

REPORTON

C.A. BROCK'S PROSPECTING OPERATIONS AT FERN TREE GULLY,

MANGANAIntroduction

In the past a considerable amount of alluvial gold has been won from Majors Gully near Mangana and the object of the present work is to trace the reef or reefs from which this gold has been shed. The gold in Majors Gully has been shed into it by way of Fern Tree Gully, very little gold having been obtained in either Calder's Gully or Golden Gully which lie to the east and west, respectively, of Fern Tree.

Location

The scene of the present operations is at the head of Fern Tree Gully. This is about three miles to the north of Mangana township and may be reached by following the Tower Hill Road to the top of a long hill and then cutting across country for a distance of approximately twenty chains.

Present Workings

Gold has been traced up Fern Tree Gully to within a few chains of its head and the work now in hand consists in trenching across the upper portion of it in an endeavour to trace the main line of the gold and thus discover the reef from which it was shed. The gully trends in a general north westerly direction and the trenches commence about ten chains below its head.

In the lowest trench coarse gold has been found in the combs of the slates which outcrop in the bed of the creek. The slates are generally overlain by a red puggy wash which carries a few colours of gold. These slates are members of the Mathinna Series of slates and quartzites and are of Cambro-Ordovician age.

About two and a half chains above this the slates are overlain by horizontally bedded conglomerates which in turn are overlain by black mudstones containing thin seams of coal. These beds are presumably of Permo-Carboniferous age. Fine gold with some coarser particles occurs in puggy wash above the conglomerates and mudstones, and has been traced up the creek for a further distance of three to four chains.

In the uppermost workings only a few colours of fine gold have been found.

Above the head of the gully the slates and quartzites of the Mathinna Series again outcrop, these being at a higher elevation than the horizontally bedded rocks of Permo-Carboniferous age. About twenty to twenty five chains to the north of the above workings a large quartz reef, containing a few pennyweights of gold to the

ten, occurs in the slates and quartzites. This is at a higher elevation than the head of Fern Tree Gully.

Source of the Gold.

Three possible sources of the gold have been considered. These are:

(1) The gold has been derived from a reef under the conglomerates or

(2) The gold has been derived from a deep lead under the conglomerates i.e. a pre Permo-Carboniferous Deep Lead. or

(3) That it came from gold bearing quartz reefs which outcrop in the Cambro-Ordovician slates and quartzites higher up the hill.

Conclusions

With regard to the first possibility, it need only be stated that if a reef did occur in the slates underlying the Permo-Carboniferous conglomerates then the conglomerates would act as a protective capping and no gold could have been shed from it.

The second hypothesis is equally untenable. The conglomerates rest horizontally on the slates and there is no sign of a gutter under them. Moreover the conditions under which the conglomerates were laid down probably approached that of sea beach or shore line conditions and there could be no question of a deep lead existing under such circumstances.

The third theory is probably the correct one. At the same time the possibility must be considered that the gold bearing quartz reefs outcropping to the north have really provided the gold found in Fern Tree and Majors Gullies. These reefs have probably been denuded to some extent and it is possible that their upper portions have been much richer than that now exposed.

If further efforts are to be made in endeavouring to trace the source of the gold it is suggested that prospecting work be carried out along the hills above the gully.

A sketch plan and cross section are attached herewith.

(K.J. Finneane)
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