

REVISION OF THE *SYNCHITA VARIEGATA* SPECIES GROUP (COLEOPTERA: ZOPHERIDAE, COLYDIINAE)

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Abstract.— The *Synchita variegata* species group is defined and revised. Six species are recognized. *Synchita fallax* sp. nov. from Southern Europe is described. Lectotype is designated for *Cicones pictus* Erichson and for *Cicones oculatus* Sharp. New synonymies are established: *Synchita undata* Guérin-Méneville, 1844 (= *Cicones pictus* Erichson, 1845 syn. nov.) and *S. oculata* (Sharp, 1885) (= *Cicones oblongus* Sharp, 1885 syn. nov.). A key to the species is included.



Key words.— Coleoptera, Zopheridae, Colydiinae, *Synchita*, *Synchita variegata* species group, new species, new synonymies, lectotype designation, taxonomy.

INTRODUCTION

The genus *Synchita* was erected by Hellwig (1792) to accommodate *S. juglandis* Hellwig and *S. variegata* Hellwig. In 1827 Curtis described the genus *Cicones* for the species *C. carpini* Curtis, 1827 from England. Erichson (1845) transferred *S. variegata* Hellwig to *Cicones* and treated *C. carpini* as a synonym of *C. variegatus*. In the same paper he established differences in the length of the antennal groove and shape of the ligula as the main distinguishing characters between *Synchita* and *Cicones*. Ślipiński and Lawrence (1997) synonymized *Cicones* with *Synchita* after studying most described and many undescribed species from all over the world, detecting a great variance in the distinguishing characters of *Synchita* and *Cicones* and recognizing *Cicones* as no monophyletic unit.

The genus *Synchita* is a large genus with worldwide distribution (except New Zealand), containing 43 described species. It belongs to the tribe Synchitini as defined by Ślipiński and Burakowski (1988). *Synchita* is closely related to *Sassaka* Pope, *Microsicus* Sharp, *Catolaemus* Sharp, *Eucicones* Sharp, *Caprodes* Pascoe and *Asprotera* Pascoe. Ivie and Ślipiński (1990) fix *S. juglandis* Hellwig as type species, correcting an invalid type fixation by Dajoz (1977). At present, the taxon *S. juglandis* Hellwig is synonymous to *S. humeralis* (Fabricius). At its present state *Synchita* can be divided into five species groups. The *S. variegata* species group is revised in this paper.

METHODS AND ABBREVIATIONS

Measurements

- EL – elytral length; along suture including scutellum.
EW – elytral width; across maximum joint width.
EYL – eye length; in dorsal aspect of head.

HL – head length; along midline from anterior margin of clypeus to line connecting posterior end of temples (surface of head has to be in a plane perpendicular to optical axis).

HW – head width; across maximum width.

PL – pronotal length; along midline from anterior to posterior margin (surface of pronotum has to be in a plane perpendicular to optical axis).

PW – pronotal width; across maximum width excluding denticulations.

TL – total length; from apical margin of clypeus to apex of elytra.

Institutions and Collections

- BML The Natural History Museum, London, Great Britain (M. Brendell);
CHW Carolus Holzschuh Collection, Wien, Austria;
CKF Michael Karner Collection, Frankfurt, Germany;
CPB Pavel Průdek Collection, Brno, Czech Republic;
CSK Rudolf Schuh Collection, Katzelsdorf, Austria;
CWH Claus Wurst Collection, Heilbronn, Germany;
DEI Deutsches Entomologisches Institut, Eberswalde, Germany (L. Zerche);
HUB Museum der Alexander Humboldt Universität, Berlin, Germany (F. Hieke);
ISNB Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgium (K. Desender);
IZPAN Muzeum i Instytut Zoologii Polska Akademia Nauk, Warszawa, Poland (S.A. Ślipiński);
MHNG Muséum d'Histoire Naturelle, Genève, Switzerland (I. Löbl);
MHNL Muséum National d'Histoire Naturelle, Lyon, France (J. Clary);
MHNP Muséum National d'Histoire Naturelle, Paris, France (N. Berti);

- MLSF Museo Zoologica de "La Specola", Firenze, Italy (S. Whitman, L. Bartolozzi);
- MSNC Museo Civico di Storia Naturale, Carmagnola, Italy (G. Curletti);
- MSNG Museo Civico di Storia Naturale "Giacomo Doria", Genova, Italy (R. Poggi);
- MSNM Museo Civico di Storia Naturale, Milano, Italy (C. Leonardi);
- NMB Naturhistorisches Museum, Basel, Switzerland (M. Brancucci);
- NMP Narodny Museum, Praha, Czech Republic (J. Jelinek);
- NMW Naturhistorisches Museum, Wien, Austria (H. Schönmann);
- TMB Termesztudományi Múzeum, Budapest, Hungary (O. Merkl);
- ZSM Zoologische Staatssammlung, München, Germany (M. Baehr);

CHARACTERIZATION OF THE SPECIES GROUPS OF SYNCHITA

The *S. humeralis* species group.

