

Nomenclatural Notes on *Proatta* and *Atta* (Hym.: Formicidae)

By NEAL A. WEBER, Swarthmore College, Swarthmore,
Pennsylvania

As a result of studies ¹ in the three chief European collections of fungus-growing ants ² synonymies and other changes are clearly indicated. Most of the several hundred forms in the literature were described by Emery, Forel and Santschi and their collections are in excellent condition.

Field work and laboratory studies of living colonies have provided information on variability within a species that was not available when descriptions were first published. It has become clear that much variation even within a nest series is normal and that many species have a considerable range within the Neotropical Region.

PROATTA Forel

1912. *Proatta*, Forel, Rev. Suisse Zool. 20: 768

Proatta butteli Forel

1912. *Proatta butteli* Forel, Rev. Suisse Zool. 20: 769

The types remaining in the Forel collection and two pins in the Santschi collection were examined. All were from Singapore and collected by v. Buttel. One of two types in the Forel collection carried the additional information "Soengi Bandan, 26. iv. 1912, v. Buttel No. 403."

While it is true that *Proatta buttelli* is strikingly like an attine, this is taken here to be an example of convergence in worker

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² Those of Forel in the Muséum d'Histoire Naturelle in Geneva, Switzerland, in charge of Dr. Ch. Ferrière; of Santschi in the Naturhistorisches Museum, Basel, Switzerland, in charge of Dr. Fred Keiser; and of Emery in the Museo Civico Di Storia Naturale, Genoa, Italy, in charge of Dr. Delfa Guiglia. Their cordial reception of the author is appreciated.

morphology and not necessarily an indication of phylogenetic relationships. The spinosity is especially like that of *Mycocepurus*, and another and unrelated ant with comparable spinosity is *Orectognathus antennatus* of New Zealand. *Proatta butteli* differs markedly from attines in having the clypeus produced as an angular lobe, which is impressed in the middle and with lateral carinae, and in having a single, large median spine on the basal surface of the epinotum anterior to the usual epinotal spines. The antenna of the worker is 12-segmented and the anterior tarsi are not dilated.

There is no evidence that *Proatta* is a fungus-grower and it is not considered here to be a member of the *Attini*. At the present time this tribe is known only to be New World in distribution.

ATTA (Fabricius), Mayr emend.

- 1804. *Atta* (part.), Fabricius, Syst. Piez. p. 421
- 1865. *Atta* (excl. *Acromyrmex*), Mayr, Novara Riese, Formic., p. 18, 78
- 1942. *Atta* (subg. *Archaeatta*), Gonçalves, Soc. Brasil de Agron. Bol. 5: 342
- 1942. *Atta* (subg. *Neoatta*), Gonçalves, Soc. Brasil de Agron. Bol. 5: 346. New Synonymy.
- 1950. *Atta* (subg. *Palaeatta*), Borgmeier, Mem. Inst. Oswaldo Cruz 48: 244. New Synonymy.
- 1950. *Atta* (subg. *Epiatta*), Borgmeier, Mem. Inst. Oswaldo Cruz 48: 244. New Synonymy.

The most conspicuous and economically important fungus-growing ants are those belonging to the genus *Atta*. The taxonomic studies by Gonçalves (1942) and Borgmeier (1950) and the biological studies by Autuori and others in recent years have aided considerably in our understanding of this genus. An examination of certain types in the European collections makes it possible here to fix the identity of several forms. The studies of Gonçalves and Borgmeier must be consulted for the genus itself. In as homogeneous a group of species as *Atta* contains, the present author is reluctant to use subgenera. When one considers the tribe as a whole, *Atta* forms the most

compact group of species and the similarities are overwhelmingly more significant than the differences.

Examination of the three European collections confirmed the general South and North American views on the identity of the two Linnean species, *cephalotes* and *sexdens*. Both appeared to have been described from Guiana (probably Surinam) specimens. The ecological distribution of the two in British and Venezuelan Guiana has been described (Weber, 1946, 1947). The typical *cephalotes* has been considered to occur here and in Trinidad. The soldier is large and conspicuously shiny on the occiput. Media and minor workers are shiny and a concolorous pale ferruginous. The typical *sexdens* is absent from Trinidad but Panama specimens appear identical to the Guiana specimens, a range markedly greater than indicated on Eidmann's maps (1935, 1937).

***Atta cephalotes* ssp. *isthmicola* Weber**

1941. *Atta cephalotes* subsp. *isthmicola* Weber, Rev. de Ent. 12: 127

While this form may be a synonym, the Emery, Forel and Santschi collections do not contain any types that are clearly the same. The most striking characters are the bicolored and shiny integument of the worker, the thorax being a distinctly darker ferruginous than the head and gaster. Dead as well as living ants show this clearly and parts of colonies maintained in the laboratory for many months on several occasions do not change in this respect.

The distribution of *isthmicola* includes the Cerro Campana some 50 miles southwest of Panamá City, Panamá, an area visited through the courtesy of Graham B. Fairchild and Carl M. Johnson. Above 2,000 feet in forested areas the ants build large nests in the clay soil. Males and females were secured by Dr. Fairchild and Ratibor Hartmann in May, 1957. The 1938 type colony on Barro Colorado Island disappeared before 1954 and the site is occupied by the very different *Atta colombica tonsipes*.

