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# BRITISH ARCHIVAL INFORMATION RELATING TO MINING OPERATIONS IN SPAIN AND PORTUGAL. AN OVERVIEW WITH EXAMPLES FROM ANDALUCIA

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## ABSTRACT

A search through the *Mining Journal*, the British equivalent of *Revista Minera*, for the years 1845 to 1925 has revealed that nearly 650 British-based companies were formed to open mines in Spain and Portugal. Some of these mining companies were small operations with a short life, but others, the majority located in Andalucia and the Bilbao area, became well-established companies. The identified companies were then cross-referenced with Board of Trade records in the National Archives at Kew, London to establish if, i) the company was formally registered, and ii) to determine if a Board of Trade file existed for that company. This article outlines the mining archives that are accessible in the United Kingdom and the type of material that can be accessed on the Internet by Spanish and Portuguese mining historians, using examples mainly from Andalucia.

**KEY WORDS:** British archives sources, mining, Spain, Andalucia

## RESUMEN

A través de una búsqueda realizada en la revista *Mining Journal*, el equivalente a la española *Revista Minera*, durante los años 1845 a 1925 se ha puesto de manifiesto que durante ese tiempo se formaron casi 650 compañías británicas para abrir minas en España y Portugal. Algunas de ellas fueron compañías pequeñas, de vida corta, pero otras, localizadas fundamentalmente en Andalucía y Bilbao, llegaron a ser empresas bien establecidas. La información de estas empresas se ha cruzado con los registros de empresas del Archivo Nacional en Kew (Londres) para determinar si 1) la compañía se registró formalmente, y 2) si existía algún tipo de archivo en el registro nacional. En este artículo se proporciona la información acerca de los archivos mineros que están accesibles en el Reino Unido y sobre el tipo de material que está disponible en Internet por historiadores españoles y portugueses, utilizando para ello ejemplos fundamentalmente de Andalucía.

**PALABRAS CLAVE:** Fuentes archivísticas inglesas, minería, España, Andalucía.

## INTRODUCTION

British mining companies have mined the mineral wealth of the Iberian Peninsula since the mid-19th century. They have worked a variety of minerals including gold in Galicia, tin in the Spanish / Portuguese border region, the iron deposits of the Bilbao area, the lead and copper deposits of central and south-west Spain and the Sierra Morena, and iron along the Mediterranean coastline at Marbella and Almeria, and inland near Granada. Not surprisingly, a vast amount of mining information lies deposited in various British archives and libraries, and in publications not readily available outside the United Kingdom. Local archives frequently contain the records of engineering companies that supplied machinery to those mining companies, for use in Spain and Portugal. As more archival databases become available for scrutiny on the Internet, it is often difficult for the historian to keep pace with these developments so it is the intention within this paper to provide details on what is available, and suggests how to access this data on the Internet, and give some indication of the type of material that is available.

## MINING PERIODICALS FOR SOURCE INFORMATION

The *Mining Journal (and Commercial Gazette)* is the United Kingdom's principal source of historical mining information. It was established in 1835 and is still being

## Registration of New Companies.

**The following joint-stock companies have been registered:—**

GITANA LEAD MINING AND SMELTING COMPANY (Limited).—Capital 50,000*l.*, in 500 shares of 100*l.* each. This is a mining, &c., company, for carrying on operations in Spain. The subscribers are—J. R. McLean, M.P., 2, Park-street, Westminster, 50 shares; J. Fowler, 2, Queen's-square-place, Westminster, 50; Edward Woods, 3, Storey's-gate, Westminster, 20; R. Kitchin, 4, Parliament-street, 10; James Sopwith, jun., 103, Victoria-street, 5; H. Oppenheim, 15, Park-lane, 10; E. von Erlanger, 43, Lothbury, 20.

Figure 1. The start of a company's formation. Registration. A listing from the 1871 Mining Journal for the *Gitana Lead Mining and Smelting Company Ltd*. Even the Mining Journal can contain errors. James Sopwith junior should be Thomas Sopwith junior.



# The Anglo-Spanish Silver-Lead COMPANY (LIMITED).

Registered under the Companies Acts, 1862 and 1867.

## CAPITAL £100,000, IN 10,000 SHARES OF £10 EACH.

Of which 6750 shares are now offered for subscription.

£1 per share to be paid on application, and £2 on allotment. Further calls, not to exceed £2 per share, to be made at intervals of not less than three months.

3250 fully paid-up shares to be allotted to the vendor in part payment of purchase-money, and which will not be entitled to dividends until 15 per cent. per annum shall have been first paid upon ordinary shares in each year.

DIRECTORS.

The Hon. ASHLEY GEORGE JOHN PONSONBY, Director of the Submarine Telegraph Company, No. 9, Princes-gardens, London—CHAIRMAN.
Sor DON FAUSTINO DEL CAMPO, Madrid.
EDWARD GOTTO, Esq., M.I.C.E., Great George-street, Westminster, and Hampstead.
HENRY JOSEPH MARSDEN, Esq., 7, Great Winchester-street-buildings, E.C.