Head capsule not constricted behind eyes. Antennal groove short, about one third of EYL. Interfacetal setae hairlike, extremely fine. Subbasal depressions on pronotum absent.

TL 1.5–4.9 mm. Elytra unicolorous. Habitus elongate parallel to broadly oval, transversally weakly convex to subcylindrical. Frons without any depressions, sculpture (punctures) gradually changing to granose sculpture of basal part of head capsule. Eyes weakly convex. Tibiae slightly delated apicad, external edge subdentate. Aedeagus with length ratio phallobasis/parameres 2.2–3.1.

Species examined. *S. humeralis* (Fabricius), *S. separanda* Reitter, *S. mediolanensis* Villa, *S. crenicollis* Wollaston, *S. impressa* Wollaston, *S. fairmairei* Grouvelle, *S. saegeri* Pope, *S. lineatosquamosa* Grouvelle, *S. fuliginosa* Melshheimer, *S. uralensis* Yablokov-Khnzoryan, *S. barbieri* Dajoz.

Distribution. Worldwide.

The *S. squamosa* species group.

Head capsule distinctly constricted behind eyes. Antennal groove long (about EYL) or short (about one third of EYL). Interfacetal setae squamiform. Subbasal depressions on pronotum absent.

TL 2.1–4.5 mm. Elytra unicolorous or variegated. Habitus elongate oval, transversally weakly convex. Frons separated from basal part of head capsule by transverse groove with sharp basal rim. Eyes large, with slightly emarginate hind margin. Tibiae parallel-sided to slightly dilated apicad. Aedeagus with length ratio phallobasis/parameres 2.5–4.5.

Species examined. *S. squamosa* (Grouvelle), *S. africana* (Grouvelle), *S. madagascariensis* (Grouvelle), *S. minor* (Pope), *S. cephalotes* (Ślipiński).

Distribution. Ethiopian and Indo-Australian.

The *S. bitomoides* species group.

Head capsule slightly constricted behind eyes. Antennal groove long (about EYL). Interfacetal setae hairlike, short. Subbasal depressions on pronotum absent.

TL 1.8–2.7 mm. Elytra unicolorous or variegated. Habitus elongate, parallelsided, transversally moderately convex. Sculpture of frons gradually changing to sculpture of basal part of head capsule. Tibiae parallel-sided. Aedeagus with short parameres.

Species examined. *S. bitomoides* (Sharp).

Distribution. Oriental.

The *S. colorata* species group.

Head capsule slightly constricted behind eyes. Antennal groove short (about one third of EYL) or absent. Interfacetal setae squamiform. Subbasal depressions on pronotum present.

TL 1.1–2.2 mm. Elytra unicolorous or variegated. Habitus short to elongate oval, transversally weakly to moderately convex. Frons separated from basal part of head capsule by indistinct, shallow, transverse groove. Tibiae parallel-sided.

Species examined. *S. colorata* (Motschulsky), *S. minima* (Sharp), *S. minuta* (Sharp), *S. nivea* (Sharp).

Distribution. Indo-Australian.

The *S. variegata* species group.

Head capsule constricted behind eyes. Antennal groove long (about EYL). Interfacetal setae squamiform. Subbasal depressions on pronotum present.

TL 2.1–3.8 mm. Elytra variegated. Habitus oblong, transversally moderately convex. Frons separated from basal part of head capsule by distinct, but shallow, transverse groove. Tibiae parallel-sided. Aedeagus with length ratio phallobasis/parameres 1.7–2.3.

Distribution. Palaearctic.

THE *SYNCHITA VARIEGATA* SPECIES GROUP

Description. TL 2.1–3.8 mm; body more or less oblong (TL/EW: 2.34–2.80), moderately convex transversally. Color dark brown to piceous, anterior margin of head, mouthparts, antennae and legs mostly reddish-brown, elytra yellowish-brown with pattern of dark markings, consisting of large dark transverse spot in scutellar region, darkened sutural interval and three transverse, zigzag-shaped bands of variable extent usually mutually confluent. Extreme variations occur in *S. variegata*, in which only some small yellowish spots remain, and in *S. oculata*, in which only the scutellar marking and three sutural spots remain.

Head transverse (HW/HL: 1.5–1.8). Lateral margins converging apicad nearly in shape of quartercircle, showing sharp angular emargination where meeting clypeus; apical margin of clypeus slightly concave, lateral angles broadly rounded. Visible part of labrum broadly rounded, shallowly emarginate in middle. Head in dorsal aspect with small edge behind eye being rim of narrow groove around

basal part of eye originating at end of antennal groove; sides of head constricted behind these temple-like rims. Dorsal side of head more or less flat with two indistinct, oblique impressions delimiting clypeus laterally; clypeus basally not separated from frons; frons separated from basal part of head capsule by transverse impression behind temples. Basal part of head capsule finely and densely granulate. Antennal groove as long as eye, with only apical part of its inner edge expanded laterad, so that in lateral aspect antennal groove appearing shorter than eye (Fig. 1), in ventral aspect, inner edges of antennal grooves strongly converging basad (Fig. 2). Eye entire. Interfacetal setae squamiform. Antenna 10-segmented, short (about as long as HW); antennomere 1 ovoid, about as long as wide, not or only slightly visible from above; antennomere 2 of similar shape, but slightly narrower and shorter; antennomeres 3 and 4 even narrower, cylindrical and longer than wide (3: 1.25–2.0 × as long as wide, 4: 1.1–1.65 × as long as wide); antennomeres 5 to 9 shorter and gradually becoming wider; antennomere 10 forming circular, flattened club; apical and lateral margins of club with dense setation, basal and medial part nearly smooth; antennomeres 2 to 9 each with a ring of 6 to 10 setae which are about as long as the antennomeres themselves and directed apico-laterad. Mouthparts as in Figs 3–5.

