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Spain

The Millstonequarries.eu website (<http://meuliere.ish-lyon.cnrs.fr>) contains information on 111 millstone quarries in Spain. The information available on the website was provided by several individuals and is primarily written in Spanish and French. Quarries were reported for several regions with the following numbers: Aragón (n = 1), Cataluna (n = 2), Comunidad de Andaucía (n = 8), Comunidad Autónoma de Castilla y León (n = 31), Euskadi/ País Vasco (n = 3), Comunidad Floral de Navarra (n = 10), Comunidad de La Rioja (n = 20), Islas Canarias (n = 4), and Isla de Menorca (n = 32). The author of this book is not aware of any articles in English concerning the Spanish millstone quarries. A very brief summary of the Spanish millstone quarries is provided below, although specific information is provided for those quarries for which Pilar Pascual Mayoral and Pedro García Ruiz shared photographs. Researchers fluent in Spanish and French are directed to the above website for details about these quarries. Articles published in Spanish and French are available for some of these quarries. Apparently, many of these quarries are not yet included in the archaeological literature.

Two regions of Spain have a total of three recorded quarries. In the region of Aragón, a single millstone quarry has been recorded. This quarry is the Prov. de Zaragoza, Cerro Redondo (Pardos Abanto), quarry which is near Abanto (<http://meuliere.ish-lyon.cnrs.fr>). Querns and millstones were made from a porphyry granite during the Roman and Medieval periods. María Pilar Lapuente Mercadal and Tim Anderson placed this information on the website during October 2007. A reference for this quarry is the publication by Cisneros Cunchillos, Lapuente Mercadal, Magallón Botaya, and Ortega Castillo (1985). Two millstone quarries have been reported (<http://meuliere.ish-lyon.cnrs.fr>) for the Cataluna region. The Olot quarry was located somewhere near Olot, Spain, but the precise location is not known. A volcanic basalt was used for Roman millstones. Fritz Mangartz provided the information to the website during February of 2007. The Olot quarry is mentioned by Williams-Thorpe (1988). The second quarry, Tarragona, is located near Tarragona, Spain, at Pedrera de El Mèdol. Millstones were produced at this quarry during Roman times from an unknown type of stone. Natalià Alonso provided information to the website concerning this quarry in February 2007.

Eight millstone quarries have been reported in the Comunidad de Andaucía region of Spain (<http://meuliere.ish-lyon.cnrs.fr>). Most of these quarries produced millstones during the modern era, but one dated to Roman times and two were used the Medieval period. Five of the six quarries exploited limestone and one produced millstones from a sandstone. Timothy Anderson reported most of these quarries but was assisted by Angel Serrano García for two quarries. Reyes Mesa (2006) is cited as a reference to the Prov. de Granada–Moclín quarry,

the Prov. de Granada–Loja–Camino del Calvario, and the Prov. de Granada–Loja–Cerro de la Fuente Santa.

The Comunidad Autónoma de Castilla y León region contains 31 known millstone quarries (<http://meuliere.ish-lyon.cnrs.fr>). All these quarries were reported to the website by Pilar Pascual Mayoral and Pedro García Ruiz between February 2007 and March 2008. Nearly all the quarries exploited conglomerate deposits but some may have quarried limestone. Most of the quarries in this region date to the modern era. Four quarries were used during the Medieval period and two during the Roman period. Three of these quarries are illustrated here due to the kindness of the recorders. First, the Prov. de Soria–Fuentelárbol quarry is located at Fuentelárbol near Quintana León. Approximately 300 millstones were at this locality. A photograph shows millstones that have been placed end to end to form a long fence (Figure 70). Second, the Prov. de Soria–Fuentelárbol 2 quarry is located at Las Canteras near Fuentelárbol (Figure 71). This modern era quarry exploited a sedimentary rock to produce about 1,000 millstones. Third, the Prov. de Soria–Canos–La Cuerda quarry was a source of conglomerate millstones (1 to 1.3 m in diameter) during the Medieval period and the modern era (Figure 72). This quarry is located at Canos (La Cuerda) near Aldehuela de Periáñez.

