



THE HAMILTON AND OUSE DISTRICTS.

*REPORT on the Hamilton and Ouse Coal Deposits, by G. THUREAU, F.G.S.,
Geological Surveyor, &c.*

Launceston, 14th August, 1883.

THE geological features and the local appearance of these districts are very similar to those examined in other parts of Tasmania; if anything the carbonaceous and carboniferous series of rocks is of less pronounced a type in the immediate vicinity of Hamilton township, than, for instance, at Fingal and Mount Nicholas, owing to the very disturbed position of the strata as shown on the Geological Sketch Plan herewith, where the various dips and angles of same have been laid down in order to explain what appears to be a very important matter.

The carboniferous strata, "or true coal measures," occur a couple of miles from Hamilton, and there, at Langloh Park, a seam of coal (I was informed) was found some years ago, whilst sinking a well through sandstone for water.* Further on, towards the Ouse district, similar strata were found to exhibit similar appearances wherever the beds were exposed to view at the surface, though a thin covering of a greenstone detritus on the higher table lands, and extensive alluvial deposits towards the Derwent River, gave but few opportunities for tracing the rocks in question by means of the usual characteristic fossiliferous bands so common with all coal-bearing districts in Tasmania. Besides the seam of coal referred to, the only similar, and in this case, semi-bituminous deposit, I could discover was on the eastern banks of the River Ouse, nearly half-way between the Ouse township and Mr. Henric Nicholas's residence. This deposit was indicated at the surface by a vein or band of deep black soil embedded in sandstone; it consists of a poor bituminous shale, brown in color, about one foot thick, and pretty difficult to obtain samples from.

Another, but much more recently formed, semi-bituminous deposit occurs about three hundred yards up the river above the "Ouse Inn." These deposits, as shown in sketch No. 3, are mostly composed of *lignites* nearly 6 feet thick; they are much interspersed with seams and layers of a slightly unctuous clay, lightish grey to white in colour. The whole deposit comprises a mass of distinguishable leaves, branches, trunks, rootlets, and stumps of trees—the latter in their original position, or other vegetable matter, more or less carbonised, and it has no value at present, when an ample supply of good forest timber is available close by.

It appears rather a remarkable feature to observe the "true coal measures" *in situ* at one side of the River Ouse, and the mesozoic formations which enclose these lignites as resting upon the former on the other side. A close examination of the adjacent country disclosed the fact that a strong dyke of splintery greenstone had in the past protruded those coal measures, and formed a barrier to the pre-historic watercourse now constituting the River Ouse; in this manner the adjacent forests were submerged, and they were buried afterwards beneath other vegetable matters and muds which were carried down so as to fill the thus formed basin, until the obstacle caused by the raised greenstone dyke had been surmounted by its partial erosion, and subsequently the so-formed lignites were exposed to view.

The other remaining mineral deposits in the Hamilton District are confined to limestone, a good iron ore embedded in basalt, and vestiges of a tertiary drift intervening between the carbonaceous rocks and the basalt overlying the former.

The *Limestone* appears to occur, in the first place, as a zone between the schistose greenstones and the dolerites, which latter, in their ball and socket-like formation, exhibit on their weathered surface a light greenish colour, owing to the decomposition of the oxydes of iron they contain. The limestone itself occurs in irregular veins, strings, and patches, considerably mixed with rounded pebbles of quartz, indicating, possibly, traces of a tertiary drift antecedent to the dolerite. From those *primary* and irregular deposits of limestone, which occur at Montagu, 6 miles, and north north-west (near the River Clyde) 2 miles, from Hamilton, a *secondary* deposit of freshwater

* Marked O in a square on Geological Sketch Plan.

limestone has been formed in the banks and on the beds of two creeks, which is much purer and more adapted for building purposes than the primary rock. This secondary limestone contains great numbers of freshwater molluscæ.

Iron Ore.—This occurs rather in a peculiar manner; and as it comprises a very good description of hematite in botryoidal forms, it may become valuable if a more compact deposit could be found. It was discovered in an outlier of basalt about 3 miles east from Hamilton, where it is freely distributed throughout that volcanic rock, and, in most cases, occupies the vesicular cavities, which otherwise are mostly encrusted with or filled by zeolites.

