

SHORTER NOTICES

The Phosphorus content of iron from the Bloomery site at West Runton, Norfolk

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THIS site was excavated in 1964 and was found to be of Saxo-Norman date.¹ No obvious pieces of unworked iron were found, but in going through the slags and debris from iron working a number of small magnetic pieces were found. These came from a number of widely spaced areas of the site:—

D.20; E.8a (pit); F.22; D.15.

These all appeared to be debris from smelting and appeared at first sight to be rust. However, on cracking them open a number of cleaved iron crystals could be seen; these were particularly well revealed in two of the specimens, from E.8a and F.22, and these were examined metallographically.

The specimen from F.22 consisted entirely of coarse ferrite with evidence of phosphorus coring on one half and thin carbide-filled grain boundaries on the other. The phosphorus cored side also contained well-developed nitride needles, showing that it had cooled slowly through the range 400–200°C. In view of the flat nature of this piece it may have had some forging, but it showed no obvious signs of work. The hardness varied from 218 in the P-containing ferrite regions to 183 HV5 in the nitride regions. Since the carbon content is so low there is no doubt that this high hardness is due to phosphorus—probably about 1–1.5%.

The second piece (from E.8a) had merely been smelted and showed the cavities associated with the adhesion of roughly spherical reduced-iron particles. Some slag was present but no nitride. The ferrite grain-size was very large and the grain boundaries weak. The hardness varied from 210 to 223 HV, again showing the presence of high phosphorus.

Pieces of this material were taken from each of the areas of the site where they were found, mixed together and then ground down to obtain an average sample. Part of this sample was separated with a magnet and chemically analyzed for iron and phosphorus. The result gave 1.34% P. and 64.0% iron. If we assume the rest to be oxygen and that all the phosphorus is dissolved in the iron, the phosphorus content of the iron would be 2.1%. However, some of the phosphorus will be present as slag. There is no doubt that a high phosphorus iron was being produced.

The nodular ores used for the production of iron on this site had contents of 1.32% P₂O₅ and the iron pan, 2.79% P₂O₅. Some local ores contained as much as 3.5% P₂O₅. If one assumes an average in the charge of 2.0% P₂O₅

one would expect the value for the metal to be about 0.5% P. Since the hardness of the metal is about 200 HV one would expect the phosphorus in the metal to be nearer 1% and the bulk of the ore to have contained 4.0% P₂O₅.

There is no doubt that this material had been struck off ferritic blooms and that it represents the type of metal being made at West Runton in the Saxo-Norman period. It would be cold short (brittle) and excellent for nails.

¹Norfolk Arch., 1967, Vol. 34 (II), 187-214.

Venta Icenorum

BY R. W. FEACHEM, F.S.A.

VENTA ICENORUM is situated on the outskirts of the Norfolk village of CAISTOR ST. EDMUND. As other Romano-British towns are referred to when appropriate by the English names of the places that succeeded them, we should expect VENTA ICENORUM to be known as CAISTOR ST. EDMUND, but it so happens that in this one instance several different names have been and still are in use as English alternatives for VENTA ICENORUM. The following list, selected at random, is enough to demonstrate the contending elements—CAISTER and CAISTOR, ST. EDMUND and NORWICH—and variations, and to point to the need for a generally agreed definitive version.

Caster, or Castre¹

Caster, near Norwich²

Caister³

Caister, near Norwich⁴

Caister-next-Norwich⁵

Caister by Norwich⁶

Caister-by-Norwich⁷

Caister St. Edmunds⁸

Caister St. Edmund⁹

Castor, by Norwich¹⁰

Castor, near the city of Norwich¹¹

Caistor¹²

Caistor, near Norwich¹³

Caistor-next-Norwich¹⁴

Caistor by Norwich¹⁵

Caistor-by-Norwich¹⁶

Caistor St. Edmunds¹⁷

Caistor St. Edmund¹⁸

On the first edition of the 25-inch Ordnance Survey map (1882) the village appears as CAISTER ST. EDMUNDS; but a quarter of a century later, on the second edition, it became CAISTOR ST. EDMUNDS on the authority of the then Rector, A. S. Morse. Now (November 1967), the Clerk to Forehoe and Henstead Rural District Council has laid down that the correct spelling for the village and for the parish is CAISTOR ST. EDMUND. It is upon such statements as this that the Ordnance Survey depends for versions of names used on maps, and CAISTOR ST. EDMUND should appear on all Ordnance Survey maps published after receipt of the Clerk's information.

There are Romano-British towns at Caistor in Lincolnshire and at Caister-on-Sea (-next-Yarmouth, *et al.*) in Norfolk, and there is Castor in Northamptonshire. The elements of confusion are present. It is high time that VENTA ICENORUM should be made to conform, and consistently be known as CAISTOR ST. EDMUND.