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## THE IRON INDUSTRY OF THE WEALD.\*

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DURING our brief sojourn in this part of Kent we shall pass through a district which, although now extremely beautiful in its rural quietude, was in ancient times the scene of bustle, noise, and excitement, by reason of the iron mines and forges then being worked in the locality. It will therefore not be inappropriate for me to say a few words.

The Iron Industry in the Weald can be traced back to Roman, if not to earlier, times. Pliny refers to the smelting of iron in Britain, and Solinus actually specifies the agricultural and other implements fabricated from British iron in his day. Julius Cæsar, Strabo, and Diodorus Siculus also mention iron as one of the products of Britain, and the first-named informs us that the ancient Britons possessed chariots, the fittings of which we now know were of iron, and he also states that pieces of that metal, reduced to a standard weight, were used in place of money. There is no evidence shewing how or by what means iron was worked or manipulated in those days, but some light has been thrown upon the manufacture of iron during the Roman occupation. At that time the iron-works seem to have been confined chiefly to the wooded districts occupied by the Forest of Dean and the great Forest of Anderida, which formed the Weald of Sussex and Kent. We are mainly indebted to the researches of the late Mark Antony Lower and the late Robert Furley for nearly all that we know concerning the Iron Industry of the Weald from its rise to its decline, and the greater part of that which we are about to relate is drawn from their able articles upon the subject.

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It appears that in Roman times iron was extensively worked in Sussex at Maresfield, Sedlescombe, and Westfield, and, it is said, at Chiddingly. At Maresfield, Roman graves have been found under deposits of scorixæ and filled in with deposits of cinders, while coins have been met with, in the heaps of slag from the furnaces, of Nero, Vespasian, Tetricus, and Diocletian; *i.e.* ranging from the first to the third century. At Sedlescombe and Westfield remains have also been found.

The late Thomas Wright, F.S.A., in his *Celt, Roman, and Saxon*, states that "the process of smelting among the Romans appears to have been simple and imperfect. The fuel used was charcoal, pieces of which are often found impressed in the cinders. It is supposed that layers of iron ore, broken up, and charcoal mixed with limestone as a flux, were piled together, and enclosed in a wall and covering of clay, with holes at the bottom for letting in the draught, and allowing the metal to run out. For this purpose they were usually placed on sloping ground. Rude bellows were perhaps used, worked by different contrivances."

The Roman method of smelting was so imperfect that it was found, in later times, profitable to re-smelt the old scorixæ. In a dialogue by Yarranton between a tynn miner of Cornwall, an iron miner of the Forest of Deane in Gloucestershire, and a traveller, the following story is told: "Well, sir, as to make it quite clear to you that iron was in England 1000 years since is very evident by those great heaps of cinders formerly made of ironstone, they being the offal (or waste) thrown out of the foot-blasts by the Romans, they then having no works to go by water to drive bellows, but all by the foot-blast, and at present great oaks are growing upon the tops of these cinder-heaps, and monies is continually found amongst these cinders; but such as is found is all of the Roman coin, most of which monies is copper, very little found (of late days) that is silver; and this offal of the foot-blast (by the Romans then cast by) doth at present make the best and profitablest iron in England."

Domesday says nothing as to the iron manufacture in the Weald, but refers briefly to it under Gloucestershire,

Somersetshire, Hereford, and Lincoln. Probably the earliest record of it in the south is the murage-grant made by Henry III. to Lewes in 1266, which empowers the inhabitants to raise tolls for the repair of their walls after the battle.

Under this grant every cart laden with iron for sale from the Weald paid a toll of one penny, and every horse-load of iron half that sum.

The difficulty of removing iron in any quantity from the Weald must have been very great, as the state of the roads up to quite recent times was deplorable, and in winter they were probably almost impassable. Mr. Shorter, of Bazing Farm, Cowden, informs me that ten sacks of corn were formerly considered a fair load for four horses in that district, but now thirty or even forty sacks are put behind a team. The iron-stone from which the precious metal was extracted was found in the middle of the Wadhurst Clay, which furnished two thin bands from 1 to 2 feet thick, but not continuous layers. The method employed to obtain the stone in the Middle Ages was by sinking a shaft to the iron-stone, removing the ore within reach, then filling it up and sinking a second, and so on; hence pits are found together in considerable numbers. Other traces of the old works are the heaps of scorix or slag of the furnaces, now overgrown with brushwood, by the sides of the old hammer-ponds, where a stream was dammed up until it acquired sufficient power to drive the hammer in the forge. Some of these hammer-ponds still exist.

