

### BASIN TECTONICS:

Along the south coast of mainland Australia a general east-west tectonic breakdown on the old Palaeozoic orogenic belt began in Mesozoic time and extended, with pauses, into Recent.

The alignment of the Mesozoic portion of the Otway basin with that of comparable age in Gippsland leaves little doubt that the two basins are along the same fundamental breakdown. Together they measure at least 500 miles in length with only 25 miles of pre-Mesozoic rocks separating them. (Index Map).

The fact that in their initial stage many basins are grabens would seem to apply to the Otway basin in view of its great overall length as compared to an average width of only about 80 miles, and great thickness of sediments (to 15,000' - 20,000'). However, due to advanced stage of uplift and erosion along portions of its south side, the Mesozoic basin does not present clean-cut lines (Fig. 1).

The Tertiary basin, on the other hand, has no such tectonic background. Rather, the sediments accommodate the areas of regional subsidence, and regional tilting although slight is an important factor. Nevertheless, there is a general coincidence (as in the Gippsland basin) in areal distribution of the thicker sediments between the basins of Mesozoic and Tertiary.

#### Development of the Basin:

The accompanying sketch (Sequence of Main Events - Fig. 25) is intended to show only the very broad events of the Mesozoic and Tertiary basins and to introduce three important factors: (a) the important break in structure and sedimentation between Mesozoic and Tertiary, (b) the complications brought about in the marginal zone between continental block and ocean basin, and (c) the nature of the Tertiary deposits - source from the north, fore-set condition and sediments ending abruptly on the continental slope.