

River, and are prominent in the eastern part of Huiroa Survey District and throughout Ngatimaru Survey District. To the main water-divide—that between the Waitara and Patea watersheds—the name “Te Wera Ridge” was given in Mr. Gibson’s report of last year. The Te Wera Ridge, however, is no more prominent or of greater elevation than its neighbours.

Most interesting are the small conical hills mentioned by Clarke as occurring near Inglewood, and also at Lepperton, in the New Plymouth Subdivision. These generally consist of coarse angular agglomerate, with some finer material, but in some cases may correctly be described as formed of shattered andesite. The Inglewood hills have a thick covering of tufaceous loam, and only where they are dissected by streams (a rare case) or opened by quarries can their true nature be ascertained. Near Warea and Cape Egmont similar conical hills occur by hundreds, if not thousands. Many of these have been opened by quarries, and many others, owing to dissection by streams or by the sea, or owing to the part removal of their soil covering, show outcrops, mainly of agglomerate, but in a few cases of shattered andesite, exactly as at Inglewood, and, it may be added, at Lepperton. There can be no doubt that each of these conical hills represents a minor centre of eruption. There are many cases of two or more being confluent, and in some areas, notably east of Warea, there are numerous low irregular ridges that no longer show distinct points of eruption, partly owing to modification by stream erosion.

In the western part of the subdivision the streams radiate from Mount Egmont and the Pouakai Range. Many flow direct to the sea, whilst others join the Waitara River. On the southern boundary are some of the headwaters of the Patea River. Though in the main of consequent characters, those streams that intersect the Tapuae-Manganui Ridge are to be termed antecedent in that part of their course. The eastern part of the subdivision is drained partly by the Waitara River and partly by tributaries of the Patea River. Here the drainage is irregular, and the various streams are deeply incised in a series of sedimentary rocks. The manner in which the drainage of this area has been diverted to the north or to the south by the piling-up of volcanic material in the Mount Egmont region is worthy of note. Attention has previously been drawn to this peculiarity by Clarke.*

Immediately westward of the New Plymouth Subdivision the coast is backed by high cliffs consisting mainly of agglomerate and broken only by the various streams that enter the sea. Westward of Oakura River the cliffs lessen in height, and near the mouth of the Stony or Hangatahuta River disappear for a considerable distance. Southward of Stony River low cliffs of tuff and agglomerate are again seen. These continue, with interruptions, past Cape Egmont to the southern boundary of the subdivision. North and south of the mouth of the Hangatahuta River, at the mouth of the Kapoaiaia Stream near Cape Egmont, and immediately south of Cape Survey District on the coast of Opunake Survey District, are insignificant sandhills. At low tide a wide beach, consisting in most localities mainly of angular boulders, is exposed. North and south of the Hangatahuta River are sandy stretches of some length. Each of the larger streams, such as the Teikaparua and the Kapoaiaia, also has a little sand and shingle at its mouth, especially near high-water mark. Near the southern boundary of Cape Survey District a continuous belt of sand and shingle begins above half-tide mark and continues southward. Seaward the beach is formed mainly of angular andesitic boulders, as to the northward

GENERAL GEOLOGY.

Table of Formations.—The rock-formations of the Egmont Subdivision are approximately indicated by the following table:—

Name of Series.	Nature of Rocks.	Approximate Age.
—	Stream gravels, &c., swamp deposits, sand-dunes, marine sand, and shingle	Recent.
—	Marine sand and shingle (raised beaches), stream deposits, peaty lignite	Late Pleistocene.
Upper Pouakai	Andesitic lavas, tuffs, and agglomerates (of conical hills), marine sandstone and conglomerate	Pleistocene.
<i>Local unconformity.</i>		
Lower Pouakai	Andesitic lavas, tuffs, and agglomerates	Upper Pliocene.
<i>Unconformity (of local type).</i>		
Upper Onairo	Claystones, sandstones, pebble-beds, shelly limestones, and conglomerates	Middle and Lower Pliocene.
Lower Onairo (not outcropping in subdivision)	Claystones, sandstones, limestone, greensandstones, marly clays, coal-seams, &c.	Miocene.

General Description.—The oldest rocks visible in the subdivision are a set of claystones, sandstones, pebble-beds, shelly limestones, and calcareous conglomerates, which, as indicated by their fossils, are approximately of Pliocene age. These rocks belong to the upper part of E. de C. Clarke’s Onairo Series, so named from a supposed typical development at the mouth of Onairo Stream, west of Urenui. The lower or Miocene part of the Onairo Series is nowhere known to be

* Clarke, E. de C.: *Op. cit.*, p. 8.