

## Short Communication

# Chewing Lice (Phthiraptera) of Several Species of Wild Birds in Iran, with New Records

Bilal Dik<sup>1</sup>, \*Ali Halajian<sup>2,3</sup>

<sup>1</sup>Department of Parasitology, Veterinary Faculty, University of Selcuk, Konya, Turkey

<sup>2</sup>Department of Biodiversity, University of Limpopo, Turfloop Campus, Sovenga, South Africa

<sup>3</sup>Department of Parasitology, Faculty of Specialized Veterinary Sciences, Science and Research Branch, Islamic Azad University, Tehran, Iran

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## Abstract

**Background:** Although there are about 520 species of birds in Iran, but only some of them have been checked for ectoparasites so far. The aim of this study was to check some more available species of the birds of Iran for lice.

**Methods:** This study was performed between 2008–2010 in northern Iran. For this purpose we tried to check some of the wild bird species available and mostly not checked before to identify the lice of them. The birds were found in some of the houses of hunters keeping as trap for catching more birds, some of the bird keepers and a few dead birds from taxidermists. In this way we could check 79 birds of 6 species.

**Results:** We identified 11 lice species on the birds and overall 15.2 % of the examined birds were infested by the lice. Nine lice species including *Aquanirmus podicipis*, *Pseudomenopon dolium*, *Ardeicola* sp, *Ciconiphilus decimfasciatus*; *Menacanthus* sp, *Austromenopon transversum*, *Pectinopygus gyricornis*, *Colpocephalum turbinatum* and *Hohorstiella lata* were recorded for the first time on the birds in Iran. One specimen of *Menacanthus* sp was found on the purple Heron (*Ardea purpurea*) that is a new host report for this lice.

**Conclusion:** Although the infection rate was not very high in the birds, but 11 species of lice in 6 studied birds species in this study, shows there are still other lice species that exist in the birds and should be identified and added to Iran lice fauna list.

**Keywords:** Lice, Birds, Iran

## Introduction

Chewing lice (Ischnocera, Amblycera) are permanent obligate ectoparasites mostly parasitic on bird species and they feed on feathers and skin scales. Although they have mouthparts designed for chewing, some of the species of Ischnocera can cause skin irritations and suck blood. Chewing lice have harmful effects that lead to decrease in productivity in host. There are about 4000 lice species on birds in the world (Price et al. 2003). Beside the existence of about 520 species of birds in Iran (Mansoori 2008), there are a few studies relevant to lice infestations and fauna in Iran (Rafyi et al. 1968,

Ardalan 1971, 1975, Rak et al. 1975).

Rafyi et al. (1968) detected 15 lice species (*Goniodes dissimilis*, *Goniodes gigas* (= *Goniocotes gigas*), *Goniocotes gallinae*, *Campanulatus compar* (= *Goniocotes bidentatus*), *Lipeurus caponis*, *Cuclotogaster heterographus* (= *Lipeurus heterographus*), *Chelopistes meleagridis*, *Columbicola columbae*, *Anaticola anseris*, *Menopon gallinae*, *Menopon pallidulum*, *Menacanthus stramineus* and *Trinoton anserinum*) on poultry, pigeons, ducks, geese and turkeys in Iran. Ardalan (1971) added to these six lice species; *Columbicola tschulyschman* from Domestic pigeon (*Columba*

*livia*), *Philopterus corvi* from Raven (*Corvus corax*), *Cuculoecus latifrons* (= *Philopterus latifrons*) and *Philopterus ocellatus* from Crow (in text: *Corvus corone*), *Cummingsiella ovalis* and *Saemundssonina humeralis* from Curlew (*Numenius arquata*). Same author (Ardalan 1975) reported *Quadriceps legatus* from Common Tern (*Sterna hirundo*), *Quadriceps conformis* from Curlew, *Laemobothrion vulturis* from Egyptian Vulture (*Neophron percnopterus*) and *Myrsidea anaspila* from Raven, for the first time in Iran. Eslami et al. (2009) detected five lice species (*Lipeurus caponis*, *Menopon gallinae*, *Menacanthus stramineus*, *Goniodes ocellis* and *Cuclotogaster heterographus*) from chicken in Golestan Province, northern Iran. According to the results of the studies performed on the lice species on the birds, approximately 39 lice species have been detected in Iran, until now.

This study was carried out to identify the chewing lice of some of the bird species of Iran.

