A taxonomic revision of European Psilommina (Hymenoptera: Diapriidae)
Part 2. The Synacra complex

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Abstract. An analysis of the apomorphic and plesiomorphic character states of the European species of the "Synacra complex" suggests that they can best be classified in a single genus Synacra Foerster with three subgenera, viz. Paratelopsius Whittaker [new status; two species, both new: S. (P.) paepara and S. (P.) atrata], Sundholmiella Hedqvist [here reduced from generic status; one species: S. (Sundholmiella) giraudi Kieffer, comb. n.], and Synacra s. str. [three species: S. (S.) brachialis (Nees), S. (S.) holconota Kieffer, S. (S.) sociabilis (Kieffer)]. The genus is redefined, as well as its subgenera and species. A key is given to all six species recognized as valid. New synonymies include S. acutipennis Kieffer, S. brevipennis Kieffer and S. flavistilus Kieffer under S. brachialis (Nees); Neuroptria inquilina Kieffer, Labolops anommali Morley, N. astigmatica Szabó and N. pannonica Szabó under S. sociabilis Kieffer and S. nigriceps Kieffer under S. holconota Kieffer.

INTRODUCTION

This treatise is the last of a series dealing with the European species of the subtribe Psilommina (Diapriidae) (Macek, 1990, 1993). Its aim is the taxonomic treatment of the genus Synacra in Europe, including classification, generic diagnosis, synonymy, keys to species and brief characteristics of previously described species; six species are recognized.

Foerster (1856) described the genus very vaguely, without any included species. Haliday (1857) gave an excellent description of his genus Artibolus, which Kieffer (1910) synonymized with Synacra. Subsequently Ashmead (1893) designated Diapria brachialis Nees, 1834 as the type species of Synacra Foerster. Later, Kieffer (1910, 1916) listed seven species of Synacra from Europe. Pschorn-Walcher (1957) revised some Kieffer’s types including the Neuroptria species from Wasmann’s collection and he synonymized Neuroptria with Synacra. Masner (1965) tentatively synonymized Prosynacra Kieffer with Synacra Foerster and Hedqvist (1975) confirmed the synonymy. Moreover, at the same time Hedqvist (1975) transferred Prosynacra giraudi Kieffer to his newly created genus Sundholmiella. The delimitation of Synacra from other genera of Psilommina is difficult due to the relatively uniform appearance of the males. In my opinion, the genus Synacra is best characterized by a single autapomorphy, namely the twelve-segmented antenna of the females. This will distinguish Synacra from the females of other Psilommina possessing higher number of antennal segments (13–15). The other, traditional, diagnostic characters of Synacra, such as the beak-like mandibles and heterogeneous pubescence of body are shown to be equivocal after the recent discovery of highly plesiomorphic species of the subgenus Paratelopsius. Earlier authors (Foerster, 1856; Ashmead, 1893; Kieffer, 1910,
1916) gave their views upon the systematic position of *Synacra* within the Diapriidae. Foerster (1856) emphasized the structure of the third antennomere in males together with the form of hind tibia as the main diagnostic attributes to assign *Synacra* to Belytinae. In contrast, Ashmead (1893) and Kieffer (1910, 1916) placed *Synacra* in Diapriinae, because of the absence of the basal cell in the hind wing, strong reduction of fore wing venation and lower number of antennal segments in females. Recent authors (e.g. Nixon, 1957; Pschorr-Walcher, 1957 etc.) assigned *Synacra* to Belytinae thus confirming Foerster's original view. The only (and most convenient) character, by which the subfamily Belytinae has been recognized ever since Foerster (1856), is the modified third antennomere in males. This character state will distinguish the subfamily Belytinae from Diapriinae (most males in Diapriinae have the fourth antennomere modified). The reduction of wing venation is very often associated with decrease in body size as in some other Belytinae (e.g. *Pantolyta*, *Pantoclis*) and therefore is of limited taxonomic value. Similarly, the tendency to decrease the number of antennal segments in females is displayed in several independent phylogenetic lineages in the Diapriidae (Macek, 1990).

**MATERIAL AND METHODS**

Specimens were borrowed or received as gifts for the National Museum in Prague (NMPC) from the following institutions with the curator's donor's name given in parentheses. BMNH – Natural History Museum, London, England (N. Ferguson), CNCI – Canadian National Collection of Insects, Ottawa, Canada (L. Masner), HNHM – Hungarian Natural History Museum, Budapest, Hungary (I. Papp), MCSN – Museo Civico di Storia Naturale, Genova, Italy (W. Rainieri), MNHN – Muséum National d’Histoire Naturelle, Paris, France (J.C. Weulersse), NHMV – Naturhistorisches Museum, Wien, Austria (M. Fischer), ZSMC – Zoologische Staatssammlung, München, Germany (H. Hilpert).