CONSIGNEE AGENTS AND FOREIGN BANKERS—Messrs. C de MURRIETA and Co., of London.
MANAGER IN SPAIN—CUTHBERT BURNUP, Esq., Seville.
CONSULTING MINING ENGINEER—CHARLES REMFRY, Esq., Linares, Spain.
SOLICITORS—Messrs. PATTISON, WIGG, GURNEY, and KING, 50, Lombard-street, E.C.
BANKERS—Messrs. PRESCOTT, GROTE, CAVE, and CAVE, Threadneedle-street, E.C.
BROKERS—Messrs. LAURIE and MILBANK, 22, Threadneedle-streets, E.C.
AUDITORS—Messrs. RICHARDSONS and TREVOR, 8, Great Winchester-street-buildings, E.C., London, and Manchester.
And one to be appointed at the first general meeting.
SECRETARY—Mr. WILLIAM BATTYE.

**OFFICES IN LONDON—16, GREAT WINCHESTER STREET, OLD BROAD STREET, E.C.**

### PROSPECTUS.

This company is formed to purchase and work, as from the 1st January, 1872, the grants of the silver-lead mines at Berlanga, Spain (one and a-half day's journey from Seville), situated in the province of Badajoz, in the district of Estramadura, held by Cuthbert Burnup, Esq., of Seville, direct from the Crown in perpetuity. Also to erect and conduct smelting-works.

The grants comprise the following mineral properties:—The Santa Catalina Mine and the Pastora group, consisting of setts called respectively El Terrible, San Juan, Diamente, San Ignacio, and Admirable—in all 57 pertinencies, each of 100 metres square, having a total superficial area of about 684,000 yards, or about 141 acres; in addition, a new sett of 24 pertinencias, called Trouador, has also been applied for, which will be included in the purchase.

These properties are in a new lead mining district. The principal or master lode extends about 3000 yards, or nearly 1¾ mile, in a line from west to east over all the mines, except Santa Catalina, which is separated from the others by about a mile.

The Pastora lode has been opened up by a series of shafts extending over the entire distance, and in every one galena or sulphuret of lead is exposed at or within a few feet of the surface; its width varies from 2 to 9 ft., and it has been ascertained to be undiminished to a depth of 44 ft., but there is every indication and reason to believe that it continues in force to a great depth. In a mine now being worked in the village of Berlanga, on a corresponding parallel lode, the galena became purer and the deposit still increased the deeper the shaft was sunk, which has now reached 104 feet.

The extent, magnitude, and continuity of this lode, and the power, richness, and purity of the ores prove these mines to be one of the most important discoveries yet made in any lead-bearing district; while the fact of their being so near England makes them comparatively a home investment.

The Santa Catalina Mine is nearest to Berlanga, distant only three-quarters of a mile. It contains two parellel lodes. One of these is powerful and well-defined, carrying from 14 to 18 in. of galena. Three shafts have been sunk, from which 60 tons per month of good ore is being produced.

The assays of ore from six of the mines show from 69 to 85¼ per cent. of sulphuret of lead, and 10¾ to 23 ozs. of silver per ton of ore.

For detailed particulars relative to the extent and value of this property the directors refer to the reports of

Captain J. H. RODDA, of Calstock, Cornwall.
CHAS. REMFRY, Esq., Mining Engineer, of Linares.
*M. ETCHATS, Engineer of the Gonesa Mines in Sardinia.*
Don ANTONIO FALCES, of the Sierra Almagrera, Government Engineer.

The last-named engineer was commissioned to report on this property by Messrs. C. de Murrieta and Co., of London; and he has also examined and verified the titles of the property.

The latest report received by the directors is one from Mr. Remfry, dated the 10th January, 1872.

In order that the fullest benefit may be reaped from these rich and extensive deposits of silver-lead it is intended to proceed with the operations at not less than 30 points simultaneously, and with this view to continue sinking the three permanent shafts now in progress alongside the master lode of the Pastora group, and to erect pumping, drawing, and dressing machinery; to sink other shafts, and drive adits or galleries, and construct tramways and dressing-floors, so as to lay open, work, and develope the lodes along their entire courses, including those of Santa Catalina.

Coal fields, through which a railway is being constructed, are within 30 miles of this property.

The capital required for the full development of the works, administration during construction, and for the purchase of the property is £100,000.

It is estimated that sinking the shafts, and driving the necessary galleries, will occupy about eighteen months, and that from these preparatory works alone there will be produced about 1300 tons of ore, the sale of which will provide interest at the rate of 15 per cent. per annum during these operations, and when the mines are laid open for permanent working they are expected to yield, at the lowest estimate, 500 tons per month, or

| | | | |
|---|---|---|---|
| 6000 tons per annum, of the market value of £14 per ton = | £84,000 | 0 | 0 |
| The total cost of production (including raising, dressing, shipment, and freight to England, together with agency, administration in London, and all other expenses) it is estimated will be £8 12s. 6d. per ton = | 51,750 | 0 | 0 |
| Leaving a net profit of | £32,250 | 0 | 0 |

Equal to about 32 per cent. on the capital of the company. A margin for a fall in the price of lead, and an increase in the cost of production, is provided for in these estimates.

A good road to Berlanga crosses this property—the railway connecting Seville with Merida, now being pushed on with vigour, is expected to be shortly completed to within 2 leagues, or 7 miles, of the mines, when the cost of transport will probably be reduced to the extent of 20s. per ton, thus increasing the above profits to £38,250, or 38 per cent. on the capital, and this amount will be materially augmented when the mines are more fully developed.

