

Table 1 The percentage co-occurrences and correlation matrices of the zooplankton populations in Jyotisar tank of Kurukshetra

	<i>D. excisum</i>	<i>C. cornuta</i>	<i>D. lumholtzi</i>	<i>N. kamakhiae</i>	<i>Cyclops sp</i>	<i>B. calyciflorus</i>
<i>D. excisum</i>	(×)	90	15	75	69	73
<i>C. cornuta</i>	0.65*	(×)	23	79	77	80
<i>D. lumholtzi</i>	-0.55*	-0.44*	(×)	30	46	37
<i>N. kamakhiae</i>	0.55*	0.54*	-0.43*	(×)	77	79
<i>Cyclops sp</i>	0.38*	0.50*	-0.41*	0.25	(×)	79
<i>B. calyciflorus</i>	0.45*	0.21	-0.32*	0.48*	0.45*	(×)

* $P < 0.05$.

Note: The values on the right and left side of (×) represent percentage co-occurrence and correlation matrix, respectively.

of zooplankton. The inferences drawn by the percentage co-occurrence (*vide supra*) also get support from the correlation matrix (*vide infra*) as it gives a measure of relationship between the numerical changes in two species. The most significant and positive correlation was observed between *C. cornuta* and *D. excisum* whereas the most negative correlation was noted between *D. excisum* and *D. lumholtzi*. *D. lumholtzi* also exhibited significant and negative correlations with all the other forms of zooplankton.

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WEIGHT AND CALCIUM CONTENT OF EGG SHELL IN RELATION TO AGE OF POULTRY FOWL

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THIN egg shells in poultry results from lack of calcium or inadequate supply of vitamin D¹. Also, fatiguing a long period of continuous egg laying results in thinning of shell². Calcification of egg shells in relation to age is reported in this paper.

Eggs were collected from 19-week-old Leghorn birds and collection continued (from the same group of birds) for the following 47 weeks. Calcium content in each egg shell was determined following standard techniques^{3,4}. For convenience, values from eggs collected in 4 continuous weeks were put in a single group and mean was calculated. Thus 12 groups (A, B, C, . . . L) were formed.

Mean shell weight (MSW) and calcium content (MCC) (table 1) observed in the present study agree favourably with values recorded earlier^{5,6}. MSW and MCC recorded from groups E and F were significantly higher than the values from other groups. MSW gradually increased from A to E, then decreased gradually to the lowest level in L. A similar trend was found regarding MCC. These indicated that the ability of birds to secrete egg shell declines

Table 1 Weight and calcium content of egg shells (mean ± SD) from birds of different age groups

Group	Age in weeks	Shell weight (g)	Calcium content/shell (g)
A	19-22	4.13 ± 0.06	2.0 ± 0.19*
B	23-26	4.89 ± 0.18	2.1 ± 0.09
C	27-30	4.41 ± 0.06*	2.3 ± 0.03*
D	31-34	4.63 ± 0.08*	2.4 ± 0.08
E	35-38	4.99 ± 0.07	2.6 ± 0.01
F	39-42	4.95 ± 0.14	2.9 ± 0.21
G	43-46	4.72 ± 0.11	2.5 ± 0.06
H	47-50	4.63 ± 0.11*	2.4 ± 0.26
I	51-54	**4.60 ± 0.05	**2.3 ± 0.03*
J	55-58	4.41 ± 0.06	2.3 ± 0.15
K	59-62	3.89 ± 0.20	1.9 ± 0.10
L	63-66	3.75 ± 0.01	1.7 ± 0.04

Correlation coefficient between weight and calcium content of egg shell } $r = 0.967$

Each value is an average of 40 samples.
 *Significantly differ from E and F; **Significantly differ from K.

with advancing age. It has been reported that Vitamin D production diminishes with age and may be associated with reduced shell calcification⁷. In the present study, the correlation between shell weight and calcium content was noted. This indicated that the shell weight is mainly dependent upon the amount of calcium present⁸.

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ON THE OCCURRENCE OF *OCHORISTICA AMERICANA* HARWOOD (CESTODA) FROM INDIA

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THREE cestode worms were collected from the intestine of Russell's viper, *Vipera russelli* from Aurangabad, Maharashtra State, India. The detailed morphological studies revealed that the worms belong to the genus *Oochoristica* Luhe, 1898 and species *O. americana* (Harwood, 1932). *O. americana* was originally described from a snake, *Farancia abacura* of N. America. A review of the literature shows that so far *O. americana* has not been reported from India. This is therefore the first report of this species from India and represents a new host record for the species. A brief description of the species is presented below.

