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STUDIES ON SOME EXTERNAL PARASITES INFESTING MIGRANT QUAILS (*COTURNIX COTURNIX COTURNIX*) TO EGYPT

(With 6 Figures and 6 Plates)

By

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دراسات على بعض الطفيليات الخارجية التي تصيب السمان المهاجر الى مصر

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تم جمع عدد ٨٧ سمان مهاجر تم صيده حياً خلال فصل الخريف من شـــاطئ الإسـكندرية لفحصها والتعرف على الطفيليات الخارجية التى تصيبها . وقد كانت النسبة العامة للإصابـــة ٥٩,٨ %. وقد تم الحصول على ثلاث أنواع من القمل تم تصنيفهم : أوكسىليبرس دينتـلتس، ليبرس كابونس وميناكانسس بيليديولس. ووجد ايضاً ان نوع الأوكسىليبرس دينتـــاتس هـــو نوع القمل الشائع في السمان تحت الفحص في هذه الدراسة. ومن ناحية اخرى تم الحصـــول على نوع واحد من الفاش يتبع عائلة بروكتوفيلوديدى جنس بتروفاجس. وقد اقـــترحت هـــذه الدراسة ضرورة إجراء دراسات أخرى مستفيضة لتحديد نوع هذا الفاش.

SUMMARY

A total of 87 migrant quails were captured during Autumn from Alexandria beach to be examined for ectoparasites infestation. The percent of infestation was 59.8 %. Three species of lice were recovered namely *Oxylipeurus dentatus*, *Lipeurus caponis* and *Menacanthus pallidulus*. *O. dentatus* was found to be the most common louse infesting the investigated migrant quails. One species of mite was recovered which belonged to the family Proctophyllodidae , genus Pterophagus. Further studies were needed to identify the actual species of these mites.

Key words: *Migrant quails, Coturnix.*

INTRODUCTION

Egypt occupies an area of a strategic geographical position between continents with long coasts on both the Mediterranean and Red sea. This unique position is the reason why so many migratory birds as common grey quails (*Coturnix coturnix coturnix*) are concentrated in this area each Autumn and Spring (Bruun, 1985).

Quail farming began to increase in Egypt through the last few years due to its palatable meat and high production rate. By this increase in quail farms, many avian diseases could be transmitted to the domesticated quails in Egypt by the migratory ones. Ectoparasitic infestation is one of the most important parasitic diseases of birds that are not markedly host specific which makes infested foreign birds potentially dangerous carriers to other habitats (Petrak, 1982). Lice and mites infestations in poultry are well known to be true profit-eaters by causing irritation and disrupted feeding resulting in anemia, retarded growth, lowered egg production , decrease resistance and loss vitality. Brooding hens are disturbed that the normal egg incubation is interfered, thus reducing the percentage of hatchability (Manuel, 1981). These ectoparasites may also be mechanical or biological vectors to the more serious viral and bacterial pathogens (El-Akabawy and Mahmoud, 1995) beside its effect on the efficiency of flying.

In Egypt, several studies were conducted on lice (Madbouly, 1961; Selim et al., 1968; El-Shafei, 1977 and Otify, 1988 a & b) as well as on mites (Omar and Fahmy, 1985; Otify, 1988 a; Amer and El-Bashir, 1994 and El-Akabawy and Mahmoud, 1995) infesting avian hosts. The study of Otify (1988 b) was the only one that carried out on lice infesting quails, whereas, there were no available literatures dealing with mites infesting quails.

The present investigation was conducted to study the incidence and taxonomy of the recovered ectoparasites infesting migrant quails to Egypt.

MATERIALS and METHODS

Eighty-seven migrant quails identified as common grey quails (*Coturnix coturnix coturnix*) according to Bruun (1985) were captured from Alexandria beach during Autumn.

Feathers and unfeathered parts of body of each bird were thoroughly investigated by naked eye aided by a hand lens and bright light. Feathers harbouring mites were picked up , quickly transmitted to clean Petri dishes, covered and placed on warm plate for up to one hour to facilitate separation of living mites. The collected lice and mites were placed in 70% alcohol containing 5% glycerin. Specimens were cleaned with lactophenol, mounted and then identified according to Baker et al. (1956); Madbouly (1961); Stojanovich and Pratt (1962) and Manuel (1981). Camera lucida drawings of ectoparasites were made and photographs was likewise taken. A representitive number of lice and mites were measured using ocular micrometer mounted in a microscope.

