

RESEARCH NOTE:**On Three Species of Chewing Lice (Mallophaga: Ischnocera) from the Common Emerald-Dove and the Spotted Imperial-Pigeon (Aves: Columbiformes) in the Philippines**

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ABSTRACT

Two species of Philippine wild birds, *Chalcophaps indica* (common emerald-dove) and *Ducula carola carola* (spotted imperial-pigeon) were examined for the presence of chewing lice. Three species of chewing lice of the suborder Ischnocera and belonging to two genera were found and identified. These are *Columbicola guimaraesi* from the former bird, and both *Columbicola cavifrons* and *Auricotes philippinensis* from the latter bird species occurring as a mixed infestation. The female *Auricotes philippinensis* is recorded and described for the first time. Photographs of all three species and illustration of the subgenital plate (genitalia) and posterior end of the female *Auricotes philippinensis* are provided. The occurrence of *Columbicola cavifrons* on *Ducula carola carola* constitutes a new host record for the parasite.

Key words: *Auricotes philippinensis*, chewing lice, *Columbicola guimaraesi*, *Columbicola cavifrons*, dove, pigeon, Philippines

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The avian order Columbiformes includes doves, pigeons and sandgrouses and is parasitized by chewing lice or Mallophaga belonging to the suborders Amblycera and Ischnocera Price *et al.* (2003). Species belonging to six and eight genera in the former and the latter mallophagan orders respectively are known to occur in columbiform birds (Price *et al.*, 2003). In the Philippines, this avian order is represented by 33 species distributed to 11 genera (Kennedy *et al.*, 2000). Fifteen bird species however are considered threatened with their present conservation status as nearly threatened, vulnerable, endangered or critically endangered (Collar *et al.*, 1999). Some of these birds are endemic to the Philippines and still others are restricted only to certain islands in the country (Collar *et al.*, 1999). Parasites of only a few species of this bird group in the Philippines are known (Eduardo, 2007) and those from the majority of the birds are awaiting discovery. Chewing lice destroy the feather of their bird

hosts and this has an effect on the host's ability to regulate body temperature, select mate and survive (Adams *et al.*, 2005). Any information of their health aspect including parasitism would be useful especially when formulating strategies for future conservation and preservation of these birds. This study presents my observation on the chewing lice found on examination of two species of Philippine wild birds, a spotted imperial-pigeon (*Ducula carola carola*) and a common emerald-dove (*Chalcophaps indica*) both from Luzon.

A spotted imperial-pigeon (*Ducula carola carola*) and a common emerald-dove (*Chalcophaps indica*) from Luzon were examined alive for ectoparasites. These were kept at the then Center for Philippine Raptors, Makiling Botanic Garden, UPLB. Lice specimens were preserved and further processed for microscopic examination following the procedure described by Desamero & Eduardo (2011). Measurements were made with the aid of a calibrated eyepiece micrometer. Photomicrographs were taken using an Olympus BX51 research microscope

