Journal on New Biological Reports
JNBR 4(1) 76 – 78 (2015)

ISSN 2319 – 1104 (Online)

Published by
www.researchtrend.net

First report of new species of *Goniodes pavonis* (the chewing lice) from Indian Peacock in Iran

Maryam Ganjali[1], Mojtaba Keighobadi [2]*, Nasser Hajipour[3]

[1]Department of parasitology, Faculty of veterinary medicine, University of Zabol, Zabol, Iran
[2] Institute of specific animals, University of Zabol, Zabol, Iran
[3]Department of Pathobiology, Faculty of Veterinary Medicine, Urmia University, Urmia, Iran

***Corresponding author:** mojtaba.keyghobadii@yahoo.com

| **Received**: 28 February 2015 | **Accepted**: 06 April 2015 |

ABSTRACT

The lice (Insecta: Phthiraptera) are permanent obligatory ectoparasite of a diverse selection of birds and mammals with a worldwide distribution. This study provides information on the lice species most commonly associated with peacock in Sistan, southeast Iran. There is no previous described study on lice infestation of peacock in Iran. For this aim, Peacock were examined carefully for chewing lice on the body surfaces**,** only one lice species was observed namely: *Goniodes pavonis***.** Another species of ectoparasites were not isolated from the infested peacock during the study period.

Key Words: *Goniodes pavonis,* Lice, Peacock, Iran.

INTRODUCTION

The Peacocks are omnivore medium sized birds forming the family Phasianidea belonging to order Galliformes. There are two main species of peacock, the Green Peacock and the Indian Blue Peacock which have a strain of white peafowl .The Indian Peacock or Blue Peafowl (*Pavo cristatus*.) is a bird species recognized for its beauty, especially the male, in particular for the long train made up of elongated upper-tail covert feathers with colorful eyespots.(Linnaeus 1758). On the economic point of view, peacocks have economic significance to humans and are a wild bird by nature that has been domesticated in many countries. In Zoos and parks, people are privileged to see many variations of peacocks, blue, green, gold, and white and purple colors attract people. The Romans graced their table with peacock meat and kept the bird to decorate their land .The peacock feather is used in form of ash or water as treatment against the snake bite and to treat various problems of lungs. Parasitic infestation especially lice (Insecta: Phthiraptera), permanent obligatory ectoparasite of a diverse selection of birds and mammals, is a common problems in Indian Peacock (Murari et al. 2005), which makes losing weight and egg production, itching and in severe infestation with sucking lice may cause anemia. According to the results of the studies performed on the lice species on the birds, approximately 4000 lice species have been detected in the world (Price et al. 2003; Wall

et al. 2001). Information regarding species of lice in Indian Peacock in Iran is not available, wherever little is known about the prevalence of ectoparasites and species of lice in birds in Iran (Azizi et al.2013; Eslami et al. 2009; Moodi et al. 2013; Nazarbeigy et al.2012; Rafyi et al .1968; Tavassoli et al.2011). Therefore, local and updated information is essential to understand the epidemiology of lice infestation in Indian Peacock to design rational control strategies. This information is also important to prevent the indiscriminant use of anthelmintics that could lead to anthelmintic resistance (Thompson 1999; Irwin 2002).So that, the objective of this study was to determine the species of lice in Indian Peacock in Sistan, southeast of Iran.

MATERIAL AND METHODS

A Collection of peacocks are kept in Chahnime zoo in Sistan, southeast part of Iran. Lice were collected from the 12 Indian peacock (10 female and 2 male), kept in semi open area in the captivity.In order to collect the lice, peacock were examined on the body surfaces between June and September 2013. All lice were collected from the feathers of the head and neck of the birds and placed in tubes with 70% alcohol, then cleared in (KOH)10% and fixed in Canada balsam (Palma 1978).The lice were identified based on morphological key described by Price et al. (2003); Wall et al. (2001); Nasser et al. (2014). Collected species have been deposited in the Iranian National Museum of Parasitology, Faculty of Veterinary Medicine, University of Tehran.

