

First record of *Spalangiopelta* Masi, 1922 (Hymenoptera, Pteromalidae, Ceinae) in Norway

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Pteromalidae is a relatively poor known group, and there are many species yet to discover. We here report two new species to Norway, *Spalangiopelta alata* Bouček, 1953 and *Spalangiopelta procera* Graham, 1966 (Hymenoptera, Pteromalidae). Some additional records on *Cea pulicaris* Walker, 1837 are also included.

Key words: *Cea pulicaris*, *Spalangiopelta procera*, *Spalangiopelta alata*, Ceinae, Pteromalidae, Chalcidoidea, Hymenoptera, Norway.

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Introduction

Ceinae is a small subfamily in the family Pteromalidae (Hymenoptera). Only one species has been recorded from Norway until now. *Cea pulicaris* Walker, 1837 was published from Norway by Steve Compton (1981) after his collecting expedition to Jostedal valley, Vestland county in 1980. After this trip he made a list of 175 species of Chalcidoidea, many of them new to Norway. This became a solid contribution to the knowledge on Chalcidoidea in Norway. Species of the Ceinae subfamily are usually extremely rare in collections (Darling 1991), and hosts are only known for *C. pulicaris* and *Spalangiopelta alata* Bouček, 1953. For *C. pulicaris* a number of Agromyzidae (Diptera) species are listed as hosts, and *Spalangiopelta* Masi, 1922 is known for parasitizing Drosophilidae (Diptera) larvae (Noyes 2019). Worldwide *Spalangiopelta* Masi, 1922 has 13 species, while *Cea pulicaris* is monotypic. The third genus in Ceinae is *Bohpa* Darling, 1991, and consists of the only Afrotropical species *Bohpa*

maculata Darling, 1991. The latest review of Ceinae, including an identification key to genera, was published by Mitroiu (2016).

Material and methods

The material in this report was collected by malaise traps (MT). Reference material is kept in the insect collections at Norwegian Institute for Nature Research (NINA) in Trondheim. The material was collected by several entomologists and their names are abbreviated as follows: Kai Berggren (KB), Jarl Birkeland (JB), Sondre Dahle (SD), Arnstein Staverløkk (AS) and Frode Ødegaard (FØ). Prior to mounting on rectangular cards, specimens were dried using hexamethyldisilazane (HMDS) to prevent shrinking. Several partially focused images were taken with a Nikon D850 mounted on a Nikon PB-5 Bellow with a Nikon Plan 10x N/A 0.30 microscope objective, then combined in the software program Zerene Stacker[®] (2016). All pictures were taken by the first author.

Results

Spalangiopecta procera Graham, 1966

Material: AUST-AGDER coastal (AAY), Kristiansand: Nedre Timenes [EIS2 N58.16197° E8.09881°], 1♀, 27 August–26 November 2016, MT, leg. KB/AS, coll. NINA; **ROGALAND** coastal (RY), Sokndal: Sandbekk [EIS3 N58.35839° E6.33291°], 4♀♀ (Figure 1), 29 April–4 October 2018, MT, leg. JB, coll. NINA.

Biology: Unknown

Distribution: England, Ireland, Northern Ireland, Spanish mainland, Sweden, Switzerland (Mitroiu 2020, Noyes 2019).

Spalangiopecta cf. procera

Material: ROGALAND coastal (RY), Sokndal: Sandbekk [EIS3 N58.35839° E6.33291°], 1♂ (Figure 2), 29 April–4 October 2018, MT, leg. JB, coll. NINA; **VESTFOLD** (VE), Larvik: Vemannsås, [EIS19 N59.13294° E9.94933°], 2♂♂, 23 May–5 July 2017, MT, leg. AS, coll. NINA; **VESTFOLD** (VE), Horten: Mellomøya, [EIS19 N59.44323° E10.45823°], 1♂, 6 May–16 June 2015, MT, leg. AS, coll. NINA; **TRØNDELAG** south coastal (STY), Orkland, Moldtun: Litjvatnet/Migarden, [EIS91 N63.55059° E9.46604°], 1♂, 26 June–17 August 2016, MT, leg. AS, coll. NINA.

