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The moose throat bot fly *Cephenemyia ulrichii* larvae not found developing in roe deer

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Dear editor,

In 2008, we published a report on *Cephenemyia ulrichii*, the moose (*Alces alces*) throat bot in roe deer (*Capreolus capreolus*) [1]. The identification was based on morphology of two 3rd instar larvae of around 50 seen in a spring hunted roe deer buck shot in Kirkkonummi, Finland. The morphological characteristics utilized in species identification as *C. ulrichii* were especially spines irregularly placed on the anterior dorsal side, while those of *C. stimulator* and *C. trompe* are in regular rows similar to those on the ventral surfaces. The only deviation we could find from the previously published characteristics [2] was the smaller size, about 26–27 mm long, while those of *C. ulrichii* typically reach a length of 40 mm.

Because there have been a number of reports of throat bots from roe deer in Finland in the last few years, and some of them have genetically been positively identified as *C. stimulator* (unpublished), we took the remaining (third) larva from the original sample and performed limited morphological analysis, which showed the morphology was consistent with the other two larvae previously identified as *C. ulrichii* with irregularly located spines on the anterior dorsal side (Fig. 1). In addition, we performed PCR and subsequent sequencing of the CO1 gene, which unequivocally proved the larva to be *C. stimulator*, not *C. ulrichii*.

The discrepancy between morphological and genetic diagnoses shows that morphological characteristics of *Cephenemyia* spp. 3rd instar larvae are not unambiguous. Fortunately, genetic analyses are easily performed now, unlike just 15 years ago.

To our knowledge, no further reports on *C. ulrichii* in roe deer have been published since our initial, hereby cancelled, one in 2008. We then concluded: "Generally, all *Cephenemyia* species are very host specific and thereby also well adapted to their hosts". This is even truer than we then had reason to believe.

Cephenemyia stimulator has since been documented in Skåne, Southern Sweden, in 2012 [3].

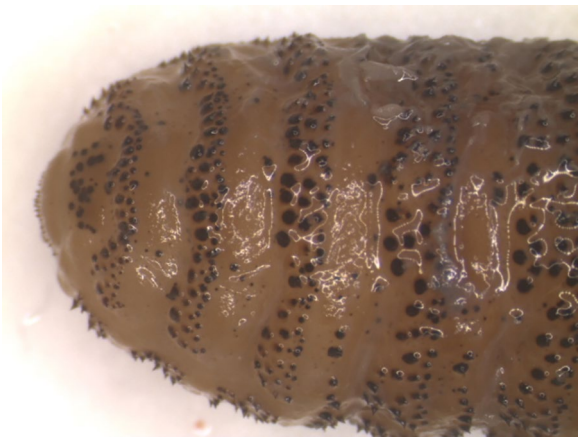

Fig. 1 Dorsal anterior view of the *Cephenemyia stimulator* larva collected 2007, analyzed 2022

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Author contributions
PH carried out the molecular genetic studies and the sequence alignment. AO drafted the manuscript. All authors read and approved the final manuscript.

Data Availability
The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Competing interests
The authors declare that they have no competing interests.

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