

REPORT ON THE PROPERTY OF MR. R.G. VERNONEAST DEVONPORT

This property is situated about $1\frac{1}{2}$ miles to the east of the Township of Devonport along the road to Wesley Vale.

It occupies parts of the summit and the flanks of a hill which rises to a height of about 300 feet above the sea. This hill forms part of a more extensive plain which has however, been dissected by numerous small streams which rise on its surface.

The plain is composed of basalt and was built up by successive flows of basaltic lava. The different flows are not readily distinguishable, but in some cases thin layers of sedimentary rocks separate them. The basalt is the typical basic basalt of the north west coast districts which has been weathered to considerable depths and which yields the richest chocolate soils of those districts. The intercalated sediments are generally sands or grits.

Paint Materials.

A shaft was sunk from the summit of the hill immediately behind the homestead to a depth of 32 feet and a bore hole was then put down a further 16 feet. The shaft passed through decomposed basalt and the bore through three feet of sand followed by 13 feet of decomposed basalt similar to that in the shaft. The basalt passed through has been almost completely decomposed by surface weathering and only a few hard kernels of slightly decomposed basalt remain. The decomposed basalt now consists of clayey material containing a considerable proportion of oxides of iron which stain the clayey matrix. The greater part of the material is stained red, but various shades of yellow and brown also exist. The red colouration is caused by the presence of the earthy form of hematite, and the yellow and brown colourations are due to the presence of limonite.

The material could not be used for the purpose of making paints in which pure oxides of iron are required. It might however be found by trial to have a limited use for the manufacture of materials to colour fireplaces doorsteps and such like.

Further it might have a use for some grades of water paints (calcimine) but tests would be necessary to establish this or otherwise.

Underground Water

The homestead is situated on the summit of a hill which the property embraces and it was desired to obtain a supply of water for household purposes. The shaft referred to above was sunk for this purpose but did not yield any water.

An examination of the surrounding country and the numerous springs and wells which exist, showed that all these springs occur at a horizon about 100 feet below the summit of the hill. Wells have been sunk and windmills have been erected on two of these springs and the water from one (Marshall's) is said to be used for household purposes.

If the shaft near the homestead had been continued to a depth of 100 feet to 120 feet it would undoubtedly have yielded a supply of water. However, an old well (now filled in) in front of the house is stated to have been sunk to a depth of 80 feet, and to have yielded water of bad quality. This work represents the water that would be cut in the new shaft and if the report as to the quality of the water is correct it would be useless to sink the well to 100 or 120 feet to obtain a supply of good quality water.

The best method of obtaining a supply at the homestead would be to install a windmill and pump at the spring at the south eastern corner of the property and pump the water to the house. It would take a considerable length of piping to carry the scheme into effect, but this is unavoidable.

Shallow holes have been sunk in the edge of the swampy ground to the south of the house, and have yielded supplies of water. These may be nearer the homestead, but if there is little difference in the distances, it is recommended that the spring at the south eastern corner be used as it is likely to yield a better supply of water as regards purity.

P. B. Nye.
Government Geologist.

Hobart.
29th January, 1926.