STUDIES ON CESTODES OF BIRDS, WITH DESCRIPTION OF A NEW SPECIES OF RAILLIETINA (RAILLIETINA)

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SUMMARY

A new cestode, Raillietina (Raillietina) waltairensis n. sp. and already described species Raillietina (Raillietina) paucitesticulata are reported from the host Streptopelia chinensis suratensis at Visakhapatnam. R. (R.) waltairensis n. sp. is distinguished from related species of R. (R.) by its size, minute rostelloar hooks and the butterfly shaped ovary. R. (R.) paucitesticulata is reported for the first time from India.

Key Words: Birds; cestodes; Raillietina sp.

RESUMEN

Un nuevo cestode Raillietina (Raillietina) waltairensis n. sp. además de una especie ya descrita, Raillietina (Raillietina) paucitesticulata han sido identificados en el hospedador Streptopelia chinensis suratensis en Visakhapatnam. R. (R.) waltairensis n. sp. se diferencia de especies relacionadas de R. (R.) por su tamaño, diminutos ganchos del rostelloar y el ovario en forma de mariposa. R. (R.) paucitesticulata ha sido identificado por primera vez en la India.

Palabras Clave: Aves; cestodes; Raillietina sp.
INTRODUCTION

There are no reports of the genus Raillietina (Raillietina) from India from the host Streptopelia chinensis suratensis till now. There are only four species, R. (R.) micracantha; R. (R.) sequensis; R. (R.) paucisetculata and R. (R.) weissi from this host from various parts of the world. In a survey during 1980-1982 for cestode parasites of birds of Visakhapatnam, India, 20 specimens of Streptopelia chinensis suratensis have been examined. Two cestodes belonging to the genus R. (R.) could be encountered. Of these, one new species R. (R.) waltairensis have been described in detail. A table showing comparative account of the species has been furnished.

MATERIALS AND METHODS

Specimens collected from small intestines of the hosts were stretched and fixed in F.A.A.; stained in alun carmine and mounted in Canada balsam. Camera lucida sketches were drawn. All measurements are recorded in millimetres.

Raillietina (Raillietina) paucisetculata (Fuhrmann, 1908)

DESCRIPTION: These cestodes are small, pale white in colour and measure 45-85 in length and 0.512-0.928 in width. Scolex measures 0.128 in diameter. Rostellum disc-shaped, well developed, measures 0.062 in diameter. It is armed with double rows of rostellar hooks of equal size, measuring 8 μm in length. Suckers round, and measure 0.039-0.042 in diameter, armed with 10.12 rows of hooks. Neck is 1.44 in length. All proglottids are wider than longer and craspedote. Genital pores unilateral and open in the middle of the proglottid margin.

Testes big, round to oval in shape, 7-9 in number and measure 0.032-0.048 in diameter. Testes surround the female genital organs and they are more to aporal side. Vas deferens highly coiled and situated in anterior one-third of the proglottid and it enters the cirrus sac. Cirrus sac spindle shaped and measures 0.128-0.144 in length. Cirrus sac crosses the osmoregulatory canals.

Ovary broad, bilobed and each lobe in turn is slightly lobulated. Ovary measures 0.144-0.160. Aporal lobe of the ovary sligh-

DISCUSSION

The present specimens come close to Raillietina (Raillietina) paucisetculata (Fuhrmann, 1908) in all characters except for the number of testes being 7-9 whereas in previously described form, they are 6-8 and the diameter of testes being 0.032-0.048 in the present form, and 0.05-0.07 in previous forms. There are only two reports of this parasite after Fuhrmann, Joyeux and Hou-demer and Yamaguti. This is a new record from India.

Raillietina (Raillietina) waltairensis n. sp.

(Figs. 1 and 2)

DESCRIPTION (Based on 5 specimens): The worms are pale white in colour and measure 100-105 in length and 0.112-1.360 in width. Scolex measures 0.117 in diameter. Rostellum well deve-

Figures 1 and 2.—Camera lucida drawings of Raillietina (Raillietina) waltairensis n. sp.
1.—Scolex.
2.—Mature proglottid.
loped, disc shaped, measuring 0.114 in diameter, and armed with double row of hooks of equal size. Rostellar hooks measure 4 μm in length. Suckers round to oval in shape and measure 0.031-0.039 in diameter. Suckers armed with 8-10 rows of hooks. Neck medium sized and measures 1.920-1.936 in length. Proglottids craspedote in nature. Immature proglottids longer than broad and measure 0.176-0.192 in length and 0.128-0.176 in width. Mature proglottids broader than long and measure 0.416-0.523 in length and 0.800-1.360 in width. In present specimens gravid proglottids are not found. Genital pores unilateral and open in the middle of the proglottid margin in common genital atrium.