The greatest source of material for this revision was collecting in the past two decades (NMPC). Therefore, the study is mostly based on fresh, clean and properly mounted material. The total number of specimens examined is 274; figures for individual species are given in each. Primary types of the species of *Synacra* examined are indicated by asterisk in synonymy of individual species treated. Unless otherwise stated type material of the new species is deposited in the NMPC. Specimens in NMPC were collected by flight-interception trap (treated with pyrethroid), pan-trap and screen sweeping. Morphological terminology has been adapted from Naumann (1982).

**Genus Synacra Foerster, 1856**


**Description.** Minute (1.2–2.8 mm), melanic to ochreous individuals with pale appendages; head in frontal view subtriangular to triangular, with mouthparts hypognathous; mandibles bidentate, simple to beak-shaped, prominent; clypeus convex to keel-shaped, prominent; face smooth, polished; tentorial pits placed in large depressions; antennal shelf distinctly prominent; postgena with dense pubescence in some species; antenna in female 12-segmented, the A3–A10 progressively widened towards apex, submoniliform; antenna in males 14-segmented with A3–A12 cylindrical to submoniliform and the third

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antennomere modified; scapus armed with two apical projections in some species. Meso-
soma slender; pronotum with distinct cervix, densely pubescent in derived species; meso-
notum slightly convex; notauli developed in ancestral, reduced or totally absent in derived 
states; scutellum with large, subrectangular to rectangular fovea at base; propodeum with 
medial keel either bifid or simple, slightly elevated in some species. Wing venation re-
duced; costalis, subcostalis, marginalis and reduced stigmais tubular; medialis, cubitalis, 
radialis nebulos to absent; basalis nebulous; stigmais in derived species reduced to tub-
ercle which projects slightly at the apex of marginalis; marginalis as long as parastigma; 
hind wing with veins forming basal cell tubular, transparent or absent totally.

Petiolus subcylindrical to transverse or swollen at sides in derived states; gaster in fe-
males fusiform, convex to compressed, sharply pointed posteriorly; metanotergite smooth 
denser pubescence at base in derived states; macrosternite rounded to keeled in 
middle; base of macrosternite rounded or humped; gaster in male subelliptical to subovate.

The six European species of Synacra recognized here form three distinct groups classi-
fied in the following subgenera: Paratelopilus, Sundholmiella and Synacra s. str. However, 
it must be stressed that this classification is considered only as a preliminary attempt 
to express putative interrelationships among the European species of the genus. Without 
the inclusion of extralimital species, the impact of this classification is limited. In my 
opinion, the subgenus Paratelopilus represents the most ancestral assemblage of species 
and may be of paraphyletic origin (see Table 2); it is characterized by slender female an-
tennae, straight distal margin of scapus, homogeneous body pubescence, slightly overlapping 
mandibles, pubescent eyes, percurrent notauli, subcylindrical petiolus, longer 
propodeum and distinct stigmais.

The subgenus Sundholmiella is characterized by the following set of apomorphies: compressed 
habitus; opisthognathous, beak-like mandibles and armed toruli. An undescribed 
species from Canada which was found to possess only a slightly compressed body, moder-
ately modified mandibles and unarmed toruli may represent the most ancestral species of 
this subgenus (Macek, in prep.). The subgenus Synacra s. str. is the most derived group as 
suggested by the following apomorphies: (i) antennal shelf entire; (ii) body pubescence 
heterogeneous; (iii) eyes bare; (iv) petiolus transverse, swollen laterally; (v) propodeum 
transverse; (vi) medial keel of propodeum not forked; (vii) plica of propodeum absent.

DISTRIBUTION. The present data suggest the genus has a Holarctic distribution, with 
exception of the cosmopolitan, synanthropic Synacra paupera sp. n. Six and four species 
are recorded in the Palearctic and Nearctic regions respectively.