## Materials and Methods

This study was performed between 2008–2010 in two northern provinces of Mazandaran and Guilan, northern Iran. For this aim, seventy nine birds belonging to the six bird species (Great Crested Grebe: *Podiceps cristatus* n= 31, Little Egret: *Egretta garzetta* n= 11, Purple Heron: *Ardea purpurea* n= 6, Cormorant: *Phalacrocorax carbo* n= 5, Black-headed Gull: *Larus ridibundus* n= 21, Rock Pigeon: *Columba livia* n= 5) were examined for louse. The birds were found in some of the houses of hunters keeping as trap for catching more birds, and some of the bird keepers. Grebes were taken for checking from fishermen that catch the birds accidentally in the fishing nets. For collecting the lice, with considering the restricts for handling the wild birds and little time for checking each bird and from among the reliable methods (Clay-

ton and Drown 2001), visual examination as the main method and based on the situation, post-mortem-ruffling were used. In order to collect the lice, the body of each bird was carefully examined. All lice were collected and placed in tubes with 70% alcohol. The louse specimens were cleared about 24 hours in 10% KOH, and then put in distilled water for one day. Following dehydration in a graded alcohol series (70%, 80%, 90% and 99%, in consecutive days) the specimens were mounted on slides in Canada balsam. After being dried in incubator, lice specimens were identified under a light microscope. The identification of the lice was carried out according to relevant literatures (Price and Beer 1963, 1965, Timmermann 1964, Clay 1973, Price 1973, Zlotorzycska 1976, Price et al. 2003).

## Results

Eleven lice species were identified on the birds in this study.

*Aquanirmus podicipis* (Denny, 1842): 4 , 1 Nymph (N), December 23<sup>rd</sup>, 2010, Host: Great Crested Grebe: *Podiceps cristatus*, Locality: Nashtarood City, Mazandaran Province. Intensity: 5 in one bird. This species is reported for the first time in Iran (Fig. 1).

*Ardeicola* sp.: 1 , June 30<sup>th</sup>, 2010, Host: Little Egret: *Egretta garzetta*, Locality: Talesh, Guilan Province. The species was not identified because there was only one female sample that was crashed during the mounting on slide. *Ardeicola* sp is reported for the first time in Iran.

Remarks: *Ardeicola expallidus* Blagovestchensky, 1940 lives on *E. garzetta*. Our sample was close to this species, although because of lack of samples it wasnt identified to species level.

*Austromenopon transversum* (Denny, 1842): 3 1 N, December 1st, 2010, Host: Black-headed Gull: *Larus ridibundus*, Locality: Cheshmeh kileh river, Tonekabon City, Mazan-

daran Province. Intensity: 4 in one bird. This species is reported for the first time in Iran (Fig. 2).

*Campanulates compar* (Burmeister, 1838): 3 ♂, 2009, Host: Rock Pigeon: *Columba livia*, Locality: Nashtarood City, Mazandaran Province. Intensity: 4 in one bird (Fig. 3).

*Ciconiphilus decimfasciatus* (Boisduval and Lacordaire, 1835): 3 ♂, June 30<sup>th</sup>, 2010; Host: Little Egret: *Egretta garzetta*, Locality: Talesh, Guilan Province. Intensity: 2 in each bird. This species is reported for the first time in Iran (Fig. 4, 5).

*Colpocephalum turbinatum* Denny, 1842: 1 ♂, 2009, Host: Rock Pigeon: *Columba livia*, Locality: Nashtarood City, Mazandaran Province. This species is reported for the first time in Iran (Fig. 6).

*Columbicola columbae* (Linnaeus, 1758): 3 ♀, 2009, Host: Rock Pigeon: *Columba livia*, Locality: Nashtarood City, Mazandaran Province. Intensity: 4 in one and 1 in one bird (Fig. 7).

*Hohorstiella lata* (Piaget, 1880): 3 ♀, 2009, Host: Rock Pigeon: *Columba livia*, Locality: Nashtarood City, Mazandaran Province. Intensity: 3 in one bird. This species is reported for the first time in Iran (Fig. 8).

*Menacanthus* sp: 1 ♀, December 1st, 2010, Host: Purple Heron: *Ardea purpurea*, Nashtarood City, Mazandaran Province (Fig. 9, 10).

Remarks: *Menacanthus* species are not found on the birds belonging to the family Ardeidae. However, one specimen of *Menacanthus* sp. was detected on the heron. The identification of the host species was correct, but in this case maybe the Purple Heron was an accidental host for this specimen.

*Pectinopygus gyricornis* (Denny, 1842): 3 ♀, April 18<sup>th</sup>, 2010, Host: Great Cormorant: *Phalacrocorax carbo*, Locality: Ramsar City, Mazandaran Province. Intensity: 5 in one bird and 1 in another bird. This species is reported for the first time in Iran (Fig. 11).

*Pseudomenopon dolium* (Rudow, 1869): 1 ♀, December 23<sup>rd</sup>, 2010, Host: Great Crested

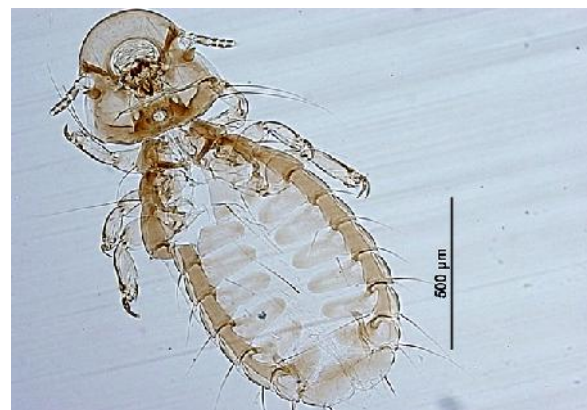
Grebe: *Podiceps cristatus*, Locality: Nashtarood City, Mazandaran Province. This species is reported for the first time in Iran (Fig. 12, 13).



