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(PRELIMINARY NOTE)**

BY M. O. P. IYENGAR, M.A., PH.D. (LOND.), F.L.S.  
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ON THE REPRODUCTION OF *ANADYOMENE*  
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THIS alga was collected at Krusadai Island near Pamban and was brought in a living condition to Madras and kept growing in the laboratory in Schreiber's culture solution made up in sea-water. The plants produced plenty of swarmer on a number of days. Two types of plants were found, one set of plants producing quadriciliate zoospores and the other forming biciliate gametes. The two types of plants were externally quite similar and could not be distinguished from one another. The quadriciliate zoospores after swarming for a short time, settled down and began to germinate. The biciliated gametes fused in pairs and formed plenty of zygotes. The fusion was generally isogamous but frequently slightly anisogamous also. The gametes from the same thallus did not fuse, the fusion always taking place between gametes from different thalli.

Very little is known regarding the reproduction of *Anadyomene*. The only detailed account of the reproduction in this genus is by Derbes and Solier (1850) who have described the formation of swarmer in the cells of the alga. But they do not mention whether the swarmer are gametes or zoospores, nor do they mention the number of cilia possessed by the swarmer. No cilia are shown even in the swarmer figured by them (Derbes and Solier, 1850, Pl. 32, fig. 9). Later authors (De Toni, 1889; Collins, 1909; Wille, 1911; Printz, 1927 and Fritsch, 1935) merely mention that swarm-spores are formed in the cells of *Anadyomene*.

The present investigation is interesting in showing that there are two types of swarmer, *viz.*, quadriciliate zoospores and biciliate gametes, and that these two types of swarmer are formed on different plants which are externally indistinguishable from one another. The occurrence of two types of plants, one asexual and producing four-ciliated zoospores and the other sexual and forming biciliated gametes, suggests the possibility of the existence of an alternation of an asexual with a sexual generation as in the case of some members of the Cladophoraceæ and Ulvaceæ. The fact that the

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\* From the University Botany Laboratory, Madras.

gametes from the same plant in the present alga do not fuse suggests that the sexual plants are probably dioecious. This appears to be the first record of sexual reproduction in *Anadyomene*. In fact no sexual fusion appears to have been actually observed so far in the Valoniaceæ (Fritsch, 1935, p. 424).

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