To the Westward and Eastward of these belts is a belt of large ferruginous veins, some of which are said to carry gold, whilst beyond them are plains strewn with stones, with here and there large quartz blows or flat-topped ridges of the desert sandstone.

The rocks of the auriferous belt, like those of most of the goldfields, consist principally of the hornblende and chlorite series, whilst the dykes are feldspar porphyry, feldstone, quartz, hornblende, and fibrous talc veins. The rocks of the two belts are identical even to their relative positions to the lodes, for on both sides of the anticlinal we find the main lode is of the class called "contact," and lies between hornblende schists and feldspar porphyry, locally called "spotted rock."

The lodes are, for the most part, small, although they open out in places to bodies of considerable size; but, to counterbalance this, they may pinch to a mere thread of quartz or indicator for a considerable distance. The stone of the reefs carries gold throughout the so-called chutes, being that portion of the lode which is large enough to work at a profit. These vary in size, but are sometimes of considerable length. The stone in the upper levels is oxidised, but below the water level it is heavily charged with sulphides of iron and copper, the latter metal being generally associated with gold in this district.

The water supply of this district is not as a rule good, the water shaft used by the Government yielding about the best supply, whilst that at the Mt. Ida Consols is so small that, in spite of the most economical treatment, it will only supply the battery 12 hours. The water difficulty does not promise to improve with depth, since, when the old sulphide zone is entered, it is found to be hard and impervious. However, when the workings are extended in the water-bearing zone to the point of intersection of the lode with a cross course, it is highly probable an abundant supply will be struck.

Timber for mining purposes is getting scarce in the vicinity of the mines, but at present there is abundance of excellent firewood close at hand.

About five miles South of the township, upon what may be probably the Southern extension of the same belt, a patch of surfacing was discovered some time ago, the deposit dry-blown, with the result that some rich parcels of gold were found. This led to the prospecting of the reefs in the vicinity, which consist for the most part of large quartz blows, all of which proved to be barren, however. Two or three smaller parallel reefs were worked, which yielded rich stone in patches, but never in sufficient quantities to pay.

*Public Batteries and Cyanide Plant.*—This is a very complete 10-head stamp battery with cyanide plant upon this field, which has been a great boon to the prospector, who, without it, could not have worked their claims. During the time this has been running, a considerable quantity of stone has been crushed and yielded very good results, whilst the tailings still remained to be treated; however, since these contain a considerable quantity of copper, the extraction from the sands, although rich in gold, will be low. The stone treated at this battery amounts to 9,832 tons, which yielded 10,795ozs. 1dwt. 6grs. of gold, giving an average per ton of 1oz. 1dwt. 23grs., the total value of the gold won being £41,021.

The district generally is in a quiet condition owing to the fact that the miners have worked out most of the payable stone exposed in the workings left by the previous prospecting companies, and therefore require capital to proceed with dead work. Many of the properties undoubtedly warrant the expenditure of capital, and when it is borne in mind that a public battery, etc., exists in such a central position, there would be no need for a company to erect its own plant until such time as it felt warranted in doing so.

With regard to boring to test lodes at a depth, this cannot be recommended anyhow until a detailed geological survey has been made of the locality, owing to the fact that the lodes are so broken by dykes and cross courses, besides which the reefs themselves are so irregular in dip and size, which might lead to most unsatisfactory or erroneous conclusions, therefore by far the most satisfactory method to be adopted for the assistance of the district would be the subsidising of sinking below the water level.

Everything considered, this district may be said to be rich in auriferous quartz veins, which present all the appearance of true fissure veins, the ore bodies, although small upon the average, contain chutes of considerable extent of workable sizes, whilst the value of the ore has been so high that it has paid working miners to raise and cart to a public battery without taking into consideration the value of the tailings.

YARDARINO BORE.—Having in view the delimitation of the Western margin of the Irwin River coal measures, a bore was put down by the Government at Dongarra in the year.

The bore attained a depth of 2,111 feet 7 inches, when operations were stopped owing to the capabilites of the bore's plant being exhausted, without having proved the presence of the Irwin River Coal Beds.*

The Government having decided upon boring operations at Yardarino, one mile to the Eastward, there was then no necessity for deepening the bore originally put down at Dongara.

Boring operations were eventually started at Yardarino, and when the bore hole attained a depth of 1,607 feet, the boring tools were lost in the hole, and it then became impossible for the contractor to continue further operations.

