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Recent finds in the Llanymyech Ogof

Pete Owen

During the four months up to the end of September 1997, members of the Shrewsbury Underground Exploration Group have made several finds in the Ogof's Mandible Chamber that could bring us a step nearer to finally dating the mine.

Along with many others, I have for a long time suspected that the Ogof predates the Roman occupation period. Until June of this year stone tools, the initial pointer to a possible Bronze Age working, have never been discovered in the mine or, if they have, it has never become common knowledge. It should be stated at this point that the Ogof is a scheduled site under the control of CADW. Although it is an offence to dig in the mine, there is plenty of evidence to suggest that digging has been going on quite recently. Not only is archaeological evidence being destroyed but any finds made are disappearing into private collections without being recorded. Having said this, without illicit digs the first group of stone tools would not have been found.

On a visit to the Mandible Chamber in June along with Gareth Owen, Patrick Owen and Russell Hill, we recovered four stone tools near to the floor groove in the old entrance adit. They were subsequently removed for safe keeping and were carefully cleaned, weighed and recorded. I have, for my own records, given each stone a reference number. It is these numbers that will be used here.

HS.1/1 : 0.8 kg. A small maul which has been modified to accommodate a better grip during use. Being micaceous sandstone, modification by rubbing on a hard surface would have been an easy task. One end shows classic bruising and has cracked through use. A flake has been chipped off the opposing end.

HS.2/1 : 0.2 kg . The smallest of this first group of stones. It is a round pebble with bruising to each end. Is this stone a possible indication that children worked in the Ogof'?

HS.3/1 : 1.2 kg. A flat stone heavily chipped on both edges. The one end shows signs of heavy usage as flakes of the stone have been knocked off.

HS.4/1 : 6.1 kg. The largest and most versatile stone yet found. This stone is pear-drop shaped and very similar to one on display at the Great Orme Mine in Llandudno. It has been used for grinding, as is evident on the underside. Bruising to the sides indicate its use as a hammer and it has been suggested that it may, due to its shape and marks it exhibits, have been used as a lap held anvil.

All the stones in group one were handed over to the Clwyd Powys Archaeological Trust shortly after discovery.

In July three more stones were recovered from the Mandible Chamber. This second group are far smaller in size to the first group and, with one exception, rather difficult to suggest what they may have been used for.

HS.5/2 : 0.25 kg. A flat axe shaped stone which may have been used as a whetstone.

HS.6/2 : 0.25 kg. An interesting stone as it has been suggested that it shows signs that it could well have started out its working life as part of a Neolithic hand axe. Once broken in the Ogof, this flake appears to have been used as a scraper.

HS.7/2 : 0.27 kg. A small hand sized micaceous sandstone pebble ground flat on one end. It may have been used for grinding however being so small this would seem unlikely.

In early September the Mandible Chamber yielded three further stones. They are unfortunately rather similar to group two in that, apart from HS. 8 / 3, it would be difficult to suggest their use.

HS.8/3 : 0.5 kg. A flat stone that fits into the hand so well it would most certainly have been used as a maul. Straight grooves on one face are possible evidence that this stone was also used for sharpening some type of pointed implement.

HS.9/3 : 0.21 kg. Although smaller than HS.7/2 it is somewhat similar in shape. It would be hard to attribute specific use for this stone.

HS.10/3 : 3.25 kg. The second largest of the stones recovered from Mandible chamber. Although a large piece has been broken off there are no markings on this stone to give any clue to its use.

The discovery of these stones does not prove that the Ogof is a Bronze Age mine but it is the closest connection with this period found there. It may be of some significance that, although we have looked throughout the mine, the only place where these stones have been found is in Mandible Chamber. Of the ten stones we have recovered, six show clear evidence of having been utilised by man. Any use that could have been made of the remaining four is not clear. I must stress that all of the stones we have found were not buried, they were just lying in the surface rubble.

Colliery Closures in the British Coalfield, in particular the Staffordshire Coalfield

David Coxill

It is no secret that the decline of the coal industry has taken place throughout the country and not just in Shropshire. The number of pit closures per year of nationalised mines is shown in Figure 1. In 1997, there were just under 30 deep mines, excluding small drift mines. Essentially, the problem has been of over-supply which has led to massive pit closures under both Labour and Conservative governments.

Figure 1 - Number of Colliery Closures under Nationalisation 1947-1994

| <u>Year</u> | <u>Closures</u> | <u>Government</u> | <u>Year</u> | <u>Closures</u> | <u>Government</u> |
|-------------|-----------------|-------------------|-------------|-----------------|-------------------|
| 1947 | 22 | Labour | 1970 | 11 | Conservative |
| 1948 | 34 | Labour | 1971 | 4 | Conservative |
| 1949 | <u>32</u> | Labour | 1972 | 8 | Conservative |
| | <u>88</u> | | 1973 | 20 | Conservative |
| 1950 | 23 | Labour | 1974 | 12 | Labour |
| 1951 | 16 | Conservative | 1975 | 9 | Labour |
| 1952 | 23 | Conservative | 1976 | 3 | Labour |
| 1953 | 20 | Conservative | 1977 | 8 | Labour |
| 1954 | 25 | Conservative | 1978 | 8 | Labour |
| 1955 | 27 | Conservative | 1979 | <u>5</u> | Conservative |
| 1956 | 17 | Conservative | | <u>88</u> 8% | |
| 1957 | 22 | Conservative | 1980 | 7 | Conservative |
| 1958 | 32 | Conservative | 1981 | 11 | Conservative |
| 1959 | <u>61</u> | Conservative | 1982 | 8 | Conservative |
| | <u>266</u> 24% | | 1983 | 18 | Conservative |
| 1960 | 47 | Conservative | 1984 | 7 | Conservative |
| 1961 | 33 | Conservative | 1985 | 28 | Conservative |
| 1962 | 57 | Conservative | 1986 | 29 | Conservative |
| 1963 | 37 | Conservative | 1987 | 11 | Conservative |
| 1964 | 37 | Labour | 1988 | 12 | Conservative |
| 1965 | 46 | Labour | 1989 | <u>18</u> | Conservative |
| 1966 | 62 | Labour | | <u>149</u> 13% | |
| 1967 | 39 | Labour | 1990 | 9 | Conservative |
| 1968 | 77 | Labour | 1991 | 15 | Conservative |
| 1969 | <u>27</u> | Labour | 1992 | 11 | Conservative |
| | <u>462</u> 42% | | 1993 | 16 | Conservative |
| | | | 1994 | <u>7</u> | Conservative |
| | | | | <u>58</u> 5% | |
| | | | | <u>TOTAL</u> = | |
| | | | | 1,111 | |

Staffordshire has several coalfields, notably the Potteries, Cheadle, South Staffordshire and the part of the Warwickshire Coalfield that extends into Tamworth. This has substantially greater reserves and historic output than Shropshire but Silverdale Colliery is the only remaining major deep mine. The closure of the major mines since 1947 is shown in Figure 2.

No major political party can therefore claim to have favoured the coal industry more than the other.

Figure 2 - Closure of Nationalised Collieries in Staffordshire

| <u>Mine</u> | <u>Date Closed (merged)</u> |
|---|------------------------------------|
| Alvecote (merged with North Warwick) | May 1951 |
| Apedale | Nov 1969 |
| Baggeridge | Mar 1968 |
| Berry Hill | Apr 1960 |
| Brereton | Jul 1960 |
| Cannock Chase No.3 | 1959 |
| Cannock Chase No.8 | Jan 1962 |
| Cannock Chase No.9 (merged with Cannock Chase) | 1951 |
| Cannock & Leacroft (merged with Mid Cannock) | Sep 1954 |
| Cannock Wood | Jun 1973 |
| Chatterley Whitfield (merged with Wolstanton) | Mar 1977 |
| Conduit | Aug 1949 |
| Coppice (Cannock Chase) | Apr 1964 |
| Deep Pit (merged with Wolstanton) | Feb 1962 |
| East Cannock | May 1957 |
| Fenton | Oct 1964 |
| Florence | Mar 1990 |
| Foxfield | Oct 1965 |
| Glasshouse | Dec 1960 |
| Grove (merged with Wyrley No.3) | Jan 1952 |
| Hamstead | Mat 1965 |
| Hawkins | Apr 1960 |
| Hem Heath | May 1996 |
| Hilton Main | Jan 1969 |
| Holditch | Aug 1989 |
| Hollybank | Dec 1952 |
| Kemball | Nov 1963 |
| Lea Hall | Dec 1990 |
| Littleton | Dec 1993 |
| Mid Cannock | Dec 1967 |
| Mossfield | May 1963 |
| Nabb | Mar 1954 |
| Nook & Wyrley | Jun 1949 |
| Norton | Jun 1977 |
| Parkhall | Dec 1962 |
| Parkhouse | May 1968 |
| Sandwell Park | Sep 1960 |
| Sneyd (merged with Wolstanton) | Jul 1962 |
| Stafford | Jan 1969 |
| Standhills | Apr 1947 |
| Victoria | Jul 1982 |
| Walsall Wood | Oct 1964 |
| West Cannock No.1 (merged with Littleton) | Sep 1958 |
| West Cannock No.2 (merged with West Cannock No.5) | Jan 1956 |
| West Cannock No.3 | Dec 1949 |
| West Cannock No.5 | Dec 1982 |
| Wimblebury (merged with West Cannock No.5) | Dec 1962 |
| Wolstanton | Oct 1985 |
| Wyrley No.3 (merged with Mid Cannock) | Jun 1963 |
| Yew Tree Drift | Apr 1950 |

Excavation of the Mine Managers Office at Snailbeach Mine

Steve Southwick & Sue Brueton

The Dig

During the weekend of April 4th 1997, work commenced to excavate the remains of the Mine Manager's office at Snailbeach Mine. The general view was that we would find little of interest remaining. Undeterred by such gloomy predictions a valiant team of volunteers turned up to help, led by Steve Southwick and Sue Brueton. Work started promptly at 10.30 am. with Nick and Rob Southwick, John Davies, Mike Worsfold and Eileen Bowen.

Sticking out of the rubble to a height of two feet was what appeared to be a plank of wood, with part of its length having been cut off for firewood. This proved to be our first surprise. It turned out to be a settle seat, still in its original position. From under this seat we recovered a few rusty hand tools. As the dig continued, the whole of the fire range was uncovered, complete with fender and poker. This gave the first real indication that we might have something very interesting. Below the settle we came to floor boards with infill below but we did not go beyond this level.

The digging operation then moved to the south (back of the settle) and to the west end of the room. Within a short time a large quantity of rusty nuts and bolts began to surface, followed quite suddenly by a wrought iron crucible found by Nick. Digging fever then became intense but careful, with the discovery of a number of bronze/copper nails, some quite large. It was felt that these, especially the larger items, may have come from the Powder House. The next find came in the form of a number of bronze bearings. This was quickly followed by a small numbered ingot of lead and a quantity of dross from the top of a smelted batch of lead, complete with pine needles used to prevent oxidation. Also recovered were several oil dash pots, stopcocks and what may be the gate off a shaft cage. When the site was cleared, measured, drawn up and photographed the site was back-filled in order to preserve as much of the domestic remains as possible.

The Building and its Sociological Aspect.

According to a survey completed by the University of Lancaster Archaeology Unit (*Trueman and Mc Gill, P27-29, item 34, 1990*), the lower part of the building appears on a site plan made between 1837 and 1847. The upper stories date from around 1870, a view which I would agree with. The remains of the fireplace in the Managers Office on the top storey suggests this from its design. The cast iron range in the suggested Assay Office area also dates from this time. It is however the settle bench which gives the best indication as to the date. I photographed one exactly like it which carried a date of 1873 in a mining museum dedicated to the iron workings at Skinningrove, North Yorkshire. Whoever worked in this office must have been highly thought of because the lay out and home comforts found in this area were for the times 'very snug'. Imagine having a nice fire range, which probably served to melt the lead on, together with a settle seat on which to sit and warm one's toes. Was this really the case.

References

Trueman, M & Gill, M "Snailbeach Lead Mine, Stage 2 Study (Archaeological Survey, August 1990), 1992, Lancaster University Archaeology Unit, Lancaster

Mining History, Ireland and the World Wide Web: a Survey of Current Resources

Greg Fewer

Prior to 1993, few people outside academia and government heard (or even cared) about the Internet. Today, it is impossible to escape hearing about the Internet almost every day since the advent of the World Wide Web. At this time, sceptics may still wonder at the value of the Web for mining history research - isn't it after all dominated by commercial organisations and especially by peddlers of pornography? Well... perhaps(!), but many academic organisations, governmental institutions and individual researchers use the Web as a venue for their publications. The Mining History Society of Ireland has its own home page (<http://www.iol.ie/~dcowman/mhsi.htm> [which now automatically converts to <http://homepages.iol.ie/~dcowman/>] or <http://shaw.iol.ie/~dcowman/mhsi.htm>) which provides various organisational details, a directory of members, a checklist of Irish mining sites, a bibliography of Irish mining history and a note from the chairperson (John Morris). The purpose of this article, however, is to highlight a range of on-line mining history resources relating predominantly to Ireland, most of which is not available on the MHSI site.

For this survey, I carried out a Boolean search of the terms "mining history" AND "ireland" using the following Internet search engines :-

Altavista (<http://www.altavista.digital.com>)

HotBot (<http://www.hotbot.com>)

Infoseek (<http://www.infoseek.com>)

Lycos (<http://www.lycos.com>)

WebCrawler (<http://www.webcrawler.com>)

Yahoo! (<http://www.yahoo.com>).

When visiting these yourself, make sure you type their URLs [Universal Resource Locators - i.e. the Web site addresses] into the 'URL'/'Go To'/'Open Location' box of your browser correctly - a misplaced letter in the case of WebCrawler could bring you to a site whose purpose is far removed from keyword searching!!

