

قسم : الطفيليات - كلية الطب - جامعة أسيوط

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اكتشاف ميكروفيلاريا جالاكتوتس ، نوع جديد ، كعدوى طبيعية فى

طيور ارثروبوجيا جالاكتوتس فى صعيد مصر

لبلى مخلوف ، عاطف سكللا ، محمد منيب

أنشاء القيام بعمل مسح طفيلى لدراسة لبعض أنواع الطفيليات التى قد تصيب الطيور البرية لصعيد مصر ، وجد الباحثون أن أحد الطيور المعروفة باسم ارثروبوجيا جالاكتوتس أو البليل الأحمر والذى تم اصطياده قرب مدينة أسيوط مصابا بالميكروفيلاريا . ومقارنة هذه الميكروفيلاريا ، بعد وصفها ورسمها ، بجميع الأنواع السابق وصفها فى الطيور البرية وجدت اختلافات كبيرة وقد اقترح ان هذه الميكروفيلاريا هى نوع جديد ، ولهذا سميت باسم ميكروفيلاريا جالاكتوتس . وهذه هى المرة الاولى التى يسجل فيها إصابة طيور البليل الأحمر بديدان الفلاريا فى مصر وربما فى العالم كله . ولذا يقترح الباحثون استمرار هذا البحث للعثور على الدودة البالغة ودراسة دورة حياتها وتحديد مصدر العدوى لما لذلك من أهمية بالغة .

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MICROFILARIA GALACTOTES N. SP. RECOVERED FROM A NATURALLY
INFECTED WHITE THROAT RUFIOUS, ERYTHROPYGIA G. GALACTOTES IN UPPER EGYPT
(With One Table and One Plate)

By

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SUMMARY

During a survey in order to study the parasitofauna of wild birds in Upper Egypt, microfilariae were encountered in a white throat rufous, Erythropygia g. galactotes which was captured near Assiut city. The microfilariae were illustrated, fully described and compared with related species. It was found to differ from all of them in certain morphological features and accordingly, it was considered to be a hitherto unknown species to which the name Microfilaria galactotes is suggested. It is the first time for this species or any other species to be described from Erythropygia g. galactotes.

INTRODUCTION

Occurance of filarial infection in wild birds had been reported by few Workers. MINCHIN (1910) listed bee-eater (Merops albicollis), blue plantain-eater (Corytheola cristata) and francolin (Francolinus mulemae) as hosts for infection with microfilariae from Uganda. FRANCHINI (1924) reported the occurrence of microfilariae in Passer montanus, Athene noctua, Circus aeginosus, Pisborina scops and Coturnis communis from Italy. LOVE et al. (1952) determined the incidence of microfilaria in Centurus carolinus, Tyrannus tyrannus, Corvus brachyrhynchos paulus, Cyanocitta c. cristata, Thryothorus ludovicianus and Mimus p. polyglottos from Southwestern Georgia, U.S.A., MANWELL (1953) recorded the microfilarial infection in western robin (Turdus propinquus), white-crowned sparrow (Zonotrichia leucophrys) and white throated sparrow (Zonotrichia albicollis) from high rockies, Colorado, U.S.A. FARMER (1960) noted the infection with microfilariae in a blue jay (Cyanocitta cristata) and a bronze grackle (Quiscalus quiscula versicolor) collected and central Iowa, U.S.A. MARX (1966) recorded the presence of microfilariae in Icterus galbula, Carpodacus p. purpureus and Spizella p. passerina from Wisconsin birds. BRAUN and WILLERS (1966) checklisted the microfilarial infections among ten different species of North American grouse. MC LAUGHLIN (1968) revealed microfilaria infection in grackle (Quiscalus quiscula), starling (Sturnus vulgaris) and redwinged black bird (Agelaius phoeniceus) from New Jersey, U.S.A. STABLER and KITZMILIER (1970) studied the incidence of microfilaria among passeriformes birds from Colorado, U.S.A.

In Egypt, few records of microfilarial infection among wild birds had been published. However, HALFAWI (1942) and NAGATY and HALFAWI (1943) erected several different new species of microfilaria among wild zoo birds in Cairo.

MATERIAL AND METHODS

One specimen of Erythropygia g. galactotes was captured near Assiut city in May 1980. Thin and thick blood smears were collected from the heart blood, air dried, fixed in absolute methyl alcohol and stained with Giemsa's stain. Preliminary examination of an entire smear was made under the low power of the microscope followed by the oil immersion inspection. Drawings of the encountered microfilariae and measurements of their landmarks were done by the aid of camera lucida. Post-mortem examination was also carried out as a trial to find the adult worms.

