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An Interesting Anoplocephalid Cestode, *Francolina allahabadensis* Gen. et Sp. Nov., of the Family Himalayidae Malhotra, Sawada and Capoor, 1983, with Revision of the Family

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Abstract

Francolina allahabadensis gen. et sp. nov. from *Francolinus pictus* is described on the presence of rostellum, a rostallar sac, a wavy liner shaped interproglottidal gland, without seminal vesicles and uterus that extends beyond excretory vessels in gravid proglottids.

Key words: *Francolina allahabadensis*, Anoplocephalidea, interproglottidal gland, *Francolinus pictus*

Introduction

An usual form from an unusual host is recognized by the presence of a small unarmed rostellum with a rostellar sac and double set of genitalia per proglottid. The interproglottidal glands being unique, forming a thick wavy band near hinder margin of each proglottid; these open to outside by small zig zag ducts. The uterus is persistent, filled with eggs possessing pyriform apparatus. The diagnostic features palce the worms in the order Anoplocephalidea Wardle, McLeod and Radinosky, 1974.

Materials and Methods

Autopsy of 20 partridges, *Francolinus pictus*, yielded ten unusual worms. The worms were stretched in lukewarm water and fixed in Bouin's fixative. Whole mounts were stained with haemalum, dehydrated and cleared in xylene and mounted in Canada balsam. Sections of both mature and gravid proglottids were cut at 6–8 μ and stained in haematoxylin and eosin. All measurements are given in mm.

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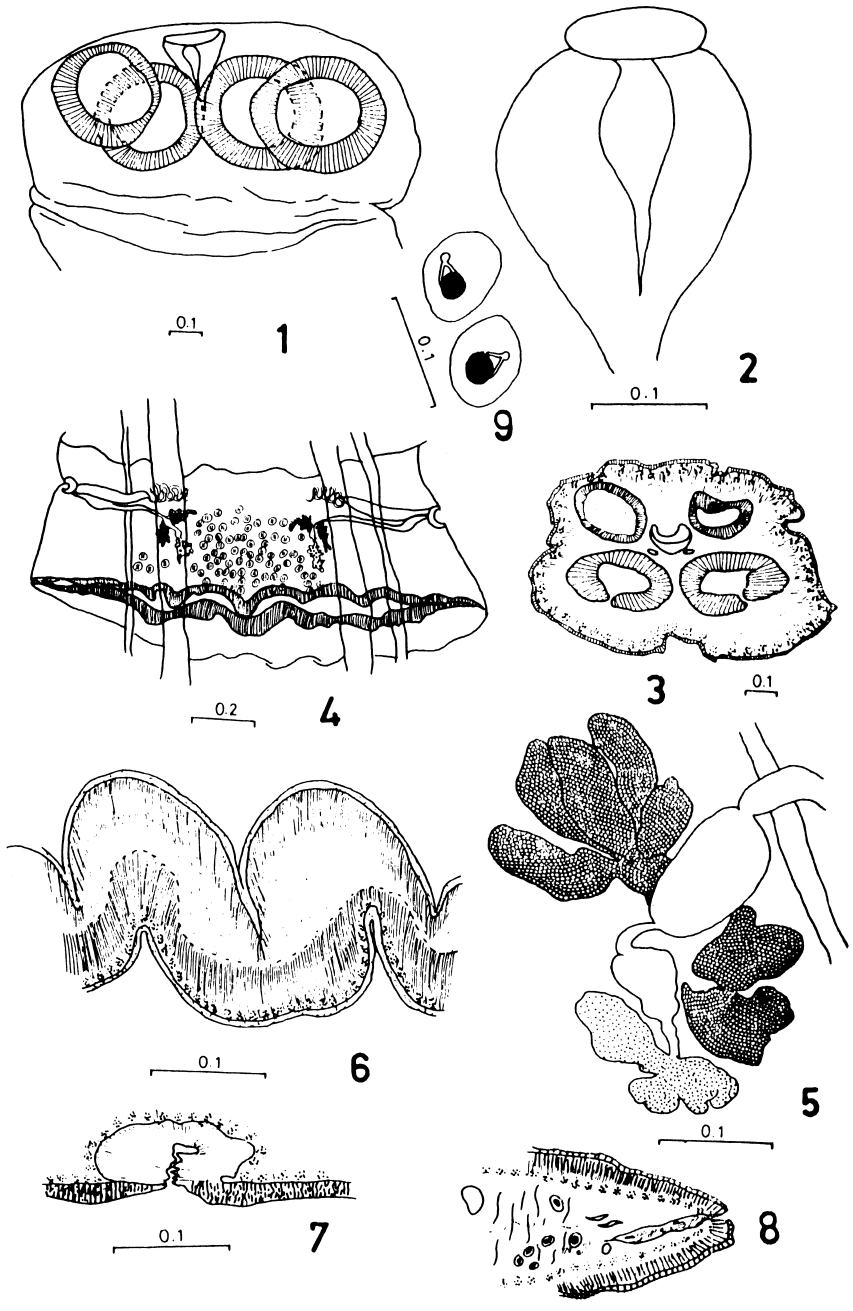
Franolina allahabadensis gen. et sp. nov.
(Figs. 1–9)