The search carried out for this article required the words 'mining' and 'history' to be adjacent to each other with the word 'ireland' necessarily appearing somewhere in the text in each Web document located by the search engines. Using the Boolean operator OR (as opposed to AND) would have produced lists of Web sites containing only the term "mining history" along with those bearing only the term "Ireland" - an irrelevant search result for our purposes.

It is advisable to use different search engines when carrying out keyword searches, since the information each one supplies is dependent on what URLs have been included in their databases. The more popular search engines might have a lot of sites indexed but other engines could contain material missed by the others so they are well worth using. Indeed, the differences became evident when I carried out the search of the terms specified above on 26 May 1997. HotBot came up with 51 documents, Altavista with 36 and WebCrawler with just 6. Neither Infoseek, Lycos nor Yahoo! allowed for Boolean searches of the terms given, producing a search result that considered every document in which only one of the three words occurred. For each word, Lycos came up with 60,266 'hits', Yahoo! produced 466,810 while Infoseek claimed to have found a staggering 23,000,968 counts. The bulk of these would, of course be irrelevant for our search purposes. However, both Lycos and Infoseek offer more advanced search capabilities but these were not pursued for the purposes of this

article, as those results compiled by the three that had applied Boolean searching probably offered a reasonably representative selection of sites to assess for Irish mining history content. Each site listed by Altavista, HotBot and WebCrawler was visited to consider its value for Irish mining history purposes either on 26 May or over the following two days. This article therefore constitutes a survey of the more relevant sites that were in existence at that time. However, since Web pages are often ephemeral in nature (either undergoing constant modification such as having their contents updated, ending up being moved to a new Web address or even being totally deleted by their compilers once they became out-of-date), some of those discussed here may be greatly altered over the next few months or may disappear completely. As an example of this kind of problem, it was found in the course of this survey that some links to MHSI's Web site from other sites are outdated (i.e., the URL was given as <http://www.iol.ie/~cbstramo/mhsi.htm>).

The article is divided into three sections beginning with an evaluation of on-line directories and links pages of mining history-related organisations before moving on to take a look at electronic bibliographies and textual content.

Directories & Links Pages

These are simply lists of (in this case) organisations or institutions of interest to (Irish) mining historians. Directories might supply such information as an organisation's postal or electronic address as well as details such as current subscriptions, the organisation's aims and also its publications (if any), but many are simply links pages. These typically contain only hypertext links to other Web pages without any additional commentary or details. They may, however, be subdivided under different category headings such as country, region or theme to facilitate different people's interests.

1. **Mining History Network's List of Other WWW Sites**
(<http://info.ex.ac.uk/~RBurt/MinHistNet/www.html>)

First port of call for anybody navigating the Web for mining history organisations would unquestionably be this. Observe the correct case of the letters in the URL to ensure arriving at the Web site. It was compiled by Roger Burt who is the contact for all of the MHN's pages (his own Web page being at <http://www.ex.ac.uk/~RBurt>) and, at the time of writing, it was last modified on 23 May 1997. It contains links to over 60 other Web sites along with a few e-mail contact addresses arranged alphabetically from "American Mining History Association" to "Yellowknife, City of". Three sites are, however, grouped together under the umbrella heading "Mining in Montana". The listing is quite international as it includes American, British, Canadian, Dutch, French, German, Italian, Russian and South African bodies, while Ireland is represented by MHSI's site. Such foreign Web sites ought to be of value to anyone with an interest in the history of Irish miners or mining companies abroad.

2. **Underground Database**
(<http://wkweb4.cableinet.co.uk/adrian.pearce/INDEX.HTM>)

British-only mining history organisations and museums are listed more comprehensively in this compilation by Adrian Pearce (E-mail: adrian.pearce@cableinet.co.uk). Some do not have a Web site or Email address but their contact postal address is provided in such cases. This is the official website for

the National Association of Mining History Organisations and Shropshire Mines Trust and there are also pages on foreign mining history societies and museums, as well as UK and foreign caving clubs and references.

3. **West's Geology Directory**
(<http://www.soton.ac.uk/~imw/links.htm>)

Another important and well-organised links page which is maintained by Dr Ian West of Southampton University's geology department (Email: imw@mail.soc.soton.ac.uk). Most links pertinent to readers of the MHSI Newsletter can be found under "ECONOMIC GEOLOGY - Mining History", which is divided into four sub-categories - General, Societies, Turkey and UK. The Societies section contains only nine entries, but two countries - Australia and Japan - are represented here that were omitted from the Mining History Network's list. The single link under the Turkey sub-category relates to the 1996 excavations at "The World's Oldest Tin Mine" at Kestel which dates to the Early Bronze Age. Only eleven links make up the UK section, seven of them dealing with the different regional parts of the Mining History Network's (MHN's) bibliography, while one of the other four is a link to MHN's directory of Web sites.

There is plenty of room for other British Web sites to be included here. There are also useful links to individual museums or museum links pages totalling 18 in all and subdivided under the following categories - General, UK, Canada, Curators, Curating, Funding and Policy, etc, Europe and USA. The emphasis of these museum links is on geology and palaeontology but some of these may contain some information on mining history. There is also a list of book publishers and sellers that deal in geology or mining history material - useful not just to the specialist book-buyer but to the wannabe-published writers on these subjects, while a section on links to geological and palaeontological bibliographies might include sites with a few references of interest to the mining historian.

4. **Das Virtuelle Museum**
(<http://www.industriekultur.de/VIM/gross.htm>)

This has a huge list of links to British mining and other industrial history museums and some organisations (Email: webmaster@industriekultur.de). The Irish or "Ireland" page ([../VIM/irland.htm](http://www.industriekultur.de/VIM/irland.htm)), however, consists of only two links - one to The Railway Preservation Society of Ireland's home page, the other to the Mining History Society of Ireland as listed on the Mining History Network's Ireland page (<http://info.ex.ac.uk/~RBurt/MinHistNet/ireland.html>) - not a direct link as it ought to be. Northern Ireland features in the Great Britain page.

5. **I.A. [Industrial Archaeology] Recordings: Other Industrial Archaeology Pages**
(<http://www.iarecord.demon.co.uk/otheria.htm>)

More UK museum links can be found by looking up this British site, though this is not as wide-ranging a list as that of 'Das Virtuelle Museum'.

6. **Websurfer's Biweekly Earth Science Review: Hot Links Page**

(<http://shell.rmi.net/~michaelg/HOTLINKS.html>)

This includes a section on “Mining and Related Topics”. It is dominated by present-day mining activities but also includes some mining and metallurgical history links. This Web page is, however, primarily concerned with palaeontology, minerals, vulcanology and geology. There are many links to geological surveys in the United States and in a number of other countries (including Ireland) while specialised sites devoted to scientific techniques or to mapping and surveying are among other links that may be worth pursuing (especially for the mining historian wishing to survey a disused mine and possibly its related geology).

7. **Cave Linx**

(<http://web.ukonline.co.uk/members/andy.mccarron/cavelink.htm>)

This is maintained by Andy McCarron (Email: andy.mccarron@ukonline.co.uk) and includes 350 links (or so it claims) to various “caving related” Web sites around the world. These are organised alphabetically under each continent (and not country as stated in this Web page's précis). Ireland merits only four entries but MHSI is not among them.

8. **Caves and Caving in the UK**

(<http://www.sat.dundee.ac.uk/~arb/speleo.html>)

This is maintained by Andrew Brooks (Email: arb@sat.dundee.ac.uk) and includes links to the Spelaeological Union of Ireland's home page (<http://www.ul.ie/~sui/>) and to special interest groups of the British Cave Rescue Association such as “SpeleoHistory”, “Cave Surveying” and “Photography”.

9. **Geological Survey of Ireland's List of Irish Earth Science & Related Sites**

(<http://www.irlgov.ie/tec/gsi/gsilink1.htm>)

This is an Irish-specific directory maintained by C. MacDermot (Email: gsiweb@tec.irlgov.ie) which includes university departments and research bodies. MHSI is given a link and, in this instance, the URL is up to date!

Bibliographies

1. **Published Works on Irish Mining 1955-1995**

(<http://homepages.iol.ie/~dcowman/book.htm>)

Any Irish mining historian seeking a relevant on-line bibliography ought to begin with this, which is the MHSI's own one. This bibliography is identical to that printed in MHSI's Newsletter No.3 (1996). Although publications post-dating 1995 are not yet included, they could easily be added at any time in the future. The major advantage of an on-line bibliography is that it can be continually updated whereas a printed one remains a static publication. Therefore, MHSI's bibliography has the potential to become the most comprehensive and up-to-date compilation on Irish mining history publications.

2. **Mining History Network Bibliography... Ireland**
(http://info.ex.ac.uk/~RBurt/MinHistNet/bib_IR.html)

This is a similar, though less comprehensive, compilation. Although both this and the MHSI bibliography are based on one compiled by Roger Burt of Exeter University, MHSI's version has been expanded. Unlike the MHSI version, however, there is a section for postgraduate theses, though none had been listed by 7 March 1995 when this particular Web page had last been brought up to date. The fact that this bibliography has not been updated for more than two years represents an under-utilisation of the World Wide Web's benefits, namely, the continually updateable nature of Web pages.

3. **International Union of Speleology's Speleological Abstracts for 1991**
(<http://www.geo.unizh.ch/~heller/SSS/BBS/91/211GB.html>)

For the hazard-wary explorer of old disused mines, the British component of this is a potentially invaluable bibliography of speleological literature dealing with (predominantly UK) accidents and rescue incidents, radon presence in caves and mines, and courses in first aid and mine leadership. The entries are listed alphabetically by author and are drawn from a wide range of periodicals including Mining News. The only Irish item, though, deals with cave rescue in Britain and Ireland in the early 1980s.

4. **List of Recent Geological Survey of Ireland Publications**
(<http://www.irlgov.ie/tec/gsi/gsipub1.htm>)

This covers the various sheets of the new 1:100,000 scale Bedrock Maps and booklets, a video, geotourism brochures and a few books on geology and mining history. Abstracts and prices are supplied for each publication while a map shows the current publication status for each of the new Bedrock Maps. A link to an on-line order form is provided to facilitate electronic submissions of orders of GSI publications. Links to other publishers of mining history material can be found in "West's Geology Directory" referred to previously.

Historical Literature

1. **Ancient Miners, Modern Collections**
(http://www.kanwar.demon.co.uk/bcgs/l_report/1996/25nov96.html)

This is a report by Alf Cole of a lecture which was given by Robert Ixer of Birmingham University to the Black Country Geological Society (based in Dudley, West Midlands, in England) in November 1996. It deals with the origins of early Irish copper and bronze working. The lecture noted that most of the Irish bronzes (found in south-west Ireland) contain, uniquely, about 2% arsenic which is unusual because arsenic only appears in the "grey ore" (or Fahlerz) minerals that are technically very difficult to extract copper from. The lecture reported that recent comparative scientific analyses of both the Irish arsenical bronze artefacts and arsenic-bearing ores from Ross Island (near Killarney, County Kerry) and its vicinity strongly support the view that this locality is the site of the earliest Bronze Age copper working in the whole of the British Isles.

2. **The Glenariff Mines and Railway**
(<http://www.btinternet.com/~lochist/glenarif.htm>)

This Web page is compiled by MHSI's vice-chair, Kevin O'Hagan (Email: kjoh@btinternet.com). It deals with a group of iron ore mines in County Antrim that were exploited from the 1870s to the early 1880s. The mining company which exploited the ore also built Ireland's first narrow gauge railway from the mines to the coast to facilitate the transportation of the minerals by sea to Bristol. Details of the railway and its ancillary structures are provided, including their subsequent dismantling, and what now survives of them. Little is known of the mines themselves though, since most of them are now blocked up.

3. **The Village of Cargan, County Antrim**
(<http://www.btinternet.com/~lochist/cargan.htm>)

This is also by Kevin O'Hagan and is about a nineteenth century village which lay close to an early (short-lived) attempt to distil paraffin from bituminous peat in the area. However, the village didn't really take off until the 1860s when iron ore mining began nearby and housing was provided for the miners. Bauxite ore also began to be mined there from 1871. Information is also offered about a short-lived overhead aerial ropeway that transported ore to the coast for export and of a narrow gauge railway which replaced it during the 1870s. Mining continued until the 1920s when the bulk of the quality ores had become exhausted. Dated May 1995, this article includes a short bibliography, a feature which does not appear for its Glenariff counterpart. Both articles are nicely illustrated with 2-3 photographs showing the localities as they appeared in the last century and what can be seen of the abandoned mining operations today. Unfortunately, when they were being prepared for publication on the Web, the titles of the two documents were confused with the HTML title which appears only in the title bar at the top of the browser window (the HTML title also appears in the results of the search engine searches). Due to the error, neither page begins with a title at its head and the HTML titles appear in the browser's title bar with redundant HTML tags. This is an easily resolvable problem that nevertheless needs addressing since paper printouts of the two Web pages would bear no titles. Also, the link given to MHSI's site is out-dated.

4. **Mining History Network .. Introduction to Mineral Statistics**
(<http://info.ex.ac.uk/~RBurt/MinHistNet/MS/intro.html>)

This provides an outline of the historical evolution of the British Mining Record Office's initially irregular, but soon annual, publications on the output of the mineral industry in Britain and Ireland since the 1840s. The earlier publications related primarily to copper and lead mining but details of other metalliferous mining operations and also of the coal industry were added later in the nineteenth century (though annual reports of the Mine Inspectors had included details on coal mining prior to this). The sort of information found in the Mining Record Office's reports are mentioned and the various changes in their title, format and content are outlined (additional material on the Mineral Statistics can be perused by typing the above URL without the final element `intro.html`).