The terms upon which this property has been purchased, including all ore now at surface, whims, plant, and stores, together with the benefit of all moneys hitherto expended in working the mines are as follows, viz.:—

£32,500, in 3250 shares of £10 each fully paid-up, which will not participate in the dividends until 15 per cent. per annum shall have been first paid on the ordinary shares.
£17,500 in cash within six months.
A royalty of 5s. per ton in perpetuity on all ores sold.
No promotion-money whatever will be paid.
There is no dead rent payable. The usual Government charges are about £100 per annum.

Labour can be had in abundance at about 2s. 6d. per day for miners, and 1s. 6d. to 2s. for general labour.

Mr. Cuthbert Burnup has undertaken the general management in Spain, with the co-operation of Mr. Remfry, whose extensive experience in the important mining district of Linares is well known. The directors have, therefore, the best assurance that the company's undertakings will be successfully carried out.

Messrs. C. de Murrieta and Co. will receive the consignments for the company, and aid its financial business with Spain.

The only agreement entered into is between Cuthbert Burnup of the one part, and William Battye, on behalf of the company, of the other part, dated 20th January, 1872.

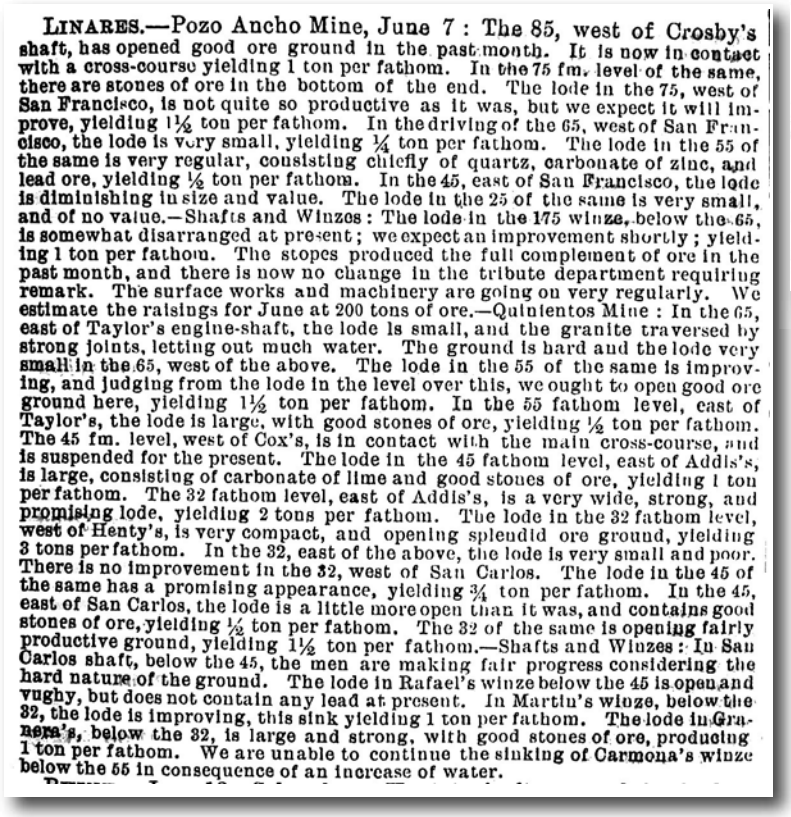
Applications, accompanied by a remittance of £1 per share, to be forwarded to the bankers of the company.

If no allotment be made the deposit will be returned in full, forthwith, without deduction.

The agreement, Articles of Association, and specimens of the silver-lead ore can be seen at the offices of the company.

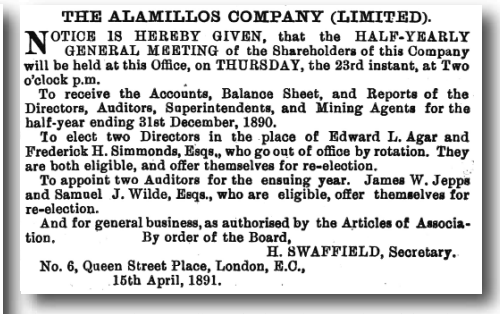
Prospectuses, with copies of the reports and plan of the mines, may be obtained of the secretary, bankers, or brokers of the company.

Figure 2. Prospectus for the *Anglo-Spanish Silver-Lead Mining Company Ltd*, Badajoz taken from the Mining Journal 1872 January 22nd, p. 70. The prospectus provides a description of both the objectives of the company and basic information about the mine.