The tertiary drift deposit referred to has no value, although I was credibly informed that it had been prospected for gold at its outcrop on the hillside, and lower down in a gully leading from it to the Cockatoo Valley Rivulet. I could not find any indication whatever, either there or in any other part of the districts examined, indicating the presence of gold. The drifts referred to exhibit but sparsely at the surface, where they contain rounded pebbles of quartz or quartzite and hard augitic basalts; also, more frequently, bits of chalcedony beautifully marked in black, blue, and white bands, disposed concentrically in either circular or polygonal and square forms.

The Coal.

Passing over Section No. 1, herewith, which simply delineates the general geological structure of the rocks as observed in traversing along the sectional line AB shown on the Geological Sketch Plan, it may be stated that no true coal measures were observed in that direction; but they were found to occur in following the line (sectional) CD on No. 2 Sketch. In the former case the Hamilton beds appear to pass beneath the Langloh coal measures, and I believe that, although coal may be found beneath the former—the limestone base not having yet been reached—the unusually disordered character of those beds (Hamilton) would much interfere, and render the winning of any deep-lying coal seams, when found, difficult and very expensive.

The more regular formation, and the extension of the Langloh-Ouse basin, should, in my opinion, be looked for in the direction of the Ouse Valley specially, and within the County of Guilford generally. This view is corroborated by and founded on the fact that the anticlinal dip of the strata is north of point B, and north-east of same, as indicated by the arrows on Geological Sketch Plan, as well as east of the Ouse township. These *carboniferous* beds of Langloh and Ouse present a somewhat different appearance from those at and near Fingal: they are composed of massive layers of sandstone, coarse in grain, and intercalated with bands of ferruginous and highly fossiliferous shales, one of which proved semi-bituminous. The Hamilton series comprises, on the other hand, *carbonaceous* beds of hard indurated sandstones and grits, soft blue and yellow shales, in which the organisms are very indistinct; whilst the Langloh, and more so the Ouse, present *Spirifera*, *Pectenideæ*, and *Calamites* in well preserved and frequently carbonised forms. It is in similar beds that the Langloh coal occurs. Unfortunately, I was precluded by circumstances not under my control from examining that seam in the bottom of the shaft, as the parties who were employed by some enterprising gentlemen to take out the water failed to do so, consequently, I can only speak of the coal which I found at the pit's mouth, and from the information given me by miners who were, years ago, employed in taking out coal for domestic and other purposes.

The coal I found near the shaft has a very good appearance; it is a hard coal, bituminous, and much resembles that of Mount Malcom seam near Fingal. As this seam is reported to be from (3' 6") three feet and six inches to (4') four feet thick, and as it occurs at a depth of about 40 feet from the surface only, there are no difficulties in the way for re-opening and working this valuable mineral deposit, whenever the proprietor of the land on which this coal occurs has assented to such being done. That this seam ramifies throughout the adjacent country I have no doubt, and that it is likewise very probable of other and deeper seams occurring in the region described above. It would be of great advantage to the public at large if these private estates were thrown open for *bonâ fide* coal-mining purposes after the measures had been thoroughly and systematically tested by means of the No. 1 Diamond Drill.

In recommending that the Langloh and Ouse coal measures should be so tested, I would recommend the sites laid down and marked on the Geological Sketch Plan, with others to follow as occasion or circumstances may require from time to time. The first object, in my opinion, should be to ascertain, by means of that perforator, the accurate dips of the Langloh seam of coal; after that, to bore at intervals in the direction of such dips, increasing, however, rapidly the depth of each successive bore-hole as approaching the Ouse township. From that locality a number of bores should be taken or made in a north-easterly direction, in order to prove the width of the basin at that point. If the sites chosen will not suit, as water is necessary for the drilling, an alteration should be adopted, but, in all cases, the eastern part of the district should be preferred so far as such is possible and practicable.