5. **Speleological Union of Ireland and the Irish Cave Rescue Organisation**
(http://www.ul.ie/~sui/suicro_news.html)

This is an on-line edition of a printed newsletter. It contains a note on the foundation of MHSI, outlining the organisation's aims, giving details of its then forthcoming inaugural general meeting and supplying contact addresses. Of concern are the references to non-archaeological excavations in certain caves around the country, notably at Poulnamadda in Fermanagh/Cavan where "carpet, a bed and multitudinous bones, frozen into a solid mass" was discovered by SUI members in 1995. I would have avoided any intervention over such material without the advice of an archaeologist or a natural historian, yet it is stated that efforts directed at moving these foreign objects are currently underway with significant numbers of bones having been removed to date. Hopefully, none of these bones date to prehistoric times since their unscientific removal would represent a loss of data to the radiocarbon dating research of Ireland's early fauna (see P C Woodman & N Monaghan, "From Mice to Mammoths: Dating Ireland's Earliest Faunas" in *Archaeology Ireland* 7(3), 1993: 31-3). One useful feature of the SUICRO page is a brief paragraph on funding sources for caving/spelaeological research projects, potentially worth exploring further for the purposes of exploring old mines.

Conclusion

This general survey of Irish mining history and related resources on the World Wide Web has only considered the results of a search for the terms "mining history" and "ireland". It should therefore be borne in mind that there may be some material that was missed because the word "ireland" did not appear on particular Web pages dealing with Irish mining history. Also, Web sites dealing with Irish miners or mining operations overseas were not included in this survey though a few of these were encountered.

Although currently dominated by organisational and bibliographic data, there is much potential for more extensive mining history information to be supplied on-line. In particular, more full-text articles (perhaps previously or simultaneously published in conventional print format) could be hosted either on the sites of particular mining history associations or on individual historians' home pages. Postgraduate theses, often difficult to publish conventionally, could be made available over the Internet, while video footage of old mine explorations or even of their archaeological excavation could accompany a textual discussion of the sites involved. Electronically searchable databases could also be placed and regularly updated on the Web, such as the MS Access database of Irish mining sites mentioned in Des Cowman's editorial of the MHSI Newsletter 3 (1996). Courses on mining history, archaeology or even safety in mine exploration could be given directly across the Internet through distance learning programmes (for an idea of what kinds of Internet-mediated courses are already being offered by a number of third level institutions in North America, see <http://www.caso.com>).

The only factors limiting the potential of the Internet as a resource for Irish mining history are the scarcity of historians willing to publish on the World Wide Web and the expense faced by many people wishing to connect to it. Hopefully, as mining history grows in popularity and more people get connected to the Net, then the demand for mining history content on the Web will increase also.

Greg Fewer is a part-time lecturer in local archaeology at Waterford Institute of Technology. He also maintains his own Web site at <http://www.infohwy.com/~gfewer/>. This coming academic year (1997/98), he will be offering an Extra-Mural Certificate course in Electronic Publication at WIT. Persons interested in taking this course may contact him or the Dept of Adult & Continuing Education, Waterford Institute of Technology, Cork Road, Waterford, for further details.

Coal Nationalisation 50 Years on - the East Shropshire Coalfield

David Coxill

Following the passing of the Nationalisation of the Coal Industry Act 1946, after it was initially delayed by opposition in the House of Lords, valuation reports of the coal industry's assets for each coalfield were prepared in order that the appropriate level of compensation could be paid to the private owners. The report for the East Shropshire Coalfield (Coalbrookdale, Shrewsbury and Forest of Wyre) was written by George Price. He was a mining engineer from Sheffield and the report gives us a valuable insight as to the state of the industry at that time. It also allows us to reflect on expectations for the future and how it all turned out. The Oswestry Coalfield is not included in this report as it formed part of the North Wales Coalfield for convenience.

1. Forest of Wyre Coalfield

At the time of nationalisation, only one deep mine was working, Alveley Colliery operated by Highley Mining Co Ltd. The coalfield extends from Bridgnorth in the north to the Abberley Hills in the south, actually crossing the county border into Herefordshire. The Highley Group of the Upper Coal Measures contains thin sulphurous coals which were only rarely worked around Bayton and Mamble. Beneath these, the Kinlet Group of the Productive Coal Measures contained "sweet" good quality coal seams that were widely worked. The principle seams were the Five-Foot (or Broach) Coal, Halfyard Coal, Four-Foot Coal and Two-Foot Coal. Only the Broach was being worked in 1946.

The Highley Mining Company was formed in 1870 and coal production at Highley Mine (SO745830) began in 1874. A second colliery was sunk at Kinlet in 1896 and continued until it was forced to close in 1937 through roof problems and heavy faulting. During the 1930s, it was decided to develop the area east of Highley Colliery and so the Alveley Colliery was sunk on the eastern bank of the River Severn in 1935-37. Production commenced in 1938 and full output was reached six years later at 275,000 tons per annum. The two mines were interconnected and, after 1940, Highley Colliery served only as ventilation shafts for Alveley Colliery. The new mine was modern for its day, being electrified from the start, so there was no need for boilers. Coal face working was fully mechanised and, in 1947, the capital cost of Alveley Colliery was £206,937. There were 289 men working at the coal face, 135 for haulage and another 561 underground making, with the 180 employed at surface, a total workforce of 741 men.

Alveley worked to the north, south and east directions but not to the west, where the Highley mine was. A natural boundary of the prospect to the east was the Romsley Fault but this appears to have been penetrated at a much later date.

The future of Alveley looked promising and it was for about 20 years. At its peak in the 1930s it employed over 1,250 men, producing about 280,000 tons per annum. Then in 1968 the quality of the coal deteriorated dramatically at a time when there was a national over supply and a major pit closure programme being implemented by Harold Wilson's second administration (1966-70) to remedy the situation. Had the quality problem occurred during or immediately after World War II, or during the mid-1970s when there were energy crises through blending, then it might not have mattered. However, coming at a time of oversupply, the mine was closed as uneconomic in January 1969.

At the time of nationalisation, it was estimated that up to the Romsley Fault the estimated reserves were 22 million tonnes for the Brooch Coal, 10 million tonnes for the New Mine Coal and 15 million tonnes for the Flying Reed Coal, making a total of 47 million tonnes. At most, only 15% of these reserves were worked.

2. Coalbrookdale Coalfield

Centred on the new town of Telford, coal seams from the Productive Coal Measures have been heavily worked. For brief details on the geology see Coxill (1995) and the review article on the IGS Telford Memoir in this Journal. The two major companies were the Lilleshall Company in the north and the Madeley Wood Company in the south-east. In addition, there were a number of companies who worked small mines.

The ownership of mines before vesting day (1st January 1947) was as follows. Only Granville, Grange and Kemberton were major producers.

| Mine (with Reference) | Grid | Owner | Year Closed |
|-----------------------|------|----------------------------------|-------------|
| Brandlee (SJ678076) | | J A Smallshaw | 1956 |
| Castle Place | | Castle Place Co Ltd | |
| Common | | Common Colliery Co (Dawley) Ltd | 1956 |
| Farm | | Farm Lane (Lawley Bank) Colliery | 1950s |
| Good Hope | | H S Pitt & Co Ltd | |
| Grange | | Lilleshall Co Ltd | 1979 |
| Granville (SJ725120) | | Lilleshall Co Ltd | 1979 |
| Huntington | | Huntington Mining Co Ltd | 1956 |
| Kemberton (SJ712055) | | Madeley Wood Co Ltd | 1967 |
| Moors | | Moors Colliery Co Ltd | |
| Wellington | | H A L Price | |
| Old Park (SJ685088) | | E Harris & Sons | |
| Plants Farm | | Dawley Mining Co Ltd | |
| Princess End & Lawley | | | 1948 |
| Rock (SJ680092) | | J Jones & Son | 1964 |
| Shortwood (SJ658096) | | Shortwood Co | 1970 |
| Shrubbery | | J H Woodfin | 1950s |
| Smalley Hill | | London Fields Colliery Co Ltd | |
| Stoney Hill | | Doseley Pipe Co Ltd | |
| Woodside | | Woodside Mining Co | |

The output for the small mines was quite small, although they made a useful contribution to the local economy. Output figures for 1936-46, for those still open on Vesting Day, are as follows :-

| Owner | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | Total (tons) |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------------|
| Wrekin Coal Co Ltd | 9,170 | 6,601 | 6,962 | 5,740 | 5,786 | 7,103 | 8,166 | 8,446 | 8,564 | 7,325 | 7,465 | 81,328 |
| J H Woodfin | 2,811 | 436 | 820 | 1,249 | 951 | 1,406 | 1,377 | 1,928 | 1,870 | 1,156 | 664 | 14,668 |
| J Jones & Sons | 1,606 | 1,811 | 1,837 | 1,921 | 2,061 | 1,712 | 1,714 | 1,661 | 1,475 | 1,391 | 1,524 | 18,713 |
| Common Colliery Co (Dawley) Ltd | 4,423 | 6,308 | 7,731 | 5,255 | 4,814 | 5,450 | 5,422 | 7,122 | 6,819 | 3,745 | 3,325 | 60,444 |
| J A Smallshaw | - | 3,517 | 4,786 | 2,485 | 2,721 | 1,404 | 3,593 | 5,008 | 2,402 | 2,188 | 2,649 | 30,753 |
| Huntington Mining Co Ltd | - | - | 1,067 | 2,555 | 4,034 | 4,146 | 3,615 | 3,249 | 3,554 | 3,661 | 2,954 | 28,835 |
| Farm Mine (Lawley Bank) | - | - | 675 | 2,327 | 816 | 1,595 | 2,028 | 675 | 4,400 | 5,061 | 5,680 | 23,257 |
| Shortwood Co | - | - | - | 959 | 909 | 4,219 | 7,608 | 9,035 | 7,791 | 11,213 | 12,077 | 53,811 |
| Moors Colliery Co Ltd | - | - | - | 1,888 | 3,339 | 3,487 | 3,853 | 5,218 | 6,030 | 5,782 | 8,159 | 37,756 |
| H A L Price | - | - | - | 275 | 3,397 | 3,504 | 1,590 | 2,066 | 2,520 | 2,298 | 118 | 15,768 |
| E Harris & Sons | 2,172 | 2,336 | 1,951 | 1,729 | - | - | 339 | 1,625 | 2,540 | 2,995 | 3,203 | 18,890 |
| Doseley Pipe Co Ltd | - | - | - | - | 2,249 | 5,584 | 4,572 | 3,971 | 2,961 | 3,275 | 1,938 | 24,550 |
| H S Pitt & Co Ltd | - | - | - | - | 1,333 | 2,581 | 2,056 | 1,882 | 1,137 | 1,934 | 2,295 | 13,218 |
| Dawley Mining Co Ltd | - | - | 270 | - | 1,046 | 3,004 | 3,470 | 1,886 | 1,754 | 999 | 1,097 | 12,506 |
| London Fields Colliery Co | - | - | - | - | - | - | 1,339 | 3,830 | 4,588 | 4,621 | 3,743 | 18,121 |
| Woodside Mining Co | - | - | - | - | - | - | - | - | 70 | 1,912 | 3,724 | 5,706 |
| Castle Place Colliery | - | - | - | - | - | - | - | - | - | - | 60 | 60 |
| Tonnage at mines closed by Vesting Day | 34,118 | 30,559 | 28,045 | 13,812 | 8,694 | 7,447 | 6,367 | 1,230 | - | - | - | 130,212 |
| TOTAL | 54,300 | 51,568 | 54,144 | 46,225 | 42,150 | 52,642 | 56,049 | 58,882 | 58,475 | 58,856 | 60,675 | 587,916 |

The last small private drift coal mine closed at Shortwoods near the Ercall in 1970. The total estimated reserves per coal seam were estimated as follows :-

| Seam | Tons (total) | Tons (small mines only) |
|------------------------|---------------------|--------------------------------|
| Fungous or Marquis | 22,653,000 | - |
| Deep | 24,741,000 | - |
| Top | 41,332,000 | 27,000 |
| Double | 46,389,000 | 193,000 |
| Yard | 33,365,000 | 211,000 |
| Flint | 37,928,000 | 380,000 |
| New Mine or Vigar | 38,928,000 | 945,000 |
| Clunch, Two Foot, Best | 54,342,000 | 1,820,000 |
| Randle, Clod | 51,666,000 | 1,634,000 |
| Little Flint | 20,156,000 | 1,236,000 |
| TOTAL | 371,563,000 | 6,446,000 |

The production for the Coalbrookdale and Forest of Wyre Coalfield combined was only just over 500,000 saleable tons in 1946. That would suggest reserves sufficient to last about 740 years but 19 years later Brown (1965) estimated the Coalbrookdale Coalfield to still contain 120 million tons. This was sufficient to last until about 2165 AD. Deep coal mining actually finished in 1979.

Madeley Wood Co Ltd

This company operated Kemberton Colliery (SJ112055) and the shafts were completed at a depth of 1,092ft in 1864. In 1946, three seams were being worked viz. the Yard, Big Flint and Vigar. During the Second World War output varied between 148,675 (1944) to 173,132 (1941) tons per annum and in 1946 the annual output was 190,000 tons. The old Halesfield Colliery (SJ704051) was closed in 1925 and joined underground to Kemberton in 1939. It was used thereafter for pumping, ventilation and emergency egress. During 1946, 558 men were employed but after nationalisation the colliery prospered and the workforce increased to nearly 800. Unfortunately, to the north-east the coal seams were being progressively cut out by Symon unconformity (see Stonehouse 1950 and Coxill 1995). This severely limited the mine's future and, with a possible north-east extension of the Coalport syncline east of the Madeley fault not proven, the mine closed in 1967.

