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Prospects of Coal at Esk.

Memo. for the Under Secretary for Mines.

By E. O. Marks, B.A., B.E., Assistant Government Geologist.

In portion 33, parish of Esk, Mr. E. Broad's Glenrock paddock contains a well said to be approximately 55 ft. in depth. In this at 50 ft. a seam of coal, 1 ft. 6 in. in thickness, is reported to have been found. Some fragments of coal lying on the tip show that coal was certainly met with, but whether the whole 18 in. was coal, or was merely coal and coaly shale mixed, I could not venture an opinion without seeing the actual seam. The well contains water 5 or 6 ft. above the seam, and Mr. Broad undertook to have this pumped out, but failed to do so prior to my departure. There are no outcrops of coal in the immediate vicinity, and an examination of the strata cut by the well might have helped in forming an opinion as to the likelihood of other seams occurring, since the one already found, even if all of good quality, is not large enough to be remunerative to work.

An inspection of the neighbourhood shows the strata to consist mainly of tuffaceous sandstones, the sand grains being composed almost entirely of volcanic or other non-siliceous rock material, with comparatively few grains of quartz. The coarser conglomerates contain water worn pebbles of trachytic rocks; the fine shales or mudstones, though seldom carbonaceous, yield the usual Trias-Jura coal measure fossils in great abundance. The harder and lighter-coloured varieties of the mudstones are composed of the debris of rocks similar to a very fine-grained trachytic rock forming the rugged hill to the east of Esk, and are sometimes, in hand specimens, indistinguishable from it.

Judging by the little that can be seen in the vicinity of the well, the strata are not greatly disturbed. Though the presence of more carbonaceous material in the outcropping rocks would have been more encouraging to the prospects of finding coal on the property, the great abundance of fossils is not an unfavourable indication. Judging by their geographical position with regard to Ipswich, the strata here probably belong to some part of the Walloon stage of the Trias-Jura system. It is quite impossible, however, without detailed investigation of the country between this and that already mapped near Ipswich, to form any definite conclusion on the subject.

With the knowledge to be gained by a close study of the whole Trias-Jura system, the likelihood of finding coal in any given locality could be better appreciated and much money saved as well as gained in the prospecting for that mineral. In the present state of our knowledge, all that one can say about the vicinity of Esk is that payable coal seams may occur below that already discovered, and that the coal, if there, will be similar in character to the Walloon and Rosewood coals.

Besides Mr. Broad's well, coal has also been found in a well on the property (por. 28v, Biarra) of Mr. J. H. Chaille, near the railway line, about 6 miles north of Esk. The seam is too small to be of commercial value, though the coal is of good appearance. The strata here are very disturbed and have in one railway cutting been intruded by igneous rocks, so that this vicinity would scarcely be desirable for prospecting work, though the sections visible show more carbonaceous strata than is the case nearer to Esk.

At the junction of Coal Creek with the Brisbane River a good section is exposed showing several thin coal seams up to again outcrops, the gully at the bottom exposing fossiliferous sandstone and capped by trachyte.

Fragments of coal are said to have been picked up further up Coal Creek after a flood, but the seam has never been found, and the railway crossing the creek further up provides a possible adventitious source for the fragments.

In portion 38v, parish of Esk, some carbonaceous shale occurs in a gully down the side of a steep hill, but nothing of any commercial value was observed. The hill here is also capped by trachyte.

To the west of Esk, in portion 67, trachyte is observed, but does not form the highest point of the hill, which is of sandstone; in portion 120 on the western fall of the hill trachyte again outcrops, the gully at the bottom exposing the fossiliferous strata.

Whether the trachyte near Esk is the same age as the surrounding strata or has been intruded into them and poured out on the surface at a later date, I saw no definite sections to prove, though the tuffaceous character of the sediments makes one suspect a contemporaneity of the volcanic action and sedimentation. The water-worn trachyte pebbles included in the sedimentary strata consist of a rock not identical in character with the trachytes observed, though possibly identical with other occurrences in the vicinity. They thus may possibly be derived from rocks of a much greater age, though the prevalence of and diversity of structure in the local trachytes renders such an assumption unnecessary.
The neighbourhood of Esk was visited by Mr. R. A. Warne, B.A., prior to my visit, and he informed me that he had found definite proof there of the Trias-Jura age of the trachytic rocks. My own observations may thus be taken as strongly supporting Mr. Warne's view, though I was not fortunate enough to observe so definite a section.

Any proposition to expend money in the search for coal necessarily depends, in the first case, on whether any demand exists for that commodity. On inquiry, the Railway Department kindly informed me that, in the event of coal of satisfactory quality and price being procurable at Esk, they would be able to take about twenty tons a day for the Benarkin Branch. This, with a small consumption by the various butter factories on that branch, should be sufficient to keep a small colliery in operation.

Ipswich and Darling Downs Districts prior to the 1st August last.

**Metalliferous Mines.**

It is regrettable that there was not an improvement in the industry in 1911, which appears to have been in many ways a repetition of its predecessor. At Gympie, very little shaft sinking has been done. Attention to prospecting and development work has been chiefly confined to the Scottish Gympie, No. 2 South Great Eastern, and Oriental Consols Gold Mines. At the two former a considerable amount of work has been done with the intention of giving the Inglewood reef a trial, the greatest depth at which work is being done at the Scottish Gympie Mine being 2,326 ft., and at the No. 2 South Great Eastern, 2,000 ft. At the Oriental Consols Gold Mine a crosscut at a depth of 2,600 ft. from the surface is now in over 1,400 ft. from the shaft. Sinking has been continued by the Amalgamated Mondland and Glannire Deep Mines, Limited, the North Glannire shaft having been deepened about 300 ft. During the year a rearrangement of the scheme for the prevention of the inundation of mines during the rains was made, two Drainage Boards being constituted in place of the one already in existence—one to have control over an area containing the mines at the northern end of the field, and the other to perform the same office regarding the mines at the southern end.

In the Burnett District the only new development was in the vicinity of Nanango, where attention was given to discoveries of tin. Very little work has been done in connection therewith, but the ensuing year will probably see its value proved. At Edsvoold, at the Burnett Gold Mines work was suspended and has not yet been resumed, while at Mount Perry the decline in the price of copper led to the suspension of mining and smelting operations by the New Queensland Copper Company, Limited, in July last. Since then a few tributaries worked in the mines until the end of the year, and it is probable that if the present improvement in the value of copper continues the company will again resume work.

In the Biggenden District the only mine being worked is the Biggenden Bismuth Mine, at which operations have been carried on all the year.

Notwithstanding the continued depression in the condition of the mining industry, there does not appear to have been an