

Comments arising from 'Black Metallurgists and the making of the Industrial Revolution' (*History and Technology*, Volume 39, 2023 Issue 1).

Dr Jenny Bulstrode's paper 'Black Metallurgists and the making of the Industrial Revolution' (*History and Technology*, Volume 39, 2023 Issue 1) (published in *UCL Discovery*) has received over 36000 views. Such interest appears to be due to her refuting the established view that it was Henry Cort who successfully produced malleable iron by the use of raw coal which he patented in 1784. Instead Bulstrode claims such a process was being used by 'Black metallurgists' at Morant Bay forge in Jamaica some 12 years previously.

However, by placing events in the context of the period and a reworking of extracts from Jenny Bulstrode's own paper there are issues that can be examined which may lead, in part at least, to a re-establishment of Cort in Samuel Smiles's pantheon of industrial heroes.¹

Following on from Abraham Darby's success in producing pig iron by the use of coke as fuel in 1709 there were persistent attempts to apply coal to the production of malleable iron.² Towards the middle of the century the need to find an alternative to charcoal was pressing as the denuding of woodland to make charcoal was in competition with agriculture.

Empirical progress was made in Britain towards resolving the problem: such was the use of a reverberatory furnace by the Cranage brothers in 1766 which opened up the opportunity for Cort to use a similar furnace for his later patent.³

However Bulstrode's claim that coal replaced charcoal in the making of malleable iron in Jamaica cannot be sustained. Here in Jamaica woodland was plentiful and easily processed into charcoal at so-called 'plantations': it therefore seems odd to

¹ Samuel Smiles, *Industrial Biography: Ironworkers and Toolmakers*, 1863 (Chapter VI Henry Cort)

² Richard Hayman, *The Shropshire wrought-iron industry c1600-1900: a study of technological change*. University of Birmingham. Ph.D.(2004) see Chapter 4 pp. 86 - 116

³ Richard Hayman 'The Cranage Brothers Forge Technology', *Historical Metallurgy* 38(2) 2004.

import coal for such purposes when charcoal was the fuel of choice for making malleable iron.

However coal is known from Jenny Bulstrode's account to have been imported from Wales or Newcastle but for use in an adjoining foundry. Here pig iron was melted in a reverberatory furnace and cast into utensils and machinery for the use of sugar plantations.

From a re-examination of the evidence used by Bulstrode one can tease out the following. The 1772 Morant Bay Indenture suggests a traditional forge consisting of twin forges, each with two fineries serving one chafery and worked in the traditional manner with charcoal coming from outlying 'plantations'. It is suggested that these were worked by the 'Black metallurgists' employing Atlantic World skills derived from their African forebears. Such 'bloomery' practice appears to have been transferable to charcoal-fired British-style forges at Morant Bay. The basis for this is borne out by the limited training needed from imported instructors (probably from Shropshire) whereas those working in unfamiliar foundry techniques needed additional training given by retained imported instructors

It can therefore be shown that the plant at Morant Bay was nothing other than a traditional forge which used charcoal with the addition of a foundry which followed standard practice by using coal in reverberatory furnaces.

A paper based on these conclusions awaits publication.

John van Laun, Hon Research Fellow in STS

8.ii.2024