WEALDEN IRON RESEARCH GROUP

NEWSLETTER

Autumn 1992 Number 16

Chairman's Letter

Dear Fellow Members,

It has sometimes been suggested that the work that WIRG does is narrow, and that to examine one region in isolation is to adopt a blinkered approach to the study of the development of iron production. Of course, such was the nature of the iron industry in Britain at certain periods in its history that the Weald sometimes did operate in isolation; nevertheless it would be foolish to deny that a knowledge of iron production elsewhere is important for students of the Weald, both for the perspective in which it places the Weald and in the many, often better preserved, examples of sites outside the Weald which can aid our understanding of this region. That this appreciation of a world beyond the boundaries of the South East is not reflected in the Group's published research is deliberate, for our contribution to scholarship is to provide evidence of Wealden ironmaking which others may use.

Therefore, while it is important that we are aware of, and learn from other areas of ironmaking, be they Ceylon or South Wales, the subject of recent lectures, or Normandy, visited during a memorable weekend, our research should remain focused on the Weald. Recent Bulletins show that this region has plenty still to yield, both from the written archive and from beneath the soil. WIRG was founded twenty-five years ago and has built up a reputation for local research which, lacking the committed membership which this Group is so fortunate to have, other regions have so far been unable to imitate.

After a short stay on the Committee, Michael Edwards has stood down; my thanks to him. Also to Alan Stevens, who brought to the Committee his wide knowledge of Sussex; he will be missed. A new season of forays has been planned (details follow later in this newsletter) and I look forward to another year of interesting enquiries, newly discovered sites and more opportunities to explore unfamiliar corners of the Weald. My best wishes to you all for an enjoyable Christmas and a stimulating 1993.

Yours sincerely, Jeremy Hodgkinson

Unscrewing the Unscrutable. Joe Pettit reports.

Brian Herbert in his article "Gloucester Furnace Bressumer Found" says (Newsletter, Spring, 1992): "It will be remembered that this is the furnace where some, if not all, of the cast-iron railings for St Paul's were cast." In 1714, of course.

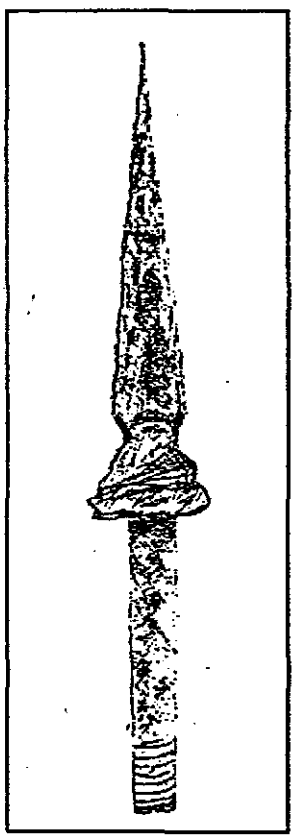
The matter is rather complicated, apart from our not knowing if other iron-works took part. "Cast-iron" implies only a furnace with foundry; the list of artefacts received by Sir Christopher Wren, transcribed in Straker's Wealden Iron, suggests that wrought-iron and steel were also involved.

When the war-damaged sections of the railings were finally dispersed to Museums or disposed of to scrap-merchants, the Sussex Archaeological Society received a complete section; it is displayed, I believe, in the open across the way from Barbican House. I lugged home a few odd pieces, nearly making a railway commuter lame for life when I dropped my haversack almost on his toes. I had previously had a black look from an official at the British Library when I dropped my shrapnel on his desk for inspection.

Among my pieces is a cast-iron spike with a wrought-iron stud protruding from the lower end, and this is threaded on its lower end. I suppose that this stud went through the horizontal railpiece and was screwed into an upright, say a baluster. The stud is one matter; wrought-iron implies a conversion-forge and a hammer.

The thread is even more of a surprise. The male thread entails another piece (a

baluster?) with a female thread. When was thread-making invented? In the Oxford A Short History of Technology and A History of Technology Vol 3, we find mention of Archimedes' screw, screw-down olive and grape presses, all in antiquity; we find at the end of the Middle Ages screw-down linen-presses and Caxton's screw-down printing press; we find Leonardo da Vinci's design for a screw-cutting machine; we find Agricola's picture of a chain-and-rag pump: here at least one gear wheel had attachable and detachable teeth, screws being used for the purpose. We find that screws were used in clock-making from the fifteenth century.



