

Recommendations.

1. Lateral development northwards, particularly from the upper levels of the Ingliston Consols Extended mine, where the northern faces of the drives and stopes are said to have been in ore of fair grade.

2. Exploratory driving on the footwall side of the porphyry at the No. 10 level north of the crosscut. The geological plan shows that the footwall of the porphyry has not been cut anywhere in the north drive.

3. Southwards extension of the Ingliston Consols Extended No. 11 south drive to pass under the winze sunk from the Fenian No. 11 level in which good gold values are said to have been obtained.

4. Continuation of the drive on the hanging wall side of the porphyry south of the crosscut at the Ingliston Consols Extended No. 12 level.

5. Continuation of the north drive at the No. 12 level where values should at least equal those obtained in the north drive at the No. 11 level.

6. Exploratory boring with a diamond drill below the No. 12 level in order to determine the width of the dyke at greater depth.

7. Exploration by actual mining operations below the No. 12 level to determine the tenor of the lode at greater depth. Because of the characteristically patchy nature of the ore body, diamond drilling cannot be relied on to determine the presence or absence of gold values.

3.—LADY CENTRAL GOLD MINE, MEEKA-THARRA.

(F. G. Forman, B.Sc.)

Whilst engaged in an examination of the Ingliston Consols Extended and Fenian Gold Mines, the writer was told of recent developments on the Lady Central Lease, where it was said that at the 210 feet level from the New Shaft—supposed to be on the Ingliston Extended East Lode—the drive, which was in a northerly direction from the shaft, had cut basaltic dolerite in the face. It was known previously that somewhere in this vicinity the East Lode was cut off by a later basaltic dolerite dyke. It seemed, therefore, that the New Shaft workings were on the southern side of the dolerite, and consequently that the east lode extended further south than was previously known. Definite evidence of the presence of the Ingliston Extended East Lode on the south side of the dolerite would open up the question of its possible extension as far south as the Ingliston Consols Extended leases.

New Shaft Workings.

The New Shaft is situated about sixty feet south of the southern end of the old Ingliston Extended open cut on the East Lode. Short northerly drives have been put out from the shaft at the 100 feet and 210 feet levels.

The No. 1 level (100 feet) extends for about 62 feet north of the shaft in brown weathered schist with flecks and patches of fuchsite. The quartz

leader in which the gold values occur, lies in and strikes parallel with the schist and has an average width of about two feet and dips east at about 80°.

The No. 2 level (210 feet) extends north of the shaft about 100 feet, the country rock being a weathered black schist similar in appearance to the wall rock of the East Lode in the adjoining Ingliston Alberts Lease. The gold values occur in a quartz leader averaging about 1ft. 6in. in width with a dip of 75° to 80° to the west. The strike of the leader is parallel to the enclosing schists. Near the face the black schist becomes much harder than elsewhere in the drive. It was the increased hardness and the fine grained black appearance of the rock which lead the leaseholder, Mr. B. Rinaldi, to believe that he had cut the basaltic dolerite dyke.

Conclusions.

The drive at the 210 feet level of the New Shaft is entirely in black schist, probably an altered peridotite. The hardness of the schist in the face of the drive is due simply to its being less weathered than the schist elsewhere in the drive, and will be found to be the normal condition of the rock at lower levels in the sulphide zone.

The position of the dolerite dyke is indicated on Sheet 5, Plate XIII. of Bulletin 68. The New Shaft is on the northern side of the dolerite and its position in relation thereto is shown on the accompanying plan.*

There is some doubt as to whether the quartz leaders exposed at the No. 1 and No. 2 levels are one and the same because of the discordancy of their dips. The brown schist at the No. 1 level might quite easily be a more weathered form of the black schist at the No. 2 level, but the fuchsite flecks and patches seen in the schist at the No. 1 level are absent from the schist at the No. 2 level. If the dips observed in the schist at the No. 1 level are maintained in depth, similar country should be found to the east side of the No. 2 level drive. This should be tested and the extension of the No. 1 level leader looked for by an east crosscut at the No. 2 level.

Western Workings.

The workings in the western part of the Lady Central lease lie in, and along, the walls of the Paddy's Flat porphyry dyke which averages about 35 feet in thickness. Stopping has been confined to rich quartz cross leaders in the porphyry. The leaders, which apparently lie in pre-gold fault fissures, run at various angles across the porphyry. They are said usually to carry gold throughout their length, but enrichment is found to take place where two leaders intersect and cross, particularly if the intersection takes place in schisted country on either side of the porphyry. The accompanying plans* show the relationship of the workings to the porphyry dyke, but the numerous auriferous cross leaders are not shown, as to do so would not serve any useful purpose and the work necessary to map them was, therefore, not justified. Several of the cross leaders, drives on which are already indicated on the mine plans, are shown and illustrate the mode of occurrence of the whole system.