Lilleshall Co Ltd

When miners returned from the First World War, management of the coal mines was returned to the private owners. Although not nationalised during that period, the war required coal mining to be nationally planned. The Lilleshall Company had several deep mines working at that time but, due to adverse trading conditions, all but two closed, viz. Stafford in 1926, Freehold in 1928, Woodhouse No.1 in 1931 and Woodhouse No.2 in 1940. A borehole programme commenced in the 1920s/30s to prove coal reserves in the Lilleshall / Sheriffhales area was quite promising and justified further investment at Granville Colliery, despite heavy losses experienced in the 1930s. It was also expected that a new mine would be sunk in the Sheriffhales area (to be called Woodlands Colliery - E Wood per communication) after the war at cost of £45,000. Originally the new mine was to have come into production at 500,000 tons per annum but an obvious manpower shortage prevented this. The Lilleshall Company were paid £10,498 as a repayment of capital for proving the concealed extension in the Lilleshall / Sherrifhales area.

The new mine was in fact never sunk and the proven reserves were added to that of Granville. It was forecasted that the existing coal reserves were sufficient to maintain existing outputs at each of the three main deep mines (Alveley, Granville/Grange and Kemberton) for over 50 years. It didn't work out like that. Reconstruction led to the merging of Granville and Grange into one single unit in April 1952. Grange was not allowed to cross the A5 (Watling Street) until after World War Two, where it worked in a small area until it met a fault that upthrew the coal seams to the south, where they had previously been worked by Woodhouse Colliery. A roadway was also driven to connect Granville and Grange collieries underground. After merging, the shafts at Grange were used for ventilation, emergency means of egress and for training purposes. It was regarded as somewhat of a primitive mine by some miners for having flat ropes.

Granville prospered in the post-war years with production often around 300,000-350,000 tons per annum. It reached a peak of around 600,000 in the 1960s, when a new manager went for

peak production. He was considered by some local people to be inferior to the previous manager, Mr Blower, who always had a new face prepared to replace an existing one that finished when it hit a fault, a regular feature in this mine.

The mine was severely faulted, which almost led to its closure in 1972, but was given a last minute reprieve due to the energy crisis caused by the Arab /Israeli war of 1972-73. There was an underground shaft to assist in developing faces in seams affected by significant faults, eg Abbey Wood and Great East. One of the shafts was deepened from 1,227ft reached in 1860 to 1,332ft in the 1950s, penetrating the Carboniferous Limestone and becoming the deepest shaft in the coalfield. Curiously, as mine worked coal seams in an eastwards / north-eastwards direction only, it was not affected by the Symon unconformity, an advantage its neighbour Kemberton did not have. Following the closure of that mine in 1967, men transferred to Granville and almost 900 men were being employed. This number quickly fell to about 600 men in the 1970s.

Faulting was the main problem at Granville and by the Second World War coal faces extended to Sherrifhales Manor. During the 1960s, Lilleshall Abbey was undermined in the Top and Double coal seams. This resulted in 2ft of subsidence causing the size of the pool to double and the Abbey walls having to be shored up. Workings in that direction extended to about the Lilleshall Golf Club pavilion and close to Hugh's Bridge. It wasn't the major faults that interrupted production but the smaller ones and the NCB's insistence on working a few long faces instead of several short faces that could more easily accommodate small faults. The high risk / high reward strategy was costly and led to production decreasing in the mid-1970s to around 250,000 tonnes per annum.

The proven reserves in the Sherrifhales area were little worked and remain to this day, where they could prove a source of coal bed methane. This is obtained by pumping water down boreholes into coal bearing strata that has been deliberately shattered by blasting, where the water absorbs methane. On return, the gas is separated from the water as it is under lower pressure. Old mine goaf workings are also a source for coal bed methane since the workings, even if flooded, are still gassy. It is worth remembering that gas was deliberately collected from Granville and sold to the Gas Board from 1957, the methane drainage plant being attached to Grange Colliery. In the 1970s, the plant was discharging 600 cu ft of methane per minute. Not all coal was cut at Granville for a lot was blasted. The seams were so gassy that the pressure of the methane coming out of a drilled hole on occasions forced the coal face to collapse.

The New Mine seam was abandoned in 1973 and the last face finished in the Heath Hill, near Sherrifhales, in March 1979. The last coal was raised in May and the mine closed in June. An appeal to save the mine was dismissed by the then Secretary of State for Energy, Tony Benn, saying that there was no evidence that the mine would not experience the same problems as had occurred in the past. With the closure of Granville, deep coal mining came to an end in Shropshire.

Perhaps the biggest insult Granville Colliery received was a speech in Telford in the 1980s by Tony Benn to denounce the pit closure programme. It was his decision to deny the necessary investment to develop new districts that led to Granville's closure. Whilst I am sympathetic to the written reply that he gave to Wrekin's then MP, Gerry Fowler, that the mine had suffered heavy losses for several years and that the social costs of its closure had been taken into

consideration for some time, I regard Tony Benn to be a hypocrite. The coal industry undeniably has been butchered but Benn supported Arthur Scargill in trying to keep some mines open that were hopelessly uneconomic.

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Memories of Madeley

Harry Micklewright

The following extracts are taken from the memoirs of Harry Micklewright, whose mother Sarah Fletcher was a member of a family who were local chartermasters. They were written a few years ago and were sent in by Patt Watt of New Zealand who is researching her family history.

“In the middle of the last century, the district between Madeley and Wellington was prosperous; the hilly ground was dotted with coal and ironstone mines and furnaces. Their names are amongst my earliest recollections - Kemberton, the only pit still working, of which Uncle John Fletcher was chartermaster, Hill’s Lane, my great grandfather Jones and my grandfather Fletcher’s pits, the Meadow pit in the centre of the town and the Court pit and furnace.”

“Each pit was worked by a contractor, known as a chawtermaster (chartermaster), who until the Mines Inspectors were appointed was entirely responsible for its working. On the whole they were extremely knowledgeable men. Uncle John Fletcher could talk very interestingly about geology, ponies, machinery and management of fields and coppices belonging to his pit. Most of them made a comfortable income, built their own houses and worked with the men till they died.”

“As a boy, on hot summer afternoons I climbed on the wall at the end on the garden. Across the field on my left was a wooded hill, once a slag heap. To the right I could see an old Newcomen engine patiently winding coal.”

“Eleven o’clock! And Topsy is going to take me to Kemberton with her father’s and brother’s midday meal. So down the narrow lane we go, past the great barn and the eerie house with its walled garden, sundial and fishpond, the old windmill, the Court furnaces, where we may be lucky enough to see the molten iron being tapped into the sow and pigs, over the canal, past Perkses, up the lane to Rowe’s Pit (Uncle Harry’s brother-in-law), just a little scared by the huge boiler which once blew up, till we reach the incline with its double row of ironstone wagons attached to an endless chain which rattles over wooden pulleys, the full trucks from Kemberton to the canal wharf pulling the empty ones on the return journey. It is fun to ride on an empty, jump off, overtake the next, and so on till we reach the top. First find cousin Will superintending the women chipping the clay off the ironstone on the pit bank, and then uncle, who is sure to take me to have a look at the grand new engine, so superior to the old Newcomen one. For a time I watch the trucks of coal coming up one of the pitshafts, and tubs of water up the other. There must have been three shafts - another for ironstone for the coal and ironstone were on different levels, or they may have had an incline underground for one or other.”

Pat has promised to send a copy of the complete memoirs for our library. She would be interested in any information on her ancestors - the Fletcher and Jones families who worked mines at Dawley, Hills Lane, Kemberton and Stirchley. Her address is :-

Pat Watt
48, Ohaupo Rd
Hamilton
New Zealand.

Review of the Geological Memoir of Telford & the Coalbrookdale Coalfield

David Coxill

“Geology of Telford and the Coalbrookdale Coalfield”, B.G.S. Memoir, HMSO London, 1995

R J O Hamblin & B C Coppack

Preface

I have now commenced to write a future SCMC Account which will be entitled “The Coalbrookdale Coalfield”. This is by popular request and will be targeted at the mining historian who wishes to read about the coalfield’s mining history but also to understand the geology regarding those horizons that produced such mineral wealth. It will be based upon my own researches into the geology and history of the area which I have undertaken periodically from the mid-1970s.

This will be a more detailed follow-on from the two chapters covering the coalfield in “Mining in Shropshire” (1995), written collectively by Kelvin Lake, David Adams and myself. This, like my 1992 book “The Mines of Lilleshall & Church Aston, Shropshire”, and a more illustrative production on that subject which is currently in preparation by David Adams, will be fully referenced. That will hopefully placate the critics of “Mining in Shropshire” that regard it as having no academic value. [Ed. - the latter book was specifically written for a general audience and was never intended as an “academic” publication. Its sales more than justify its format - which I would like to see academic ones match any day!]

The new geological memoir that was published on the coalfield by the B.G.S. in 1995 provides a golden opportunity to review the contents of an excellent piece of work that brings new information to the public domain for the first time. Its presentation is superb and it is written by some very gifted individuals. Time goes by rapidly for science and already some new data has become available since the memoir was written and this will be commented on. For anyone wishing to briefly acquaint themselves with the geology and mining history of the coalfield, they are referred to an article I wrote in the 1995 SCMC Journal.

Background

The long awaited new geological memoir updates and replaces the earlier out of print edition entitled “The Country between Wolverhampton and Oakengates” by T.H. Whitehead et al (1928). It is based on a fundamental re-survey of the Coalbrookdale Coalfield that was carried out in the early 1970s, complimenting the 1:25,000 and 1:10,560 scale geological maps of the new survey that were published in 1978. The new 1:25,000 map is far easier to use than the older 1:63,360 Wolverhampton sheet (1929) that accompanied the older memoir. The price of the new 1:10,560 map has risen dramatically in recent years and is not recommended for purchase. At £50.00 the new memoir is pricy but acceptable for the serious individual.

There was concern that funding would never be found for publication. It benefits from the extra information that has been gained from boreholes, opencasting and geophysical surveys since the old memoir was published. The survey was carried out while Granville Colliery was still working. It does not entirely cover the northern part of the coalfield in the published maps as the Lilleshall, Church Aston and Sherrifhales area is excluded.

The log sections, maps and diagrams are excellent. An OS map base would have been preferable in many places but OS copyright costs no doubt prohibit this. Since the analysis of the memoir includes the Lilleshall limestones, the title should have been “The Geology of the Coalbrookdale Coalfield” in keeping with its traditional name. Although centred on and dominated by Telford, peripheral areas outside the new town lie within the coalfield, eg Broseley. Composed of 9 chapters, 6 appendices, 53 figures and 4 tables covering 158 pages, it is well written but in places will be too detailed for the non-geologist to read. It quite rightly concentrates on the Coal Measures which is where the main mineral wealth was exploited. The recognition of the works of Dr Ivor Brown is conspicuous by its absence. A brief history of the mining development of the coalfield was published as “Mineral Resources of the Coalbrookdale Coalfield - Basis of the Industrial Revolution” (R Hamblin, I Brown and J Elwood, 1989). Consequently no mining history is included in the present memoir. I believe this to be a mistake since the memoir will stay in print longer than the Mercator Geologist article. Still this is an opportunity for the SCMC to exploit.

Introduction

Before commenting on the memoir text, the reader needs to know the very basics of the coalfield's geology. The coalfield, centred on the new town of Telford, is very small by national standards. It extends from Linley in the south to Lilleshall and the Wrekin in the north and it is very narrow at outcrop. The outcropping Productive Coal Measures are bounded by the Boundary Fault in the north, against later Triassic Sandstones, dips beneath these sandstones roughly east of Sheriffhales and Shifnal, outcrops updip against older strata to the east and is cut out unconformably beneath Upper Coal Measures strata south of Linley.

Within the Coal Measures, valuable coal, ironstone and clay seams were exploited for many centuries. Even natural bitumen was discovered and pumped from the tar Tunnel at Coalport. On the flanks of the coalfield, Lower Carboniferous Limestone was worked at Lilleshall/Church Aston in the north-east and Steeraway, The Hatch, Little Wenlock in the north-west, mainly as a flux for the iron furnaces. The older Wenlock Limestone was worked for similar purposes at Lincoln Hill near Ironbridge and Buildwas south of the River Severn. Small aggregate quarries have also worked Uriconian lavas at Lilleshall, Lawrence Hill (near to Ercall), basalt lavas at Doseley Quarry, igneous “camptonite” intrusion at Maddocks Hill and the sedimentary rock quartzite at the Ercall Quarries. Even brine has been pumped from several wells, eg at Preston-on-the-Weald. Iron pyrites and Walker's Earth (an inferior version of Fuller's Earth) have been worked locally from the Wenlock Shales at Coalbrookdale.

The coalfield is heavily and multiple fractured. The main trend belongs to the Variscan orogeny (mountain building epoch) which created north-west/south-east trending fractures. The most notable examples are the Lightmoor Fault, Great East or Limestone Fault and the Ketley Fault. The Lightmoor Fault divides the coalfield into an uplifted exposed western section and a downfaulted concealed eastern section. It is not surprising that the western part of the coalfield, where the coal seams are shallower, was worked first, while the deeper concealed section had to await technological developments, ie the steam engine to pump them dry, before it yielded its mineral wealth.

The Variscan earth movements also folded the strata into three distinct basins, the Donnington, Madeley and Coalport Synformal Synclines. The coal seams were reasonably well protected in these basins from erosion but the reverse was true of higher land in the

antiformal (dome) areas between these basins. The famous Symon Unconformity removed all the workable coal seams in a south-west/north-east trend, sub-parallel with the Great East Fault, from Coalbrookdale, extending through Brookside to the north of Shifnal. This barren zone, now called the Stirchley Anticline, has no mines and divides the coalfield between a northern and southern area.

