

***Nematocystis indicus* sp. nov. (Apicomplexa: Monocystidae)  
from an Indian earthworm (Annelida: Oligochaeta)  
*Perionyx excavatus* (Perrier)**

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**Summary**

A bio-diversity study in search of acephaline gregarines from Sandeshkhali village under Sundarban delta of West Bengal province, India revealed a new species of *Nematocystis* Hessé, 1909; *Nematocystis indicus* **sp. nov.** in the seminal vesicles of earthworms *Perionyx excavatus* (Perrier). Gamonts are elongated, with a cylindrical main body and a short wider anterior portion that contains the small nucleus. Both the ends are gradually narrowed like a 'V' to a nearly pointed tip. Body length varies from 172.0–400.0  $\mu\text{m}$  (mean= 257.0  $\pm$  65.4  $\mu\text{m}$ ). The maximum body width ranges from 18.0–49.0  $\mu\text{m}$  (mean= 25.0  $\pm$  9.0). Gametocyst almost rounded ranging from 48.0–68.0  $\mu\text{m}$  (mean= 56.0  $\pm$  1.3  $\mu\text{m}$ ). Oocysts biconical, measuring 7.0–11.5 (mean= 9.3  $\pm$  1.1  $\mu\text{m}$ ).

**Key words:** Gregarines, acephaline, earthworm, *Nematocystis*, new species, India

**Introduction**

Gregarines are chiefly coelozoic or lumen-dwelling apicomplexan protozoans of invertebrates, especially arthropods and annelids. There are two major groups of gregarines, the acephaline and the cephaline, and earthworms harbour the acephaline forms. The acephaline, or aseptate forms, lack a septum near the anterior-end that separates the cytoplasm into two compartments. Aseptate gregarine fauna have been reported from various parts of the world including India (Hessé 1909; Bhatia & Chatterjee 1925; Bhatia & Setna 1926; Kar 1946; Kalavati 1979; Subbarao *et al.* 1979; Pradhan & Dasgupta 1980a, b; 1982; 1983a, b; Roychoudhury & Halder 1984; Bandyopadhyay *et al.* 2001; 2004; 2006a, b; Bandyopadhyay & Mitra 2005a, b, c, d), but in India, little is still known about their diversity and prevalence in invertebrate hosts. Investigations in search of acephaline gregarines infesting earthworms of West Bengal, India revealed the