

Papéis Avulsos de Zoologia

NEW AND LITTLE KNOWN NEOTROPICAL COLEOPTERA III. *SYNCALYPTA STRIATA* PIC, 1922, WITH DISCUSSION ON *SYNCALYPTA STEPHENS*, 1830 (BYRRHIDAE)

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ABSTRACT

Syncalypta striata, briefly and very incompletely described by Pic in 1922 from "Brazil", is redescribed upon specimens from Jacareacanga, Pará, Brazil. compared to the type-series, collected in Corumbá, Mato Grosso, Brazil. Lectotype and paralectotypes of the species are designated. *Syncalypta striata* is compared to the North American *Syncalypta tessellata* (LeConte, 1850), and comments are made on the structure of the genus, especially its relations to other byrrhids. *Syncalypta*, together with a few other aberrant genera, undoubtedly represents a distinct phylogenetic lineage, possibly even a distinct family, as already suggested by El Moursy (1961).

INTRODUCTION

In a recent paper on *Georyssus humeralis* Pic, 1923 (Reichardt, 1973: 247), I mentioned that seven specimens received together with the type-series of *Georyssus humeralis*, belonged to a family undetermined at the time. Recently I discovered specimens of this species in the collection of the Departamento de Zoologia, Universidade Federal do Paraná, Curitiba (DZUP), which after study turned out to be a Byrrhidae: *Syncalypta striata* Pic, 1922.

Through the kindness of Mrs. A. Bons, Museum National d'Histoire Naturelle, Paris (MNHN), I was able to borrow 13 "cotypes" of *Syncalypta striata*. They all bear the same locality label, and in spite of only three being marked as "type", I consider them all as cotypes, and select one as lectotype.

My friend John F. Lawrence, Museum of Comparative Zoology, Cambridge, Mass., United States (MCZC), sent me two specimens of the sole North American representative of the genus, *Syncalypta tessellata* (LeConte, 1850). These specimens were important as comparative material, since they permitted the conclusion that the two species are congeneric. I am also very much indebted to Dr. Ross H. Arnett, Jr., for bibliography, and to my friend Renato C. Marinoni, Departamento de Zoologia, Universidade Federal do Paraná, who loaned the specimens studied.

THE GENUS SYNCALYPTA

Syncalypta striata is thus far the only byrrhid known from the tropical parts of the Neotropical Region (according to Blackwelder, 1944: 270, there are four genera in the extreme south of South America and Falkland Islands. These are, however, completely unrelated to *Syncalypta*, actually representing the true Byrrhidae of El Moursy, 1961). It is the sole Neotropical representative of a genus otherwise occurring in North America and Europe. Pic's original description is taxonomically useless, and worse than most of his descriptions, since only the following three lines are appended to the description of *Syncalypta suturalis* Pic (from Hanoi; probably a species of *Curimopsis*): "Très voisin du précédent est la *S. striata* mihi, du Brésil, qui se distingue, à première vue, par les élytres nettement striés et sans rangées de gros points."

The status of the species of *Syncalypta* Stephens, 1830, is very chaotic. Ganglbauer (1902) proposed the subgenus *Curimopsis*, which at present includes the majority of species (26); Franz (1967) proposed a third subgenus, *Atlantopsis*, to include a new species from the Canary Islands, and possibly also five species described by Wollaston from the same Archipelago and Madeira Islands. Seven Oriental species and two from Algeria described as *Syncalypta*, have not been studied in recent years, and their subgeneric status is unknown.

