SOME ATTINE SYNONYMS AND TYPES

(HYMENOPTERA, FORMICIDAE)

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Studies in the European Forel, Santschi and Emery collections of attine or fungus-growing ants[1], supported by a grant from the National Science Foundation, have shown that a number of synonyms exist. Some in *Atta* and *Trachymyrmex* have been published (Weber, 1958, Ent. News 69:7-13 and 49-55) the present records are by genera listed below. These synonyms reflect not only the direct examination of types but a growing realization, based on field and laboratory studies, that considerable infraspecific variation is normal. The attine tribe as a group consists of spiny and ferruginous workers and it has been found true particularly that the exact proportons of spines and the color varies considerably within a colony. As so often has been the case, a description of a new species based on one or two known specimens can hardly picture the true situation. For this reason it should be useful to redescribe some species, indicate where the types now are and if possible to show where conspecific material may be found.

Cyphomyrmex rimosus ssp. **minutus** Mayr

1862. *Cyphomyrmex minutus* Mayr, Verh. Zool.-bot. Ges. Wien, 12:691.

Forel, Santschi and Emery were in agreement on the common *Cyphomyrmex* form as shown by the specimens so labeled in their collections. They placed them under *Cyphomyrmex rimosus minutus*. The proper name to be applied to it is another matter since their collections do not contain any types of Spinola or Mayr, the describers of *rimosus* (recorded from Pará, Brazil) and *minutus* (from Cuba).

The specimens listed by Forel, Santschi and Emery as *minutus* are the same form considered by the author (Weber, 1940, Rev. de Ent. 11:406-427 and *Ibid.*, 12:93-130) to be the widely distributed *rimosus* of the islands and shores of the Gulf of Mexico and Caribbean Sea and the mainland south to Brazil and Bolivia. In the Forel Collection is a pin marked "Cotypus" with the labels: "*C. Steinheili* ☿ Forel, Bresil; *C. rimosus* Spin. r. *minutus* Mayr, coll. A. Forel." The single worker is on a minuten nadeln with heavy iron salt spicules protruding from the high part of the thorax.[2] It has a thorax length of 1.09

[1] That of Forel in the Muséum d'Histoire Naturelle in Geneva, Switzerland; of Santschi in the Naturhistorisches Museum, Basel, Switzerland; and of Emery in the Museo Civico Di Storia Naturale, Genoa, Italy. The authorities of these museums were most helpful in making available their collections for study.

[2] The term "thorax", as used generally in myrmecology, is taken to mean the compact, rigid part separated from the head and petiolar node or nodes by sharp constrictions. The fact that in its development it may include the first abdominal segment need not obscure the primary concept of a well understood central structure that bears the legs (and wings in males and females). The term "alitrunk", used in place of "thorax", is inaccurate when applied to the wingless worker ant, is a longer word and does not appear to be an improvement.

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mm. and total extended length of 3.01 mm. The postpetiolar node from above is 0.30 mm. long by 0.42 mm. wide. This also is the common form. It is probable that *minutus*, too, is a synonym of *rimosus* but this cannot be proved with existing evidence. From considerable collecting in the area the author has concluded that this is as variable a species as other attines have proven to be.

Cyphomyrmex rimosus ssp. **fuscus** Emery

1894. *Cyphomyrmex rimosus* var. *fuscus* Emery. Bull. Soc. Ent. Ital. 26:225.
1921. *Cyphomyrmex rimosus* var. *fuscula* Emery, Genera Insectorum, Fasc. 174, p. 342.
1938. *Cyphomyrmex rimosus* ssp. *curiapensis* Weber, Rev. Ent. 9:190. **New synonymy.**

Emery renamed this ant *fuscula* when *Trachymyrmex* was considered by him to be a subgenus of *Cyphomyrmex*. He had earlier in the same 1894 publication named an ant *T. urichi* subsp. *fusca*. Since there appears now no good reason to consider *Trachymyrmex* a subgenus of *Cyphomyrmex* his original name should stand. Aside from morphological evidence, the present ant cultivates a yeast-like fungus on insect excrement, the *Trachymyrmex* a hyphal form of fungus on vegetal substrate.