RESULTS

The present investigation showed that 52 (59.8%) out of the examined 87 quails were found to be infested with ectoparasites. These ectoparasites were three species of biting lice and one species of mites. The lice spp. were *Oxylipeurus dentatus*, *Lipeurus caponis* and *Menacanthus pallidulus*, while that of mites was *pterophages sp.* *O. dentatus* was the most common louse of the examined migrant quails where it was found in 48 (92.3%) out of the 52 infested quails. On the contrary, *L. caponis* and *M. pallidulus* were found to infest one bird/each with an infestation rate of 1.92%. The *Pterophagus* species was the only species of mites recovered from the examined migrant quails where it infested 42(80.77%) out of 52 infested quails. Some investigated quails harboured a mixed ectoparasites infestations, as one infested with *O. dentatus*, *L. caponis* and *Pterophagus* sp., another one had *O. dentatus*, *M. pallidulus* and *Pterophagus* sp. and 36 quails infested with *O. dentatus* and *Pterophagus* sp.

Description of lice:

All lice infesting migrant quails under investigation belonged to the suborder Mallophaga, the biting lice. The mouth parts consisted mainly of the mandibles adopted for chewing and feeding on feathers and epithelial scales. Those that belong to the family Philopteridae (*O. dentatus* and *L. caponis*) were provided with roughly rectangular or square-shaped head with antennae extended outward beyond the margin of the head. Those that belong to the family Menoponidae were provided with roughly triangular head with grooves on the sides of the head where the antennae were concealed. The maxillary palpi were present.

Oxylipeurus dentatus (Sugimoto, 1934). This species occurred on the feathers of the head and neck. It was dark-grey or almost black in colour. Grossly, it was darker in colour and larger in size than *Lipeurus caponis*. Microscopically the abdominal segments were provided with triangular dark markings on either sides. The posterior end of the female was deeply clefted (Fig. 1, Plate 1), while that of the male was flattened or slightly clefted (Fig. 2, Plate 2). The penis was bulbous or rounded at the tip. The female ranged from 1.974 to 2.368 mm long and 0.622 to 0.815 mm wide (Average 2.015 X 0.723 mm). The male ranged from 1.301 to 1.920 mm long and 0.247 to 0.366 mm wide (Average 1.746 X 0.295).

Lipeurus caponis (Linn, 1758). This was the slender louse of the infested quails. It occurred mainly on feathers of the neck, wings and tail. They were found resting inbetween the barbules of feathers. They were inactive and didn't move even when were disturbed. They were dark grey in colour, elongated in shape with narrow dark areas on each abdominal segment margin. On the ventral aspect of the abdominal segment, there was a broad central marking. The female (Fig. 3, Plate 3) posterior end was bifid . Females and several mymphal stages were recovered from the infested birds but no any male could be detected . The female ranged from 1.640 to 2.013 mm long and 0.350 to 0.762 mm wide (Average 1.718 X 0.582 mm). The nymphal stages differed from the adult in having smaller size and the absence of fully developed genetalia.

Menacanthus pallidulus (Newmann, 1912). This species (Fig. 4, Plate 4) was very active lice, occurred on the feathers of the neck, back and breast. It was yellow-brown in colour. Each abdominal segment was provided with a row of setae on the dorsal surface. The abdomen was broad. The female had a rounded posterior end with 3 pairs of long bristles and fine setae inbetween. The female ranged from 1.981 to 2.314 mm long and 0.970 to 1.114 mm wide (Average 2.019 X 0.991 mm). No males of this species could be found in the collected specimens.

Description of mites:

All the mites recovered from the investigated migrant quails belonged to the suborder Sarcoptiformes, family Proctophyllodidae and *Pterophages* spp. This mite may be distinguished from other feather mites in that the two anterior pairs of legs don't posses the posterior angulations. The male and female each had a dorsocentral and two dorsolateral plates, a hysterosomal plate and several accessory plates.

The anterior propodosomal vertical setae were not present. The female (Fig. 5, Plate 5) posterior end was tapering, bilobed and possessed strong long setae. The male (Fig. 6, Plate 6) posterior end was slightly bilobed and possessed large leaf-like apendages. The male had adanal copulatory suckers. The female ranged from 0.391 to 0.455 mm long and 0.184 to 0.215 mm wide (Average 0.418 X 0.191 mm). The male ranged from 0.382 to 0.421 mm long and 0.194 to 0.220 mm wide (Average 0.399 X 0.210 mm). Further investigations are needed to identify the species of this mites.

