

interplay of two factors - regional uplift and basin subsidence. It was pointed out that the Gippsland blocks and Otway Ranges form the eastern and western extremities of the physiographic province, Southern Uplands.

Igneous Activity:

The Newer Basalts (Pliocene to Recent), with thicknesses of about 100 feet, are found over a large portion of the Victorian portion of the basin and to the north of it, as well as in some smaller areas in South Australia. Many volcanic centres are scattered throughout these regions. The Older Basalts (Eocene-Oligocene) occur in small areas and as intrusions on the Otway Ranges. The lamprophyre dyke or sill found at 5,573 feet in Portland No. 3 was dated by potassium-argon at 17.1 million years, or Middle Miocene. Pretty Hill No. 1 was bottomed at 7,874 feet in diabase supposedly of Cambrian age. More recently, the basalt at about 8,000 feet in Casterton No. 1 was dated by the potassium-argon method as Upper Jurassic. (Well Data Chart, Fig. 23).

It is believed that the occurrence of igneous activity in the offshore basin in both Mesozoic and Tertiary, is more prevalent than presently recognized, especially in South Australia. (Gravity Map Fig. 22 and Magnetometer Map Fig. 21).

What appears to be a volcano and associated basalt flows within the Tertiary is seen on each of the lines OS-11 (Fig. 19) and OS-12, between Otway Peninsula and King Island. However, the main area of activity seems to lie in South Australia, in the general region of Beachport, where the Tertiary is disturbed locally (as on SA-5). In the same general area a supposed intrusion within the Mesozoic is seen on SS-29 (Fig. 19) and another is mapped over 35 miles from SS-3 to SS-20. (Fig. 9).

The deep water occurrences of possible volcanoes and flows are discussed under Continental Margin.