

Systasis edlandi – a new species of Ormocerinae (Hymenoptera, Pteromalidae) from Norway associated with rowan berry (*Sorbus aucuparia*) (Rosaceae)

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Systasis edlandi n. sp. is described from Norway, representing a new species of *Systasis* Walker, 1834. Discrimination from the closest species is discussed briefly. The material is a result of an extensive hatching project from rowan berry (*Sorbus aucuparia*) run by the late Torgeir Edland. Even though the exact circumstances about the biology can be recalled, it is to believe that the host is a gall midge (Diptera, Cecidomyiidae).

Key words: Ormocerinae, *Systasis edlandi*, new species, gall midges, Cecidomyiidae, rowan berry, *Sorbus aucuparia*.

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Introduction

The genus *Systasis* Walker, 1834 has a worldwide distribution, comprising 58 nominal species represented in all zoogeographic regions except the Neotropical (Noyes 2015). There are 25 species known from the Australian region, seven from the Oriental, 19 from the Palearctic (inclusive China), six from the Afrotropical and five from the Nearctic (Noyes 2015). Two species are considered as Holarctic and nine species are found in Europe. Of the nine species reported from Europe, the following five are reported from Sweden: *S. angustula* Graham, 1969, *S. annulipes* (Walker, 1834), *S. encyrtoides* Walker, 1834, *S. parvula* Thomson, 1876 and *S. tenuicornis* Walker, 1834 (Hedqvist 2003, Mitroiu 2015). The

genus is previously not reported from Norway (Mitroiu 2015).

Little is known about the biology of the genus, but information on primary hosts is given for about 15 species (Noyes 2015), and the majority of these are about gall midges (Diptera, Cecidomyiidae).

In the 1960s and 1970s a hatching project on *Argyresthia conjugella* Zeller, 1839 (Lepidoptera, Argyresthidae) was initiated by the Norwegian Plant Protection Center [Plantevernet, Ås], and led by Torgeir Edland (1932–1999) (Edland 1965, Sømme & Hansen 2004). The aim of the project was to improve the knowledge about the distribution of the species in Norway, and try to predict outbreaks of the moth. The main host is rowan berry (*Sorbus aucuparia*), but in favorable summers the moths also attack and cause severe

damage on apples (*Malus* spp.) (Ahlberg 1927, Edland 1965, Sømme & Hansen 2004). Also associated insects, including parasitoids as parasitic Hymenoptera, were collected in the project. This article deals with the description of a new species of *Systasis* from Norway, hatched from rowan berries in this project.

Material and methods

Terminology and nomenclature generally follow Graham (1969). The abbreviations used in the text are the following: ocellar-ocular distance = OOL, posterior ocellar distance = POL. Supplementary information and interpretations of the text given on the labels are given in curly brackets. The faunistic divisions within Norway and municipality notations follow Økland (1981), and are given in bold. In this case they coincide with the divisions given on the labels which follow the original system of Strand (1943). The description comprises all specimens listed below, not only the primary type. All material examined in this study originally belonged to the collections at the Norwegian Plant Protection Center [Plantevernet, Ås], but was in 2005 merged into the collections at Natural History Museum of Oslo (NHMO). Holotype and paratypes have been deposited at NHMO, except for four of the paratypes transferred to the private collection of the senior author (CKT).

Description

Systasis edlandi n. sp. Figures 1–5

Holotype: ♀ Os [OS Sør-Aurdal:] Liagrend, Sør-Aurdal, 27/VIII 1979, Kl. lab. [hatched laboratory] 18 IV 80, 2/79, leg. T. Edland; 80-751, *Systasis annulipes* (Walk.). [det. Anonymous; probably T. Edland] [NHMO]. Figure 5.