RESULTS AND DISCUSSION

According to the results of microscopic examination performed on the lice species of Indian peacock; one species were identified, namely: *Goniodes pavonis*. (Fig.1 and Fig.2). They are large lice, about 2.6-3mm in length, Table 1 gives the measurements made on this specimen. Lice species was commonly observed on the feathers of the head and neck region of the birds. Of the 30 specimens collected, from the infested peacock, 21 adult and 9 larvae were identified. This species is reported for the first time from Indian peacock in Iran.

It is important to consider that external parasites in birds cause feather loss, irritation, injury, nervousness, pruritus and reduction in production rather than their role as vector (Wall et al. 2001, Marco Antonio et al. 2014). This paper reports on lice infestation caused by *Goniodes pavonis* in peacocks kept in a Zoo in South-East Iran. This species was the first chewing louse described from the Indian Peafowl by Linnaeus, 1758 (Nasser et al. 2014). *Goniodes pavonis* and Table 1 Measurements of *Goniodes pavonis* from Indian peacock in Sistan (ranges in mm).

Cephalic Length	Cephalic Width	Thoracic Length	Abdominal length	Total Length
0.6 1.± 0.2	0.85 ± 0.2	0.4±0.3	1.6± 0.4	2.6± 0.4

Fig. 1 *Goniodes pavonis* (Male) derived from Indian peacock (*Pavo cristatus*) in Sistan: Enlarged the first segment of antennal.

Fig. 2 *Goniodes pavonis* (Female) derived from Indian peacock (*Pavo cristatus*) in Sistan: The first segment of antennal and posterior.

Amyrsidea minuta were the most prevalent species in the survey of louse distribution upon the peacock Pavo cristatus from an English zoo (Stewart et al.1996). Several studies have focused on avian louse infestations in Iran and *Goniodes* species have been reported as ectoparasites of different bird order. Rafyi et al. (1968) reported that poultry, pigeons, ducks, geese and turkeys can be parasitized by some specific species of *Goniodes*, *Lipeurus*, *Cuclotogaster*, *Chelopistes Columbicola*, *Anaticola*, *Menopon*, *Menacanthus* and *Trinoton*. Ardalan (1971) detected 10 lice species from domestic and wild birds collected in the western

and southern parts of Iran**.** Additionally, five lice species (*Lipeurus caponis, Menopon gallinae, Menacanthus stramineus, Goniodes dissimilis* and *Cuclotogaster heterographus*) have been reported from chicken in Golestan Province, northern Iran (Eslami et al. 2009). Girisgin et al. (2013) also found *Goniodes* sp., on wild birds in northwestern Turkey and reported *G. pavonis* for the first time in Turkey. Although, this species was reported from native fowls in Iran by Nazarbeigy et al. (2012). Naz et al. (2012) published the chewing lice (Phthiraptera) of Columbidae (Columbiformes) from neighbor country Pakistan, she did not report *Goniodes* on pigeon. Also, there have been studies on infestation with lice in passerine birds, greatwhite pelican *(Pelecanus onocrotalus),* Golden Eagles and other wild bird species in Iran, There is no record of this louse species from this bird orders (Tavassoli et al. 2011;Dik and Halajian 2013 ; Moodi, 2013; Azizi et al.2013).

Despite these studies, the knowledge of lice species on peacock in Iran remains limited. There was no previous targeted research on lice infestation of peacock. We report for the first time in this study louse on peacock in Iran. Considering that there is limited information available on the louse fauna of peacock**,** further investigations are needed to identify and comprise future collections of lice.

REFERENCES

Ardalan A.1971. Mallophaga of Iran: new records.Bull. Soc Pathol Exot 64:236-237.