The Emery collection now contains two pins here, one with five workers bearing the labels: "F. 59, S. Cath., Schm; Cyphomyrmex rimosus Sp. var. fuscus Emery." The second pin, of two males, one alate female and two workers has the same "S. Cath. Schmidt" top label. The Forel collection contains as a "Cotypus" a pin of two workers labelled: "Cyphomyrmex rimosus var. fusca Em; S. Catharina."

These type ants are large, sharply sculptured *rimosus* with the occipital angles more produced than in *trinitatis* but with less acute posterior thoracic tubercles. The scapes surpass the occipital angles by their distal diameters. The anteromedian impression of the gaster and squamate hairs are conspicuous. A direct comparison with cotypes of *curiapensis* shows that they are the same. The three castes of the latter were described in 1938.

Cyphomyrmex rimosus ssp. **transversus** Emery

1894. *Cyphomyrmex rimosus* subsp. *transversus* Emery, Bull. Soc. Ent. Ital. 26:226.
1901. *Cyphomyrmex rimosus* st. *olindanus* Forel, Ann. Soc. Ent. Belg. 45:337.
1938. *Cyphomyrmex rimosus* ssp. *venezuelensis* Weber, Rev. Ent. 9:188. **New synonymy.**

The Emery collection contains four pins in the type series, the leading pin bearing the labels: "Matto Grosso, Germain." It contains one dealate female and three workers. The postpetiolar node of the female from above is 0.32 mm. long by 0.52 mm. wide so that it is indeed transverse as the new name implied. The Forel collection contains a pin with one worker marked "Cotypus," from Matto Grosso, whose postpetiolar node is 0.22 mm. long by 0.30 mm. wide. The Forel collection also contains a pin marked "Typus" from Olinda, Brazil with two workers which presumably are the types of the synonym, *olindanus*.

A comparison of cotypes of *venezuelensis* with the workers in the Forel collection show them to be the same. A worker marked "Cotypus" and sent to me by Menozzi in the 1930's is from Matto Grosso (Germain) and may be part of the type series. It is small and with the postpetiolar node deeply impressed. Despite minor differences, *venezuelensis* is best considered a synonym.

Cyphomyrmex salvini Forel

1899. *Cyphomyrmex rimosus* race *salvini* Forel, Biol. Centr.-Amer. Hym. 3:40.

The Forel collection contained two pins, one of which was wrongly labeled "Typus." This one, with three workers, had six separate labels, reading from top to bottom: "Typus; Port Limon, Costa Rica, III 25.05, F. C. Paulmeier; Type No. AMNH; C. rimosus salvini For; r. C. salvini Forel; coll. A. Forel." The second pin, of one worker, has two labels: "C. rimosus, Spin. ♀ r. Salvini Forel; coll. A. Forel." It is unfortunate that it had no locality label; Bugaba, Panama (Champion) is the type locality. The total length of the worker, with head and gaster bent down, is 2.2 mm., thorax length 1.11 mm. and the occipital angles 0.10 mm. One of the Costa Rican workers had occipital angles 0.12 mm. long. The two pins were of the same species. The caste described and figured originally by Forel is the female but his figure compared with the workers in the Forel collection and those described below as *acutus* indicate clearly what the species is, regardless of where the female may be. When the type female and the female of *acutus* are found, the latter may be considered a synonym.

Cyphomyrmex salvini ssp. **acutus** Weber

1940. *Cyphomyrmex acutus* Weber, Rev. de Ent. 11:409.

The typical *salvini* worker, as listed above, is darker and more densely and finely punctate than the cotype of *acutus* with which it was compared. The latter has a much more acute post-ocular tubercle and the postpetiolar tubercles are more prominent. For these reasons *acutus* is temporarily retained as a subspecies although, when more specimens of both appear, *acutus* may turn out to be a synonym.

The best biological evidence for considering either *salvini* or *acutus* as a species separate from *rimosus* would be the finding of the fungus garden. If it consists of yeast-like masses of cells on insect excrement this would suggest that the ants belong to the *rimosus* complex which is unique in possessing this type of garden. If like *costatus*, e.g., in having a typical mycelium, the ants should be treated as a separate species.

Myrmicocrypta F. Smith

Myrmicocrypta collaris Emery

1913. *Myrmicocrypta collaris* Emery, Ann. Soc. Ent. Belg. 57:252.