Such screws were made on miniature lathes in the eighteenth century. We do not yet know if any Wealden Iron machinery or products except for my spike included threaded parts; we do not know if the iron-workers had thread-cutting devices. Perhaps they worked merely with a vice, cold chisel and file. Perhaps they worked with a treadle lathe and a file. In fact the thread on my spike is quite sophisticated. Of course, only male threads could be cut like this. How would a female thread be cut? A tap for this purpose could be made more easily than a die. Dare we suppose taps and even dies? They are mentioned in ancient records.

It is necessary to point out that producing threads implies steel tools, if only a hammer, cold-chisel and file. Wrought-iron is soft but it requires harder tools to work it: I have an ancient poor-quality hammer with a mushroomed head. Soft-headed!

The Straker List poses this problem in another form. There is mention of "steeled punches". Tylecote in his Metallurgy in Archaeology discusses various ways of making steel. Cleere and Crossley in 'The Iron Industry of the Weald' note that steel was made in the sixteenth century at Steel Forge in Hartfield and at Robertsbridge. We must suppose some method used in the Weald in 1714.

And what were the punches for? I suppose they were used to drive home the wedges, also mentioned in Straker's list, which might act as 'keys' to 'lock' the composite structure in a rigid state. There is such a key on my grandfather's hop-pitcher made in Framfield probably a hundred years ago; it locks the handle, called a yoke, onto the shaft. It is a sort of wedge-shaped cotter-pin rather more elaborate than a mere 'cut' nail. This article is intended to ask questions and provoke more. As a further provocation I must mention that one of the pieces given me by the foreman at St Pauls was later said by the Surveyor to be Victorian. Then is my spike with the threaded stud Victorian? Collapse of article!

Have all the relevant St Paul's documents been examined? The railings should be studied in situ at St Pauls and in the Barbican annexe and compared with the Straker List. They are composite and represent a proto-historical sample of mass production of interchangeable parts - not very precise, of course. Some of the consignment was sent back by Sir Christopher Wren as faulty. One of my pieces has a large blow-hole in it.

I am reminded of the preacher who announced that he was going to attempt to 'unscrew the unscrutable'. I ask for such a one for our, as yet, inscrutable subject..

Books consulted:
B Herbert WIRG Newsletter (Spring 1992), 1-2.
E Straker Wealden Iron, (1931), 206.7; also 109. 177 and 272.

T K Derry and T I Williams A Short History of Technology, (Oxford, 1960): Archimedean screw: 123-4; grape and olive presses: 59-60.

Chas Singer and others A History of Technology (Oxford, 1957). Screw: Archimedes: 106; taps and dies in antiquity: 334; from the fifteenth century: linen and printing presses: 382-390; screw-cutting: 334-340; Agricola: 324-6; screws in clock-making: 657.

R F Tylecote Metallurgy in Archaeology, (1962). Steel: 244-252, 273--281, 293-8.

Henry Cleere and David Crossley The Iron Industry of the Weald, (Leicester University Press, 1985). Steel: Steel Forge: 109, 115, 122, 124; steel at Robertsbridge: 145-6.

Tebbut Research Fund 1992 *Awards*

At the 1992 AGM Margaret Tebbut presented two awards from the research fund. Here the recipients, Peter Ovenden and Jaime Kaminsky, write about their projects.

Fuel Reactions in the Bloomery Furnace: A kinetic Study by Peter Ovenden

One of the more informative papers on the direct process of iron smelting is that of Tylecote et al.(1971). Considerable care was taken over the control of furnace conditions and extensive data were presented in numerical and graphical form. The data provided clear evidence that production efficiency was kinetically controlled. Two furnace temperature profiles, for different air flow rates, showed similar exhaust gas temperatures but, lower down, the bed temperatures were significantly different.

