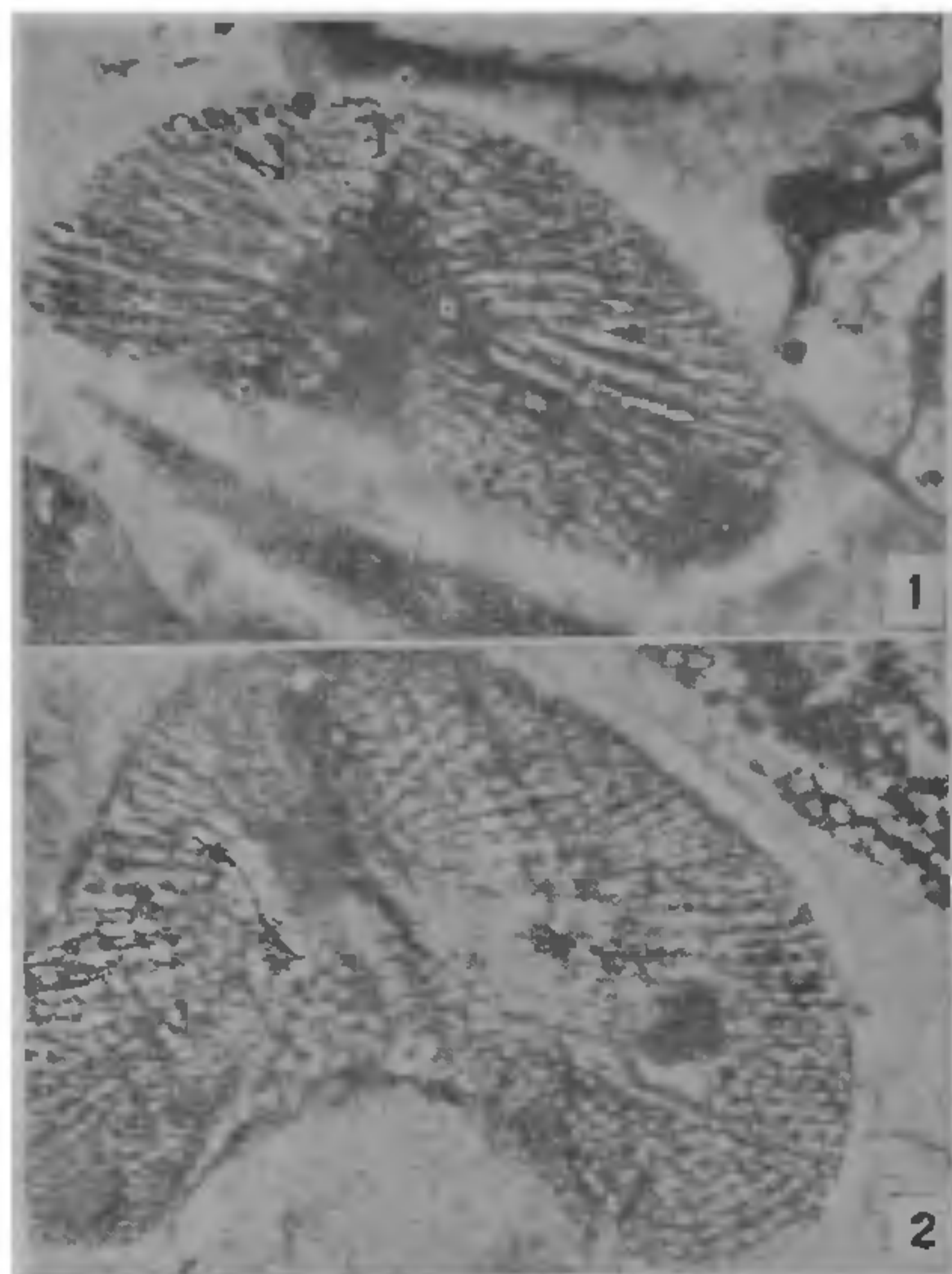


Figured slides. CL. 01, CL. 19.



FIGS. 1-2,  $\times 75$ .

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### THE NATURE OF FLUID IN THE EGG OF *CALOTES VERSICOLOR*

The egg of *Calotes versicolor* is creamy-white with a soft leathery shell. On pricking a viscous fluid oozes out from about the third day of incubation. Nothing much is known about the nature of this fluid. One comes across references about the presence of albumen or egg white in the eggs of crocodiles and tortoises. Clark<sup>1</sup> believes in the presence of albumen in the eggs of black snake; however, according to Young<sup>2</sup> and Bellairs<sup>3</sup> there is

little, if any, albumen in the eggs of lizards and snakes. It is in this context that the eggs of *Calotes versicolor* are studied in the present investigation.

