

tribution of planktonic species which are the first group on fig. 1; distribution nos. 1 - 22. Little comment need be made as they follow the anticipated sequence. The combination of the various members of the Orbulina bioseries (distribution nos. 1 - 8) differentiates the Zonules D to H of the Miocene. This evidence is reinforced by the distribution of certain species of Globorotalia (nos. 15 - 17). Associated with the larger benthonic species Gypsina howchini, Hofkerina semiornata and Planodiscus irregularis is an elongate Globigerinoides trilobus with a large umbilical aperture and 4 spiral sutural apertures. Both this G. trilobus morphotype and the larger benthonics listed are restricted to Zonule F. Carter (1964, pl. 9, figs 185 - 187) illustrated this morphotype and states (l.c., p.106) that it is restricted to his Faunal Unit 9 (= part of Zonule F) and associated with Lepidocyclina and the larger benthonic forms listed above. This G. trilobus morphotype may be referable to G. trilobus altiapertura Bolli, but Jenkins (1960, p.353) illustrates a different variant as representing this taxon in the Lakes Entrance Oil Shaft. To save confusion I have listed the Zonule F form as Globigerinoides trilobus morphotype B (distribution no. 6). It may be only of local biostratigraphic significance, though Carter (l.c.) reports it from both the Gippsland and Otway Basins. In all probability it is a warm water morphotype which migrated into southern Australian Miocene seas during a short period of elevated temperatures which is evident from the sudden and limited distribution of the larger benthonic (discussed above) and from the oxygen isotope work of Dorman (1966, fig. 1).

Distribution of benthonic foraminifera is similar to that in the Gippsland Basin, especially with regard to the change in Cibicides spp content (distribution nos. 23 - 27) above Zonule G. Appearance of the heavily costate Uvicerina sp. 9 is noted in Zonule H. As noted above the presence of Gypsina howchini, Hofkerina semiornata and Planodiscus irregularis confirms the presence of Zonule F.