

## STUDIES ON A NEW SPECIES OF THE GENUS ECHINOCHASMUS DIETZ, 1909 (TREMATODA: ECHINOSTOMATIDAE)

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**Abstract.** Six Indian Tawny eagles, *Aquila rapax vindhiana* were autopsied, but only one bird yielded nine specimens of the above genus from its intestine; when examined only three flukes were sexually mature containing eggs; these are described here as new species.

### GENUS ECHINOCHASMUS DIETZ, 1909.

#### *Echinochasmus (Echinochasmus) vindhianae* sp. n.

Figs. 1, 2

The material studied consisted of three mature specimens of the above species recovered by the author, in September, 1970 from the intestine of an Indian Tawny eagle, *Aquila rapax vindhiana*.

The body of the fluke is elongate having a truncated anterior end and a broadly rounded posterior extremity. The worms measure (all measurements in mm) 1.82—1.92 in length and 0.38—0.45 in maximum width at the acetabular region of the body. The cephalic collar is provided with 22 spines with a dorsal interruption. The oral sucker is terminal and measures 0.06 in diameter. The ventral sucker is large and rounded in shape, it is placed in the anterior 1/3 of the body and measures 0.28—0.37 by 0.24—0.26.

The mouth leads into a short prepharynx, measuring 0.020—0.026 in length. The pharynx is muscular, longer than broad measuring 0.09—0.10 by 0.06—0.07. The oesophagus is narrow and fairly long, measuring 0.12—0.20 and divided into two intestinal caeca at a distance of 0.37—0.44 from the anterior end of the body. The intestinal caeca run backwards parallel to the lateral margins of the body, terminating in the posterior extremity. The caeca are masked by the vitelline follicles. The testes are smooth and oval in shape, they are situated in the middle of the body overlapping each other. The anterior testis measures 0.10—0.22 by 0.26—0.30 and the posterior testis 0.25—0.33 by 0.38. The cirrus sac is dorsal to the acetabulum, immediately below the intestinal bifurcation, measuring 0.16—0.18 by 0.07—0.09; the vesicula seminalis occupies a larger part of the cirrus sac. The genital pore is somewhat median. The ovary is rounded in shape and is placed between the ventral sucker and the anterior testis, measuring 0.09 by 0.09—0.12. The vitellaria consist of small follicles tending to form transversely-elongate clusters, extending anteriorly up to the mid-level of the acetabulum whilst posteriorly they are distributed all along the available space. The uterine coils are very few and restricted to the pre-testicular region. The eggs are few in number and are operculated, measuring 0.067 by 0.040.

Fig. 1. *Echinochasmus* (*Echinochasmus*) *vindhianae* sp. n. (dorsal view).

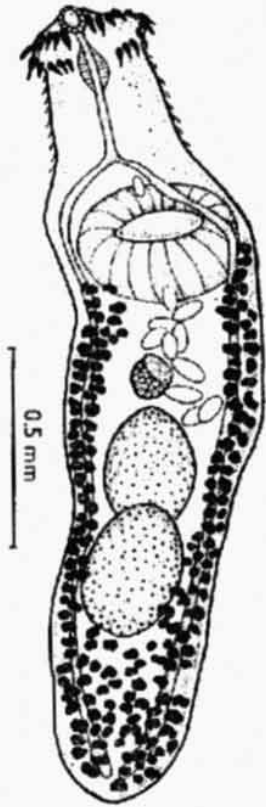


Fig. 2. *Echinochasmus* (*Echinochasmus*) *vindhianae* sp. n. (head collar showing spines).

## DISCUSSION

The fluke under study differs from all the following species, namely: *Echinochasmus* (*E.*) *coaxatus* Dietz, 1908; *Echinochasmus* (*E.*) *beleocephalus* (Linstow, 1873) Baschkirova, 1941; *Echinochasmus* (*E.*) *liliputanus* (Looss, 1896) Witenberge, 1932; *Echinochasmus* (*E.*) *perfoliatus* (Ratz, 1908) Baschkirova, 1941; *Echinochasmus* (*E.*) *japonicus* Tanabe, 1926; *Echinochasmus* (*E.*) *megavitellus* Lal, 1939, in the lesser number of head spines, sucker ratio, structure and disposition of the vitellaria and the size of the eggs.

The form under review is somewhat allied to the under mentioned species, namely: *Echinochasmus* (*E.*) *curyporus* (Looss, 1896) Baschkirova, 1941; *Echinochasmus* (*E.*) *amphibolus* Kotlan, 1922; *Echinochasmus* (*E.*) *novalichesensis* Tubangui, 1932; *Echinochasmus* (*E.*) *tobi* Yamaguti, 1939; *Echinochasmus* (*E.*) *squamatus* and *Echinochasmus* (*E.*) *mirus* Mendheim, 1940, but it differs from all the above, not only in the lesser number of head spines but also in the much smaller size of its body, sucker ratio, the structure and disposition of the vitellaria, the size of the eggs and the overlapping condition of the testes, which is a conspicuous feature of the worm described herein.

The worm under study also differs from all the following forms, namely: 1. *Echinochasmus* (*E.*) *megavitellus* Lal, 1939; 2. *Echinochasmus* (*E.*) *dietzivi* Issaitschikoff, 1927; 3. *Echinochasmus* (*E.*) *donaldsoni* Beaver, 1941; 4. *Echinochasmus* (*E.*) *rugosus* and 5. *Echinochasmus* (*E.*) *redioduplicatus* Yamaguti, 1933, in possessing a greater number of head spines, as compared with the first three forms and a lesser number of spines with the last two species and also differs from all the above five forms in its sucker ratio, structure and disposition of the gonads and vitellaria and the size of the eggs.

The worm under discussion resembles *Echinochasmus* (*E.*) *schwartzi* Price, 1931, and *Echinochasmus* (*E.*) *gorsakii* Yamaguti, 1939 as far as the general shape and disposition of the gonads are concerned, but differs markedly from the former in its sucker ratio, shape of the gonads, structure and disposition of the vitellaria, size of the body and

the dimensions of the eggs, whereas it differs from the latter in 1) its sucker ratio, which is 1 : 4 in the new form whereas it is 1 : 3 in *Echinochasmus (E.) gorsakii*; 2) its overlapping condition of the testes and rounded shape of the ovary, whereas the testes in *Echinochasmus (E.) gorsakii* are very much approximated to each other at their borders but do not overlap completely and the ovary is also bean-shaped; 3) the structure and the disposition and the extent of vitellaria which are up to the mid-level of the acetabulum in the form under study, whereas the vitellaria in *Echinochasmus (E.) gorsakii* simply cross-over the ovarian level, without reaching even up to the level of the acetabulum; 4) both the worms differ also in the size of their eggs as well as the dimensions of the body.

In view of the valid structural differences exhibited by the worm, it is considered to create a new species and proposed to name the new species *Echinochasmus (Echinochasmus) vindhiana*.

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#### ИЗУЧЕНИЕ НОВОГО ВИДА РОДА *ECHINOCHASMUS* DIETZ, 1909 (TREMATODA: ECHINOSTOMATIDAE)

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**Резюме.** Было вскрыто 6 экземпляров индийского орла (*Aquila rapax vindhiana*), но в кишечнике лишь одного из них обнаружено 9 особей выше упомянутого рода сосальщиков; только три сосальщика оказались половозрелыми с наличием яиц и в настоящей работе описаны в качестве нового вида.

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