

Beeston Castle OW - SJ 538591Examination of a piece of magnetic material receivedon 19th July 1981.

Microscopic examination showed that this was a piece of almost completely rusted steel. The predominating matrix is pearlitic with needles of a lighter phase. These traverse the replicated pearlitic matrix with a widmanstatten["] distribution. Slag seems to be absent. The micro-hardness (100 g) of the matrix is 330 and that of the needles is 600 suggesting that they may still be cementite.

Conclusion.

This was a piece of hyper-eutectoid steel with a carbon content of about 1.0%. The fact that it shows such a good replicated structure and the cementite needles are still relatively uncorroded suggests that it has only just completed its mineralisation and therefore has not been in the ground very long. The absence of slag shows that it is not older than about 1350 AD.

R.F. Tylecote.

11th August 1981

Mount 432.