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Three New Species (Cestoda: Davaineidae) from the Rock Pigeon *Columba levia domestica* with Comments on the Infection

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Raillietinia canabia sp.n., *R. Zahratis* sp. n. and *Cotugnia majdoubi* sp. n. were described from the ileum of the rock Pigeon *Columba levia domestica.* About 35% of the collected birds, which revealed ova and or segments in their droopings, showed clinical signs consisting mainly of general weakness, ruffled feathers and diarrhea. Several hundred worms were recorded at the rate of 25 specimens per 9 millimetres of the affected parts of the intestine.

Columba levia domestica birds are commonly found in the Arabian Peninsula and are quite popular for their meat consumption. This study deals with the survey of the parasitic fauna of such birds which are of economic and public health importance in these regions. The investigation revealed two species of the genus *Raillietina* Fuhrmann, 1920 and a third new species of the genus *Cotugnia* Diamore, 1893.

Materials and Methods

Seventy rock pigeons were collected from the market places in the rural areas around Riyad City. Droopings for helminthic eggs and gravid segments were examined. Clinical inspection of these birds was also carried out. At autopsy, the worms were removed from the upper parts of the ileum of the infected birds washed in physiological saline and left to relax for several hours. Specimens were fixed in 10% formalin at 60°C and stored in 70% alcohol. Whole-mounted specimens were stained according to the procedure put forward by Carvajal and Dailey (1975). After the staining is completed the specimens were dehydrated in alcohol, cleaned in Cedarwood oil and placed into the mounting medium (Canada balsam) on slides.

Average measurements are given in millimetres. Keys adopted by Yamaguti (1959), Wardle and McLeod (1952), Sawada (1953) and Schmidt (1970) were referred to for the identification.

(a) *Raillietina canabia* sp. n. (Fig. 1-3)
Host:
Columba levia domestica
Locality:
Saudi Arabia (Central Region)
Parasitic habitat:
The upper part of the ileum

Diagnosis

Description based on 25 specimens. Body with numerous segments; length of strobila 130 - 200, width 0.46. Scolex 0.28 in width and has a double circle of hammer shaped hooks; suckers armed, diameter of sucker 0.06 - 0.07; diameter of rostellum 0.13 - 0.15, 2 rows of hooks on the rostellum, the length of the hook 0.014 - 0.017. Genital pores unilateral. Cirrus pouch 0.1 - 0.13 in length.The number of testes 26. Number of eggs in the egg capsule 1 - 5; diameter of the egg 0.04.

Remarks

Raillietina Canabia sp. n. is related to *R. echinobothrida* Megnin, 1881 in the diameter of rostellum and number and length of its hooks. It is also related in the armature of suckers, position of genital pores and length of cirrus pouch. It differs, however, in the size of worms, width of scolex, diameter of suckers and in the diameter of eggs and their number in the egg capsule. *R. Canabia* sp. n. is also related to *R. kashirvarensis* Sawada, 1953 in the armature of the suckers, the unilateral arrangement of the genital pores, lenght of cirrus pouch, number of testes and number of eggs in the egg capsule. But differs in the width of worms, width of scolex, diameters of suckers, rostellum and eggs.

(b) *Raillietina Zahratis* sp. n. (Fig. 4 - 6)
Host:
Columba levia domestica
Locality:
Saudi Arabia (Central Region)
Parasitic habitat:
Middle part of the ileum

Diagnosis

Description based on 20 specimens. Length of the worm 170 - 300, width 1.0 - 1.53. The scolex is 0.16 - 0.19 in width. Suckers armed and measure 0.03 - 0.05 in diameter. Rostellum 0.06 in diameter and has two circles of small, hammer-shaped

hooks. Strobila with many proglottids. Genital pores unilateral. Cirrus pouch measures 0.19 - 0.21 in length and situated anterior to vagina. Number of testes 12 - 15. Egg capsules with 3 - 9 eggs; diameter of the egg 0.065.

