



E-ISSN: 2320-7078

P-ISSN: 2349-6800

JEZS 2019; 7(4): 922-923

© 2019 JEZS

Received: 14-05-2019

Accepted: 18-06-2019

**Dr. Vysakh Mohan M**

Department of Veterinary  
Parasitology, College of  
Veterinary and Animal Sciences,  
Mannuthy, Kerala, India

**Dr. Bindu Lakshmanan**

Assistant Professor, Department  
of Veterinary Parasitology,  
College of Veterinary and Animal  
Sciences, Mannuthy, Kerala,  
India

**Dr. Jacob Alexander**

Assistant Director, Zoological  
Gardens, Thiruvananthapuram,  
Kerala, India

## Report of chewing lice *Craspedorrhynchus* sp. on *Milvus migrans* from Kerala

**Dr. Vysakh Mohan M, Dr. Bindu Lakshmanan and Dr. Jacob Alexander**

### Abstract

The lice (Insecta: *Phthiraptera*) are permanent obligatory ectoparasite of a diverse population of birds and animals having worldwide distribution. Researches about lice infestation in birds are being carried out in various parts of the world. But, lice infestation in wild birds is poorly studied or understood. This report cites about lice infestation in Black Kite (*Milvus migrans*). An investigation on lice from an injured black kite was performed in October 2018. The collected ticks were identified *Craspedorrhynchus* sp. Birds are usually not a reservoir of ectoparasites, because of their self-grooming abilities. But, this report provides an information about lice infestation, that can be extensive in a debilitated bird. Hence, more investigations and researches are required to know more about lice infestations in wild birds and their probable health problems.

**Keywords:** *Phthiraptera*, biting lice, *Craspedorrhynchus* sp., black kite lice, *Milvus migrans*, first report

### Introduction

Among ectoparasites, lice (Insecta: *Phthiraptera*) comprise largest insect species (Marshall, 1981) [4]. Chewing lice (*Phthiraptera*) are permanent ectoparasites of both wild and domestic species of birds, which feed on feathers and dead skin. For attachment and for feeding these lice attach feather or hair shaft for support. Ischnoceran lice are restricted to feathers. Infested birds become progressively worsen plumage and feather condition which in turn affect the thermoregulation mechanism (Booth *et al.*, 1993; Kose and Møller, 1999; Vas *et al.*, 2008) [1, 2, 10]. Like every louse, these are also wingless with a direct life cycle, and three nymphal instars further developing to adult lice. Unlike other insect species they are having unparalleled host specificity and are highly specialised to survive in its host species. Even though the biology lice are poorly studied, their host specificity has attended by many systemic biologists to resolve host relationships.

Black kite (*Milvus migrans*) is medium-sized among the birds of prey included in the family *Accipitridae* belonging to the order *Accipitriformes*. Comparing others in the group, black kites are opportunistic hunters and are likely to be scavengers. These ubiquitous birds usually spent more time in gliding and soaring in search of prey. Local and updated information is important in understanding the epidemiology of lice infestation in *Milvus migrans* to design a suitable control protocols. It will also be significant in prevention of indiscriminate use of ectoparasiticides. Herein, we report the first incidence of *Craspedirrhynchus* sp. in *Milvus migrans* and discuss the importance of lousiness in wild birds.

### Materials and Methods

This bird under study was rescued by forest department in October 2018 from outskirts Trivandrum city (8.5241° N, 76.9366°E) and was transported to Zoological Gardens, Thiruvananthapuram for treatment of fractured right wing. While under treatment we could detect lice infestation on head and feathers of the bird counted about 150. We collected the specimens for identification. As a preventive measure we dipped the whole flock of birds in the aviary in cypermethrin (a synthetic pyrethroid) (James *et al.*, 1990).

The lice population was quite more in the lore of bird's head. This is the first report of *Craspedorrhynchus* sp. infestation in *Milvus migrans*. The specimen was treated with 70% alcohol, then cleared in 10% KOH, and finally fixed in Canada balsam (Palma, 1978) [3]

### Correspondence

**Dr. Vysakh Mohan M**

Department of Veterinary  
Parasitology, College of  
Veterinary and Animal Sciences,  
Mannuthy, Kerala, India

## Result and Discussion

The male lice of this Ischnoceran genus were shorter than females. The female specimens were, on an average, 2.47mm long. The male lice were 1.85mm long. The head was trapezoidal in shape and measured 0.76mm in females and 0.71mm in males. The 5 antennal segments were clearly demarcated. Three long setae were present in the region of temples. The hyaline margin of the head was evident. The marginal carina had a distinct lateral interruption. The pre-marginal and ventral carina of forehead extended anteriorly than the clypeal plate.

