

# Tin smelting slags from Crift Farm, Cornwall, and the effect of changing technology on slag composition

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*ABSTRACT: Tin-smelting slag from an early medieval site at Crift Farm in Cornwall was analysed using SEM/EDS. A comparison was made between the chemical composition of this slag, which was produced by a simple hand-blowing technology, and slag from seven tin-working sites of later date which employed a more sophisticated water-powered blowing-house technology. The chemical compositions of areas within single pieces of slag were found to be highly variable. This is suggestive of a highly viscous material, with little mixing during smelting. The Crift Farm slag was found to have a chemical composition sufficiently similar to the later 'blowing house' slags that it could not be distinguished from them by this method of analysis.*

## Introduction

The south-west of England has a long history of tin-working, from prehistory to the recent past. However, knowledge regarding the methods of tin-smelting prior to the 16th century is scant. By the 14th century substantial water-powered mills termed 'blowing houses' were in use; the earliest reference being to a 'blouynghous' at Lostwithiel, Cornwall, in 1332 (Hatcher 1970). It remains unclear when this development was first introduced and how rapidly it replaced the previous technology (*ie* hand-blowing). Evidence for tin-smelting sites which date from before the time of the blowing houses is extremely rare.

One example of such an early smelting site was discovered at Crift Farm in Cornwall (SX067602) in 1975 (Fig 1). Subsequent excavations revealed a three-roomed building in the style of a Cornish longhouse (Fig 2), which had associated with it ore-processing tools and a waste-dump containing an estimated five tonnes of tin-smelting slag. This would represent many episodes of smelting. Carbon-dating of charcoal recovered from the site indicated that it was

in use c1200 AD (Buckley and Earl 1990) and this is supported by typological dating of pottery.

The building at Crift Farm (Fig 3) differed from a typical blowing house in several particulars other than style of construction. Documentary sources describing blowing houses state that the availability of water was essential (Greeves 1981), and evidence of leats and waterwheel mounts are clearly visible at several blowing house sites such as Week Ford and Outer Down in Devon. The situation of the site precludes the use of water power, since at 180m OD it is above the spring line and no

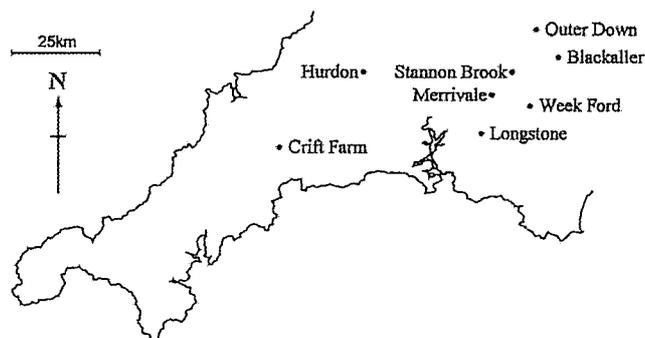


Figure 1: Map showing locations of tin smelting sites in Devon and Cornwall.