

This formation is probably of Devonian age, resting unconformably upon the edges of the clay-slates and quartzite conglomerate beds with quartz reefs of the Metamorphic series.

Another line of flat-topped hills, but lower, extends along the side of the creek, but these are of much more modern formation, and it is in these that the deep leads are met with. The beds which form these hills rest directly upon the indurated slates and are pipe-clay, soft white sandstone, gypsum and boulder beds. The wash is often very ferruginous and hard, necessitating crushing. The whole of these beds are capped by a ferruginous sandstone containing large quantities of fossil wood. To the Eastward the country opens out and large flats are met with, on some of which all trace of soil has been washed away, leaving the edges of the indurated slates with quartz reefs exposed, and it was on these flats that a good deal of gold was picked up.

Some of the reefs are worth testing, and this country is said to extend away for 40 miles to the Eastward.

## APPENDICES.

As it may be of interest, generally, to have a few particulars about the progress of other mineral fields which were not examined last year, the following is a short account of what has been done up to the end of 1890.

### YILGARN GOLDFIELD.

This field, during the last year, has settled down steadily to work, and no less than six crushing plants have been erected, besides a considerable amount of developing work done in the mines themselves.

At Golden Valley only two mines are now at work, the Kathleen and the Waterhall; neither of these mines has yet erected crushing plant, but they both have a large quantity of rich stone at grass. The Kathleen has been opened up to a depth of 80ft., and the lode is about 25ft. in width, consisting of two masses of white quartz containing mundic, one on either side of the lode, whilst the centre is composed of broken country, with small leaders rich in copper ore; the white quartz assays about 18dwts., whilst the leaders carry several ounces of gold to the ton.

The Waterhall, which is a part of the same line of reef, has been followed down on the underlay for a depth of 82ft.; a body of stone about 3ft. in thickness being worked, which yields about 2ozs. of gold to the ton.

In both these mines the lodes are well-defined, and carry gold as far as yet opened up; therefore there is every prospect of their proving payable mines.

At Hope's Hill a ten-head battery has been erected near the lake, about one mile from the main shaft, and stone is being crushed. The lode, to a depth of 82ft., is well-defined, and is about 50ft. in thickness, some portions being very rich in gold, but the whole carrying a certain amount. This large reef

carries gold at its outcrop the entire length of the two areas; and, considering the ease with which it can be worked, the quantity and richness of the stone, this mine should pay well when a larger crushing plant is erected nearer the mine. At Southern Cross there are five mines at work, four of which are crushing, the No. 1 Central Extended being the only one in which machinery has not yet been erected; but this mine is being opened up, and very good stone raised; a shaft has been sunk 104ft. The reef is well-defined, of about 25ft. in width, carrying gold all through and all the way down, but being particularly rich on both the hanging and foot walls. A trial crushing of 104 tons, taken from a depth of between 30 and 60ft., yielded 186ozs. 15dwts. of gold, and, as the stone is just as good in depth, it would pay well to put machinery on this mine. On the Central a good deal of work has been done during the last year; 2,205 tons of stone have been crushed, yielding 1,523ozs. 2dwts. 23grs. of gold, but, as this was more or less prospecting, a good deal of poor stone was crushed. The lode has now been worked to a depth of 110ft., the reef being about 25ft. in thickness, carrying gold all through, but the richer portion from two to seven feet, and about 80ft. in length, is all that has been crushed; this stone will carry about 2oz. to the ton. The latter crushings have greatly improved, being always over an ounce to the ton, and, as the stone seems to improve in depth, there is every prospect of this mine paying.

Fraser's has been extensively opened up on two reefs; the extension of the Central reef being worked to a depth of 60ft., and 180ft. in length, from which a part of the reef, varying from 4 to 10ft., is being worked; whilst a small reef at the South end has been sunk on to a depth of 100ft.; this reef, although smaller, is much richer than the former, yielding about 2oz. to the ton in trial crushings. From the two reefs, 1,776 tons of stone have been crushed, yielding 2,158ozs. 13dwts. 12 grs. of gold. To judge from this return, and the character and richness of the reef in depth, this mine may be put down as a success. Joining this area on the South side, and working in the same small rich reef, is Fraser's South mine; here the reef has been opened up to a depth of about 70 ft., where it is about five feet wide. All the crushings, up to the present, have yielded over an ounce to the ton, which must be quite satisfactory to all those concerned in it.

The Exchange reef has been opened to a depth of 110ft., the lode being from three to six feet in thickness, of a mullocky nature. A Huntingdon Mill has been erected near the lake, about two miles from the claim, and the crushings up to the present have been very satisfactory.

Five miles to the Southward another series of workings have been opened during the last year, one of which has proved to be very good; this is Blackburn's, from which 70 tons crushed yielded 129ozs. 14dwts. 12grs. of gold.

The reef is well defined, about three feet in thickness, and has been opened to a depth of 85 feet.

About 20 miles further South is Jacoletti's area, where some very rich stone was found at the surface, but in sinking this shoot has been lost.

On Parker's Range there are six claims at work, some of which have been tested to a depth of 80ft. The reefs are smaller here than at Southern Cross, and contain more mundic in depth. These areas are called Parker's, Sewell's, Toomey's, Thorn's, The Union, and Rickey's. The reefs on all these are well defined, rich, and were very showy in their caps, but up to the present no crushings have been made. A little South of this line of country are the areas called Macintosh's, Uphill's, Yilgarn, O'Driscoll's, &c.; these are all nice little reefs, rich in gold, one of which on Macintosh's area is being worked, and a crushing plant has been erected near the lake; all the stone crushed up to the present yielding over an ounce to the ton.