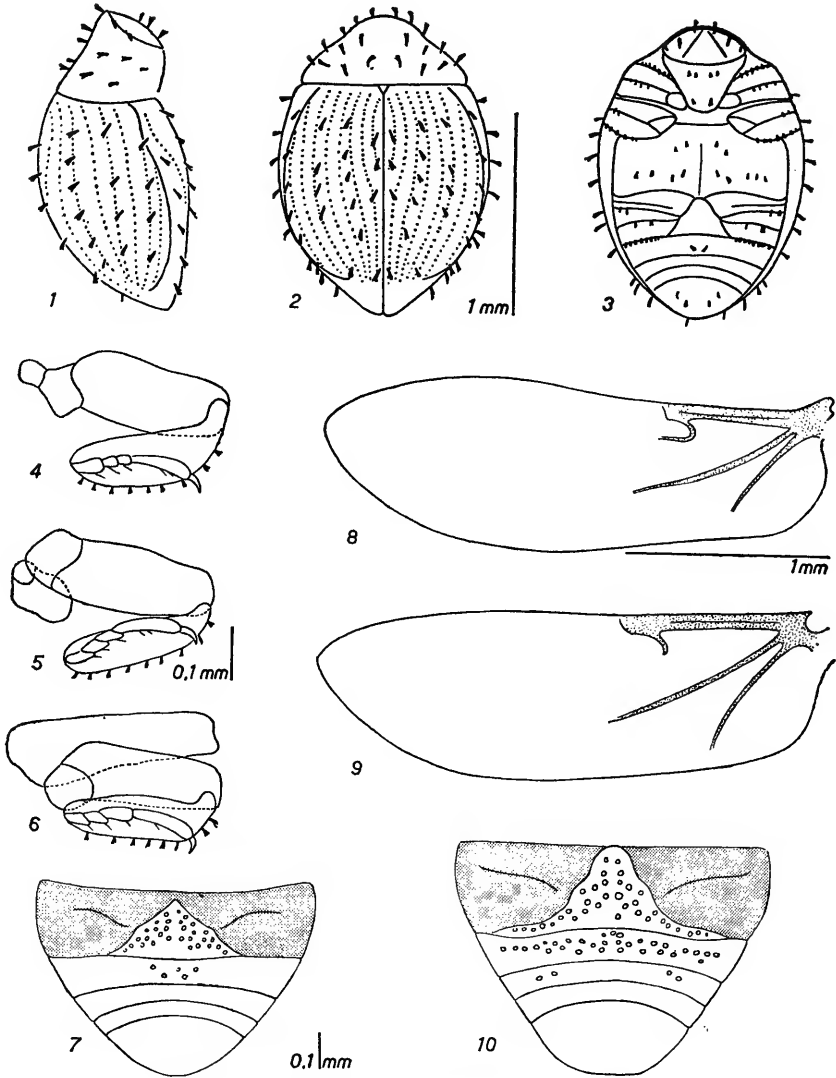
Some authors, especially from North America (Casey, 1912; El Moursy, 1961; Arnett, 1962), consider *Curimopsis* a distinct genus; I concur with this concept. *Syncalypta* thus only includes two European species (*minuta* Reitter, 1884, and *spinosa* Rossi, 1794), the North American *tesselata* (LeConte, 1850), and the Brazilian *striata* Pic, 1922. It is, however, possible that some of the Oriental and North African species mentioned above, belong into *Syncalypta*, s. str.

Syncalypta has always been considered as very aberrant among byrrhids. Portevin (1931) erected the tribe Syncalyptini for the genus. Crowson (1955: 53) placed *Syncalypta* in a new subfamily, Pedilophorinae, together with *Pedilophorus* Steffahn, 1842, and *Microchaetes* Hope, 1834 (the former of widespread, Holarctic distribution, the latter restricted to Australia). Crowson suggested that this subfamily would include at least two distinct tribes.

El Moursy (1961) went a step further, elevating Portevin's Syncalyptini to family level, including the genera *Syncalypta*, *Curimopsis* and *Microchaetes*. Arnett (1962: 455; 1968: 455), even though following El Moursy's paper in most details, considered the Syncalyptinae as subfamily.

In an alleged "Revision der Gattung *Syncalypta* Steph.", Franz (1967) considered the genus as a true byrrhid [with *Currimopsis* (sic) Ganglbauer as subgenus], erected the new tribe Syncalyptini for the genus, disregarding earlier proposals of tribes and subfamilies. It is interesting to note that of the supra-generic groups proposed, Portevin's Syncalyptini, El Moursy's Syncalyptidae and Franz' Syncalyptini are synonymous. Crowson's Pedilophorinae seem to be broader, including other genera.

My own knowledge of Byrrhidae is restricted to *Syncalypta* and a cursory review of the literature. Nevertheless it is possible



Syncalypsa striata (♀ from Jacareacanga). 1, lateral view; 2, dorsal view; 3, ventral view; 4, front leg; 5, middle leg; 6, hind leg; 7, abdomen; 8, membranous wing. *Syncalypsa tessellata*. 9, membranous wing; 10, abdomen.

to draw some interesting conclusions about its relations to other byrrhids.

First of all there is no doubt that *Syncalyptra*, *Curimopsis* and *Atlantopsis* are quite distinct from the remaining Byrrhidae, and deserve to be kept apart. At present I follow Arnett (1962) in placing the genera in a subfamily of their own.

The most striking difference is the structure of the male genitalia. Byrrhidae have the typically trilobed male genitalia, with median lobe (= penis) and two lateral lobes (= parameres), as illustrated by El Moursy (1970: 335, figs. 11-17), for example. In *Syncalyptra* the aedeagus lacks lateral lobes, and the penis has a well developed basal piece (figs. 17, 18). Franz (1967) illustrated the male genitalia of some, mostly European species of *Curimopsis*, and tried to distinguish the subgenera of *Syncalyptra* on the basis of details, especially the presence and development of the basal piece. It is interesting that the aedeagus of *Syncalyptra striata*, a species which in other characters agrees with *Syncalyptra*, s. str. (see discussion after redescription below), is of the typical *Curimopsis*-structure, as defined by Franz (1967), and has nothing in common with that of *Syncalyptra spinosa* Rossi (fig. 1 in Franz, l.c.).