RESULTS

Microfilaria galactotes n. sp.

Over than 15 microfilariae were detected in one blood smear obtained from the heart blood of a white throat rufous, Erythropygia g. galactotes. Trials to find the adult worms in this host failed.

Morphology:

The microfilariae are non-sheathed, which tend to be straight or slightly coiled, shows graceful curves in

the blood films. It is long and slender, measuring 135 - 200 μ in length and 3 - 5 μ in breadth. Its anterior extremity is rounded and posteriorly it tapers into a fine long straight tail. The cuticle takes a reddish colour by Giemsa stain and shows transverse striations specially at the inner side of the curves. The column of nuclei is composed of large digitiform to oval well defined nuclei. They mostly clump together, but do not mask the anatomical land marks of the microfilaria. Cephalic space is 1.2% of the total length, and there is usually a pair of pear-shaped oral structures "Mundgebilde". In the tail region, the column of nuclei is composed of a single row of three to four long nuclei which reach the tip of the tail.

The nerve ring is an interruption at about 25.8% of the total length of the body from the anterior extremity. It appears as an oval empty space or a rounded cell with a central nucleus. The excretory pore is oval and is about 40.9% of the total length of the body from the anterior extremity. The excretory cell is rounded and located immediately posterior to the excretory pore. There is four interruptions posterior to the excretory cell which represent the genital cells, namely G1, G2, G3 and G4. The G1 is large oval and is about 59.8% of the length of the body from the anterior end, while G2 is about 72.6%, G3 87.3% and G4 92.4%. Anal pore could not be detected.

An internal body "Innenkorper" can easily be demonstrated in this microfilaria. It appears as light reddish granular body when stained by Giemsa, and its length is about 1/16 of the total length of the microfilaria. Plate 1.

Host : Erythrogygia g. galactotes.

Locality : Assiut Governorate, Upper Egypt.

Specimens : Type material is deposited in the Dept. of Parasitology, Faculty of Medicine, Assiut Univ.

DISCUSSION

Although the occurrence of blood parasites in wild birds had been reported from many parts of the world, records on wild avian fauna in Egypt is still limited. Several new species of microfilariae were discovered by NAGATY and HALFAWI (1943) in Sturnidae zoo birds from Egypt. Microfilaria galactotes, under discussion, is remarkably different morphologically from the previously known species in many points. The criteria used for differentiation was based on measurements, presence of the sheath, shape of the mouth structure and the tail, presence of the internal body, differences in the position of the anatomical land marks and the host involved, table 1.

The present specimen is more or less similar to Microfilaria kadryi NAGATY and HALFAWI (1943) in total length and breadth, but can be easily differentiated on the following grounds. The tail contains 3 - 4 long nuclei reaching the tip in the present material, while it is free from nuclei in the previously described species. Moreover, the presence of criteria for differentiating it from M. kadryi.

According to the available literature, it seems that, this is the first record of the filarial infection to exist in the white throat rufous, Erythrogygia g. galactotes in Egypt and possibly in the world, and to which the taxonomic name Microfilaria galactotes is suggested.

Erythrogygia g. galactotes is considered as an emigrating bird, visiting Egypt during summer (EL-NEGUMY *et al.*, 1947). Nevertheless, an important question is still waiting answer, whether this microfilarial infection occurred in Egypt, or such parasite is imported and will be adapted to the Egyptian birds. Extension of this work to recover the adult worms and trials to elucidate the life cycle of the encountered parasite is therefore highly recommended.

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MICROFILARIA GALACTOTES

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TABLE (1)

Comparison between *Microfilaria galactotes* n. sp. and the previously described species by Nagaty & Halfawi (1943)