Testes big, slightly lobed and 8-9 in number. They are distributed in between the osmoregulatory canals and more number to aporal side (5-6). Testes measure 0.080-0.096 in diameter. Vas deferens highly coiled and anterior to middle of the proglottid. Cirrus sac muscular, crosses the osmoregulatory canals and opens in middle of the proglottid margin. Cirrus sac measures 0.176-0.208 in length and 0.064-0.080 in width.

Ovary bilobed, situated in the middle of the proglottid. Two lobes are equal in size (0.064-0.144) and connected with ovarian isthmus. Ovary gives a butterfly appearance together with the female genital complex. Vitelline gland is compact, posterior to ovary and measures 0.096-0.128 in diameter. Vagina a thin tube opens out separately just adjacent to the male genital opening into a common genital atrium. The distal portion of the vagina is muscular and shows slight dialation before opening out into genital atrium. This dialation is very clear in some proglottids.

**DISCUSSION**

Four species of *Raillietina (Raillietina)* were already described from the host *Streptopepla chinensis* from various localities, *R. (R.) micranthus* (Fuhrmann, 1908); from Africa; *R. (R.) sequens* Tunabnqui et Maslùñqan, 1937 from Luzon; *R. (R.) puacitesticulata* (Fuhrmann, 1908) from Malaya and *R. (R.) weissi* Joyeux, 1923 from Africa. Of these cestodes *R. (R.) sequens* resembles the present specimens in a few characters like size of scolex and suckers, width of strobila and length of the cirrus sac.
But the present specimens differ from *R. (R.) sequens* in many other aspects like size of the worm, rostellum diameter, rostellar hook size, width of cirrus sac, number and size of testes.

It differs from *R. (R.) microcantha*; *R. (R.) paucitesticulata* and *R. (R.) weissi* in all characters.

It resembles *R. (R.) torquata*, cestode of *Columba livia* in a few characters like number of testes, sucker diameter and rostellar diameter. But it differs from *R. (R.) torquata* in many other characters like size of worm, size of scolex, rostellar hooks, cirrus sac etc.

Besides these four species of *Raillietina (Raillietina)* from *Streptopelia chinensis*, a number of species of *Raillietina (Raillietina)* have been described from other columbiforms birds: *R. (R.) ceylonica* (Baczynska, 1914); *R. (R.) cincta* (Fuhrmann, 1920); *R. (R.) columbiella* Ortlepp, 1938; *R. (R.) cyrtus* (Sirjan, 1914); *R. (R.) flaminia* Meggitt, 1931; *R. (R.) fuhrmanni* (Southwell, 1939); *R. (R.) joyeuxi* (López-Neyra, 1929); *R. (R.) kantipura* Sharma, 1943; *R. (R.) nagpurensis* Mophe, 1925; *R. (R.) nripendra* Sharma, 1943; *R. (R.) osakensis* Iwate et Tamura, 1933; *R. (R.) parvulincincta* Meggitt et Saw, 1924; *R. (R.) perplexa* Johri, 1938; *R. (R.) pseudocyrtus* Meggitt, 1931; *R. (R.) quadratriculata* Moghe, 1925; *R. (R.) senaensis* (Weithafer, 1918); *R. (R.) spiralis* (Baczynska, 1914); *R. (R.) taiwanensis* Yamaguti, 1935; *R. (R.) tunetensis* Joyeux et Bae, 1927; *R. (R.) vogeli* Hilmey, 1936; But the present form differs from all above forms in all major characters.

It resembles *R. (R.) cryptacantha* (Fuhrmann, 1908); a cestode of *Columba deleguere sharpeii* in number of testes and sucker diameter. But it differs the above form in length and width of the worm, scolex diameter, rostellar diameter, rostellar hook length and length of the cirrus sac.

A few forms like *R. (R.) fragilis* Meggitt, 1931 cestodes of *Columba punicus* and *R. (R.) polycaulis* (Kotlán, 1921) from *Tricoglossus haemated intermedius* resemble in number of testes. But these forms differ from the present form in all other characters.

The main differentiating feature of this cestode from other species of *R. (R.)* is very minute size of the rostellar hooks. The hooks could be observed only with higher magnification under the microscope. In lower magnification, hooks are not seen clearly. Another feature is the strikingly butterfly shape ovary. The ovary with two lobes and genital complex gives a butterfly shape. This type of ovary is not seen in other species of *Raillietina (Raillietina)* described previously.

Taking these points into consideration, it is justifiable to erect the present specimens as a new species *Raillietina (Raillietina) waitairensis*. A comparative table of the present specimen together with the other species is given.

Holotype is deposited in the Department of Zoology, Andhra University, Waltair-530 003, India.

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