

subhorizontally bedded. The oldest sediments are present only in the basinal areas and are possibly composed of glauconitic sands of Neocomian to Albian age (e.g. N 321, sp 5000-6000, Encl. 16) : the top of this sequence may have been penetrated at the very base of GC.258. The overlying sequence passes up from Albian to Cenomanian clays into Upper Cretaceous to Recent chalks and oozes of deeper water origin. There are numerous hiatuses in the succession, probably due to current controlled deposition/erosion. At core hole RC 8-56, Turonian chalks are found 100 cm below the sea floor. The fauna indicates that deep sea conditions were already achieved by Middle Albian times, and there are few signs of post Middle Cretaceous deformation. The clays at the base of the sequence probably form much of the thicker sections visible in the basinal areas (Encl. 7, 13). Cross-bedding (N 324-1, sp 2300-2400, Encl. 16) and unconformities (N 324-1, sp 300, Encl. 16) probably indicate local high energy slope environments and slight tilting.

3. Albany-Esperance Area

In this area the tectonic trends follow the east-west trend of the coastline. The slope is steep and is characterised by deep erosion channels and slumps.

Below the Neocomian unconformity Pre-Cambrian metamorphics of 5.6 km/sec seismic velocity underlie the shelf along much of the area. Off the southern end of the Perth Basin, however, nearly 2000 m of tilted sediments, probably of Permian to Lower Mesozoic age, may be seen both on the shelf and in deeper water (where they have been downfaulted).

At the seaward ends of the sections, the basement is of volcanic character and has a layer 2 velocity (5.5 km/sec in V.16.37, Hawkins et al., 1965). Near the slope base it seems to onlap the pre-unconformity basement (e.g. N 400, sp 2000-3000, Encl. 17). Magnetic basement picks from the unconformity level higher up the slope and on the shelf, together with outcrops of Neocomian tholeiite (Bunbury Basalt, Veevers and Evans, 1973), suggest that volcanics cover several parts of the continental margin.

The post-Neocomian sediments may be divided into three units. The lowest is only present locally on the slope and may be absent from the deep water. It is thought to represent the Neocomian to Albian interval but is not always distinguishable from below and has been excluded from the isopach map (Encl. 13, 14).

The middle unit, which is thought to be of Upper Cretaceous to Palaeocene age, comprises the bulk of the post-Neocomian section. It has been involved in slumps and seaward-dipping antithetic synsedimentary faults on the slope and generally