Some large calcite veins contain numerous quartz crystals. Calcite often replaces the fine tuffaceous base between veins, feldspar and epidote being absent. No fragments of *Atomodesma* were seen in the limestone.

The green tuff is moderately weathered and a richer green than the tuffs of the Brook Street volcanics. A section (10265) showed quartz, highly altered plagioclase feldspar, abundant epidote and chlorite, fine ash, and fragments of igneous rock.

Conglomerate that is probably part of the Stephens Formation was reported by Bell, Clarke, and Marshall (1911: 16) in the upper reaches of Groom Creek, but only boulders were seen by the writer. Sections showed the conglomerate to be composed of well-rounded pebbles of rhyolite, syenite, trachyte, and fine tuff. The matrix of the conglomerate is tuffaceous and rich in chlorite, epidote, and small fragments of igneous rock.

No fossils were found in the Nelson city area. In 1917, Trechmann described fossils (brachipods, corals, and the pelecypod *Atomodesma*) that indicate a Permian age for the limestone at Wairoa Gorge.

ROCKS OF PROBABLE TRIASSIC AGE (Z).

Poorly exposed unfossiliferous rocks of probable Triassic age occur west of the Maitai Group and east of the Tertiary rocks, from the southern boundary of the mapped area north to near Brook Valley, where they taper out. The best outcrops are in Marsden Valley and on hills to the south.

The fossiliferous Triassic belt farther south is separated from the Maitai Group to the east by a major fault that was named Eighty-eight Fault by Henderson, Macpherson, and Grange (1959). Aerial photographs suggest that this fault extends north along the west side of the Maitai belt to the mapped area, but the actual fault is not exposed.

The rocks are massive unfossiliferous greywacke with few bedding planes. In section (10267) abundant small angular grains of quartz, feldspar, granular iron ore, with rare pyroxene and amphibole are set in a fine clay cement rich in haematitic dust.

The rocks are unfossiliferous and their true age uncertain. They are considerably higher in rank than the highest rank Tertiary and lower in rank than the Maitai sediments. Like the fossiliferous Triassic rocks they are not intersected by quartz veins, and they are thought to be of Triassic age.

TERTIARY ROCKS

Hochstetter's (1864: 252) division of the Tertiary rocks into Older Tertiary (coal measures of Jenkins Hill coal mine at Enner Glynn) and Younger Tertiary (steeply dipping fossiliferous sandstone on the foreshore) is substantially correct in the light of present knowledge.

McKay (1878: 145) divided the rocks into three groups:

Younger gravel deposits
  Port Hills
Lower Miocene (Pareora)
  Gravels and fossil deposits of the Port Hills.
  Pectunculus globosus beds at Wairoa Gorge.
Cretaceo-Tertiary
  Marls—railway cutting, Bishopdale
  Conglomerate, sandstone, shale, and coal—Jenkins Hill.

Later (1879: 101) he gave a slightly revised order:

Pareora Beds
  Gravels—Port Hills