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THE SPECIES OF MALLOPHAGA IN WILD BIRDS IN IRAN

By H. RAK, M. ANWAR and A. NIAK (*) (**)

INTRODUCTION

RAFYI *et al.* (1969) reported 15 different species of Mallophaga from domestic birds in Iran. ARDALAN (1971) gave a list of six more species as a new record and later on (1972) she added four more species to her findings.

She also gave the name and the localities of their host. They were all collected from the western and southern parts of Iran, except one namely *Cuclotogaster heterographus* which was collected from *Corvus corax* and geese around Tehran. This louse was also reported from geese and chicken by ANWAR *et al.* (1971 b) in their revised list of parasites from domestic birds in Iran.

They also added two species as the new record to their previous report (ANWAR *et al.* 1971 a).

The present paper is a study on mallophaga found in wild birds in the Tehran area.

MATERIALS AND METHODS

Birds belonging to different species were collected from the Tehran area either by shooting or catching in special hunting nests. Some birds were also bought from local pet shops.

(*) Séance du 8 octobre 1975.

(**) Department of parasitology, Faculty of Veterinary Medicine University of Tehran, P. O. Box. 3262 Tehran, Iran.

In the case of shooting the birds were put immediately into separate polythene bags and tied.

All birds were brought to the laboratory. The feathers and bodies were searched for ectoparasites. Lice were collected and transferred into clearing fluid (distilled water 30 cm³, glacial acetic acid 30 cm³, chloral hydrate 40 g.) for eight hours. They were then mounted on slides with HOYER's solution and examined under the microscope.

RESULTS AND CONCLUSION

Up to date 27 species of mallophaga have been reported from birds in Iran (RAFYI *et al.*, 1968, ANWAR *et al.*, 1971 *a* and *b*, ARDALAN, 1971 and 1972) of which 16 species were reported from domestic birds. ARDALAN gave the name of species which she found in wild birds. Her findings are from the birds collected in the western and southern parts of Iran, but only one species has been reported around Tehran.

The present studies on the ectoparasites of wild birds in the Tehran area revealed that there are more species of mallophaga than previously reported.

We found fifteen species as a new record of mallophaga in Iran. The species and their hosts are as follows :

Anaticola crassicornis from *Anas clypeata*, *Laemobothrion maximum* from *Falco tinnunculus*, *Laemobothrion sp.* from *Aquila chrysaetos*, *Alcedoecus annulatus* from *Alcedo atthis*, *Colpocephalum pectinatum* and *Strigiphilus sp.* from *Streptopelia turtur*, *Amyrsidea fulvomaculata* from *Coturnix coturnix*, *philopterus picae* from *pica pica*, *philopterus ocellatus* (*) and *Colpocephalum pectinatum* from *Athene noctua*, *philopterus sp.* and *Bruelia sp.* from *Turdus ruficollis*, *Upupicola upupae* from *Upupa epops*, *Amyrsidea hexapilosus* from *Phasianus colchicus*, *Colpocephalum sp.* from *Falco cherrug*.

There are a few points which need further explanation. In spite of the precautions taken, there were a number of cases in which mallophaga were found on birds which are not their normal hosts.

Although mallophaga are generally narrowly host-specific, there are species which are found on different hosts. This has also been reported by ARDALAN (1972) who found *Cuclotogaster heterographus* from goose and *Corvus corax*, which is actually an ectoparasite of *Gallus domesticus*.

ANWAR *et al.* (1971 *b*) also found this parasite on chicken and ducks. Whether this is the parasite of chicken only and our findings are accidental, needs further investigation.

In six cases we found only one louse in each host and they were nymph. We were not able to identify the species, therefore the generic name is given. *Anas clypeata*, *Alcedo atthis* and *Phasianus colchicus* are originally found in the north of Iran.

(*) This species has been reported by ARDALAN (1972) from *Corvus corone*.

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SUMMARY

Up to date 27 species of Mallophaga have been reported from birds in Iran. Further studies in Tehran area showed that the wild birds harbour more lice. The following species of Mallophaga are reported for the first time from birds in Iran.

Anaticola crassicornis from *Anas clypeata*, *Laemobothrion maximum* from *Falco tinnunculus* *Laemobothrion* sp. from *Aquila chrysaetos* *Alcedoecus annulatus* from *Alcedo atthis*, *Colpocephalum pectinatum* and *Strigiphilus* sp. from *Streptopelia turtur*, *Amyrsidea fulvomaculata* from *Coturnix coturnix*, *philopterus picae* from *pica pica*, *Philopterus ocellatus* and *Colpocephalum pectinatum* from *Athene noctua*, *Philopterus* sp. from *Turdus ruficollis*, *Upupicola upupae* from *Upupa epops*, *Amyrsidea hexapilosus* from *Phasianus colchicus*, *Colpocephalum* sp. from *Falco cherrug*.

RÉSUMÉ

27 différentes espèces de louses ont été décrites chez les oiseaux en Iran. Notre étude a indiqué que plus de Mallophaga, comme suivent, se trouvent chez les oiseaux et sont signalés pour la première fois en Iran.