LINARES.—Pozo Ancho Mine, June 7 : The 85, west of Crosby's shaft, has opened good ore ground in the past month. It is now in contact with a cross-course yielding 1 ton per fathom. In the 75 fm. level of the same, there are stones of ore in the bottom of the end. The lode in the 75, west of San Francisco, is not quite so productive as it was, but we expect it will improve, yielding 1½ ton per fathom. In the driving of the 65, west of San Francisco, the lode is very small, yielding ¼ ton per fathom. The lode in the 55 of the same is very regular, consisting chiefly of quartz, carbonate of zinc, and lead ore, yielding ½ ton per fathom. In the 45, east of San Francisco, the lode is diminishing in size and value. The lode in the 25 of the same is very small, and of no value.—Shafts and Winzes : The lode in the 175 winze, below the 65, is somewhat disarranged at present; we expect an improvement shortly; yielding 1 ton per fathom. The stopes produced the full complement of ore in the past month, and there is now no change in the tribute department requiring remark. The surface works and machinery are going on very regularly. We estimate the raisings for June at 200 tons of ore.—Quinientos Mine : In the 65, east of Taylor's engine-shaft, the lode is small, and the granite traversed by strong joints, letting out much water. The ground is hard and the lode very small in the 65, west of the above. The lode in the 55 of the same is improving, and judging from the lode in the level over this, we ought to open good ore ground here, yielding 1½ ton per fathom. In the 55 fathom level, east of Taylor's, the lode is large, with good stones of ore, yielding ½ ton per fathom. The 45 fm. level, west of Cox's, is in contact with the main cross-course, and is suspended for the present. The lode in the 45 fathom level, east of Addis's, is large, consisting of carbonate of lime and good stones of ore, yielding 1 ton per fathom. The 32 fathom level, east of Addis's, is a very wide, strong, and promising lode, yielding 2 tons per fathom. The lode in the 32 fathom level, west of Henty's, is very compact, and opening splendid ore ground, yielding 3 tons per fathom. In the 32, east of the above, the lode is very small and poor. There is no improvement in the 32, west of San Carlos. The lode in the 45 of the same has a promising appearance, yielding ¾ ton per fathom. In the 45, east of San Carlos, the lode is a little more open than it was, and contains good stones of ore, yielding ½ ton per fathom. The 32 of the same is opening fairly productive ground, yielding 1½ ton per fathom.—Shafts and Winzes : In San Carlos shaft, below the 45, the men are making fair progress considering the hard nature of the ground. The lode in Rafael's winze below the 45 is open and vughy, but does not contain any lead at present. In Martin's winze, below the 32, the lode is improving, this sink yielding 1 ton per fathom. The lode in Granera's, below the 32, is large and strong, with good stones of ore, producing 1 ton per fathom. We are unable to continue the sinking of Carmona's winze below the 55 in consequence of an increase of water.

Figure 3. *A Linares Lead Mining Company Ltd.* fortnightly report taken from the 1871 Mining Journal. The report provides detailed information on all the working points in the mine.



THE ALAMILLOS COMPANY (LIMITED).

NOTICE IS HEREBY GIVEN, that the HALF-YEARLY GENERAL MEETING of the Shareholders of this Company will be held at this Office, on THURSDAY, the 23rd instant, at Two o'clock p.m.

To receive the Accounts, Balance Sheet, and Reports of the Directors, Auditors, Superintendents, and Mining Agents for the half-year ending 31st December, 1890.

To elect two Directors in the place of Edward L. Agar and Frederick H. Simmonds, Esqs., who go out of office by rotation. They are both eligible, and offer themselves for re-election.

To appoint two Auditors for the ensuing year. James W. Jepps and Samuel J. Wilde, Esqs., who are eligible, offer themselves for re-election.

And for general business, as authorised by the Articles of Association. By order of the Board,

H. SWAFFIELD, Secretary.

No. 6, Queen Street Place, London, E.C.,
15th April, 1891.

Figure 4. A Notice regarding a forthcoming meeting of the *Alamillos Company* taken from the *Mining Journal* (1891).


Figure 5. The company seal of the Linares Lead Mining Company redrawn from a paper embossment in the company file in the National Archives. Later seals for all companies tended to be standardised and unimaginative.

published weekly. The information it contains on specific mining companies is variable; from simple letters from shareholders who express comment on the performance of a particular company, through to detailed accounts of mining operations.

The formation of a company can be advertised in several ways. A new company may initially be mentioned in an article extolling how good a particular mining area is. This is usually followed a few weeks later by an entry in 'Registration of New Companies', for example the *Gitana Lead Mining and Smelting Company Limited* (see Figure 1) from the Linares area. A full company prospectus may also be published, for example *Anglo-Spanish Silver-Lead Mining Company Ltd* (see Figure 2) at Badajoz, and in some cases covering several pages.

Once mining operations have commenced, the mine manager may send in progress reports. These may be on a monthly basis, but the reporting of the Linares mines managed by John Taylors and Sons are superb, with very detailed reports being published every two weeks, which for the *Linares Lead Mining Company* spans a period of nearly 60 years! An example of one of these reports is shown in Figure 3. The reports will usually comment on the progress (or non-progress) of mining operations both on the surface and underground.

By law, a company must hold an Annual Meeting (Farrar 1930, 329) and these are also reported on, some can be very detailed, with comments on the profits and losses of a company. Notifications prior meetings are usually placed in the *Mining Journal*, an example is shown in Figure 4.

The *Mining Journal* (or *Mining Communications* as it is now known) does have an accessible database for their more recent articles (http://www.mining-journal.com). The North of England Institute of Mining and Mechanical Engineers have recently completed a project to put a searchable database of *Mining Journal* topics on the Internet, and this can be found at: http://www.mininginstitute.org.uk.

*The Mining World (and Engineering Record)* was published from 1872 to 1962 and contains similar material to the *Mining Journal*. However, it may carry additional articles and mining reports to that published in the *Mining Journal*.

The British Newspaper Library at Colindale, north London has a complete collection of the *Mining Journal* and *Mining World*. The *Mining Journal* can also be found at Birmingham and Hanley Libraries in the West Midlands of England as well as in the libraries of The National Coal Mining Museum for England, Wakefield, West Yorkshire, and the North of England Institute of Mining and Mechanical Engineers at Newcastle upon Tyne.