Most experimental bloomery furnaces have been concerned with the efficiency of metal production as a function of furnace size and shape as revealed by excavation. Few have been operated by practising bloomsmiths. A notable exception was reported by Pole (1974). He described two attempts at iron smelting in Upper Ghana. At Jefisi, the operation was noted for the careful preparation of ore and charcoal, the latter from a secret source, and a slower and more regular pumping rate under the smith's own hand initially. At Zanlerigu, virtually the opposite conditions pertained: the poor result here was blamed on the "hard" ore.

The evidence, summarised above, indicates that the character of the charcoal, together with a control of air flow, is a major factor in the successful production of an iron bloom. A more detailed analysis of charcoal combustion is unlikely to be obtained from simple bloomery experiments and a series of undergraduate projects was planned for the academic year of 1975/76. Of those carried out in the Department of Chemistry, Southampton University, the most significant has been described by Mudd (1976). His conclusions were:

1. The bulk density of the charcoal was a significant factor in the successful operation of a bloomery furnace.

2. The initial air flow rate was critical if a high combustion rate was to be achieved.

3. Once the changeover in combustion mechanism was accomplished the process was largely independent of flow rate.

It is now proposed to carry out a detailed study of the factors controlling the thermal efficiency of the combustion process using an improved version of Mudd's experimental apparatus. Additional analytical devices are being purchased through the award from the Tebbutt Research Fund.

Environmental implications of the Wealden iron industry, by Jaime Kaminski

My current fieldwork project represents doctoral research being undertaken in the Department of Archaeology at the University of Reading. The intention of the research is to assess the environmental implications of Romano-British iron production in the Weald. I hope that through the systematic application of pollen analysis, in addition to the more traditional charcoal analyses, the nature of the Romano-British exploitation of the Wealden forest will be ascertained.

My aim is to undertake a two stage operation including pollen analysis at selected sites, in conjunction with a widespread geo-physical survey to quantify the actual volume of wood utilised per site. Initially I hope to obtain pollen sequences from the paleo-soils beneath selected Romano-British slag deposits and from the silts of the ore pits surrounding the larger industrial sites. Taken together such information should reveal if deforestation had taken place as a result of over exploitation of woodland resources for smelting, or if woodland management was an integral part of the exploitation of iron ore. As a complementary operation the charcoals found within the slag matrix will be analyzed to provide direct evidence of the wood species exploited in iron production and could also determine if the wood utilised was coppiced.

The second stage of the project will include a magnetometer and resistivity survey of a substantial, representative selection of Romano-British bloomery sites to quantify the area and volume of the slag deposits. Related to contemporary experimental data for the output of iron furnaces this should provide

an estimate for the minimum period of operation for the individual Wealden sites.

These geo-physical surveys, as well as yielding data for my study, will complement the existing data bases of Wealden sites, and may open up interesting, even unique, insights into the management of Romano-British iron industry.

Jaime would like to hear from anyone interested in his research or who could offer suggestions of sites that he might find worth investigating. In particular he would like to find valley bogs, or filled in river channels as such places are conducive to the preservation of pollen. Contact him at the University of Reading, Box 218, Reading, RG6 2AA.

Clues to the Past Part 2

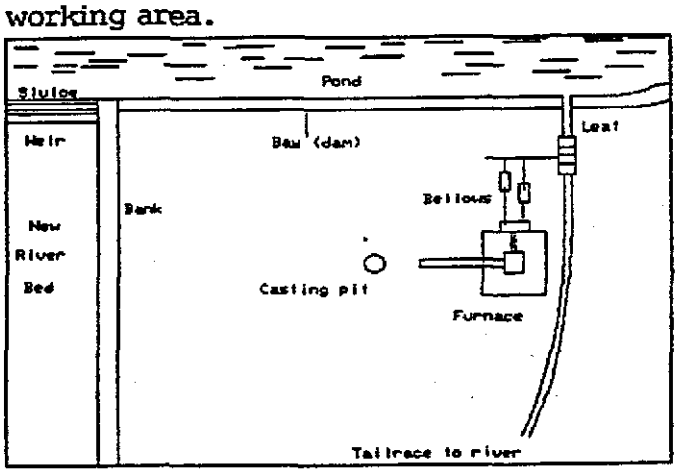
Dot Meades continues her series of notes to help members recognise the signs of the iron industry in the Weald.