BIOLOGY. Very little is known about the hosts of Synacra. From the few rearing records, 
as well as field observations, it is assumed that the majority of hosts are various species of 
Diptera. Several species have been reported from ant nests, but none have definitely been 
reared from the ants. It is probable that such observations referred to female wasps looking 
for their hosts associated with the substrate of the ant nests. An unusual host record exists 
for Synacra giraudi Kieffer; this species is recorded by Kieffer (1916) from the scolytids 
[Tomicus piniperda (L.) and Orthotomicus laricis (F.)] but its true host is more likely to be 
some midge, e.g., the Corynoptera flavicuda Zetterstedt (Sciaridae), which is known to 
live in the galleries of scolytids on conifers (Huggert, 1979).

RELATIONSHIPS. Synacra is closely related to Acanosema Kieffer, from which it differs 
by a single autapomorphy, the twelve-segmented antenna in females.
Key to European species of Synacra

1. Mandibles simple, overlapping apically (Figs 3, 4); stigmata distinct, vertical; scapus long, slender with straight distal margin (Figs 15, 16); pronotal shoulders angulate (Fig. 18) ............................................. 2
   - Mandibles beat-like, more or less prominent (Figs 1, 2); stigmata indistinct; scapus stout and short with distal margin raised projecting in 2 opposite denticles; pronotal shoulders rounded (Fig. 1) ............................................. 3

2. Antennal shield entire with no cleft between toruli (Fig. 3); clypeus convex, not prominent; propodeum with plica reduced; macrosternite in female longitudinally keeled; base of macrotergite smooth ............................................. attracta sp. n.
   - Antennal shield with shallow cleft between toruli (Fig. 4); clypeus keel-shaped, prominent (Fig. 4); propodeum with plica not reduced, macrosternite in female simply convex; macrotergite with base shortly striate (Fig. 5) ............................................. paupera sp. n.

3. Body strongly compressed; margin of toruli projecting as small denticle; body pubescence homogeneous; eyes pubescent; petiolus subcylindrical; propodeum with median keel forked and plica present ............................................. giraudi (Kieffer)
   - Body not compressed, cylindrical; margin of toruli rounded; body pubescence heterogeneous; eyes bare; petiolus transverse, swollen laterally; median keel of propodeum forked or simple; plica of propodeum absent ............................................. holconota (Kieffer)

4. Notauli absent .................................................................................................. 4
   - Notauli present ................................................................. sociabilis (Kieffer)

5. Mandibles long, strongly prominent, serrate ventrally (Fig. 1); propodeum without posterior transverse keel; macrosternite in female without anterior keel ............................................. brachialis (Nees)
   - Mandibles short, slightly prominent, not serrate ventrally (Fig. 2); propodeum with posterior transverse keel; macrosternite in female slightly keeled anteriorly ............................................. 5

Classification of European Synacra

Subgenus: Synacra s. str.

Synacra brachialis (Nees, 1834)
Synacra holconota Kieffer, 1910
Synacra sociabilis (Kieffer, 1904)

Subgenus: Sundholmia Hedqvist, 1975, stat. n.

Synacra giraudi (Kieffer, 1910), comb. n.

Subgenus: Paratetelopsus Whittaker, 1930, stat. n.

Synacra attracta sp. n.
Synacra paupera sp. n.

Subgenus Synacra s. str.

Synacra (Synacra) brachialis (Nees, 1834)
(Figs 1, 8, 11, 14)

*Diapria brachialis Nees, 1834: 333, male, types lost.
*Paramesius brachialis: Curtis, 1860: 466.


**DIAGNOSIS AND RECOGNITION.** A small species (1.3–2.2 mm); mandibles beat-like, strongly prominent, serrate ventrally; tentorial pits placed in large, deep depressions; clypeus
Figs 1–18. 1, 8, 11, 14 – *Synacra brachialis* (Nees); 2, 6, 17 – *Synacra sociabilis* (Kieffer); 7, 12, 13 – *Synacra giraudi* (Kieffer); 3, 10, 16 – *Synacra attracta* sp. n.; 4, 5, 9, 15, 18 – *Synacra paupera* sp. n. 1–4: head, frontal view (scale 0.4 mm); 5–6: metasoma, dorsal view (scale 1 mm); 7–10: male antenna, proximal part (scale 0.3 mm); 11–12: metasoma, lateral view (scale 1.1 mm); 13–16: female antenna (scale 0.5 mm); 17–18: anterior part of mesosoma, dorsal view (scale 0.5 mm).
compressed, prominent; antennae in female stout, incrassate; scapae short with prominent flange armed with two opposite denticles; ventral margin of genae, pronotum, sides of propodeum, petiolar and anterior part of macrosternite with dense cushion-like pubescence; eyes bare; notacli present; propodeum smooth with posterior keel absent; petiolar transverse, swollen at sides; base of macrotergite smooth.