Ardalan A. 1975. Mallophaga of Iran. Five new records of Mallophaga from Iran. Bull Soc Pathol Exot 68(1):93-94.

Azizi HR, Adel M, Sayahi E, Zamani Moghadam AK, Esmailian Dehkordi A and Hematzadeh M .2013. Laemobothrion maximum (chewing lice) in Iranian Golden Eagles. J Anim Poultry Sci 2(3): 85-90.

Dik B and Halajian A. 2013. Chewing lice (Phthiraptera) of several species of wild birds in Iran, with new records. J Arthropod Borne Dis 7(1).235-237.

Eslami A, Ghaemi P and Rahbari S. 2009. Parasitic infections of free range chickens from Golestan Province, Iran. Iranian J Parasitol 4(3): 10–14.

Girisgin AO, Dik B and Girisgin O. 2013. Chewing lice (Phthiraptera) species of wild birds in northwestern Turkey with a new host record. Int J Parasitol 2: 217–221.

Irwin PJ. 2002. Companion animal parasitology: a clinical perspective. Int J Parasitol 32: 581-593.

Linnaeus Carl. 1758. Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. Tomus I. Editio decima, reformata. Holmiae. (Laurentii Salvii).

Marco Antonio C, Jaime A, Narciso Tsac A. S, Jerez- Salas M.P, Edgar B and Lopez JC. 2014. Ectoparasites and their damage in Backyard Turkeys in oaxaca's coast, Mexico. EJVM 7**:** 1-14.

Moodi B, Aliabadian M, Moshaverinia A and Mirshamsi Kakhki O. 2013. New data on the chewing lice (Phthiraptera) of passerine birds in East of Iran. Sci Parasitol 14(2):63-68.

Murari SK, Frey FJ, Frey BM, Gowadaa TV and Vishwanath BS.2005. Use of pavo cristatus feather extract for the better management of snakebite Neutralization of inflammatory reactions. J. Ethno pharm. 99: 229– 237.

Nasser M, AL-Ahmed A, Shobrak M and Aldryhim Y .2014. Identification key for chewing lice (Phthiraptera: Amblycera, Ischnocera) infesting the Indian Peafowl (Pavo cristatus) with one new country record and new host record for Saudi Arabia. Turk J Zool 38.

Naz S, Sychra O and Rizvi SA .2012. New records and a new species of chewing lice (Phthiraptera, Amblycera, Ischnocera) found on Columbidae (Columbiformes) in Pakistan. Zoo Keys 174: 79–93.

Nazarbeigy M, Rahbari S and Ronaghi H. 2012.The survey of ectoparasite infestation among native fowls (Gallus Damesticus) in Ilam, Iran. 8th NICOPA Kerman, Iran

Palma RL. 1978. Slide-mounting of lice: a detailed description of the Canada balsam technique. New Zeal Entomol 6(4): 432-436.

Price RD, Hellenthal RA, Palma RL, Johnson KP and Clayton DH .2003.The chewing lice: World checklist and biological overview. Illinois; p. 1-448. Illinois Natural History Survey Special Publication 24.

Rafyi A, Alavi A and Rak H. 1968. Bird lice in Iran. J Vet Faculty. 25(1): 107–122.

Stewart IRK, Clark F and Petrie M. 1996. Distribution of Chewing Lice upon the Polygynous Peacock Pavo cristatus J. Parasitol 82(2):370-372.

Tavassoli M, Salmanzadeh R and Jabbari H. 2011. Infestations of *Piagetiella titan* (Menoponidae: Mallophaga) on juvenile white pelicans (*Pelecanus nocrotalus*, L.) in Urmia Lake National Park, northwest Iran. Int. J Vet Res. 5:105.

Thompson RC. 1999. Veterinary parasitology: looking to the next millennium. Parasitol Today 15: 320-325.

Wall R and Shearer D. 2001. Veterinary Ectoparasites second edt. Blackwell Science; 123-126.