

bicarpellate ovary indicated that the plant can be a member of Gentianales; the presence of air spaces in the t.s. of roots pointed out that it must be an aquatic or marshy genus. This habitat coupled with the induplicate-valvate corolla showed that the plant belonged to the tribe Menyanthoideae⁶ and the family Menyanthaceae which occurs in India⁷. The genus *Nymphoides* Seignier is the only marshy/aquatic taxon of the Menyanthaceae⁷⁻⁹.

The 5 S Indian species of *Nymphoides* are distinguished on the basis of their seed character⁸⁻¹⁰. A comparison of the seeds of *Granthika tagara* with the five species of *Nymphoides* revealed that the seeds in the remnants of *Granthika tagara* closely agreed with those of *N. macrospermum*¹⁰. In addition, the characters of roots, leaves, flowers, peduncles and fruits of the remnants also agreed with *N. macrospermum*. Hence, the crude drug *Granthika tagara* is identified as the roots and rhizomes of *Nymphoides macrospermum* Vasudevan.

Incidentally, *N. macrospermum* was established as a new species by R. Vasudevan Nair¹⁰ who opines that in vegetative characters, it closely resembles *N. indica* as to make identification difficult; further, sympatric existence of some species of *Nymphoides* is also responsible for the inadvertent mixing of other species by the collectors. Hence, it is possible that sometimes *Granthika tagara* may consist of an admixture of species of *Nymphoides*.

Detailed botanical descriptions of *N. aurantiacum*, *N. cristatum*, *N. indica* and *N. parvifolium* are given by Subramanyam⁹ while that of *N. macrospermum* by Vasudevan¹⁰.

Since *Granthika tagara* is actually used in place of *Tagara (V. jatamansi)* which is fast diminishing due to indiscriminate exploitation, it will be worthwhile if this drug is pharmacologically and clinically investigated. Preliminary clinical trials carried out at the Ayurvedic Research Unit, CCRAS, National Institute of Mental Health and Neuro-Sciences, Bangalore, on mental disorders with *Granthika tagara* as one of the ingredients in the preparation have yielded favourable results (personal communication).

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Regional Research Centre, S. N. YOGANARASIMHAN,
Jayanagar, V. S. TOGUNASIH.
Bangalore 560 011, (MRS.) Z. MARY.
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* Institute of History of Medicine, Tughlakabad, New Delhi.

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ON A BRANCHED DWARF MALE IN *OEDOGONIUM* SP.

IN the course of studies on the algal flora of Andaman and Nicobar Islands, the authors came across a nannandrous species of *Oedogonium* Link possessing branched dwarf-male filaments (nannandria), a feature hitherto unknown in the genus¹⁻³. Further, the present species *Oedogonium gallicum* Hirn⁴, is a new record for the Indian flora.

Oedogonium gallicum Hirn

Nannandrous, idioandrosporous. Vegetative cells cylindrical, 20-22 μ m in diameter, 49-60 μ m long. Oogonia, rarely observed, solitary, globose, opening by supramedian pore, 48.5-50 μ m in diameter and 51-52.5 μ m long, oospore globose with thick, smooth wall, mesospore brownish yellow, 44-46 μ m in diameter and 47-49 μ m long. The nannandria are upto 73.5 μ m long with two to three antheridia (length 7.5-10 μ m; breadth 9-9.5 μ m) containing two superimposed antherozoids each, the attaching rhizoidal cell is somewhat swollen towards its upper (distal) end and is branched towards the proximal end, the branches are composed of one or two cells with a clear transverse septum. The basal attaching ends are club-shaped with thick mucilage to serve for attachment (Fig. 1). The rhizoidal cell possesses hyaline contents.

Habitat : Planktonic, with other algae in a fresh-water pond.

Coll. No. : 277 F.

Loc. : Rangat, Middle Andaman Islands.

Date : 10-11-1978.