*S. brachialis* is closely related to *S. sociabilis*, from which it differs by following characters: (i) mandibles strongly developed, ventrally serrate, beet-like, (ii) absence of posterior keel of propodeum; (iii) macrosternite in females simply rounded anteriorly. It differs from *S. holconota* by the presence of notacli.

**Variation.** Female micropterous to alate; no other variation was noted in the material studied.

**Material examined.** Types: *Synacra flavistilus* Kieffer, Belveder, Italy, lectotype male here designated (coll. Solari, MCSN); *Synacra acutipennis* Kieffer, Budapest, Hungary, lectotype female here designated (coll. Szépligeti, HNHM). Further material: 71 specimens from Europe.

**Distribution.** Europe: Austria, Czech Republic, England, Finland, France, Germany, Hungary, Ireland, Italy, Russia, Slovakia, Switzerland.

**Biology.** Nixon (1957) recorded one female from the nest of *Ponera coarctata* Nees (Formicidae); Donisthorpe (1927, ex Nixon, 1957) found this species with *Lasius brunneus* (Latreille) (Formicidae).

**Remarks.** The species concept is based on Nees’ (1834) original description; the type material is considered lost. The synonymy of *S. acutipennis* and *S. flavistilus* are based on examination of the types.

*Synacra* (Synacra) *sociabilis* (Kieffer, 1904)  
(Figs 2, 6, 17)

*Synacra inquilina* Pschorr-Walcher, 1957: 75.
*Synacra proxima* Pschorr-Walcher, 1957: 75.
*Synacra sociabilis* Pschorr-Walcher, 1957: 75.
*Synacra anommati* Masner, 1965: 64.

**Diagnosis and recognition.** A small species (1.3–1.9 mm); mandibles beet-like, slightly prominent, not serrate ventrally; tentorial pits in large deep depressions; clypeus compressed, prominent; female antennae incrassate; scapae short, with raised distal flange armed with two opposite denticles; eyes bare; ventral margin of genae, pronotum, the sides of propodeum, petiolar and anterior part of macrosternite with dense cushion-like pubescence; notacli present; propodeum smooth with all keels developed; petiolar transverse, swollen at sides; base of macrotergite smooth with white pubescence.

*S. sociabilis* is closely related to *S. brachialis*. For its differential diagnosis see under the latter. It differs from *S. holconota* by the presence of notacli.
Variation. The species varies in colour (ochraceous to fuscous), in the length of mandibles (relatively prominent mandibles in some specimens never reach the length of those in *S. brachialis*) and in the development of wing venation (stigmalis can vary from distinct to obsolete).

Material examined. Types: *Synacra picea* Kieffer, Aachen, Germany; lectotype female here designated (coll. Foerster, NHMV); *Labolops anomnatus* Morley, London, England, 4.viii.1874, type, female (coll. Morley, BMNH); Further material: 42 specimens from Central and Western Europe.

Distribution. Europe: Austria, Czech Republic, England, Finland, France, Germany, Hungary, Luxembourg, Netherlands, Russia, Slovakia.

Biology. Kieffer (1904, 1910) cited Wasmann's (in litt.) observations on its association with the nests of *Formica* and *Lasius* species (Formicidae). Nixon (1957) reared some specimens (misinterpreted as *S. holconota*) from scarid larvae in a mushroom. I collected this species in yellow pan-traps placed in rotten tree hollows colonized by *Lasius brunneus* (Latreille) (Formicidae). Flight period May–September.

Remarks. *S. sociabilis* has been designated as type species of *Neuropria* Kieffer, 1904. Kieffer (1904) included in *Neuropria* three additional species, which, however, appeared to be conspecific with the type species. After examination of types, Pschorn-Walcher (1957) synonymized *N. proxima* with *N. sociabilis* and, further, he treated *Neuropria* as a junior synonym of *Synacra*. The third species, *N. inquilina*, was left unresolved. Dessart (1975) argued with Pschorn-Walcher's conclusions upon the controversies relating to the correct identification of Kieffer's types. In spite of Dessart's justified objections I believe that the synonymization of *S. proxima* with *S. sociabilis* is correct. However, the status of *S. inquilina* remains still problematic. Pschorn-Walcher's (1957) argument for the validity of this species is based on the different ratio index of antennomeres in female. The revision of this character state is impossible because the head of the type is missing (Dessart, 1975). Pschorn-Walcher (1957) may have replaced the damaged type specimen with another one from the original Kieffer's type series. This supplementary specimen is labeled as follows: "Hochseid, 26.viii.1909, from nest of Formica sanguinea v. globaria". However, Kieffer (1916) referred the latter specimen unambiguously to *N. sociabilis*. As the type series remained inaccessible for me, I made an attempt to identify Kieffer's *N. inquilina* from the original description. The only difference stated by Kieffer (1916) is in body colour, which, as noted above, can vary considerably. The other characters given in the original diagnosis and the figure of head by Kieffer (1905, 1910, 1916) fit perfectly with concept of *S. sociabilis*. As a result, there is no doubt as to the conspecificity of *N. inquilina* with *N. sociabilis*. The synonymy of *S. anomnatus* is based on type examination and those of *N. pannonica* and *N. astignata* on original descriptions. Nixon (1957) misinterpreted *S. holconota* for *S. sociabilis*.