The male genitalia of different genera in the same family in Coleoptera is usually of the same basic structure, and does not present differences and variations as those of *Syncalyptra* and the other Byrrhidae.

Little is known about mouthparts of the different genera of Byrrhidae. Arnett (1962: 451) described the maxillary palpi as three-segmented, and the labial palpi as two-segmented. Williams (1938: 280, pl. 19 fig. 60) illustrated four and three segments respectively for *Byrrhus americanus* LeConte, 1850; El Moursy (1970: 334, figs. 4, 5), mentioned the same number for *Byrrhus fasciatus* Forster, 1771, and the same number is typical of *Syncalyptra striata* (figs. 11-15). Maxilla and labium of the two species of *Byrrhus* and *Syncalyptra striata* show great similarities, except that in the latter last segment of the labial palpi in globose, more or less pear-shaped, and the ligula is formed by a single, undivided piece.

In the two species of *Syncalyptra* examined, the membranous wings (figs. 8, 9) are fully developed, and very similar. Venation is extremely reduced and restricted to the basal third of the wing. This venation is quite distinct from that shown by Forbes (1926: 134, pl. 16, fig. 109) for *Cytilus* sp. and by El Moursy (1970: 334, fig. 9) for *Byrrhus fasciatus*. The reduction of venation may be related to the very minute size of the beetles.

Still another striking character of *Syncalyptra*, s. lat., is the number of tarsal segments. *Syncalyptra*, *Curimopsis* and *Atlantopsis*, have tetramerous tarsi (figs. 4-6), as opposed to pentamerous tarsi in the remaining Byrrhidae (including *Microchaetes*, which El Moursy placed in Syncalyptidae). There are several examples of coleopterous families with variable number of tarsal segments, but the byrrhids seem to be quite homogeneous in this regard, the only exception being the mentioned genera.

These differences between *Syncalyptra*, *Curimopsis* and *Atlantopsis* on one hand, and the other byrrhids on the other hand, are quite important, and show that the two groups are really distinct.

I think, however, that it is premature to decide on the rank to be given the *Syncalypinae* in relation to the remaining *Byrrhidae*. It is well possible that they are a distinct family, as suggested by El Moursy (1961), but data are still too scarce for such a decision.

***Syncalypa tesselata* (LeConte, 1850)**

(Figs. 9, 10, 19)

The status of the North American species of *Syncalypa* is confused. Casey (1912) mentioned that *Syncalypa*, *s. str.*, was not represented in North America; Leng (1917: 128), however, discovered a species in the Eastern United States, and listed it as the European *Syncalypa spinosa* Rossi. Arnett (1962: 455) refers to *Syncalypa tesselata* (LeConte, 1850), as the only North American species of the genus, occurring in the Eastern United States (New York and Connecticut) and Canada.

I have received two specimens from *New Hampshire*, Rumney, 18.VII.1930 (P. J. Darlington), which were used for comparison with *Syncalypa striata*. I have not checked the literature for the identification of the species.

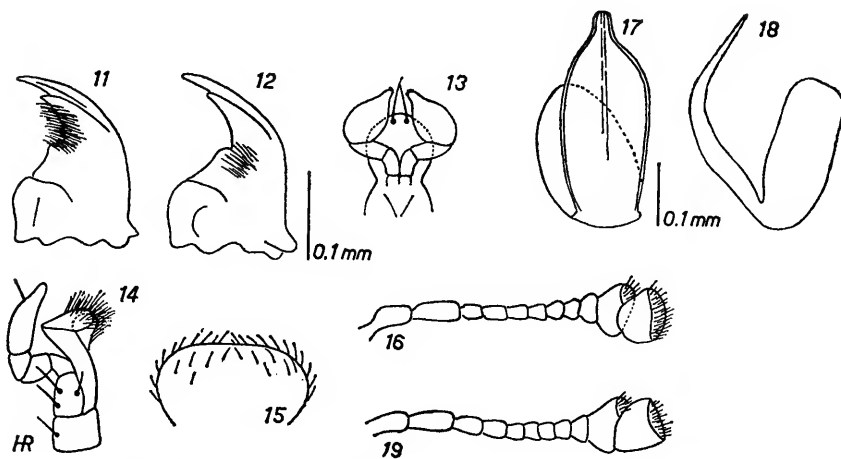
The measurements of this species are as follows: total length, 1.6 mm; maximum width, 1.18 mm.

***Syncalypa striata* Pic, 1922**

(Figs. 1-8, 11-18)

Syncalypa striata Pic, 1922: 3 (Lectotype, present designation, Brazil, Mato Grosso, Corumbá; MNHN, examined); Blackwelder, 1944: 270 (Catalog); Costa Lima, 1953: 77.

