ORIGINAL ARTICLES.

I. OXFORD FOSSILS.—No. 1.

By Professor PHILLIPS, M.A., LL.D., F.R.S., &c.

[PLATE IX.]

THE specimen of Fossil Wood in flint, figured in Pl. IX. of the GEOLOGICAL MAGAZINE, from a drawing by Mr. Crozier, was presented to the Oxford Museum by Sir Woodbine Parish, K.C.H., to whose intelligent liberality the public collections of England are greatly indebted. It was obtained from the Chalk of Winchester.

The nodule of flint which, when broken across, disclosed the included piece of wood, is of an elongated oval form, and with the uneven and knobbed surface which frequently indicates aggregation on a sponge. The fractured surface shows partial change of colour by watery actions from without, and many variations of tint within, arising from some original differences in the composition of the mass. The colour is on the whole lighter than is common in flints of the Upper Chalk. Examined with a lens, traces of spicula and other organic bodies appear, but it is not practicable to trace through the mass a distinct spongiöse texture.

The wood lies in the middle, and the figure of the flint is in a general sense entirely conformed to it, and embraces it equally on all sides. There is a certain distinctness of tint in the flint where it is in contact with the wood. The wood is a fragment, worn and rounded in some of the prominent parts, and looks like a small portion of a pine-branch which had been exposed to rough treatment, so as to present a wasted surface deprived of the bark. It is entirely siliceous, and reveals in the utmost perfection the whole of the tissues.

Traversing the woody fibres are several short tubular masses, swollen at the end, and marked more or less plainly with transverse rings. These are flint moulds in cavities left by boring-shells, probably *Teredines*. It appears that these animals must have begun their operations in a young state on the wood when it had been reduced to its present figure and magnitude; for the moulds which remain in their holes appear to be quite small at the surface, and quickly to grow larger within.

Among the pleasures almost peculiar to geological study is the special gratification which many of the phenomena afford, even if we leave out of consideration the theoretical truths which the facts concur to establish. Every rock has its history; every pebble its vicissitudes; every fossil its accidents of life, and its casualties of death. In looking at this bit of wood in its flinty tomb, one easily imagines the train of probable events which led 'to this conclusion.' Far away from the Cretaceous Sea of Albion, among the mountains previously uplifted in the west, from which had flowed the great river of the Wealden, we see a forest of Coniferous trees.

Whirled along and broken to fragments by the rushing stream which received their decaying stems, the ruins of the forest reach the sea, and some few pieces float far from shore, beyond the area of deposited mud and drifted sand. Attacked by xylophagous mollusks, and sinking to the ocean-bed, one at least serves as the nucleus for organic growth and accretion. Not merely accretion, as in the case of an ironstone nodule, which grows more and more regularly ellipsoidal in the outer layers round a fern-frond; and not entirely of sponge-growth, though some traces of this tissue appear; for it would be difficult on this view to account for the reniform envelopment of the wood. Nor can we admit the idea of the flint being in this case secreted into a cavity of the chalk, with this bit of wood suspended in the axis of the hollow. But we may perhaps conceive that, after being surrounded wholly or partially by organic matter, and even buried in the Cretaceous deposit, the wood may have served as the local centre of attraction for siliceous solutions, such as have more than filled to solidity the tissues of sponges and the cavities of Echinoidea, and thus to have undergone the complete 'petrification' through every cell and fibre which is frequently witnessed in other wood differently circumstanced. This kind of local attraction to particular tissues can be often exemplified in fossil wood which has become wholly calcareous, pyritous, or siliceous, just as the whole framework of sponge has become siliceous by attraction, continued after death, of the same substance which, while alive, it extracted from sea-water to build up its spicular skeleton.

OXFORD: *June 17, 1865.*

II. ON THE GENUINENESS OF CERTAIN FOSSILS FROM THE MACCLESFIELD DRIFT-BEDS.

By R. D. DARBISHIRE, B.A., F.G.S.

[Read before the Manchester Geological Society, March 29, 1865.]

AT the last meeting of the Society, Mr. Plant made statements respecting the supply of so-called fossil shells from the Drift at Macclesfield, of a striking and curious character: he warned geologists against certain specimens, on the grounds that some were only recent shells sold as fossils, and others, though bearing the appearance of Drift-fossils, were not only spurious as such from Macclesfield, but were not even fossils at all, being nothing but the results of an elaborate system of importation and manufacture: forgeries, in fact, to meet a new demand. Mr. Plant allowed that some of these frauds were well calculated to deceive even geologists, and quoted a statement that they had been successful at the Museums of London, Liverpool, and Manchester. Besides the simple introduction of recent shells, he specially reported a process of fetching such shells from recent beaches at Liverpool, Southport, or Ireland (even the use of West Indian or African shells), the breaking-up of the same, and the subjection of the fragments to fire or acid, and a subsequent treatment by friction in a basket with