The outer shell layers of the entire eggs of calotes, at various stages of development were peeled off for proper infiltration, fixed in Smith's fixative,<sup>4</sup> dehydrated, cleaned in benzene and cut serially at  $12\mu$ . Sections were stained with Erlich's hæmatoxylin and mounted in balsam. On studying the sections it was observed that allantois makes its appearance early in the development and completely surrounds the yolk sac by about the 15th day of development, just as was observed by Weekes<sup>5</sup> for the two species of snakes, *Denisonia suta* and *Denisonia superba*.

In calotes, the histological structure throughout the length of the oviduct is the same and does not show the presence of albumen glands. It seems that real albumen is probably absent in calotes egg. Thus the viscous fluid which could be collected from the early period is allantoic fluid. In order to confirm that this fluid is not albumen, it was analysed for its contents, by the various tests described by Cole.<sup>6</sup> It was found that the egg fluid of calotes does not contain all the constituents of albumen but only some mucoproteins.

Total proteins present in the fluid at various stages of development of calotes were estimated colorimetrically by the method described by Lowry and others.<sup>7</sup> From Table 1 it could be seen that protein content of the fluid increases during calotes development.

TABLE 1  
Protein in fluid of calotes egg

Age in days	Total amount of fluid per egg (ml.)	Protein in total fluid per egg (mg.)
3	0.05	0.015
12	0.2	0.634
24	0.3	0.975
34	0.5	1.335
43	0.5	2.260

This fluid with nutritional role like albumen would not show such an increase in its protein content. Moreover this fluid is found to contain the waste products of nitrogen metabolism.<sup>8</sup>

It thus seems justifiable to conclude that real albumen is probably absent in calotes egg and the fluid in the egg is not albumen but allantoic fluid. Nevertheless the presence of proteins in this allantoic fluid might have some significance of its own.

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**ADULTS OF EUMEGACETES ARTAMII  
FROM WHITE LEGHORN PULLETS  
INFECTED WITH THE  
METACERCARIAE FROM TWO  
DRAGONFLIES**

*Eumegacetes* (Lecithodendriidæ, Trematoda) occurs in the rectum and the cloaca of a great variety of wild birds in Africa, Brazil, Europe, Formosa, Havana, India and Russia. To the twelve species listed under this genus by Yamaguti,<sup>5</sup> eight others have been added. Of these, the eleven Indian species are: *E. artamii* and *E. braunii* Mehra, 1935; *E. microdiosus* Chauhan, 1940; *E. mehraii* Jha, 1943; *E. riparius* Gupta, 1957; *E. singhi* Jaiswal, our studies on the distribution of metacercarial *E. megacetabulus* and *E. hyderabadensis* Jaiswal and Vasudev, 1960. Most of the species so far named are based on the study of a single specimen. The differential characters stressed by the authors in justification of their species are not infrequently of minor significance and often appear overlapping which naturally tends to make the taxonomic concept somewhat confused.

Hanumantha Rao and Madhavi<sup>2</sup> reported the metacercarial cyst of *Eumegacetes* in the naiads of the libellulid dragonflies. During our studies on the distribution of metacercarial cysts in the local dragonflies, a typical eumegacetid metacercaria has earlier been recorded from a male of *Brachythemis contaminata* (Fabr.).<sup>1</sup> Cysts of this type, also encountered in *Orthetrum sabina* (Drury), were fed to three clean pullets reared in the laboratory. 18 metacercariæ were administered to one

pullet; 19 cysts to another but on four different dates; and 9 cysts to a third pullet. The droppings of the first, amongst the infected pullets, alone became positive for the characteristic eggs on the 16th day after infection. The autopsy, conducted on the 19th day after infection, yielded two mature flukes—one from the *Bursa fabricius* and the other from the *Cloaca*. These specimens were fixed in 10% formalin and subsequently stained and mounted—one being a pressed form. This has been studied for its morphology and measurements. The other helminths collected were tapeworms—10 specimens of *Raillietina cestocillus* and 12 specimens of *R. tetragona*.