1913. *Myrmicocrypta corniculata* Emery, Ann. Soc. Ent. Belg. 57:253. **New synonymy.**

Although Emery described both species as new, these were each based on single alate females that still exist in the Emery collection. The *collaris* female, labeled "Vilcanota, Peru, Stug.; Myrmicocrypta collaris Em.", has an extended length as mounted of 3.62 mm. thorax 1.27 mm. and postpetiolar node from above of 0.26 mm. long by 0.47 mm. wide. The *corniculata* female, labeled: "Pachitea, Peru, Stdg.; Myrmicocrypta corniculata Em," has an extended length as mounted of 3.6 mm., thorax 1.16-1.20 (difficult to see exactly) and a postpetiolar node from above of 0.27 mm. long by 0.47 mm. wide. Both specimens were evidently from the collector, Staudinger. A direct comparison of the two shows that they are conspecific and that slight differences in wings and the occipital area are not significant. Since *collaris* was described first, this name should stand.

Direct comparisons with specimens of *ednaella, longinoda, occipitalis, spinosa, unidentata* and *urichi* show these to be distinct.

Myrmicocrypta squamosa F. Smith

1860. *Myrmicocrypta squamosa* Smith, Jour. Ent. 1:74.

1934. *Myrmicocrypta buenzlii* Borgmeier, Arq. Inst. Biol. Veget. Rio de Janeiro, 1:104. **New synonymy.**

The Forel collection contains a pin of three workers labeled: "M. squamosa Sm., ☿, Ypiranga, São Paulo (Ihering)" that agree well with Trinidad specimens of *buenzlii,* whose type locality is Surinam. Since Smith's descriptions were often worthless, the continental myrmecologists went to some pains to determine what they applied to. If Forel's concept is correct in this instance, *buenzlii* becomes a synonym.

Mycetophylax Emery

1913. *Cyphomyrmex* subg. *Mycetophylax,* Emery, Ann. Soc. Ent. Belg. 57:251.

1956. *Paramycetophylax,* nov. gen. Kusnezov, Idia, Agosto-Sept., p. 24. (Minist. Agric. y Ganaderia, Buenos Aires.) **New synonymy.**

The new genus, *Paramycetophylax,* was based on *bruchi* described below and is discussed there.

Mycetophylax bruchi Santschi

1916. *Sericomyrmex bruchi,* Santschi, Physis, 2:183.

1922. *Mycetophylax bruchi,* Santschi, Bull. Soc. Vaud. Sc. Nat., p. 355.

1956. *Paramycetophylax bruchi,* Kusnezov, Idia, Agosto-Sept., p. 24. (Minist. Agric. y Ganaderia, Buenos Aires.) **New synonymy.**

Santschi dedicated a number of ants to Carlos Bruch. Several were attines and he later placed them in other attine genera so that confusion is sometimes possible. Fortunately the Santschi collection still contains a type ant labeled "*Mycetophylax bruchi* Sants.; Argentine; Puerto Madryn (Biraben)" which is No. 3450 in the collection. This is a worker with a thorax, excluding neck, of 1.32 mm., or length with neck of 1.39 mm. The postpetiole from above is 0.30 mm. long by 0.41

mm. wide. The head back of the eyes is 0.91 mm. and it is 1.01 mm. from occiput to the anterior border of the clypeus. The head appears squarish. I noted it at the time as "a good *Mycetophylax* but with large, acute inferior pronotal tubercles as in ants of other related genera and with a very slight anterior pronotal median gibbosity (not tubercle)." Santschi's type of *pauper* is similar but his *cristatulatus* has a strikingly high median gibbosity or obtuse tuberosity on the median pronotal area. Kusnezov bases his descriptions of *Paramycetophylax* on Santschi's same Puerto Madryn species and figures the head of a worker. Considering the Santschi type, it would appear that unless attine genera are to be broken up into many on the basis of minor distinctions, the new genus name would be a synonym. In this particular case the ant has a character somewhat transitional to that of other genera.

