

Two Chewing Lice Species, *Colpocephalum subzerafae* and *Laemobothrion tinnunculi*, on A Kestrel (*Falco tinnunculus*) in Istanbul: Two New Records from Turkey

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Summary

On the examination of a male kestrel (*Falco tinnunculus*), which was captured in Istanbul in June of 2011, three lice were collected. The lice were examined microscopically and two species of chewing lice (*Colpocephalum subzerafae* and *Laemobothrion tinnunculi*) were identified. All of the lice were male. These species are recorded for the first time from Turkey.

Keywords: *Colpocephalum subzerafae*, *Laemobothrion tinnunculi*, Chewing lice, Kestrel, Turkey

İstanbul'da Bir Kerkenezde (*Falco tinnunculus*) Görülen İki Çiğneyici Bit Türü, *Colpocephalum subzerafae* ve *Laemobothrion tinnunculi*: Türkiye'den İki Yeni Kayıt

Özet

İstanbul'da Haziran 2011'de yakalanan bir erkek kerkenezden (*Falco tinnunculus*) üç adet bit toplandı. Bitlerin mikroskopik incelemesinde iki çiğneyici bit türü (*Colpocephalum subzerafae* ve *Laemobothrion tinnunculi*) tespit edildi. Toplanan bitlerin hepsinin erkek olduğu belirlendi. Kerkenezde bulunan bu türler Türkiye'den ilk kayıttır.

Anahtar sözcükler: *Colpocephalum subzerafae*, *Laemobothrion tinnunculi*, Kerkenez, İstanbul, Türkiye

INTRODUCTION

In the last decade in Turkey, some studies have been performed on the lice infestation of raptors¹⁻⁷. The results of these studies (summarized in [Table 1](#)) indicated that 12 raptor species were examined for lice and 10 lice species were identified. There are two kestrel species, Eurasian (or Common) Kestrel (*Falco tinnunculus*) and Lesser Kestrel (*Falco naumanni*) in Turkey⁸ and no study has been performed on their lice infestations. In the case, the lice species found on a male kestrel (*Falco tinnunculus*), which was captured in Istanbul, are reported.

lice. Three lice were collected from the kestrel into a bottle containing 70% ethanol. The lice were then transferred to 10% potassium hydroxide solution for a day in order to macerate their internal soft tissues. After maceration, the specimens were washed with distilled water, dehydrated in a series of increased concentrations of ethanol (70%, 80%, 90%, 99%) in consecutive days, and cleared by passing through a mixture of ethanol and xylol, then pure xylol for every 3 h. After clearing, the specimens were mounted between glass slides and cover slips with Canada balsam. The identification of the lice was carried out according to their morphological characteristics⁹⁻¹².

CASE HISTORY

A male kestrel (*Falco tinnunculus*), which was captured in Istanbul in June of 2011, was found to be infested with

In total three lice were collected from the kestrel. All of them were male. Two species of chewing lice *Colpocephalum*