A simplified stratigraphical succession of the traditional coalfield is as follows :-

| Formation | Rock Type | Period |
|---|--|--|
| Sherwood Sandstones | sandstone | TRIASSIC |
| Bridgnorth Sandstone | sandstone | PERMIAN |
| Enville Formation | sandstone & clays | } UPPER COAL MEASURES (Upper Carboniferous) |
| Keele Formation | sandstone | |
| Coalport Formation | sandstone | |
| Hadley Formation | sandstone | |
| Productive Coal Measures (Middle & Lower) | coal, ironstone, pyrites, seatearths, sandstones | |
| Lilleshall & Steeraway Dinantian Limestone Series | limestone, sandstone, Little Wenlock basalt | LOWER CARBONIFEROUS` |
| Basement Beds Lilleshall | oolitic limestone | DEVONIAN ? |
| Wenlock Limestone | limestone | } SILURIAN |
| Wenlock Shale | mudstone, siltstone | |
| Dolgelly Beds | black radioactive mudstone | } CAMBRIAN |
| Comley Sandstones | glaucastic sandstone | |
| Wrekin Quartzite | quartzite | |
| Uriconian Lavas | lavas | PRE-CAMBRIAN |

The Text

Chapter 1 is the introduction and summarises the geology and history of research. The latter could have been expanded and been a forerunner to an extra chapter on possible concealed connections with other coalfields. Sadly this is missing.

Chapter 2 is about Pre-Coal Measures. This ranges from the Pre-Cambrian Rushton Schists, includes the Silurian Wenlock Limestone, the the Lower Carboniferous Limestones. It is interesting to note that the latter have been discussed but not the faulted rhyolitic inlier of Lilleshall Hill. Both fall north of the mapped area. The memoir covers a square area and consequently includes an area in the south-west that is not traditionally associated with the coalfield. Boundaries have to be drawn somewhere so it is only right that the non-coalfield strata is sensibly underweighted. Figure 2 on page 4 is innovative since it shows the conjectured incrop boundary of Dinantian (Lower Carboniferous) and Ludlow (Silurian) strata. Incrop means the line where a concealed horizon pitches against and is cut out by a later higher horizon unconformably. This has resulted at the Lincoln Hill Mine of the Lower Carboniferous Limestone in the north of the district being absent and the Lower Coal Measures resting unconformably on Silurian Wenlock Limestone.

In the Cambrian strata of southern Lilleshall, the memoir notes that the Croft borehole (1972) discovered the Dolgelly Beds above the Comley Sandstone. Since the new memoir was first

drafted (many years prior to its publication) there has been a major borehole programme for investigations into the stability of mine workings, principally done by Arup Geotechnics. This investigation programme has established that the Dolgelly Beds are unconformably cut out by the basal limestone strata. Fortunately it does not underlie any housing since a high gamma reading is recorded, caused by the decay of uranium, emitting radon gas.

On page 15 it is suggested that possibly Silurian strata lies beneath the Lower Carboniferous strata at Lilleshall. That was possible since the Cambrian/Carboniferous outcrop contacts are all faulted. However, recent borehole evidence has proved that Cambrian strata lies directly beneath Lower Carboniferous strata, the Silurian being absent (Coxill, 1992). The Arup Geotechnics investigation programme proved that there are several local unconformities within the Lilleshall limestone sequence. Had the new memoir been edited to reflect new data available in the late 1980s and 1990s, it would more accurately reflect the current state of knowledge at the publication date. Coxill (1992) interprets the basal part of the Lilleshall limestone series (Dixon's Group 1 Beds in Whitehead et al., 1928) as possibly being of late Devonian age, based on sedimentological evidence, ie they resemble conodonts of that age. Nevertheless I accept that there is yet no faunal confirmatory evidence. The memoir incorporates the work of Mitchell and Reynolds (1981) that through studying the conodont fauna and re-assessing the brachiopod species identifications, eg the original survey's collection, proves that Dixon's Group 2 Beds are a much older Tournaisian age within the Lower Carboniferous than previously thought.

Chapters 3-5 concern the Coal Measures and they give an excellent account of the mineral bearing horizons. The Limesotn/Great East Fault has always been used to divide the coalfield into the two synformal synclinal basins north and south, with the Symon trending sub-parallel to its axis and in the south-west removing all workable coal seams. The memoir names this antiformal anticlinal dome as the Stirchley Anticline. Curiously, the north is called the Dawley area but it should really be called the Donnington or Lilleshall Company area by tradition. The south Madeley area is acceptable terminology.

General mention is made where each mineral horizon was worked which is useful. It would have been preferable for the mine plans for each worked horizon to have been shown in summary form but I suppose this is a geological, not a mining publication. It is shown for the first time that, in addition to the Symon, there are other local washouts within the Productive Coal Measures. It is field observations of this quality that justifies the re-survey of classic geological areas. Excellent examples are shown in Figures 22 and 24 on pages 56 and 60.

The Coalport Formation has been sub-divided so that its lower part is now called the Hadley Formation, which is the diachronous equivalent to the famous Etruria Formation of Staffordshire. The isopach contour maps of Figures 11 and 12 showing the changing thickness of named formations are an excellent diagrammatical inclusion in the memoir. The famous Symon Unconformity has been re-named the Hadley Unconformity because the name Symon means unconformity, making it a tautologous phrase.

Chapter 6 concerns Permian and Triassic rocks which occur on the flanks of the coalfield to the north and east. It updates the stratigraphical nomenclature of these formations as follows :-

| Old Name | New Name | Period |
|-------------------------|---|---------------|
| Lower Mottled Sandstone | Bridgnorth Sandstone | PERMIAN |
| Bunter | Kidderminster Conglomerate } Sherwood Sandstone | } |
| Upper Mottled Sandstone | Wildmoor Formation } Group | } TRIASSIC |

The memoir takes the conservative view, as I do, that the Enville Beds of the Upper Coal Measures belong to the Upper Carboniferous and not the Permian.

Chapter 7 is about structure. The memoir and maps illustrate how heavily mined the coalfield is, much more than is possible to show on the old Wolverhampton sheet. Some of the problems mining engineers had can be appreciated in the area immediately west of Grange Colliery and north of Watling Street (A5). It is shown as so severely faulted that it seems incredible that it was ever worked. Yet it worked as an independant mining unit from 1868-1952. The cross sections on Figure 37, page 101 illustrating the folding as well as the faulting are excellent. In Figure 36, page 100, it is postulated that the Coalport Syncline extends in a north-east direction beneath later strata. This theme could have been expanded, as previously noted, updating the work of Wills (1956) for this area.

The new memoir concludes that the Symon does not affect Productive Coal Measures strata north of a line roughly from Granville Colliery to Ketley. This is confirmed by a borehole sunk in the Lilleshall/Sheriffhales area that has been reported by Stonehouse (1950). This is interesting since sheet sections of Crow Hayes (Coxill, 1992) and of the Hugh's Bridge borehole in the 1920s show an incomplete coal seam succession, with the highest seams apparently being cut out progressively northwards. It now seems that this is due to a combination of faulting and coincident, rather than the Symon being involved.

Chapter 8 discusses recent geophysical surveys. Chapter 9 on Quaternary drift deposits shows new drift patterns being mapped as compared to the old survey. The discovery of the buried drift channel at Oakengates is particularly interesting. There was a major landslide at Jackfield, east of Ironbridge on the River Severn where many houses fell into the river. That was a combination of collapsed workings from the nearby old Tuckies Mine clay workings and unstable slopes (Brown, 1975).

Appendix 2 is a list of shafts, pits and collieries. It could have been improved by stating the owners and when the mine was worked. Appendix 5 is a glossary where surprisingly the term Symon is missing.

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Henfwlch Mine Explored

Roy Fellows

The Henfwlch Adit emerges at NGR SN737882, just above the Nant-y-moch mountain road, a particularly scenic part of mid-Wales. There are spoil heaps just above the road and, just inside the trees, the stone chimney of what was once a building. Beyond this, at the head of a section of boggy ground, is the adit.

This was first entered by myself about 1988 and at that time it was thigh deep in water. It was found to be a straight heading for about 200 metres, passing a blocked rise on the right and a blind heading on the left. The blind heading contained the remains of a wheelbarrow. After the straight section, the level turned south for about 70 metres and then west. On the right, a short level has been made into an explosives store and this has the remains of a wooden door. After passing another short level on the left leading to a winze, the level reached a collapse. Although this could be passed, it was blocked a few metres further on by another solid collapse.

In 1994, I returned to the mine in order to descend the aforementioned winze. There was a length of timber across the level, put there for this purpose by other explorers. I considered this inadequate, however, and placed a number of bolts. The winze was found to be 48ft deep to a solid bottom, where there were a number of sections of ladder which had fallen away from the sides of the shaft. There was a window to the west into a large stope, a floor of rubble being gained after a further few feet. Here, water coming down the shaft disappeared into the floor. Progress inbye was prevented by a continuation of the collapse from the adit above. Above a bank of deads, the stope extends about 15 metres in an outbye direction. This was the limit of my earlier explorations however, towards the end of the level, a gap in the boulders draughted strongly and this was to be the subject of my recent attentions.

In the winter of 1996, I returned to the mine as part of what I was now calling my "Mid-Wales Project". The object of this was to gain access to workings not previously entered by modern explorers. The water level was now upper chest and, in the freezing weather conditions and chill factor winds prevailing at that time, this made changing out of a wet suit at the end of the day something of a feat of endurance. The object of the exercise was a dig at the draughting area at the end of the main level. This required a considerable amount of timber but the deep water, however, was to be a blessing as it was quite easy to make it up into little rafts and tow it down the level. The dig being vertical and in loose material has required special considerations. Initially it was necessary to squeeze past a boulder of slightly questionable stability. It was very tight and, although only about 8ft, I fitted a short length of electron, without which it would have been impossible to get back out. This boulder has subsequently been half chiselled away and secured with a scaffold pole plus some shoring to support the ground underneath it. Also a steep rubble slope was encountered immediately below the dig. I have consolidated this by driving in road steels to pull in a horizontal length of timber, at a place where a step is very conveniently placed. My fear was that disturbance of the rubble slope by exploration parties could compromise the integrity of the dig.

The dig leads down to the head of a stope, which has been filled with collapse material and backfill. It is the same one reached by the 48ft winze. Descending the rubble slope and ascending a slope of backfill, the horizon of the adit is regained. The horizon is made up of backfill in a stoped out area with a height of about 4 metres. Here there is a very interesting artefact, a wheelbarrow made without any legs in near perfect condition. These wheelbarrows

Figure 3 - Henfwlch Mine Accessible Workings

Portal at NGR SN737882

are of a type known in Derbyshire as “Sough Barrows”. The word sough is a Derbyshire name for a drainage level and Derbyshire soughs are often very confined spaces, hence the design of the barrow. The Henfwlch version, however, is somewhat larger and is fitted with a cast iron wheel.

The level continues for another 200 metres or so to end at a collapse of what appears to be dried-out mud from the surface but on the left is another winze. Before this, two blind headings are passed on the right. The first has an enamelled teapot, now almost rusted away and the second has been half backfilled. One section has extensive packwalls and, at this point, there are stubs of many tallow candles. The winze at the end was descended after some difficulty in providing a suitable belay. The walls of the level are in a soft mudstone, the same kind of ground seen at the Hafan Mine to the south-west. This is a different kind of ground to the rest of the mine. It was obviously unsuitable for bolting and I was also unable to make a satisfactory belay with scaffold poles after dragging them through the levels. My final resort was an Acro prop. The winze also required the use of electron ladder due to a slope of soft ground at the top. It was found to be 40ft and blind, being merely a trial.

Obviously the burning question is that of a possible connection with Hafan. Rather than give an opinion on this, I shall try to reiterate the facts and leave the reader to make their own conclusions. One of my colleagues has suggested that they must connect because the water running down the 48ft winze must be exiting at Hafan Deep Adit, however this is not necessarily so. David Bick states that the mines never connected and that water could be finding its way into Hafan by natural fissures. Indeed, at the end of the workings several veins can clearly be seen to take the form of natural mineralised fissures rather than solid rock.

The geological survey seems to suggest that the two mines do connect but without saying so in so many words. It describes the Henfwlch Adit as “draining the principal or Hafan shaft to a depth of 24 fathoms. About 83 fathoms further west the Bog shaft is drained by the same adit”. Plotting the course of the adit on the OS map puts the collapse at my dig to correspond with the shaft on top of the hill adjacent to the quarry (NGR SN735882). This must be the principal shaft referred to by the British Geological Survey. Plotting the rest of the adit on the map takes one to a point only about 80 metres from the head of the Hafan incline, where the Hafan workings start. To add to the controversy, David Bick describes Hafan Deep Adit as being driven for 250 fathoms (500 yards)! This would most certainly take it below the horizon of the Henfwlch workings.

Exploration of the workings described is both easy and straightforward, all in there are about 600 metres of workings that can be explored without vertical techniques. On a subsequent visit I was easily able to lower the water level to belt depth so a little more work would reduce this level still further. The dig is reasonable for anyone of average build but would probably be impossible for anyone of wider girth. The 48ft winze is both safe and straightforward, the water flow can be stemmed by a little damming in the level. This mine should provide interesting exploration for many years to come.

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- | | |
|------------|--|
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Figure 4 - Building at Henfwlch Mine

General Rules & Special Rules at Shropshire Mines

Ivor Brown

Legislative control over activities at Shropshire mines increased in a dramatic way between the mid-19th century and the early 20th century. Not only was there the normal Acts and Regulations controlling the mines but also two separate sets of Rules with which to comply. The first set of Rules were called General Rules and laid down by Parliament, they were cumbersome and difficult to modify. The second set were called Special Rules and these worked like local bylaws (see Figure 5). They were made by the mineowners themselves and modifications to accord with local practice were easy, quick and inexpensive to obtain. Shropshire miners generally were willing to accept, even prefer, the Special Rules but were always concerned that they themselves had no part in the process of making them. Indeed, through their agent Mr W Latham, they strongly petitioned the Royal Commission on Mines in 1908 that they should at least “have a voice” on what was included in them.