DISCUSSION

Lice infestation in the present study was 92.3%. A result , was nearly similar to that recorded by Otify (1988 b) – 96 % . *O. dentatus*, *L. caponis* and *M. pallidulus* were the lice species recovered from migrant quails in the present study, whereas, Otify (1988 b) reported another four species of lice on migrant quails. The *O. dentatus* was the most common spp. in the present investigation, while *Cuclotogaster heterographas* was reported as the predominant one by Otify (1988 b). Manuel (1981) recorded the same spp. recovered in the present work in the domestic chicken in Philippines, this may be attributed to the wide host range of these species; an opinion coincided with that of Petrak (1982). In the present study, the male of two lice species could not be obtained, this may be due to early infestation and / or these birds were not recently captured; a suggestion came in agreement with Petrak (1982).

One species of feather mites (*Pterophagus* sp.) was recorded from migrant quails in the present investigation. As far as the author is aware, quails were not recorded to be a host for the species of the genus *Pterophagus* mites. Further studies will be needed to identify the obtained species of *Pterophagus*, where Baker et al. (1956) reported that pigeons could be infested by *P. strictus* on the body feather. Also, El-Akabany and Mohamoud (1995) reported it in moorhens, doves and sea gulls.

From the previously mentioned data of the present study and that of others as well as the fact that ectoparasites may not be markedly host-specific, it appeared that migrant quails to Egypt could be dangerous carriers of some ectoparasites to the domesticated quails (Japanese quails) and other avian hosts in Egypt.

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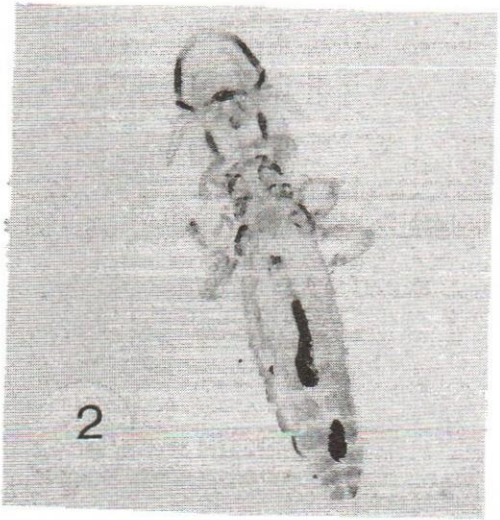
LIST OF FIGURES

LIST OF PLATES


1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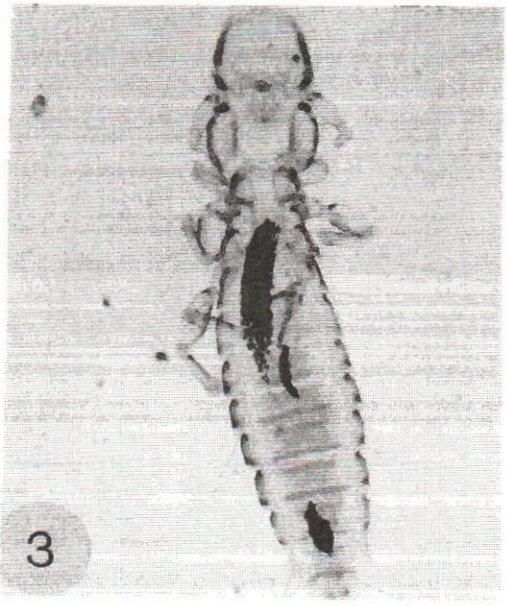
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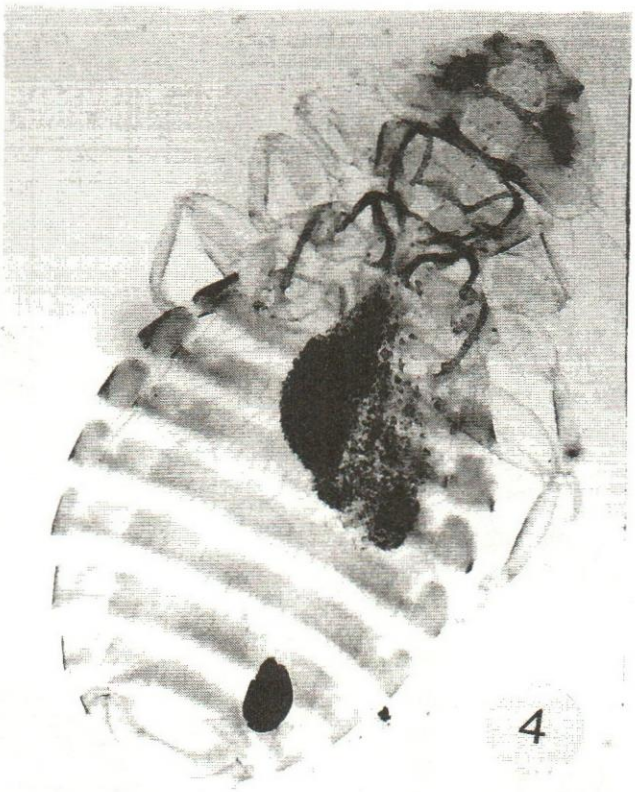