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Table 1. Studies on the lice infestation of raptors in Turkey			
Tablo 1. Türkiye'de yırtıcı kuşların bit enfestasyonları üzerine çalışmalar			
Province	Examined Raptors	Lice Species	Ref.
Ankara	Ten long-legged buzzards (<i>Buteo rufinus</i>) at Zoo	<i>Craspedorrhynchus</i> sp, <i>Degeeriella</i> sp. <i>Laemobothrion</i> sp,	(1)
Konya	Two long-legged buzzards (<i>Buteo rufinus</i>)	<i>Colpocephalum</i> sp., <i>Craspedorrhynchus platystomus</i> , <i>Degeeriella fulva</i> , <i>Laemobothrion maximum</i> ; (Total 47 lice)	(2)
Kırıkkale	Three long-legged buzzards (<i>Buteo rufinus</i>)	<i>Colpocephalum nanum</i> , <i>Craspedorrhynchus platystomus</i> , <i>Laemobothrion maximum</i> ; (Total 20 lice)	(3)
Konya	Five long-legged buzzards (<i>Buteo rufinus</i>) at Zoo	<i>Craspedorrhynchus platystomus</i> , <i>Degeeriella fulva</i> , <i>Laemobothrion maximum</i> ; (Total 76 lice on 3 of 5 birds)	(4)
	One imperial eagle (<i>Aquila heliaca</i>) at Zoo	<i>Colpocephalum impressum</i> , <i>Craspedorrhynchus fraterculus</i> , <i>Degeeriella aquilarum</i> ; (Total 93 lice)	
	One marsh harrier (<i>Circus aeruginosus</i>) at Zoo	<i>Degeeriella fusca</i> ; (Total 12 lice)	
	One Greater Spotted Eagle (<i>Aquila clanga</i>) at Zoo	No lice	
	One Short-toed Snake Eagle (<i>Circaetus gallicus</i>) at Zoo	No lice	
Nevşehir	Long-legged buzzard (<i>Buteo rufinus</i>)	<i>Colpocephalum nanum</i> , <i>Craspedorrhynchus platystomus</i> * (only nymph), <i>Degeeriella fulva</i> , <i>Laemobothrion maximum</i>	(5)
	Common buzzard (<i>Buteo buteo</i>)	<i>Laemobothrion maximum</i>	
Kayseri	Long-legged buzzard (<i>Buteo rufinus</i>)	<i>Colpocephalum nanum</i> , <i>Craspedorrhynchus platystomus</i> *, <i>Degeeriella fulva</i> , <i>Laemobothrion maximum</i>	(5)
	Common buzzard (<i>Buteo buteo</i>)	<i>Colpocephalum nanum</i> , <i>Craspedorrhynchus platystomus</i> *, <i>Degeeriella fulva</i> , <i>Laemobothrion maximum</i> (only nymph)	
	Black kite (<i>Milvus migrans</i>)	<i>Colpocephalum milvi</i> , <i>Laemobothrion maximum</i> (only nymph)	
	European Honey buzzard (<i>Pernis apivorus</i>)	<i>Colpocephalum</i> sp., <i>Degeeriella fulva</i>	
	Long-eared owl (<i>Asio otus</i>)	<i>Strigiphilus barbatus</i>	
Niğde	Long-legged buzzard (<i>Buteo rufinus</i>)	<i>Degeeriella fulva</i>	(6)
Sivas	Long-legged buzzard (<i>Buteo rufinus</i>)	<i>Colpocephalum nanum</i> , <i>Degeeriella fulva</i>	(6)
	Common buzzard (<i>Buteo buteo</i>)	<i>Colpocephalum nanum</i> , <i>Degeeriella fulva</i> , <i>Laemobothrion maximum</i>	
Kırşehir	Common buzzard (<i>Buteo buteo</i>)	<i>Colpocephalum nanum</i> , <i>Craspedorrhynchus platystomus</i> *, <i>Degeeriella fulva</i>	(7)
Konya	One long-eared owl (<i>Asio otus</i>)	<i>Strigiphilus barbatus</i> ; (Total 28 lice)	(6)
	Three common buzzards (<i>Buteo buteo</i>)	<i>Kurodaia fulvofasciata</i> ; (Total 4 lice on 1 of 3 birds)	
	Seven long-legged buzzards (<i>Buteo rufinus</i>)	<i>Craspedorrhynchus platystomus</i> , <i>Colpocephalum nanum</i> , <i>Degeeriella fulva</i> ; (Total 207 lice on 4 of 7 birds)	
	One greater spotted eagle (<i>Aquila clanga</i>)	No lice	
	One Eurasian hobby (<i>Falco subbuteo</i>)	No lice	
Eskişehir	One common Buzzard (<i>Buteo buteo</i>) (injured) at Zoo	No lice	(7)
	One Long-legged Buzzard (<i>Buteo rufinus</i>) (injured) at Zoo	No lice	
	One northern Goshawk (<i>Accipiter gentilis</i>) (injured) at Kızılınler village	No lice	
Konya	Two Long-legged Buzzards (<i>Buteo rufinus</i>) (injured)	No lice	(7)
	One Merlin (<i>Falco columbarius</i>) (injured) at Beyşehir	No lice	
Karaman	One long-eared Owl (<i>Asio otus</i>) (dead)	No lice	(7)
Nevşehir	One short-toed Snake Eagle (<i>Circaetus gallicus</i>) (dead) at Ürgüp	No lice	(7)

* In the article (5), this species is written erroneously as *Colpocephalum platystomus* (Personal communication with the authors, Abdullah Inci and Bilal Dik, 23/01/2012)

subzerfae Tendeiro, 1988 and *Laemobothrion tinnunculi* (Linnaeus, 1758) (Fig. 1), were identified by microscopic

examination. Some dimensions of these lice are given in Table 2.

