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Autor: Medd, Alan W.

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assumption. The number of specimens also varies within the stratigraphical interval studied; there is an increase in such numbers in the lower part of the Kimmeridge Clay, to a maximum number per unit mass of rock found for the whole of the Jurassic.

The methods of study are as stated in MEDD (1971) but a Zeiss photomicroscope II has been used for the routine optical investigations. The Nomarski interference phase contrast accessory is occasionally of help in the study of coccoliths. A TV fast scanning accessory on the scanning electron microscope has also proved to be of value for a detailed study of coccolith strew mounts; the instrument used is a Cambridge Instruments Co. Stereoscan Mark 2A, which is located at the Institute of Geological Sciences, London. The technique of NOËL (1973, p. 98) in examining the rock surface with an SEM has also been used but without her remarkable successes. Other Kimmeridgian samples examined, however, have provided excellent results, with abundant assemblages and coccospheres seen.

The problem of sample contamination is considerably diminished using borehole material and none of the problems associated with surface collected material (MEDD 1971, p. 823) was encountered. The problem of reworking of older coccoliths into the younger nannofloras has not been overcome as to its recognition, as opposed to these species having an extended range. It is difficult to envisage a method of erosion of the older sediments, which would preserve the coccoliths in such numbers as have been found at some levels in these boreholes. The relative proportions of the species are also different from that encountered in the older material. These suspect species appear most often in samples, which are already rich in numbers of indigenous species (i.e., not found in older sediments).

Figured or cited material prefixed with the letters "EM" are of micrographs taken with a Philips 75B transmission electron microscope at the Sedimentology Research Laboratory, University of Reading, and the material is lodged at that laboratory. If prefixed with the letters "SEM", the material was examined using the scanning electron microscope at IGS, London, where the material is now housed. If prefixed by the letters "MPK", the optical strew slides are stored in the MPK collection of type and figured specimens at the Institute of Geological Sciences, Leeds.

Details of the assemblages

The dominant species in all of the samples studied is *Ellipsagelosphaera britannica* (STRADNER) and particularly the small form of it. The only other species found, which occasionally constitute more than 25% of the nannoflora are: *Tetralithus gothicus* DEFLANDRE, *Palaeopontosphaera dubia* NOËL, *Zeugrhabdotus erectus* (DEFLANDRE) and small tremalith-like forms. The remainder of the species recorded can be found in varying degrees of abundance, but with no single species comprising more than 10% of the nannoflora.

Stratigraphical distribution

The distribution of the nannoflora of the Haddenham and Gamlingay boreholes are summarized in Tables 2 and 3, which record the species in the order of their