

The Clare Basin: a geological and geophysical outline

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Extract

The Clare Basin (Fig. 1) is a poorly documented Carboniferous basin remnant, situated offshore west of Ireland, which is considered to be an extension of the onshore West Clare Namurian Basin (WCNB). It has in the past been variously described as, or as part of, the Clare Shelf and Shannon Basin (e.g. Cope *et al.* 1992), the Shannon Trough (e.g. Sevastopulo 1981), and the Dingle-Shannon Basin (e.g. Gardiner & MacCarthy 1981). It lies immediately north of the Iapetus Suture which is assumed to have closed during the Devonian. Figure 1 shows the general location of the Clare Basin, the outline of the younger Porcupine Basin and Slyne Trough, and the onshore geological outcrop map. Also shown are the locations of boreholes and the line of cross-section figured in the paper.

Little is known of the sedimentary sequence or thickness in the offshore basin, but it is suspected to contain Tournaisian, Viséan, Namurian and Westphalian sequences. The presence of Late Cretaceous sediments is also possible, particularly in the west, as well as a thin Tertiary veneer.

Onshore outcrop

The onshore part of the Clare Basin, the West Clare Namurian Basin, is well known to field geologists for its spectacularly developed and well exposed syn-depositional slide and slump features. Gill (1979) estimated that it contains a maximum thickness of about 5000 ft of Namurian shales, siltstones and sandstones resting with only minor unconformity on Viséan shallow water limestones. The Namurian sequence consists of black, euxinic, goniatite-bearing shales (the Clare Shale) succeeded by parallelbedded turbidite sandstones (the

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