

- (ii) Tracheids with simple bordered pits, round, 15μ diameter; orifice elliptical, $10 \times 3\mu$, vertical; 2 pits in cross field (Fig. 1, B).
- (iii) Cuticles with polygonal cells, 7μ across, some of which are thickened (Fig. 1, C).

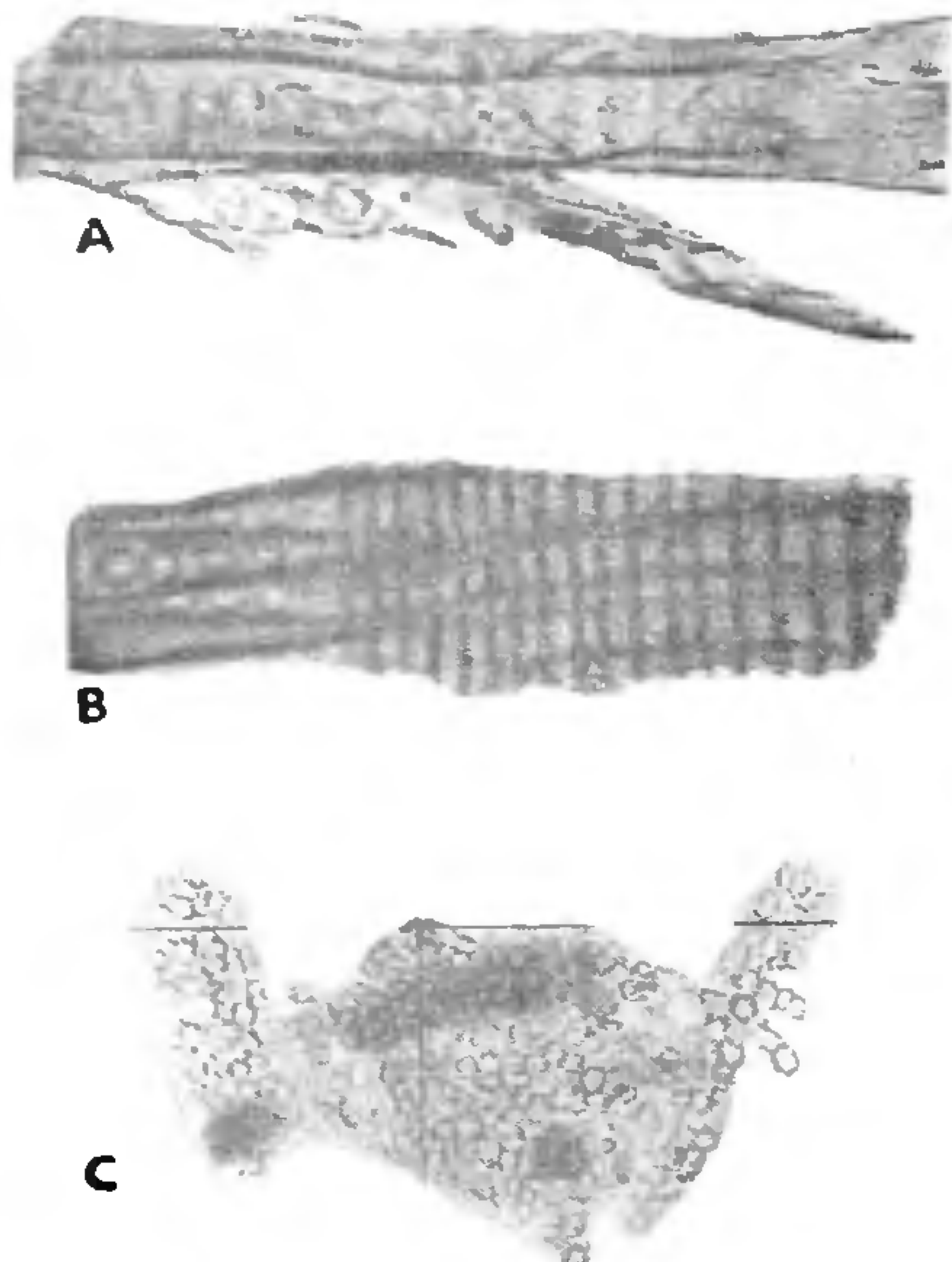


FIG. 1. A-C. Plant remains from phyllites of Bhikiasain area.

