BRONZE STEEL-YARD FOUND WITH ROMAN REMAINS AT BADEN, IN ARGOVIE.

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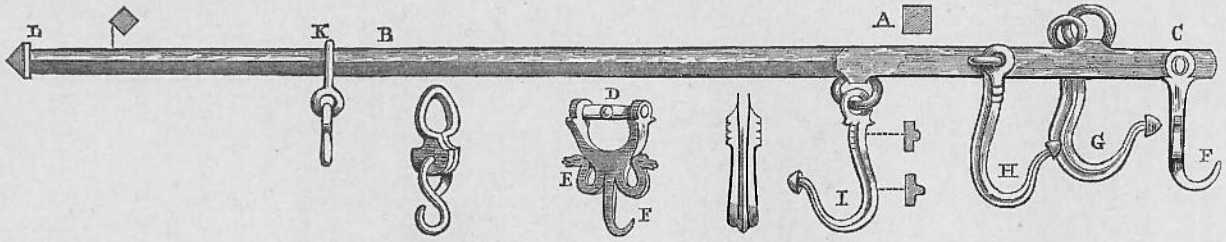
In the account in our previous number [1] of Roman ruins discovered at Baden, in the autumn of 1871, mention was made of a small room which was originally provided with a hypocaust. At a later period, when the house was rebuilt, and alterations made in its arrangements, it seems to have served the purpose of a store-room, for in it, and close about it, there came to light those implements of bronze and iron, to which reference has already been made. In this present number, from among the many implements of iron, we will select three as deserving our particular attention.

Our illustration represents a Roman balance—*statera*, or *trutina*—destined for weighing heavy objects, and therefore made of iron and very strong. The weight, allowing for some loss of metal by oxidation and injury, amounts to probably some 11 lb., Swiss weight = $5\frac{1}{2}$ kilos. The beam of the balance—*scapus*—is a quadrangular rod, 1 metre 19 centimetres long, divided into two uneven lengths of 36 and 83 centimetres respectively. At the extremities of the shorter one (A), which is rather thick, is a triple hook (E), on a moveable axis (C, as seen sideways, D in front), on which hangs the weighing-plate—*lanx*—close to another hook (F), for hanging up any articles for weighing. On three sides of this shorter portion are three strengthening pieces, pierced to admit rings moving on an axis. Attached to these are hanging hooks—*ansæ* (G, H, I,), which form the turning-points of the lever. On the longer part (B), which meets the shorter obliquely, is the weight attached to a running slide (K), while the scale is marked on the sides of the rod. This ends in a knob (L), to prevent the weight from sliding off.

[1] See "Indicateur d'Antiquités Suisses, 1868—1871," vol. i. p. 338; also p. 189 of the present volume of Archæological Journal.



Length of the original, about 48 inches.

Bronze *librilla* or steelyard, of remarkably good workmanship : found with culinary implements, and also works in bronze, of high artistic character, in excavations at Baden, Canton of Aargau, in the North of Switzerland.—See Indicateur d Antiquités Suisses, 1868—1871, vol. i., p. 338. (Comp. Caylus. t. iv., 304, vii., 174.)

Close to this steel-yard another was found, something shorter, but in other respects quite similar.

So far, these steel-yards before us correspond with the Roman examples preserved in museums, and described in many archæological works; as, for example, in the Museo Borbonico and Overbeck's Pompeii. They differ, however, from the usual examples of this kind, as also from those made known by Caylus (vol. iv., pl. 94—97), inasmuch as, being destined for weighing *light*, *heavy*, and *very heavy* objects, they are furnished with *three* hanging hooks, and *three* distinct scales. The others have only two hooks and two scales, marked on opposite sides of the rod. In the triple division of the rod its shorter portion terminates on a pivot, on which the hook of the weighing-scale hangs. This can be set at will in the direction of either of the three hooks, and its respective marked scale.

The same arrangement is met with on a small bronze steel-yard which we have in the museum at Zurich, with the weight belonging to it.

Unfortunately, in the case of the example before us, the scale arrangement, which on two sides of the rod is only hard to make out, is on the third almost destroyed. Meanwhile, it is sufficiently clear that the cyphers, cross-strokes, and points, marked on the metal by the chisel, have been done in the most careless and inaccurate manner. The result of this defect in an instrument of otherwise so excellent a construction is that such goods only could be weighed where half a pound more or less did not matter. The steel-yard is usually held in the position it assumes in our illustration. The hook nearest to the central point of the lever (I) is naturally destined for the lightest objects, and on its respective scale single pounds can be read off, though truly in our example not safely. The scale for the middle hook (H) begins with the number XXXX., whence it follows that only objects above 40 lbs. weight could be weighed by this hook.

The scale runs thus :—

V·I·I·I·I·V·I·I·I·I·V·I·I·I·I·V·I·I·I·I·V·I·I·I·I·XXXX.

The perpendicular lines betoken pounds; the points half pounds.

The scale at the third hook (G), for weighing the heaviest objects, begins in like manner with 40 lbs. (XXXX). The fives

and tens are here separated by points, which stand for pounds.

X····V····X····V····X····V····X····V····XXXX.

A parcel of nearly double this weight could be weighed on this hook.

The fault in these scales is the circumstance that the weight is not given in numbers on the scale; but at each weighing there must be a fresh reckoning from the first mark, which renders the use of the instrument troublesome.

This steel-yard must be especially regarded as a splendid specimen of iron-work, which surprises even experts. Each piece—for instance, the hook for the weighing scale, with its points terminating in the heads of animals; the hanging hooks with their moulded strengthening ribs, &c., are carried out with a taste equal to their practical cleverness. When we consider that the Roman workman relied less on his very imperfect file than on the skilful use of his hammer, we are impressed with no less favourable notions of the handiwork of the Romans than we are by a study of their casting operations.

In conclusion, we will observe that, according to the estimation of experts, this steel-yard is fully equal to weighing from 200 to 250 kilos.

[The Institute is indebted to the kindness of Mr. W. M. Wylie, F.S.A., for the foregoing translation of the memoir by their learned correspondent at Zurich, of which the original was given in the "Indicateur" of Swiss antiquities.]