

THE TREES OF THE POST-GLACIAL FOREST  
BEDS IN THE NEIGHBOURHOOD OF  
LIVERPOOL.

*By T. Mellard Reade, C.E., F.G.S., F.R.I.B.A.*

[READ MARCH 7TH, 1878.]

---

WITH a view of testing the truth of the assertion, made by several of those who have examined the submarine forests in the neighbourhood of Liverpool, that none of the roots of the stumps of trees, so plentifully scattered over the shore, penetrate the blue clay or silt below the peat, I employed a couple of men to dig one up at the Alt mouth. The following gentlemen were present, and can speak to the truth of what I am about to describe :—Messrs. R. A. Eskrigge, F.G.S., W. Semmons, F.G.S., T. J. Moore, C.M.Z.S., T. Higgin, F.L.S., Alfred Morgan, E. M. Hance, LL.B., Edwin Foster, and W. Hewitt, B.Sc.

In consequence of prevailing winds, and changes in the tidal currents, the submarine forest at the Alt mouth is undergoing considerable denudation; and is therefore in an exceptionally good state for observation. A stump was selected having a prostrate oak trunk lying beside it, which, from its size and position, one might legitimately infer lay as it fell from its basal stump and roots.

Operations were commenced by digging a trench around the stool of the tree in the peat, and fifteen inches into the blue silt below. In doing this, a number of main roots and many rootlets were intercepted and cut through by the spade. Several of the main roots were then very carefully pared of the peat in which they were embedded, and traced down, and connected with the roots in the blue clay, which had been severed by the spade. The tree was then undermined and levered up

with planks; and on being removed, numerous tap roots were seen penetrating the silt, below our excavation. On turning the stump over, the same tap roots were seen in the silt remaining attached to the tree. Some of the party also dug away the peat and sandy silt from the stool of a larger oak tree, higher up the shore, and traced the main roots into the ground below.

That the trees of this ancient forest are now in the places in which they grew and fell was, therefore, proved to demonstration, and certainly to the satisfaction of every gentleman present. The process of destruction undergone by the peat discloses from day to day fresh proofs of the truth of the foregoing observations. Roots of trees are from time to time exposed by the removal of the peat above them, preserved in all their connected ramifications.

The silt or ground in which the trees are rooted belongs to the series which I have named—the Formby and Leasowe Marine Beds; and an excavation made on a previous occasion showed a bed of shells, six inches thick, composed mostly of *Cardium edulis* and *Tellina balthica*, about six feet below the surface.\* That this forest is pre-historic I have no doubt whatever, and a very considerable alteration of the relative levels of the land and sea must have taken place since it grew.

In connexion with this subject, I have been making a collection of mammalian bones, which are deposited in the Liverpool Museum. They have been washed out of the peat and the underlying silts.

The submarine forest at Leasowe and Meols is the Cheshire equivalent of the one just described. Nor is it by any means a local phenomenon that I have described; as similar forest beds, of the same age, are met with in almost every important estuary of Great Britain.

\* Post-Glacial Geology of Lancashire and Cheshire.—*Proceedings of L'pool Geo. Soc.*, Session 1871-72.