

**INSECT PESTS INFESTING ANIMAL MUSEUM
COLLECTIONS IN IRAQ**

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ABSTRACT

Studies were conducted from 1980 to 1989 to determine the insect pests infested animal museum collections in Iraq. Twelve species of Coleoptera were recovered, eleven belonged to the Dermestidae, and one to the Tenebrionidae. Of these *Anthrenus coloratus* Reitt. and *Phradonoma nobile* (Reitt.) were the most commonest and widely distributed species. *Trogoderma bactrianum* Zhant. and *Orphilus niger* (Rossi) were recorded here for the first time in Iraq .

INTRODUCTION

Museum collections are an important source of reference to the researcher and students of natural history. These collections are subject to attack by various kind of pests particularly insects. Some of 102 species of insects have been reported doing considerable damage to museum specimens in U.S.A. (Edwardset al. 1980). Dermestid beetles are the most important and most numerous group of the order Coleoptera attacking a large number

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of materials of high protein content such as museum specimens of insects, stuffed birds, hoofs, horns, furs, skins etc. The larvae are apparently entirely responsible for the damage done by these pests. They attack the intersegmental membranes of the body, genitalia and others. As a result of such infestation the material becomes fragile losing many parts of taxonomic value and often rendered them unfit for systematic work.

Early literatures concerning the dermestid beetles as attacking museum collections have been reviewed by Hinton (1945). So far, in Iraq no representative of these pests have been investigated. however, it seems, useful to give here a brief account of these insects and their importance and method to be effectively used to prevent their damage, and to help those involved in museum collection and to lay foundation for further investigations.

MATERIALS AND METHODS

A survey for the museum insect pests was carried out in Iraq on different dates during 1980-1989. A total of eleven animal museum collection particularly insects were visited. These are Agriculture Colleges in Baghdad, Basra and Mosul; Agriculture Institutes in Baghdad, Basra, Amara and Nasiriya ; Iraq Natural History Museum: Biological Research Centre ; Department of Entomology (Ministry of Agriculture) in Baghdad and Dohuk. Visits were made to each Museum during early part of April before adult emergence. Special attention was given to the collection of Iraq Natural History Museum, because it consists of various kind of Natural History materials

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particularly mammals, birds, fishes, invertebrates and plants. Part of this collection has been displayed in their natural habitat in glass cases, others particularly bird study skins, animal skins and insects were housed in standard museum drawers .

Most Entomological Institutions visited have stored their collections either in cabinets of glass-top drawers (insect - proof) or in store-boxes. The above collections were carefully examined for insect infestation . It was quite easy to recognize such infestation by the occurrence of a layer of dust under the infested specimens. Adult beetles were collected from the drawers or boxes and live larvae soon were removed from infested materials and placed in petridishes maintained in the laboratory till emergence. Representative specimens of each species being identified and confirmed by Professor Dr. R. Zhan-
ntiev of Department of Entomology, Moscow State University USSR. Specimens of all species have been deposited in Iraq Natural History Museum .

RESULTS AND DISCUSSION

Observation on insect pest infesting preserved animal museum collections in Iraq, revealed twelve species of beetles, belonging to two families. Of these two (marked with an asterisk in table 1) are new records for Iraq. The species along with their food preference are given in table 1. For convenience the genera and species arranged according to Mroczkowskis (1963) catalogue. The majority of the species found here are well known

Table I. Insect pests found in Animal Museum Collections in Iraq.

Pest species	Insects	Collection preference		
		Birds	Mammals	Dried fish
Dermestidae				
Attagenus cyphonoides Reitter	X			
Attagenus fasciatus (Thunberg)	X			X
Attagenus lobatus (Rosenhauer)	X			
* Trogoderma bactrianum Zhantev	X			
Trogoderma granarium Everts	X			
Trogoderma inclusum LeConte	X			
Trogoderma variabile Ballion	X			
Phradonoma nobile (Reitter)	X			X
Anthrenus coloratus Reitter	X		X	
Anthrenus flavipes LeConte			X	
* Orphilus niger (Rossi)	X			
Tenebrionidae				
Tribolium castaneum (Herbst)	X			

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pests of museum in one or more country of the world (Hinton. 1945 ; Edwards et al. 1980) and some such as *Trogoderma granarium* Everts and *Tribolium castaneum* (Herb.) are well known pest of stored grains and other products in this country (Hussain. 1963 ; Al-Ali, 1977). The commonly occurring beetles were *Anthrenus coloratus* Reitter and *Phradonoma nobile* (Reitter) which were present in particaly every museum collection examined. Insect with frequent occurrence were *Attagenus fasciatus* (Thunb.), *Trogoderma variable* Ball., *Trogoderma granarium*, *Anthrenus flavipes* Lec. and *Tribolium castaneum*. Species that occur in a few numbers were *Trogoderma inclusum* Lec., *Trogoderma bactrianum* Zhant., *Attagenus cyphonoides* Reitter and *Attagenus lobatus* (Rosenh.). Rarely occurng insect was *Orphilus niger* (Rossi) . Some of these species such as *Anthrenus coloratus*, *Anthrenus favipes* and *Trogoderma variable* were sufficiently numerous during a year or more to be of a great importance in museums, others namely *Phradonoma nobile* and *Attagenus fasciatus* present only in small numbers and the damage they caused was slight. The damage caused by *Trogoderma variable* on this side has been so serious for the last few years. It was observed that the adult of this species is capable of living without requiring food or water in order to attain their full fecundity and longevity. Similar finding was also recorded dy Norris (1936) on *Trogoderma versicolor* and dy Hinton (1945) on *Trogoderma granarium*. It is probable, however, that within few years this beetle will become abundant enough to destroy any insect collection

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in Iraq unless somebody has to pay attention for this problem .

Although it is beleived that *Trogoderma granarium* larvae prefer cereal products to substances of animal origin (Hinton, 1945), I have observed this dermestid well develop on insect collections. Similar observation was also reported by Lindgren and Vincent (1959) on this matter. Despite of having more than seven species of *Anthrenus* in this country (Derwesh, 1935 ; Al-Ali, 1977), only two namely *Anthrenus coloratus* and *Anthrenus flavipes* were found attacking museum collections. *Anthrenus coloratus* feeds on a wide variety of animal products and have been observed causing considerable damage to insect materials and stuffed animals particularly rodents (hair,falling from fur) whereas *Anthrenus destorys* stuffed birds and some times animals but not insects. Adults of both species are usually active during Spring tnd Suramer and visit flowers of umbiliferous plants particularly celery and parsley and feed on their pollens and necter.

For the past 25 yeare I have had the insect collection of the Iraq Natural History Museum under my care and supervision officially.However, I have made considerable efforts to prevent damage by these pests. Dust scattered of 10% Siven on the floor of a drawer of insects protected the contents from attack for more than three years.

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