Remarks

Raillietina Zahratis sp. n. is related to *R. tetragona* Molin, 1858 in the diameter of rostellum, length of hooks, armature of suckers and arrangements of genital pores. But differs in the size of worms, width of scolex, diameter of suckers, length of cirrus pouch, number of testes and number of eggs in the egg capsule.

(c) *Cotugnia magdoubii* sp.n. (Fig. 7 - 8)
Host:
Columba levia domestica
Locality:
Saudi Arabia (Central region)
Parasitic habitat:
Middle and lower parts of the ileum.

Diagnosis

Description based on 18 specimens. Length of worms 60 - 100 and width 2 - 3. Scolex 0.44 - 0.55 in width, suckers unarmed and diameter of each 0.1 - 0.14. Rostellum measures 0.25 - 0.44 and has small hammer-shaped hooks arranged in two rows, length of a hook 0.01. Proglottids, each with two sets of genital organs and with bilateral genital pores. Cirrus pouch 0.15 - 0.18 in length and is anterior to vagina. Testes in two median fields and their number 100. Ovaries paired, one egg in each egg capsule and the egg measures 0.04 x 0.06.

Remarks

Cotugnia magdoubii sp. n. closely resembles *C. digonopora* Pasquale, 1890, in the size of worms, in the arrangement of the genital pores and in the number of testes. But differs in the width of scolex, diameter of suckers and rostellum and the length of the cirrus pouch.

Discussion

Out of 70 pigeons inspected, 25 showed ova and or segments of helminthic parasites in their droopings. Clinical observations of the affected birds revealed general weakness, diarrhoea and ruffled feathers. At autopsy, 8 birds showed mixed infections either with the three species described above or only with two of them; the remainder showed single infections. About 800 worms were recovered at an average rate of 25 species per 9 millimetres of the infected ileum(Fig. 9). The mucosal surface of the affected areas showed numerous small white nodules and few haemorrhagic spots.

References

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Keys

Fig. 1 - 3. *Raillietina canabia* sp. n.,
Fig. 4 - 6. *Raillietina Zahratis* sp. n.,
Fig. 7 - 8. *Cotugnia magdoubli* sp. n.

1 : Head (scolex)
2 : Egg capsule
3 : Mature proglottid
4 : Head (scolex)
5 : Egg capsule
6 : Mature proglottid
7 : Head (scolex)
8 : Mature Proglottid
9 : *R. Zahratis* and *C. magdoubii* in the ileum of infected pigeon.