* The Mineral Wealth of Western Australia. A. Gibb Maitland. Bulletin No. 4. Perth : By Authority : 1900, pp. 105-106.

The following is a section of the strata pierced:—

YARDARINO BORE.

| Nature of Strata. | Thickness. | | Depth. | |
|---|---|---|---|---|
| | ft. | in. | ft. | in. |
| Clay and sand | 53 | 7 | 0 | 0 |
| Quartz gravel | 76 | 5 | 53 | 7 |
| Yellow sand and ironstone bands | 16 | 0 | 130 | 0 |
| Quartz gravel | 6 | 0 | 146 | 0 |
| Micaceous shale | 48 | 0 | 152 | 0 |
| Fine white sandstone | 10 | 0 | 200 | 0 |
| Grit | 11 | 0 | 210 | 0 |
| Sandstone and shale | 29 | 0 | 221 | 0 |
| Micaceous sandstone | 5 | 0 | 250 | 0 |
| Shaley sandstone | 30 | 0 | 255 | 0 |
| Lignite | 0 | 6 | 285 | 0 |
| Shaley sandstone | 59 | 6 | 285 | 6 |
| Shaley sandstone (and coal?) | 3 | 6 | 345 | 0 |
| Shale | 16 | 11 | 348 | 6 |
| Sandstone and shale | 15 | 11 | 365 | 5 |
| Sandstone, shale, and iron pyrites | 74 | 8 | 381 | 4 |
| Shaley sandstone | 4 | 0 | 456 | 0 |
| Shale and sandstone | 22 | 0 | 460 | 0 |
| Grit, sandstone, and shale | 64 | 7 | 482 | 0 |
| Grit, sandstone, and shale cemented in places with pyrites | 126 | 6½ | 546 | 7 |
| Shaley sandstone | 75 | 6 | 673 | 1½ |
| Shale | 45 | 9½ | 748 | 7½ |
| Grit and sandstone | 30 | 11 | 794 | 5 |
| Sandstone and grit cemented in places with iron pyrites | 52 | 8 | 825 | 4 |
| Sandstone with occasional pyrites | 40 | 6 | 878 | 0 |
| Shale and sandstone with pyrites | 63 | 2 | 918 | 6 |
| Shale | 23 | 0 | 981 | 8 |
| Sandstone with occasional pyrites | 93 | 6 | 1,004 | 8 |
| Sandstone | 11 | 0 | 1,098 | 2 |
| Sandstone with occasional pyrites | 152 | 1 | 1,109 | 2 |
| Sandstone | 42 | 10 | 1,261 | 3 |
| Shale | 9 | 11 | 1,304 | 1 |
| Grit | 87 | 0 | 1,314 | 0 |
| Shale | 40 | 0 | 1,401 | 0 |
| Sandstone and grit with occasional pyrites | 166 | 0 | 1,441 | 0 |
| Total | 1,607 | 0 | 1,607 | 0 |

When boring ceased, the water stood at 25 feet below the surface, and at this depth 2,000 gallons per hour could be pumped without lowering the level of the water. The temperature of the water was 87° Fahr.

Two samples of the water were submitted to the Government Analyst, Mr. E. A. Mann, at whose hands the following results in grains per gallon were obtained:—

| | I. | II. |
|---|---|---|
| Silica | ·62 | 1·64 |
| Iron and Alumina | ·46 | ·28 |
| Carbonate of Lime | 4·86 | 2·58 |
| „ Magnesia | 3·50 | 6·96 |
| Sulphate of Lime | 6·60 | 11·36 |
| „ Magnesia | 6·72 | 4·96 |
| Chloride of Magnesia | 5·38 | 7·54 |
| „ Sodium | 67·76 | 128·36 |
| | 95·90 | 163·68 |

It is of interest to note that an assay at the hands of Mr. E. S. Simpson, of the pyritous sandstone, from 913 feet yielded a trace of gold to the ton.

Neither the Dongara nor the Yardarino bores having entered the Coal Measures, and the main object of the operations being yet unaccomplished, the necessity for definitely ascertaining the seaward extent of the Irwin River beds may be held to justify the expenditure necessary to put down another bore hole to the East, where it may be expected these strata would be met with at a relatively shallow depth, provided boring in such a locality would advance the general interests of the State, and not those of a private corporation.