

the tide, and as there were no other bodies of water in the vicinity that would answer the description of "lagoons." The fact that a spring, or lake, or land-locked lagoon rises and falls in sympathy with the tides does not make them tidal waters. Actually at the present time the water in a large drain at the back of the reclamation works on the Whanganui-o-Rotu rises and falls in sympathy with the tides, although no visible flow of the tide can reach it and it is a mile from the sea.

131. There was, of course, water to the south of Napier in 1865, either salt water which came up the channel of the Tutaekuri River or river water backed up by rising tides, but I am quite satisfied that it was not to this water that the Provincial Surgeon was referring.

132:—

4. We refer the Court to Commodore Drury's chart of the Ahuriri Road and Port Napier Anchorage. This map was prepared in 1855. On it you will find arrows showing the inward and outward flow of tide, and in the entrance you will find that the strength of the tide is given as 6 to 7 knots.

133. This chart, if the one produced to the Court, I find has been corrected four times since 1855—*i.e.*, in the years 1865, 1881, 1892, and 1895. How then can it be indicative of conditions in 1851?

134:—

5. We would ask the Court again to refer to chart No. 1, and particularly to the delta formation at the mouth of the Tutaekuri River and also at the mouth of the Purimu Creek. We submit that this chart clearly indicates how the land on the Heretaunga Plains was formed, and this map, in our opinion, bears out the statements contained in the paper by the late Henry Hill, Esquire, F.G.S., which is published in the "Transactions of the New Zealand Institute," 1908, Volume 41, page 429, to which the Court is referred. At the hearing of the previous Commission in 1920 Mr. Hill gave evidence as to his researches in the geological formation of this part of Hawke's Bay.

135. This paragraph calls for little comment. The late Mr. Hill's article was entitled "The Great Wairarapa: A Lost River," and concluded with the following passage:—

Thus the past can easily be dovetailed with the present. Construction and destruction are ever in operation, and all the forces of Nature have one of these two ends in view. A whole district like that along the east coast may suddenly disappear, but upon the ruins new foundations at once begin to be built that in the end show sufficient growth as to become suitable as man's dwelling-place. The geologist cannot say how long it will take to fill up the waters that were once land-areas, but the process that immediately followed the disappearance of the Great Wairarapa still continues, and will continue unless there should come another period of volcanic activity and earth movements such as was experienced at the going out of the Pliocene and the coming in of the Pleistocene periods in the geological history of this country.

136. His evidence before the Native Land Commission of 1920 was as follows:—

Was Inspector of Schools. Have heard evidence given this morning. I do not think it was ever a fresh water lake. Cape Kidnapper to Mahia Peninsula was at one time joined. I speak geologically. A river in my opinion then ran through to Poverty Bay. An earthquake period supervened and the bay subsided. The cliffs show the area of subsidence. The rivers then sent water into the land subsided. The Heretaunga plains have been gradually filled up by river material. Shingle from Tukituki was diverted across the Bay, and this continued around the bay forming lagoons as far as Whakaki. Shingle spit along Ahuriri must have been there for hundreds of years and separated the lagoons from ocean proper. White in his *Ancient History of the Maori* referring to Takitimu canoes refers to Watchman Island and Rorokuri Island (Vol. 3/75).

Tawhao remarked about the shell fish of Whanganui-o-Rotu.

Before sandspit was formed I think the Tutaekuri came further back. Until formation of sandspit it would be open sea. Have no doubt from cliffs that they were originally on sea coast. I found shells which show that the water was salt. Thus in study of plant life it differs from that of an inland lake.

Have made a study of artesian wells and of various strata and they bear out my theory that it was once part of the sea.

Under cross-examination by Mr. Myers the witness continued:—

Marine shells are found on top of Rimutaka. It means that the land was at one time under the sea. The changes I spoke of may have taken place thousands of years ago. I base my theory on geological observations. Some times the theory set up is not correct. Question of shell fish goes back to time immemorial. There are many shell fish within the inner harbour. Cannot say whether the fishing or shell fish have been affected by the Harbour Works.