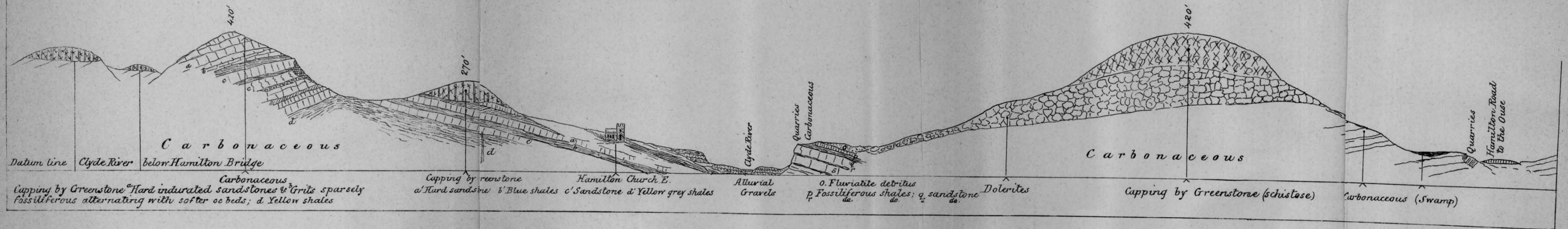
G. THUREAU, F.G.S., Geological Surveyor.

HAMILTON & OUSE

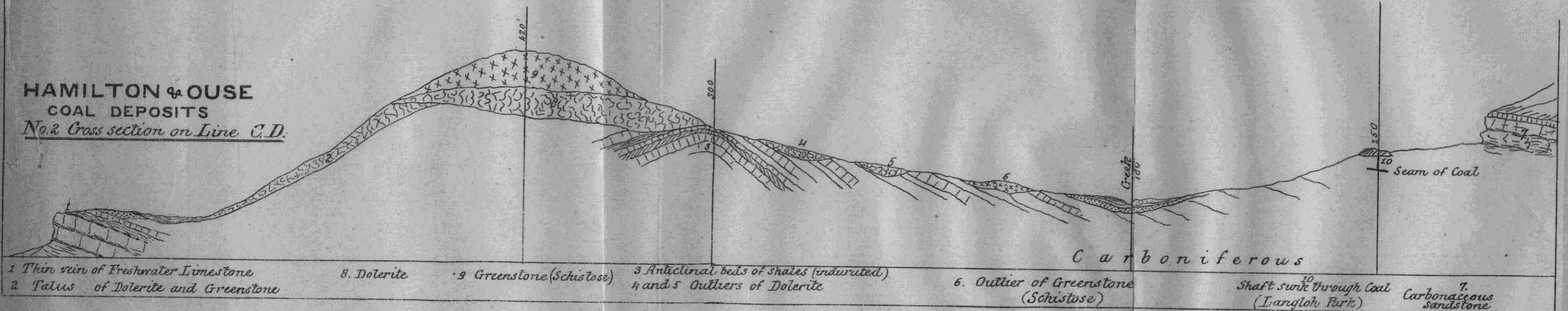
GOAL DEPOSITS

Cross Section on Line A.B. No.1.

Vertical Scale 1/2 inch to 100 feet.

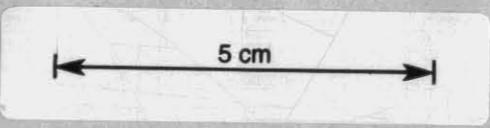


HAMILTON & OUSE
COAL DEPOSITS
No. 2 Cross section on Line C.D.



- 1 Thin vein of Freshwater Limestone
- 2 Talus of Dolerite and Greenstone
- 3 Anticlinal beds of shales (indurated)
- 4 and 5 Outliers of Dolerite
- 6 Outlier of Greenstone (Schistose)
- 7 Carbonaceous sandstone
- 8 Dolerite
- 9 Greenstone (Schistose)
- 10 Shaft sunk through Coal (Langloh Park)

Office of Mines
 October 1883, etc.