***FOR CORRESPONDENCE:**

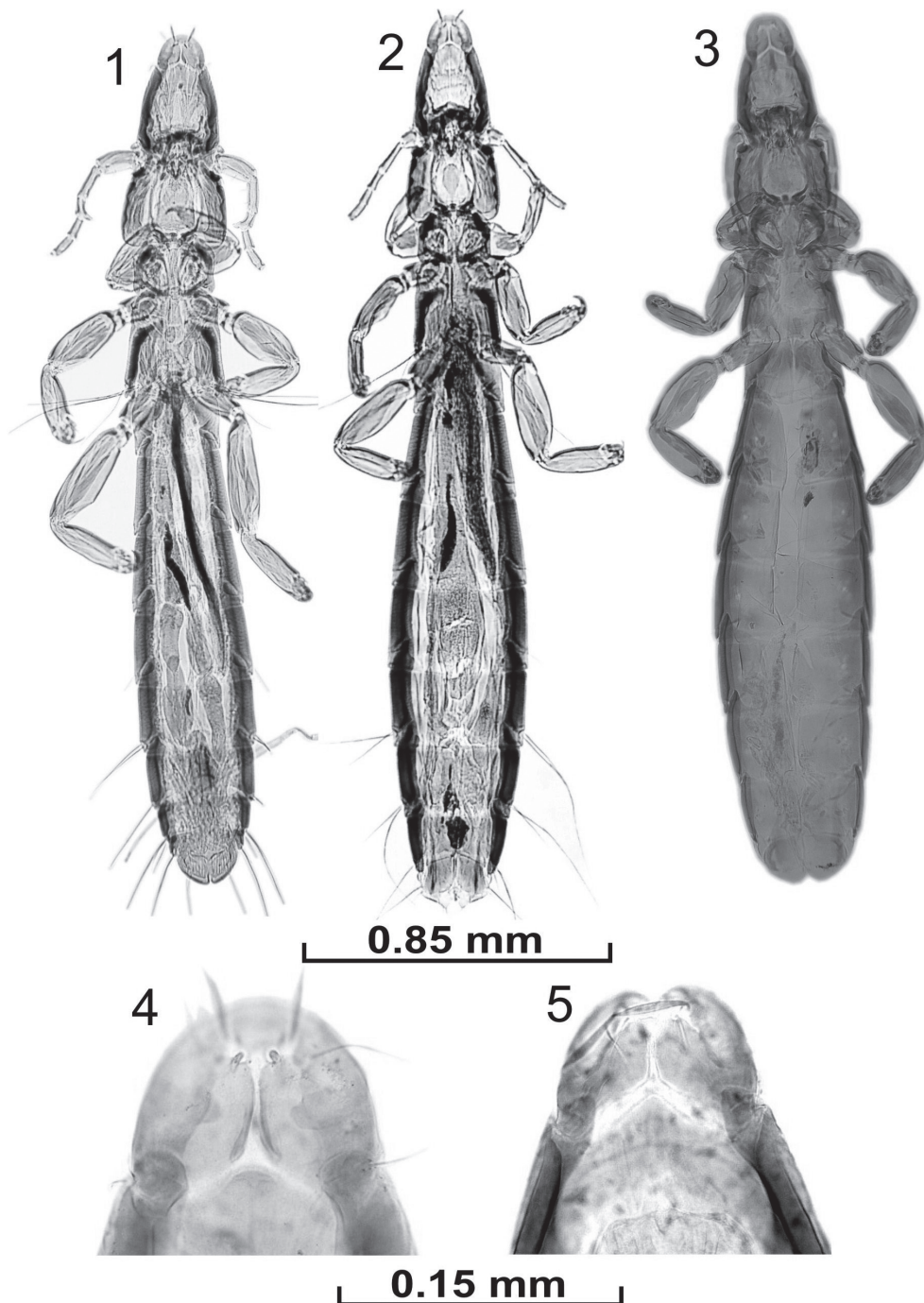
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with digital camera attachment. Drawings were made with the aid of an Olympus drawing apparatus attached to an Olympus CX31 research microscope. Voucher specimens were deposited in the Parasite Collection of the College of Veterinary Medicine, UPLB under accession number as indicated for each species.

Two species of *Columbicola*, *C. guimaraesi*

and *C. cavifrons*, and a species of *Auricotes*, *A. philippinensis* were identified in this study. The former was recovered from *Chalcophaps indica* and the latter two were found on *Ducula carola carola* as a mixed infestation. All three species belong to the mallophagan suborder Ischnocera. These are discussed below by species.

