

this plant the Sat. chromosomes were found too close, with their short arms facing one another and satellites apparently fused (figures 4 and 5). This orientation was recorded in 70% of the cells scanned. The number of chromosomes involved in each association varied from 2 to 4. The associations involved homo- as well as non-homologous Sat. chromosomes.

Observations on the frequency of satellite associations in human trisomics for D and G group chromosomes are of significance. Some workers⁷⁻¹⁰ claim an increased frequency of Sat. associations in trisomics, while others refute it^{11,12}. The present finding on *P. ovata* indicates that the tendency of Sat. and non-homologous associations increases manifold with the addition of a Sat. chromosome to the tetraploid complement.

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A CRITICAL ACCOUNT ON THE FIRST OCCURRENCE OF *COELASTRUM COMPOSITUM* WEST FROM INDIA

L. JOSE and R. J. PATEL

Department of Biosciences, Sardar Patel University, Vallabh Vidyanagar 388 120, India.

DURING an exploration of the algal flora of Kerala the authors came across an interesting species of *Coelastrum* (Chlorococcales) from a freshwater tank at Kalamassery in Ernakulam. This species, *C. compositum*, was established by West¹ in 1907. This is the first report of its occurrence in India.

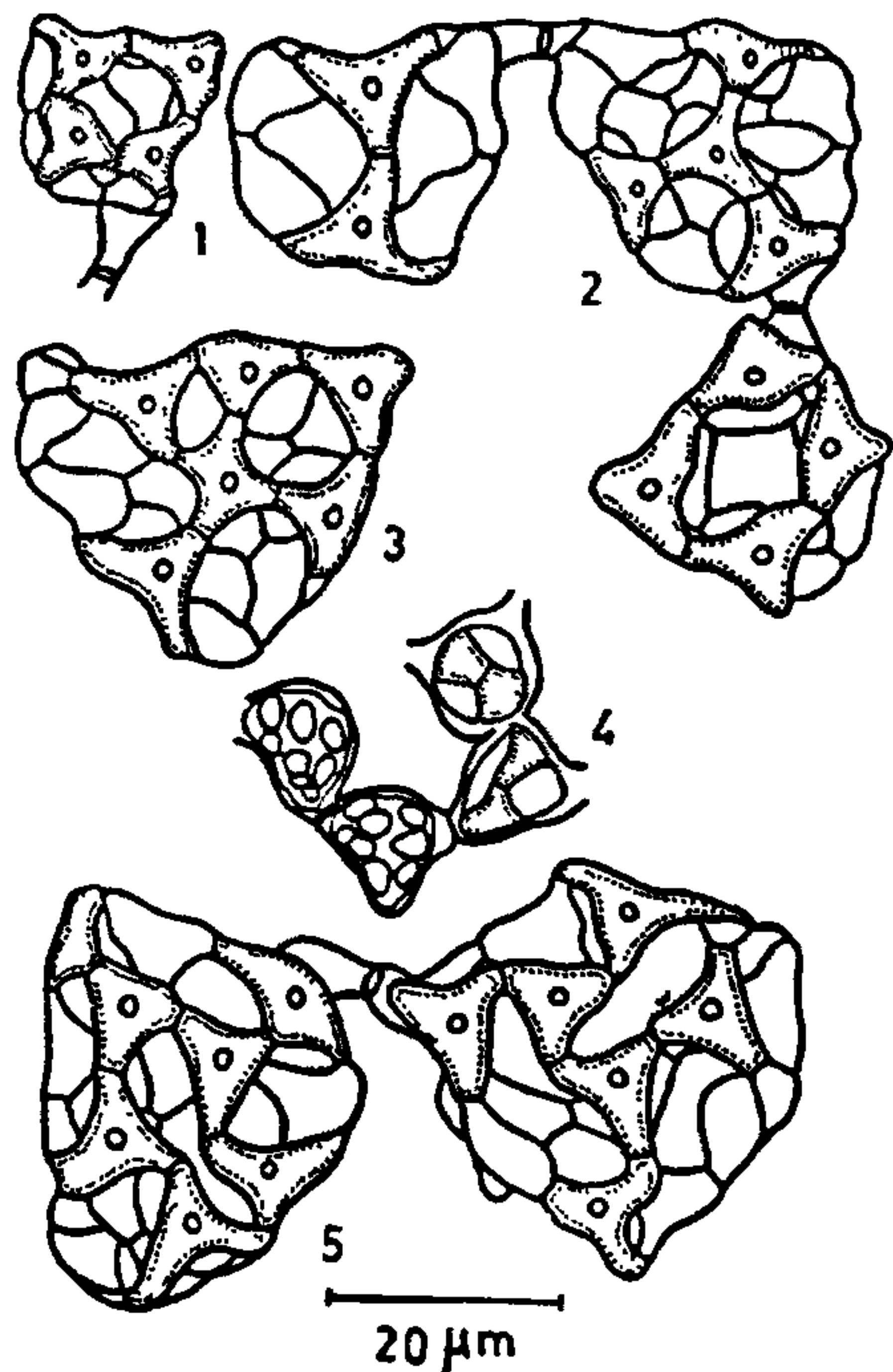
This alga is planktonic and was found growing along with the species of other genera like *Actinastrum*, *Selenastrum*, *Scenedesmus*, *Dimorphococcus*, *Nephrocytium*, and some members of Cyanophyceae.