Three millstone quarries have been reported from the Euskadi/ País Vasco region of Spain (<http://meuliere.ish-lyon.cnrs.fr>). Pilar Pascual Mayoral and Pedro García Ruiz reported all three of these quarries to the website in November 2007. The Prov. Álava (Araba)–Barambio–Garrastatxu quarry is located at Barambio (Santuario de Barambio) near Amurrio. A sedimentary rock (conglomerate?) was quarried at this locality. Millstones produced at the quarry ranged between 1 and 1.3 m in diameter. The Prov. de Vizcaya–Arbaitza–Barrio Arbaitzarte quarry is located at Arbaitza (Barrio Arbaitzarte) near Orozko. During the 18th to 20th centuries, more than 50 millstones were made from a sedimentary rock at this quarry. The third quarry, Prov. de Vizcaya–Manzarraga, is also near Orozko. This modern quarry exploited a sedimentary rock during the modern era.

A total of ten millstone quarries have been reported in the Comunidad Floral de Navarra region of Spain (<http://meuliere.ish-lyon.cnrs.fr>). Most of these quarries were used during the modern era and three date to the 20th century. At least one quarry was also used during the Medieval period. Various sedimentary rocks were quarried including sandstone and conglomerate. Some of the quarries produced millstones between 1 and 1.2 m in diameter. Pilar Pascual Mayoral and Pedro García Ruiz documented all of these quarries.

Twenty millstone quarries have been documented in the Comunidad de La Rioja region of Spain (<http://meuliere.ish-lyon.cnrs.fr>). All of these quarries were reported to the website by Pilar Pascual Mayoral and Pedro García Ruiz between February 2007 and January 2008. Sedimentary rocks, most conglomerates, were quarried for millstones and querns in this region. The majority of the quarries were used during the modern era. One Roman era quarry, one Medieval, and one “Celtibero (Hierro II)” were also reported. The researchers shared photographs for three of these quarries. The first quarry is the San Vicente de Robres (Robres del Castillo) quarry near Robres del Castillo was used during the modern period (Figure 73). Conglomerate millstones between 1 and 1.7 m in diameter were produced at this quarry. A second quarry, Robres del Castillo, is located at Los Molares. Large millstones (1.4 to 1.8 m in diameter) were made from a sedimentary rock (Figure 74) at this quarry during the modern era. Finally, the San Vicente de Robres 2 (Robres del Castillo) quarry is another modern era quarry located near San Vicente de Robres (Figure 75). A conglomerate was quarried at this location.

Publications are available for several millstone quarries in the Comunidad de La Rioja

region including San Vicente de Robres (Robres del Castillo) quarry (Pascual Mayoral and García Ruiz 2001, 2002, 2003c), Jubera (Santa Engracia de Jubera) quarry (Pascual Mayoral and García Ruiz 2001, 2002, 2003c), the Torrecilla en Camerous quarry (Pascual Mayoral and García Ruiz 2003b), the Arnedillo quarry (Pascual Mayoral and García Ruiz 2002), Robres del Castillo quarry (Pascual Mayoral and García Ruiz 2003c), Jubera 2 (Santa Engracia de Jubera) quarry (Pascual Mayoral and García Ruiz 2003c), the Robres del Castillo 2 quarry (Pascual Mayoral and García Ruiz 2003c), the Igea quarry (Pascual Mayoral and García Ruiz 2003a; Pascual Mayoral and Moreno Arrastio 1980), the Villaroya quarry (Pascual Mayoral and García Ruiz 2003a; Pascual Mayoral and Moreno Arrastio 1980), the Grávalos quarry (Pascual Mayoral and García Ruiz 2003a; Pascual Mayoral and Moreno Arrastio 1980), the Muro de Aguas quarry Pascual Mayoral and García Ruiz 2003a), the Robres del Castillo 3 quarry (Pascual Mayoral and García Ruiz 2003c), the Luezas quarry (Pascual Mayoral and García Ruiz 2003c), and the Almarza de Cameros quarry (Pascual Mayoral and García Ruiz 2003b).