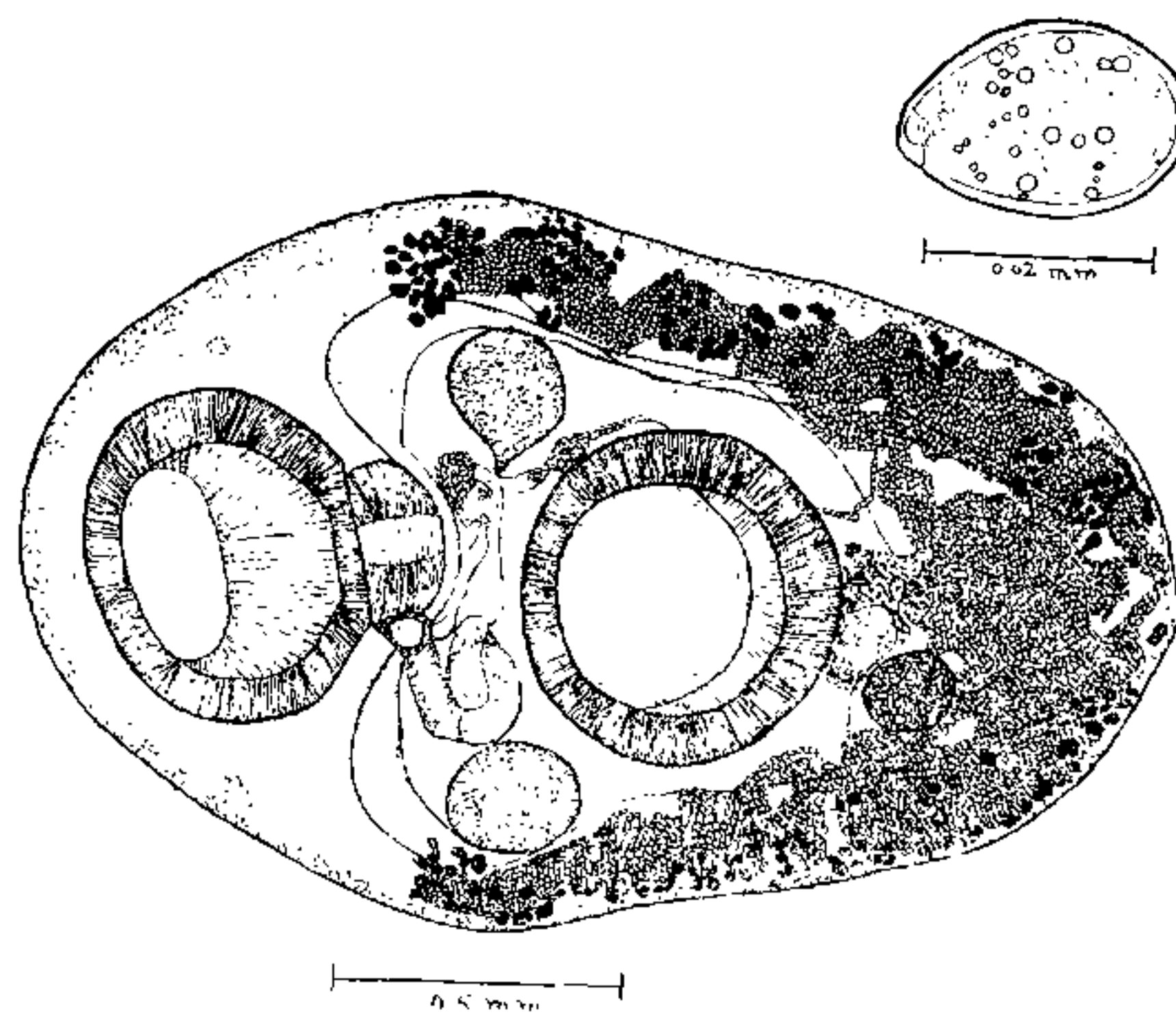


FIG. 1

The nearly elliptical body, with aspinose cuticle and rounded ends, measured 2.17 mm. in length and 1.23 mm. in maximum breadth lying in the preacetabular zone. It had the subterminal oral sucker of 0.50 × 0.58 mm.; the pharynx of 0.27 × 0.15 mm.; the acetabulum, of 0.58 × 0.59 mm. lying immediately behind the middle of the body; chambered excretory cornua; the slightly dextral genital opening at the level of the mid-pharyngeal region; symmetrical and intercæcal but immediately preacetabular testes; with the right one of 0.27 × 0.22 mm. and the left of 0.24 × 0.22 mm.; the cirrus sac lying to right of the median line, between the anterior margin of the acetabulum and the right intestinal cæcum, somewhat crescent-shaped, with a coiled seminal vesicle in its swollen basal half and a prominent pars prostatic area; spherical ovary immediately postacetabular, dextral, 0.17 × 0.14 mm. with the pear-shaped