

Figure 1. View of Jiehkkaš fell in Enontekiö (69.072511, 20.808731). The majority of the Finnish *Chaetovoria antennata* records are from the high fells of Enontekiö Lapland. (Photo: Jaakko Pohjoismäki)

First rearings of *Chaetovoria antennata* (Villeneuve) (Diptera: Tachinidae), including description of the puparium

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INTRODUCTION

Chaetovoria antennata (Villeneuve) is a rarely collected arctic-alpine specialist, whose distribution is restricted to northernmost Scandinavia and the Alps.

A total of 21 specimens, including one male reared from *Anarta melanopa* Thunberg (Lepidoptera: Noctuidae), are known from Finland (EntDatabase 2016). All Finnish records are from fell habitats above treeline in Inari and Enontekiö Lapland (Fig. 1). Only two specimens are known from Norway, one male from Finse (Rognes 1983) and one reared male from Troms in northern Norway, the puparium of the latter serving as the basis for the description below.

There are no published host records for *Chaetovoria* prior to the observations presented here, although there is a record in the online EntDatabase that is based on the same specimen from Finland discussed below. The tribe to which *Chaetovoria* belongs, the Voriini (Dexiinae), are almost exclusively parasitoids of Lepidoptera (Tschorsnig & Herting 1994).

MATERIAL AND METHODS

Two specimens were examined, as follows.

1♂ [the aforementioned Troms specimen]: NORWAY, Karlsøy: Reinøy, Stakkvik (EIS 171). Ex larva Symphyta (Hymenoptera) from *Betula*. July 2002, Ove Sørlibråten leg. (Natural History Museum, Oslo). The puparium is in a gelatin capsule together with the remnants of the host's cocoon. The dorsal cap of the operculum is missing and the ventral cap is detached. Figures and length estimation were based on the imagined position of a reattached ventral cap.

1♂ [also recorded in EntDatabase] (Fig. 2): FINLAND, Li: Inari, Kaunisää. Ex larva *Anarta melanopa*, 23 August 2000, Juhani Itämies leg. (Zoological Museum, University of Oulu, Oulu). Unfortunately no puparium was preserved from this rearing.

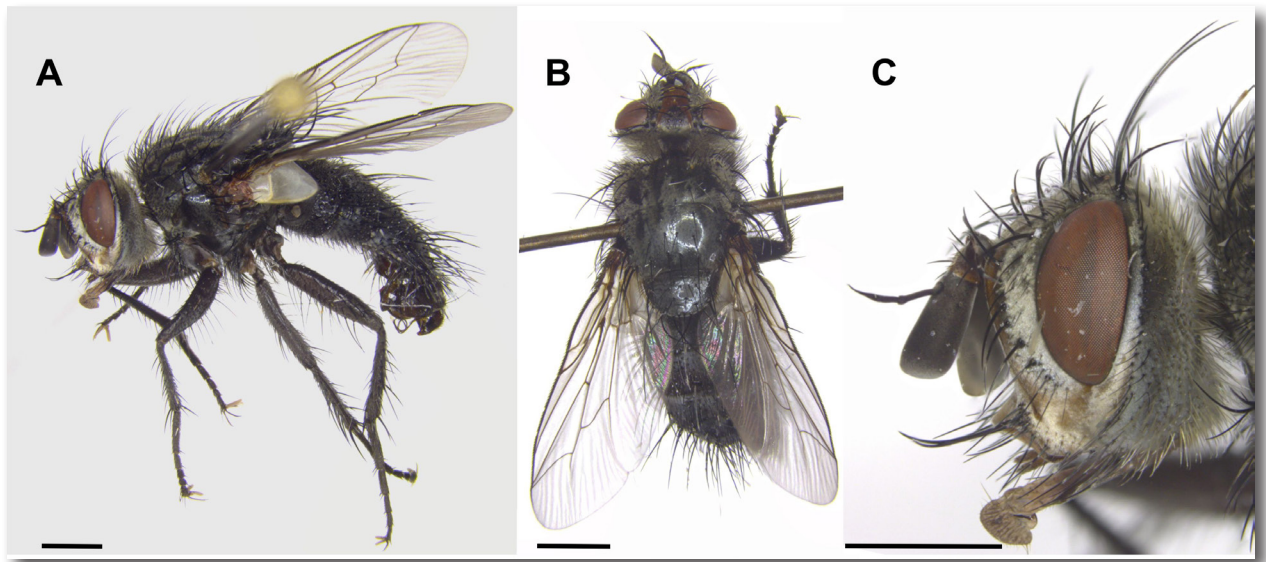


Figure 2. Male *Chaetovoria antennata* from Inari, Finland. **A.** Lateral view. **B.** Dorsal view. **C.** Head. Scale: 1 mm. (Photos: Jaakko Pohjoismäki)

