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SHALES OF PICTOU COUNTY.

(Dr. Ellis.)

"If we compare in the next place the oil-shales of Nova Scotia with those of New Brunswick, just described, it will be seen that the shales from the two provinces are on the whole of different types. Those from Nova Scotia are on the whole much more carbonaceous, and by no means so rich in hydrocarbons as those of Albert and Westmorland counties. A somewhat full description of the shale areas of Pictou County was given by Sir W. E. Logan and Edward Hartley in the Geological Survey report for 1866-9, which more especially relates to the oil-shales of Stellarton and McLellan's brook. The Stellarton deposits were worked quite extensively in 1860, shortly after their discovery in the previous year, and the output was partly shipped to distillation works in Boston and Portland, and in part was used for mixing with bituminous coals in the manufacture of illuminating gas. For the same reasons apparently that so disastrously affected the mining of the shale deposits of New Brunswick and the Utica shales of western Ontario, viz. the discovery of the native oils in that province and in the United States, the mining of Stellarite was soon after suspended, and has never been resumed.

This description of the deposits in the vicinity of Stellarton are such as to show that in the present stage of enquiry for oil-shales there are of sufficient importance to be again investigated and more thoroughly than before. In connection with this it may be said that a couple of years ago, samples of the Stellarite mined in 1860, were collected after being exposed on the dumps for nearly half a century. They were analyzed in the Department at Ottawa, the result being a yield of 44.8 gallons crude oil with 14½ pounds ammon. sulphate per ton. Samples taken from Patrick's old dump near the old fulling mill on McLellan's brook mined about the same date, gave by similar tests in Ottawa, crude oil 42 gallons, and ammonium sulphate 41 pounds per ton. This analysis indicates a shale of sufficient value to be worthy of further examination, especially in view of the statement made by Sir W. Logan in his description of the section given of this part of McLellan's brook, that the section originally opened by Mr. Patrick had in places a thickness of eight feet, and the measures at this place were affected by faulting, by which the original thickness was so reduced as to render the further working impossible at that time. The thickness of the deposit at Stellarton as given by Logan and which was quoted in the paper of last year, is in one place five feet, of which the upper part of 16 inches is bituminous coal, the middle portion of 22 inches is Stellarite, and the bottom bench, also of 22 inches is oil-

shale.

In a section given by Logan along Marsh brook mention is made of a bed of oil shale, the thickness of which is not clearly defined but is said to be four feet. A small pit was sunk on this seam by a Mr. Haliburton. During our examination of this area last year this pit could not be definitely located, but several tests were made of shales along Marsh brook, though no deposits as rich as those found on McLellan's brook were seen. The analyses of three samples of the shales from this area will be found in the list given of analyses made from samples taken along McLellan's brook.

On a map issued by the Geological Survey of the Pictou Coal-fields, in 1904, which is largely the work of Dr. H. S. Poole, the locations of several outcrops of oil-shale are given. It was however found somewhat difficult to locate these outcrops on the ground so as to secure specimens for analysis. A number of locations were however selected at various points along McLellan's brook and in the vicinity, including Marsh and Shale brooks, and samples were taken from what were regarded as the most promising outcrops. These have been analyzed by the Department of Mines at Ottawa, to determine the contents in crude oil and ammon. sulphate.

In all eight samples were selected for this analysis, the results of which are as follows:—

McLellan's brook; New Glasgow, a branch of East river of Pictou; from Patrick's old slope, 27 chains below the old fulling mill.

Crude oil, imp. gallons, 42; Sulp. am. pounds 41, per ton.

McLellan's brook, Black's old mill site.

Crude oil, imp. gals. 14½; Amm. sulp. 35 pounds.

Marsh brook, the lower end at the forks with McLellan's Br.

Crude oil, imp. gals. 8. Amm. sulp. undit.

Marsh brook, 150 feet above McKay's house.

Crude oil, imp. gal. 3. Sulp. amm. undit.

Marsh brook, 500 feet above McKay's house from area blasted;

Crude oil, imp. gals 14; Sulp amm. undt.

Shale Brook, upper end,

Crude oil, imp. gals. 4 Sulp. amm. undt.

Shale brook, near forks with McLellan's brook

Crude oil, 9. Sulp. amm. undt.

From bed of black shale, one mile west of Woodburn station, in small brook 500 feet north of railway track, from bed 10 feet thick.

Crude oil, imp. gals. 14.3; sulp. amm. undt.

It will be seen from the above list of analyses that most of the samples selected are not sufficiently rich in hydrocarbons to repay any attempt at development, but that in the case of the Stellarite found at Stellar-