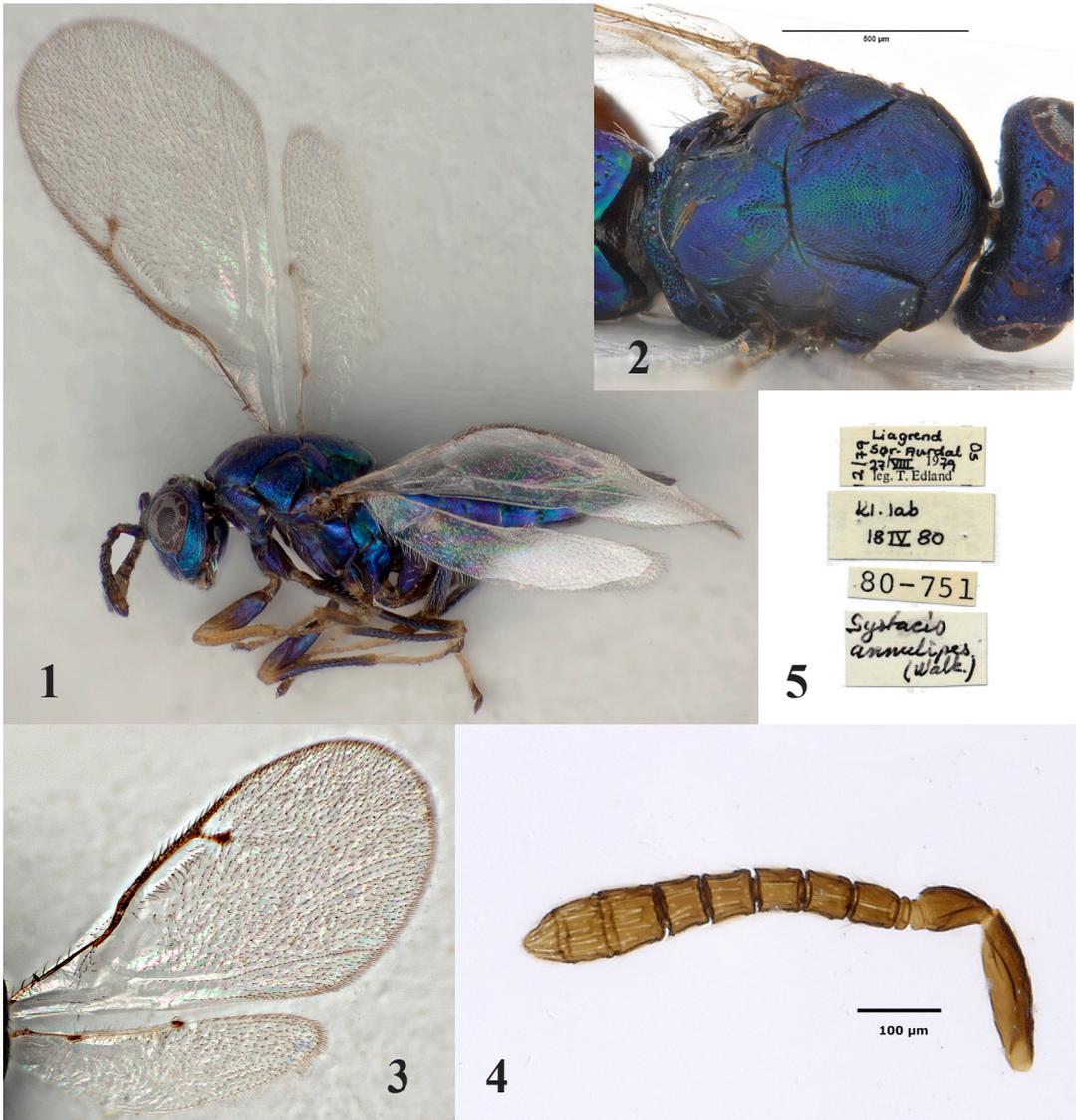
Paratypes: 1♀ AK [AK Eidsvoll:] Korslund, Ørbekk, 23/VIII 1978, Kl. lab. [hatched laboratory] 21 II 79, 88/78, leg. T. Edland [NHMO]. 2♂♂ HES [HES Åsnes:] Fall, Åsnes, 27/VIII 1980, Kl. [hatched] 20 III 81 and 24 III 81, leg. T. Edland, 96/80 [CKT, NHMO]; 1♂

Os [OS Sør-Aurdal:] Sørum, Sør-Aurdal, 27/VIII 1979, Kl. lab. [hatched laboratory] 17 IV 80, 1/79, leg. T. Edland [NHMO], 80-796; 1♀ Os [OS Sør-Aurdal:], Liagrend, Sør-Aurdal, 27/VIII 1979, Kl. lab. [hatched laboratory] 20 IV 80, 2/79, leg. T. Edland, 80-752 [CKT]; 2♂♂ Os [OS Sør-Aurdal:], Liagrend, Sør-Aurdal, 27/VIII 1979, Kl. lab. [hatched laboratory] 15 IV 80 and 17 IV 80, 2/79, leg. T. Edland [NHMO], 80-799; ♂ Os [OS Sør-Aurdal:], Liagrend, Sør-Aurdal, 27/VIII 1979, Kl. ute [hatched outside] 25 V 80, 2/79, leg. T. Edland, 80-801 [CKT]; 1♀ Os [OS Nord-Aurdal:], Sundvoll, Nord-Aurdal, 27/VIII 1979, Kl. lab. [hatched laboratory] 18 IV 80, 3/79, leg. T. Edland, 80-753 [NHMO]; 1♂ Os [OS Nord-Aurdal:], Sundvoll, Nord-Aurdal, 27/VIII 1979, Kl. lab. [hatched laboratory] 16 IV 80, 3/79, leg. T. Edland, 80-805 [NHMO]. 2♀♀ Bø [BØ Krødsherad:], Noresund, Krødsherad, 28/VIII 1978, Kl. lab. [hatched laboratory] 23 II 79, 112/78, leg. T. Edland [NHMO, CKT].

