

were made, but showed a gold-content ranging only from 1 gr. to 8 gr. per ton, and silver from 1 dwt. 5 gr. to 1 dwt. 21 gr. per ton. Other small non-persistent veins occur, carrying where exposed equally low values. Whether the erosion of the upper horizon of those veins already located or of veins concealed beneath the heavy overburden of surface débris afforded the alluvial gold is impossible to determine. The fact that no samples of the "specimen quartz" won from the sluicing operations of the past could be obtained for comparison with the quartz of the veins exposed renders the problem even more difficult.

The mullock-dumps of several small drives are noticeable on the hill which rises from Te Mata Stream immediately eastward of the Gentle Annie Creek junction. Some of the drives which are still open show small non-persistent rubbly quartz veins, carrying little or no values. A small crushing and amalgamating plant was erected at the foot of this hill, but on what prospects it was impossible to determine.

Tapu.—The valley of Tapu Creek, although at present commanding little attention from a mining point of view, yielded in the past a considerable amount of gold, partly from veins and partly from the sluicing of hillside talus and stream-débris. In the lower portion of the valley the auriferous-quartz veins which have proved remunerative are genetically connected with a main line of faulting, and occur both in the stratified rocks (Tokatea Hill Series) and in the overlying volcanics. The fault or "main slide" strikes south-east from McIsaac's Claim in the No. 3 Gully, and has been located in the Golden Point, Sheridan, and Bullion claims. The veins, which were all of the bonanza type, ranged in width from a fraction of an inch to 4 ft. Very few have been worked, and none extensively developed below the adit levels. Presumably the ore-shoots became small or unremunerative in depth; but since rocks of the Tokatea Hill Series (lithologically similar to the spotted rhyolitic tuffs which have enclosed rich gold-silver veins on the Tokatea Hill, Coromandel) outcrop in the gorge of Tapu Creek not far from the main fault-line, there is no reason why other remunerative veins should not be discovered, either in these rocks or in the overlying andesite along the course of this line.

Another area of mineralisation is that in which the Mahara Royal and other claims on the southern side of the Tapu Valley below the main fork of the stream are located. The gold-silver veins here, which are of the usual bonanza type, are enclosed in propylitic andesites.

The occurrence of a different type of andesite (probably of the Beeson's Island Series) in the Tapu Valley, eastward of the main forks of the stream, probably explains the non-auriferous character of the relatively extensive area of country at the headwaters of Tapu Stream. The same rocks have continuous extension northward from the Tapu Valley into the Te Mata Valley.

Areas Southward of Tapu Stream.—As yet topographical work only has been carried out in the valleys of the Waiomo and Te Puru streams, and consequently no remarks can here be made on their geology.

Eastern Side of the Main Range.—The areas already described in this section lie to the west of the main range. On the eastern side of the range a careful examination for the presence of metalliferous veins has been made of the relatively large and in places rather inaccessible stretch of country extending from the Kaimarama Valley in the north to the source of the Waiwawa River on Table Mountain Range in the south. Without entering on a detailed description, it may be stated that, with the possible exception of the Upper Kaimarama Valley, where the rock-formation and vein-occurrences are analogous with those of the adjoining upper Mahakirau Valley of the Coromandel Subdivision, the results of our examinations do not favour the opinion that payably auriferous veins will be discovered in this particular area. In assigning reasons for the poverty of the area in economic minerals, the great development of the Beeson's Island Series of andesites, which throughout the whole peninsula contain few payable metalliferous veins, must be considered. Rhyolitic rocks and younger andesitic intrusives, neither of which are favourable for the existence of metalliferous veins, are also present.

Special Area within the Thames Borough.—At the Town of Thames geological work has been confined to making a preliminary reconnaissance of the area, and to a detailed survey of that portion including the Day Dawn and Norfolk, New Sylvia, and other mining claims, lying within the watershed of Tararu Creek. The work is, however, not sufficiently advanced to give expression to any conclusions which may have been drawn from the observations made.

(2.) *Coal.*—Within the area under review the discovery of coal-seams supposed to have some economic value has from time to time been reported. All of these, on examination by officers of the Survey, were found to occur at the contacts of volcanic accumulations of different periods of eruption. These seams, as might be expected from the fact that they overlie old eroded land-surfaces, or occur in local silted depressions which existed thereon, have little persistence or regularity. In view of this, and the fact that the coal-bearing rocks of the Torehine Series (of Coromandel Subdivision) do not exist in the Thames Subdivision, it is unlikely that workable coal-seams will be found in this area.

Stream-gauging and Water-power.

The streams of the area, owing to the relatively short distances of any portion of the water-parting from the sea-coast, normally carry rather small volumes of water. Further, their gradients, as mentioned before, are low usually right back to the junction of the rapidly descending headwater branches. These characteristics render the streams unimportant as the sources of any considerable amount of water-power.

The largest stream in the area is the Waiwawa River, flowing into Whitianga Estuary on the eastern coast-line. No measurements of any value bearing on the volume of this river could be obtained by us during the whole period that we were camped in its valley, owing to its continually swollen state as the result of constant rains. It may be stated, however, that the potentialities of