A new and very different process of ironsmelting was introduced into East Sussex from northern France late in the 15th century, the blast furnace. It had three major advantages: iron could be produced in much larger quantities than before - about a ton a day; it could be continuously produced over a number of weeks without dismantling the furnace; a new type of iron, pig iron, suitable for casting, was the initial product and this could also be refined into the wrought iron traditionally used by blacksmiths .

Materials Stone, bricks, clay, tiles, timber, for building the furnace and ancillary buildings; wood and leather for bellows; iron ore, charcoal (occasionally wood chips) for smelting.

Description The new blast furnace was a much larger affair than the earlier bloomeries, its outside measurements being approximately 7m x 7m. On a typical, uncomplicated blast furnace site, the furnace and its adjacent working area were in a valley, just downstream from a bay (the Sussex word for a dam) which held back water in a furnace pond. The furnace would be built on one side of the valley. Bellows serving the furnace would be activated by water power, the water wheel being driven by water coming via a leat (channel) from the pond. Having been used, this water then flowed out of the working area through a tail-race and eventually rejoined the main stream further down the valley.

The level in the furnace pond was maintained by means of a sluice and weir, any surplus water being allowed to flow along a channel constructed for the purpose on the opposite side of the valley to the furnace. This channel was usually heavily embanked so that no unwanted water could flow into the working area.



Method After the furnace had been thoroughly dried and heated, iron ore and charcoal were fed into the top, being gradually heated as they descended until they reached the hottest part of the furnace. At this point, the iron ore melted and dripped into a hearth at the foot of the furnace, where it was collected until the hearth was full. The molten iron, being denser, remained at the bottom of the hearth, with the waste material (slag) floating above it. From time to time, this slag would be tapped off, allowed to solidify and then broken up and shovelled away. This left room for more iron in the hearth. When enough molten iron had been collected this could be tapped into moulds and allowed to set.

What you might find on a blast furnace site The most likely things to find are blast furnace slag and charcoal, often thickly strewn on the working area. The slag is usually quite unlike that from bloomeries, being lighter in weight and glassy. It comes in many colours, sometimes brown and full of holes; it can be black, blue, green or grey; it may be plain or streaked with another colour. The size of individual pieces can vary from tiny fragments up to 15 cm or more.

You may also find pieces of the moulds into which molten iron was poured. These look rather like pottery but are smooth and grey on one side and rough on the other.

Then there are the remains of earthworks: the bay is often visible as a fairly low bank across the valley but can be quite high and impressive. On some sites it may no longer exist, having been bulldozed away for agricultural reasons. Where there is a bay, the furnace pond may be still in existence, or there may be a flat silty field where it once was. Caution is needed in these places as they may be boggy and dangerous. Even where there is no bay left, a clue to its whereabouts may be a pronounced right-angled bend in the present-day stream, plus the fact that the stream flows along one side rather than taking a more natural course through the middle of the valley. The stream embankment may also have survived. A bank jutting out from the bay into the working area may indicate where there was a loading ramp. Sometimes there are long humps and bumps which suggest the presence of ancillary buildings. Where these are the right shape and size and in the right place, they may be interpreted as the foundations of a furnace, particularly if burnt stone and clay are concentrated in that area.

There is often a great deal of charcoal staining on a blast furnace site as well as small pieces that can be picked up. Where this is concentrated in a particular place it can indicate the site of a charcoal store.

Small pieces of roasted ore may also be found. Again, a concentration of these may show the site of a charcoal roasting area or a store.

Bloomery cinder has also been found on a number of blast furnace sites. This can have at least two interpretations; one is that a bloomery smelting furnace may have preceded the blast furnace; the other is that bloomery cinder was being re-smelted in the furnace, which is known to have happened in the Forest of Dean.

Some blast furnace sites have also been occupied by conversion forges, which were operated to convert surplus pig iron into wrought or malleable iron. These may have been contemporary with the blast furnace or they may have existed before or after it. More about the conversion forge in the next newsletter.

The above account should not be taken to mean that every blast furnace site is as described, or even that every feature will be present on a given site. There are sites whose water supply came from a river via a very long leat and those whose internal arrangements are quite unlike those described but on the whole these are the exceptions. What I have tried to do is to describe a simply laid out site against which forayers can consider the anomalies which they will surely encounter.

