

An unexpected host: *Wohlfahrtia magnifica* (Schiner, 1862) recorded from a nestling of *Cinclus cinclus* (Linnaeus, 1758)

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Abstract

We report a rare case of myiasis caused by *Wohlfahrtia magnifica* (Diptera: Sarcophagidae) in a nestling of *Cinclus cinclus* in eastern Slovakia. The larva was recorded on one of five nestlings during routine ringing in a nest located under a bridge (Tichý Potok village) on 16. May 2025. Identification was based on larval morphology, including posterior spiracles with two distinctly curved slits, consistent with a second instar, and conspicuous bands of cuticular spines. Although *W. magnifica* is a well-known obligate agent of traumatic myiasis in mammals, records from wild passerine birds are scarce. This observation represents an unusual host association and highlights the potential for infestation in nestling birds.

Key words: myiasis, Sarcophagidae, white-throated dipper, Slovakia, host record

Introduction

Wohlfahrtia magnifica (Schiner, 1862) (Diptera: Sarcophagidae) is a well-known species of flesh fly and an obligate agent of traumatic myiasis of considerable medical and veterinary importance (Farkas et al. 2001). The species is widely distributed throughout the Palearctic region, including Central and Eastern Europe, the Mediterranean basin, North Africa, the Middle East, and parts of Asia (Farkas et al. 2009). Its larvae develop exclusively in living vertebrate hosts (Table 1), where they feed on living tissues and may cause severe tissue damage.

Infestation by *W. magnifica* (wohlfahrtiosis) affects a wide range of domestic and wild animals, particularly livestock such as sheep, cattle, horses, and pigs, as well as dogs (Farkas et al. 2001, 2009). Birds are considered relatively rare hosts, although cases have been reported in domestic geese and other avian species (Farkas et al. 2001, 2009). In avian hosts, infestations are often associated with injuries or other predisposing conditions and may lead to severe tissue destruction.

Table. 1. Reported hosts of *Wohlfahrtia magnifica* with documented geographic occurrence and literature sources.

Host species	Country of occurrence	Reference
<i>Ovis aries</i> (sheep)	Greece; Italy; Europe (general)	Sotiraki & Hall 2012; Hall & Farkas 2000
<i>Capra hircus</i> (goat)	Europe (multiple countries)	Sotiraki & Hall 2012
<i>Bos taurus</i> (cattle)	Italy	Ambrosi & Principato 1994
<i>Canis lupus familiaris</i> (dog)	Italy	Bonacci et al. 2017
<i>Canis lupus familiaris</i> (dog)	Greece	Orfanou et al. 2011
<i>Canis lupus familiaris</i> (dog)	Hungary	Farkas et al. 2009
<i>Canis lupus familiaris</i> (dog)	Turkey	Şaki 2004; Ütük 2006; Dik et al. 2012
<i>Canis lupus familiaris</i> (dog)	Iran	Rafinejad et al. 2014
<i>Canis lupus familiaris</i> (dog)	Morocco	Farkas et al. 2009
<i>Canis lupus familiaris</i> (dog)	Israel	Schnur et al. 2009
<i>Canis lupus familiaris</i> (dog)	Russia	Portchinsky 1916
<i>Homo sapiens</i> (human)	Italy	Perroncito 1900
<i>Homo sapiens</i> (human)	Turkey	Kokcam & Şaki 2005
<i>Felis catus</i> (cat)	Italy	Bonacci et al. 2020
<i>Equus caballus</i> (horse)	Italy	Bonacci et al. 2020
<i>Sus scrofa domesticus</i> (pig)	Italy	Bonacci et al. 2020
<i>Sus scrofa</i> (wild boar)	Italy	Bonacci et al. 2020
<i>Oryctolagus cuniculus</i> (rabbit)	Italy	Bonacci et al. 2020
<i>Vicugna pacos</i> (alpaca)	Italy	Bonacci et al. 2020
<i>Anser</i> (domestic goose)	Hungary	Farkas et al. 2001
Various mammalian hosts	Europe; North Africa; Asia	Hall et al. 2016; Spradbery 1991

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Observation

Locality and date: Tichý Potok village, tributary Filipovec (stream) of Torysa river (Slovakia), 16. May 2025.

Host and context: The record originates from a nest of the white-throated dipper *Cinclus cinclus* (Aves: Passeriformes: Cinclidae) located in a half-open nest box (“polobúdka”) under a bridge. The nest contained five nestlings at the time of inspection during bird ringing activities.

Findings: One dipteran larva (Figures 1–2) was detected on one of the five nestlings. No additional larvae were observed on the remaining nestlings during the same visit. No further individuals of *C. cinclus* were examined on that day. The exact localization of the larva on the host body was not recorded. The specimen was collected during ringing and subsequently examined under magnification.

Identification: The larva was identified based on morphological characters following Niederegger et al. (2019). Diagnostic features included posterior spiracles with two distinctly curved slits, consistent with a second instar larva; a robust and apparently incomplete peritreme; and conspicuous bands of cuticular spines on the body segments (Figures 1–2).

The combination of spiracular morphology and body armature allows reliable separation from other myiasis-causing Diptera. These characters are consistent with larvae of *W. magnifica* (Diptera: Sarcophagidae) and differ from those of *Protocalliphora* (Calliphoridae), which typically exhibit smoother cuticle and different spiracular morphology (Niederegger et al. 2019).



Figure 1. Second instar larva of *Wohlfahrtia magnifica* (Diptera: Sarcophagidae) collected from a nestling of *Cinclus cinclus* (Tichý potok, Slovakia, 16 May 2025): dorsal view showing segmentation and cuticular spines, ventral view.



Figure 2. Posterior spiracular disc of a second instar larva of *Wohlfahrtia magnifica* (Diptera: Sarcophagidae): detail of the posterior end showing two curved spiracular slits and a weakly developed peritreme.

Discussion

Wohlfahrtia magnifica is primarily associated with mammalian hosts, and its occurrence in wild passerine birds appears to be rare. The present finding represents an unusual host association in the white-throated dipper *C. cinclus*. Although the exact site of infestation was not recorded, the presence of a larva on a nestling suggests that even aquatic passerines may be susceptible to infestation, possibly in connection with minor injuries or other predisposing factors.

Further observations are needed to assess the frequency of such host associations and their ecological significance.

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