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A description of the larva of *Coomaniella (Coomaniella) purpurascens* Baudon, 1966 and a discussion on the tribal placement of *Coomaniellini* Bílý, 1974 (Coleoptera: Buprestidae)

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Abstract

A detailed description of the mature larva of *Coomaniella (Coomaniella) purpurascens* Baudon, 1966 and a discussion of the taxonomic position of the tribe *Coomaniellini* Bílý, 1974 are presented. Larva is fully illustrated including details of the mouth parts and inner structures of the proventriculus. The larval characters support the tribal status of *Coomaniellini* with close relations to the tribe *Dicercini* Gistel, 1884 in contrast with the former placement of the tribe near *Anthaxiini* Gory & Laporte, 1839.

Key words: taxonomy, larval morphology, Buprestidae, *Coomaniellini*, Oriental region

Introduction

Coomaniellini as a distinct tribe was established by Bílý (1974) for a single Oriental genus *Coomaniella* Bourgoïn, 1924 (type species *Coomaniella modesta* Bourgoïn, 1924 by subsequent designation by Bílý, 1974). According to Bellamy (2008) and Jendek & Pham (2013) the genus *Coomaniella* currently comprises 31 species belonging to 6 species-groups from 3 subgenera: *Coomaniella* Bourgoïn, 1924 (= *Coomaniellina* Bílý, 1974; 27 species), *Strbaniella* Jendek & Kalashian, 1999 (type species *C. prolunga* Jendek & Kalashian, 1999; 2 species), and *Tuberniella* Jendek & Kalashian, 1999 (type species *C. abeillei* Obenberger, 1940; 2 species). *Coomaniella (C.) purpurascens* Baudon, 1966 belongs to the *modesta* species-group of the nominotypic subgenus (Jendek & Pham 2013).

The data on biology and food-plant associations of *Coomaniella* species are extremely rare. *C. (C.) purpurascens* is the only species with a known host plant—*Chukrasia tabularis* A. Juss. (Meliaceae) from West Bengal, India (Jendek 2002), though the host plant of the described larvae are unknown (see Material and methods). Jendek & Pham (2013) summarized the data on the “rendezvous” trees on which many *Coomaniella* species were observed resting or mating and collected, however, there is no confirmation that these “rendezvous” trees were also larval host plants for any species.

Théry (1929) placed *Coomaniella* in *Anthaxiini* next to *Philanthaxia* Deyrolle, 1864. Bílý (1974) elevated it to the tribal rank and proposed it had affinities with *Kisanthobiini* Richter, 1949 and *Melanophilini* Bedel, 1921 although he indicated that in many important diagnostic characters *Coomaniellini* differ strongly from all the known taxa being highly specialized. Holynski (1988, 1993) downgraded *Coomaniellini* to subtribe within *Anthaxiini* sensu Holynski (1988) which comprised a number of unrelated taxa.

Jendek & Kalashian (1999) described within *Coomaniella* two subgenera (see above) and 12 new species and re-revised the whole genus but without expressing any opinion concerning the taxonomic relations of the tribe. They also discussed all known bionomical and ethological data which were later summarised and enlarged by Jendek & Pham (2013—see above).

Abdomen (Figs. 1, 11, 12, 15) flattened; all segments slightly transverse, bearing microspinulated areas; lateral sides widely arcuate with sparse short whitish setae; 1st abdominal segment slightly transverse, 1.3–2.0 times as wide as long and slightly narrower than 2nd; covered with microteeth like these on thoracic segments; dorsally and ventrally with poorly defined ambulatory pads. Abdominal segments 2–8 slightly transverse, 1.3–1.5 times as wide as long, with medially slightly constricted sides; bearing longitudinal microspinulated areas (Fig. 26); 9th abdominal segment transverse, arcuately narrowed posteriorly, 1.3–1.6 times as wide as long, with evenly rounded sides; 10th abdominal segment slightly transverse, 1.2–1.4 times as wide as long, with rounded, posteriorly narrowing sides; apex deeply divided by vertical, slightly sclerotised anal rim.

Spiracles (Figs. 9, 10, 28, 29). Mesothoracic spiracles (Figs. 9, 28) of buprestoid, cribriform type, reniform, transverse, 2.4 times as wide as long, situated on the sides of anterior part of mesothorax, with cancellate perithrema and poorly branched trabeculae; surrounding cuticle mainly glabrous. Abdominal spiracles (Figs. 10, 29) of the same type, oval, transverse (that on the 1st abdominal segment 2.4 times as wide as long), situated dorsally in depressions on abdominal segments 1–8, with a few unbranched trabeculae, surrounding cuticle glabrous or with poorly defined microspinulae.

Proventriculus large, globular, with complicated internal armament consisting of different elements, without dorsal and ventral central stripes. Main fields with moderately dense, microteeth arranged in groups on slightly elongated tubercles (Fig. 27); their margins with smaller teeth arranged on longer tubercles, anteriorly and posteriorly changing into fine microspinulae and setae; glabrous areas finely rugulose.

Discussion

In order to compare larvae of *Coomaniella (C.) purpurascens* with presumably related taxa, we have studied the larvae of the following dicercine genera: *Dicerca (D. alni* (Fischer, 1824), *D. furcata* (Thunberg, 1887), *D. moesta* (Fabricius, 1792)), *Capnodis (C. miliaris* (Klug, 1829), *C. tenebrionis* (Linnaeus, 1767)), *Polybothris (P. angulosa* (Théry, 1905), *Dicercomorpha (D. interrupta* Deyrolle, 1864), *Haplotrinchus (H. inaequalis* (Deyrolle, 1864), *H. embrikiellus* (Obenberger, 1936)) (see also Bílý 1999, Bílý & Volkovitsh 2002). For detailed summary of the larval characters of Anthaxiini see Bílý & Volkovitsh (2005) who stated that according to larval characters Coomaniellini have nothing in common with Anthaxiini.

Larval characters of *Coomaniella (C.) purpurascens*, particularly the sculpture and armament of prothoracic plates completely agree with conclusions of Evans *et al.* (2014) about the close relations of Coomaniellini to Dicercini. Similar prothoracic plate armament of microteeth and asperities along the grooves forming “fountain-like structures” at their anterior parts have been never observed in anthaxiine larvae but they are characteristics of Dicercini (Bílý 1999, Bílý & Volkovitsh 2002). Also many adult characters (form of antennae, tarsi, male genitalia, nearly holoptic eyes and strong sexual dimorphism) support the isolated position of Coomaniellini as a separate tribe. Larva of *C. (C.) purpurascens* differs from all studied dicercine larvae mainly in the nearly rectangular and very long asperate area surrounding prosternal groove (Fig. 17) but having no data on the variability of this character in the other species of *Coomaniella*, we cannot establish the diagnostic value of this character on generic or tribal level.

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