

When the ground is cleared there is generally only a few inches of the top soil, and then from two to four feet of whitish blue clay, something like pipe-clay. This clay as it nears the shingle gives way to a gritty brownish coloured soil. At an average depth of four feet the shingle is reached, and is firmly held together by a rust-coloured cement. This shingle holds water to a depth of as much as six or eight feet. Below that a drift is reached which drains the water. A trench was cut about two feet wide into the shingle, completely separating a block of land except in floods, when the trench was filled and the land under water. About two years after the land was cleared the roots were grubbed up, and numbers of these fish were found in the soft clay. Some were very lively and others torpid, some showing a bright skin and some a foul slimy coat. The shape of the fish could sometimes be seen in the mud from which it had been dislodged. They are found in great numbers in making new roads through swampy land, but seem to disappear from the land on its being drained and cultivated.

Mr. Lodder remarked that he had collected a similar fish under stones on the banks of a fresh-water stream, near the anchorage ground for coal vessels, at the Bay of Islands.

Mr. Gillies stated that fish apparently similar, and which manifested the same dislike to fresh-water, had been obtained by Mr. G. B. Owen at a depth of several feet when sinking a well at Newmarket. He also drew attention to the interesting account of the mud-fish given by Dr. Hector in his Notes on the Edible Fishes of New Zealand.

4. "On a Remarkable Instance of Refraction of the Hakarimata and Taupiri Ranges," by Major W. G. Mair.

(ABSTRACT.)

On 1st June of the present year a remarkable instance of mirage or refraction was witnessed by a number of persons in Alexandra. A portion of the Hakarimata and Taupiri ranges, about ten miles in length, distant from thirty miles on the left to thirty-six miles on the right hand, and bearing from north-west to north, appeared to be lifted fully 1,000 feet into the air. At one moment it looked like a dark wall with a straight upper edge, and then it would suddenly be cleft open and present numerous gaps and peaks with castellated summits. The openings would increase gradually and then close again, after which flashes of light would appear in the face of the wall, and

gaps would again be seen, the transitions being so rapid that the eye could not follow them. At times the phenomenon would become as it were fixed, and no perceptible alteration could be noticed for the space of a quarter of an hour. The upper edge maintained the same level throughout, except when occasionally a clump of trees would be drawn up to several times their height.

5. Further Notes on the Nativity of *Polygonum aviculare*, L., in New Zealand; in reply to Mr. Travers," by T. Kirk, F.L.S. (See *Transactions*, p. 315.)

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