A preliminary key to the European species of the genus *Saotis* Förster, 1869, with a list of British species (Ichneumonidae: Ctenopelmatinae: Mesoleiini)

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An illustrated key to the European species of *Saotis* described by Thomson, Schmiedeknecht and Morley, is given. A new synonym is proposed: *Saotis mirabilis* Schmiedeknecht, 1914 (type examined) = *I sakarus seleuciformis* Kolarov, 1987, syn. n. The material of *Saotis* (collected in Britain) kept at the National Museums of Scotland and the Natural History Museum, London, is listed.

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Introduction

During visits to Lund in 1993 and 1997, the senior author examined type specimens of all species described by C.G. Thomson that are currently placed in the genus *Saotis* (cf. Yu & Horstmann, 1997), and prepared illustrations to many of them. This comprises the majority of the European species of the genus. During the senior author’s visit to Edinburgh in 2002, it was possible to examine the British and European specimens of *Saotis* held by the National Museums of Scotland (NMS) and the Natural History Museum, London (BMNH), and to prepare a preliminary key to the European species presented here.

A new synonym is proposed: *Saotis mirabilis* Schmiedeknecht, 1914 (type from the Berlin Museum is examined) = *I sakarus seleuciformis* Kolarov, 1987, syn. n.; *Saotis Förster, 1869* = *I sakarus* Kolarov, 1987, syn. n. Although *S. mirabilis* is a relatively large, brightly coloured species with more elongate abdomen than in other species of *Saotis*, these distinctions are insufficient for the warrant recognition of the genus *I sakarus* Kolarov, 1987 (possibly, it can be considered as a subspecies of the genus *Saotis*).

*Saotis* is a highly specialized genus, parasitising species of *Pontania* O. Costa and *Phyllocolpa* Benson (Hymenoptera: Tenthredinidae) forming galls and leaf curls on *Salix* (Bridgman, 1887; Hinz, 1961; Kopelke, 1994).

The basic morphometric characters and their abbreviations used in this work are listed below:

- **i.fl.** – index flagellaris, ratio of length of 1st and 2nd flagellar segments combined to eye height (longitudinal diameter);
- **i.gen.** – index genalis, ratio of minimum length of malar space (“gena”) to basal width of mandible;
- **i.terg.** – index tergalis, ratio of length of 1st metasomal tergite to its maximum width.

A preliminary key to the European species of *Saotis* (females only)

1. Mesothorax predominantly red; metasoma much longer than head and thorax combined. – Flagellum with 27-33 segments

   1. **S. mirabilis** Schmiedeknecht, 1914 (= *I sakarus seleuciformis* Kolarov, 1987, syn. n.)

2. Epipleura of tergites 5-6 white

   2. **S. compressiuscula** (Thomson)

3. Scutellum black; flagellum with 22-24 segments. – Tergites 6-8 predominantly black dorsally (with white band on hind margin); ovipositor sheath light brown (Fig. 2); metasoma moderately compressed. Syntypes: fore wing 3-5 mm long; head wide; **i.fl.** 1.1; 1st flagellar segment about 5 times as long as wide (in other species usually shorter); malar space short, **i.gen.** 0.25; clypeus widely impressed along lower margin, convex above impression; propodeal areas very indistinct; **i.terg.** 1.8; fore and middle coxae and all trochanters yellow (hind trochanter I darkened dorsally); hind coxa reddish or brownish; hind tibia yellowish white, weakly darkened at base and at apical 0.3

   3. **S. compressiuscula** (Thomson)
1. Scutellum with a yellow spot; flagellum with 25-29 segments.

2. Tergites 6-8 predominantly white (with a black dorsal spot at base); ovipositor sheath yellow, usually tapered at apex (Fig. 1); flagellum usually with 25-26 segments; hind tibia reddish brown, but dirty white on posterior side in basal 0.6. – Synotypes: malar space rather long, i. gen. 0.4; i. terg. 1.5; mesoscutum with yellow central and anterolateral spots; scutellum dorsally (except for black median spot at base) and postscutellum yellow; fore and middle coxae and trochanters yellow; propodeum with distinct areola and apical area ... S. brevispina (Thomson)

3. Tergites 6-8 predominantly black dorsally, with a rather narrow white band on hind margin; ovipositor sheath not as above (Figs 3, 4); flagellum with 26-29 segments; hind tibia with wide dark ring in basal 0.3 (Fig. 21); sometimes tricolourous: black and reddish shiny and projecting; hind spurs brownish; tergites black with white epipleura (Fig. 3) ... S. bilineata (Gravenhorst, 1829)

4. Mesoscutum red and separated from black mesopleura by a yellow longitudinal band. – Syntypes of S. emarginata: flagellum with 29 segments, i. gen. about 0.33 (in male, 0.1); face with two yellow spots below antennal sockets and yellow marks above clypeus, on malar space and on cheeks; mesoscutum with two yellow anterolateral spots; hind tibia tricolourous, its hind apical margin shining and projecting; hind spurs brownish; tergites black with white epipleura (Fig. 3) ... S. tricolor (Thomson)

5. Flagellum usually with 29 segments ... 7

6. Flagellum with 26-27 segments ... 7

7. Ovipositor sheath light brown ... S. liopleuris (Thomson)

8. Tergites very densely covered with short hairs; malar space rather short; i. gen. 0.2; all coxae brownish black; thorax entirely black. – Tergites of metasoma black to brown, without white pattern; apical tergites (except dorsally), hypopygium and ovipositor usually ochraceous (Fig. 5); Holotype: 23/24 flagellar segments; clypeus impressed along lower margin; black to brown, with the following parts white: clypeus, mandibles, hind corner of pronotum, tegulae, fore and middle trochanter II; all coxae and hind trochanter black; hind tibia whitish, weakly fuscous at extreme base and brownish at apical 0.35; mesopleura granulate; epipleura of tergite 3 (except at base) and tergites 4-8 not separated by a crease ... S. nigritervinis (Thomson)

9. Tergites with hairs much sparser and longer; malar space usually longer; coxae red or black; thorax entirely black or with yellow marks.