***Columbicola guimaraesi* Tendeiro,**

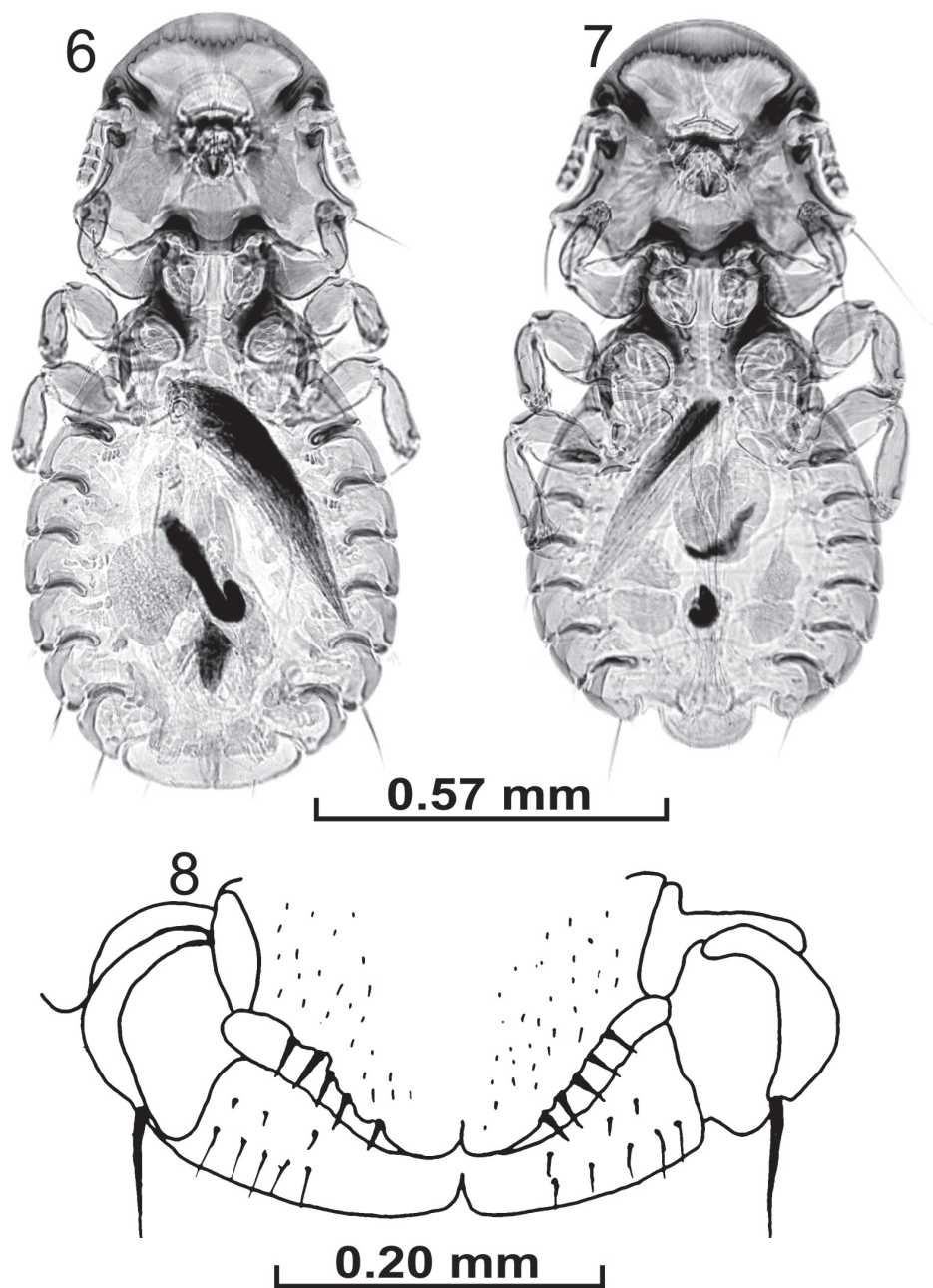


Figs. 1-5. *Columbicola* spp. 1. *Columbicola guimaraesi*, male, ventral view; 2. *C. guimaraesi*, female, ventral view; 3. *Columbicola cavifrons*, female ventral view; 4. Anterior end of *Columbicola guimaraesi*; 5. Anterior end of *Columbicola cavifrons*.

1965 (Figs. 1-2, 4): The present materials of this species consisted of two males and five females from *Chalcophaps indica* in Luzon. *Columbicola guimaraesi* was originally described as a complex of three subspecies, *C. guimaraesi guimaraesi*, *C. guimaraesi grandiusculus* and *C. guimaraesi vitiensis* by Tendeiro (1965, 1967). However, Adams *et al.* (2005) in their revision of the genus *Columbicola* of the Old World elevated each subspecies to species level and provided keys to

separate them including the other species of the genus. My materials of this species conform to the re-description of Adams *et al.* (2005) for this species.

***Columbicola cavifrons* Taschenberg, 1882** (Figs. 3, 5): Only females (three adults and one juvenile) of this species were collected from *Ducula carola carola*. They agree very well with the re-description of Adams *et al.* (2005) for the species. Previous Philippine materials of this



Figs. 6-8. *Auricotes philippinensis*. 6. Female, ventral view; 7. Male, ventral view; 8. Female subgenital plate (genitalia) and posterior end.

species were from *Ducula aenea palawanensis* (green imperial-pigeon) (Adams *et al.*, 2005). Its occurrence in *Ducula carola carola* (spotted imperial-pigeon) constitutes a new host record for the parasite.

To date, the genus *Columbicola* contains 77 valid species (Adams *et al.*, 2005) and ten species have been reported in Philippine birds (Tendeiro, 1967, 1969; Adams *et al.*, 2005).

***Auricotes philippinensis* Tendeiro, 1976** (Figs. 6-8): Twenty eight males and 18 females of this species were collected from the same host (*Ducula carola carola*) and locality (Luzon) that was also infested with *Columbicola cavifrons*. This species was first described by Tendeiro (1976) but based on only one male specimen (female was not known then) from *Ducula carola carola* caught in Dalton Pass, Nueva Vizcaya. *A. philippinensis* has already been adequately described by Tendeiro (1976) and the present materials of the male of this species conform to that description. However, the female of this species has not been known until now and is recorded for the first time. It is described below. Photographs of both sexes and illustration of the genitalia both of the female and the male are provided based on the present specimens.

Female: Whole body as in Fig. 5, slightly larger than male. Head index 1.22. Features of the head, prothorax, pterothorax and abdominal segments (II-VIII) were essentially similar to those of the male including chaetotaxy as detailed by Tendeiro (1976). Genital plate (genitalia) and posterior end of the female as shown in Fig. 8. Dimensions (in mm), mean values in parentheses: Head: length 0.400-0.425 (0.410), width 0.462-0.550 (0.501); Prothorax: length 0.100-0.175 (0.127), width 0.255-0.335 (0.294); Pterothorax: length 0.105-0.150 (0.134), width 0.365-0.460 (0.412); Abdomen: length 0.637-0.775 (0.714), width 0.612-0.675 (0.645); Total body length: 1.262-1.375 (1.322).

Price *et al.* (2003) listed 50 valid species of the genus *Auricotes*. Of these, only two species have been reported in the Philippines. The occurrence of *Columbicola cavifrons* on *Ducula carola carola* constitutes a new host record for the parasite.

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