spread but less obvious. Only a few molluscan grains are present, and no brachiopod material was positively identified. Identification of the smaller grains is difficult and pressure-solution effects have often considerably modified the original grain shape. Sparry calcite cement fills the intergranular and skeletal cavities, but rarely shows a mosaic texture in the former. Rim cementation of echinodermal fragments is common and in a number of cases has resulted in poikilitic enclosure of terrigenous grains.

The material between the hard bands has a similar framework to that of the hard bands, but is much more poorly cemented. Subaerial leaching has probably removed some of the cement, but there is little evidence that this material was ever completely cemented. Generally only echinodermal rim cement and a little sparry calcite cement around the grains are present and bind them loosely together.

Member A is not solely composed of banded limestones, and in the region of the Mangaotaki and Kihikihi streams junction alternating poorly-sorted, sandy-silty limestone and calcareous siltstone are present beneath the banded limestones. There is no regular distribution of these beds, which have developed only locally.

MEMBER B: *Type description*: At the type locality Member B is 50ft thick and is composed of sandy biosparites and minor calcareous sandstones which show an overall upwards percentage decrease in terrigenous material and a corresponding increase in the carbonate content. Near the base of the member the limestone contains an appreciable amount of terrigenous mud and some glauconite pellets.

The interval between 24ft and 30ft is occupied by coarse banded limestone which interrupts the general trend. Banding is not developed to the extent seen in the banded limestones of Member A, but consists of hard bands (3–4in wide) separated by thin, discontinuous softer bands that have weathered back into the outcrop.

Near the top of the member, a 15in bed of large oysters is seen in slightly sandy biosparite. Three feet above this another oyster bed is present, but is associated with biomicrites. The base of this bed is taken as the top of the member.

Distribution and content: Member B is widespread throughout the area west of the main north-trending basement ridge and the rocks are recognised as belonging to four different facies (Fig. 9).

Facies B1: Calcareous sandstones and sandy biosparites which grade up into purer biosparites at many localities are included as Facies B1. In the lower parts of the sequence, these rocks may contain appreciable amounts of terrigenous mud, and freshly broken slabs show evidence of infaunal activity. Usually they are massive in outcrop, but some of the more carbonate-rich rocks show incipient development of stylolitic seams.

In thin section (Pl. 3, 2), the rocks are poorly to moderately sorted, sorting increasing vertically. The terrigenous grains are usually angular to sub-angular and are dominantly quartz with a lesser amount of feldspar. Vertically, the quartz-feldspar ratio becomes greater and near the top of the sequence large sub-rounded quartz grains appear. Polished and abraded glauconite pellets are present in the lower parts of the sequence. The skeletal fragments are well comminuted and are dominantly echinodermal, polyzoan, and foraminiferal. Algal grains are conspicuous but small in quantity, while molluscan material is always rare. In the more carbonate-rich rocks the grains are generally coarser and echinoderm plates more prevalent. Pressure solution has considerably modified the margins of many of the grains. Sparry calcite and echinoderm rim cement are widespread. Micrite is typically absent from the intergranular cavities although it does occur in some skeletal cavities. The proportion of micrite (if any) in the more muddy rocks could not be determined.