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SOME ECTOPARASITES OF THE HEDGEHOG HEMIECHINUS AURITUS GMELIN (INSECTIVORA, ERINACEIDAE) IN CENTRAL IRAQ .

Jalil Abul-hab and Batool Ali Shihab

Regional Training Center for Malaria and Vector Biology and Control and College of Education for Girls. University of Baghdad, respectively

Abstract

Specimens of the hedgehog **Hemiechinus auritus** Gmelin, which were trapped in two places on the Eastern shores of the Tigris River, some 50 and 60 Km, south of Baghdad, central Iraq, were searched for ectoparasites. They revealed the following parasites : One species of Anoplura : **polyplex spinulosa** (Burm.), family Hoplopleuridae, two species of fleas : **Synosternus pallidus** (Tasch.) and **Ctenocephalides felis** (Bouche), family pulicidae, One mite species : **Ornithonyssus bacoti** (Hirst), family Macronyssidae and two tick species : **Rhipicephalus leporis** and **R. turanicum** family Ixodidae. All these ectoparasite species are new records on this hedgehog in Iraq

INTRODUCTION

Ectoparasites of domestic mammals of Iraq are fairly known. Abul-hab (1984) dealt with the ectoparasites of commensal rodents in Baghdad area. He reported the occurrence of fleas, lice, mites and ticks on these animals. Leiper (1954) surveyed all the farm animals of Iraq for endo and ectoparasites. He found several species of each of the ticks, mites, lice, fleas and other minor parasitic arthropods. Hoogstraal and Kaiser (1958) reported on 21 species in a collection of over 500 adults and 900 nymphs and larvae. They stated that the bulk of the specimens was furnished by the Iraq Veterinury Service. Most of the material was secured from domestic animals. Robson et al covered the Ixodoidea of domestic animals of Iraq and studied the seasonal, geographical and hosts distribution in a series of papers spanned three years (1967, 1968, 1969). These authors did not add new records to what already had been known and recorded by previous workers except the finding of a single specimen of the species **Ambylomma lepidum** Donitz. Khalaf (1963) presented a list of ticks species which were collected from domestic and wild animals .

The ectoparasites of wild animals (reptiles, birds and mammals) of Iraq are still poorly studied. Hubbard (1960) studied the flea fauna of the country which included hedgehogs. While collecting the fleas, Hubbard (1955) collected ticks from these animals. In the above mentioned study, Hoogstraal and Kaiser (1950) mentioned in the

collection which they studied there were ticks from wild animals furnished by different sources. These wild animals included reptiles, birds and mammals Abul-hab (1973 and 1986) reported on the bed bugs and the of bats and the ectoparasites of some semiwild rodents. respectively. In these studies he reported finding several species bed bugs fleas, lice. mites and ticks. Abdullah and Hassan (1987) working on hedgehogs in Ninavah Governorate reported finding four ixodid epecies and ona flea species on the long eared hedgehog .

Some of the wild mammals 6 and birds, are well known animal resevoirs of pathogens of many zoonotic diseases (Mattingly **et al,** 1973). This is true especially in the case of rodents, bats. carnivors and ungulates. Some Insectivors. like Armadella. do harbour the trypanosomes of Chaga's disease and act as reservoirs of these flagellates in the Americas (Mattingly et **al** 1973). Farhag Azad (1973) in Afghanistan found one species of hedgehogs, namely **Hemicchinus megalotis** naturally infected by tularemia .

It is because of their importance as pathogen reservoirs and because their ectoparasites are little known in Iraq. the hedgehogs deserve more attention. The present study reports on a small collection of ectoparasites collecte off a hedgehog in central Iraq. According to Hatt (1959), there are three species of hedgehogs in Iraq. The most videly spread of these species is the long earod hedgehog. **Hemiochinus auritus** Gmelin .

MATERIALS AND METHODS

In the course of a study on the ectoparasites of rodents, ten specimens of hedgehogs were unintentionally trapped on two occassions. March 3, 1986 and Augast 18, 1987. in two places, in Suwaura and Azizyyah Qadhas, Wassit Governorate. central Iarq. Both places are agricultural districts. situated on the Tigres river,some 50 and 60 km. south of Baghdad.

The ectoparasites were obtained by anesthetising the hedgehogs in a transparent bag with chloroform. After that they were vigorously shaken while in the bag and then discarred. The bag was emptied on the white sheet of paper spread on a shallow metal pan. The ectoparasites droped on which the sheet were carefully talen to a petri dish with 70% ethyl alcohol. The ectoparasite specimens were preserved in 70% ethyl alcohol.The whole study was carried out in the laboratory of medical entomology, Regional Training Center. All the identifications were locally made .

RESULTS

All the specimens of the hedgehog which were trapped turned out to belong to one species. **Hemiechinus auritus** Gmelin. Table 1 shows the ectoparasite species which were obtained from these specimens. As the table shows. the parasites included one lice species. two flea speceis. one mite species and probably two tick species. The table also shows parasite stages. i.e .larvae, nymphs,adult males and females and the number of the parasites according to stages and sex.

DISCUSSION

The ectoparasites which are reported here are well known as to their life history medical importance and the stages which are involved in pathogen transmission. The following discussion deals only with their distribution and previous records in Iraq and some other middle eastern countries, if available.