Coelastrum compositum West (figures 1-5).

Colonies free-floating, coenobia pyramidal, cubical or polygonal, simple or compound, colonies of 4, 8, 16 or 32 cells. Cells truncate, conical or rarely cruciate with the apex of the cone directed outwards, arranged in tetrahedral groups of four, joined together by their basal lateral sides to form a large hollow in the centre of the coenobium. Cells 6-13.6 μm in diameter, 4- and 8-celled coenobia 16-32 μm in diameter, 32-celled coenobia 44-52 μm in diameter.

Reproduction is by autocolony formation which is asynchronous. The autospores are formed inside the parent cell which organize to form the young coenobia. The young coenobia are held together inside the parent cell to a very late stage, so coenobia under different stages of development were found held together in series (figure 4). This series formation is due to parent cell connection.

According to West, *C. compositum* is distinguished from all the other species of this genus by having a tetrahedral group of four cells in place of what would normally be a single cell. In this species the space between the groups is very large and also have small intercellular spaces between each group of 4 cells. It is also characterized by the abruptly truncate external angles of the cells. West has not reported autocolony formation in this species. The specimen described here agrees with the one described by West in all respects except in having slightly larger dimensions of cells. The occurrence of a cruciate-shaped cell is a new observation for this species.



Figures 1-5. *Coelastrum compositum* G. S. West. 1. 8-celled coenobium; 2 and 5. Mature coenobia joined together by parent cell connection; 3. A coenobium showing cruciate-shaped cell in the centre; 4. Autocolony formation in different stages.

According to Philipose² there are different opinions about this species. *C. compositum* has been considered to be a synonym of *C. proboscideum* Bohlin by Smith³ and Prescott⁴. But Brunthaler⁵, Fritsch and Rich⁶, Rich⁷ and Philipose treated it as a distinct species. Here also it is treated as a distinct species following the above authors.

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STUDIES ON THE INHERITANCE OF TRIMOULTERS IN THE SILKWORM, *BOMBYX MORI*

RAVINDRA SINGH, J. NAGARAJU and K. VIJAYARAGHAVAN

Central Sericultural Research and Training Institute, Mysore 570 008, India.

THE number of larval instars in a given species is genetically fixed¹; however, studies^{2,3} have shown that larval instar in insects is influenced by low temperature, low humidity, starvation or population density. In silkworm, *Bombyx mori*, the number of larval moults has been shown to be reduced or increased by the combined effect of temperature, photoperiod and nutrition experienced during embryonic development and larval stages^{4,5}. Appearance of sex-linked trimoulters in silkworm has been reported by many workers^{6,7}. The present study is aimed at understanding the manifestation of trimoulters in hybrids of different parent combinations of the silkworm, *Bombyx mori*.

A three-way cross involving two bivoltines (NB₇ and NB₁₈) and one multivoltine (MHMP-W) was found giving spontaneous trimoulters of both sexes to an extent of 6 to 8%. This trimoulters line was used for the present study. Appearance of trimoulters in F₁ varied considerably depending upon the parent strains used either as male or female. The segregation of trimoulters and tetramoulters, their larval span and the percentage of trimoulters in each replication are given in table 1. In a cross involving females of NB₁₈ (a Japanese type bivoltine which spins dumbbell cocoons) and trimoulters males, all the trimoulters segregated (9.5 to 35%) were invariably females. However, no trimoulters appeared in the reciprocal cross. Similar results have been reported⁵ in the cross of univoltine × multivoltine or bivoltine