*Synacra* (*Synacra*) *holconota* Kieffer, 1910

**Synacra holconota** Kieffer, 1910: 723.


Diagnosis and recognition. A small species (1.2–1.8 mm); ochraceous; mandibles strongly prominent, beak-like, serrate ventrally; tentorial pits in large deep depressions; clypeus compressed, prominent; antennae in female incressate; scapus short, stout with
distinct flange armed with two small denticles; eyes bare; ventral margin of genae, pronotum, propodeum at sides, petiolus and anterior part of macrosternite with dense, cushion like pubescence; notauli absent; propodeum smooth with all keels developed; petiolus transverse, swollen at sides; wing venation reduced; stigmalis indistinct. *S. holconota* is closely related to *S. brachialis*, differing from the latter by total absence of notauli.

**Variation.** No variability was observed in material available.

**Material examined:** Types: *Synacra holconota* Kieffer, Aachen Germany, lectotype male here designated (coll. Foerster, NHMV); *Prosynacra nigriceps* Kieffer, Nava, Alpes Maritimes, Italy, lectotype male designated by Hedqvist (1975) (coll. Solari, MCSN). Further material: 21 specimens from Central Europe.

**Distribution.** Europe: England, Germany, Hungary, Italy, Switzerland.

**Biology.** Nixon’s (1957) note on its host refers in reality to *S. brachialis*, which he confused with *S. holconota*; the collection data suggests *Phytomyza albiceps* Meigen and *Agromyza spiraeae* Kalmelbach (Diptera: Agromyzidae) as hosts of this species.

**Remarks.** Kieffer (1910) classified this species as *Synacra* even though he should have assigned it into his newly established genus *Prosynacra* (notauli absent). Nixon (1957), without examination of the types, confused *S. holconota* with *S. brachialis*. Masner (1965) synonymized *Prosynacra* with *Synacra* tentatively, which was confirmed after type examination by Hedqvist (1975). The present type examination established the identity of the two enigmatic species definitively and confirmed also the conspecificity of *S. nigriceps* with *S. holconota*.

Subgenus *Sundholmiella* Hedqvist, 1975, stat. n.


*Synacra* (Sundholmiella) *giraudi* (Kieffer, 1910), comb. n.

(Figs 7, 12, 13)


**Diagnosis and Recognition.** A small species (2.2–2.6 mm); fuscous; body compressed, higher than wide; antennae in female slender, incrassate towards apex; scapus short, stout with two short denticles on distal margin; margin of toruli projecting into small denticule; tentorial pits in deep depressions; clypeus keel-shaped; mandibles beak-like, prominent; eyes pubescent; body pubescence homogeneous; notauli obliterated posteriorly; petiolus subcylindrically, finely rugose; propodeum quadrate with all keels developed; medial keel of propodeum forked; stigmalis reduced, radialis nebulous; basal cell of hind wing with tubular veins, pale; gaster compressed with apex sharply pointed in female; macrotergite with short basal striae; macrosternite humped anteriorly in female.

**Variation.** No variability was observed in material available.

**Material examined:** Types: *Prosynacra giraudi* Kieffer, Mont de Marsan, France, lectotype and paralectotype female and male, respectively, designated by Hedqvist (1975) (coll. Perris, MNHP). Further material: 11 specimens from Central Europe.

**Distribution.** Europe: Austria, Czech Republic, France, Germany, Poland, Sweden.
Biology. Host records (Kieffer, 1916) of larvae of Tomicus piniperda (L.) and Orthotomicus laricis (F.) appear dubious. The rare adults occur in coniferous forests; flight period June–September.

