tinue for a short distance only, and appear to be contained in a trough-like depression of the other rocks that show in the banks of the river further down the gorge.

4. Cretaceous or Cretaceo-tertiary Rocks.

(*a.*) *Limestones, &c., of the Main Range bounding the District on its Eastern Side.*—These rocks have not actually been observed *in situ*. They occupy the higher part of Maungapohatu Mountain, and evidently extend along the crest of the main range to the north and south some considerable distance from Maungapohatu. The knowledge of their existence in the position indicated, is the presence in the principal source-stream of the Waikari of a great abundance of large blocks of coral limestone that have been washed down from the great slips at the foot of Maungapohatu, and originally from the solid part of that mountain itself. This limestone is composed mainly of a branching madrepore coral, but occasionally specimens of *Flabellum* are present. Many of these limestone blocks, large and small, showed a mixture of earthy material of a more or less calcareous character, but a large percentage was composed of comparatively pure coralline limestone, many of the blocks being pure, and fit to form ornamental marbles. Massive beds of this material could be seen along the great line of cliffs that form the western face of Maungapohatu, and apparently the beds of limestone alternated in thick beds with the strata of a less calcareous or marly character. Not being allowed to approach within two miles of the sacred mountain, this description of the strata forming it is necessarily an inference from what could be learned of the detrital matter at its base and constituting the great slips and rock avalanches that lie round the Maungapohatu Settlement. On the northern end of the mountain huge masses of limestone rock have weathered into fantastic shapes, one of which, of stupendous size, resembles the head and face of a man, and simulates the face of a Maori to a remarkable degree. This can be well observed from the top of Pawairoto Hill, eight miles distant, and is in reality a very striking feature of the outlines of the mountain. Nearer to Maungapohatu Settlement, and apparently forming an underlying bed, is a great thickness of apparently brecciated rock from which enormous slips have broken away, leaving square towers and obelisks standing in clear and bold relief against the sky. Large masses of light-coloured rock compose part of this brecciated stratum, but whether this is to be regarded as a cornstone limestone of huge proportions or a true breccia cannot at the present time be determined. Rents in the limestone forming the higher part of the mountain, due to eating away of the more marly strata underlying, are numerous, and on the plateau-like tops there are numerous small depressions, more or less circular, which the Natives consider to be volcanic craters. These latter are, however, to be regarded as due to the solvent action of water containing carbonic acid in solution. The great burying-place of the Maoris is situated on the higher part of the mountain, and appears to be a fissure formed by wreckage near the face of the great cliff. The precise spot where the remains of all the notable dead of the Urewera country are deposited is described as being covered by a large slab of rock which, when required, is lifted so far as to admit of the sacred relics being thrust into the chasm underneath, down which they descend to unknown depths in the bowels of the mountain.

(*b.*) *Shales and Sandstone underlying* (*a*).—These are of very considerable thickness, possibly exceeding 1,000ft. The upper beds appear to be evenly stratified shales, and the lower beds are shales and sandstones, with which are associated concretionary boulders resembling the saurian boulder concretions of the Waipara and Amuri Bluffs, belonging to the same series of rocks which have a considerable development along the east coast of the South Island. These rocks are identical with the rocks yielding petroleum in the Poverty Bay district, and which extend northward along the coast to the mouth of the Waiapu River. These rocks in the neighbourhood of Maungapohatu have the same physical characteristics and the same fossil contents that are to be met with on the East Coast. The fossil forms consisting of different species of Inoceramus, which are regarded as being conclusive proof that their age is at least not younger than the Cretaceous period.

5. Old Secondary and Palæozoic Rocks.

(*a.*) *Sandstones and Shales.*—These form the greater area of the country examined, and, in conjunction with (*b*) and (*c*), form the whole of the fundamental rocks west of the main range to the ranges forming the western limits of the district. Along the course of the Waimana River they have generally a westerly dip at moderate or high angles. The rocks themselves are of the ordinary type of sandstones and shales that are to be met with in the Tararua and Ruahine Mountains of the Wellington and Hawke's Bay Districts. They are much jointed and shattered, but show nowhere much evidence of alteration, nor are lode-fissures or mineral veins to be met with in them. Even sulphides and arsenates of iron are rarely to be detected in these rocks, and altogether they do not impress one favourably as being the repositories of gold-bearing lodes. At many places, both the sandstones and shales are to a considerable extent charged with nodules of compact blue or greyish limestone, and at places the rocks themselves are, to a limited extent, of a calcareous character. As a result they are factors towards the production of the excellent soils that distinguish the low lands towards the seaboard in the lower valleys of the larger streams. At one place, west of the Upper Whakatane, compact white limestone is found, which may be regarded as a kind of marble, but it has not been ascertained whether this rock occurs in sufficient mass to enable it being quarried in blocks of any considerable size, and it is situate in such an out-of-the-way part of the country that, even if it did so occur, it could not be regarded as of any commercial value.

(*b.*) *Breccias and Diabasic Volcano Tufas.*—These rocks are seen to be well developed in the Waimana Gorge above the Ruatoki Plain, and form a massive development of solid and indistinctly stratified rocks that are remarkably free from joints and dislocations which so much characterize the sandstone and shale division of the same formation. About the middle of the lower Waimana Gorge they are highly calcareous, and form a dark compact limestone that is in