Brazil and Peru were labeled as "*Carebara*".

What are the possible biogeographical implications? If *Paedalgus* is known only from South America, continental Africa and Sri Lanka, we may hypothesize that the ancestor of the genus lived in Gondwana before the split of Africa and South America. If the distribution of *Paedalgus* is a product of vicariance, these ants (and Myrmicinae as well) could be a very ancient group, living in the Southern Hemisphere during early Cretaceous, at or before the time of the oldest known ants (Grimaldi and Agosti 2000).

The biogeographic implications of the presence of *Paedalgus* in America are currently analysed by the author in a study of the systematics and phylogeny of the pheidologetonine genera.

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## References

- AGOSTI D, MAJER JD, ALONSO LE & SCHULZ TR (EDS). 2000. *Ants: Standard methods for measuring and monitoring biodiversity*. Washington (DC): Smithsonian Institution. 280 p.
- BOLTON B. 1995. *A New General Catalogue of the Ants of the World*. Harvard University. 504 p.
- BOLTON B, BELSHAW R. 1993. Taxonomy and biology of the supposedly lepto-biotic ant genus *Paedalgus*. *Syst Entomol* 18:181-189.
- GRIMALDI D, AGOSTI D. 2000. A formicine in New Jersey Cretaceous amber (Hymenoptera: Formicidae) and early evolution of the ants. *Proc Natl Acad Sci (USA)* 97(25):13678-13683.
- WILSON EO. 1971. *The Insect Societies*. Harvard University. 548 pp.