

Chewing lice from wild passerines (Aves, Passeriformes) from Vietnam, with description of a new species of the genus *Brueelia* (Phthiraptera, Ischnocera, Philopteriidae)

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Abstract

Seven species of chewing lice (Insecta: Phthiraptera) were found on six species of passerine birds (Passeriformes) in northern Vietnam. A description and illustrations of *Brueelia alophoixi* sp. nov. ex *Alophoixus pallidus* (Pycnonotidae) are given. New host records are: *Abroscopus superciliaris* (Sylviidae) for *Myrsidea* sp.; and *Orthotomus sutorius* (Sylviidae) and *Lonchura striata* (Estrildidae) for *Brueelia* spp.

Keywords

Brueelia, new species, Phthiraptera, passerine birds, new records, Vietnam

Introduction

There are 446 species of passerine birds (Passeriformes) in Vietnam (Lepage 2008 with using Clements 2007), and 151 of them (34%) are known as hosts of 193 species in 11 genera of chewing lice (Insecta: Phthiraptera) (Price *et al.* 2003). Therefore, there is a great number of bird lice to be found on birds in this country. The aim of this paper is to present data on chewing lice found on a few passerine birds from Vietnam, including the description of one new species.

Materials and methods

Wild birds, mostly passerines, were examined near Bo Lu village (22°23'N, 105°37'E) within the Ba Be National Park in Northern Vietnam. The location lies in the Tropical Southern China Area of the Indo-Malayan Realm. It is characterised by steep limestone mountains, interspersed by lowland non-limestone areas. Bo Lu is situated close to Ba Be Lake in the center of the Ba Be National Park. The lake lies at 150 m above sea level and the surrounding mountains rise up to 1,098 m above sea level. Vegetation coverage mainly includes two types of forests: limestone and evergreen forests (Le Trong Trai *et al.* 2004).

Birds were examined during the rainy season from 4 to 12 July 2008. Dawn-to-dusk mist-netting was conducted to capture as many bird species and individuals as possible to collect ectoparasites. A line of about 100 m of mist nets was erected and checked once an hour. Every individual bird was identified using the field guide by Robson (2007). Captured birds were processed and released back into the wild as quickly as possible to minimize disturbance.

Chewing lice were collected by visual examination and using the fumigation chamber method (Clayton and Drown 2001) with visual search of the head. Lice were fixed in 70% ethanol in the field. Subsequently in laboratory, they were slide-mounted in Canada balsam as permanent slides, following the technique by Palma (1978). Identification of the lice was based on papers by Ansari (1958), Hellenthal and Price (2003) and Price *et al.* (2003). The nomenclature of the lice follows Price *et al.* (2003). The taxonomy of the birds follows Clements (2007).

The description of the new species is attributed to the first author of this paper. Types of the new species described in this paper are deposited in the Moravian Museum Brno, Czech Republic, at the Natural History Museum, London, England and at the Department of Zoological Museum of the IEBR, VAST, Hanoi, Vietnam.

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Results

A total of 45 individuals of 14 bird species belonging to eight families were examined. Eighteen birds of six passerine species were found with chewing lice. Seven species of chewing lice were determined (Table I). Only one was identified as a known species (*Myrsidea ochracei* Hellenthal et Price, 2003), and another represents a new species that is described below. The other five records are given at the generic level only, but they may represent new species. No chewing lice were found on *Sasia ochracea* Hodgson (4 specimens examined, Piciformes, Picidae), *Alcedo atthis* (Linnaeus) (1 specimen examined, Coraciiformes, Alcedinidae), and the following passerines: *Parus major* Linnaeus (1, Paridae), *Yuhina zantholeuca* (Blyth) (2, Sylviidae), *Stachyris nigriceps* Blyth (4, Timaliidae), *Stachyris striolata* (Muller) (2, Timaliidae), *Pelloroneum tickelli* Blyth (2, Timaliidae) and *Pelloroneum ruficeps* Swainson (1, Timaliidae).

Brueelia alophoixi sp. nov. (Figs 1–3)

Male (Fig. 1): Preantennal region as long as the postantennal, with convex anterior margin. The marginal carina uninterrupted, indented medianly and the anterior margin of the head at this point hyaline, with small rounded area of sclerotization in the indented part of the marginal carina.

Pronotum with 1 medium long seta on each postero-lateral corner; metanotum with 5–6 setae (2 long and 3–4 medium long) on each postero-lateral margin. All abdominal tergites divided centrally. Tergal setae: II (first apparent tergite)–IV, 0 (only one male with single short tergo-central seta on one side of tergite IV); V, 2; VI–VII, 3; VIII, 5 on each side; IX much narrowed with a marginal row of 10–11 setae, with lengths as shown (Fig. 1), terminally with 1 medium long and 2 short setae. Abdominal sterna with a pair of medium long lateral setae. Male genitalia as in Figure 2.

