

Breadth of inner cortical zone .007 inch.

„ middle „ „ .0245 „

„ outer „ „ .014 „

Total breadth of cortex ... .0455 „

Total diameter of stem ... .147 „

Diameter of axial string =  $\frac{8}{21}$  of whole diameter.

NOTE.—In a letter to *Nature*, (vol. 25, p. 124), Prof. Williamson, to whose encouragement and advice we are much indebted, suggests that the generic name, *Myriophylloides*, should be changed to *Helophyton*. This he does on two grounds :—1st, that *Myriophylloides* is likely to suggest improbable affinities, and 2nd, that Unger has already employed a very similar name—*Myriophyllites*—for a genus of Tertiary plants. We are not quite convinced of the advisability of the change on the grounds specified, but bow to the superior judgment and maturer knowledge of our kind and genial leader.

The question of affinities to which Prof. Williamson incidentally alludes, can only be settled by the study of additional specimens; but we may point out that the structure of the axis of our interesting fossil is strongly suggestive of Dicotyledonous relationships.

---

ON CERTAIN DISCOVERIES OF BRONZE IMPLEMENTS IN THE  
NEIGHBOURHOOD OF LEEDS. BY JOHN HOLMES.

IN May last (1881), a labourer in digging a trench by the side of an ancient foot-path going from the Carr Moor side, Hunslet, to Beeston Churwell and Morley, near Leeds, at about 10 feet 6 inches deep in clay, came upon a hoard of nine bronze implements. Eight are of the Palstave and one of the Socketed Celt types—all of which I fortunately obtained and now exhibit.

In May, 1878, in tunneling under the River Aire at Thwaite Gate, Hunslet, about a mile S.E. of the preceeding, at about 20 feet deep in sand, a well formed spear head was discovered. Again in May, 1846, a discovery of bronze weapons occurred, when

excavating on a line of the Leeds and Dewsbury Railway at Churwell, a short distance outside the Borough of Leeds, consisting of three spears and five palstaves. An account published in the "Gentleman's Magazine" stated that there were nine axe and four small javelin-heads, but James Wardell, Esq., Deputy Town-Clerk of Leeds, who investigated on the spot, and who obtained these now shewn, concurs in the statement given above (See "Historical Notes" 1869). Mr. Wardell also observes that "Some years ago, a large and heavy Bronze palstave was found in a garden at Morley, along with a gold coin of that period." (Historical Notes, p. 42, 1869) The Celt is here, measuring as he says, "Seven inches in length, and weighing twenty-one and three-quarter ounces," but nothing more being said, the gold coin, I think is doubtful.

In the collection of the Leeds Philosophical Society there is a Bronze palstave, marked Churwell, exactly like these of the Hunslet Carr types.

While making a lock for the Canal of the Aire and Calder Navigation, about 5 miles N.E. of Wakefield, one of the most beautiful Bronze Daggers known was discovered at 22 feet deep, beneath silt containing oak-trees, gravel, sand, and soil. This was in 1842, and is further interesting from the fact, that in 1818 at Stanley Ferry, only 2 miles above where the dagger was found, a Canoe boat made from a solid oak, was found, the remains of which may now be seen in the Ethnological room of the York Museum. Still further south, 5 or 6 miles, at the other side of the Calder, in ploughing a field at the base of the hill upon which stands the Castle of Sandal Magna, a very interesting type of Bronze Celt was found about the year 1852.

The above list is very far from complete, and only given to shew the extensive distribution of the Bronze Implements in this portion of Yorkshire.

Reverting to the positive evidences before us, and taking

advantage of the classifications laid down by Mr. Evans,\* we may say, that the Sandal Magna Celt is of an early and simple type. It is finely palmated, measures  $5\frac{1}{2}$  inches long, and weighs 13 ounces.

The earliest and simplest type figured by Mr. Evans is like one which I obtained at Cyprus in 1873. Such an implement placed in any knob or handle of wood, would tend in use to split it along the grain of the wood. To prevent this, a series of progressive contrivances are exhibited in Bronze Celts, which by swelling the surface, or by flanging the sides, or across, would tend to prevent splitting from a direct stroke or blow of the implement, and so give efficiency for its use. The Celt now before us (the Sandal specimen) shews an interesting stage of transition, viz., the slight thickening from the ends to the centre ; a slight ridge across the centre, and a well defined side flange, partly cast and partly hammered,—while much decayed, affords evidence of a hollow-ridged-ornament running across the flanges—such as Mr. Evans figures in No. 7 from Suffolk, No. 12 from Norfolk, No. 14 from Lewes, No. 15 from Ely, No. 17 from Liss, and several from Scotland and Ireland. The general form of this Celt is common over the British Islands, and in Denmark, and may be considered a good specimen of the second or third stage of progress.

The whole of the Hunslet-Carr hoard, save the socketed one, are of the latest and best form of the palstaves. They have been cast with sunken hollows—to fix in a split handle—with a well shaped cross flange in the centre to prevent splitting ; and they have each a loop to tie to, or to steady the head upon a handle. The cutting edge is well shaped—being worn most by use on the side opposite to the loop. They are slightly ornamented in casting, by a simple ridge, and in one instance a V shaped shield below the cross flange, all economising material, while strengthening the Celt itself. One has further, at the handle end, a small piece notched

---

\* "Ancient Bronze Implements, Weapons, and Ornaments of Great Britain," (1881).

out on each side, leaving a sort of wedge in the centre, which would tend to fix and steady it in the handle. They measure from  $5\frac{1}{2}$  to  $7\frac{1}{4}$  inches in length, and weigh from 12 to 17 ounces. The range of such palstaves is very extensive, perhaps most numerous in Sweden and Denmark, very numerous in Ireland, and frequent in both Scotland and England. Mr. Evans figures many such at pp. 88-9, 90-1, &c.

The Socketed Celt has nothing very especial in it, except that it is larger than the average, being  $4\frac{3}{4}$  inches in length, and weighs 10 ounces. It has a  $\nabla$  shaped ornament in the casting, from the collar of the socket, to the cutting edge; and others thus figured are given by Mr. Evans at p. 128. The range of such Celts is like the palstave widely spread; and France shews a considerable variety. In Great Britain they are frequent, but perhaps not so numerous as the palstave form, upon which it appears to be a later advance, obviating any tendency to splitting the handle by use. Mr. Evans figures the mode of their handling in Nos. 184, 5, 6 and 7, and such like handling may be seen in use upon the Egyptian pictures in the tombs near the pyramids, and at Beni Hassan and Thebes.

The large palstave found at Morley, and the six or eight, including the spear heads, found at Churwell in the Railway cutting, deserve a more careful examination. Some are just rough cast, with the fringe edge of the metal left, as it escaped into the imperfectly closed edge of the core or mould, in which they were cast. Some are hammered and finished, and the spears have evidently undergone a slight process of hammering at the edges, to make them ductile, tough, and sharp.

The range of this form of implement is very extensive. Examples are numerous in Norway and Sweden, and Ireland, as well as in England and Scotland. Mr. Holmes is of opinion that the Socketed Celt may perhaps be associated with the Semetic tribes recorded in history, and of the long-skulled prehistoric people, and concluded with a number of speculations as to the character and state of civilization of the early tribes using bronze implements in Britain.