PUPARIUM

The puparium is 7 mm long (estimated as explained above) and 3.2 mm wide, reddish-brown, cylindrical and slightly ovoid in shape (Fig. 3A, B). Its surface texture is dull with fine transverse striations; these are only slightly deeper along segmental divisions. Bands of spines completely absent. Lateral muscle scars not visible. Posterior spiracles situated above the longitudinal axis (Fig. 3C). Spiracular plate matt blackish and in the shape of a tilted numeral 8. Posterior spiracles small and shiny black with three radiating slits each (Fig. 3D). Anal plate transversely oval with the opening slit-like.

NOTES ON BIOLOGY

Not much is known about the biology of *Chaetovoria antennata* and the species is rarely observed in the wild. As with many arctic-alpine tachinids, the adults have been observed sitting on rocks or low vegetation on mountain tops (Tschorsnig *et al.* 2003). From Finland there are two larger series collected as side catches from pitfall traps: 7 specimens, 4.vii–12.viii.2007, from Ánnjaloanjobákti (69.173381, 21.386069) and 6 specimens, 9.vii–15.vii.2009, from Urtašvággi (69.220880, 21.070171), both localities in Enontekiö Lapland (EntDatabase 2016). Collecting such a high number of specimens from pitfall traps is unlikely to be an accident; rather these observations indicate that the flies spend much time running on the ground. This would also fit the observation of *Anarta melanopa* as a host, since its larvae live on various low shrubs on fell tops. The moth is also one of the commonest noctuid species present in the above treeline fell habitats throughout the Nordic countries (Silvonen *et al.* 2014).

As *Chaetovoria antennata* have been reported visiting flowers (Tschorsnig *et al.* 2003), pan traps could be ideal for catching the species in the right habitats, especially in places where collecting is difficult due to unpredictable or changing weather conditions. Monitoring arctic-alpine specialists like *C. antennata* has some urgency as the high arctic regions are expected to be most affected by impending climate change.

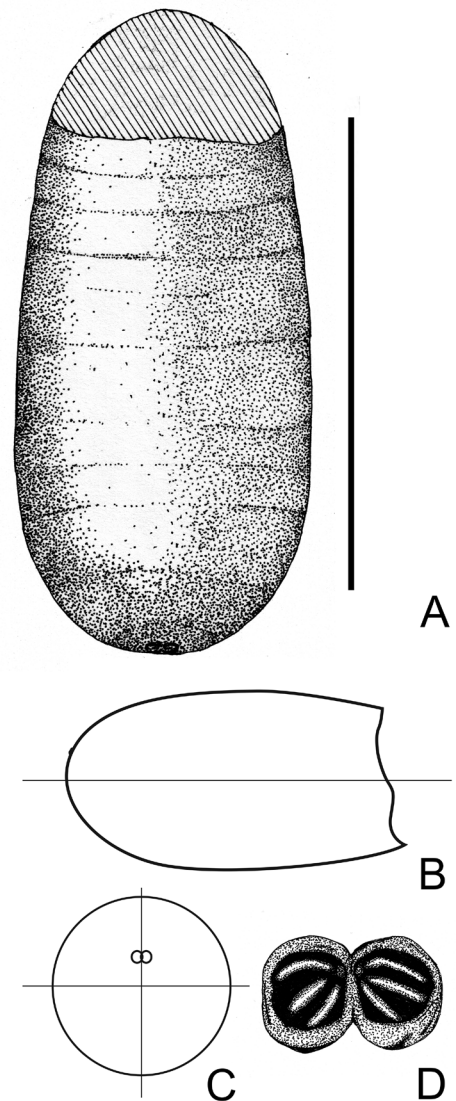


Figure 3. *Chaetovoria antennata*, puparium. **A.** Dorsal view. **B.** Lateral view. **C.** Posterior view. **D.** Posterior spiracles. Scale bar for 3A: 5.0 mm.

EPILOGUE

The examined specimen from Inari, Finland, has been DNA barcoded. The sequence data was released recently (Pohjoismäki *et al.* 2016) and is publicly available through the Barcode of Life Database (BOLD 2016) and GenBank (GenBank 2016).

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