

Iron Making at Weir Wood – A Brief Introduction (2nd edition)

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This short essay is, of necessity, a much simplified and condensed account of iron making in the vicinity of the area now occupied by Weir Wood Reservoir. A list of source material at the end should guide the reader who requires a more detailed insight into the activities and processes involved.

In historic times the Weald was the most important iron-producing region in Britain. The main production periods here were Roman and Tudor, and the Medway valley at Weir Wood Reservoir contains sites dating to both. These are by no means isolated examples however, there being numerous iron making sites throughout the Weald, and some, such as Gravetye, Mill Place, Brambletye and Standen, being fairly near to Weir Wood.

So why was the industry so concentrated in this corner of England? The answer lies mainly with the ready availability of resources close at hand – in particular and most important was iron ore, then the sandstone and clay for making kilns, wood for charcoal and building and, later, water to power bellows and hammers. Iron still shows its presence in some of the small streams that run down to the Weir Wood valley, e.g. figure 1; this one runs into the



Fig.1 – Iron-stained deposits in the bird sanctuary's 'red bog'.

so-called 'red bog' in the bird sanctuary at the western end of the reservoir. Here soluble iron in the incoming stream is converted to a non-soluble form by microbial action, the resulting precipitation creating a bright orange sludge.

The locations of the two historic iron making sites at the reservoir are identified today by various slag deposits and these are described in the following sections.

Roman

The earliest site in the valley now occupied by the reservoir is situated along what is now the southern shore. It is known as Walesbeech after a now-demolished farmhouse, the site of which is shown on some maps under that name, but the Roman iron works were located further to the west. Here is a large slag heap, partly eroded by the reservoir, which is now overgrown by the trees seen on the left of figure 2. This is the site of a Roman bloomery¹ that has been dated by pottery finds to the late first and second centuries AD (dating slag deposits on their own without the aid of pottery or other artefacts can be difficult).



Fig.2 – The Roman bloomery site at Walesbeech is hidden in the trees to the left. Slag and limestone fragments are scattered for some distance along the shoreline.

¹ The bloomery process created metallic iron directly from heating the ore, as distinct from the later and more productive blast furnace process which produced a brittle iron-carbon alloy (cast iron) that was subjected to further heat treatment to reduce the carbon content (wrought iron)



Among the remains to be found here is tap slag from the furnace showing characteristic molten flow patterns (figure 3).

Other finds include pieces of 'shelly', otherwise known as Cyrena limestone. Occurring in thin layers in the Wadhurst Clay, shelly is formed from the closely packed shells of a small species of bivalve. It can be rich in iron, so it provided a

Fig.3 – Tap slag from Walesbeech.

useful source of ore. Additionally the limestone content would have acted as a flux to help separate the molten iron from the slag waste. An example of shelly is the largest item in figure 4.



Fig.4 – Tap slag, Cyrena limestone and undated pottery fragments found at Walesbeech on 15th November 2010 (scale in centimetres).

Tudor

Wealden iron was in high demand, especially for making guns during the wars of the Tudor period, and a number of sites in the East Grinstead area were producing iron at this time.

The site known as Stone lies beneath the high-water level at the western end of Weir Wood Reservoir. The archaeological records document a blast furnace here in 1574, and the slag

residues that can still be found in times of drought show that there was also a forge in the vicinity. There has been a single pottery find to support this date, but nothing to suggest earlier operation. The opposite ends of what remains of the bay² can be clearly seen during times of drought (figure 5). When the reservoir is full this site is totally submerged.



Fig.5 – Southern end of the bay at Stone revealed when the reservoir was at a low level.

The bay was reinforced and raised over time by the addition of furnace slag and forge bottom material (figure 6). More such waste products also occur extensively along the steep north bank at this location (behind the River Medway in the background of figure 5). The area beyond the bank, here obscured by trees, is known as Cinder Bank Field.



Fig.6 – Blast furnace slag and forge bottom waste on the bay at Stone.

² Bay is an ancient local term for a dam such as that used to hold back water to power the furnace bellows and the forge hammer.

The forge bottom material is characteristically heavy, presumably indicating that it still contains a significant iron content, whereas the blast furnace slag is much less dense and is glassy in appearance due to its silica content (figure 7).



Fig.7 – Blast furnace slag (centre & right) and forge bottom (left) from the bay at Stone recovered on 15th November 2010 (scale in centimetres).

The iron industry at Stone must have been quite lucrative, for example its profits paid for the construction in 1599 of a significant timbered house in East Grinstead High Street (Cromwell House).

Some recent finds

In the autumn of 2010, when the reservoir was at a low level, examples of tap slag and shelly were found distributed along a section of the western shore of the promontory known locally as Pintail Bank (immediately to the west of Admiral's Bridge Wood). These are similar to those from Walesbeech and Jeremy Hodgkinson from the Wealden Iron Group confirms they are contemporary with the Walesbeech deposits. Careful exploration of the area in November 2011 did not reveal their origin. There is a small stream flowing into the reservoir here, so one speculative assumption could be that they were washed down from an unidentified site on higher ground to the south. Another possibility might be that they were dug up at Walesbeech or elsewhere and used for track or other foundation material during subsequent agricultural activity. However, these remain as speculative concepts and the reality remains a mystery.

Some of these finds are shown in figure 8 on the following page.



Fig.8 – Tap slag (four right) and Cyrena limestone (six left) from Pintail Bank recovered on 23rd November 2010 (scale in centimetres).

Decline of the industry

The Wealden iron industry declined as cheaper and more efficient production methods came into being, notably the replacing of charcoal fuel with coke in the middle of the 18th century, so it became more economical to locate iron making sites closer to the coal fields.. The Wealden industry was not helped by a growing import trade of iron from Sweden and elsewhere in Europe, nor by the difficulty of sustaining the huge demands for local timber. A few sites lingered on but the industry had all but gone from the Weald by the end of the 18th century.

Tailpiece

Photos by the author. Sources and acknowledgements are on the next page.

Source material and further reading

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Wealden Iron Research Group web site, www.wealdeniron.org.uk

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Amazon sourced the main reference volumes, including those long out of print.

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