John Ray, a naturalist, describes the method of smelting in the Weald in 1674. The iron-mine (ore) was to be found at a depth varying from 4 to 40 feet. There were several sorts which the ironmasters mixed that they might melt to advantage. When the ore was brought in they placed rows of it alternately upon charcoal, and then set them on fire to mollify the ore, so that it might be broken before it was put into the furnace. They then beat it into small pieces and put it into a furnace charged with charcoal, which melted it in about twelve hours. The bottom of the furnace was made of sandstone, and the rest of the furnace was lined

with brick to the top. Every six days they call a founday, in which space they make about eight or ten tons of iron. The hearth by the force of the fire constantly blown grows wider, so that if it will at first make a sow of 600 pounds at last it will make 2000 pounds. The lesser pieces of 1000 or under they call pigs. If the hearth was made of good stone it would last forty foundays, and the fire was never suffered to go out. The cinder-like scum swam upon the melted metal in the hearth and was let out once or twice before a sow was cast.

Sussex was the chief seat of the iron trade in the Weald. In Kent there were foundries at Cowden, Hawkhurst, and Lamberhurst. *Sir Richard Baker, Knt., had one forge and one furnace in Cranbrook and Hawkhurst; Sir Alexander Culpeper, one furnace at Goudhurst; Thomas Dyck, one forge at Dorndale; Thomas Bratle, one furnace at Horsmonden; Sir Thomas Fane, one furnace at Tonbridge; Quyntyn, one furnace at Cowden; Sir W. Waller, one forge at Biddenden; Thomas Darell, one furnace at Goudhurst.* Other ironmasters in Kent were Stephen Colyns, at Lamberhurst, Michael Weston, at Cowden, and Sir Richard Butler, at Biddenden—but the principal were the Knights and the Tichbornes, both of whose descendants became baronets. Leonard Gale, of Sevenoaks, who carried on his father's business, that of a blacksmith, removed into Sussex, becoming a wealthy ironmaster; his son was educated at Oxford, was called to the Bar, and was returned in 1710 as one of the members for East Grinstead. He evidently had a good opinion of the Cowden forges, judging from the following advice given to his family: "If you can get one of the Cowden furnaces it will be very well, for I do assure you that if I were forty years old I would, by God's help, get a good estate by this employment, for I have within these twenty years cleared nearly £300 per annum out of that very forge; and I never would have left my forge but that my men would work no other sows but Cowden, and they made me pay 20s. for every ton of sows more than I could have them at some other furnaces, which was a great hindrance to my gains; I therefore let my forge."

Of the various articles made in, and from the iron of, the Weald we need only notice on the present occasion the ordnance, the fire-backs, the andirons, and the tomb-slabs. The first iron cannons of English manufacture were made at Buxted, in Sussex, by Ralph Hogge, a master founder, who employed as assistants, Peter Baude, a Frenchman, and a skilled Flemish gunsmith named Peter von Collet.\* Many French and German names may be found in the Parish Registers of Sussex who were probably workmen employed by ordnance makers.

In 1595, forty-two cast pieces of great ordnance, weighing about 6000 pounds or three tons apiece, were made by Thomas Johnson for the Earl of Cumberland. Whether these were made in the Weald does not appear.

The chimney or fire-backs are very interesting, as they were frequently made expressly for the owners of the houses in which they were placed, hence we find them decorated with family arms, dates, and appropriate inscriptions. Other decorations include the badge and initials of Elizabeth, with grapes and vine-leaves; the arms of France and England quarterly; also classical stories, as Venus and Adonis; the Thief and Dog from Æsop. Some have scriptural devices, such as Abraham offering up Isaac, the Queen of Sheba, Christ and the Woman of Samaria, etc.

