## Editorial

This issue of *Industrial Archaeology Review* contains a suite of articles drawn from research undertaken in different parts of Great Britain, together with a contribution from the United States of America. These cover diverse topics yet share some common themes, with the iron industry featuring prominently in three articles.

Publication of the annual Rolt Memorial Lecture has been a key attribute of *Industrial Archaeology Review* since its inception, and this issue opens with a paper based on the lecture delivered by Geoffrey Stell to AIA's annual conference in 2018. This keynote article examines the scientific and technological background to the 20<sup>th</sup>century wartime remains associated with the defence of Scapa Flow, the Royal Navy's main fleet anchorage during both World Wars. This expansive and enclosed natural harbour at the heart of the Orkney archipelago benefitted from one of the most concentrated defence networks in Britain, much of which still survives. The article explores the ground-breaking scientific and engineering achievements represented by the surviving remains, including what is believed to be the most complete surviving example of a Z-battery in Britain, together with evidence for antiaircraft batteries, degaussing stations, radar stations, and numerous ancillary structures.

The naval military background is continued through the following article, in which Emily Schwalbe uses the iron ballast discovered on *H.L. Huntley* as a case study for aspects of the iron industry in the US Confederacy. Launched in July 1863 and taken into government service under the control of the Confederate States Army at Charleston, *H.L. Huntley* gained renown as the first combat submarine to sink a warship, despite being lost during the attack. The recovery of the submarine from the seabed in August 2000 elicited huge interest, and was described by Dr. William Dudley, Director of Naval History at the Naval Historical Centre, as 'probably the most important find of the century'. A paper explaining the forensic analysis of a ballast pump from the submarine appeared in *Industrial Archaeology Review* in 2016, whilst the present article focuses on the iron ballast and considers what light its discovery sheds on the Confederacy's attempts to address the iron shortages that hampered their military ambitions throughout the American Civil War.

The iron industry is strongly represented in the following two contributions. The first of these presents an account of a series of archaeological excavations that uncovered the remains of a 17th-century iron slitting mill at Lymm in Cheshire. With the exception of the mechanical hammer, the slitting mill was the first piece of powered machinery to be used in the iron-processing trades, and was of great importance to the progress of iron-making from a craft-based trade to a mechanised industry. Despite the key role that they fulfilled in this transition, surviving physical remains of slitting mills are very rare, with the best example in England being that at Lymm; it is also one of very small number that has been subject to comprehensive excavation. This was initiated in 1968 by a local historical society and led to further small-scale excavations until 1974, although a comprehensive plan of the slitting mill was not produced and the site had become overgrown and inaccessible by the 1990s. This was redressed in 2005, when the entire site was excavated under my direction as part of a wider heritage project, providing significant new evidence for the layout and development of the slitting mill ahead of its consolidation and presentation as an industrial monument.

In the second iron-related article, Richard Williams and David de Haan analyse a unique first-hand account of the Coalbrookdale Iron Company's blast furnace

practice that was written in the early 1780s and discovered recently in the archives of Chatsworth House. This account provides a detailed list of the raw materials and their proportions for charging the furnace, together with transport and labour costs, and advice for building a furnace hearth. It also holds some significant information on the technical practice at Coalbrookdale at the time, making a significant addition to the existing knowledge of iron-making processes during a period of rapid technological development.

In the final article, Kenneth Jackson presents a study of the industrial landscape of the Eller Beck valley in North Yorkshire, which was exploited for quarrying limestone from the late 18th century on the initiative of aristocratic landowners, and then given over to the production of textile goods. The short canal that was built along the valley to serve the limestone quarries is now a popular walking route and tourist destination, but its attractive natural character belies the rich industrial heritage of the Eller Beck. The article explains the development of this fascinating valley and its impact on the historic market town of Skipton through a survey of the remnants of the industrial infrastructure, presenting the Eller Beck as a microcosm of the early industrialisation of a North Yorkshire market town.

The next issue of *Industrial Archaeology Review*, scheduled for delivery in May 2020, will have articles covering a range of topics that are drawn from different parts of the world. These are likely to include an account of sulphur mining in Chile, the legacy of tobacco factories in the Spanish urban landscape, approaches to examining industrial development in the Derwent Valley in north-east England, and an early railway that employed a very rare type of cast-iron track along its route between Stonetrough Colliery in Staffordshire and Congleton in Cheshire.

Ian Miller i.f.miller@salford.ac.uk