The development of these Rules is outlined in the following and examples are given of their enforcement in Shropshire. Copies of the Special Rules for Shropshire’s Collieries (including ironstone mines) and for Clay Mines have been located but, as yet, no Special Rules have been found for the orefield. Special Rules have, however, been found for the Derbyshire Lead Mines and the Ore Mines of North Wales, as well as separate Rules for some individual mines in small fields similar to Shropshire elsewhere in Britain. Part of one of these, that at Foxdale Lead Mine in the Isle of Man, is therefore used as an example.

A notable feature of mining law is its differences from general law, eg the number of cases of infringement taken to court bears little resemblance to the actual number since in most cases the offender (and in mining you are guilty until proven innocent) is given the choice of being tried by the management or by a Court of Law. This system was still in operation in Shropshire in the 1950s-60s as I know to my cost - fined 10s 0d for carrying a piece of equipment (a new pick blade) in a cage carrying passengers. The fine went to a charity chosen by the colliery staff (I believe). The offender signed an apology notice (see Figure 7) if he opted to be tried by the management.

Development

The Coal Mines Inspection Act 1855 laid down that two separate sets of Rules would apply to collieries, the General Rules to be carried out in every mine under the Act and the Special Rules to be made “for each colliery by the owners or agents thereof”. General Rules included such matters as provision of sufficient ventilation, properly constructed shafts, proper signalling and indication arrangements for winding and that steam boilers should have safety valves, water gauges and steam gauges.

The Special Rules were to be so framed as to suit the method of working, the nature of the seams and character of the winding and other appliances used at a particular colliery. In each coalfield the characteristics of the collieries were so often much alike that Rules for a particular coalfield were agreed by the major operators, although individual operators could still go it alone. In any case, the Special Rules as made by the owners or agents had to receive the approval of one of the principal Secretaries of State.

The Mines Inspection Act 1860 repealed the above although many of the provisions were similar. The new provisions for the General Rules now included aspects of fencing, safety

Figure 5 - Example of General Rules & Special Rules

**GENERAL RULES
AND
SPECIAL RULES
TO BE OBSERVED BY
THE OWNER, AGENT, UNDER-VIEWER,
DEPUTIES AND WORK-PEOPLE
OF
MR JOSEPH MARSLAND'S
PROVIDENCE COLLIERY
CLIFFE HILL,
WAKEFIELD, YORKSHIRE**

WAKEFIELD:
PRINTED BY W. T. LAMB, STATIONER, &c
17, Northgate

—
JULY 18TH 1856

PREFACE

THE Act of Parliament 18 and 19 Victoria, cap. 108, 14th August, 1855, recites that Coal owners shall establish special rules for the conduct and guidance of persons acting in the management of Collieries, and of all persons employed in or about the same; and that such special rules shall be approved of by the Secretary of State, subject to the arbitration of one or more competent persons in the district, nominated by the Coal-owner, and chosen by such Secretary of State.

The Act of Parliament, clause 11, enacts that every person employed in or about a coal mine or colliery who neglects or wilfully violates any of the special rules established for such coal mine or colliery, shall for every such offence be liable to a penalty not exceeding two pounds, or to be imprisoned; with or without hard labour, in the common gaol or house of correction for any period not exceeding three calendar months or to be proceeded against and punished according to the provision of the act Fourth George the Fourth, chapter thirty-four, intituled 'An Act to enlarge the Power of Justices in determining Complaints between Masters and Servants'.

The Act of Parliament also recites that the General and Special Rules shall be painted on a board, or printed on paper, to be pasted thereon, and shall be hung up or affixed on some conspicuous part of the principal office of the colliery, and that they shall be renewed and restored as often as they or any part of them become obliterated and destroyed; and that a copy of such General and Special Rules shall be supplied to all persons in or about the colliery; and the 13th clause of the said act recites that every person who pulls down, injures or defaces any Notice hung up or affixed, as required by this Act, shall for every such offence be liable to a penalty not exceeding forty shillings.

lamp usage, overhead covers to protect persons in shafts, disuse of single link winding chain and use of large flanges or horns on winding drums (to prevent rope or 3-linked chain slipping off). The Special Rules now had to be specific on signalling and details of method and places for distribution of wages. The 1860 Act was also intended to apply to stratified ironstone mines as well as collieries.

The Metalliferous Mines Regulation Act 1872 proved to be misleading, partly as it did not include most ironstone mines (which were covered by the Coal Mines Regulation Act 1872), but was intended to cover also such non-metals as limestone and slate. The provision of both these Acts with regard to the Rules were similar but Special Rules were only compulsory for mines under the Coal Mines Act. The Secretary of State, however, could decide that they were necessary at a prescribed metalliferous mine.

Later Regulation Acts modified the earlier Acts. The Coal Mines Regulation Act 1887 tightened up on the firing of shots, use of safety lamps and the conditions of employment and included in total some 39 General Rules. In addition, the Special Rules had to be brought up to date. The 1896 Act amended the principal Act and added General Rules relating to the use of tamping materials during shotfiring, the use of lamps and inspection of working places and provides for the representation of the men in cases of arbitration arising under the provisions of the Act.

By the first decade of the 20th century, the Code of Special Rules had been agreed for each of the 24 Mining Districts in Great Britain, the number of rules varying from 93 to 247. The Shropshire Code for Mines contained 208 rules but avoided the excesses of some of the rules in other districts, eg making attendance at church on Sunday compulsory and attendance at work in an unshaven state a breach of the Act (based on Coal Mining Law by J Sinclair 1958, published by Sir Isaac Pitman & Sons).

Application

The annual reports of the Inspectors of Mines at this time usually give the date when the individual mines adopted Special Rules. Occasionally single copies are still found and these provide considerable information on the operations of a particular mine or mines at the time they were produced. In 1908 the Royal Commission on Mines made a collection of the Codes of Rules in force at that date. This collection was then published with the following “prefatory note”.

“This collection of the Codes of Rules in force in mines and quarries in the United Kingdom has been compiled for the use of the Royal Commission on Mines. The volume is divided into three parts. Part I, relating to mines under the Coal Mines Regulation Acts, comprises the General Rules in Section 49 of the Coal Mines Regulation Act 1887 (as amended by Section 5 of the Coal Mines Regulation Act 1896), the regulations as to the use of explosives contained in the Order made by the Secretary of State under Section 6 of the Coal Mines Regulation Act 1896 and the principal codes of Special Rules established under the Coal Mines Regulation Acts which are in force in the various Inspection Districts. Part II, relating to mines under the Metalliferous Mines Regulation Acts, comprises the General Rules contained in the Act of 1872 and the principal codes of Special Rules established thereunder. Part III contains the model code of Special Rules for quarries and indicates the variations from the model codes which are in force in some of the Districts.”

Figure 6 - Extracts from Examples of Special Rules

Shropshire Clay Mines

3. The Owner, Agent or Manager shall appoint competent persons to perform the several duties prescribed by the Act and Special Rules and shall appoint an Overman at each pit or mine under his charge, to perform the duties hereafter prescribed; such person shall not be a contractor, not employed by a contractor. He may from time to time revoke all or any such appointments, and shall immediately fill up the vacancy occasioned by such revocation, or by the decease of any appointee.
6. Where pillars of clay are being removed, the Owner, Agent or Manager shall keep posted up at the mine a notice specifying the maximum distance apart at which props or other roof supports at the working faces are to be set, and the persons setting props or other roof supports shall see that the maximum distance is not exceeded.
15. He shall employ no boy under 12 years of age below ground, nor any boy or girl under 13 years of age above ground; and before employing any girl or woman on the surface, or any person under 16 years of age either above or below ground, he shall report to the Owner, Agent or Manager that he is about to employ such a person.

Shropshire Coal Mines

3. All persons who are casually employed underground (Masons, Enginewrights and others) shall be amenable to the Act, and the Special Rules, and shall make themselves acquainted with the same.
7. No person shall go to sleep whilst on duty or in the mine, and where there is more than one shift, no person having charge of men, machinery, signals or ventilating apparatus, shall leave work until relieved, unless authorised by his superior officer.
12. No person shall ill-treat any animal which may be employed underground or in connection with any mine.
13. No person shall come to or be at the mine in a state of intoxication. Nor shall any person take any intoxicating drink into the pit, nor drink it upon the works, except by permission of the Manager.
21. A Certificated Manager shall, where safety lamps are used, from time to time, fix lamp stations at such points in the mine as he shall think fit, not being in any return air-course, at which station lamps may be lighted and re-lighted, and shall also fix a point in the mine or in the ventilating district beyond which no light other than in a locked safety lamp shall ever be taken. All such lamp stations shall be indicated by a board with the words "Lamp Station" legibly inscribed thereon.

Foxdale Lead Mine

6. Every working place or travelling road in every part of the mine in which persons are at work or along which they have to pass shall be visited at least once every working day by the Owner or Agent or some competent person appointed for the purpose, who shall satisfy himself that the place or road is in a safe condition.
12. When rock-drills are used, the holes shall be kept wet to prevent the atmosphere being charged with dust.
14. Shafts, winzes and underhand stopes, which have been abandoned or disused for some time, shall not be entered until a burning light has been lowered into them and the absence of foul air ascertained.
16. No unskilled or inexperienced person shall be allowed to work alone upon any work attended with any special risk or danger, or to charge or fire shots.
24. Unless specially permitted by the Owner or Agent, no person shall be allowed about the mine after working hours or on Sunday.

Included amongst the 24 District-based Special Rules for mines under the Coal Mines Act (which included stratified ironstone and clay) are Shropshire, Shropshire Clay Mines, North Wales, Cannock Chase, North and South Staffordshire, Cleveland Ironstone Mines and Ganister Mines. Special Rules for metalliferous mines include the Derbyshire Lead Mines, Ore Mines in North Wales and Slate Mines in North Wales (there is no mention of Shropshire Ore Mines).

The Codes for individual mines include Foxdale Lead Mine (Isle of Man), Cocklakes Gypsum, Honister Slate and several for Cumberland Iron Ore Mines (no Shropshire mines are included). As examples, shown in Figure 6 are the top portions of the sheets of Rules for Shropshire Clay Mines, Shropshire Coal Mines (which includes ironstone) and the Foxdale Lead Mine.

Enforcements

Either the Inspector (through the Secretary of State), the owners or the managers could prosecute under the Special Rules. For example, in 1901 the Madeley Wood Company's management prosecuted a dan-filler under Rule 71 for "neglecting of a fireman's orders" with a fine of 2s 6d with 5s 6d costs. The same dan-filler was also prosecuted under Rule 77 for not examining his work place to ensure that it continued to be safe from gas, etc. He was acquitted but ordered to pay 3s 6d costs. At this time, very few Shropshire mines had adopted Special Rules but in 1902 the Rules were established on a District basis.

After the district-wide adoption of Special Rules on 27th September 1902, the number of prosecutions increased. For example, in 1904 the Inspector prosecuted the management of the Dunge Mine (Broseley) on three counts relating to steam boilers and the Lilleshall Company prosecuted a holer under Rule 109 for having an unlocked safety lamp in the mine. In 1905, the Madeley Wood Company prosecuted a horse driver for abusive language under Rule 2 and he was fined 5s 0d with 10s 0d costs. It then took 17 horse drivers to Court under Rule 68 for "absenting themselves from work". This was probably a strike but most were fined 1s 9d with 6s 3d costs.

In 1907, the Inspector's Annual Report shows that some 58 mines of coal, fireclay and ironstone in Shropshire were operating under the 1902 Special Rules. A few small mines were not but the criteria for their exemption was not given. No mention is made of the Special Rules at other clay mines, eg Red Clay, and there is a blank space in the column for showing the date of adoption of rules at each of the 12 ore mines of South West Shropshire.

An interesting situation seems to have occurred in 1912, the Inspector prosecuted the manager of Billingsley Colliery under Rule 17 (failing to appoint competent persons - fined £10) and the mine's owners in turn prosecuted the night deputy under Rule 50 for "failing to examine all places under his charge and failing to see all doors were closed and ventilation was taking its proper course (fine and costs £1). Presumably something happened and there is a story here! With the prosecutions that followed the adoption of Rules, there must have been some effect on the behaviour of both Shropshire mine operators and miners and certainly the accident statistics started to improve. It would be interesting to examine this in more detail. The system has not been researched beyond the dates mentioned above but the Coal Mines Act 1911, when implemented, replaced many of the provisions in General Rules using enlarged General Regulations. It seems too that Special Rules were also overtaken by other legislation from this time but even now managers are required to produce Rules for their mine on special topics such as support rules, transport rules, etc.

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Footnote

A copy of the Codes of Shropshire (Coal Mines and Clay Mines) will be held in the Club library.

Figure 7 - Example of Apology Note

NOTICE

Apology

I or We, the undersigned _____ Colliers, hereby express our regret that on
1895, I or we committed a breach of the (Special Rules established under the) Coal Mines Regulation Act, 1887,
by _____ at _____ Pit,
belonging to the _____ and I or we tender our sincere apologies to the Owners or Company,
to their Officials, and to our fellow workmen for the same.

We further agree to pay the sum of _____ shillings to the _____ as a proof of our
penitence.

We also undertake in future to observe and to support to the best of our abilities the requirements of the Coal
Mines Regulation Act, 1887, and the Special Rules established thereunder.

Copies of this apology shall be printed and posted up at the Company's Collieries as a warning to others that
the Act and Special Rules will be strictly enforced by the Authorities, with a view to the maintenance of proper
discipline and safety of the persons employed.

Witness our signature this _____ day of _____ 1895.

Descent of Watson's Shaft, Tankerville Mine

Alan Robinson

On 22/1/97, the shaft was filmed by Peter Eggleston, using the MineCam, and a level had been located very close to the blockage at the shaft "bottom". Perhaps this blockage is resting on a staging associated with the inset. On 29/1/97, Andy Yapp and myself were persuaded to go and have a look.