***Atta cephalotes* ssp. *lutea* Forel**

1893. *Atta lutea* Forel, Ann. Soc. Ent. Belg. 37: 587

The type series in the Forel collection consisted of 15 pins, two being designated as types, the remainder as cotypes. All were collected by Jeffreys in Barbados. There is no maxima worker or soldier but workers of various sizes smaller than the maxima. All are uniformly pale brownish yellow and finely punctate on the head. A pin of three workers (media to maxima) in the American Museum of Natural History and one secured by the author through exchange with Dr. Ferrière are of this type series. They have the same characters as above.

Contrary to the allocations of this as a separate species by more recent workers, it appears to be no more than a subspecies of *cephalotes*. It would seem to be a mutant developed from *cephalotes* on the pale coral sand of this small island. Perhaps it was introduced as typical *cephalotes* by way of the abundant shipping between Barbados and Trinidad and Demerara several centuries ago. I collected typical *cephalotes* in all parts of Trinidad and do not believe that *lutea* occurs there.

***Atta cephalotes* ssp. *opaca* Forel**

1904. *Atta cephalotes* var. *opaca* Forel, Rev. Suisse Zool. 12: 31.

A single pin in the Forel collection, marked "Typus," is of a soldier from St. Antonio, Colombia, collected by Forel. The anterior lateral pronotal spines are reduced to mere humps and the anterior median ocellus is bipartite. It agrees perfectly with the specimens I took at Rio Porce (Lat. 6° 40' N., Long. 75° 10' W., 3,400 ft.) Colombia in 1938, representatives of which were determined as *opaca* by Gonçalves (1942, p. 345). He gives the range of the subspecies as Colombia, Bolivia and Brasil. Borgmeier (1950, p. 258) adds Peru.

Dr. Ferrière during my visit translated the original description as follows, commenting that the language was not entirely clear:

"var. *opaca* n. var. The rear of the head is dull, and the

tufts of hair on the vertex are more dense and reclinate. Although strongly visible, this variety is insignificant and inconstant. I have collected it beside the typical form at St. Antonio, in Colombia."

If the last statement indicates the actual situation, *opaca* may be a form originating not through geographical isolation but *in situ* through mutation. An alternative explanation is that, while *opaca* may have originated in the conventional manner (i.e. geographical isolation), it later spread to the territory of typical *cephalotes*. Both factors may be involved in the presently unclear distribution of *Atta*.

***Atta cephalotes* ssp. *polita* Emery**

1905. *Atta cephalotes* subsp. *polita* Emery, Mem. Accad. Sc. Ist. Bologna 2: 18

There are five pins in the Emery collections. Four of the five are labelled "Maipiri, Boliv., Staud." and one pin with the largest ant bears the identification "*A. cephalotes* var. *polita* Emery." All five carry a tiny green square of paper which doubtless signifies type material. In the original description the only specimens available was a series of small workers 3.5–6.5 mm. in length sent by Staudinger and Bang-Haas from Mapiri, Bolivia. Emery made his comparisons with workers of equal size of the typical form.

The ants clearly are a *cephalotes* form and should not have been described without the maximum caste. The largest ant, a medium-sized media, has the bicoloration and shininess suggesting *isthmicola* (though with the head not markedly paler than the thorax) but three others are concolorous as in typical *cephalotes* and one has the gaster darker. One ant has a moderately dull and punctate head.

***Atta colombica* Guérin**

1845. *Atta colombica* Guérin, Iconogr. Règne Anim. 7: 422

The types, from Colombia, appear not to have been examined by any worker after Guérin and are now unknown. They are

not listed by Vecht (1957) in his description of Guérin types although syntypes of *Atta insularis* are. During the past century various dull-colored specimens have been referred to this species but all such identifications should be suspect. In the original description only workers were mentioned and these had the head and prothorax glabrous. Compared with *insularis* they are paler, being reddish brown. His *Atta Lebasii*, described also from Colombia and on the same page, has been considered by the European myrmecologists to be the same as *colombica*.

***Atta colombica* ssp. *tonsipes* Santschi**

1929. *Atta colombica* v. *tonsipes* Santschi, Wien. Ent. Ztg. 1929, 46: 92

Regardless of the uncertainty of what *colombica* may be, the ants that Santschi described as the variety *tonsipes* still exist and these represent the common *Atta* of the Panama Canal Zone. The Santschi collection has one pin marked type, a large worker (not a small soldier), from Bella Vista, Panama, "W.M.Wh." The initials refer to W. M. Wheeler and it was G. C. Wheeler (I studied under both of them) who collected and sent other specimens to Santschi. G. C. Wheeler has kindly loaned me other type material. For the original description Agua Clara and Colon ants were also used. The Santschi collection contains a soldier from France Field, Panama, Bierig 4. vi. 30.

Santschi had no way of determining that *tonsipes* was indeed a variant of *colombica* but, until evidence can be produced that his form is a synonym of something, his name is the best available. At the present time it appears to be the only flourishing *Atta* on Barro Colorado Island, Canal Zone and has been used repeatedly by the author in experiments.

Gonçalves (1942, p. 346) has identified specimens that I took at Juan Diaz, Panama as *tonsipes* and they are the same form as that in the Canal Zone.

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