## ARCHIVAL SOURCES

### Board of Trade Records at the National Archives, London and Scotland

A detailed examination of the *Mining Journal* from 1845 to 1925 has identified about 650 mining companies that were formed in the United Kingdom, predominantly in the 19th century, to work mines in Spain. Those mining companies were registered with the Board of Trade, the British Government's Department for regulating commercial enterprise in England and Wales. When a company became defunct, the files relating to that company were closed and eventually deposited in the National Archives at Kew, London (Anon 2006).

Before 1844, mining companies were usually composed of wealthy speculators who formed partnerships.

In 1844 the Joint Stock Companies Registration and Regulation Act provided the foundation for modern company law in the UK. It made the distinction between private partnerships and those companies that issued freely transferable stock / shares in that company. It also required companies that issued stock to be registered and retain information relating to the companies activities, shareholders and finance. The *Andalusian Mining Association* was one of the first mining companies with Spanish interests to be formed under the new regulations (1845 Mining Journal, July 12th, page 348).

This Act was strengthened further in 1856 with the introduction of Limited Liabilities (Ltd.) for company shareholders (Anon, 2006).

Prior to being deposited to the National Archives the company files were preened and it can often be 'hit or miss' as to what information is retained in the files. However, the files contain a wealth of information pertinent to British mining endeavors worldwide, and are an important archive. Company files are kept in three main categories under the reference coding BT31, BT41 and BT34 (Anon 2006).

Files with the prefix BT41 contain the records of mining companies formed between 1844 and 1856. The files may contain the names and addresses of the mining company, promoters, officials; a company prospectus; details of capital; share allocations and balance sheets. In practice the information in the files is variable. The file for the *Guadalcanal Silver Mining Association* (BT41/279/1605), for example contains just a list of Directors, whilst that for the *Linares Lead Mining Company* (BT41/361/2049) provides a detailed record of company finance over a number of years. Occasionally documents can be found embossed with the official company seal, like the example from the *Linares Lead Mining Company* file reproduced in Figure 5.

BT31 is the prefix for companies registered and subsequently dissolved under the 1856 and later Companies Acts and forms the bulk of company material in the National Archives. Retained information includes the Memorandum and Articles of Association, the constitution of the company, statement of capital, directors, annual returns including finance and a list of shareholders. The latter can be very useful as it shows the level of support a company has.

Until the introduction of the Companies (Winding-Up) Act 1890 it was not a requirement for companies to file Liquidators accounts. Files prefixed BT34 contain Liquidators accounts for the period 1890 to 1932. After 1932 the Liquidators accounts can be found in the BT31 files. Further documents relating to the winding-up of a company may be found in Court Records with the prefix J. However, the J files may only a copy of the formal notice placed in the London Gazette, the official newspaper of record in the United Kingdom (Anon, 2006).

The National Archives database can be searched for BT41 and BT31 files. The database Internet address is: http://www.nationalarchives.gov.uk/catalogues.

The database provides a files reference number and the year the company was formed. For example, the *Marbella Iron Ore Company Limited* has the reference number BT31/30809/5881 and was formed in 1871. The number 5881 is the unique number of the company in the Board of Trade register; the number 30809 refers to the box that contains the file, and BT31 is the file classification. There is also a further reference for this particular company, J107/262 that relates to the winding-up of the company. These are no company formation dates listed in the database for BT41 files.

For visitors to the National Archives it is possible to reserve documents via the Internet prior to the visit.

Scotland had its own system of registering companies and some mining records are available in the Scottish Record Office at Edinburgh. There is also a searchable database on the Internet at http://www.nas.gov.uk. The Scottish Record Office uses a prefix of BT2 for its company files. *The Linares Zinc Mining Company Limited* that worked at Teruel has the reference BT2/691. It was formed in 1876 and was dissolved in 1881.

## OTHER DATABASES ON THE INTERNET

### National Library of Wales, Aberystwyth

There are very few references to Spanish mining in the National Library of Wales. However the Herbert family of Powys were involved with both the *Guadalcanal* and *Rio Tinto* mines in the early 1700s, and

letters referring to these mines do exist in this archive. The searchable database can be found on the National Library's Internet site: http://www.llgc.org.uk and it is possible to print off full transcripts of material in the archives.

**Access to Archives**

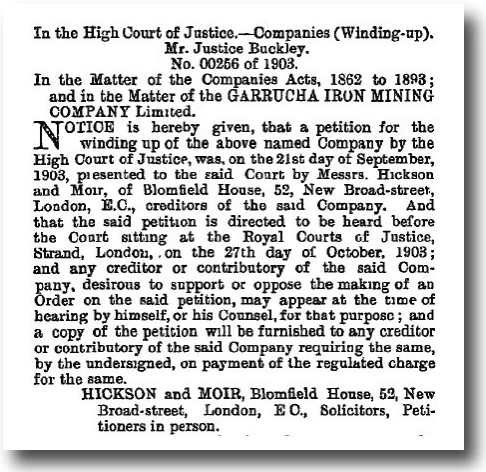
The Access to Archives is a powerful search engine that interrogates the databases of regional archive offices and institutions throughout England. The main catalogue is available on http://www.a2a.org.uk. This database is being added to constantly as more archive collections are added.