As many Club members know, a lot of work has been carried out by Shropshire County Council to stabilise both the shaft top and engine house base. The shaft top is gridded with a close net grid on RSJs and a timber platform has been set about 6 metres below. John Davies and Stuart Tomlins had already cut a section of the timber out in the corner to accommodate the MineCam and slim cavers. It was opened out a bit more to make a very snug fit for Andy and myself. The top grille provides a suitable belay but the gauge is too close to tie knots, so it was necessary to have a bowline loop down to the platform level.

Once below the platform, the descent was easy and we landed on a rubble pile some 45 metres below. From here, a level went out towards Ovenpipe Shaft and an ever deepening pool of cowsh slurry! A few metres in, a second level headed out for about 70 metres towards what we assume to be New Shaft. There was an obvious draught towards Watson's Shaft which appeared to find its way over stowed backfill at the end of the level. To minimise disturbance to the slime, Andy stepped in my footprints on the way to the far end and we both used them to return back to dry ground. We spotted a few rusting cans, some small calcite and limonite stalactites and two sections of a wall-mounted wooden leat.

Figure 8 - Sketch Plan of Watson's Shaft, Tankerville Mine

The Examination for Shropshire's Potential Colliery Managers in 1901

Ivor Brown

Ever since 1872, colliery managers of every coal mine, other than the very smallest, had to hold a "Certificate of Competence" obtained in a state organised examination. These 'tickets', the Certificate of Competency First Class (Colliery Managers) and from 1887 Second Class (Under Managers), were granted by the Home Office or equivalent and the examination included a written test. The 'tickets' were on a par with those of a Ship's Captain.

The following papers (see Figures 9 & 10) were set to test potential Colliery Managers from Shropshire in 1901. Can you do them? The writer is offering a prize of one recent "Deputy's Manual" to the best attempt at answering questions 1, 2 and 3 in the Arithmetic section. All calculations are to be shown, no aids other than log-tables are to be used. The decision of the examiner is final. Last date for entry is January 31st 1998.

In 1901 the Shropshire representatives on the Board of Examiners were N. T. Beech of the Lilleshall Co Ltd (representing Mining Engineers) and C. Grocott of Ashley Heath, Market Drayton (representing the miners). The local Mines Inspector W. H. Atkinson was Chairman. No Shropshire candidate was awarded the First Class Certificate in 1901 but George Ferriday of Oakengates got a Second Class Certificate. The career of George Ferriday has not yet been traced but a Jason Ferriday (Certificate No.2292) was manager of the Haybridge Iron Company's Old Park Lawn Pit (34 employees) and the newly re-opened Spout Pit (18 employees) in 1907.

References

Reports of the Inspectors of Mines.

Figure 9 - Examination Paper

COAL MINES REGULATIONS ACT, 1887

BOARD FOR EXAMINATIONS FOR THE MINING DISTRICT OF NORTH STAFFORDSHIRE, SHROPSHIRE AND CHESHIRE

QUESTIONS TO BE PUT TO CANDIDATES FOR THE FIRST CLASS CERTIFICATES OF COMPETENCY TO BE PUT TO MANAGERS OF MINES, AT THE EXAMINATION TO BE HELD ON THE 25TH AND 26TH JUNE, 1901

10 a.m. to 1.30 pm

Preliminary

State your name, age, address and occupation, and if you hold an Ambulance Certificate.

Ventilation

1. State the rules that are applicable to the resistance of air travelling through a mine, describe and state how you would be guided by such rules in the laying out the general ventilation of a mine.
2. The total quantity of air circulating in a mine ventilated by a fan and natural ventilation combined is 100,000 cubic feet per minute, the quantity circulating when the fan is standing is 25,000 cubic feet per minute, what quantity would circulate if the effect of natural ventilation could be eliminated?
3. If 40,000 cubic feet of air per minute is passing through one split in a mine which is gauged by a regulator having an opening 3ft x 6ft, what quantity will pass if the opening be increased to 4ft x 6ft?
4. Ventilate accompanying plan, marking by arrows the direction of the air currents, putting in the necessary stoppings, doors, brattices, and lamp stations, having due regard to getting the coal from the coal faces.

Chemistry

1. What is meant by the diffusion of gases, and how is it utilized in ventilation.
2. What are the chemical causes of spontaneous combustion in a coal mine, and what are the resultant gases?
3. Describe how electricity is produced :-

1st by primary battery,
2nd by dynamo.

Geology

1. Describe the chief characteristics of the carboniferous strata and of the strata overlying and underlying it in ordinary sequence.
2. Describe the faults usually found in coal measures, and give your opinion how they were formed.

Arithmetic

1. How many tons of water will a double-acting ram pump 10 inches in diameter, 20 inches stroke, 20 strokes per minute discharge in a day of eight hours?
2. What quantity of fuel will be required per day, eight hours, to generate steam for an engine 20 inches cylinder , 10 inches stroke, running 60 revolutions per minute, average steam pressure 50 lbs, allowing a consumption of 2½ lbs per horse-power per hour?
3. (1) Give the square root of 18,900
(2) Give the cube root of 29,791,000.

Figure 10 - Examination Paper

COAL MINES REGULATIONS ACT, 1887

**BOARD FOR EXAMINATIONS FOR THE MINING DISTRICT
OF NORTH STAFFORDSHIRE, SHROPSHIRE AND CHESHIRE**

**QUESTIONS TO BE PUT TO CANDIDATES FOR THE FIRST CLASS CERTIFICATES OF
COMPETENCY TO BE PUT TO MANAGERS OF MINES, AT THE EXAMINATION TO BE HELD
ON THE 25TH AND 26TH JUNE, 1901**

2 p.m. to 5.30 p.m.

Preliminary

State your name, age, address and occupation, and if you hold an Ambulance Certificate.

Mining Operations Generally

1. The following is the section of the strata where it is proposed to sink a shaft :-

| | |
|------------------------|------|
| Soil | 2ft |
| Clay | 4ft |
| Wet running sand | 6ft |
| Clay | 15ft |
| Sandstone rock | --- |

Explain with sketches how you would sink through this, the finished size of the pit to be 14ft diameter.

2. Describe the ordinary operations in sinking a 14ft shaft; what precautions would you take for the safety of the men employed in sinking the above?

3. Describe how you would put in the following curbs :-

- (1) Ordinary bricking curb
- (2) Garland curb
- (3) Wedging curb for tubbing.

4. Give a description, with sketches, of the method of working the seam of coal you are best acquainted with, and the different methods of timbering you would adopt.

5. Describe how a steam engine is indicated, and what are the advantages of doing so.

6. Describe the method of bringing coal from the working face to the main level in a seam at an angle of 1 in 3. What appliances would you adopt, and what precautions would you take to prevent accidents?

7. Give sketch as to how you would attach a wire rope to a cage, and state the principal points to be attended to to ensure the safe working of the rope.

8. How would you commence a survey from the pit bottom where steel girders and rails are used, and what precautions would you take to ensure accuracy?

Mining in Hunthouse Wood, Mable, Worcestershire

David Poyner, Andrew Santer and Robert Evans

The parish of Mable in Worcestershire lies on the Wyre Forest Coalfield and has seen mining from at least the 17th Century. The largest complex of mines is located close to the village centre, along the Marlbrook valley [1]. However, coal has been worked at other locations in the parish including Hunthouse Wood, which lies to the south and is bordered by the Dumbleton Brook on its east and south sides (Figures 11 & 13). The name Hunthouse Wood is now applied collectively to a series of dense woods which clothe the steep slope of the brook and its tributaries and today is largely owned and run as a nature reserve by the Worcestershire Wildlife Trust. However, it has had an interesting industrial past, as will be reviewed below.

Geology [2]

Hunthouse Wood lies on the edge of the southern basin of the Wyre Forest coalfield and coal seams outcrop along its southern edge (see Figure 11). In this basin, known as the Mable Coalfield, only Upper Coal Measures (the Highley Beds) are present and lie unconformably on the underlying Old Red Sandstone. Two important coal seams occur in Hunthouse Wood which have been worked commercially as household coals as well as the more traditional uses such as hop-drying and brick-making. They lie in an east-west belt of measures stretching across the Mable Coalfield, in which the coal seams thicken appreciably and improve in quality. The Hunthouse Wood area also sees an improvement in floor and roof conditions in the higher of the two seams, the Main or Five Foot, in which most of the working has taken place. The lower seam, the Hard Mine Coal, is, as its name implies, rather hard and difficult to work. Both coals attain a thickness of about 6ft, including bands of parting.

The main stratigraphic feature in the sequence is a band of sandstone, 100ft thick, known as the the "Thick Sandstone". This, along with a thin band of limestone rich in the fossil *Spirobia* and a band of purple and red mottled clay, the "Horseflesh Clay", provides a useful marker in interpreting the geology of the locality. The most significant tectonic feature of Hunthouse Wood is that it is located in a trough fault, with a throw of about 50ft. This means that the Hard Mine coal outside of the fault is almost on the same horizon as the Main Coal within it. This was elucidated in the Second World War by Geoffrey Bramall, managing director of the Bayton Colliery Company, and has had considerable implications for the history of mining.

Pre-Mining History

Hunthouse Wood formed the boundary of the Saxon manors of Sodington and 'Broc'. In the 13th Century some of the woodland was granted to one Wynwaru as part of a farm or 'wic', hence the name Winwick's Wood. For a period Hunthouse Farm (perhaps the manor of Broc) may have been a hunting lodge. Subsequently the names have lost their meanings and become transposed, leading to the presence of Winrick's Wood Colliery in Hunthouse Wood.

By the end of the Middle Ages the wood had become part of the lands of the Blount family of Sodington and Mawley Hall and it was to remain in this family until well into this century. Little is known of its use for much of this period. The land is wet and slopes steeply, so was of little agricultural value. Most retained its semi-natural cover with only some coppicing until felling took place between the wars.

Figure 11 - Location of Hunthouse Wood

Historical Evidence for Mining

The first records of mining in this part of Mamble which have so far come to light are the notebooks of the geologist Sir Roderick Murchison, who visited the area in 1833. He noted the presence of shallow mines at Hunthouse. In 1842 Berrows Worcester Journal reports the death of a boy who fell down a pit shaft at Frith Common, a settlement about ½ mile west of Hunthouse Wood [3]. It is likely that these mines were the fore-runners of the large late-19th century complex that was known as Buckets Leasow Colliery, and which worked the coal from the outcrop south of Hunthouse Farm almost towards the ground of the Mamble Colliery itself. Both of these were owned by the Blount Family and were subsequently leased to the Aston family. Buckets Leasow remained a primitive colliery with handwinding until its closure in 1907, employing about 20 men in its latter years [4]. It is important to note that it did not include any part of Hunthouse Wood in its workings and it is not certain whether Murchison's colliery in 1833 was within the wood or close to the farm. Thus there is no certain documentary evidence for pre-20th century mining in Hunthouse Wood.

Matters become much clearer with the founding of the Bayton Colliery Company, registered in December 1914 [5]. Although this actually took over a mine in Bayton village, known as Bayton No.1 on the Sakenhurst Estate of the Guerny family, the real target was to lease the minerals of the Mawley Estate; 1500 acres including Hunthouse Wood. The First World War meant that this was not achieved until 1921 but almost immediately the company began to sink a shaft just to the north of Mamble village; Bayton No. 2 or the "Eggbox Pit", so-called because of its square-section, timber lined shaft. Unfortunately it was not a success and it closed in 1923, shortly followed by No. 1, where reserves had been exhausted. The Bayton Colliery Company was left without a working colliery to its name and was forced to do some rapid prospecting. It was decided that the outcrop in Hunthouse Dingle was the best prospect for rapid coal production and in April 1924 a pair of drifts were driven in an outcrop of the Main Coal (Figure 12 - b). The mine exceeded expectations and so the site was developed in a more extensive way. In 1925 a tramway was laid to the mine from the road and in 1926 a third drift was opened further to the south in the woods (Figure 12 - b).

In 1928 the workings were so extensive from the first two drifts that it was decided to sink shafts down to them, to improve ventilation and working efficiency. In the event, it was necessary only to put down a single shaft and, on completion of this, a road was laid out to it, allowing the company's own fleet of lorries direct access to the pit head and eliminating the need for the tramway. The mine was now known as Bayton No.3 or Winwick's Wood. At some point a shaft was also sunk to the more southerly drift in the wood (Figure 12 - b&c).

In the early 1930s, the company's interests lay elsewhere, with a trial sinking at Stildon Manor (Bayton No.4), the purchase of the small Hollins Colliery in Pensax and a rather unsuccessful colliery nearer Mamble Village (New Mamble or Bayton No.5). However, No.3 remained the mainstay of the company and in April 1936 a start was made on a fresh pair of shafts to extend the workings further to the north. These were to be Bayton No.6, or Hunthouse Colliery (Figure 12 - c). This went well but in August 1937 water broke through a small fault and flooded the existing workings of No.3. Given that this was shortly to be abandoned in favour of No.6, no attempt was made to pump the old mine dry and the miners were transferred to New Mamble (the other mine of the company then in operation) until No.6 was finished. This finally opened in June 1939, and the expectation was that New Mamble would soon close. However, the Second World War intervened to make this a very protracted process. It was not possible to secure the promised electricity supply at No. 6, leaving it short of power. Furthermore, Government permission could not be obtained to close down New

Mamble,

Figure 12 - Development of Mining

even though it was making a loss. The power shortage was eventually solved by the purchase of two gas engines. These drove the compressors to supply the compressed air picks used at the face. However, the Ministry of Fuel and Power still refused permission to close New Mamble until the company agreed to reopen the drifts to provide work for those men too old to cope with No.6. Thus in 1944 one drift was driven parallel to those of 1924 and another closer to that of 1926, to clean out the coal that had previously been left. A lorry road was also put down to these.