**Fig. 1.** *Aqanirmus podicipis*, adult female, host: *Podiceps cristatus* (Great Crested Grebe) (original)



**Fig. 2.** *Austromenopon transversum*, adult female, host: *Larus ridibundus* (Black-headed Gull) (original)



**Fig. 3.** *Campanulates compar*, adult female, host: *Columba livia* (Rock Pigeon) (original)



**Fig. 4.** *Ciconiphilus decimfasciatus*, adult female, host: *Egretta garzetta* (Little Egret), (original)



**Fig. 5.** *Ciconiphilus decimfasciatus*, adult male, host: *Egretta garzetta* (Little Egret), (original)



**Fig. 6.** *Colpocephalum turbinatum*, adult female, host: *Columba livia* (Rock Pigeon) (original)



**Fig. 7.** *Columbicola columbae*, adult male (left), adult female (right), host: *Columba livia* (Rock Pigeon) (original)



**Fig. 8.** *Hohorstiella lata*, adult female, host: *Columba livia* (Rock Pigeon) (original)



**Fig. 9.** *Menacanthus* sp, adult female, host: *Ardea purpurea* (Purple Heron) (original)



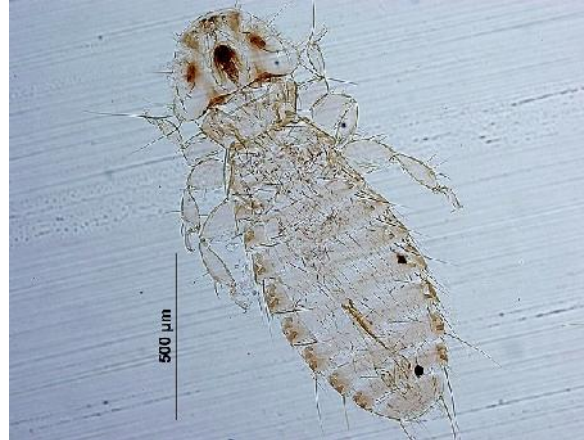
**Fig. 10.** *Menacanthus* sp, adult female, head, host: *Ardea purpurea* (Purple Heron) (original)



**Fig. 11.** *Pectinopygus gyricornis*, adult male, host: *Phalacrocorax carbo* (Cormorant) (original)



**Fig. 12.** *Pseudomenopon dolium*, adult female, host: *Podiceps cristatus* (Great Crested Grebe) (original)



**Fig. 13.** *Pseudomenopon dolium*, adult male, host: *Podiceps cristatus* (Great Crested Grebe) (original)

## Discussion

Approximately 4000 valid lice species have been reported on the birds worldwide (Price et al. 2003). However, there is little previous information about the louse fauna of the birds in Iran and there are not many studies done about the chewing lice on the wild birds in this country. In the studies done relevant to the chewing lice found on wild birds, approximately 39 lice species have been detected in the birds in Iran, until today. A few number of wild birds species were examined for the louse species in those studies. Although only six species of wild birds includ-

ing 79 birds overall were examined for the louse in this study, but eleven lice species with nine new species for the fauna of Iran are reported and the overall infection rate was 15.2%. Out of these birds, only rock pigeon was examined by the previous researchers of Iran (Rafyi et al. 1968) and the other 5 species of birds are checked for lice for the first time in this study. In this study, eleven lice species, *Aquanirmus podicipis*, *Ardeicola* sp, *Austromenopon transversum*, *Campanulates compar*, *Ciconiphilus decimfasciatus*, *Colpocephalum turbinatum*, *Col-*

*umbicola columbae*, *Hohorstiella lata*, *Menacanthus* sp, *Pectinopygus gyricornis* and *Pseudomenopon dolium* were found on the birds.

*Campanulates compar* (= *Goniocotes bidentatus*) and *C. columbae* were the only species reported previously in Iran, *Campanulates compar* from Pigeon as *Goniocotes bidentatus* by Rafyi et al. (1968) and Ardalan (1972) and *Columbicola columbae* from Rock Pigeon (*Columba livia*) by Rafyi et al. (1968) and Rak (1974). Except these two species, the others are recorded for the first time in Iran.

One specimen of *Ardeicola* sp. collected from Little Egret was not identified because the specimen was crashed during mounting on the slide.

Rak et al. (1975) stated that they detected some lice species found on the hosts which were not their normal host. Similarly, we found one specimen of *Menacanthus* sp collected from Purple Heron which is not its normal host and this specimen could not be identified and this issue needs to be studied more with more samples.

In conclusion *A. podicipis*, *P. dolium*, *Ardeicola* sp, *C. decimfasciatus*, *Menacanthus* sp, *A. transversum*, *P. gyricornis*, *C. turbinatum* and *Hohorstiella lata* were recorded for the first time on the birds in Iran. Normally, the species belonging to the genus *Menacanthus* are not found on the birds belonging to the family Ardeidae. However, one specimen of *Menacanthus* sp was found on the purple Heron for the first time in this study.

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