

NOTES ON THE SHAFT SUNK FOR COAL AT THE  
CASCADES.

[BY S. H. WINTLE.]

HAVING heard that a shaft was being sunk by Mr. Newman on the property of Mr. Degraives, at the Cascades, with the view of finding coal, I seized the first opportunity of visiting the spot, in the hope that the *debris* of the shaft would be a safe clue to the actual age of the sandstone of that locality,—and which I believe to be a continuation of the sandstone of this city. Calling upon Mr. Newman on my way thither, he kindly allowed his son to act as my guide to the spot. I found the shaft situated on the side of a hill looking about N.W. to the left of the residence of Mr. Degraives, and about three-quarters of a mile beyond it in the direction of Mount Wellington. This shaft has been opened at the base of an old sandstone quarry, which was formerly worked, I understand, by Mr. Newman.

I never entertained the hope that coal would be found in that locality in a payable seam, on account of the carboniferous limestone being seen *in situ* in the bed of the rivulet, and which formation, according to Professor Selwin, constitutes the base of the coal measures, as a rule, in Tasmania.

Upon arriving at the shaft, I found the mouth of it to be about 300 feet above the limestone in the bed of the rivulet, the dip of which is nearly S.E. I therefore considered it highly probable that after sinking, say 150 feet, there would still be room for even one or two good seams of coal, with the usual strata, before the limestone would be reached, the dip of the sandstone being the same as that of the carboniferous limestone.

Upon examing the *debris* of the pit, I found unmistakable evidence of the strata already passed through being of carboniferous age; but although a depth of 92 feet had been reached, there was an absence of those striking indications which characterize the existence of good seams of coal.

The bed of sandstone that underlies the fire-clay is thickly studded with fossil plants, from one of which I obtained a small quantity of coal—being, in fact, the mineralized stem of a plant or shrub—about three inches in diameter. It has the appearance of a highly bituminous coal, but upon putting it to the test it turned out to be anthracite. I, therefore, concluded that if coal were eventually reached it would be anthracite. But of such a desideratum being realised I have but little hope.

I have on former occasions expressed an opinion that the

sandstone at the Cascades was of Triassic age. That opinion was based upon the best evidence within my reach. The strata which the shaft in question has pierced have completely overturned that theory, the rocks exposed thereby being strictly carboniferous, as may be seen by reference to the diagram. The sandstone on the north side of the rivulet is without doubt of carboniferous age (see Fig. 1), since it reposes immediately on the crystalline limestone, which teems with the typical fossil shells of the mountain limestone,—such for instance as *Spirifera leptenæ* (syn. *productæ*), *Leminulæ*, *Pectenida*, and *Eurydesma*, with Bryozoa remains, the most characteristic of which are *Fenestella*, *Polyparia*, and *Stenopera*.

The cherty or impure limestone (Fig. 2), and into which the crystalline limestone may be said to pass, is also fossiliferous, but to a much less extent than the latter. If, therefore, as I am inclined to think is the case, from the *debris* of the lowest stratum of the shaft, this stratum has been reached, then there is an end to all expectation of finding coal, for the upper portion of the base of the carboniferous system has been reached.

In looking at the sinking of this shaft from a practical point of view much credit is due to Mr. Newman for setting a worthy example of private enterprise to his fellow-colonists; and although he may fail in discovering the object of his search, it may be a source of some satisfaction to him to know that he has already made an important contribution to science, and which it is more than probable the keenest superficial observation, extending over several years, would not have afforded.