

younger rocks present lie along the east side of the principal water-parting, but attain their greatest elevations towards the western or south-western border of the different areas.

The different mountain ranges of the Peninsula trend sub-parallel to each other and to the south-west, and it must have indeed been that they were continued in that direction considerably beyond their present limits, as otherwise it would be impossible to account for the presence of lake deposits on the tops of some of the higher mountains between the Kauaeranga and Ohinemuri watersheds. The mere erosion of the western end of these different ranges, though sufficient to remove the lake barriers in that direction, does not account for the tilted and disturbed state of the strata of lacustrine origin. Elevation of the western side of the Peninsula has to afford reasons for this.

The movements whereby the western side of the Peninsula has been raised and the eastern lowered have been in operation for a considerable time, and are still going on. The evidences of elevation within quite modern times are seen at the Thames, and on the coast-line north of Tapu Creek as far as the Orunui Stream, sea-beach gravels in this part being found at levels 200 ft. above the sea. North of this, direct evidence, as exemplified by the presence of old sea-beaches on the coast-line, is not abundant, nor very apparent; but at Torihine, three miles south of Cabbage Bay, old beach shingle reach to a height of 80 ft. above the present tide-mark. All the streams on the west side are tidal but for a short distance from where they enter the gulf, or the different harbours along its eastern shore, and none of them are tidal at low water. The deeper-seated rocks of the Peninsula appear also on this to a greater extent than on the eastern side of the Peninsula. On Moehau they rise to 2,500 ft.; at Cabbage Bay, on the Tokatea and Success Ranges, and thence to the Tiki, the height to which the slates attain on the west side of the range is from 800 ft. to 1,000 ft. Further south they reach to lesser heights, till they disappear beneath the volcanic rocks of Tapu Creek, at a moderate height above sea-level. In Rocky Point, near the Thames, they are last seen on the west side of the principal water-divide, and as an isolated outcrop reach to from 200 ft. to 300 ft. above the level of the sea.

On the east side of the Peninsula the slates appear at various places between Cape Colville and Mercury Bay. On this side they are last seen in Kuaotunu Peninsula, in which they reach a height of from 500 ft. to 600 ft. Here, however, they are in an axis of elevation different from that of the main range from Moehau to the Thames. Nevertheless, if a line be drawn from Kuaotunu to the Thames, this will be at right-angles to the greatest dip or plunge of the slates and the younger succeeding formations to the south-east. The Tokatea rocks, though not confined to the west side of the main range, have likewise this general plunge to the south-east; and the Kapanga group, though having its typical locality on the west side of the range, and largely developed between Coromandel and Cabbage Bay, has still the larger area of its development on the east side of the main water-parting. The rocks of the Beeson's Island group are developed largely on both sides of the main range, and form the whole of the mountain range beyond Te Aroha, in the southern part of the district. The acidic rocks, generally spoken of as rhyolites, are mainly confined to the eastern slopes of the main water-parting, but reach into the western fall in the Kauaeranga, Puriri, Omaha, and Hikutaia Valleys, and in the Omaha and Ohinemuri Valleys reach nearly to the level of the plain. In the Omaha the rhyolites are intrusive, as they are in the upper valley of the Hikutaia. In the Rahu, a small tributary of the Ohinemuri, and in the valley of the Ohinemuri itself, below Mackaytown, the rhyolitic material is of a more tuffaceous character, and it is possibly of younger date than the great bulk of the acidic rocks.

From the disposition of the different groups of volcanic rocks, and their unconformable relation to each other, it is evident that the elevatory movement to the north and north-west began before the close of volcanic energy concerned in the outpouring and building-up of the younger rhyolitic rocks, and, as would appear, even before the deposit of the rocks of the Kapanga group.

#### PREVIOUS GEOLOGICAL EXPLORATIONS.

Professor Von Hochstetter was the first geologist of note who made an examination of any part of Cape Colville Peninsula. He arrived in New Zealand in December, 1858,\* and in June, 1859, made an examination of the district surrounding Coromandel Harbour, firstly and more particularly with reference to the occurrence of gold in that part of the Auckland District, and more generally with reference to the peculiar character of the rocks, as gold-producing, and the geological structure of Cape Colville Peninsula. The early history of the Coromandel Goldfield may fittingly here be given in Hochstetter's own words. He says:—

"People began to prospect for gold here, and already in October, 1852, a Reward Committee was formed which promised a reward of £500 to the discoverer of a valuable goldfield in the northern district of New Zealand. Within less than a week the reward was claimed by Mr. Charles Ring, a settler recently returned from California, who asserted that he had discovered gold upon Cape Colville Peninsula, forty miles east of Auckland, in the vicinity of Coromandel Harbour. The specimens produced by Mr. Ring were pieces of auriferous quartz, and some minute particles of gold-dust, which he had found on the Kapanga, a creek flowing into the harbour. The Commissioners sent out to investigate the matter also confirmed the existence of gold, leaving it, however, doubtful whether there was a goldfield extensive and rich enough to pay for the working.

"This was the first discovery of gold upon New Zealand. There was a general rejoicing in Auckland over the lucky event; the people indulged in the most sanguine hopes, and at once arrangements were made for working the goldfield. As the land upon which the gold was found

\* "In 1854 and 1855, Mr. Heaphy, of Auckland, published geological notes on the Coromandel district, near Auckland, and in the gold-diggings in Coromandel Harbour. The trachytic rocks found there were mistaken for granite."—"New Zealand," by Hochstetter (English edition), p. 49.