**National Register of Archives**

The National Register of Archives was one of the first archival databases to go on the Internet. It can be found on: http://www.nationalarchives.gov.uk/nra.

**London Gazette**

The London, Edinburgh, and Belfast Gazettes are the official newspapers of record in the United Kingdom. Official notices relating to companies, for example Extra-ordinary General Meetings, and winding-up notices to formally dissolve a company, are published in the Gazette. The London Gazette is probably the most relevant of the three publications. There is a searchable database, using the archives link that goes as far back as 1752. The Internet address is: http://www.gazettes-online.co.uk and an exact copies of the relevant Gazette page is produced in *.pdf format. An example is shown in Figure 6.



In the High Court of Justice.—Companies (Winding-up).
Mr. Justice Buckley.
No. 00256 of 1903.
In the Matter of the Companies Acts, 1862 to 1898; and in the Matter of the GARRUCHA IRON MINING COMPANY Limited.
NOTICE is hereby given, that a petition for the winding up of the above named Company by the High Court of Justice, was, on the 21st day of September, 1903, presented to the said Court by Messrs. Hickson and Moir, of Blomfield House, 52, New Broad-street, London, E.C., creditors of the said Company. And that the said petition is directed to be heard before the Court sitting at the Royal Courts of Justice, Strand, London, on the 27th day of October, 1903; and any creditor or contributory of the said Company, desirous to support or oppose the making of an Order on the said petition, may appear at the time of hearing by himself, or his Counsel, for that purpose; and a copy of the petition will be furnished to any creditor or contributory of the said Company requiring the same, by the undersigned, on payment of the regulated charge for the same.
HICKSON and MOIR, Blomfield House, 52, New Broad-street, London, E.C., Solicitors, Petitioners in person.

Figure 6. The official announcement indicating that the Garrucha Iron Mining Company is going into liquidation taken from London Gazette 2nd October, 1903, p. 19.

## EXAMPLES FROM ANDALUCIAN MINING AREAS

The operations of the *Rio Tinto* and *Tharsis* companies, working the pyrite deposits of Huelva Province are well documented thanks to a good distribution of archival material in both Britain and Spain. However, the remainder of Andalucia is also rich in minerals, and other British companies exploited them, and there is archival and published material on many of those companies (Vernon, 2003).

**Jaen: Linares / La Carolina**

John Taylor and Sons, and Thomas Sopwith junior, both from renowned mining families, established a number of profitable companies at Linares and the success of their companies attracted other British investors to the area. The *Centenillo Silver Lead Mines* (established in 1886) near La Carolina is just one other example.

The Taylor's initially established three companies, *Linares Lead Mining* (1851), *La Fortuna* (1855) and *Alamillos* (1862). Regular reports in the Mining Journal helped to give this trio of companies publicity and enhance their reputations as well run profitable companies. So successful were the three companies, it prompted the editor of Mining World to refer to them as 'drops of comfort' (Anon, 1884).

The *La Fortuna* Company had its own lead smelter at Linares. The ore from the other two Taylor's companies however was sent by rail to the *Linares Lead Mining Company's* smelter at Cordoba, closer to fuel supplied from the Belmez coalfield. Duncan Shaw who managed the Cordoba smelter tried unsuccessfully to float several companies in the Bailen area (1873 and 1875), in the extreme southwest of the Linares ore field. Two other Taylor's companies at Linares, the *Buena Ventura* (1878) and *Spanish Mining Properties* (1900) were not as successful.

Thomas Sopwith junior established *The Spanish Lead Company* in 1864. Financially supported by his father (who famously managed mines in the Alston area of northern England) and the Beaumont-Blackett family, the mines and smelter at La Tortilla became one of the most successful Linares operations. In 1880 the financial tethers of the Beaumont-Blackett's were severed and the company was re-floated as *T. Sopwith and Company*. Despite Thomas Sopwith junior's accidental death in 1898 the company continued until 1907 when it was reconstructed and floated in France as the *Sociéte des Anciens Établissements Sopwith*. During his stay at Linares, Sopwith floated two *Gitana* companies (1871 and 1876) and was also the British Vice-Consulate.

The National Archives at London contain files on all these companies, some very detailed. However whereas

John Taylor's activities at Linares are widely reported with regular reports in the Mining Journal and elsewhere, Thomas Sopwith junior published very little about his mining operations. However there are secondary sources to compensate, and the diaries (in private hands) of Thomas Sopwith senior record how the company started. Other archival sources describe how the mining operations of the Sopwith Company went into decline. Despite Sopwith being a British Vice-Consulate at Linares, very little correspondence about Sopwith remains in the British Foreign Office archives also lodged at Kew. Amazingly the official Vice-Consulate seals with which all official documents were stamped still remain!

**Cordoba: Cerro Muriano/Espiel**

The Sierra Morena to the north and west of the City of Cordoba is heavily mineralised. British mining involvement in the area was relatively small during most of the 19th century. However the formation of the *Cordova Exploration Company Ltd* in 1897 brought significant British involvement into the area. The Company was primarily formed to explore a lead prospect, Minas Mayo Segundo, but as it happened they discovered copper ore. The principal shareholders were all from northeast England, Donaldson Cruddas and Andrew Noble, ordnance makers from the Elswick Works, Newcastle upon Tyne, and Walter Scott and Richard Esholt Carr, of the *Bede Metal and Chemical Company Ltd*, Hebburn, County Durham.