Spalangiopecta alata Bouček, 1953

Material: VIKEN (Ø), Hvaler: Arekilen, [EIS12 N59.03873° E110.1217°], 1♀ (Figure 3), 26 June–2 July 2018, MT, leg. FØ & SD, coll. NINA.

Biology: Noyes (2019) lists the Diptera family Drosophilidae and the species *Scaptomyza flaveola* (Fallén, 1823) (in Norwegian “Rapsflue”) as primary host.

Distribution: Czech Republic, Denmark, Germany, Moldova, Netherlands, Northern Ireland, Sweden, United Kingdom (Mitroiu 2020, Noyes 2019).

Spalangiopecta cf. alata

Material: VIKEN (Ø), Råde: Oven, [EIS20 N59.31528° E10.73995°], 1♂, 26 June–5 August 2018, MT, leg. FØ, coll. NINA.

Cea pullicaris Walker, 1837

Material: ROGALAND coastal (RY), Sokndal: Sandbekk [EIS3 N58.35839° E6.33291°], 2♂♂ (Figure 5), 29 April–4 October 2018, MT, leg. JB, coll. NINA; **ROGALAND** coastal (RY), Sokndal: Rekedal [EIS3 N58.36095° E6.26390°], 2♂♂, 21 April–4 October 2018, MT, leg. JB, coll. NINA; **AUST-AGDER** coastal (AAY), Grimstad: Sandkleiv, [EIS6 N58.346715° E8.53289°], 1♀ (Figure 4), 15 July–19 September 2015, MT, leg. FØ, coll. NINA.

Biology: The Diptera family Agromyzidae and the species *Phytomyza pauliloewi* Hendel, 1920 are listed as primary hosts (Noyes 2019).

Distribution: Algeria, British I., Czech Republic, Germany, Ireland, Italian mainland, Moldova, North European Russia, Northern Ireland, Romania, Spanish mainland, Sweden (Mitroiu 2020, Noyes 2019).

Discussion

For subfamily and generic diagnoses of Ceinae, see Mitroiu (2016). Specimens of Ceinae are easily overlooked in sorting trays. All records in this report were collected with Malaise traps, but flight interception traps (FIT), Berlese extraction, pan traps and more specific sweeping have also resulted in an increase in collection specimens (Darling 1995). Traps can be an efficient way of collecting pteromalids but give reduced information about host associations. However, the method reveals some valuable information about flight periods, and may be used to give predictions about the habitat and probable hosts. While *Cea pullicaris* is the only species in its genus worldwide, we would expect another three species of *Spalangiopecta* to occur in Norway. *Spalangiopecta alboaculeata* Darling, 1995, *S. brachyptera* Masi, 1922, and *S. dudichi* Erdős, 1955 are all known from Western Palaearctic and are found in our neighbouring country Sweden (Dyntaxa 2020). In this paper we add two species to the list of published pteromalid species in Norway, and the new number is 279. The collected males could not be unquestionably associated with the females.



FIGURE 1. Female of *Spalangiopelta procera* Graham, 1966 from Sandbekk in Sokndal municipality, Rogaland.



FIGURE 2. Male of *Spalangiopelta Masi*, 1922 found on same locality as female *Spalangiopelta procera* Graham, 1966 at Sandbekk, Sokndal municipality, Rogaland.



FIGURE 3. Female of *Spalangipelta alata* Bouček, 1953 collected in Arekilen, Hvaler.



FIGURE 4. Brachypterous female of *Cea pulicaris* Walker, 1837 from Sandkleiv in Grimstad municipality, Aust-Agder.



FIGURE 5. Male of *Cea pulicaris* Walker, 1837 from Sandbekk in Sokndal municipality, Rogaland.

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