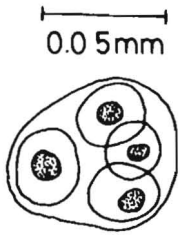

Fig. 2

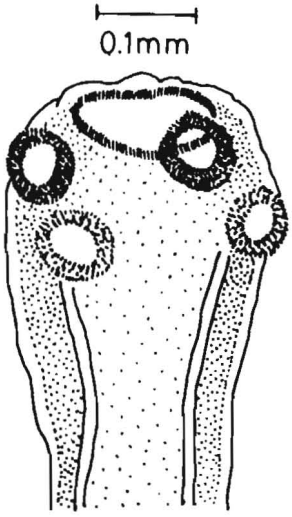

Fig.1

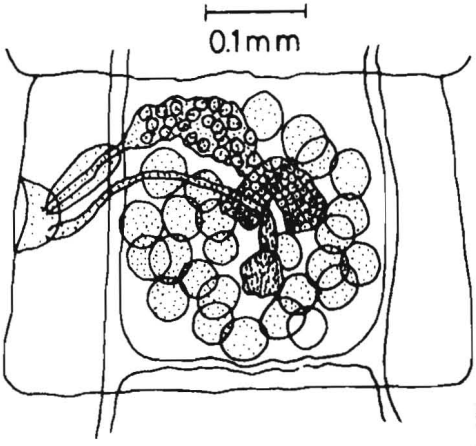

Fig.3

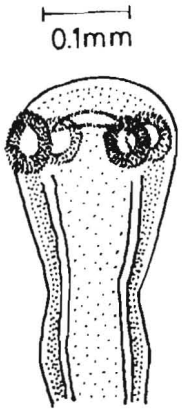

Fig. 4

Fig. 5

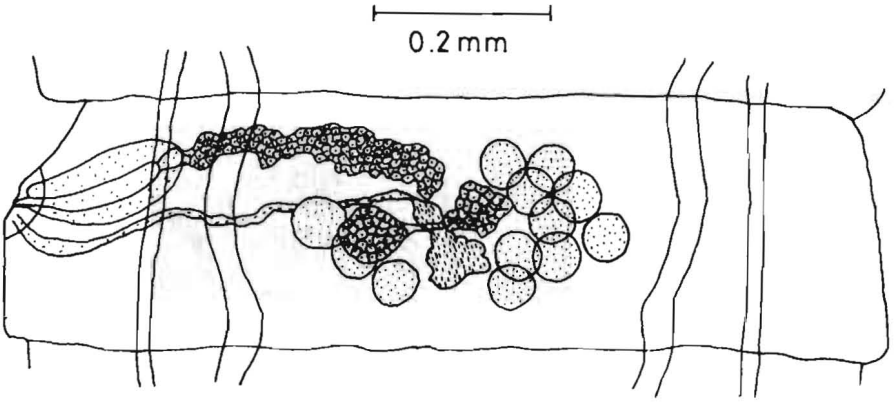

Fig. 6

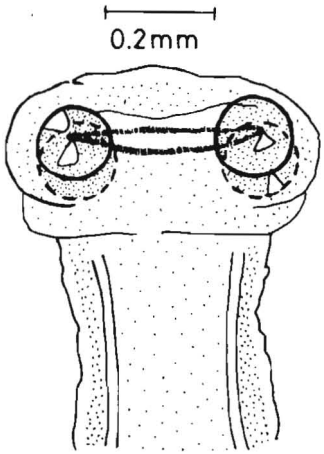

Fig. 7

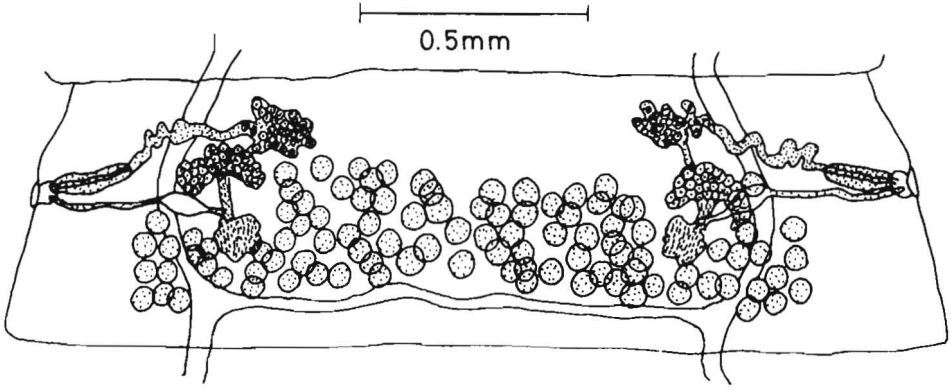

Fig. 8

Fig. 9

ثلاثة أنواع جديدة (سستودا : ديفنيديا) من الحمامة الصخرية (كولمبا ليفيا دومستكا) مع التعليق على العدوى

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حوالى ٣٥٪ من الطيور التى جمعت ، والتى وضحت من برازها بويضات وفصوص ، ظهرت عليها علامات اكلينيكية تتكون من ضعف عام ، وريش متصلب وإسهال ٠

سجلت مئات من الديدان بمعدل ٢٥ دودة فى كل ٩ مليمترات من أجزاء الأمعاء المصابة ٠