By 1903 a new company had been formed, *Cerro Muriano Mines Ltd*, to take over the prospect. Carr was a director along with Messrs. Alfred Fellows, William Frecheville and John Taylor. The John Taylor family sensing a good venture held nearly 4% of the share issue. John Power, the manager of Sopwith's at Linares, also bought 1000 shares in the Company.

A short-lived attempt was made in 1906 to draw further capital into the area with the formation of the *North Cerro Muriano Mines, Ltd*. to work a lode adjacent to the Cerro Muriano mine. The Taylor's and Carr, who by this time was British Vice-Consulate, were directors of the new company that was wound up in 1911.

At the Cerro Muriano mine there was substantial investment with the purchase of a new duplex pumping engine in 1905. By August 1908 however, both the Cerro Muriano companies were amalgamated as the *Cordoba Copper Company Ltd* (Figure 7) but still under the Taylor's management and Carr's directorship. After selling the mines to a Spanish mining company in the early 1920s, the released capital was used to purchase several copper mines in India and the company was restructured as the *Indian Copper Corporation* in July 1924.

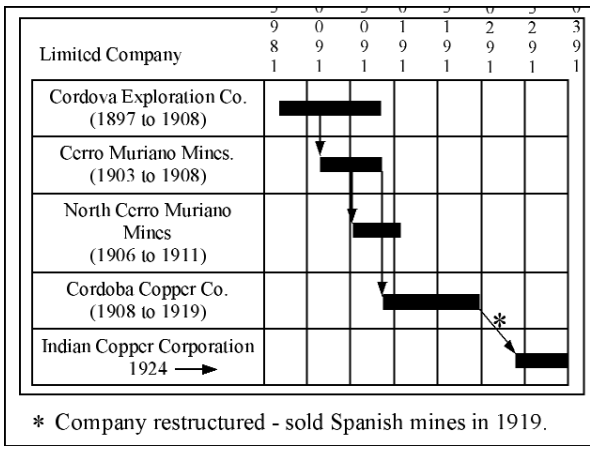
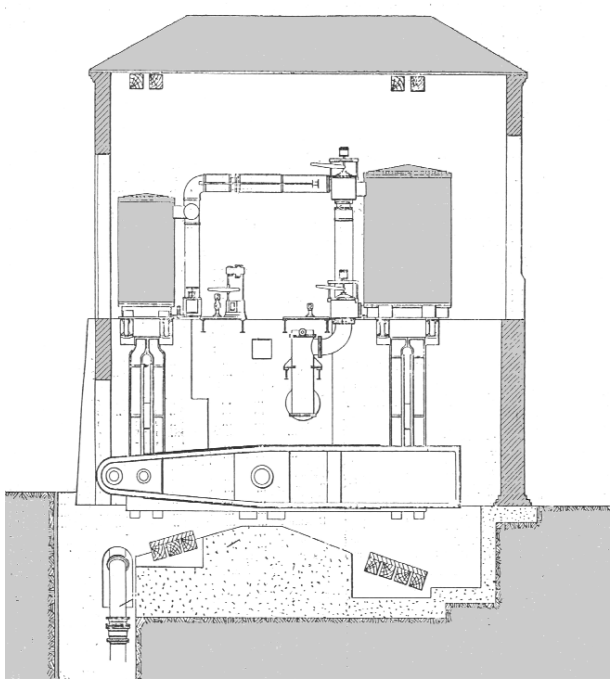



Figure 7. Flow chart showing the various British mining companies at Cerro Muriano, Cordoba.



*Manufactured by:* Hathorn Davey, Leeds, England.
*High pressure cylinder.* Diameter 54 inches with a stroke of 8 feet
*Low pressure cylinder.* Diameter 94 inches with a stroke of 10 feet
*Cost of engine:* £3550
*Cost of pumps:* £1975
*Ordered:* 29th June 1903
*Delivered:* February to May 1904
*Shaft depth:* 1000ft+
*Source:* Hathorn Davey archives and Mining Journal 1905.

Figure 8. Two sources provide information on the San Rafael Shaft pumping engine at Cerro Muriano. The illustration is from the *Mining Journal* and the data regarding the engine are from the Hathorn Davey Archives, Leeds.

The Cerro Muriano mining companies are well documented both in the *Mining Journal* and in the National Archives. The BT31 files contain mining reports, including mine sett plans and company

Figure 9. The San Rafael Shaft engine house that once contained the Hathorn Davey engine. The photograph was taken in 2004.