James Money MA.FSA. 1918-1991
An Appreciation

James Money was a senior Civil Servant who pursued what amounted to a second parallel career in archaeology. Present knowledge of prehistoric and Roman settlement in the Weald of Kent and Sussex owes much to his research over forty years.

Born at Penshurst, Kent, in 1918, he was educated at Tonbridge School and graduated in Classics at Kings College, Cambridge. His war service included a secondment to the government of Malta to write a history of the civilian war effort, service in Greece, and the task of drafting Admiral Mountbatten's report on South East Asia Command. Dedication to field archaeology was a logical consequence of his academic background and war-time experience.

In the early years, James worked with Kathleen Kenyon at Wroxeter, and published his first excavation report on a tile kiln at Seale, Surrey (1943). It was his excavations of the rock shelters and Iron Age hillfort at High Rocks, Tunbridge Wells (1954-61) which established his position as an archaeologist of considerable standing. He was quick to appreciate the benefits of scientific applications in archaeology, and enlisted such expertise to enhance the value of interpretations derived from his fieldwork. Results were reviewed and disseminated through assiduous correspondence, contributions to conferences, and rigorously prompt publications. James was elected a Fellow of the Society of Antiquaries of London in 1957.

During the 1960s, James devoted his skill as an excavator to understanding the successive Romano-British and medieval iron-making

sites at Minepit Wood, Withyham. Meticulous field techniques enabled him to uncover and interpret the subtle features of bloomeries, and the traces of flimsy ancillary structures which are so difficult to detect in Wealden soils.
Having built up a network of enthusiastic and dedicated volunteers, James then resumed his research on hillforts with excavations at Castle Hill, Tonbridge. He derived wry amusement from the veiled criticism levelled at those who excavated on 'sun-soaked hillforts' leaving others to engage in the real business of chasing bulldozers in the name of rescue archaeology. His steadfast approach then might now be championed as a model regional research design!

Work began in 1972 on what was to be James Money's last and most ambitious excavation, at the Iron Age and Romano-British settlement at Garden Hill, Hartfield, East Sussex. Fieldwork continued there annually until 1982 and, at the time of his death, James was working on the complex report of this site - a task which will now be carried to completion by the Garden Hill Excavation Group, which he founded.

Many young archaeologists are indebted to James for his encouragement and training. A surprising number have gone on to pursue careers as professional archaeologists. He was a perfectionist, and assumed a total commitment on the part of those who came to work with him; year after year, dedicated volunteers and professionals returned from this country and overseas to work with him. There would be no shortage of constructive criticism, but James was equally generous with the recognition of skills among members of his excavation team. The excavations at Garden Hill embraced a wide range of James' archaeological interests, while his Civil Service expertise and administrative flair were applied to the great benefit of organisational matters and fund-raising.

Retirement and release from the annual commitment to archaeological fieldwork enabled James to develop his talents as an author. Painstaking research for his book, Capri (1986), soon established this as the authoritative social history of the island. Wider horizons were thus never clouded by the intensity of his interest in the archaeology of the Weald - indeed, James was proud that his knowledge of buried soils found application, too, in aspects of Mediterranean archaeology.

In his capacity as Chairman of the Liaison Committee for the Council for British Archaeology, Regional Group 11, James Money was known to fellow archaeologists throughout the South-East, and beyond. He will be missed not only for his contributions to scholarship, but also by those for whom his broad culture, his knowledge of painting and sculpture, his ready wit and pithy comment made him a stimulating companion.
Anthony Streeten

Editor's note: Interim reports on the Garden Hill excavations are held in the Library of the Sussex Archaeology Society at Barbican House.

The Welsh Connection

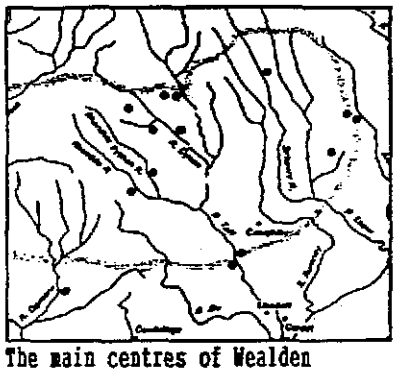
The speaker at our AGM in July of this year was Philip Riden, of the University of Cardiff, author of the excellent gazetteer of charcoal furnaces from 1660. His subject was the charcoal iron industry of South Wales and its links with the Weald. Here Dot Meades gives a flavour of what was a most interesting lecture, and one which, I am sure, will lead to an extended foray by the Field Group. Book your places now!

