

seem that they were in existence before the east-west tectonic breakdown that formed the Mesozoic basin. Thus, they could represent remnants of Palaeozoic such as the Permian of Tasmania, which was not involved in an orogeny.

### Mesozoic:

#### Jurassic:

The recently drilled Casterton No. 1 found about 2,000 feet of sands, gravels, mudstones and basaltic flows between characteristic Otway and metamorphic basement. The basalt was dated Upper Jurassic by the potassium-argon method. This is the first well to have reached the base of the Mesozoic and basement in the western part of the basin. It now seems that a considerable area of the western portion of the basin may be underlain by this series. It is of special interest because of the reportedly good sands it contains. (Text Fig. 26).

What may be the offshore counterpart to this series is a thick wedge of sediments within the lower part of the Mesozoic mapped from lines SA-12, SS-29, SA-3, SS-18 and SS-19. (Fig. 19). The wedge is identified on the basis of strong, distinctive reflections and by a discordance in dip with the overlying beds. The wedge laps upon, but does not cross, the barrier to the southeast formed by the Beachport - SS-28 basement high. The identifying reflections play out to the southwest with visible lateral changes, as would be expected from changes of facies. They do not continue southward, but may extend northeastward toward Casterton, following the passage formed between the rim of the basin and the Beachport-Kalangadoo high. (Fig. 1).

The nearby onshore seismic refraction profile (position shown on Top Basement Fig 10) shows basement with velocity of 18,000 ft. /sec. and a higher refractor of 14,000 ft. /sec. that seems to tie in with the top of the wedge as seen offshore. This is discussed from another viewpoint in connection with the cross section (Fig. 18) and refraction line from Mt. Salt to Penola.