

that of the Tairua, carry some detrital gold. The source of this gold, however, is not quartz veins, but altered tuffs, which, as before stated, carry in places a sparse dissemination of the precious metals. Narrow clay-filled fissures in these tuff or ash beds in places contain an appreciable quantity of gold derived from the surface leaching of the rock itself. Such seams have here and there been prospected, but they have always proved erratic and non-persistent.

At Otanui gold to the value of perhaps £15,000 was in years past mined from the surface levels of veins intersecting altered andesitic lavas and breccias. The country rock on the whole resembles that of the upper Karaka, and it probably belongs to the same series. The work of crosscutting these veins at greater depth is now progressing. From the dish prospects afforded by the creeks adjacent to the Otanui, and the character of the country rock exposed in this area, further prospecting here would seem advisable.

*Kirikiri-Wharehoe-Matatoki Area.*—In this fairly extensive area lying between Kauaeranga and Puriri a payable gold proposition has never been located, and, in the writer's opinion, is never likely to be located. The country at the actual head of the Kirikiri, in which is located the Kirikiri Mine, lies without the boundary of the subdivision, and is excepted in this review. Andesitic rocks of the Beeson's Island Series, and tuffaceous and intrusive rhyolites of more recent age, are the prevailing if not the only rocks occurring in this area.

*Puriri Area.*—The principal mining country of the Puriri lies in the upper valley of the main left branch (Apakura), a district, however, which is not included in the subdivision. Andesitic rocks of the "First Period"—the "Auriferous Series"—outcrop in the Puriri Valley, and are flanked or capped by andesites of the Beeson's Island Series or by tuffaceous rhyolites. The contact between the andesites and the younger rhyolites is a most irregular one, the latter having been deposited upon a land surface very much the character of what exists to-day in the same locality.

The strongest vein, and the one that has proved the most productive within the area under review, is the Joker, which traverses the spur separating the two main branches of the Puriri. This vein, which is enclosed in propylitised andesites, averages about 15 in. in width, and has been traced and partially worked over a distance of 20 chains along its strike, yielding in places pockets of "specimen stone." Both English and Auckland capital has been expended in exploiting the prospect, but mismanagement, in great part, killed what chances there were of returns to the investors.

Small rich pockets of "specimen ore" were in the early days obtained in the Captain Cook Claim, in the lower valley of the Puriri. The range of propylitisation of the andesites is here very limited, and the prospect of the particular vein located is a poor one. Occurrences of this kind—small pockets of "specimen" veinstone invariably giving out at a very short distance below the surface—have been rather characteristic of the Puriri area.

Within the rhyolite formation altered and silicified areas occur which carry gold, but, unfortunately, not in payable quantity. A potentially more important rhyolite area includes Pakirarahi Mountain, the locus of the Champion and other claims, but this lies outside the subdivision now under survey.

*Thames Special Area.*—What has here been designated the Thames Special Area is the Thames mining centre proper, and lies between the Tararu-Ohio Stream and the Hape Creek.

As a good deal has been written about the geology and the mining of this famous old quartz-reefing centre, any such general description as could here be submitted would serve no special purpose. In the complete report which is now being prepared dealing with the Thames Subdivision, the geology and mining of this special area will be discussed at length. It is hoped that the recent detailed survey of the field, embracing new data that have been afforded by mining operations since the previous reports were published, will throw further light upon certain difficult problems connected with the structure and the ore occurrences of the area. The quartz veins of this field, it need hardly be remarked, are of the bonanza type, and are contained in propylitised andesitic rocks.

The hopes of the field are at present centred in development of the deeper levels. So far, 630 ft. below high-water mark is the lowest level at which a prospecting crosscut of any length has been driven. This crosscut from the Old Big Pump shaft southward was advanced scarcely as far as the Prince Imperial shaft. No great amount of work was done at this level apart from the actual driving of the crosscut, but yet sufficient, it would seem, to prove the unproductiveness of the country crosscut at this horizon. It seems reasonable to suppose that, had the crosscut been advanced further southward, productive country would have been intersected. The general dip of the zone of country on the hanging-wall or seaward side of the Moanataiari fault, which contained the rich bonanzas of the past, is south or south-west. The discovery, therefore, of pay-ore in the veins of the southern and south-western portion of the same zone at greater depths than yet exploited may be expected. The Victoria, the Saxon, and the May Queen are the properties in which the southern extension or deeper portions of this ore-bearing zone should occur. The driving of a crosscut at the 1,000 ft. level, northward from the well-equipped Thames-Hauraki shaft, is now under consideration by the May Queen, Saxon, Victoria, Waiotahi, and Kuranui-Caledonian companies jointly. The shaft named is well placed in the southern portion of the area in question, and such a crosscut should command the unexploited portions of the ore-bearing zone mentioned, as well as prospect the stretch of country further northward.

It is more than likely that the diamond drill will play an important part in further prospecting this northern portion of the field below the 1,000 ft. level. The cores afforded by the Kuranui-Caledonian bore from a depth of 1,034 ft.—that is, before the bore penetrated the Moanataiari fault—gave some indication that an ore-bearing zone may exist on the seaward side of the fault at and below the depth mentioned. Boring from suitable offset drives projected westward from the main 1,000 ft. level crosscut, will certainly prove the most economical method of initially prospecting the deeper horizons and of thus throwing further light on this vital question.