At the time of sinking of the 1944 drifts, Geoffrey Bramall of the Bayton Colliery Company became convinced that the best coal lay to their north-east. A detailed survey of the geology of the brook valley suggested the presence of the trough fault and he proved this by driving a trial level at 45° from the mouth of one of the 1924 workings (Figure 12 - d7). This, starting out in the Main Coal, passed through the fault into the Hard Mine, proving Bramall's conjecture. Bramall then turned to the area east of the trough fault and explored the outcrop of the Main Coal with a series of trials [6]. Arising out these, a production drift was started in November 1946, following the draining of a bog which lay in its path. The first entrance to this mine was on the outcrop, close to the brook (Figure 12 - d8) and was served by a tramway. This was subsequently used for drainage, with a cross-measure drift being driven to the surface further to the west (Figure 12 - d8a) to meet up with a surface road for lorry access (Figure 12 - d). Subsequently a shaft was sunk into its workings (Figure 12 - d9), presumably to aid ventilation. Sometime between 1947 and 1950 a further production drift, No.9 Drift (not to be confused with No.9 Shaft), was opened alongside the brook, midway between the 1924 and 1946 drifts (Figure 12 - d9). This worked the Main coal previously proved by one of the trials referred to above.

After the war, electricity finally arrived in November 1945, although an electric winding engine was not installed until some years later. The coal industry was nationalised in August 1947 but at first the Bayton Colliery Company retained its independence, working as a small mine under a series of temporary licenses from the National Coal Board. However, operations at Bayton were too large for the company to escape the NCB's clutches and, after an uncomfortable 18 month relationship, the Bayton Colliery Company abandoned the struggle and made the mine over to the NCB. They continued to operate a brickworks and coal haulage business until the 1960s. The NCB seem to have made a sorry mess of running the pit and closed it in February 1950. As a small and isolated mine, it stood little chance of survival in the new order.

Although the NCB had no interest in working the Worcestershire half of the Wyre Forest Coalfield, others were not so easily discouraged. The Mole family of Clows Top had worked at the local collieries since the previous century and had made several attempts in the inter-war period to open mines in the area. With the withdrawal of both the Bayton Colliery Company and the NCB, they took their chance and obtained a license to work the coal in the vicinity of No. 8 drift as a small mine (Figure 12 -e). Rather than re-use the drifts, they sank two new shafts, (officially Bayton Nos.10 and 11, following on from the nomenclature of the Bayton Colliery Company), although the mine was always known as Hunthouse. Production began in 1954, using a mixture of largely second-hand plant driven by compressed air or electricity. As a licensed mine, usually 30 men were employed underground. In 1963 an additional shaft (No.12) was sunk and fitted with a pump to improve drainage. The mine closed in 1972, nominally because of flooding. Attempts to re-open it as a going concern came to nothing, although the site was not cleared until 1979.

Surface Remains

As noted above, documentary evidence for pre-1924 working is insubstantial and inconclusive. However, there is clear archaeological evidence for earlier mining. Along most of the outcrop are traces of coal digging, with signs of spoil tips and drift mines in several places (Figure 13 - 1-3). Old workings were discovered when No.8 drift was being opened out in 1946, where the coal had been taken from the upper part of the Main Coal seam. In the east of the site, the workings seem fairly haphazard (Figure 13 - 3), but in the west they seem to have been laid out to a plan. Along the valley-side are two parallel lines of shafts, each on its own terrace, which also carry access tracks. The shafts are laid out at approximately 50 yard intervals (Figure 13 - 1). Exact details are difficult to recover, as the area has been affected by ground slippage and was of course partly re-worked in the 1920s. However, there are perhaps up to 5 or 6 shafts in each row. On the level ground by the side of the brook there are substantial spoil mounds, perhaps arising from the shafts (Figure 13 - 2).

The area of the 1924 drifts is well preserved at the eastern end (Figure 13 - 4). There are the foundations of the haulage engine, still with holding down bolts, and the office. The mouth of No.2 drift is discernible, and No.7 cross-measure drift put down in 1944 can be followed for some distance to where it has collapsed. When the drifts finally closed here the mouths were sealed by bulldozing and so the western end of the site is harder to interpret. A number of artefacts remain, including a vertical boiler and the base of a wooden tub in the brook, a steel arch, a wheel set, and numerous lengths of rail. The tramway incline that served the 1924 mines is well preserved for most of its length and at the top of the bank there are brick foundations of unknown function; perhaps part of a brake-drum assembly or a creeper (Figure 13 - 5). Further along is a bank made up of the bodies of steel tubs, now badly corroded (Figure 13 - 6). These are perhaps more likely to date from the 1940s.

At the site of the shaft of No.3, there is no sign of the shaft itself (Figure 13 - 7). At some point, the stream which ran alongside the pithead has been culverted and perhaps at this point the site was tided up. However, the site remains as an obvious platform, with large mounds of burnt ash. There are signs that this has been quarried for hardcore at some time. There are a quantity of concrete arches on the site, that are probably left over from culverting the stream, and also two much rusted A-frames of unknown provenance. The lorry road down to this site is obvious (Figure 13 - 8), as is its continuation to the 1924/44 drifts (Figure 13 - 9). The lowest section of this is distorted by land slippage and the main track now curves away to the east, cutting through the line of the 1925 incline.

At the site of Hunthouse No.6, there is a prominent spoil tip and, adjacent to it, the foundations of the land sale screens (Figure 13 - 10). The shafts have been capped and most of the site built over. However, nearest to the lane which originally served as the tramway and then road to the earlier mines are the brick-built compressor and gas engine house and the stables. These have survived by being converted into a house and garage. The roofs have been raised but the original walls are quite distinct. Further along the track, buried in conifers which screen the saw-mill, is a horizontal boiler almost completely sunk in the ground. At the site of No.8 drift, the incline of c.1946 is well preserved for most of its length (Figure 13 - 11). It is associated with several large lengths of approx. 9" flanged pipes and rail sections. At its base, the first drift entrance is obvious as a line of subsidence. Just off this is a (filled) brick-lined shaft, shown on all plans of the workings, perhaps put down either for exploratory purposes or to aid ventilation (Figure 13 - 12). The later entrance to the drift is marked by

Figure 13 - Surface Features

two low brick retaining wall and a short length of subsidence (Figure 13 - 13). The access road is largely visible, but seems to have been washed away by a stream close to the drift mouth (Figure 13 - 14).

Further north in the wood is the site of No.9 shaft, sunk to ventilate the workings (Figure 13 - 15). This is now marked by a flooded hollow but lying besides it are the remains of a hand windlass. This consists of an iron roll supported on two wooden frames, and was formerly encased in a sheet-iron hut. This was apparently purchased secondhand and never used. The site of the Mole Brothers' Hunthouse Colliery was completely cleared, except for No.12 shaft set in the wood (Figure 13 - 16). The Pulsometer Pump was left in situ and the flooded shaft used as an emergency source of water for the sawmill which replaced the mine. A steel gantry stands over the shaft, carrying an electric motor which was used to move the pump up and down. The gantry itself may have been purchased second-hand from the Rockmoor Coal gassification experimental site, set up in 1951 [7]. Close by is a sinking kibble. Hunthouse Colliery was salvaged by Bewdley Museum before its demolition, and this now has a number of artefacts in store, including a cage and tub.

There is an enigmatic collection of remains close to the entrance to the nature reserve, in the north of the site. These essentially consist of a number of deeply worn holloways leading south-east down the hillside to Dumbleton brook (Figure 13 - 18). They may well have been formed over a considerable period as part of a route through the wood to Pensax and perhaps also for timber hauling purposes. Some are overlain by the 1946 incline to No.8 drift. However, one cuts through this, showing the route was re-established post-1947. At the top of the bank is a brick and concrete foundation of some kind of building of unknown function (Figure 13 - 17). Next to this are a compressed air receiver and a water-tube vertical boiler. These can be identified on a 1946 inventory of Hunthouse No.6 colliery [8]. A little further north are another series of holloways leading down the hill, their lower ends now obscured by land slips. In one of these are the remains of pipes and rails suggesting it had been associated with coal mining. Detailed records of the activities of the Bayton Colliery Company survive but less is known of the NCB period or the early days of the Mole Brothers' operations. It is possible that the tracks may have been pressed into service during these times, perhaps as access to No.9 or other drifts. The remains of No.9 drift have not yet been positively identified but, together with the associated trial drifts, they are probably at the northern edge of earlier outcrop working close to 3 in Figure 13.

Conclusions

Hunthouse Wood has had a long history, being exploited both for its timber and coal. Plans to extend the workings into areas yet untouched came to nothing in post-war years and much coal remains. An attempt to resume mining in 1990 failed in the face of local (commuter) opposition and County Council policy.

There are good remains surviving from all periods of mining history. The coal mines are well documented during the interwar period but much less is known about activities outside this period. Further study of the physical remains may help to shed light on this. Although Hunthouse Wood Nature Reserve is open to access at all times please note that many of the remains of Hunthouse Colliery (Nos.8-12) lie on private land and the goodwill of the landowner depends on the respect of his privacy.

Acknowledgements

We would like to thank the Worcestershire Wildlife Trust, Mr M.Harding of M & M Timber and Johnson, Poole and Bloomer.

References

- 1) D Poyner & R Evans, "Mamble Colliery", SCMC Journal No.4, 1997, pp.34-8.
- 2) See 1":1 mile Geological survey map, sheet 182, and accompanying memoirs, "The Geology of the Country around Droitwich, Abberley and Kidderminster", G H Mitchell, P W Pocock & J HTaylor, 1961, HMSO.
- 3) Notebook of R I Murchison, Geological Society Archives, M/N67; Berrows Worcester Journal, March 31st 1842.
- 4) See various years of Mineral Statistics, edited R. Hunt/ Home Office, British Parliamentary Papers, 1856-1948. Buckets Leasow Colliery is shown on the 1883 and 1902 25":1 mile Ordnance Survey plans.
- 5) Most of the following information is taken from papers ex-Mr Geoffrey Bramall, held by R Evans. See also the valuation and inventory files on the Bayton Colliery Company held at the Public Record Office (PRO) (COAL34/59 and 38/62).
- 6) Bramall refers to three exploratory drifts (a [Key's drift], b and c), and a trial shaft (Powell's Pit). Of these, (a) *may* be No.7 drift; (b) and (c) were close to No.9 drift into the Main and Hard Mine coals respectively. The mouth of Powell's pit (21ft to the Main Coal) was at 406ft, which corresponds to a spot height on one of Bramall's maps (a little south-west of the mouth of No. 8 drift), giving a clue as to its possible site.
- 7) PRO COAL 30/36, Coal gassification at Rockmoor.
- 8) PRO COAL 38/62.

More Mining Remains in Ireland

Nick Southwick & Mike Moore

Glengowla Mine (Map 45 - 425086)

The Geoghan family owns this site and to gain access an appointment is necessary, as they are trying to turn the site into a show mine. The mine is currently being pumped out, it is understood that the mine was abandoned by the workers and was allowed to fill with water. As a result, a number of interesting artefacts have been found including, kibbles, tools, windlasses and an interesting haulage shoot and pumping system. There are also a number of museum specimens of calcite and green fluorspar. The mine was worked during the mid 1800s and records show that it was worked for lead, zinc, barytes and iron pyrites.

There are few remaining surface features apart from a leat, which runs for about 1½ miles. There is the suggestion of a waterwheel pit, a building that could have been a powder house and another which may have been a Blacksmiths Shop. The Geoghans are trying to put things on site and are currently building a horse gin and are making the shaft tops safe.

39.25 tons of lead with 3.57oz per ton were extracted.

Clements Mine (Map 38 - 526990)

This was originally worked in the 1800s, for which there are few records, and later re-worked in 1908. On the site, however, the surface remains provide visible signs of different workings.

The processing mill, which is large and impressive, is quite prominent and overlooks Lough Corrib. It is in a fine condition and is well worth preserving. It seems likely that it was powered by a pelton wheel arrangement as there is evidence of a leat going from the stream which would have worked the wheel and driven the crushers. Above this is an incline plane, with a partly intact brake drum housing at the top. Another incline continues down past the mill to the remains of a wooden pier on the Lough.

At the top of the first spoil tip, and cutting across the stream, an open adit is found (see Figure xxx). This is about 2 metres wide and appears quite modern, running straight in for about 200 metres. At this point, a branch passage to the right runs about 350 metres and has a small cross cut with a possible rise which was not climbed due to loose rock.

The tip higher up comes from the open cut stopes to the right of the stream. A small adit below the cut is blind after 20metres and care should be taken crossing a sump in the passage. On the opposite side, another short level has been driven and there is also a collapsed adit a little further up the hill. The tip here is quite surprising and a large amount of unprocessed galena can be found. This probably dates from a more modern time because the tip material had been dumped across the original incline. There is also a report about a boat full of ore, which sank in Lough Corrib on route to Galway and is still thought to be there.

Figure 14 - Underground Workings at Clements Mine

The Glan Mines (Map 45 - 481055)

The whole of this area is rich in small mineral veins but, due to the terrain and vegetation, they are very difficult to locate. The largest of these is Currughduff Mine, which was worked in the 1860s, producing copper, nickel, lead and iron pyrites (output unknown). The whole area abounds with trial pits and adits but these are mostly collapsed or small trials. There is a well-defined tramway that seems to service all of the area.

To find further information and locations you are advised to contact the Geoghans in Oughterard.

Sheefrey Mine (690910)

Very little is recorded of this mine but it is known to have been worked before 1800 for copper pyrites and galena which contained a large percentage of silver.

The site is easily found just off the “Western Way” long distance footpath. From information provided prior to the visit it was thought further workings would be found further up the valley but after an extensive search the only remains are two collapsed levels, a small amount of tip material and remains of a small building, suggesting that the workings are not large.

Membership List (as at November 1997)

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Pete Etchells 19 Camborne Court, Camborne Rd, Walsall WS5 3JE T. 01922-640519
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Maurice Febry 18 Okus Rd, Charlton Kings, Cheltenham, Glos GL53 8DU T. 01242-242160
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