

forming a bluff 500 ft. to 600 ft. in height, about half a mile to the west of the Kapanga shaft. The lavas here are rudely columnar, the columns being, on an average, 1 ft. in breadth. The flows are dipping south at angles approximating to 45° .

The rocks of the Kapanga and Scotty's Mines are fine-grained tuffs, interstratified with solid flows of a dark hornblende andesite. The breccias and lava dip to the south-west and south at low angles. They are overlain to the west by the Miocene breccias of the Blagrove's Freehold Mine. Through the older tuffs and lavas the Kapanga shaft has been sunk to a depth of 1,000 ft., and from the bottom of the shaft a borehole has been put down for 150 ft., making 1,150 ft. in all. The last 500 ft. to 600 ft. was sunk entirely through tuff beds.

From the main northern mass of andesites several tongues run south and south-west. Of these the most westerly runs through Dacre's Hill and through the Hauraki district, touching the sea to the south of Paraparokino, where the andesites weather by the removal of the interstitial matter, thus leaving each felspar isolated on its little pedicel of rock, and glistening in the sun like scales of mica. The rock of the south-east slope of Dacre's Hill is obscured by scrub and surface clays, but at the summit the bare outcrop forms a scree on the southern slope. The rock here is solid, dark-coloured, and breaks with a conchoidal fracture. Under the microscope the rock appears to be an augite-andesite.

The major portion of the Hauraki area next to the south is composed of a highly decomposed andesite, probably augitic, but the nature of the ferro-magnesian silicate is a matter of some doubt, owing to the difficulty of procuring a solid undecomposed fragment. A central core of only partially decomposed andesite appears to run from the Hauraki South shaft northward through the Hauraki South, Golden Pah, Hauraki, and Bunker's Hill Mines, approximately parallel with the direction of the ridge.

The second tongue from the main body runs south from the Kapanga shaft along the eastern slope of the ridge, terminating in Trig Hill. The narrow belt consists of highly decomposed andesites, containing reefs yielding small pockets of gold.

A third prolongation, separated from the preceding by the alluvial gravels of the Kapanga streams, reaches as far south as the Kapanga Township. Its andesites are well decomposed, but, so far as is known, this tongue contains no auriferous reefs. The great development of the andesites is, however, in the eastern portion of the Coromandel area, occupying the whole of the range to the east of the Palæozoic slaty shales, and consequently descending on the western slope of the main range to an average height of 800 ft. above sea-level, ranging from 250 ft. behind the Upper Township to 950 ft. on the Pukewhau saddle. In many places along the junction of the slates and andesites the old land-surface is revealed. This is notably the case on the road to the Success Mine, where, in an old basin in the slates, the remnants of lacustrine deposits have been preserved. (See Fig. 6.)

These beds are formed of fine muds and clays and small pebble conglomerates. The pebbles are all of slate, and represent a period of deposition prior to the andesitic eruptions. The lowest beds appear to be fine slate conglomerates, or rather pebble-beds, interbedded with which are fine mud and clay partings about 2 in. in thickness. The coal-seam is 6 in. wide where exposed, but it will, of course, thin away to a feather edge on being opened up. The total thickness of the beds may be 20 ft. to 30 ft.

Throughout the eastern area of the volcanic rocks they are everywhere in the form of solid lavas, tuffs and breccias being absent. Near the junction of the slate with the andesite in the Karaka Creek is the galena lode previously mentioned. This reef strikes approximately east and west, and is exposed in the bed of the creek. On assaying a bulk sample I obtained the following ore content:—

Metal.	Quantity per Ton.					Value per Ton.		
						£	s.	d.
Silver	2 oz. 14 dwt.	...	...	...	0	7 0
Gold	1 dwt.	...	...	...	0	4 0
Lead	16·8 per cent.	...	...	...	2	17 6
Copper	4 per cent.	...	...	...	2	10 6
Total value per ton						...	£5	19 0

Given a sufficient quantity of ore, and with efficient concentration, the above lode should yield a handsome profit on outlay. The quantity can, however, only be determined by prospecting-drives.

An isolated exposure of the volcanic andesites is met with in the Preece's Point peninsula, which rises slowly from the alluvial flat, and, reaching an elevation of 200 ft., runs west for nearly two miles. The andesites are well decomposed, and are identical with those of the Hauraki area, of which Preece's Point may be considered as a southern outlier. Small outliers of this rock are met with at the base of the slate hills, containing, as also does the Preece's Point rock, reefs not of a highly auriferous character. (See Fig. 7.)

The andesites, continuing southward, next form the southern extremity of the Tiki ridge, comprising the area known as the "Tiki field," where the quartz reefs contain gold in small pockets.

South of the Waiau Creek the volcanic rocks have a great development, sweeping round to the south-east, and joining the great eastern area, to the obliteration of the Palæozoic slaty shales. At the junction of the eastern boundary of the slaty shales with the andesites are the Matawai and Pukewhau fields. The rocks to the west and south-west of the Waiau Stream rise to a height of 700 ft. to 800 ft. above sea-level, and, so far as is yet known, are non-auriferous. On the western bank of the Awakanæ Creek the andesite boulders on the hillside weather in a remarkable manner. Below each boulder concave plates from 6 in. to 2 ft. square and $\frac{1}{8}$ in. to $\frac{1}{4}$ in. thick may be picked up. These plates are apparently quite fresh, and I am disposed to attribute this peculiar form of