The general characters suggest that the remains are of gymnospermous wood.

On the basis of lithology and stratigraphic position, the rock units of Bhikiasain area can be correlated with Jausar¹ formation, the age of which is problematical. Auden² considers it to be Cambrian-Devonian. Gansser,³ in his stratigraphical column, has placed the Jausars in the Ordovician while Boileau⁴ considers them to be Precambrian to Lower Cambrian. Valdiya⁵ correlates the Jausar and Nagthat formations with the Alwar and Bijawar formations of Peninsular India which are usually regarded to be of Precambrian age. In this context, the present discovery of plant remains is significant. Gymnosperms are generally considered to have evolved during the Upper Devonian. This suggests a younger age for the Jausars, i.e., Upper-or Post-Devonian. Detailed investigations, which are underway at the University of Poona, may throw further light on the subject.

The writers are indebted to Prof. B. G. Deshpande for his constant encouragement and for critically going through the paper. They are thankful to Shri A. V. Phadke for taking the photomicrographs. The senior author gratefully acknowledges the financial assistance received, for fieldwork, from the Wadia Institute of Himalayan Geology, Delhi.

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Poona-7, March 4, 1971.

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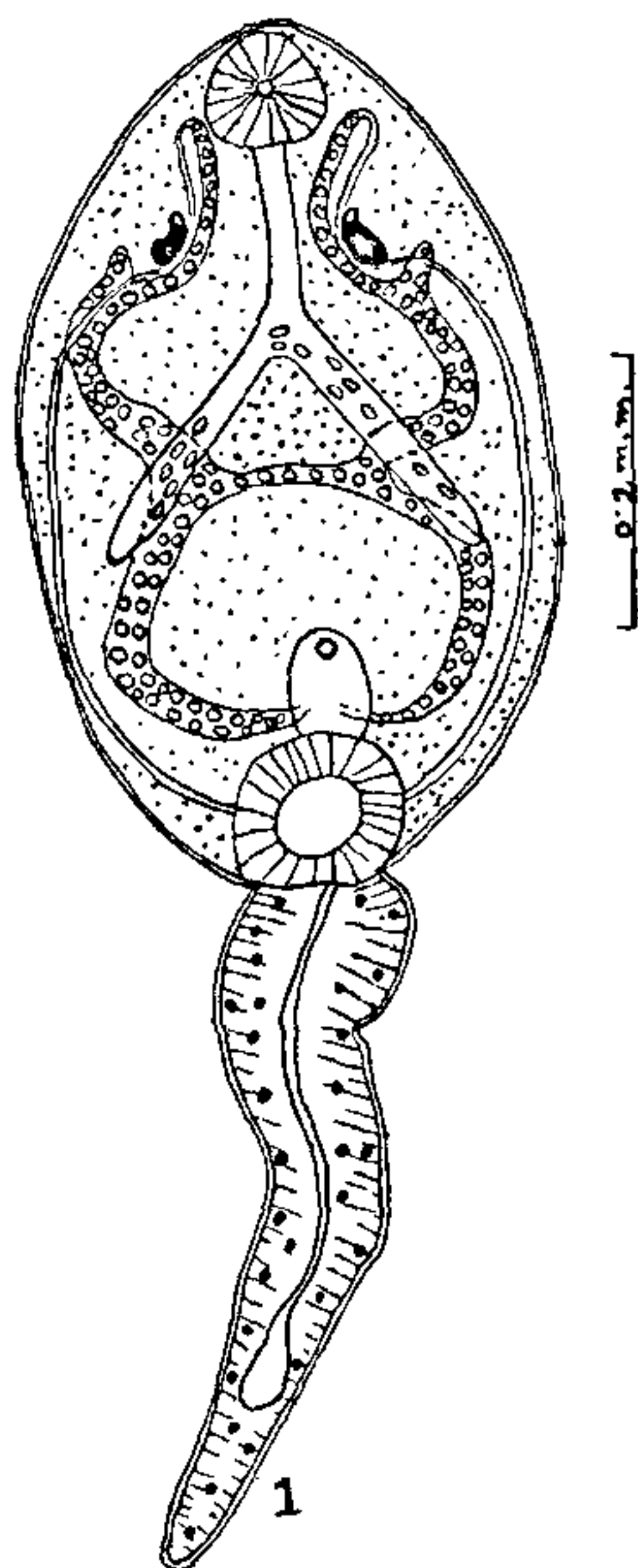
AN AMPHISTOME CERCARIA FROM *GYRAULUS EUPHRATICUS* (MOUSSON)

