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COFFINSWELL, GREAT WEST BROOKE, TORBAY, GWB 91: THE IDENTIFICATION OF MINERAL REPLACED PLANT MATERIAL PRESENT ON IRON AGE CURRENCY BARS

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Summary

Ties, used to secure Iron Age metal currency bars, and other extraneous fragments of plant material associated with the bars were preserved by mineral replacement of the tissues. Examination of the ties indicated the use of several herbaceous stems including possibly *Pteridium aquilinum* (L.) Kuhn, bracken, and some narrower unidentified stems. The abundance of bracken adhering to other areas of the bars suggested its possible use as a packing material.

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COFFINSWELL, GREAT WEST BROOK, TORBAY, GWB 91.

The identification of mineral replaced plant material associated with Iron Age currency bars.

Eight bundles of metal currency bars were excavated from a pit located in a field at Coffinswell. The bundles included six to eleven bars which had been tied together. Subsequent corrosion of the surface of the bars had fused the bundles into a single unit. The ties used to secure each bundle were visible on the undersides of the bundles, preserved by mineral replacement. They appeared to be composed of twisted or plaited strands and were of variable width from 1-1.75 cm. In addition, fragments of mineral replaced plant material were adhering to the bars in several areas.

Preparation and Examination

Although several ties were used to secure the bundles many of these were not suitable for examination. Two samples <99> and <98> were removed from the tie on bundle <105> in area 3 (see diagram). Small fragments of fibrous-looking material (not associated with the ties) were removed from bundles <105> and <107> in areas 1, 2, and 5, and between bundles <107> and <108> in area 4, and bundles <104> and <105> in area 7 (see diagram). The samples were fractured to expose clean surfaces and examined using an epi-illuminating light microscope at magnifications up to X400. Sample <98> was examined by Alison Hopper in the Conservation Department of the AML using an SEM.

Results

The tie <99>

The fractured cross-section demonstrated that the tie was composed of a number of herbaceous stems. The structure of the outer area of the tie (i.e. furthest from bars) was less well preserved than the inner region and rather compressed. Anatomical features were difficult to discern in this area but those observed were comparable to those of stem or rachis of *Pteridium aquilinum* (L.) Kuhn, bracken. The inner area of the tie (i.e. immediatly adjacent to the bars) included at least 8 or 9 narrow, hollow stems. The widest of these measured 2 mm in diameter. They were circular in outline with slight undulations (indicating shallow axial ridges), and did not appear to be crushed or compressed. Although anatomical features of the sub-epidermal structure (vascular tissues) of the narrow stems were not defined, those of the outer epidermis of some were well preserved. The features observed on the epidermis of several stems included: axially elongated epidermal cells, some with very slightly sinuous anticlinal walls; stomata (possibly paracytic) present between the ridges. Trichomes and prickle hairs were not observed. Although these features were insufficient to identify the stems examined, the absence of the long and short epidermal cells and prickle hairs characteristic of the family Gramineae (grasses) suggested that grass (or cereal) stems were not used.

A small fragment of epidermis associated with the tie but not part of the stem material, showed elongated epidermal cells with very sinuous anticlinal walls characteristic of those of the frond of *Pteridium aquilinum* (L.) Kuhn.

The tie <98>
Epidermal features consistent with those of the hollow stems described above were observed.

Other vegetative material
Areas 1, 2, 4, 5, and 6
These samples included fragments similar in structure to stem and frond of *Pteridium aquilinum* (L.) Kuhn.

Area 7
This material was in poor condition but the features observed were consistent with those of stem of *Pteridium aqulinum* (L.) Kuhn, however, this identification remains tentative.

Conclusion
The tie examined appeared to have been made from a number of herbaceous stems, possibly including *Pteridium aquilinum* (L.) Kuhn, bracken. The latter would certainly have provided a tough material of some length. The narrower, circular, hollow stems may have been incorporated into the fabric of the tie, or may possibly have been accidently cut and caught up with the bracken. The abundance of bracken identified from areas not associated with the ties suggested that it may have been used as a packing material around the bars when they were placed in the pit.

GBW91: COFFINSWELL: UNDERSIDE OF CURRENCY BARS.