Subgenus Paratelopilsus Whittaker, 1930, stat. n.


Synacra (Paratelopilsus) atracta sp. n.
(Figs 3, 10, 16)

Diagnosis and recognition. The most slender species among all known Synacra; scapus in female long, slender, with simple apex; antennomeres slender, cylindrical, becoming slightly widened towards apex; mandibles overlapping apically; clypeus rounded; pronotal shoulders angulate; petiolar subcylindrical; basal cell of hind wing with tubular veins; gaster slender, fusiform.

Based on morphological analysis, this species is the most ancestral of all Palaeartic Synacra species presently recognized. Together with S. paupera sp. n. (described below) and the Nearctic S. canadensis Whittaker, they form a species complex comprising the subgenus Paratelopilsus, the most basal position in the Synacra stem. For distinguishing characters see the description of S. paupera sp. n. (described below).

Description. Female (holotype). Body length 2.2 mm; colour black with metasoma more ferruginous; legs, tegula, antennae and mandibles ochraceous.

Head in dorsal view subrectangular, slightly wider than long, with pale semidecumbent pubescence; antennal shelf prominent; temples gently receding behind eyes; toruli large, closely approximated to each other, cleft between them absent; ocelli small, arranged in equilateral triangle; eyes shorter than temples, finely pubescent; head in lateral view higher than long, subtriangular with vertex rounded; malar space longer than eye diameter; head in frontal view subtriangular with smooth, shining face; fore tentorial pits in large depressions; clypeus globose; mandibles short, crossing at tips; antennae slender with antennomeres becoming slightly widened towards apex; apical part of antenna incrassate with short semi-decumbent pubescence; scapus slender, as long as four following segments together, apex of scapus simple; relative proportions (length/width) of antennal segments 2–12 as: 18:8, 20:5, 10:5, 10:6, 10:7, 11:8, 11:8, 12:8, 13:9, 13:9, 25:10.

Mesosoma slender, as wide as the head width, sparsely covered with pale, semidecumbent pubescence; pronotum subdivided into pronotal neck and pronotal collar; pronotal shoulders prominent; epomia absent; lateral pronotal depressed, smooth with intensive gloss; mesoscutum slightly convex, descending towards pronotum moderately; notauli percurrent; axillae indistinct; scutellum slightly convex, quadrate, with deep, rectangular anterior fovea; deep lateral foveae smooth; mesopleuron smooth with indistinct submedian transverse depression; anteroventral bar of mesopleuron reduced; dorsellum with medial keel prominent; propodeum slightly transverse, concave posteriorly, medial keel forked, inner plica reduced anteriorly; the outer plica complete, incurved anteriorly, both plicae ending into raised posterior ledge; wing venation reduced, C, Sc, marginalis, stigma and basalis tubular, cubitalis nebulous, M and radialis vestigial, marginalis as long as parasigma, postmarginalis as long as stigma, stigmatis oblique, as long as half of marginalis;
hind wings with tubular costa and pate basal cell; legs slender, hind tibiae straight, longer than femora, metafemurars as long as three following tarsomeres.

Petcillus subcylindrical, slightly longer than wide, with fine irregular rugosity; gaster elongate, convex, strongly pointed posteriorly, posterior half of gaster slightly compressed; base of macrotergite smooth; pygidium as long as praepygium, slightly downcurved.

Male (allotype). Differs from female as follows: (i) antennae 14-segmented, filiform with cylindrical antennomeres, covered with homogeneous pilosity; (ii) A3 with shallow basal emargination; (iii) gaster elliptical.

Variation. The species varies to a considerable degree in the following characters: (i) length/width ratio index of all antennomeres in female; those in proximal in higher degree (A3: 1.5–3) than those distal (A10: 1.1–1.5); (ii) the shape of gaster varies from wider, subfusciform to slender, fusiform; (iii) structure of medial keel of propodeum varies from simple to forked.


Etymology. Species name is derived from Greek "atractos" referring to the characteristic form of gaster.

Distribution. Europe: Austria, Czech Republic, Germany, Slovakia. Asia: Nepal.

Biology. Host unknown. All individuals were collected in forest habitats; flight period between June–August; rare species.