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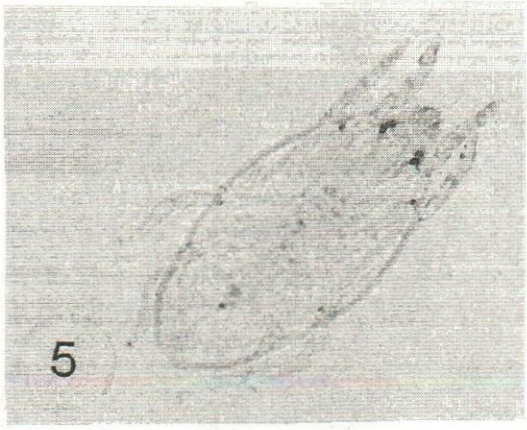

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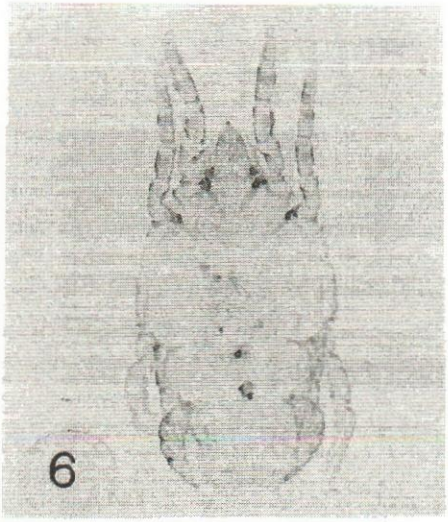

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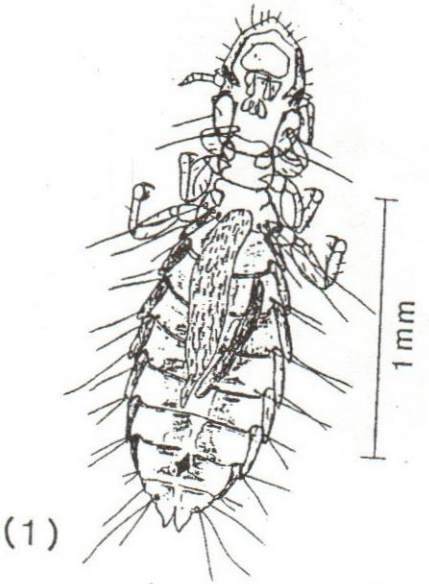
Plates (1 - 4)



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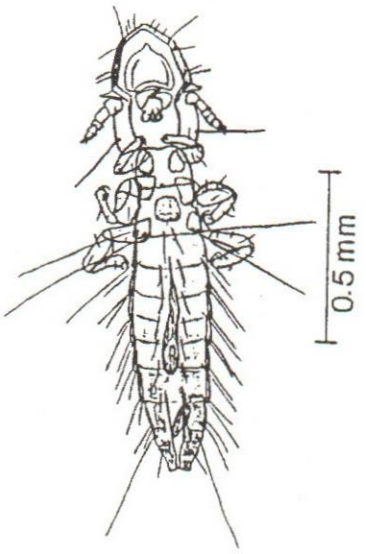

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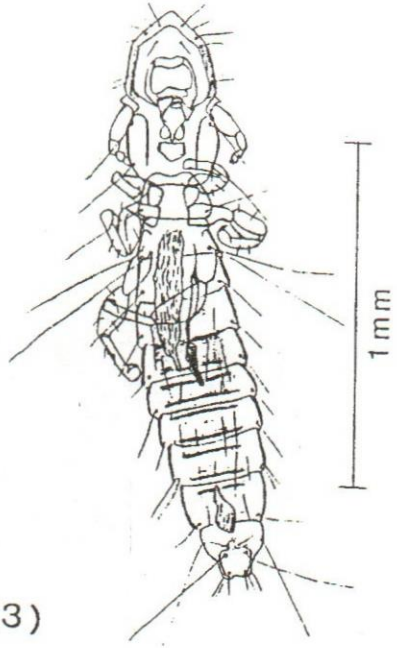