10. Scutellum with a pair of yellow basalateral spots. i. gen. 0.45; metasoma beyond apical part of tergite 1 smooth and almost polished; hind tibia darkened dorsally, dirty whitish to dirty rufous at middle 0.5 ventrally. – Lectotype: 24 flagellar segments; mesoscutum with anterolateral spots; fore and middle coxae and trochanters white to yellow; hind coxa and hind trochanter blackish brown (in other specimens, sometimes red); sternites white; epipleura rusty rufous; fore and middle tibia rufous, darkened dorsally at the middle. Metasomal tergites (3-7) with a white spot on hind margin dorsally (this spot angulate anteriorly); ovipositor sheath from yellowish brown (in type) to rufous-yellow, tapered apically (Fig. 6) ... S. variocosa (Thomson)

11. Metasomal tergite 2 at apical part and median longitudinal band on tergite 3 reddish brown; first tergite about 2.2 times as long as wide; sternites 1-4 reddish yellow, sternites 5-6 rufous; ovipositor sheath rather narrow (Fig. 8). – Holotype: fore wing 4.2 mm; flagellum with 26 segments (other specimens sometimes with 24 segments); i. f. 0.9; 1st flagellar segment 4 times as long as wide; i. gen. 0.3 (0.25-0.33); clypeus widely convex on lower margin; tergites black, apical 0.33 of tergite 2 and wide longitudinal median mark on tergite 3 brownish red; epipleura of tergites 2-3(5) separated by a crease; ovipositor sheath brownish (Fig. 8) ... S. dorsata (Thomson)

12. Metasomal tergite 2 and 3 black dorsally; tergites 1-3 (in holotype) 2.7, 2.4 and 2.0 times as long as apical width of tergite 1, respectively; sternites fuscous, hypopygium reddish yellow; ovipositor sheath rather wide and light brownish (Fig. 9). – Holotype: antennae broken; face black with a pair of small yellow spots distal to clypeal foveae; i. gen. 0.33 ... S. nigritervinis (Thomson)

13. Scutellum black; lower margin of clypeus with median convexity; flagellum with 26-27 segments; ovipositor sheath very wide, blackish (Fig. 7); dorsal areas of propodeum indistinct. – Holotype: fore wing 4.9 mm; flagellum with 26 segments; propodeal carinæ very weak, vestigial; hind margin on dorsum of tergites 3-7 white; sternites 3-6 yellowish white (Fig. 7) ... S. nigritervinis (Thomson)

14. First tergite 2.2-2.9 as long as wide (Fig. 19); flagellum with 24-25 segments; tergite 2 polished at apical 0.3; ovipositor sheath light brown to brown (Figs 12, 13) ... S. morleyi (Fittkau) ... S. variocosa (Thomson)

15. First tergite 1.6 times as long as wide (Fig. 20); flagellum with 23 segments; tergite 2 entirely granulate; ovipositor sheath larger and darker (Fig. 14) ... S. variocosa (Thomson)

S. nigriventris (Thomson)

S. dorsata (Thomson)

S. nigritervinis (Thomson)

S. variocosa (Thomson)
15. Areola of propodeum narrow and distinctly separated from apical area (Fig.16); 3rd segment of hind tarsus about 1.3 times as long as 5th segment; tergites 3–7 black, with a yellowish dorsal apexal spot; sternites pale brown, sternites 5 and 6 widely yellowish at apical part; ovipositor sheath wide and blackish (Fig. 11).

Mandibles wide, brownish, slightly convex before teeth.

S. heteropus (Thomson)

Areola of propodeum wider and not separated from apical area (Fig.15); 3rd segment of hind tarsus about 1.0 times as long as 5th segment; shape and largely brownish colour pattern of metasomal segments as in Fig.10.

S. hoeli Roman

The annotated list of British species (on the materials from BMNH and NMS)


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(T.A. Marshall) (BMNH: incorrectly labelled as cotype of Homocidus Bassus emarginatus Morley).


**Saotis sp.** 1 (possibly, var. of *lispheurus* (Thomson, 1888)). 2 ♀, England, Oxfordshire, Dry Sandford Pit, SU468995, Malaise trap, 14-30.VI.1990 and 30.VI-19.VII.1990 (K. Porter) (NMS); 1 ♀, Scotland, Sutherland, Bettyhill, Skelpick, NC724560, Malaise trap, 3-9.VII.1982 (D. Horsfield) (NMS).


Acknowledgements

We are grateful to Drs R. Danielson (Lund), M.G. Fitton (London) and F. Koch (Berlin) for facilitating examination of specimens in their care. The visit of D.R. Kasparyan to Edinburgh in October-November 2002 was made possible by funds available from the Pelham-Clinton Memorial Trust.

References


Received 15 December 2002