Dimensions (in mm): preantennal width 0.24; preantennal length 0.15; temple width 0.29–0.30; postantennal length

0.15–0.16; prothorax width 0.20–0.21; metathorax width 0.26; abdomen width at level of segment V 0.34–0.36; total length 1.44–1.48; genitalia width 0.06; genitalia length 0.15.

Female (Fig. 3): Generally as for male. Tergal setae on each side of abdominal segments: II–V 0; VI–VII 1; VIII 2–3; IX 3–4 (2 long and 2 short). Ventral terminalia as in Figure 3; subgenital plate wide slightly convex posteriorly, with characteristic chaetotaxy as shown.

Dimensions (in mm): preantennal width 0.27; preantennal length 0.15–0.17; temple width 0.33–0.34; postantennal length 0.16–0.18; prothorax width 0.22; metathorax width 0.28–0.30; abdomen width at level of segment V 0.41–0.42; total length 1.78–1.80.

Type material: Holotype male ex *Alophoixus pallidus* (Swinhoe). Vietnam: Bo Lu, Ba Be NP, Bac Kan Province, Northern Vietnam, 6 July 2008, coll. I. Literák, Nguyen Manh Hung, P. Podzemný. Deposited at Department of Zoological Museum of the IEBR, VAST, Hanoi, Vietnam (O.Sychra-V07). Paratypes: 6 males, 8 females, with same data as holotype. Deposited at the Moravian Museum Brno (O.Sychra-V01–V04), Natural History Museum, London, England (O.Sychra-V05–V06) and Department of Zoological Museum of the IEBR, VAST, Hanoi, Vietnam (O. Sychra-V08).

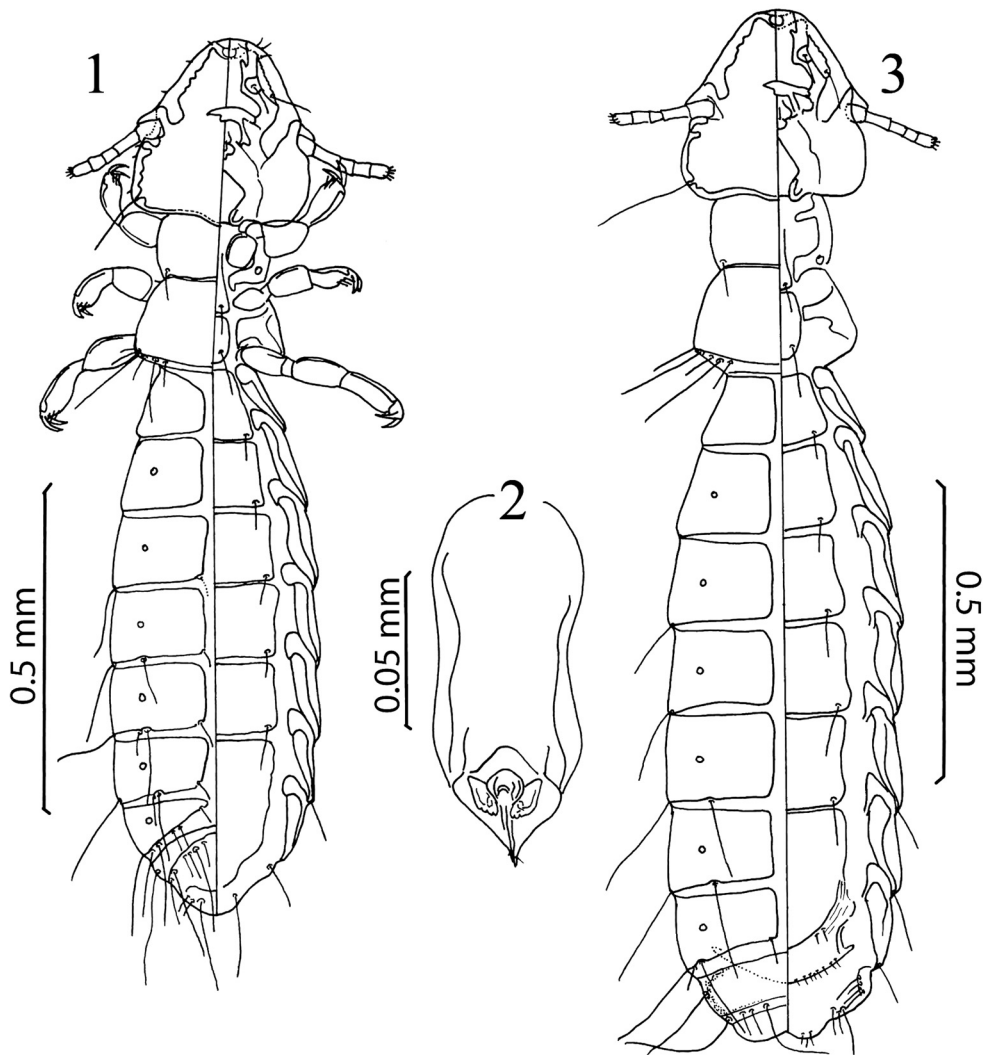
Remarks: *Brueelia alophoixi* is morphologically similar to *B. guldum* described by Ansari (1955: 54) from *Pycnonotus cafer* (Linnaeus). However, *B. alophoixi* can be separated from *B. guldum* by the following combination of features: (1) absence of postspiracular seta on tergite IV in the male; (2) higher number of setae on tergite IX in the male (*B. alophoixi* has a group of 7–8 tergo-central setae with two of them much longer than the remainder, while *B. guldum* has a group of 6 tergo-central setae all of the same length); (3) higher number of setae on tergite VIII in the female (6 setae in *B. alophoixi* against two setae in *B. guldum*); (4) smaller dimensions, especially that of prothorax and metathorax.