**Synoxoa (Paratelopsilus) pauera sp. n.**

(Figs 4, 5, 9, 15, 18)

Diagnosis and recognition. Small (about 2 mm), pale species; mandibles slightly overlapping apically; clypeus convex, compressed; tentorial pits placed in large, deep depressions; toruli separated by deep cleft; antennae in females with basal antennomeres relatively slender, becoming widened apically, with slightly differentiated five-segmented clava; distal margin of scapus simple; eyes pubescent; antennomeres A3–A12 in males with long adherent bristles forming whorls at widest part of each segment; body pubescence thin; pronotal shoulders sharply pointed; notaular distinct; propodeum with medial keel forked; petiolus subcylindrical; base of macrotergite shortly striate.

This species is closely related to S. atracta (described above), from which it differs by the following: (i) distinct cleft between toruli; (ii) clypeus prominent, compressed at sides.
(iii) plicae complete; (iv) macrotergite with short striae at base; (v) macrotergite with short striae at base; (vi) antennomeres A3–A14 in males with verticillate pubescence.

DESCRIPTION. Female (holotype). Length 2.1 mm; colour light ferrugineous with black patch on vertex and mesosoma more fuscos; pubescence pale, sparsely scattered over all body. Head in dorsal view slightly transverse with prominent antennal shelf; toruli separated from each other by deep cleft; temples receding behind eyes; ocelli small, arranged in a flat triangle; distance of hind ocellus from posterior eye margin longer than their mutual distance (OOL > POL); eye diameter equal to length of malar space; eyes pubescent; head in lateral view slightly higher than long; vertex globose; head in frontal view subtrangular with entire face smooth and polished; subantennal furrows absent; tentorial pits placed in deep, large depressions; clypeus prominent, compressed at sides; mandibles simple, crossing at apex, slightly prominent; scapus slender, as long as four following segments together, distal margin of scapus simple; pedicel subconical, slightly shorter than A3; antenna incrassate, with indistinct 5-segmented clava.

Mesosoma slender, as wide as head; pronotum subdivided into pronotal collar and pronotal neck; pronotal shoulders prominent, sharply pointed; epomia absent; lateral pronotum slightly depressed, smooth, highly polished; mesoscutum convex, steeply descending towards pronotum; notauli concave, parallel posteriorly; axillae indistinct; scutellum almost flat, smooth with subsemicircular fovea anteriorly; deep lateral foveae densely pubescent in middle; mesopleuron smooth, slightly depressed medially; subalar furrow distinct, rugose; metanotum with flat dorsum and deep lateral furrows, medial keel of dorsellum flat; propodeum slightly transverse, strongly narrowed posteriorly, posterior transverse keel raised into prominent ledge, distinctly separating nucha from dorsal part of propodeum, medial keel forked; plicae complete, not projecting posteriorly; fore wing venation reduced, pale, C, Sc, marginalis, basilis and stigmatis tubular, M, Cu and radialis spurious, indistinct, marginalis as long as parastigma, stigmas hook-shaped, perpendicular to marginalis; hind wings blade-like in shape, with costa tubular and basal cell obsolete; legs slender with femora differentiated into distinct basal stalk and distal clava; hind tibiae longer than femora, becoming moderately widened towards apex.

Petiolus subcylindrical, longer than wide, finely striate; gaster fusiform, strongly pointed at apex; pygidium slightly downcurved, shorter than praepygium; macrotergite striate at base; macrotergite slightly convex anteriorly.

Male (allotype). Differs from female as follows: (i) antennae filiform with antennomeres A3–A14 subcylindrical, slightly constricted medially, with very long bristle-like hairs, forming whorls, arising from widest part of each segment; (ii) A3 narrowed at base, slightly bowed; (iii) gaster subellipsoid, with apex rounded, downcurved.


ETYMOLOGY. Species name refers to the host species name (Bradysia paupera).

DISTRIBUTION. Palearctic region: Denmark, Japan, Netherlands. Nearctic region: Canada, USA. Oriental region: Malaysia.

BIOLOGY. The widely scattered collecting data suggest association of the species with human agricultural activity (mushroom cultivations, greenhouses, backyards). Bradysia paupera (Diptera: Sciaridae) is the only host recorded at present.

ACKNOWLEDGEMENTS. Curators from various museums kindly loaned specimens of Synacra (see Material and Methods).

REFERENCES


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APPENDIX. Table 1 lists some important characters and their presumed polarity. Table 2 reviews distribution of these characters in the species presently revised. As can be seen from Table 2, distribution of the characters does not provide an unequivocal phylogenetic relationship for the presently treated species. A cladogram has not been constructed, and the tables are intended as a base for future cladistic analysis of a broader material.

