There are two discontinuous belts of Raukumara strata, one on each side of the Pukeroro Fault, each belt being interrupted along its length by one or more faults. The only complete section is through the south-west end of the south-eastern belt, where the Raukumara Series overlies fossiliferous Ngaterian, underlies Piripauan, and contains in their correct order the key species of *Inoceramus* for the upper and lower of the three Raukumara stages. At Kaiwhata Stream, the best section through the north-western belt, the upper and middle stages of the Raukumara Series are defined by their key fossils and underlie fossiliferous Piripauan, but the lowest stage is faulted out by the Pukeroro Fault.

The Raukumara Series is about 1,500ft thick and consists of graded-bedded, light-grey, finely layered quartzose sandstones and laminated jarositic grey siltstones, in rhythms from two to six feet thick, and irregularly spaced bands of massive conglomerate from three to 20ft thick. The conglomerate bands appear to form the bases of the rhythms. They are mostly composed of well-rounded pebbles and cobbles that are almost entirely greywacke, set in a sandy matrix. A few of the conglomerate bands contain mudflakes that have weathered red, and are thus conspicuous rocks. Fossil fragments, small concretion with *Inoceramus* fragments, and unfossiliferous concretionary boulders are not uncommon in the conglomerate.

Loose boulders of siltstone, sandstone, and conglomerate, mostly concretionary, and up to 10ft long, litter the streams where they flow through the conglomerates. Some of the concretionary boulders contain well-preserved fossils. From their position in the streams it is certain that the fossiliferous boulders are derived from the conglomerates, but although fossiliferous pebbles and unfossiliferous boulders have been found in the conglomerates, probably because of their comparative rarity no fossiliferous boulders have yet been found in them.

The sediments of the concretionary boulders are mostly well sorted, and the fossils, as distinct from those of the interbedded sediments, are varied. Sediments and fossils both indicate that the concretionary boulders are of shelf facies.

Several kinds of concretionary boulders are represented, but by far the commonest consists of bands of conglomerate with well-rounded and well-sorted greywacke pebbles interbedded with bands of well-sorted medium sand. Most of the boulders of this kind contain abundant *Megatrigonia glyptica* and *Inoceramus* fragments, and a few contain in addition rare gastropods and rare belemnites. The *Megatrigonia* has the greatest interest, being described by Finlay and Marwick (1948) in what was one of the first references to the fossils of the Ngahape area. It is unfortunate that although the fossils are well preserved their matrix clings to them and they cannot be extracted cleanly.

The conglomerates are interbedded with graded-bedded sandstones and siltstones, and the conglomerates and sandstones appear to be turbidites. Consequently the concretionary boulders, together with the well-rounded greywacke pebbles, have probably been transported into deeper water from the shelf.

The fossils are mostly of Motuan and Ngaterian age, appreciably older than the conglomerate itself, and represent shelf faunas that are not known in place in the North Island, but are widely distributed in boulders in similar conglomerates of about the same age at several other places in the North Island (Wellman, 1959).

MATA SERIES

Piripauan Stage (Mp1 and Mp2)

The strata mapped as Piripauan consist of about 1,300ft of graded-bedded, light-coloured, and finely-bedded quartzose sandstones and jarositic grey siltstones that are divided into a lower 500ft (Mp1), with conglomerate bands similar to those of the Raukumara Series, and an upper 800ft (Mp2), without conglomerate bands but with sills and flows of alkaline basalt, which are shown by crosses in