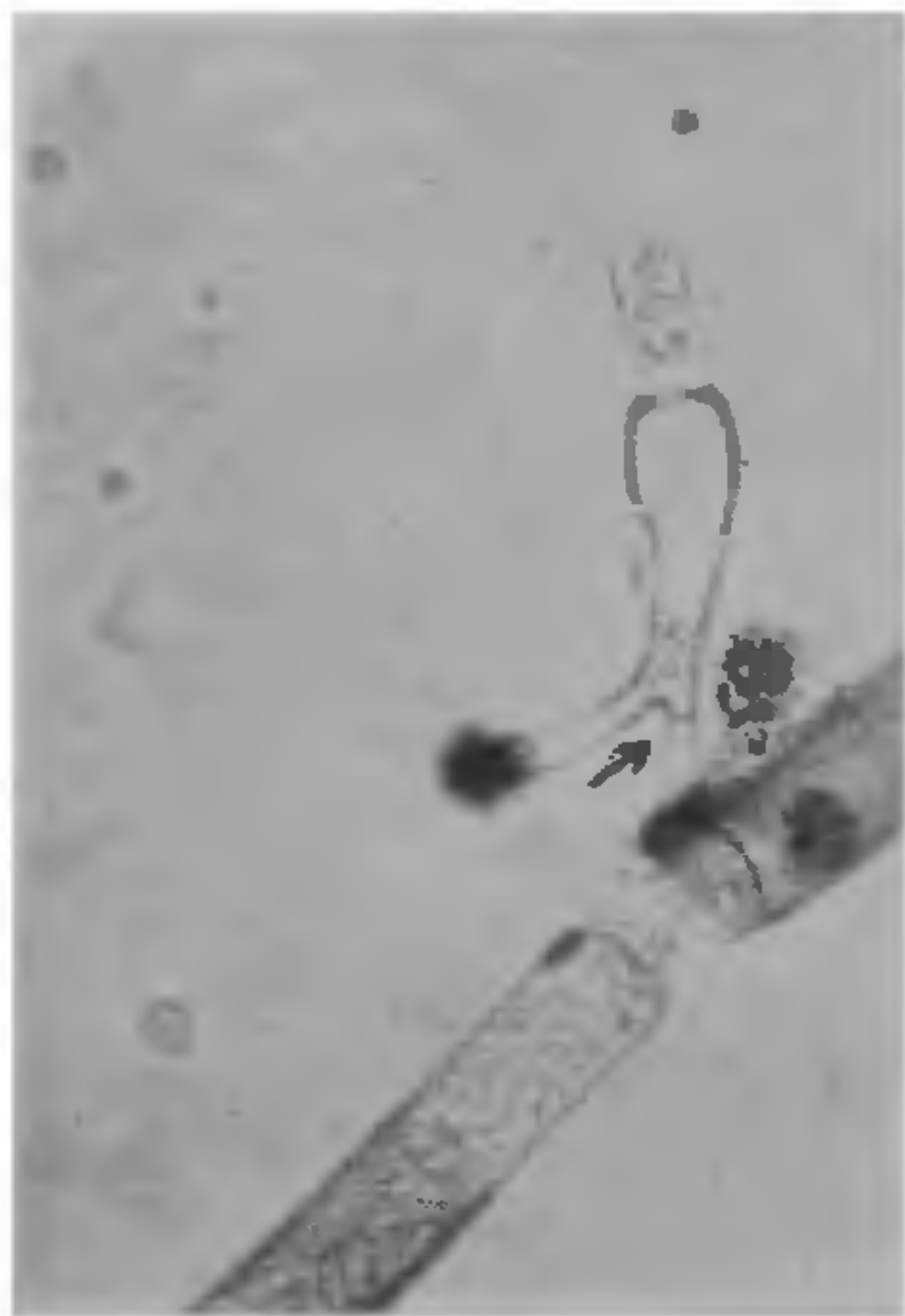


FIG. 1. Dwarf-male filament showing antheridia and branched rhizoidal cell with transverse septum (arrow) and attaching mucilaginous pads, $\times 375$.

The Oedogoniales constitute a series with unbranched (*Oedogonium*), branched (*Bulbochaete*) and heterotrichous (*Oedocladium*) vegetative body. The presence of branched stages in *Oedogonium* are, therefore, of evolutionary and phylogenetic significance. If the branched nannandria with multicellular rhizoidal system reported here are considered teratological, then, it indicates a faculty to develop branched filaments in a normally unbranched genus pointing towards evolution of a *Bulbochaete*-like thallus. However, should this feature be regarded as an atavistic reversion, it will be deemed to imply that the Oedogoniales represent a reduction series. It is difficult to decide on any one of the two views mentioned above, at the present state of our knowledge.

Department of Botany,
Lucknow University,
Lucknow, India,
April 16, 1979.

BRAJ NANDAN PRASAD,
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EUGREGARINE PARASITES OF COLEOPTERA FROM NORTH-EAST REGION OF KARNATAKA