Abdomen possessed characteristically sclerotised lateral paratergal plates and setae. The louse was identified as *Craspedorrhynchus* sp. (Smith, 2001) <sup>[11]</sup>.

*Craspedorrhynchus* species are highly host specific (Mey, 2001) <sup>[5]</sup> and typically occur on a single host species usually Falconiformes birds (Palma, 1994) <sup>[6]</sup>.

Lice population in a particular host ranges from zero to thousands per host. Parasitic abundance and distribution has little attention despite their diversity and potential impacts on host population (Santiago *et al.* 2008) <sup>[8]</sup>.

Lousiness is well studied in poultry species. They cause irritation, leading to inappetence and increased disease susceptibility. Symptoms may include scabby, irritated skin and reduced egg production (Tower and Floyd, 1961) <sup>[9]</sup>.

Biting lice cause considerable irritation when present in large numbers. Normally healthy birds will groom by themselves to get rid of ectoparasites. Poorly nourished or sick birds not exhibiting normal grooming behaviour are often infested with lice. In this case the bird was reluctant to grooming. This might be a reason in the flaring up of lice in its body.

Some birds, especially passerine birds show an interesting behaviour known as anting. These birds use only those ants (Formicidae subfamilies) whose workers exude or spray toxic substances in attack or defence and will not sting. While landing on an ant colony, they allow the ants to crawl into its plumage or even pick up ants and apply them to the feathers (Simmons, 1966) <sup>[8]</sup>. After the worker ant liberally anoints the feathers with noxious fluids, many dead and dying lice are found in the plumage of birds immediately after anting.

Analysing the facts, it is evident that lousiness is not much a problem in healthy birds. But, in the case of unsound birds the problem must be addressed.

## References

1. Booth DT, Clayton DH, Block BA. Experimental demonstration of the energetic cost of parasitism in free-ranging hosts. Proc. R. Soc. Lond. B Biol. Sci. 1993; 253:125-129.
2. Kose M, Møller AP. Sexual selection, feather breakage and parasites: the importance of white spots in the tail of the barn swallow (*Hirundo rustica*) Behav. Ecol. Sociobiol. 1999; 45:430-436.
3. Palma RL. Slide-mounting of lice: a detailed description of the Canada balsam technique. New Zeal Entomol. 1978; 6(4):432-436.
4. Marshall AG. The ecology of ectoparasitic insects. Academic Press, London, U.K., 1981, 459.
5. Mey E. A new *Craspedorrhynchus* species (Phthiraptera: Ischnocera) from Australia, with an annotated checklist of this chewing louse genus. Deutsche Entomologische Zeitschrift. 2001; 48:117-132.
6. Palma RL. The identity of *Nirmus obtusus* and other Quadriceps species (Phthiraptera: Philopteridae) from

Clipperton Island and the Gala'pagos Islands. Journal of the Royal Society of New Zealand. 1994; 24:267-276.

7. Santiago AD, Whiteman NK, Parker PG, Ricklefs RE, Valkiunas G. Patterns of parasite abundance and distribution in island populations of Galapagos endemic birds. J Parasitol. 2008; 91(3):584-590
8. Simmons KEL. Anting and the problem of self-stimulation, J. Zool. 1966; 149:145-62.
9. Tower BA, Floyd EH. The effect of chicken body louse [*Eomenacanthus stramineus* (Nitz)] on egg production in New Hampshire pullets. Poultry Science. 1961; 40:395-398.
10. Vas Z, Csörgö T, Møller AP, Rózsa L. The feather holes on the barn swallow *Hirundo rustica* and other small passerines are probably caused by *Brueelia* spp. lice. J Parasitol. 2008; 94:1438-1440.
11. Smith, Vincent S. Avian louse phylogeny (Phthiraptera: Ischnocera): a cladistic study based on morphology. Zool J Linnean Soc. 2001; 132:81-144