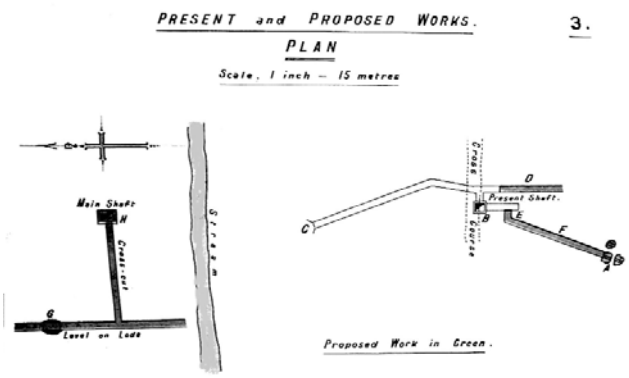



Figure 10. A mine plan of the Santa Sofia antimony mine. It forms part of a mining report in the Andalucian Antinomy Mines Ltd file in the National Archives at Kew, London.

accounts. The monthly outputs are also regularly recorded in the Mining Journal as well as reports on the Annual General Meetings. The *Mining Journal* records the purchase and the installation of a duplex steam engine by the *Cerro Muriano Mining Company Ltd.*, from the engineering company, Hathorn Davey of Leeds, West Yorkshire, England. At the Regional Record Office in Leeds there are still records relating to this engine, including the original order, costing and subsequent maintenance. The plans of the engine may also still exist, but they are in a large collection of plans awaiting classification. Information about the engine is shown in Figure 8.

The engine house, on the San Rafael Shaft, still exists close to the main road at Cerro Muriano. When I first visited the site in the 1970s, it was in open country, but now the area is built up. The engine house is shown in Figure 9.

The antimony mine at Espiel, Cordoba was owned between 1902 and 1913 by another chain of British companies. The *Spanish Mining and Exploration Company Ltd.* originally acquired the lease for the mine in 1902. Later the same year the lease was transferred to *Santa Sofia Antimony Mines Ltd*. The following year, 1903, the lease was bought by the *Andalusian Antimony Mines Ltd*. Finally in 1907 the mine was acquired by *Espiel Antimony Mines Ltd*. that had ceased operations in 1912, before finally being wound-up in 1913.

The Espiel mine is hardly mentioned in the *Mining Journal*, but the BT31 files in the National Archive contains copies of the various Agreements and mining reports (Figure 10) and a prospectus, including a laboratory report on ore analysis.

**Almeria and Granada**

Deposits of iron occur throughout much of Almeria Province. Along with predominantly Spanish and French companies, British companies worked those deposits in the late 19th and early 20th century. Two main railway lines dominated the area. The Granada line running to Almeria, and the Baza to Aguilas line, of the *Great Southern of Spain Railway Company Ltd*. Both railway lines terminated at substantial loading piers at Almeria and El Hornillo, Aguilas. British companies designed the piers and both still survive.

The Alquife haematite deposits in Granada Province were worked about 1900 by a consortium of the *Coltness Iron Company* and the *Millom and Askam Iron Ore Company*. The main railway connecting the mine with the loading pier at Almeria is about 100kms long. The last 12km is a branch line to the mine built by the *Alquife Mines and Railway Company Ltd*. The Alquife mining operations had close ties with haematite mining companies in Cumbria and the archives at Barrow-in-Furness, Cumbria hold numerous reports about Alquife in the Hart Jackson and Son's Collection.

Elsewhere in Almeria, Spanish companies predominantly operated the majority of the iron mines with occasional British company activity. Examples include the *Almeria Iron Ore Company*, *Almeria Mines*, *Bacares Iron Ore Mines*, *Gergal Railway and Mines*

*Company*, *Garrucha Iron Mining Company* and the *Alhamilla Mining Company*.

In the northeast of Almeria Province, the rich silver lead mines of the Sierra Almagrera attracted minimal British interest. The *Sierra Almagrera Mining Company* formed in 1872, is one example. Other British Companies were formed to operate the lead smelting plants, for example, the *Villaricos Silver Lead Mining and Smelting Company* and the *Vera Smelting Company*. The *Aguilas Smelting Company* was formed to re-smelt the silver rich slag left from Roman smelting operations. However all these companies were short lived and apart from the BT31 files in the National Archives, there is very little information available on their operations.

## CONCLUSION

The period from the 1860s to the 1900s has been described as Spain's 'golden age' of mining (González, 2001). This statement is based on the high tonnages being produced by Spanish metal mines. Prior to this period in 1849 there was a relaxation in regulations relating to the importation of machinery and changes to trading tariffs (Anon, 1849). These are all factors that encouraged foreign investment in Spain and this was followed soon after by significant investment in Portugal.

The Board of Trade Records at the National Archives, Kew, London and contemporary mining press contain a vast amount of information relating to British mining operation on the Iberian Peninsula. Those companies are just as much a part of Spanish and Portuguese mining history as other foreign investors from France and Germany. By writing this article I hope I have demonstrated how it is possible to build up virtually a complete picture of a mining companies history, and have given to mining historians in Spain and Portugal an indication of the variety of mining information that lies in the various libraries and archives throughout the United Kingdom, and the preparatory work that can be done by consulting databases on the Internet.

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## REFERENCES

Anon, 1849. Reduction of Duties on metals in Spain. *Mining Journal,* London, 202 and 265

Anon, 1884. Drops of Comfort. *Mining World*, London, 374

Anon, 2006. *Registration of Companies and Businesses: Domestic Records Information 40*. Research Guide, National Archives, Kew, London.

Farrar, H. 1930. *Company Law*. Donnington Press, St. Albans.

González, R.D. 2001. A glimpse of Spanish mining's 'Golden Age' from an economic history viewpoint. *British Mining*, 69. Northern Mine Research Society, 90-116

Vernon, R.W. 2003. Beyond Huelva: Other British Mining Legacies in Andalucia, Spain. In: *Proceedings of the 6th International Mining History Congress*, Akabira City, Hokkaido, Japan, 166-169.