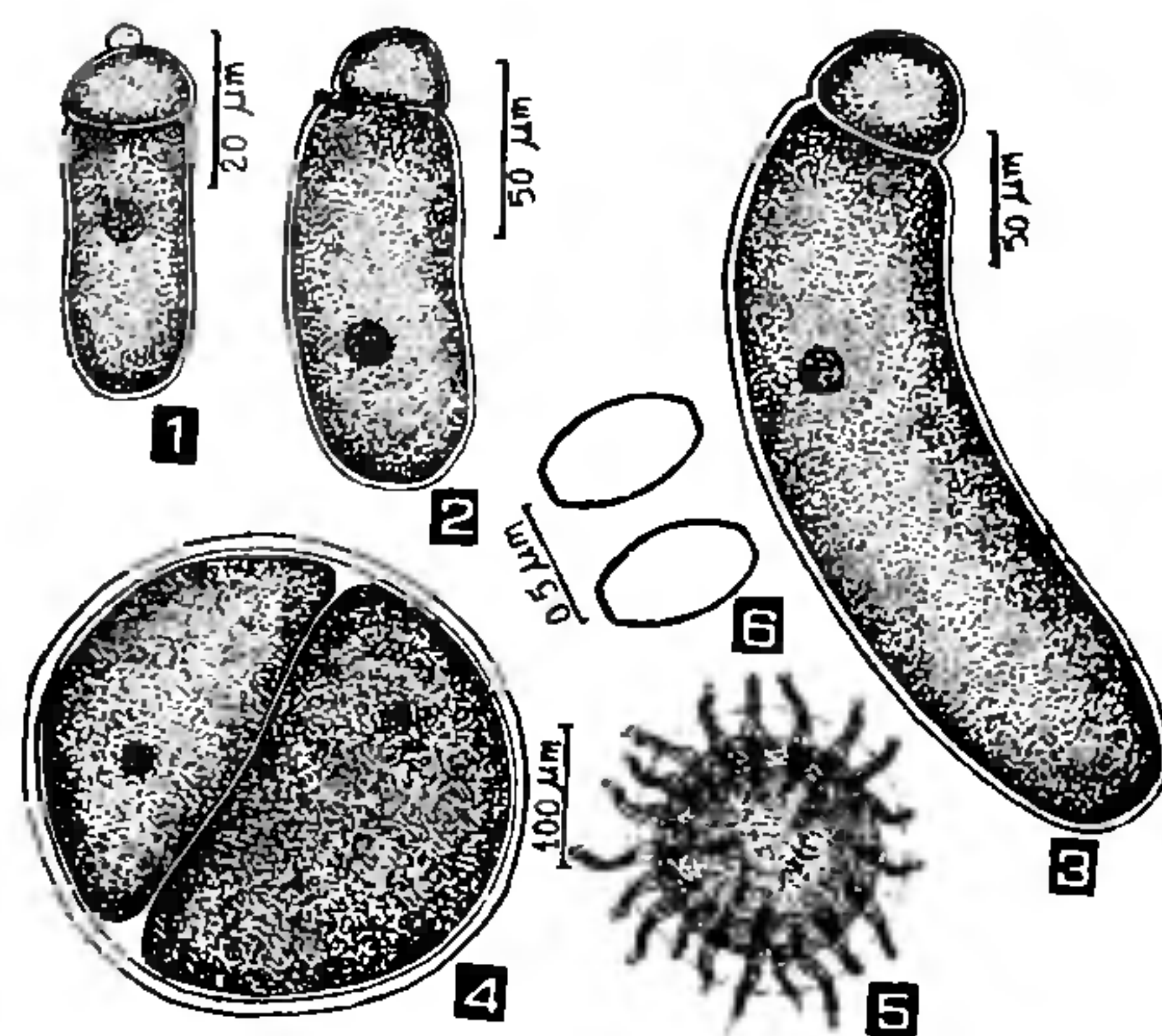
II. *Leidyana gnyanagangai* n.sp., Found in the Gut of *Rhytinota impolita* Fairm.

THE genus *Leidyana*¹ comprises 13 species. Of these, complete life-cycle agreeing to the generic characters is known in only 8 species².

The present report deals with the morphology of a cephaline gregarine infesting the beetle, *Rhytinota impolita*, found around Gulbarga (Karnataka, India). The beetle also serves as the natural host for *Cystocephalus devdharii*³.

Smear preparations of the midgut revealed the presence of gregarines in various developmental stages: cephalins in the anterior region of the midgut followed by sporadins in the posterior region. No intracellular stage was observed. The gametocysts were found in hindgut. The description of the various stages of this gregarine is as follows:

The smallest cephalin (Fig. 1) is a lumen-dwelling form, has a cylindrical body ($30 \mu\text{m} \times 15 \mu\text{m}$) with hemispherical protomerite and simple sessile knob-like epimerite. The epimerite ($5 \mu\text{m} \times 5 \mu\text{m}$) persists till the cephalin reaches a length of about $50 \mu\text{m}$. The cephalin, after shedding the epimerite enters the sporadin stage. The young sporont (Fig. 2) are also cylindrical and as development proceeds, the cylindrical deutomerite takes a bend at its anterior 1/4 region thus giving a permanent and characteristic comma-shaped appearance to the adult sporont (Fig. 3). Sporadins are solitary forms and measure $200-350 \mu\text{m}$ in length.



FIGS. 1-6. Fig. 1. Cephalin. Fig. 2. Young sporont. Fig. 3. Adult sporont. Fig. 4. Freshly formed gametocyst. Fig. 5. Mature gametocyst with sporeducts. Fig. 6. Doliform sporocysts.