Dr. Riden opened by noting that the most comprehensive account of the Welsh ironworks is still that of Llewellyn published in Archaelogia Cambriensis in April 1863 and that the lack of good studies means that it is difficult to relate the Wealden industry to South Wales.

The Wealden connection began after some Acts of Parliament, passed between 1536 and 1543, brought Wales under English common law. This created more stable political and economic conditions in the principality making it easier for the English to set up ironworks there. Evidence on the ground has been much overlaid by modern industrial activity and documentary references are few, but it is known that iron bloomeries existed in this part of Wales during both the Roman and medieval periods; also that a Welsh-owned industry using the indirect process started before the Wealden connection.

There were ample wood supplies to fuel the ironworks. Water for power came from the large number of fast flowing streams at the

southern end of the Welsh massif which made pen ponds unnecessary. However, all except the Wye are unnavigable, so there was little easy access to the interior. Iron carbonate ores similar in content to those found in the Weald (28-35%) occur widely amongst the coal measures outcropping at the southern and northern rims of the "saucer". However, a limited amount of much richer haematite (about 55%) occurs along a thin strip of carboniferous limestone at the southern edge of the coalfield in the Taff and Ebbw valleys, similar to another strip in the Forest of Dean.



The main centres of Wealden operation in South Wales

This haematite attracted Sir Henry Sidney and his partners, in 1564, firstly to look for the ore and then to rent an existing blast furnace on the east bank of the River Taff, to make the high quality iron needed by his Robertsbridge ironworks in the manufacture of steel plates. The enterprise did not last long, perhaps because of the expense of transport over land and sea from the Taff valley to Robertsbridge. The closure of the ironworks may also have been affected by the death of its clerk of the works in 1570.

Other, less socially elevated Wealden ironmasters, followed Sidney into South Wales, some no doubt fleeing creditors. One entrepreneur, a man called Roberts, sited an illicit gun-casting furnace in an exceptionally inaccessible location at Abercarn. He was only found out after he died in 1576, when a quantity of ordnance was found there. He is possibly one of those referred to in Hogge's Complaint.

Others, more honest, tried to make a living from normal iron production using the less rich iron ores; they made bar iron and shipped it out but the few Welsh port books give no clear indication of their activities. They were hampered by high costs of transport to their markets, local unfriendliness and the lack of historical trading links. Profits seem to have been minimal and not enough to sustain the Wealden presence in the area beyond about 1590. A Sidney marriage to Barbara Gamage, heiress to considerable Welsh estates prompted some expansion from Shropshire into eastern Wales which proved more durable. Some English influence remained through connections with commercial interests in London which provided investment and marketing for Welsh iron producers. One of the Matthews family of Welsh ironmasters set up as a cutler on London Bridge. There are no references to Wealden ironmasters later than the 16th century.

Dr Riden has found no evidence to support the view that Wealden ironmasters moved to Wales because wood supplies in the Weald were exhausted. Nor does the very limited Wealden connection suggest an English take-over of the Welsh charcoal iron industry. The situation was in no way analogous to French involvement in the Weald; there are no dynasties of Kent or Sussex names persisting in Welsh records. It was just a case of a few pioneers, perhaps only ten or twelve people, trying their luck.

Perhaps Sidney's example prompted links between the Welsh industry and London; another less fortunate example was provided by Roberts, for illicit gun-founding continued under Welsh management at least until 1616 when the Exchequer ordered such a furnace to be destroyed.

Field Group Forays 1992/93

The 1991/92 season was enjoyed by all the members who attended, and some definite progress was made, as detailed in the current bulletin. The next season breaks some new ground, and continues lines of enquiry opened in previous years. Forays and dates for '92/93 are as follows:

Oct 17 Stonehurst, field walk and resistivity survey.

Nov 28 Henly blast furnace, site survey.

