ON A NEW SPECIES OF GENUS OOCHORISTICA FROM THE INTESTINE OF CALOTES VERSICOLOR

BY V. R. MISRA, M.Sc.
(Department of Zoology, Lucknow University)

Received January 10, 1945

[Communicated by Dr. G. S. Thapar, M.Sc., Ph.D. (London), F.A.Sc.]

Oochoristica indica sp. nov.

About 50 species have been described under the genus Oochoristica from reptilian and mammalian hosts, the reptilian host being more common. The chief differences among various species are:—size of the worms, size of scolex and suckers, presence or absence of receptaculum seminis, size, extent and course of cirrus sac, number of testes and their arrangement, character and shape of vitelline glands, and the size and arrangement of eggs in gravid segment.

The worms described here have been obtained from the small intestine of Calotes versicolor in Lucknow. Out of four animals dissected only one was infected. They were killed by hot water, fixed in formalin and preserved in 3% formalin to which a drop of glycerine was added.

The worms were stained with Acetic Alum Carmine and Borax Carmine but the latter did not give satisfactory results.

External characters.—The length of the worms ranges between 136 and 200 mm. with a maximum breadth of 1.35 to 1.55 mm. Scolex is about 350 μ in diameter and the suckers, 170 to 190 μ, are cup-shaped and muscular, of which two are placed on the dorsal side and two on the ventral. A neck measuring 6 mm. long is followed by segmenting strobila. In immature segments, rudiments of cirrus sac and vagina appear first and about the same time rudiments of ovary also appear. After about 30 immature segments, mature ones are encountered. The immature segments are broader than long but these become longer as we proceed backwards in the strobila.

The genital pores are irregularly alternate. In 61 fully mature consecutive segments the arrangement of genital pores was found thus:—6 R, 2 L, 3 R, 3 L, 1 R, 6 L, 1 R, 2 L, 3 R, 4 L, 1 R, 1 L, 4 R, 6 L, 1 R, 3 L, 2 R, 1 L, 3 R, 1 L, 1 R, 1 L, 1 R, 1 L, 2 R, 1 L = 61 segments.
FIGS. 1-3.—Fig. 1. Scolex. Fig. 2. A mature segment. Fig. 3. Two eggs showing membranes and hooks.

e.p., Cirrus pouch; e.v., Excretory vessels; g.a., Genital atrium; n., Nerve; n.g., Nerve ganglion; o., Ovary; s.g., Shell gland; t., Testes; v., Vagina; v.d., Vas deferens; vit., Vitelline gland.
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Excretory system.—There are four excretory canals, two being on either side. The outer ones are nearly straight tubes but the inner ones are wavy. The two vessels of either side unite in the scolex just behind the suckers after which they ramify. The vessels run as two separate ducts and they do not inter-communicate nor have transverse connections at the posterior end of the segment.

Nervous system.—Two nerve ganglia are present between the dorsal and ventral suckers. They give out two nerve cords, one from each ganglion, on the posterior side. The nerve cords run parallel to the inner excretory duct.

Reproductive system.—Reproductive organs are simple. There is a muscular oval genital atrium in which open the cirrus sac and the vagina. The opening of the genital atrium is situated in the anterior third of each proglottis.

Male genitalia.—There are 30 to 36 testes arranged in a single row behind the ovary. Vas deferens is a very much coiled structure situated in about the middle of the segment. The coiled structure persists in the cirrus sac too.

Cirrus sac is an oblong structure, 220 μ long and passes beyond the excretory vessels. The inner excretory vessel and nerve cord pass over the cirrus sac while the outer excretory vessel passes below it. There is no specialized cirrus.

Female genitalia.—Ovary is a bilobed structure and each lobe is further composed of many smaller lobes. Behind the ovary is situated the vitelline gland. Anterior to the vitelline glands is the shell gland. From the shell gland is given off a fine duct which unites with the two ducts coming from each lobe of the ovary. From this point starts the oviduct which runs first anteriorly and then laterally. Near the genital atrium the oviduct becomes somewhat widened forming vagina, which opens in the genital atrium near the opening of the cirrus sac. Maximum diameter of the ovaries is 390 μ and of the vitelline glands 150 μ. Uterus is not distinct and receptaculum seminis is absent.

In the gravid segments the eggs are found scattered in the whole segment between the two outer excretory vessels. Ovaries and vitelline glands disappear first and then the testes and vast deferens with cirrus sac. Genital atrium however persists. Gravid segments are nearly one and a half time as long as broad.

Eggs are rounded structures about 42 μ in diameter. There is a thick-walled outer covering and a thin-walled inner membrane which contains the egg. Each egg is armed with 6 hooks, 16 to 18 μ long.
About 21 species of *Oochoristica* have so far been reported from reptiles:—*O. tuberculata*, *O. amphisbaena*, *O. ameiva*, *O. zonuri*, *O. crassiceps*, *O. trachysauri*, *O. lagrensi*, *O. thapari*, *O. parva*, *O. hainanensis*, *O. paravoria*, *O. bivitellobata*, *O. gracewileyae*, *O. theileri*, *O. brasiliensis*, *O. parvula*, *O. cryptobothrium*, *O. rostellata*, *O. khalili*, *O. fibriata*, and *O. Osheroffi*. Out of these, two *O. crassiceps* (Baylis) and *O. thapari* (Johri) have been reported from *Calotes*.

The species described in this paper can be compared with *O. parvula*, *O. thapari*, *O. trachysauri*, *O. theileri*, *O. crassiceps* and *O. tuberculata* to which it shows closer affinities but it can be readily distinguished from them all.

From *O. parvula* it differs in being much larger in size, by the absence of receptaculum seminis, and in having very much developed suckers. (The length of *O. parvula* is 20 to 25 mm. and the size of the suckers 170 to 190 $\mu$.) From *O. thapari* and *O. trachysauri* it differs in size, the number of testes and their arrangement. (In both of these species the number of testes is about 60 while in the present case it is never more than 36.) From *O. thapari* it further differs in the size and course of cirrus sac, which in the case of *O. thapari* reaches nearly the middle of the segment and passes over both the excretory canals. From *O. crassiceps* and *O. theileri* it differs in having a larger number of testes, longer cirrus sac, well-developed suckers and distinct segmentation of the body. From *O. tuberculata*, which is nearly equal in size to the present form, it differs in having larger suckers (170 $\mu$), a longer cirrus sac and in the number of testes. The number of testes in *O. tuberculata* range between 20 and 40 while in the present case it is never more than 36 or less than 30.

It thus appears to differ from all the known species of *Oochoristica* thereby justifying the creation of a new species, *O. indica*, for its reception.

*Host.*—*Calotes versicolor*.

*Locality.*—Lucknow.

**ACKNOWLEDGEMENT**

I am deeply indebted to Dr. G. S. Thapar for the constant guidance and interest he has taken in this work. He made many useful suggestions and was very kind in placing his personal library at my disposal.
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