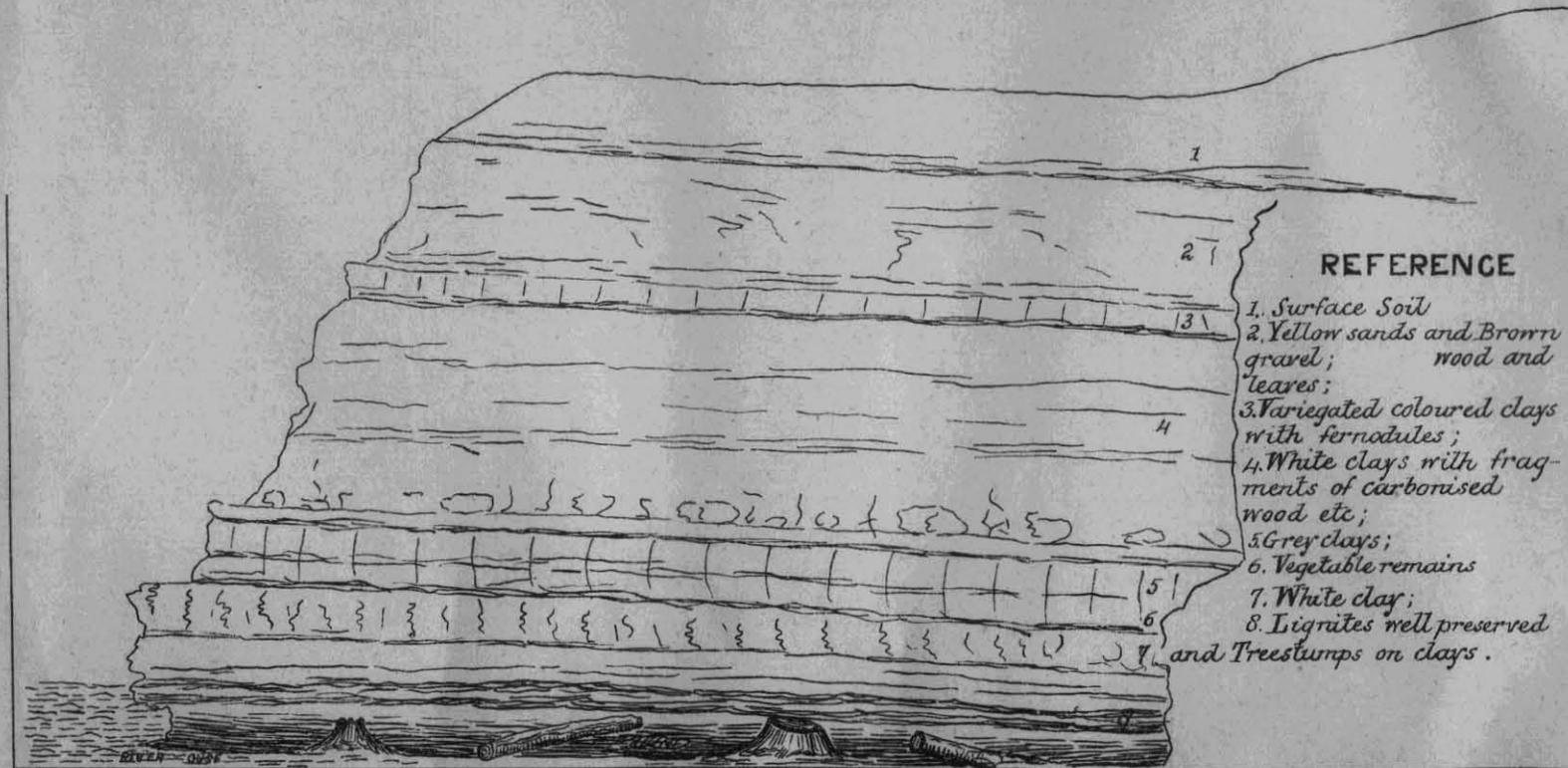


HAMILTON AND OUSE

COAL DEPOSITS

"LIGNITES" NO.3

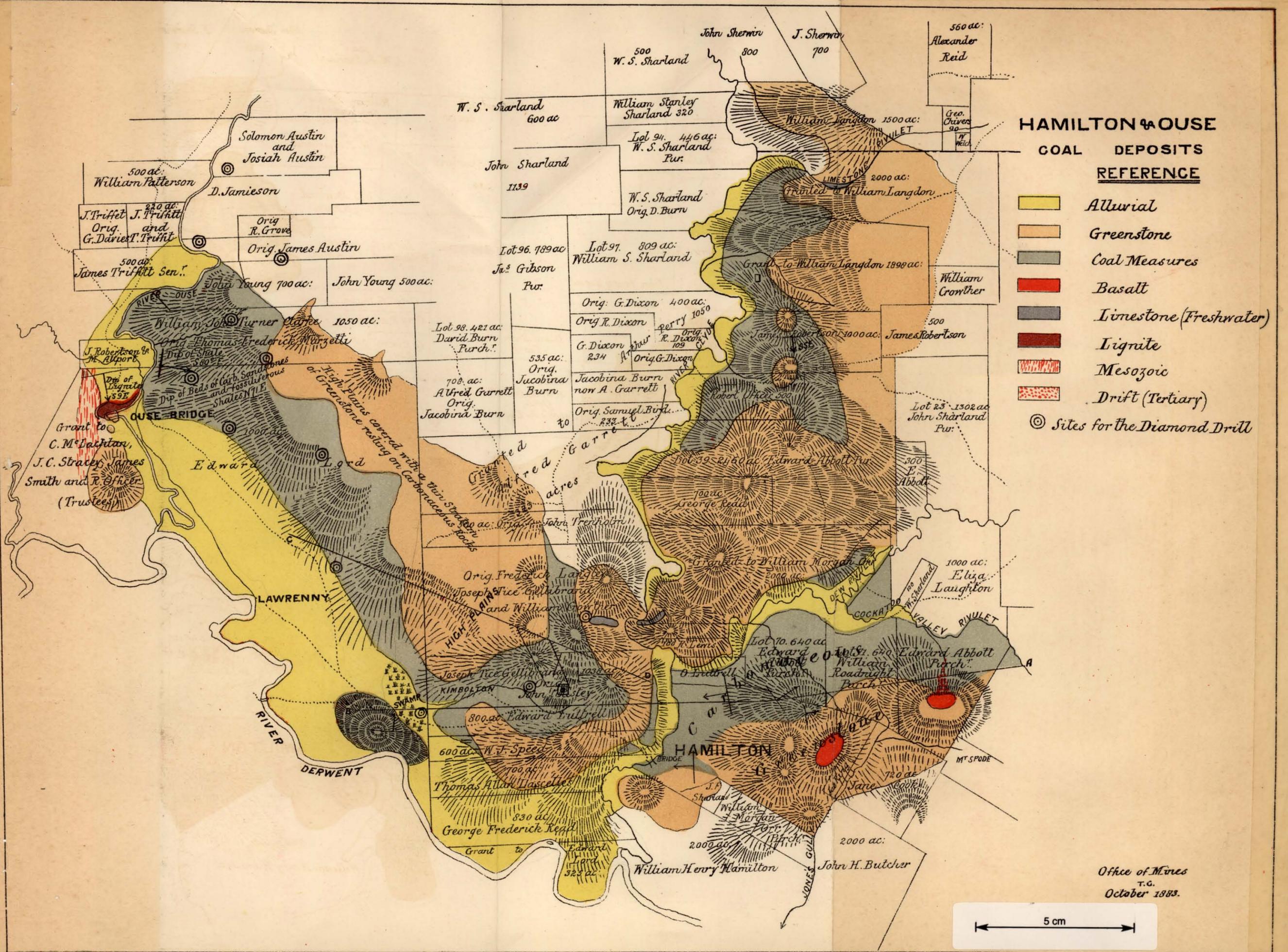
Vertical scale half an inch to 100 feet.



5 cm

(5)

5/6



HAMILTON & OUSE
COAL DEPOSITS
REFERENCE

- Alluvial
- Greenstone
- Coal Measures
- Basalt
- Limestone (Freshwater)
- Lignite
- Mesozoic
- Drift (Tertiary)

© Sites for the Diamond Drill

Office of Mines
 T.G.
 October 1883.