	Mf. Leilae	Mf. Kadryi	Mf. Nomani	Mf. Khalili
Host	<u><i>Sturnus vulgaris</i></u> , starling	<u><i>Sturnopaster</i></u> <u><i>capensis</i></u> , Indian pied myna.	<u><i>Temenuchus</i></u> <u><i>pagodarum</i></u> , pagoda starling.	<u><i>Acridotheres t.</i></u> <u><i>tristis</i></u> , common myna.
Adult	<u><i>Diplotrisaena leilae</i></u>	Not found.	Not found	Not found
Total length	675 - 169 u	130 - 189 u	34.2 - 150.5 u	285 - 370 u
Breadth	3.5 - 5.4 u	3 - 6 u	3.6-5.4 u anteriorly 1.8 u posteriorly	5.4 - 7.2 u
Cephalic space	1.6 %	1 %	-	1 - 2 %
Nerve ring	22.9 %	23.7 %	31 %	19.6 %
Excretory pore	32.6 %	33.6 %	33.9 %	27.7 %
Excretory cell	35.4 %	-	40 %	33 %
G 1	56 %	58.5 %	58 %	53.1 %
G 2	67.8 %	-	63.7 %	63.5 %
G 3	77.7 %	-	78 %	70.3 %
G 4	81.9 %	-	81.7 %	78.3 %
Anal pore	14% from posterior end	At the posterior end	-	13 %
Sheath	Non sheathed	Non sheathed	Non sheathed	Sheathed
Mundgebilde	Pair	Pair	-	-
Tail	Fine, twisted and free from nuclei	4.5 nuclei and not reach the tip	Blunt & filled with nuclei	Tapers into fine end straight or coiled sometimes present, 1/6 - 1/4 of total length.
Internal body	-	-	-	-

(Cont'd) Table (1)

	<u>Mf. Azizae</u>	<u>Mf. Salemi</u>	<u>Mf. galactotes n. sp.</u> present study (1980)
Host	<u>Acridotheres</u> <u>Javanicus, Javanmyna.</u>	<u>Caracious g.</u> <u>garrulus, blue jay</u>	<u>Erythropygia g.</u> <u>galavtotes, white throat rufous</u>
Adult	Not found.	<u>Squamofilaria coronata</u>	Not found
Total length	53.6 - 116.8 u	47 - 68 u	135 - 200 u
Breadth	2.7 - 5.4 u anteriorly 0.9 - 1.8 u posteriorly	3 - 6 u anteriorly 0.9 - 1.8 u posteriorly	3 - 5 u
Cephalic space	3 %	3 %	1.2 %
Nerve ring	25.5 %	24.9 %	25.8 %
Excretory pore	36.6 %	34.5 %	40.9 %
Excretory cell	41.6 %	-	44.5 %
G 1	61.9 %	58.9 %	59.8 %
G 2	68.7 %	-	72.6 %
G 3	-	-	87.3 %
G 4	82 %	77.3 %	92.4 %
Anal pore	-	14.6 %	Not detected
Sheath	Non sheathed	Non sheathed	Non-sheathed
Mundgebilde	Single	pair	pair
Tail	Short, curved & markedly narrower	tapers suddenly into narrow pointed end	3-4 long nuclei in a single row and reach the tip which is fine, straight and long.
Internal body		-	Present, 1/16 of total length

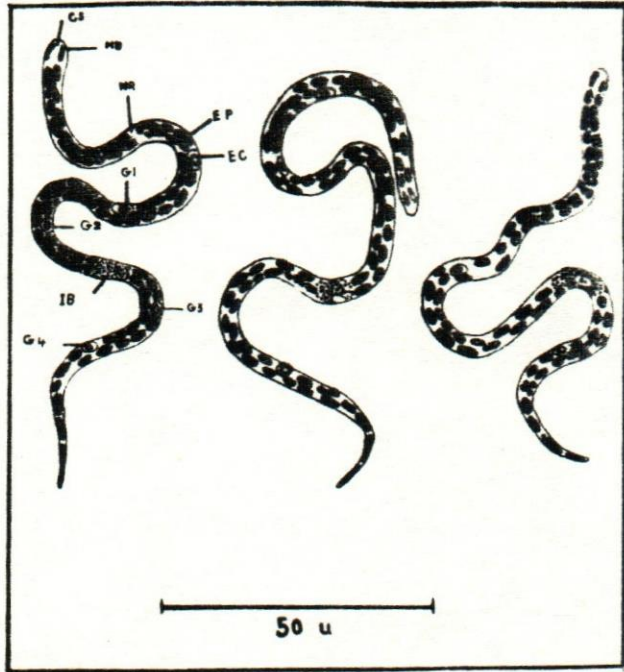


Plate (1)

Abbreviations: CS Cephalic space.
 MB Mouth structure.
 NR Nerve ring.
 EP Excretory pore.
 EC Excretory cell.
 G1 First genital cell.
 G2 Second genital cell.
 G3 Third Genital cell.
 G4 Fourth genital cell.
 IB Internal body.