Lice : Anoplura : only one species of lice found, which is **polyplax spinulosa** (Burm.), family Hoplopleuridae. The lous is a cosmopolitan rodent species. Abul-hab (1984, 1986) found it in great numbers, on both commensal and semiwild rodents, collected in several places in Iraq. Theodor and Costa (1967) working in Occupied palestine, found the specise on several rodenes, but not on insectivora. Abdullah and Hassan (1987) did not find on **H.auritus** which they surveyed for ectoparasites in Ninavah. The lice on domestic or wild animals are not known to transmit pathogens to man, they may keep some disease infections going on among their animal hosts. The present finding of **p. spinulosa** on **H. auritus** constitutos the first record for Iraq and Eastern Meditoranean countries .

Table 1 : Ectoparasites recovered from ten specimens of Hemiechinus auritus hedgehog in central Iraq .

Parasite species	Total number recovered per stage and sex			parasite index * per stage and sex		
	L**	N	A	L	N	A
Polyplax spinulosa						
(Anopleora, Hoplopleucidae)	--	2	1 M 2 F	--	0.2	0.1 M 0.2 F
Ctenocephalids felis						
(Siphonaptera, pulucidae)	--	--	1 M 4 F	--	---	0.1 0.4
Synosternus pallidus	--	--	2 F	--	--	0.2
Ornithonyssus bacoti						
(Acarina, Macronyssidae)	--	8	10	--	0.8	1.0
Rhipicephalus leporis	8;	4	11 M	0.8	0.4	1.1
(Acarina, Ixodidae)			13 F			
Rhipicephalus ? turanicum						
(Acarina , Ixodidae)	--	--	4 M	0.0	0.0	0.4
Total six species	8	14	48	0.8	1.4	4.8

* Parasite index means number of parasites found per individual inset searched

** L : larvae , N : Nymph , A : adult

*** M : male , F : female

Fleas (Siphonaptera) : Two species of fleas were recovered and both belong to the same family, pulicidae These species are :

Ctenocephalides felis (Bouchs). This is a cosmopolitan flea species and was previously reported by many investigators in Iraq on domestic and wild animals. Only Abdullah and Hassan (1987) previously reported it on **H. auritus**, in Iraq. The species is also recorded in almost all the Middle Eastern countries, i. e. Lebonon (Lewis, 1962a), Syria (Lewis, 1962b), Turkey (Lewis, 1965),Iran (Farhag Azad, 1973), Occupied palestine (Theodor and Costa, 1967) and Saudi Arabia (Lewis, 1982) .

Synosternus pallidus (Tasch.). Hubbard (1960) was the first to record this flea species from Iraq from an undetermined hedgehog. The present report may be the first on **H. auritus.** Lewis (1982) reported it on several mammals, but he states that it is mainly of a parasite of hedgehogs and these mammals are undoubtedly the preferred hosts. Thoedor and Costa (1967) reported it on three species of hedgehegs, including **H. auritus** .

Mites (Acarina) : No previous records of mites on the hedgehogs are known from Iraq. In the present work, which is the first record, one mite species was found namely **Ornithonyssus bacoti** (Hirst) . the family Macronyssidae. This species of mites is a world wide parasite of rodents and commonly known as the Tropical rat mite. Abul-hab (1984 and 1986) previously reported it from

both commensal and semiwild rodents in Iraq . In this work, both nymphs and adults were found .

Ticks (Ixodoidea) : probably two species of ixodid ticks were found in this work. These species are : **Rhipicephalus leporis** pomerantzey and **R. ? turanicus** pomerantzov and Matikashvili. The present work is the first record for the first tick species on **H. auritus**. Abdul Rassoul and Mohammad (1988) recorded **R. leporis** on **Paraechinus aethiopicus .** These same authors reported **R. turanicus** on **H. auritus,** among other wild mammals. Most of the **Rhipicephalus** species are three hosts species.The hedgehogs constitute an easy and available ground hosts for these species. In the present work all stages were found.

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J. Abul - hab and B. A. Shihab

بعض الطفيليات الخارجية على القنفذ طويل الاذن في وسط العراق

جليل أبو الحب و بتول على شهاب

الخلاصة

جرى فحص افراد من القنفذ طويل الاذن كانت قد أخذت من منطقتين على شاطىء دجلة ، حوالي ٥٠كم و ٦٠كم جنوب بغداد ، بحثا عن الطفيليات ـ الخارجية كانت النتيجة ان هذه الافراد من القنفذ كانت مصابة بالطفيليات الخارجية التالية: نوع واحد من القمل هو **PolyPlax Spinulosa** (Beerm.) من العائلة (Hoplopleuridae) ، نوعان من البراغيث هما **Synosternus Pallidus** (Tasch.) , **Ctenocephalides Felis** (Bouehe) **Ornithonyssus** وكلاهما من العائلة (Pulicidae) **bacoti** (Hirst) نوع واحد من الحلم هو من العائلة (Macronyssidae) ونوعان من القراد هما **R. turanicum** Pam. , **Rhipicephalus Leporis** Pom. وكلاهما من العائلة Ixodidae .

كل هذه الانواع من الطفيليات الخارجية تسجيلات جديدة ، على هذا القنفذ في وسط العراق .