Oochoristica americana (figure 1)

Body 160–165 mm in length and 1.43–1.52 mm in

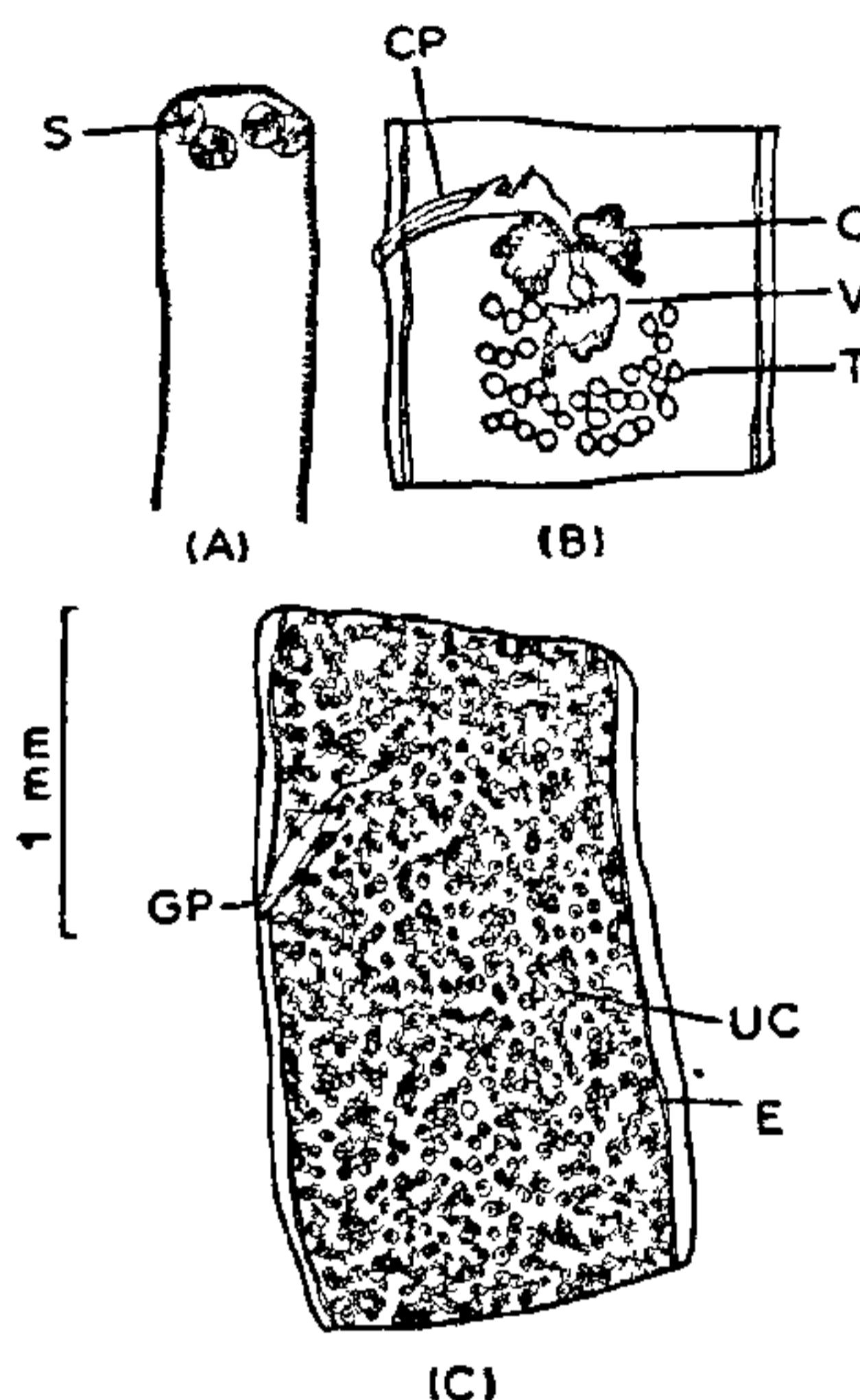


Figure 1. *Oochoristica americana*. A. Scolex; B. Mature segment; C. Gravid segment; S, sucker; GP, genital pore; T, testes; V, vitellarium; CP, Cirrus pouch; O, Ovary; UC, Uterine capsule; E, eggs.

maximum width. Scolex 0.41–0.55 mm in width. Suckers 0.11–0.13 × 0.13–0.14 mm in size. Genital pores irregularly alternating. Testes posterior and lateral to the vitellarium, 28–44 in each segment. Cirrus pouch 0.27–0.55 mm in length. Ovary bilobed, each lobe with 7–11 acini. Vitellarium medium, 0.13–0.20 × 0.21–0.26 mm in size. Each uterine capsule containing single egg. Uterine capsule 0.049–0.060 mm in diameter, while oncosphere 0.022–0.027 mm in diameter.

The genus *Oochoristica* is established by Luhe¹. Hughes² and Spassky³ provided keys to the species of the genus.

The present form, when compared with all the known species of the genus *Oochoristica*, comes closer to *O. americana*⁴ in the number and distribution of testes. Moreover, it also resembles in the size of scolex and suckers and the length of cirrus pouch. The present form differs from *O. americana* only in a few morphometric variations which are considered as intra-specific. It is redescribed here as it represents a first record of the species from India and also it is a new host record.

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