Reddish-brown and very shiny, with sparse, testaceous, club-shaped, erect setae scattered on surface; surface usually covered with crust of hardened mud, which makes observation of details impossible. *Head* invisible from above, in resting position completely retracted inside prothorax (figs 1, 3), leaving only a more or less circular part of frons exposed. This exposed part of frons very finely micro-rugose, with about ten clubbed setae, and with two oblique, quite deep grooves. Eyes, antennae and mouthparts invisible externally when head retracted. Eyes more or less reniform, with incision at antennal insertions. Antennae (fig. 16) with 11 segments; scape and segment II, each about twice as long as III; segments III to IX small, about equal, but from VII onwards, each slightly enlarged apically; segments X and XI large, forming a loose club; each of the club segments with an apical, more or less asymmetrical apical, sensorial area with dense pilosity. Mouthparts (figs. 11-15) characteristically with very globose apical segment of labial palpi. *Pronotum* widest at base, and very much narrowed towards front, in a more or less regular curve. Surface regularly convex, micro-rugose and with scattered punctures, as well as scattered club-shaped setae. *Scutellum* very small, triangular, micro-rugose, glabrous. *Elytra* only slightly wider at humeri than base



Syncaelypta striata (♀ from Jacareacanga). 11, right mandible, ventral view; 12, left mandible, dorsal view; 13, labium; 14, maxilla; 15, labrum; 16, antenna. 17, aedeagus, dorsal view of median lobe; 18, lateral view.

Syncaelypta tessellata. 19, antenna.

of pronotum; from here slightly expanded to near middle, where they are widest, and then regularly curved towards rounded sutural angle; surface very convex and regularly curved, sculptured more or less as pronotum in regards to micro-rugosity and punctures; each elytron with a raised carina near lateral margin, which starts more or less at humeri, and extends to near apical angle. Between suture and this carina, each elytron with eight finely punctate striae, the I short, ending before middle of suture, the other seven starting near basal margin and extending to near apex of elytra, where they are somewhat confluent and confused. Between pre-marginal carina and lateral margin of each elytron a single, short punctate stria, which starts near base, and ends about middle of lateral margin. Clubbed setae placed in the following elytral interstices (fig. 2): I (= sutural), IV (here setae placed next to III stria), VI and IX, as well as very close to lateral margin. Setae usually about six or seven in each interstice, but apparently they are easily rubbed off; I (sutural) interstice only carries three setae. *Ventral surface* (fig. 3) as shiny and sculptured as dorsal surface; all appendages, when retracted, closely appressed to body. A few clubbed setae along front margin of prosternum, on surface of metasternum, and a few on abdominal sternites (the ventral, clubbed setae are much shorter than dorsal ones). Inter-coxal process of I visible abdominal sternite (fig. 7) covered with relatively large, foveolate punctures; middle of sternite II with a few of these foveolate punctures. *Legs*: each leg much separated from the opposite leg; the posterior ones with large and transverse coxae (fig. 6). When retracted, each segment of legs hidden under preceding segment; outer margin of all tibiae with a row of clubbed setae; all tarsi tetramerous, with three basal segments relatively small, and IV

about as long as three preceding ones together; tarsal claws simple. *Hind wings* (fig. 8). *Aedeagus* (figs. 17-18). *Measurements*: total length, 1.25 mm; maximum width, 1.0 mm.

Material examined

BRAZIL. *Mato Grosso*: Corumbá (Lectotype and 11 paralectotypes, MNHN; 1 paralectotype, MZSP). *Pará*: Jacareacanga, XII.1968 (M. Alvarenga) (24 exs., DZUP, MZSP, MNHN, MCZC).

Discussion

Syncalypta striata belongs into the genus on account of several characters, especially the two frontal grooves (fig. 3) the dorsal and ventral vestiture formed only by clubbed setae (figs. 1-3), and the foveolate punctures of abdomen restricted to I and part of II sternites (fig. 7). As mentioned above, it is curious that the aedeagus of this species is of the type found in European species of *Curimopsis* (see Franz, 1967).

As all other species of the genus, *Syncalypta striata* completely lacks external sexual dimorphism.

Syncalypta striata was compared to the North American *Syncalypta tessellata* (see notes above), the latter being larger, almost black, and having the I elytral stria complete from scutellum to apical angle (interrupted near middle in *Syncalypta striata*, fig. 2).

Unfortunately no ecological data are available for the studied material. The Jacareacanga material was possibly collected at light. All specimens, from both localities, are covered with a mud-crust, which is quite difficult to remove. This crust suggests that the species lives near water courses, probably in the mud along shores, as has already been recorded for several other species of *Syncaelyptinae*.

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