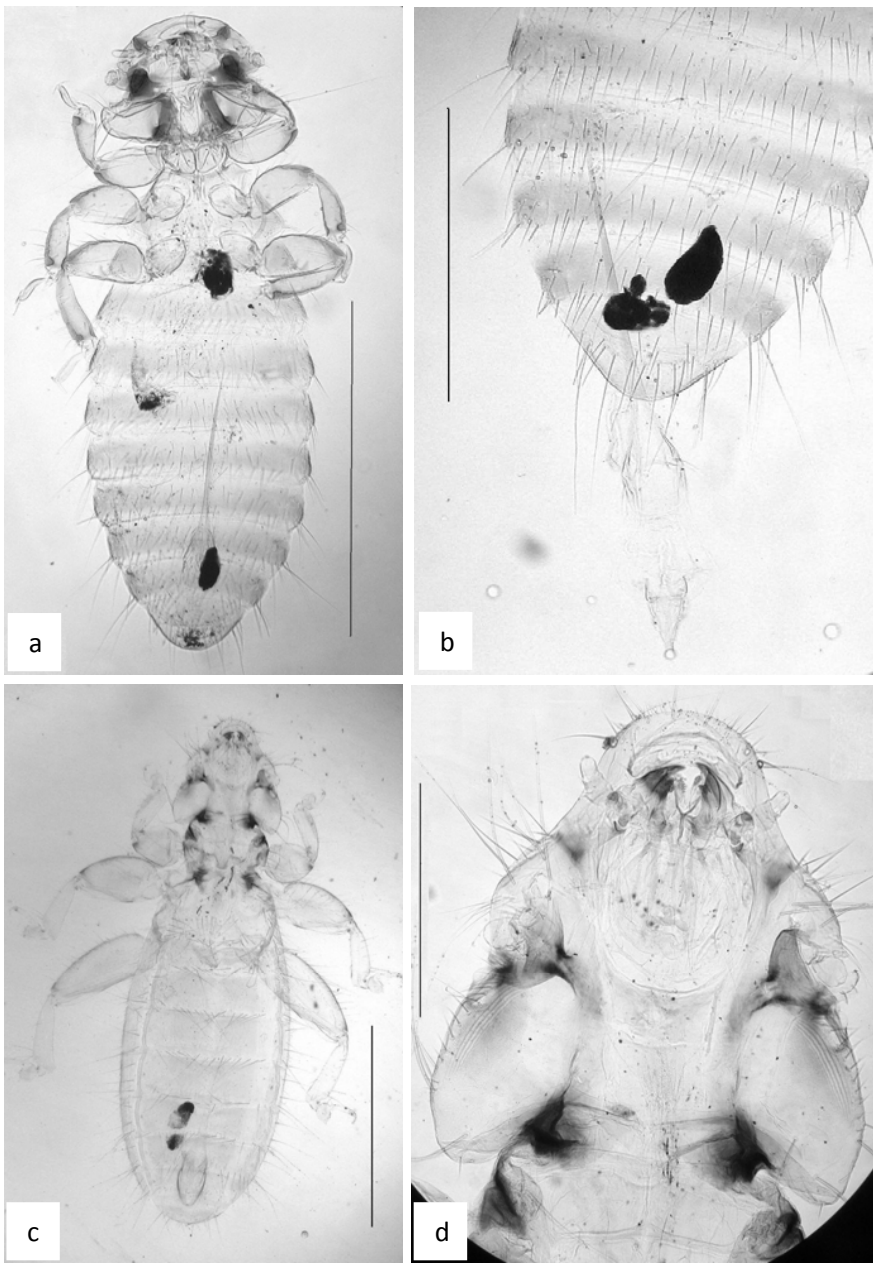


Fig 1. The lice collected from the kestrel *Colpocephalum subzerafae* (male); **a)** Whole body (scale = 1 mm), **b)** Posterior end (scale = 0.5 mm), *Laemobothrion tinnunculi* (male), **c)** Whole body (scale = 3 mm), **d)** Anterior end (scale = 0.75 mm)

Şekil 1. Kerkenezden toplanan bitler *Colpocephalum subzerafae* (erkek); **a)** Tüm gövde (skala = 1 mm), **b)** Arka tarafı (skala = 0.5 mm), *Laemobothrion tinnunculi* (erkek); **c)** Tüm gövde (skala = 3 mm), **d)** Ön tarafı (skala = 0.75 mm)

Table 2. Some data on the dimensions of the lice collected from the kestrel
Tablo 2. Kerkenezden toplanan bitlerin bazı boyutlarının ölçümleri

Dimensions of the Lice	<i>Colpocephalum subzerafae</i>	<i>Laemobothrion tinnunculi</i>
N	2.0	1.0
Head length (mm)	0.35	1.44
Head width (mm)	0.46	1.52
Cephalic index (ratio)*	0.78	0.95
Thorax length (mm)	0.27	1.81
Thorax width (mm)	0.45	1.69
Abdomen length (mm)	1.16	3.83
Abdomen width (mm)	0.64	2.27
Total length (mm)	1.78	7.09

* Cephalic index = Head length/Head width

DISCUSSION

In the previous studies conducted in Turkey, 12 species of raptors (Common Buzzard, Long-legged Buzzard, Greater Spotted Eagle, Imperial Eagle, Marsh Harrier, Short-toed Snake Eagle, Black Kite, European Honey Buzzard, Merlin, Eurasian Hobby, Northern Goshawk, Long-eared Owl) were examined in terms of lice and 10 chewing lice species (*Colpocephalum impressum*, *Co. milvi*, *Co. nanum*, *Craspedorrhynchus fraterculus*, *Cr. platystomus*, *Degeeriella aquilarum*, *D. fulva*, *Kurodaia fulvofasciata*, *Laemobothrion maximum*, *Strigiphilus barbatus*) have been identified (Table 1). However, there is no study on the lice of kestrels in Turkey at present.

In the present study, a male kestrel (*Falco tinnunculus*),

which was captured in Istanbul, was found to be infested with two chewing lice species, *Colpocephalum subzerafae* and *Laemobothrion tinnunculi*. These lice species were not amongst the chewing lice species found previously in Turkey¹³. This is the first record of *Colpocephalum subzerafae* and *Laemobothrion tinnunculi* from Turkey.

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