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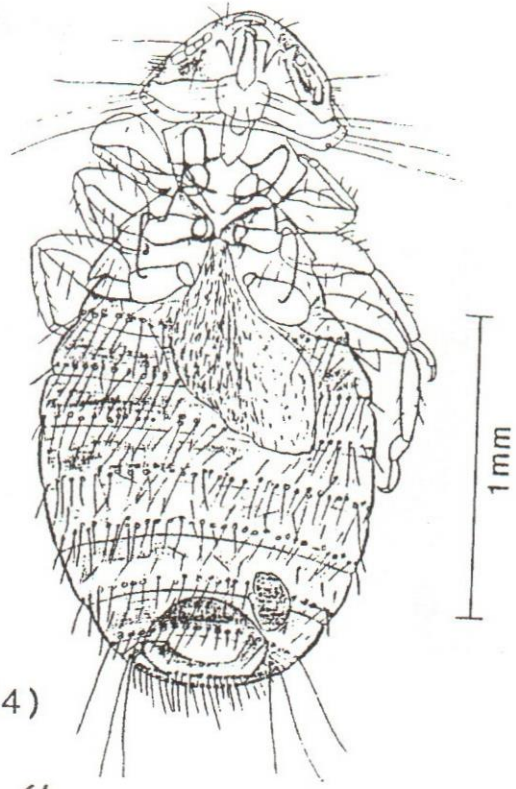

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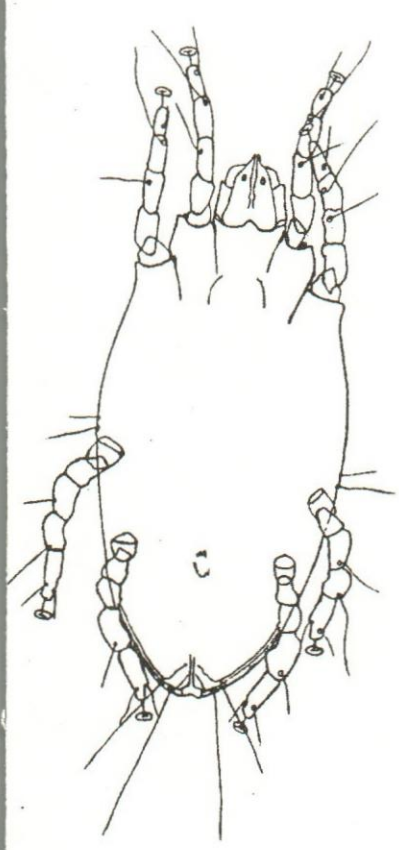
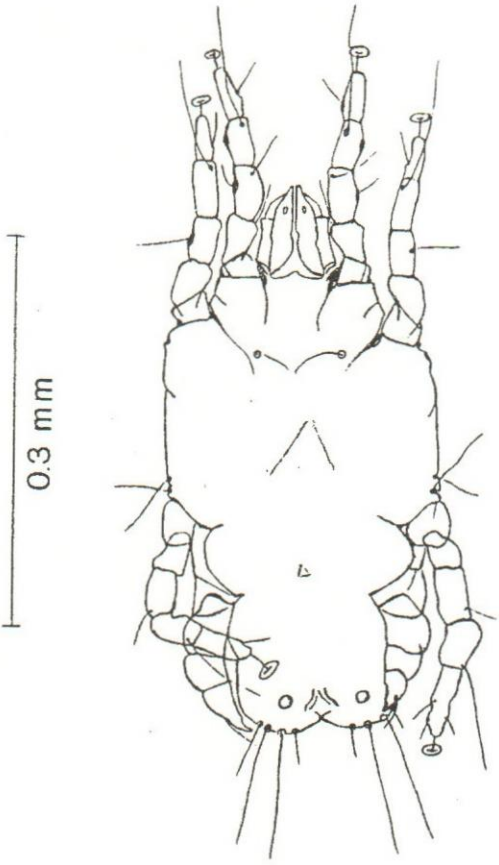
Plates (5 & 6)





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