

MR. COLIN FRASER, MINING GEOLOGIST.

During the period under review Mr. Colin Fraser has been almost continuously engaged in field and office work connected with the detailed survey of the Hauraki Division, Auckland. From January, 1907, until the beginning of April Mr. Fraser was occupied in completing the detailed survey of the Coromandel Subdivision. Assisted by Mr. J. H. Adams, he then undertook the preparation of a bulletin (No. 4) on this area. In this, with other office-work, he was occupied at headquarters till the middle of November, when he left to begin the geological survey of the Thames Subdivision, lying south of the Coromandel Subdivision. Towards the end of April I joined Mr. Fraser, and till the end of May personally supervised the field-work being conducted by him. In this work, with the exception of a short period during which he accompanied me on a reconnaissance through the Tairua-Puriri Goldfields, he has been engaged until the close of the field season at the end of May. The work in the Thames Subdivision is in a forward condition, and it is hoped that towards the end of next season Mr. Fraser and myself will be in a position to begin the preparation of a bulletin on the area. The following is Mr. Fraser's report on his work during the past seventeen months:—

Field-work in the Coromandel Subdivision, Hauraki.

The portion of the Coromandel Subdivision which in 1906 occupied the attention of the Hauraki field staff was confined to the Coromandel and Otama survey districts. These districts, together with those of Harataunga, Colville, and Moehau, which lie immediately to the northward, constitute the Coromandel Subdivision, and, having been described in detail in Bulletin No. 4,* call for no further reference here.

Field-work in the Thames Subdivision, Hauraki.

Extent and Position of the Area.—During the past season geological field-work has been carried out in both the Hastings and Thames survey districts, which together constitute the Thames Subdivision. These two survey districts, which together cover an area of some 239 square miles in extent, extending from Kirita Bay in the north to the Puriri Valley in the south, comprise the western half of the southern portion of the Hauraki Peninsula, and include also a contiguous portion of the mainland. The eastern boundary of this subdivision is a north-and-south line which passes through the central portion of the peninsula, and intersects Trigonometrical Station 97 on Table Mountain; the western limit is in part the coast-line of the peninsula bordering the Firth of Thames, and further southward a straight line passing meridionally across the Piako Plains from a point west of the mouth of the Piako River.

The portion of the Thames Subdivision already examined lies for the most part northward of a line drawn from the village of Tapu, on the western coast-line, to the trigonometrical station on Table Mountain. Detailed geological examinations have also been carried out in the special area of Thames Borough; within the watershed of Tararu Creek; and also along the coastal belt immediately to the northward.

Nature of the Work carried out.

The nature of the geological, topographical, and mineral prospecting work carried out in the Thames Subdivision is precisely the same as that described in connection with the neighbouring Coromandel area in the annual report of 1907.

The preparation by the Head Office draughting staff of accurate working-maps on a scale of 20 chains to the inch, showing the trigonometrical stations and topographical data supplied by the Lands and Survey Department, has greatly facilitated the plotting of the field-work. The valuable contour-map of the Thames mining centre, prepared by Mr. E. F. Adams, authorised surveyor, will be of great service. The gentleman named has also kindly placed at our disposal information and records connected with the underground workings of the Thames field which otherwise would be unobtainable.

Physiographic Notes.

The Thames Subdivision is in the main one of considerable general elevation, and is deeply dissected by the numerous streams which drain to both the eastern and the western coast-lines of the peninsula. The dominant physiographic feature is the Cape Colville Range, which forms the principal drainage-divide of the Hauraki Peninsula. This range, from the point where it enters the northern part of the subdivision, has a sinuous though generally southerly trend for a distance of about twelve miles, parallel to the longitudinal extension of the peninsula. Thence the main water-parting turns sharply to the eastward, and following the elevated volcanic plateau of Table Mountain continues for about two miles beyond the eastern boundary of the area. Here it once more assumes its southerly trend, in places approaching, but nowhere crossing, the eastern boundary-line of the subdivision. On this range, which has a general elevation of about 1,700 ft., Papakai (2,497 ft.), Maumaupaki (2,688 ft.), and the steep-sided flat-topped Table Mountain (2,600–2,700 ft.) are conspicuous peaks.

The numerous streams which incise the flanks of the Cape Colville Range usually present very high gradients for relatively short distances from their points of origin, but in their middle and lower courses they descend more gradually towards base-level.

Numerous spurs and subsidiary ridges have been developed as the result of stream dissection, while, as might be expected in an area formed in great part of comparatively recent volcanic rocks, groups of hills showing little definite arrangement are not uncommon.

* Bulletin No. 4 (New Series), N.Z. G.S., 1907.