A second agglutinating worm named *Titahia corrugata* by Webby (1958) was described from a North Island locality but has also been found in a number of places in the South Island (Plate 2). Its relationship to the rather similar fossil *Dentalium batheri* Finlay, described by Bather in 1905 (as *D. huttoni*) from the Kowai River (S74/22), is unknown.

In spite of the paleontological work and of the stratigraphic importance of the annelids, they are not touched on in the two major monographs of the Triassic faunas of New Zealand (Trechmann, 1918; Marwick, 1953).

McKay (1881) considered the *Terebellina* beds to be younger than *Daonella* and older than *Monotis*, but the problem of the age relationship of *Terebellina* to *Monotis* is still not solved. Their particularly close association in the Ashley Gorge and Arthurs Pass areas leaves little doubt that the two fossils are not greatly different in age. It is unlikely, however, that their zones overlap since they seem to occur everywhere in discrete areas of outcrop.

For eastern central Canterbury at least, *Terebellina* beds can be mapped as a zonal unit. The beds are very commonly graded, but in many places (for example, in the Ashley Gorge, Hutt Stream, the upper Selwyn valley, and near the upper Kowai bridge) worm tubes can be seen to occupy all positions with relation to bedding. This contrasts with Webby's observations at Titahi Bay (1958) where the whole sequence was interpreted as a succession of turbidites and the worm tubes were found as a scum on the top of each unit. Some at least of the Canterbury *Terebellina* beds are not redeposited.

Neither *Terebellina* nor *Titahia* is known to occur in Hokonui Facies rocks. If a two-facies subdivision of South Island Triassic rocks were ever to have an organic rather than a lithological basis it is surely with the *Terebellina* beds and the very different Balfour Series equivalents in South Otago, Southland, and Nelson that this would be done. The apparent absence of the worms from the Hokonui Facies suggests that these organisms may have existed in a rather specialised environment. One of a number of possibilities is that of deeper water offshore. Reed (1957) has already suggested that some of the Torlesse rocks near Wellington may be deep-water mudstones. Annelids are known from the same general area, but the relationship of the tubes to the sediments they are preserved in is undescribed, and there is still no clear picture of their ecology.

Upper Jurassic Fossil Localities

There is no record of any fossil collection of undoubted Lower or Middle Jurassic age from South Island Torlesse rocks, but recent paleobotanical work by Dr G. Norris has shown that relatively rich assemblages of plant microfossils are present in the Torlesse Group, and further collecting may well produce material in this time range. So far, spores from a single locality, Alford Forest (S81/509), have been tentatively assigned to the Lower Jurassic; all other spore and microplankton collections in post-Triassic Torlesse rocks are thought to be no older than Upper Jurassic.

Inoceramus galoi Boehm occurs in boulders in the upper valley of the Kaiwara River, a tributary of the Hurunui River (S62/782; P. A. Maxwell, pers. comm.). The species is restricted to the Heterian Stage (correlated with the Lower Kimeridgian) in Hokonui Facies sequences. The presence of the *Idoceras* Zone of the Heterian (Fleming and Kear, 1960: 45) in Torlesse rocks is indicated by *Idoceras speighti* (Marshall) described from a boulder in the Hurunui River, downstream from the Kaiwara junction (S62/174).