NATURAL infection with *Cercariae indicae* XXIX in this snail constitutes the only report of an amphistome cercaria under the "Pigmentata" group,² though experimental infection of *Gyraulus convexiusculus* with cercaria of *Gastrothylax crumenifer* has been reported.⁴ Two other types, *Cercaria chungathi* and *C. gyraulusi*, from *G. convexiusculus* have also been described.¹

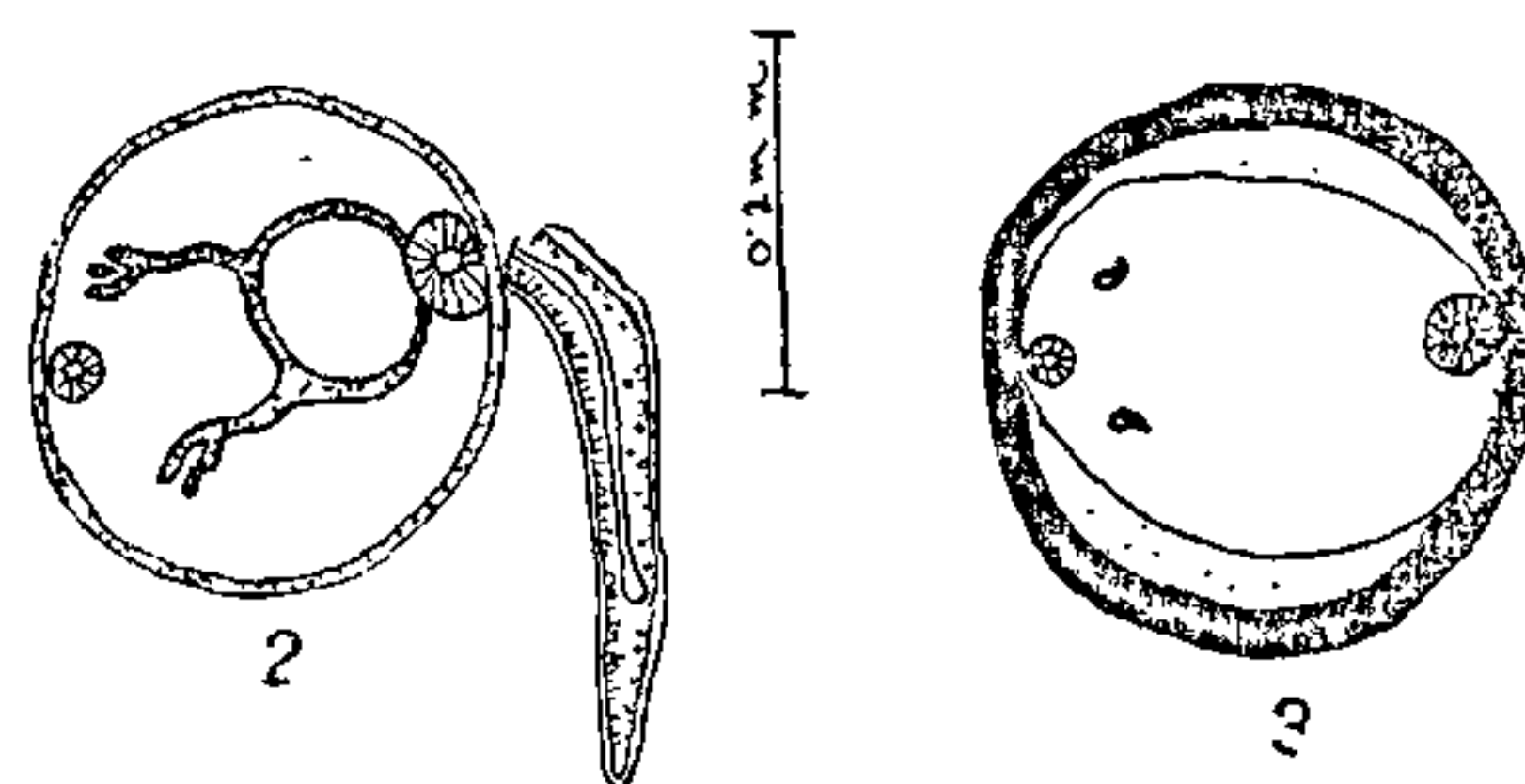
Numerous specimens of *G. euphraticus* were collected during October, 1969, through December, 1969, from the ponds at Raya and Bhainsa about 13 kilometres from the college premises. These were individually kept under sunlight, between 9-12 a.m., in beakers half-filled with tap-water for observing the emergence of the cercariae harboured by them. Among the trematode larvae found to emerge, the amphistome cercariae were studied in slide preparations of the live specimens. One type of amphistome cercariae available represented the "pigmentata" group. With an extremely low incidence, 12 specimens of larvae form were available for morphological study including the excretory system. The process of encystment was also observed. A brief account of cercaria and metacercaria has been attempted. Feeding experiment was not possible due to inadequate material.