Dec 13 Chiddingstone, trenching and minepit investigation.

Jan 16 Forewood, trenching and bloomery site visit. (We'll get a date for this site if it kills us!)

Feb 13 Stonehurst, trenching.

Mar 13 Roman Road, south of Surrey/Kent border.

Apr 24 Churt, further investigation of forge site.
Anyone who wants to join the field group forays should contact Dot Meades on 0825.712367 for details.

Publications for Sale

All the publications listed below are available from:
Mr. B.K. Herbert, 1, Stirling Way,
East Grinstead, SUSSEX RH19 3HG

The normal price includes postage within the UK, *prices in* brackets are available only when publications are collected at meetings.

The Excavation of a Late 16th/Early 17th Century Gun Casting Furnace at Maynard's Gate. O.Bedwin. £0.90 [0.60]

The Fieldwalker's Guide and an Introduction to the Iron Industries of the Weald. B.K Herbert. £3.00 [2.50]

The History of Watermills, the Wealden Iron Industry, and Geology of the South-East. C.E.Woodrow, B.K.Herbert, & C.Smart. 3rd updated edition. £1.60 [1.30]

Bombards, Mons Meg and her Sisters.
A description of early wrought-iron cannon.
R.D.Smith & R.R.Brown. Royal Armouries Monograph No 1. £6.50 [6.00]

Parson Levett and English Cannon Founding. B.G.Awty. £1.20 [1.00]

A Cast-Iron Cannon of the 1540s. B.G.Awty £1.20 [1.00]

Identifying 18th Century Trunnion Marks on British Iron Guns: a discussion. R.R.Brown. £0.70 [0.50]

The Woolwich Proof Registers, 1780-1781. R.R.Brown. £0.70 [0.50]

Guns Carried on the East Indiamen. R.R.Brown. £0.70 [0.50]

The Fuller Letters; Guns Slaves and Finance.
(Ironmaster at the Heathfield Furnace in Sussex)
D.Crossley and R.Saville. £20.00 [17.50]

Old Series WIRG Bulletins. Volumes 1,9,11,13,14,15,16,17. each £0.80 [0.50].
OLD SERIES VOLUMES 2,3,4,5,6,7,8,10,12 ARE OUT OF PRINT AND WILL NOT BE REPUBLISHED.

New Series WIRG Bulletins.
Volumes 1 to 7 (1981-1986) £1.30 [1.00]
Volumes 8 to 12 (1987-1991) £1.80 [1.50]
note: Volumes 5 & 10 have an index

Finings

LA METALLURGIE NORMANDE
A copy of the book, La Metallurgie Normande 12e - 17e siecles - La revolution du haut fourneau by J-F.Belhoste, B.G.Awty and others, has been given to WIRG by the publishers, the Inventaire General. Members with a reasonable knowledge of French wishing to read the Group's copy may borrow it from the Secretary (0732 838698).

NORTHPARK FURNACE, WEST SUSSEX
Limited excavations have taken place here again this Autumn, prior to essential backfilling. The foundations of a small brick-floored building were uncovered, on higher ground above and to the north-east of the furnace. Its purpose is unknown at present.

TEBBUTT RESEARCH FUND
Applications are invited from individuals and groups for grants towards research in the Wealden iron industry. It is anticipated that approximately £200 will be available from the fund in 1993 and anyone interested in receiving a grant should write a suitable letter of application, giving details of themselves, together with relevant information about the research envisaged.

Applications should be sent to the Hon. Secretary of WIRG, Mrs S. Broomfield, 8, Woodview Crescent, Hildenborough, Tonbridge, Kent, TN11 9HD, to reach her by 31st March 1993.

WINTER MEETING 1993 - A DIARY DATE!
The 1993 Winter Meeting will be held on Saturday 6th February, at a venue to be announced. The speaker will be the Group's Chairman, Jeremy Hodgkinson, who will give an illustrated talk on "Aspects of the Wealden Iron Industry: 1750-70." Further notice of this meeting will be circulated to members nearer the time.

JEREMY HODGKINSON is holding a day school on the Wealden Iron Industry on Saturday 20th March at Hastings Museum and Art Gallery. Contact 0273 678537 for further details and enrolment.