Table 1. Character state polarization. The following 25 characters with their presumed plesiomorphic (0) or apomorphic (1, 2, 3) states in six European Synacra species are derived from comparison with the genera of subfamily Belytiniae.

<table>
<thead>
<tr>
<th>No.</th>
<th>Character state</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.</td>
<td>Habitus:</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Female antenna:</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Scapus:</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Scapus, distal margin:</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Toruli:</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Antennal shelf:</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Ocelli:</td>
<td></td>
</tr>
</tbody>
</table>

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Table 1 (continued).

<table>
<thead>
<tr>
<th>No.</th>
<th>Character state</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>Body pubescence:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>homogeneous</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>heterogeneous</td>
<td>1</td>
</tr>
<tr>
<td>8.</td>
<td>Clypeus:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>globose, slightly convex</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>keel-shaped, slightly prominent</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>keel-shaped, sharply prominent</td>
<td>2</td>
</tr>
<tr>
<td>9.</td>
<td>Subbantennal sutures:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>present</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>absent</td>
<td>1</td>
</tr>
<tr>
<td>10.</td>
<td>Mandibles:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>overlapping apically</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>slightly beak-like</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>sharply beak-like</td>
<td>2</td>
</tr>
<tr>
<td>11.</td>
<td>Eyes:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>pubescent</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>bare</td>
<td>1</td>
</tr>
<tr>
<td>12.</td>
<td>Eponia:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>present</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>absent</td>
<td>1</td>
</tr>
<tr>
<td>13.</td>
<td>Pronotal shoulders:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>prominent</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>rounded</td>
<td>1</td>
</tr>
<tr>
<td>14.</td>
<td>Notauli:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>present</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>reduced</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>absent</td>
<td>2</td>
</tr>
<tr>
<td>15.</td>
<td>Pterygopod polymorphism:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>absent</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>present</td>
<td>1</td>
</tr>
<tr>
<td>16.</td>
<td>Petiolus:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>subcylindrical</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>transverse, swollen laterally</td>
<td>1</td>
</tr>
<tr>
<td>17.</td>
<td>Propodeum:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>quadrato</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>transverse</td>
<td>1</td>
</tr>
<tr>
<td>18.</td>
<td>Propodeum, posterior keel:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>present</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>absent</td>
<td>1</td>
</tr>
<tr>
<td>19.</td>
<td>Propodeum, medial keel:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>forked</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>simple</td>
<td>1</td>
</tr>
<tr>
<td>20.</td>
<td>Propodeum, plica:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>present</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>reduced</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>absent</td>
<td>2</td>
</tr>
<tr>
<td>21.</td>
<td>Stigmalis:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>distinct</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>indistinct</td>
<td>1</td>
</tr>
<tr>
<td>22.</td>
<td>Radialis:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>indistinct, nebulous</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>absent</td>
<td>1</td>
</tr>
<tr>
<td>23.</td>
<td>Hind wing, basal cell veins:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tubular, pigmented</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>tubular, transparent</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>absent</td>
<td>2</td>
</tr>
<tr>
<td>24.</td>
<td>Macrosternite, female</td>
<td></td>
</tr>
<tr>
<td></td>
<td>simply convex</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>slightly keeled anteriorly</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>slightly keeled in all length</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>sharply keeled, compressed</td>
<td>3</td>
</tr>
<tr>
<td>25.</td>
<td>Base of macrotergite:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>shortly striate</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>smooth</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 2. Data matrix for Synacra. Characters and codes as indicated in Table 1.

<table>
<thead>
<tr>
<th>Taxa</th>
<th>Characters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</td>
</tr>
<tr>
<td>brachialis (Nees)</td>
<td>0 2 2 0 1 1 1 2 1 2 1 1 1 1 1 1 1 1 2 1 1 1 2 0 1</td>
</tr>
<tr>
<td>helconota Kieffer</td>
<td>0 1 1 2 0 1 1 1 2 1 2 1 1 1 1 2 0 1 1 0 1 2 1 1 2 1 1</td>
</tr>
<tr>
<td>sociabilis (Kieffer)</td>
<td>0 1 1 2 0 1 1 1 2 1 1 1 1 1 0 0 1 1 0 1 2 1 1 2 1 1</td>
</tr>
<tr>
<td>giraudi (Kieffer)</td>
<td>0 1 0 2 1 0 0 0 1 2 0 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>attracta sp. n.</td>
<td>0 0 0 0 1 1 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>pasperea sp. n.</td>
<td>0 0 0 0 0 1 0 2 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 2 0</td>
</tr>
</tbody>
</table>

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