The andirons or fire-dogs, as they are popularly called, have commonly upon the front of them shields bearing the sacred monogram, the arms of France, the Tudor badge of the rose and crown, family arms and initials, emblems of the smith or farrier's occupation, and a bird probably intended for a phoenix. The chimney-backs and andirons usually date from the fifteenth to the seventeenth century, but some bear the date of the eighteenth century.

The iron tomb-slabs are very massive, and may frequently be met with in the churches and churchyards of the

\* The name Hogge, or Hoggé, seems to have been corrupted into Huggett. There is a place near Mayfield called Huggett's Furnace. The distich—

“Master Huggett and his man John,  
They did cast the first cannon”—

is still preserved amongst the inhabitants of the locality. There are many blacksmiths named Huggett still living in East Sussex.

Weald of Kent and Sussex. There is one belonging to the fourteenth century in Burwash Church, Sussex. It is of course known to most of you that the iron balustrades, numbering 2500, which until recently entirely surrounded St. Paul's Cathedral, were cast at the Lamberhurst furnace; these weighed 200 tons 81 pounds, and cost £11,202. Sir Christopher Wren was opposed to their erection, as it was not part of his design. He writes: "As to the iron fence it was wrested from me, and the doing of it carried in a way that I venture to say will ever be condemned."

We have before stated that Sussex was the chief seat of the iron trade; the reason of this was that the lay barons held the lands constituting the Weald of Sussex, sported over it, and cut down the timber without any restriction; while in Kent the heads of the Church and religious houses down to the time of Archbishop Winchelsea, who held the See of Canterbury at the beginning of the fourteenth century, prohibited their tenants from felling the timber in any of their woods, hence the difficulty of obtaining material for smelting purposes, causing the iron trade in the Kentish districts to decline. The inhabitants having the right, on certain terms, to grub the underwood, soon availed themselves of it, and brought the land under cultivation, and directed their attention to the manufacture of cloth.

A word or two may be said of the Ironmongers' Company. The date of the formation of the Guild is not known, but on the 30th September 34 Henry VI. (1455) they obtained grant of armorial bearings "as the honourable craft and fellowship of the franchised men of ironmongers of the city of London." They were first incorporated by charter in 3 Edward IV. (1463), when Robert Toke became one of the Keepers or Wardens. In 1592, Sir William Rowe, a native of Hawkhurst, and a member of the Ironmongers' Company, filled the office of Lord Mayor of London.

It seems that the iron trade in the Weald and other parts of England was at a standstill during the fifteenth century, due probably to the importation of iron from abroad. The enormous consumption of timber for smelting purposes throughout the country was in the next century

making itself apparent, for we find in 1543 that it became necessary to enact "that no wood shall be converted into pasture; that in cutting coppice woods at twenty-four years' growth or under, there shall be left standing and unfelled, for every acre, twelve standrils or stores of oak, or in default of so many, then of elm, ash, asp or beech, and that if the coppice be under fourteen years' growth, it shall be inclosed from cattle for six years." In 1636 more trouble was in store, as the waste of timber was again brought before Government. Surveyors were appointed to inquire into the status of the trade, the number of mills, furnaces, etc., the woods that supplied them, and their situation and distance from the different works.

Thus, what with the interference of Parliament and Government, civil war, and prejudice of landed proprietors, the trade began to decline. Similar enactments succeeded in Elizabeth's reign. At the close of Charles the Second's reign a great part of the iron in use was imported.

The final crushing blow to the Iron Industry of the Weald came, however, when coal was discovered in the regions north and east of the Trent and Severn, which caused the ironmasters to remove their works elsewhere. In the meantime all the iron-works belonging to the Crown or to the Royalists had been destroyed, and after the Restoration the royal iron-works in the Forest of Dean were demolished for fear that the manufacture of iron should endanger the supply of timber for shipbuilding. So rapid was the decline of the trade that in 1796 not one furnace was at work in Kent, and only one at Ashburnham in Sussex; this in 1825 also became a thing of the past. Thus ended a great industry which (as I have endeavoured to shew) existed in Kent for a period of nearly 2000 years.