Anaticola crasicornis de *Anas clypeata*, *Laemobothrion maximum* de *Falco tinnunculus*, *Laemobothrion* sp. de *Aquila chrysaetos*, *Alcedoecus annulatus* de *Alcedo atthis*, *Colpocephalum pectinatum* et *Strigiphilus* sp. de *Streptopelia turtur*, *Amyrsidea fulvomaculata* de *Coturnix coturnix*, *Philopterus picae* de *pica pica*, *Philopterus ocellatus* et *Colpocephalum pectinatum* de *Athene noctua*, *philopterus* sp. de *Turdus ruficollis*, *Upupicola upupae* de *Upupa epops*, *Amyrsidea hexapilosus* de *Phasianus colchicus*, *Colpocephalum* sp. de *Falco cherrug*.

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DEMODECTIC MANGE IN THE EYELID OF DOMESTIC RUMINANTS IN IRAN

By H. RAK and R. RAHGOZAR (*) (**)

INTRODUCTION

According to literary data, the first report of demodectic mange in the eyelid was by SIMON, 1842 (cited by NEMESERI and SZEKY, 1966) (1) who found *Demodex ovis* in the Meibomian glands of the upper eyelid of sheep. This observation was confirmed by OSCHATZ 10 years later (cited by NEMESERI and SZEKY, 1966) (1).

Later on various workers noted the incidence of *Demodex* mite in the eyelid of different ruminants. Up to date there is no information on the infestation of the eyelid of ruminants in Iran.

The classical study of demodicosis in Iran started with the work of RAFYI *et al.* (1967) (4) who listed *Demodex* mite in human, pig and sheep. Later on RAK (1969) (5) reported *Demodex canis* in dog. In the following years the study of demodicosis in animals continued in Iran. The object of the present paper is to record the occurrence, and percentage of demodicosis in the eyelid of domestic ruminants in Iran. The survey revealed that the incidence and percentage of the infection to this mite in some animals are relatively high.

MATERIAL AND METHODS

The infected ruminants were identified on the basis of the results obtained from *Abattoir* survey of ruminants (*post mortem* inspection) at the Tehran *Abattoir* and by means of microscopic and histological examination of the eyelid.

In order to obtain information about the incidence and percentage of demodectic mange in ruminants, screening test were made on a total of 867 animals. The study of the eyelid revealed that 67 out of 182 cattle (36.8 percent), 4 out of 160 buffalos (2.5 percent), 29 out of 186 sheep (15.5 percent), 53 out of 186 goats (28.4 percent) and 16 out of 153 camels (15 percent), were infected with *Demodex* mite. The pathologic course and the reaction of the organism was followed up histologically. The most efficient technique for macerating tissue and examining residue for *Demodex* mite was the KOH method adapted from French (1962) (1).

(*) Séance du 8 octobre 1975.

(**) Department of Parasitology, Faculty of Veterinary Medicine, University of Tehran, P. O. Box, 3262, Tehran Iran.

In all cases complete eyelids were digested in 10 percent KOH, washed, placed in 12 ml. centrifuge tube, centrifuged at 2,000 g gravity for 5 minutes. From the sediment 0.1 ml. was pipetted to a slide and covered with a coverslip and examined microscopically. Sections of heavily parasitized eyelids were fixed in Bouin's solution, paraffin embedded, cut at 8 to 10 μ m. and stained with haematoxylin and eosin or Mallory's triple stain.

Care was taken to prevent contamination with *Demodex* from the other parts of the body. Such contamination could cause false results. Mites were found in several stages of development in both section and scraping.

CONCLUSION AND DISCUSSION

From the foregone account it may be concluded that under normal condition demodectic mange in the eyelids of ruminants may be regarded as a diffuse infestation of a mild nature with only a moderate degree of skin reaction. No evidence of secondary bacterial invasion or histological changes other than distension of the hair follicle was found. The survey indicates that in Iran 36.8 percent of cattle, 2.5 percent of buffalos, 15.5 percent of sheep, 28.4 percent of goats, and 15 percent of camels are infected with *Demodex* mite in the eyelid. The results obtained suggest a very high contamination of some ruminants with *Demodex* mite, and maximum infection being in cattle (36.8 percent) while the minimum infection rate was of buffalos (2.5 percent). To our knowledge, this is the first record of the presence of demodicosis in cattle, goats, buffalo, and camel in Iran.

SUMMARY

Incidence, percentage and the histopathological changes in the eyelid of ruminants due to *Demodex* were studied.

65 out of 182 (36.8 percent) cattle, 4 out of 160 (2.5 percent) buffalos, 29 out of 186 sheep (15.5 percent), 53 out of 186 (28.4 percent) goats and 23 out of 153 camels (15 percent) were infected with *Demodex* mite in the eyelid.

No evidence of secondary bacterial invasion or histological changes other than distension of the hair follicle was found. This is the first record of the presence of demodicosis in cattle, buffalo, goat and camel in Iran.

RÉSUMÉ

Nous avons étudié l'incidence, le pourcentage et les changements histopathologiques de paupière des ruminants provoqués par *Demodex*.

65 sur 182 (36,8 0/0) des bovins, 4 sur 160 (2,5 0/0) des buffles, 29 sur 186 (15,5 0/0) des moutons, 53 sur 186 (28,4 0/0) des chèvres et 23 sur 153 (15 0/0) des chameaux avaient l'infection de paupière causée par *Demodex* mite.

Nous n'avons trouvé ni l'invasion bactérienne secondaire ni les changements histopathologiques, seulement la distension des poils folliculaires. C'est la première fois que nous trouvons la présence de démodicose chez les bovins, buffles, chèvres, moutons et chameaux en Iran.