Description (based on ten worms): Strobila length 80–100; maximum with 3.6 in gravid proglottids. All prglottids broader than long. Scolex small, 0.68–0.98 x 0.98–1.3. Rostellum, 0.15–0.208 x 0.03–0.05. Rostellar disc, 0.04–0.05 x 0.1–0.15 and rostellar sac, 0.20–0.24 x 0.14–0.21. Suckers small unarmed, 0.375–0.48 x 0.36–0.44. Neck absent. Proglottids craspedote, Immture, mature and gravid proglottids, 0.44–0.66 x 1.42–1.65; 0.59–0.86 x 1.31–2.05 and 0.88–1.44 x 2.27–3.6, respectively. Genitalia double per proglottid. Testes medullary, 40–90 in number in each proglottid. Testes spherical to oval 0.032–0.085 x 0.034–0.068. Cirrus pouch cylindrical 0.288–0.36 x 0.02–0.064, reaching to ventral excretory vessels. Both internal and external seminal vesicles absent. Vas deferens highly coiled behind cirrus pouch. Each ovary lying close to excretory vessels on either side. Ovary bilobed with finger like acini, 0.032–0.192 x 0.108–0.368. Vagina distinguishable into a copulatory, 0.014–0.028 and a conducting part, 0.008–0.014 in diameter. Vagina opening behind cirrus pouch, into the common genital atrium. Receptaculum seminis flask shaped, prominent, 0.076–0.148 x 0.05–0.098. Ootype post-ovarian, 0.04–0.08 x 0.028–0.055. Vitelline gland compact, post-oravian, 0.03–0.064 x 0.06–0.165. Uterus in gravid proglot-



1. Scolex.
2. Rostellum with rostellar sac (magnified).
3. Transverse section through scolex.
4. Genitalia in mature proglottid.
5. Female genitalia (magnified).
6. Interproglottidal glands (magnified).
7. Transverse section through interproglottidal glands showing zig zag duct and the opening.
8. Transverse section of a proglottid showing relation of genital ducts with excretory vessels.
9. Eggs with pyriform apapratus.

tids persistent, sac like without anterior or posterior outpounching and extending on either side beyond the excretory vessels measuring 0.845–1.014 x 1.4–1.944. Eggs spherical to oval 0.036–0.08 x 0.032–0.085 with pyriform organ. Pyriform cap measuring 0.013–0.016 x 0.012–0.016; horns 0.008–0.016 in length. Onchosphere 0.016–0.02 x 0.012–0.016. Genital atrium 0.08–0.112 wide and 0.064–0.08 deep, located in the anterior half of the proglottid margin on each side. Genital ducts passing between the excretory vessels.

Host: *Francolis pictus* [Aves: Phasianidae]
Locality: Allahabad, India
Holotype: APZ(101/86) deposited in Parasitological collections, Department of Zoology, University of Allahabad

Francolina gen. nov.

Diagnosis: Scolex with an apical rostellum and a rostellar sac. Neck absent or present. Genitalia double per proglottid. Testes mainly medullary. Internal and external seminal vesicle absent. Uterus sac like extend beyond excretory vessels. Interproglottidal glands form a liner band. Parasites of birds and mammals.

Discussion

The new cestode *Francolina allahabadensis* gen. et sp. nov. is characterized by the presence of a typical wavy-shaped interproglottidal glands. Worms from cattles possessing interproglottidal glands were included by Yamaguti (1959) in the family Anoplocephalidae Blanchard (1981), the subfamily Monieziinae Spasski (1951) under the order Anoplocephalidea Wardle et al. (1974). The subfamily Monieziinae includes three subgenera of *Moniezia* viz. *M.* (*Moniezia*), *M.* (*Blanchariezia*) and *M.* (*Baeriezia*) separated on nature of interproglottidal gland.

Malhotra, Sawada and Capoor (1983) established a new family Himalayidae under the order Anoplocephalidea Wardle et al. (1974) on the basis of a rostellum, a rostellar sac, double set of genitalia, transverse lobed and saccular uterus and a pyriform organ.

Himalaya is the only genus so far described under the family Himalayidae. The new genus resembles with *Himalaya* in respect of presence of rostellum, double set of genitalia and in pyriform organ in eggs, but differs form it mainly in presence of interproglottidal glands and in absence of seminal vesicles.

Revised family diagnosis: Himalayidae, Anoplocephalidea – Medium sized worms. Scolex with rostellum. Segmentation distinct. Proglottids craspedote, broader than long, anapolytic or apolytic. With double set of genitalia per proglottid. Testes numerous, medullary. Genital pore marginal. Ovary lobed or not. Vitelline gland compact, post-ovaian. Uterus persistent, sac like with or without outpouchings. Interproglottidal gland present or absent. Eggs with pyriform apparatus. Adults in mammals and birds. Type genus *Himalaya*.

Key to the genera of the family Himalayidae

1. Worms without interproglottidal glands but with internal and external seminal vesicles . . . . . *Himalaya*
2. Worms with interproglottidal glands but without internal and external seminal vesicles . . . . . *Francolina* gen. nov.

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