Pronotum transverse (PW/PL: 1.14–1.34), widest in apical fourth, wider than head and narrower than elytra, convex, disc flattened and more or less uneven, with two admedian basal depressions. Lateral margins of pronotum flattened and denticulate; each denticle with elongate scale pointing apicad, in apical fifth of lateral margin pointing basad. Anterior angles slightly produced and rounded; posterior angles only slightly accentuated by small tooth. Apical part of pronotum broadly margined by transverse row of deep punctures; middle of pronotal base produced backwards and margined by transverse groove.

Prosternum with apical part as broad as head, converging basad, separated from proepisternum by irregular groove being indistinct at frontal margin, becoming narrow line basally, and there meeting outer margin of coxal cavities. Procoxal cavities externally open, as wide as prosternal process; prosternal process truncate or slightly emarginate posteriorly and longitudinally impressed in middle. Setation on ventral side not squamiform.

Elytra oblong (EL/EW: 1.48–1.80), maximum width at beginning of apical third, transversally convex with distinct humeral calli (all species winged); lateral margins narrowly explanate and slightly serrate (more conspicuous in basal third). Each elytron with 9 rows of deep punctures; punctures separated longitudinally by less than their diameters, interstices each with narrow deflexed squamule. Intervals flat (except in *S. variegata*, in which the alternate intervals are slightly convex) and shiny, with single or rarely with double row of punctures, each bearing squamiform seta of different shape than squamiform setae of striae. Epipleura continuously narrowing toward apex, sculptured with very indistinct punctures bearing simple setae.

Mesosternum, metasternum and corresponding episterna sculptured like prosternum; metasternum with impressed median line. Mesocoxae separated by half of coxal diameter; metacoxae slightly wider. Ventrites 1, 2 and 3 of equal length; ventrites 4 and 5 shorter, flexible, last one (5) with marginal groove; intercoxal process of ventrite 1 sharply angulate. Sculpture on ventrites less distinct than on rest of ventral side.

Legs short; femora hardly surpassing lateral margins of body; tibiae slightly shorter than femora, oval in cross-section, outer edge rounded apically; outer side of tibiae with short squamiform setae, inner side with hairs only. Tarsi 4-segmented, segments 1 to 3 short, segment 4 as long as 3 preceding combined. Claws simple.

Aedeagus well sclerotized, except for elongated basal opening and membranous median suture on ventral side. Phallobasis about two thirds of total length. Parameres of more or less elongate conical shape, distinctly separated on ventral side, separated dorsally by weakly sclerotized triangular lamella covering median lobe. Median lobe with broad base, narrowed apicad, broadened again in middle and narrowed into long and thin tip apically, weakly sclerotized and freely moveable. Position of aedeagus in abdomen: convex side dorsal.

In all specimens sculpture of dorsal surface, particularly of head and pronotum, hidden by dustlike secretion giving specimens a dull appearance.

List of species

- S. fallax* sp. nov.
- S. iranica* (Dajoz, 1973)
- S. oculata* (Sharp, 1885)
- S. undata* Guérin-Méneville, 1844
- S. ussuriensis* (Yablokov-Khinzoryan, 1978)
- S. variegata* Hellwig, 1792

KEY TO SPECIES OF THE *SYNCHITA VARIEGATA* GROUP

1. Pronotal surface with distinct, dense granulation
..... *ussuriensis* (Yablokov-Khinzoryan)
- . Pronotal surface with large, irregular punctures, intervals forming polygonal net of narrow ridges 2
2. Third elytral interval in basal half with double row of squamiform setae, usually slightly convex
..... *variegata* Hellwig
- Third elytral interval in basal half with single row of squamiform setae, all intervals flat 3
3. Elytra more convex transversally. Lateral margins in basal half scarcely visible from above *oculata* (Sharp)
- . Elytra less convex transversally. Lateral margins in basal half clearly visible from above 4
4. Setae of elytral intervals semierect (about 40°)
..... *fallax* sp. nov.
- . Setae of elytral intervals procumbent
..... *undata* Guérin-Méneville and *iranica* (Dajoz)



Figures 1-5. *Sychita undata*: (1) head, lateral aspect, (2) head, ventral aspect (Scale: 0.5 mm); *S. variegata*: (3) labium, setae on mentum partly omitted, (4) right maxilla, (5) right mandible, ventral aspect. (Scale: 0.1 mm).