Etymology: The specific name derives from the generic name of the type host.

Table I. List of hosts and their lice

Birds	P ¹	E ²	Chewing lice	F ³	M ⁴	N ⁵
Pycnonotidae						
<i>Alophoixus pallidus</i> (Swinhoe)	4	6	<i>Myrsidea ochracei</i> Hellenthal et Price, 2003	3	4	7
	4	6	** <i>Brueelia alophoixi</i> sp. nov.	13	17	8
Sylviidae						
<i>Abroscopus superciliosus</i> (Blyth)	3	5	** <i>Myrsidea</i> sp.	0	2	5
<i>Orthotomus sutorius</i> (Pennant)	1	7	** <i>Brueelia</i> sp. 1	1	0	0
Timaliidae						
<i>Macronous gularis</i> (Horsfield)	1	7	<i>Brueelia</i> sp. 2	1	0	1
Muscicapidae						
<i>Copsychus malabaricus</i> (Scopoli)	1	1	<i>Philopterus</i> sp.	1	0	0
Estrildidae						
<i>Lonchura striata</i> (Linnaeus)	2	2	** <i>Brueelia</i> sp. 3	2	0	0

P¹ – number of birds parasitized; E² – number of birds examined; F³ – number of females; M⁴ – number of males; N⁵ – number of nymphs; **a new host-lice record.



Figs 1–3. *Brueelia alophoixi* sp. nov.: 1 – male; 2 – male genitalia; 3 – female

Discussion

In the course of this study, specimens belonging to three louse genera: *Myrsidea*, *Brueelia* and *Philoaterus* were identified from birds of five passerine families: Pycnonotidae, Sylviidae, Timaliidae, Muscicapidae and Estrildidae. The paper includes also first records of chewing lice from two of the 14 bird species examined, i.e. *Abroscopus superciliaris*, *Orthotomus sutorius*. Although we believe that the lice we identified to generic level only (see Table I) probably represent new species, it is not advisable to base the description of a new louse species on a single sex, and even less on a single specimen. Moreover, most species of *Brueelia* and *Philoaterus* are more easily identified by the male, while most species of *Myrsidea* are more easily identified by the female.

The specimens of *Myrsidea* cited in this paper from *Abroscopus superciliaris* represent the second record of this louse genus from the diverse and widespread passerine family Sylvi-

idae. Our two male specimens are practically inseparable from those of *M. sylviae* Sychra et Literák, 2008 described recently from *Sylvia atricapilla* (Linnaeus) (Sychra and Literák 2008). However, without a female at least, an accurate identification of the males cannot be made, either as a different new species or as a new host-lice association for *M. sylviae*. Further collections and study of chewing lice from sylviid hosts and from other wild passerines in Vietnam will probably clarify these records to the species level.

To date, no record of chewing lice from wild birds in Vietnam has been published. McClure *et al.* (1973) mentioned list of ectoparasites of the birds of Asia including many birds known from Vietnam. Though this publication lists associations for other countries in Asia, the authors also state that they briefly collected in Vietnam. Unfortunately, their records do not give the geographical location of the collections. We suspect there are other records or local publications with records of lice from Vietnam and more precise revision

is needed for providing of the list of louse-bird association in Vietnam.

Although we examined only a small number of bird species, our findings represent new louse-bird associations for four of six species of birds that were parasitized. Since there is high number of potential passerine hosts in Vietnam, one can assume that there is still a great number of lice to be found on birds in that country.

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