Etymology: To honor Torgeir Edland (1932–1999) who ran the project on *Argyresthia conjugella* and hatched all the specimens.

Diagnostic characters: *S. edlandi* is close to *S. angustula* Graham, 1969, but differs particularly in its longer gaster, the pedicellus distinctly shorter than anelli plus first funicular segment (Figure 4), basal vein of forewing with irregular row of hairs through, and a second irregular row behind them (Figure 3). This species is easily distinguishable from all other known European species of *Systasis* with very narrow and more concave posterior edge of the propodeum. On all other species, the arc is much weaker, or the posterior edge is almost parallel to the frontal edge.

Male. Length: 1.9–2.3 mm. Head and thorax dark greenish blue, abdomen darker, with strong violet reflection more extensively green only the basis of abdomen and proximal band of the last 3 tergites. Antennae fuscous, scapus and pedicellus with color as the head, without any testaceous markings. Legs mainly blackish with a green tinge, except foretibia which is mainly testaceous, sometimes with greenish cloud or band in the middle; knees and the extreme apices of tibiae testaceous; all tarsi pale testaceous, their 5th segment fuscous. Tegulae coloration as the thorax;



FIGURES 1–5. *Systasis edlandi* n. sp. **1.** Holotype complete specimen, photo: K. Sund. **2.** Holotype dorsal side, photo: G. Søli. **3.** Holotype wing, photo: K. Sund. **4.** Paratype antennae ♀, photo: Geir Søli. **5.** Holotype labels, photo: L.O. Hansen.

wings hyaline, venation brownish testaceous.

Head in dorsal view 2.0–2.1 times as broad as long, and in frontal view about 1.3 times as broad as high; temples about one quarter as long as eyes. POL 3.0 OOL. Antenna with scape not or hardly reaching to level of lower edge of median ocellus; combined length of pedicellus and flagellum equal to width of head; pedicellus nearly twice as long as broad, distinctly shorter as

anelli plus first funicular segment; flagellum much as *S. angustula*, slightly clavate, proximally equal or slightly stouter than the pedicellus, funicular segments quadrate, or the 4th and 5th very slightly transverse, the 5th as long as the first segment of clava; the segments are quadrate, or the 4th and 5th very slightly transverse; clava as long as the three preceding segments together.

Thorax 1.4 times as long as broad. Basal

vein of fore wing with irregular row of hairs through, and a second irregular row behind them (sometimes only with 2–3 hairs); speculum large, on upper surface of wing with a bare strip below the marginal vein up to the stigmal vein; the triangular area between the postmarginal and stigmal veins is mainly bare; disc of wing beyond the speculum, rather densely haired; marginal vein about 1.8 times as long as postmarginal vein, postmarginal vein is 1.8 times as long as stigmal vein. Propodeum very narrow, in the middle only one tenth as long as the scutellum; uniformly, but a bit more strongly reticulate as the thorax.

Gaster lanceolate, distinctly longer, 1.25–1.3 times as long as head plus thorax, acutely pointed apically. Tergites 1–4 more strongly reticulate as the thorax.

Female. Length: 1.6–2.0 mm. Very similar to the male, and sharing the typical male characters, except the triangular area between the postmarginal and stigmal veins which is mainly bare; basal vein pilose, with some more hairs in distal third of basal cell; antenna with scape not or hardly reaching to level of lower edge of median ocellus. Differs from the male chiefly in the antennae, gaster and smaller size.

Distribution: Norway.

Biology

Little is known about the biology of the genus, but information on primary hosts is given for about 15 species of *Systasis* (Noyes 2015). The majority of these are gall midges (Diptera, Cecidomyiidae) with about 40 observations. In addition there are a few reports from Tortricidae (Lepidoptera), Agromyzidae, Tephritidae (Diptera), Cynipidae (Hymenoptera), Bruchidae and Curculionidae (Coleoptera) (Noyes 2015).

Several gall midges are associated with rowan (*Sorbus aucuparia*) (Buhr 1965, Skuhravá *et al.* 2006, Gagné & Jaschhof 2014). *Contarinia sorbi* Kieffer, 1896 and *Clinodiplosis cilicrus* (Kieffer, 1889) [= *Clinodiplosis sorbicola* Rübsaamen, 1917] are both restricted to the leaves of rowan, where the former is making galls and the latter living as inquiline in galls of the former and other

gall midge species (Buhr 1965, Gagné & Jaschhof 2014). *Contarinia floriperda* Riibsaamen, 1917 has larvae living gregariously in swollen flower buds of rowan and seems common. It is univoltine and hibernates in the soil. Furthermore, a specimen of *Jaapiella* sp. has been reared from flower buds of rowan, while several specimens of the predatory *Lestodiplosis* sp. were bred from rowanberries damaged by other species of insects (Skuhravá *et al.* 2006). The last one may be a plausible host guess.

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