Mycetophylax emeryi Forel

1907. *Myrmicocrypta emeryi* Forel, Intern. Sc. Rev. Genevo 4:144.
1948. *Mycetophylax hummelincki* Weber, Ultgaver. Natuurwet. Stud. v. Suriname en Curacao 3 (No. 14): 78. **New synonymy.**

A cotype worker in the Santschi collection from Cienaga, Colombia (Forel) has the same color and structural characters as *hummelincki.* The Wheeler and Santschi descriptions, used as a basis for describing *hummelincki,* proved unreliable.

Mycetophylax emeryi ssp. **bolivari** Weber

1948. *Mycetophylax bolivari* Weber. Ultgaver. Natuurwet. Stud. v. Suriname en Curacao 3 (No. 14): 78.

Considering the specimens so far known, *bolivari* is best considered to be a geographical subspecies of *emeryi* differing in much paler color. It is primarily a pale ferruginous with head slightly darker.

Sericomyrmex Mayr

Sericomyrmex amabalis Wheeler

1925. *Sericomyrmex amabalis* Wheeler, Biol. Bull. 49:166.
1931. *Sericomyrmex bierigi* Santschi, Rev. de Ent. 1:279. **New synonymy.**

The Santschi collection contains under *bierigi* three pins labeled: "Panama, La Conception, 16.vii.30, Bierig," and one labeled: "Panama, France Field, Bierig 1.vi.30." These type ants agree exactly with dark specimens of *amabalis* from the latter type locality, Barro Colorado Island, Canal Zone. Santschi lacked specimens of *amabalis* for comparison and was unaware of the marked color and size differences since found by the present writer to be common in this species although not present in Wheeler's type series. Specimens taken in March 1957 on Barro Colorado Island were a dark brown. To the distribution of the species may also be added specimens collected at Turrialba and Bataan, Costa Rica (N.A.W.).

Acromyrmex Mayr

Acromyrmex (Moellerius) landolti Forel

1884. *Atta* (*Acromyrmex*) *Landolti* Forel, Bull. Soc. Vaud. Sc. Nat. 20:357.

Unfortunately the types of *landolti* were not seen in the Forel collection. Under *balzani* this collection has specimens from Paraguay (Fiebrig). In the Santschi collection, however, the ants labeled as this and the ants of *balzani* and its forms prove to be of one species. The Emery collection *landolti* also are of the same species as *balzani*. Specimens collected by the author at Rio Porce, Colombia in 1938 as typical *landolti-balzani* and may well be similar to the types of *landolti*, which came from Colombia. In the keys that Emery, Forel and Santschi used for separating the species of *Acromyrmex* the two key out together and are separated on minor distinctions. It would appear, therefore, that *balzani*, described six years later, is the synonym or at most a subspecies of *landolti*. Because the types of *landolti* were not studied, *balzani* is retained until better proof is at hand.

Acromyrmex (Moellerius) balzani Emery

1890. *Acromyrmex* (*Moellerius*) *balzani* Emery, Ann. Soc. Ent. France, 10:67.

There are four pins in the Emery collection, the first, containing eight workers of differing sizes, jumbled together, bearing the labels: "Paraguay, Balzan; Atta Balzani Em. n. sp." As described under *landolti*, this may be same as that species. The eight workers were compared with the subspecies named by the author as follows:

A *planorum* cotype (Rev. de Ent. 1937, 7:409) lacks the epinotal tubercle and the well developed horseshoe-shaped ridge on which are the median anterior pronotal tubercles; it is much paler.

A *myersi* paratype with thorax 2.60 mm. (Rev. de Ent. 1937, 7:408) has fewer striae on the frons, has larger occipital tubercles and higher median anterior pronotal tubercles.

A *pampanus* cotype (Rev. de. Ent. 1938, 9:200) has the striae of the frons less extensive and the occipital spine rises more abruptly.

Santschi's var. *multituber* holotype, a maxima with thorax 2.71 mm. (Bull. Soc. Vaud. Sc. Nat. 54:362) has the frons densely and finely rugulose between the carinae.

Santschi's var. *senex* cotypes from Pirapora, Brazil (Rev. Mus. Paulista, 1923; 13:19) have a fine, dense rugulosity generally distributed over the head and on part of the thorax. The thorax length of the maxima is 2.58 mm. and it has a well developed inferior mesonotal spine as in *myersi*.

The above differences seem minor and it is possible that these forms are synonyms of a widely distributed and variable species which should be called *landolti*.