

negative geotaxy. Light and oxygen gradients are subsidiary directing stimuli. Species differ in their rates of movement and in the times at which their motilities commence and cease. These differences cause species to reach the surface in succession throughout the morning and early afternoon.

J. H. EVANS, G. D. HAFNER and D. HARDY (Royal Holloway College, University of London)

Centric diatoms; turbulence, light attenuation and SiO₂ demand

Investigations since 1965 of Thames Valley Reservoirs have indicated the importance of natural and artificially induced turbulent mixing upon phytoplankton populations. Small centric diatoms from the River Thames usually sediment rapidly in reservoirs while large centric diatoms may become seasonally dominant. *Stephanodiscus astraea* (Ehrenb.) Grun. is influenced by SiO₂ concentrations, light attenuation and vertical mixing. Associated with its growth there have usually occurred low or decreasing primary productivity rates which suggests some heterotrophic potential. Field sedimentation experiments, mainly in 1974, indicated moderately rapid sedimentation even during vertical mixing. A comparison between "live" and "preserving" traps indicated cell depletion by grazing and/or by bacterial action.

W. F. FARNHAM and N. A. JEPHSON (Portsmouth Polytechnic)

A survey of the maerl beds of Falmouth (Cornwall)

Most of the maerl occurred as dead fragments, sometimes associated with *Zostera marina*, but living beds of *Phymatolithon calcareum* (fertile in December) and *Lithothamnium corallioides* rhodoliths were found within the Outer Harbour. The epiphytes were similar to those found on maerl beds in Brittany. Noteworthy species included *Bonnemaisonia hamifera* (male)/*Trailliella intricata* (tetrasporangial), *Dudresnaya verticillata*, *Carpomitra costata*, *Vaucheria piloboloides* and *Seirospora seirosperma*. *Solieria chordalis* was recorded for the first time in Britain and was later found in Dorset. Furthermore, a foliose red alga was collected, not referable to any previously known British species, but which has not yet been fully identified.

P. FAY (Westfield College, University of London)

Some aspects of the ecology of planktonic blue-green algae

G. E. FOGG, F.R.S. (Marine Science Laboratories, Menai Bridge)

Antarctic phycology

Algae are often locally abundant in certain terrestrial and freshwater situations in the maritime antarctic and in the sub-littoral and plankton of antarctic seas. The high biomass values which are often achieved are the result of the slow growth made possible by a reduction of respiration relative to photosynthesis at low temperatures.

J. C. GREEN (Marine Biological Association, Plymouth) and D. J. HIBBERD (C.C.A.P., Cambridge)

The ultrastructure of *Diacronema vlkianum* Prauser, with special reference to the haptonema and flagellar apparatus

This paper is being prepared for publication.

A. D. GREENWOOD, H. B. GRIFFITHS and U. J. SANTORE (Imperial College, London)

Chloroplasts and cell compartments in Cryptophyceae

Chloroplasts in chlorophyll *a*-containing algae, excepting Dinophyceae, are contained in sub-compartments isolated from the general nucleocytoplasmic continuum by the plastid ER cisterna. The unique periplastidial matrix in Cryptophyceae containing starch and putative ribosomes may depend on subsidiary genomes, carried possibly in small fibrogranular inclusions limited by fenestrated double membranes, named provisionally "nucleomorphs". These were perhaps acquired from a cytoplasmic starch forming ancestor by direct endocellular differentiation or by endosymbiosis in another eukaryotic cell. An empty compartment as found in other Chromophyta could have followed loss of the nucleomorph thus eliminating dependent ribosomes, proteins and starch synthesis.

CHRISTINE M. HAPPEY-WOOD (University College of North Wales, Bangor)

Studies of elusive algae: benthic *Chlamydomonas* spp.

Although descriptions of *Chlamydomonas* are frequent, little attention has been paid to their ecology. Counts may be made on agar or directly on live cells treated with respiratory inhibitor.