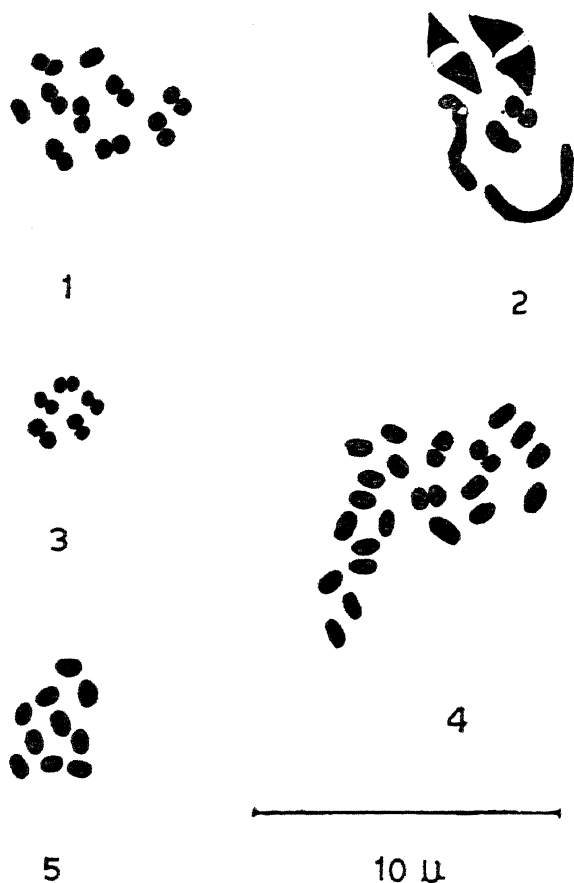


KARYOLOGICAL STUDIES ON THREE SPECIES OF COPEPODS

THE present communication is based on preliminary studies on the chromosomes of three species of the copepods, namely *Cyclops bicolor* Sars, *Oithona rigida* Giesbrecht, and *Laophonte setosa* Boeck, collected from the Cochin Backwater, Kerala.

The specimens, soon after the collection, were fixed in acetic alcohol (1 part acetic acid and 3 parts absolute alcohol) and squashes were prepared from the specimens after staining them with Gomori's haematoxylin.

Cyclops bicolor has a diploid number of 10 chromosomes. The spermatogonial prophase chromosomes of this species pass through the usual course of condensation and finally 10 metacentric rod-shaped chromosomes enter the metaphase plate (Fig. 1). The parallel stages



FIGS. 1-5.

Figs. 1-3. *Cyclops bicolor* (male). Fig. 1. Spermatogonial metaphase. Fig. 2. Metaphase-I. Fig. 3. Metaphase-II. Fig. 4. *Oithona rigida* (male), Spermatogonial metaphase. Fig. 5. *Laophonte setosa*, Spermatogonial metaphase.

of mitosis studied in the developing embryos of this species, however, revealed V-shaped metacentric chromosomes. This type of variation in the morphology of chromosomes in tissues of the same species has been attributed to the differences in the physiological

conditions and to the peculiarity of the material itself.³

Metaphase I and II plates of meiosis in males of *C. bicolor* revealed the presence of 5 bivalent and 5 univalent chromosomes respectively (Figs. 2 and 3). In the other species, *Oithona rigida*, the spermatogonial chromosome number was 22 (Fig. 4). The size and shape of the chromosomes were similar to those of *C. bicolor*. The third species, *Laophonte setosa* showed a diploid number of 10 chromosomes during its spermatogonial metaphase stage (Fig. 5).

Braun¹ has described a range of 3 to 11 haploid chromosomes amongst 11 species of *Cyclops* he examined. Beermann² has reported 11 haploid chromosomes in *Cyclops strennus*. White⁴ has pointed out that copepods show conspicuous variations in their chromosome number even in systematically closely related species. The two species, *O. rigida* and *C. bicolor* which were under investigation by the present authors, although belonged to the same suborder Cyclopoidea, yet they revealed 22 and 10 diploid number of chromosomes respectively.

C. bicolor and *L. setosa* belonging to different suborders, Cyclopoidea and Harpacticoidea respectively showed 10(2n) and 5(1n) chromosome numbers respectively. *Cyclops vernalis* was found to have a haploid number of 5 chromosomes¹. Further studies on chromosomes will explain the evolutionary relationship of these two sub-orders.

At present the data available on the chromosomes of copepods are quite insufficient to establish basic number of chromosomes for this group. However, from the findings of earlier workers and of the present authors, it seems reasonable to assume 11(1n) chromosomes as the modal number for this group.

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National Institute of Oceanography,
Biological Oceanography Division,
Karikkamuri Cross Road,
Cochin-11, November 6, 1971.

USHA GOSWAMI.
S. C. GOSWAMI.

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