* Plan not published.

In an east crosscut near the southern end of the 160 feet level south drive, a small quartz leader is exposed which is said to have carried gold values where it was worked in the adjoining lease, the United. The leader as exposed in the crosscut, lies parallel to and about fifteen feet east of the hanging wall of the porphyry, but does not contain payable gold values. The values in such quartz veins and leaders in other parts of Paddy's Flat are characteristically patchy, and a northern drive on this leader, with the object of prospecting for other shoots of auriferous quartz, seems worth while.

4.—INGLISTON ALBERTS G.M., MEEKATHARRA.

(F. G. Forman, B.Sc.)

The following brief description of the geological features of the East Lode in the Ingliston Alberts Lease (late Ingliston Extended*) is written after an examination made at the request of the Syndicate.

The East Lode is a shear zone in the black schist (altered peridotites) lying parallel to and about 180 feet east of the Paddy's Flat porphyry dyke. Throughout its greater part the East Lode lies close to a fine grained basaltic dolerite dyke, which is of later date than the ore body. This dyke and the ore body are not strictly parallel, and the effect where the dyke approaches closer than usual to the shear zone of the lode, is a partial squeezing out of the lode with a consequent reduction of the normal stopping width. This is purely a mechanical effect, so that should it be found on further development that the dip of the dyke changes, and the lode is consequently entirely pinched out, it should be found again without any alteration in values on the other side of the dyke.

The present lowest level on the East Lode is at 550 feet, and is driven north from the Faithful Shaft for a length of about 380 feet. All payable ore vertically above this level has been stoped out by the Ingliston Extended Company. The present holders, the Ingliston Alberts Syndicate, have sunk two winzes each 50 feet deep below the 550 feet level. These winzes, the No. 1 winze and the No. 2 winze, are 40 feet and 145 feet respectively north of the crosscut from the Faithful Shaft.

The lode at the bottom of the No. 1 winze is exposed over a width of 10 feet. The footwall or west side of the winze at the bottom appears to coincide with the footwall of the lode, but a definite hanging wall on the east side of the winze has not yet been exposed.

At the bottom of No. 2 winze the lode is exposed over a width of 16 feet. The western side or footwall of the winze appears to coincide with the footwall of the lode, but bore holes put out into the hanging wall still show gold values continuing.

It is stated by the Manager that the average value of the ore exposed in No. 1 winze and No. 2 winze is about 15dwts. of gold per ton. The basaltic dolerite dyke which lies close to the hanging wall of the lode at the upper levels, has not yet been exposed in either of the winzes.

* A full description of the geology and ore deposits of the Ingliston Extended mine is contained in G.S.W.A. Bull. 68.

Conclusions.

The East Lode is of deep seated origin and the gold values are likely to continue to much greater depths than the present deepest workings.

The widening of the lode in the two winzes below the 550 feet level is probably due to the greater distance between it and the basaltic dolerite dyke which appears to have flattened its dip and has, therefore, retreated eastward away from the lode channel.

The present width of the lode is likely to be maintained in depth, unless a further change in the dip of the dolerite dyke causes it to again enter the lode channel.

Should the lode at greater depth be completely pinched out by the dolerite dyke, it should be found again without any alteration in gold values on the other side of the dyke, the barren interval depending on the width and dip of the dyke.

Ingliston Alberts (Ingliston Extended) Main Spur.

The main spur is a body of quartz almost vertical and striking parallel to and about 70 feet east of the west lode which lies on the hanging wall side of the Paddy's Flat porphyry dyke. The Main Spur has been faulted between the No. 1 and No. 2 levels. The effect of this faulting is shown diagrammatically in the plans or plate XV. and the section on plate XIX. of Bulletin 68.

It was suggested to the writer by the Underground Manager, that instead of the faulting being on one plane as depicted in Bulletin 68, it might be on two parallel planes and that in consequence a further body of ore might exist between these two planes somewhere between the No. 1 and No. 2 levels.

After inspection of the fault planes exposed at both levels, and a study of the plans and sections in Bulletin 68, the writer is of the opinion that the conditions as depicted by the plans and sections in Bulletin 68 actually do exist, and that therefore no isolated body of ore representing a displaced portion of the Main Spur will be found between the two levels.

5.—SUGGESTED BORING FOR "DEEP LEADS," GREENBUSHES TINFIELD.

(F. G. Forman, B.Sc.)

The first locality examined was an extensive sandy flat at the head of Moulton Brook (locally known as Battler's Gully). On the old Battler's Hope leases, M.L's. 313-314, two deep shafts have been sunk, with the object of prospecting for a "deep lead." These shafts are now inaccessible, but the following extract from Bulletin 32 describes the conditions as found and coincides with descriptions supplied to me by miners with local knowledge.