

Acknowledgements.

This work was never intended as a serious research document, but somehow it became a rather detailed study, not just of the Sierra Almagrera, but of lead mining and processing in general. Its haphazard development has now made it very difficult for me to acknowledge all of my sources. So many pictures and so much information was grabbed from internet searches, often after going down several pathways, that I have no idea where some of them came from. If I have used some of yours, dear reader, and have not acknowledged them, please accept my apologies.

My primary source was the book, *Sierra Almagrera y Herrerías: Un Siglo de Historia Minera*. [Cuevas del Almanzora, 1828-1936] by Enrique Fernández Bolea. While fascinating, detailed and eminently scholarly it is not for the faint hearted. Google Translate renders its flowery prose almost unintelligible, a problem if, like me, you are not Spanish speaking. It is, however, the most well thumbed book that I have ever owned.

The other publication, this time a digital one, that became my secondary source was Hastial 2012, in particular, the article by Antonio González Jódar and José Manuel Sanchis, called *Desagües y Socavones de Sierra Almagrera, Cuevas del Almanzora, Almería*. Reading it for the first time was like walking into Aladdin's cave!

In 2017, I was fortunate enough to meet Señors Bolea and Jódar by chance in the Barranco del Jaroso. Haltingly, I explained that I was writing some notes for English visitors to the area, and would they mind if I used information and pictures from their works. Both, unhesitatingly, gave me permission, for which I can't thank them enough. Subsequently, Antonio Jódar has been kind enough to reply to my e-mail queries, and then, on reading the original copy of *Then, There Were Mines*, gently advise me of my errors. It has also been my privilege to walk in the Sierra with him, and to benefit from his considerable knowledge of it.

Another notable authority on the history of mining in Andalucía is the scholar, Andrés Sanchez Picón. Together with Isabel Garcia Jiménez, he wrote the paper, *Minas de Almagrera S.A. 1944-1958. El intento de una empresa de INI de revitalizar un distrito minero tradicional*. This, together with, *Sierra Almagrera. 100 años de lucha contra el agua*, by Andres Navarro, took me, and the story of *El Arteal*, up to relatively modern times.

Just when I had started this almost complete re-write of the original text, there appeared on the internet a copy of Gustave Reinhold's paper. entitled *Pumping Station at Sierra Almagrera*. which he had presented to the Institution of Civil Engineers in 1898. This was a great help to me in piecing together the early development of the *El Arteal* complex.

I found my way around the Sierra by using Google Earth and José Manuel Sanchis's photographs of the various mines. These wonderful pictures can be found at mtiblog.com (localidades Andalucía). I have used some of them in this book when they illustrate a point better than one of my own photos. Quite often mti gives the co-ordinates for a mine's location, so the track up to it can be found using Google Earth. Don't worry if you miss the track on your first attempt, I frequently failed on even the third try.

A.G. Jódar's blog *Bayo los Espartaes* and Francisco Mulero Navarro's *El Portal de Sierra Almagrera* gave some good background information and have wonderful images, taken by remote camera, of the depths of some of the shafts. *Bajo los Espartaes* also has good then and now photographs.

While J.M. Sanchis is the present day chronicler of the remains of the mining industry in the Sierra Almagrera, tribute has to be paid to José Rodrigo Navarro as the 19th century chronicler. Between 1874 and 1883 he photographed so many of the mining installations in the area. His wonderful pictures give us so much insight into what it was like all those years ago. They say that a picture is worth a thousand words, but the detail and clarity of Rodrigo's make them worth many thousands of words.

Bibliography

All that I can do for the rest of the acknowledgements is to list the downloaded pdf files that I have used, the web sites which I have bookmarked, and the books, both printed and digital, that I have purchased. These, with the exception of the printed books, are shown in the order in which they appear on my laptop. Untidy, I know!

Books.

Sierra Almagrera y Herrerías; Un Siglo de Historia Minera. E F Bolea
Memoria Visual del Siglo XX (1901-2000) La Tarjeta Postal Ilustrada en Cuevas del Almanzora
EF Bolea and J G Cervantes.
Tiempos de Plata y Plomo. E F Bolea, J G Rodríguez and P P Laríos.
Elementos de Laboreo de Minas. Joaguin Ezquerro de Bayo.
Accidente Nuclear de Palomares. José Herrera Plaza.

E Books.

Diccionario Geografico. Estadistico Historico de España. P y Sagasti Madoz.
The Principles, Construction and Application of Pumping Machinery. Henry Davey.
The Metallurgy of Lead. John Percy.
Principles of Metallurgy. A. Horseman Hiorns.

Downloaded pdf files.

Una Familia Velezana en el Apogeo Minero de Sierra Almagrera. Los Negocios de Los Fernández Manchon.
E F Bolea
La Minería del Hierro Contemporánea en Almería. M Pérez de Perceval Verde.
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Modelos Tecnológicos en la Minería del Plomo Andaluza Durante el Siglo XIX. A Sánchez Picón.
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researchgate.net. El desagüe minero de Sierra Almagrera. 100 años de lucha contra el Agua.
Tierra.rediris.es provided the information on the Jaroso hydrothermal system.
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Brief history of mine ventilation. M J Mc Pherson.
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Chembrains. Block elementsII
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Almaden Baritel de san Andrés.
Cronicas Mineras de Rogelio Mouzo Pagán