

The identity of *Menacanthus eisenachensis* Balát (Insecta, Phthiraptera, Amblycera, Menoponidae) from the Reed Warbler (Passeriformes, Sylviidae)

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Abstract

Three hundred and thirty-one Reed Warblers *Acrocephalus scirpaceus* (Hermann) were examined for chewing lice (Phthiraptera). Twenty-eight (8.5%) were parasitized with *Menacanthus curuccae* (Schrank, 1776). Mean intensity of infestation was 4.3 lice. Hence, the name *Menacanthus eisenachensis* Balát, 1981, currently applied to *Menacanthus* lice parasitizing Reed Warblers, is placed as a junior synonym of *M. curuccae*, with Reed Warbler as a new host for the latter species.

Keywords

Chewing louse, Phthiraptera, *Menacanthus*, *Acrocephalus scirpaceus*, Slovakia, Czech Republic, England, Faroe Islands

Introduction

Price *et al.* (2003) cite the only one species of chewing louse known from the Reed Warbler, *Acrocephalus scirpaceus* (Hermann, 1804), as *Menacanthus eisenachensis* Balát, 1981.

This name was first mentioned by Mey (1977) for lice occurring on Reed Warbler and Marsh Warbler, *A. palustris* (Bechstein, 1798), however the species it represented was not described. Therefore it was a *nomen nudum* until Balát (1981) inadvertently gave sufficient information for *M. eisenachensis* to become a valid name under the International Code of Zoological Nomenclature (ICZN 1999). Balát included only a single poor photograph of *M. eisenachensis*, with minimal text description. Consequently, Palma *et al.* (1998) recognized *M. eisenachensis* as a valid species, though with uncertain status. In their checklist, Price *et al.* (2003) include *M. eisenachensis* as a valid species with *A. scirpaceus* as a single type host, while Mey (2003) mentions this species as *M. curuccae eisenachensis* with *A. palustris* as type host.

The aim of this study was: (1) to investigate recently made collections of *Menacanthus* lice from Reed Warblers; (2) to review their true systematic status; and (3) to determine their prevalence and intensity of infestation on that host.

Materials and methods

Birds were captured by mist-netting during ringing activity carried out in reed beds around the wetlands of Gbelce, near the city of Štúrovo (47°51'N, 18°30'E) in the southern part of Slovakia. A total of 241 Reed Warblers were examined for lice during the pre-breeding migration of April 2008. The second collection locality was in a fishpond area between Hodonín (48°51'N, 17°07'E) and Mutěnice (48°54'N, 17°02'E) in the southeast of the Czech Republic. A total of 28 birds were examined for lice during the breeding season 2008 (July 8–11, 2008). Lice were collected using the fumigation chamber method (Clayton and Drown 2001) with visual search of the head. Chewing lice were initially preserved in 70% ethanol and subsequently mounted in Canada balsam on microscope slides. Identification of the lice is based on Price (1977).

Additional samples of chewing lice examined were collected from Reed Warblers in Cambridgeshire, England (Brooke and Nakamura 1998) and the Faroe Islands (Palma and Jensen 2005).

Attempts to locate the type specimens of *M. eisenachensis* in the Balát collection, which is deposited at the Moravian Museum, Brno (MZM), Czech Republic, were not successful.

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Table I. Statistical parameters of *Menacanthus curuccae* on *Acrocephalus scirpaceus* from Slovakia, the Czech Republic, England and the Faroe Islands

<i>Menacanthus curuccae</i>	Prevalence (%)	Mean intensity \pm SE	Intensity range	Male:female	Adult:nymph
Slovakia (n = 241)	7.9	4.8 \pm 0.9	1–11	1:1.8	1:2.7
Czech Republic (n = 28)	10.7	2.3 \pm 0.3	2–3	– ^a	1:0.4
England (n = 57)	8.8	3.4 \pm 0.6	1–5	– ^a	1:1.1
Faroe Islands (n = 5)	20.0	3 ^b	3	1:2	–
Total (n = 331)	8.5	4.3 \pm 0.6	1–11	1:3.1	1:1.9

^aOnly females were found, ^bonly one bird was parasitized with adult lice.

Unfortunately the original sample of one male and 25 females is lost, probably irretrievably.

The material examined was divided into four groups:

Group 1: 9 males, 16 females, 67 nymphs ex *A. scirpaceus*, Slovakia, Gbelce, 2008, leg. Sychra, Literák, Podzemný, Trnka. Deposited in personal collection of the first author.

