VI. *Description of a Fossil Tree found in a Quarry at Niteshill, the Property of Colonel DUNLOP of Househill. By the Rev. PATRICK BREWSTER, one of the Ministers of the Abbey Church, Paisley.*

(Read Feb. 1. 1818.)

THE quarry of Niteshill, from which this very interesting petrification was taken, lies about three miles south-east of Paisley, and is part of a coal formation. It consists of white sandstone, which in many parts is deeply stained by an impregnation of iron. Two very thin seams of excellent coal occur immediately under the sandstone, with the intervention of a few feet of till or blaize. The strata dip to the south, and crop out about a hundred yards north of the spot from whence the tree was taken. At this spot the face of rock is about sixteen feet; fourteen feet above the tree, and one under; another foot being occupied by the stem itself.

The part which has been detached from the rock consists of stem and roots, five feet of stem, and two of roots, different views of which I have endeavoured to represent in figures 1, 2, & 3.

The tree was found in contact on every side with the solid rock. Its direction was nearly north and south; the root end pointing

pointing to the north, and the line of the trunk inclining with the strata to the south ; the dip being one foot in seven.

When it was first disengaged from the surrounding mass, it had a complete envelope of coal, incrusting its whole surface : but this interesting portion had been removed by the workmen before I had an opportunity of examining it. Deprived of the coal, the surface still bears a considerable resemblance to bark.

From the fracture of the stem downwards, the lines or furrows are pretty regular ; but as they approach the root, they meet and run into each other. On one side the space between them is slightly convex, while on the opposite it is concave, and somewhat of a fluted appearance.

Internally there cannot be perceived the slightest vestige of any ligneous structure. The stone of the tree, however, is in some respects different from that of the circumjacent rock : it is in general more compact, and contains more iron, and is of course specifically heavier.

Owing to the impregnation of iron, the colour is in some parts so much deepened, that the workmen mistook it for whin. This difference of colour and of gravity, however, is partial, and does not extend equally through the whole mass of the petrification. In some of the roots particularly, the stone is as pure as in any part of the quarry.

For the following dimensions I am indebted to Colonel Dunlop of Househill the proprietor, who, with that kindness and liberality which distinguishes him, has afforded every facility towards the examination and description of this singular fossil.

The trunk, independent of the roots, is *five* feet in length. There are four principal roots, each of which measures *two feet*.

feet. The circumference, taken close by the root, is *five feet seven inches and a half*: In the middle of the stem *four feet and a half*; and at the top or fracture *three feet nine inches*.

In the immediate neighbourhood of the above tree, and in the same rock, there are four converging branches, which have once been united; three of which penetrate the rock in different directions, and the fourth runs along its surface. They are evidently of a different species, and belong, I suspect, to the fragment of another stem which was found some time ago near the same spot. The species to which they belong is well known among this class of petrifications, and occurs in some of the neighbouring quarries. The length of the exposed branch, from the fracture to the point of division, is 15 inches; the ascending branch is 26 inches, and the other is 35.

Description of the Figures, PLATE IX.

Figs. 1, 2, 3, are different views of that part of the tree which has been detached from the rock, and which is now at Househill.

Fig. 4. represents that part of the quarry in which the remainder of the tree is still lodged.

Fig. 5. represents four converging branches of a different species of tree, found near the former.

Fig. 6. is a section of a trunk found near the above branches, and supposed of the same species.