The cercaria, 0.470×0.380 mm size and with 0.353 mm long tail, lacked pigmentation and had oral sucker of 0.029 mm diameter; 0.094 mm long oesophagus; short intestinal and 2.4μ breadth. The pathogen was identified

the body; acetabulum of 0.044 mm in diameter; excretory bladder with anterior excretory pore and main excretory trunks, with a transverse commissure without any diverticulum and situated behind the intestinal bifurcation, draining into it posteriorly and, after reaching the anterior level, passing backwards to enter the acetabular area; eye spots situated between the anterior end of the body and the level of intestinal bifurcation (Fig. 1).



Cercaria bulimusi, stated to possess an oesophageal sphincter absent in the present form. *Cercariae indicae* XXXII,³ according to Peter and Srivastava,² is smaller in size and has relatively large suckers, the oesophagus is nearly half long as the body and the shorter intestinal caeca do not reach three-quarter of the body length. An information about the genital rudiments could not be available on account of the limited material. The identity of this form exhibiting some affinities of these two cercariae would be possible on detailed study after feeding experiments with more material.



FIGS. 2-3. Fig. 2. Another cercaria under initial stages of encystment. Observe the typical excretory system, the beginning of the separation of the tail and a thinner cystic wall. Fig. 3. A full developed metacercaria.

Grateful acknowledgement is due to Dr. B. P. Pande, for his guidance, and to the Principal of the College, for the facilities provided.

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FIG. 1. A live specimen of the amphistome (pigmentata) cercaria from *G. euphraticus* showing the digestive and excretory system.

After a free-swimming life of 20-30 min, the process of encystment in this cercaria began with partial severance of the tail and in consequence of the deposition of the cystic material as a thin layer (Fig. 2). A complete separation of the tail was later achieved and a greater deposition of the cystic material produced. The metacercaria, of 0.292×0.318 mm in size, was smaller than the earlier form and had a 0.016 mm thick cyst-wall. The larva inside revealed the two suckers and the eye spots (Fig. 3). The pattern of the excretory system was, however, evident in the earlier stage (Fig. 2).

On account of absence of diverticulum in the transverse commissure, this cercaria resembles

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THE GERMINATION OF TRUE SEEDS OF POTATO UNDER LONG STORAGE CONDITIONS

BESIDES being the basic material for breeding programmes, the true seeds of potato are of value in the following cases: (a) a large number of wild and cultivated collections can be maintained through true seeds and it is sufficient if these collections are grown once in a few years, (b) maintenance of germ plasm collections through true seeds eliminates all