Group 2: 5 females, 2 nymphs ex *A. scirpaceus*, Czech Republic, Hodonín, 2008, leg. Procházka, Požgayová. Deposited in personal collection of the first author.

Group 3: 8 females, 9 nymphs ex nestling *A. scirpaceus*, England, Cambridgeshire, 1994–1996, leg. Brooke. Deposited in personal collection of the third author. These were obtained from five nestling warblers, out of 57 examined, as reported by Brooke and Nakamura (1998).

Group 4: 1 male, 2 females ex *A. scirpaceus*, Faroe Islands, Nólsoy, 19.08.1997, leg. Jensen. Deposited in personal collection of the second author. These were obtained from one warbler, out of five examined, as reported by Palma and Jensen (2005).

Results

All of the lice collected from Reed Warblers belong to the species *Menacanthus curuccae* (Schrank, 1776). Twenty two (8.2%, n = 269) Reed Warblers examined in Slovakia and the Czech Republic were parasitized. Mean intensity of infestation was 4.3 lice. Total prevalences, mean intensities, sex ratios and adult nymph ratios of *M. curuccae* on Reed Warblers from Slovakia, the Czech Republic, England and the Faroe Islands are given in Table I.

Discussion

The Reed Warbler *Acrocephalus scirpaceus* is a common European bird. It is found wherever it finds suitable breeding habitat, and is abundant in such locations. The total population in Europe was estimated at 2.700.000–5.000.000 breeding pairs (BirdLife International 2004). Reed Warblers are among the birds with the highest number of individuals captured during mist-netting and ringing activities in Europe. Despite this, there are only a few, incomplete records of lice from this host. Mey (1977) reported occurrence of *Menacanthus* from five (10%, n = 50) Reed Warblers examined in Germany, with in-

tensity range 2–5. Subsequently Balát (1981) found 26 *Menacanthus* from five birds in the southern part of the Czech Republic (localities Velký Dvůr near Pohořelice and Sedlec near Mikulov). This shows that lice probably occur on this host with low prevalence and intensity. *Menacanthus* lice are very agile, they can be easily overlooked. Our results are consistent with this idea. Literák (1983) and Sychra *et al.* (in press) examined 52 Reed Warblers during post-breeding migration in 1979–1981 and 2004 in the north-eastern part of the Czech Republic. No lice were found on these birds. There may be more such negative records, but they are usually not reported (Rózsa 1997). It should be mentioned that we examined adult birds during pre-breeding migration or breeding season and populations of the most species of lice increase in these seasons (Price *et al.* 2003). Conversely during post-breeding migration, when mostly young birds have been examined (Literák *et al.* 1995), vertical transmission of lice and moulting of birds reduce the louse populations (Price *et al.* 2003; Sychra *et al.*, in press).

Our samples of *Menacanthus* from Reed Warblers fit the description of *M. curuccae* in Price (1977), except for the presence of 1–2 anterior setae on pleurites III–VII. We consider this difference only as demonstration of intraspecific variation of this louse species. Despite the loss of the type material of *M. eisenachensis* and the poor description by Balát (1981), we are confident that this species is *M. curuccae*. Therefore, we place *M. eisenachensis* as a new junior synonym of *M. curuccae*. This is consistent with Mey (2003) who regarded *M. eisenachensis* as a subspecies of *M. curuccae*. Collections of *M. curuccae* from Reed Warblers from several localities in Europe (Czech Republic, England, Faroe Islands) show that this species lives and reproduces on Reed Warblers. Balát (1981) noted that a typical feature of females *M. eisenachensis* is a distinctly dark brown head and prothorax while the whole abdomen is yellow-brown, giving specimens a bi-colored appearance, even macroscopically. Our observations confirm and agree with Balát's note. In addition, in his unpublished notes, Balát mentioned finding *M. eisenachensis* on Reed Warblers, not only in the type locality but also from the wetlands of Gbelce, where our survey was carried out.

Menacanthus is among the most speciose of menoponid genera. It is found on a broader range of closely related hosts, usually belonging to a single family. Our findings corroborate that host-lice distribution pattern, extending the host range

for *M. curuccae*. This species, previously known from 4 vireonid and 12 sylviid hosts, including 5 species of *Acrocephalus* (Price *et al.* 2003; Ilieva 2005; Sychra *et al.*, in press), has now been confirmed on *A. scirpaceus* for the first time.

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