Four millstone quarries have been reported on Spain's Islas Canarias (Canary Islands) located in the North Atlantic Ocean near southern Morocco (<http://meuliere.isb-lyon.cnrs.fr>). The Cantera de La Calera (La Suerte-Las Piletas) quarry located near Agaete on the island of Gran Canaria was reported by Amelia Rodríguez Rodríguez in March of 2007. Volcanic stone was exploited for millstones 35–50 cm in diameter during the prehistoric period. A quarry photograph shows several millstone preforms isolated on a nearly vertical rock face. The Cantera de El Queso quarry is located near Santa Lucía de Tirajana on Islas Canarias. At this location, millstones were manufactured from volcanic deposits. The quarry was reported by Amelia Rodríguez Rodríguez in March of 2007. A quarry photograph shows scars on a nearly vertical rock face where millstone had been cut. The third quarry on the Canary Islands is Cantera de Riquián quarry located near Las Palas de Gran Canaria. It was reported by Amelia Rodríguez Rodríguez in March of 2007. A volcanic basalt was exploited for millstones. The final quarry reported on the Canary Islands is Cantera de Cuatro Puertas near Telde. It was reported by Amelia Rodríguez Rodríguez in March of 2007. Millstones were made from a basalt. A photograph of the quarry shows circular millstone extraction areas on a nearly vertical rock face. References cited for all four quarries were Rodríguez Rodríguez and Barrosa Cruz (2001) and Rodríguez Rodríguez, Martín Rodríguez, Mangas Viñuela, González Marrero and Buxeda-Garrigós (2006).

A total of 32 quarries have been reported for Spain's Isla de Menorca (<http://meuliere.isb-lyon.cnrs.fr>). The island of Menorca (or Minorca) is one of the Balearic Islands off the east coast of Spain. Joaquin Sanchez Navarro has personally recorded all these quarries. The period of use for all these quarries was between the ninth and thirteenth centuries A.D. It is assumed that people returned to these quarries repeatedly over the centuries when querns were needed. The quarries are located along the coast of the island and exploited a sedimentary rock. Quarries ranged from small extraction areas to quarries that produced large quantities of querns. Mr. Sanchez Navarro graciously shared some photographs for this book. The first quarry in these photographs is Punta de Sa Mioca (Figure 76) which is located on the coast; it exploited a sedimentary rock for querns. It is estimated that 16,000 to 25,000 querns were produced at the quarry. Photographs of the quarry show an expanse of horizontal bedrock with round extraction holes. Second, the Morro Llevant-ses Anglades-Cap d'en Font quarry (Figure 77) is located on the coast at Morro Llevant-ses Anglades-Cap d'en Font near Sant Lluís. This quarry (Figure 78) is in a sedimentary rock where an estimated 750 to 2,250 millstones were produced. An example of a completed millstone from S' Aranjif on Menorca is illustrated in Figure 79.

Several studies have provided descriptions of the millstone and quern quarries of Spain. Most of these sources have been cited in the discussions above, but for the reader's benefit they are here listed together, with their Spanish titles approximately translated into English: Cisneros Cunchillos, Pilar Lapuente Mercadal, Magallón Botaya, and Ortega Castillo (1985) published "Archaeological-Geological Study of Round Hill (Pardos, Zaragoza)" which includes millstones. Rodríguez Rodríguez and Barrosa Cruz (2001) produced a study entitled "Working the Stone to Grind the Grain: The Prehistoric Exploitation of the Mill Quarries of tufa in the Grand Canary Islands." Pascal Mayoral and Garcia Ruiz (2001) wrote about the "Quarries and Technology of Millstones in the Jubera River (the Rioja)." The following year, Pascal Mayoral and Garcia Ruiz (2002) published "New Quarries of Millstones (and Presses), Valley of Cidacos." In 2003 Pascal Mayoral and Garcia Ruiz produced three studies: (2003a) "Millstone Quarries and Presses, Basin of Linares River: Wall of Water, Villaroya and Gravalos"; (2003b) "New Discoveries of Millstone Quarries, Iregua River"; (2003c) "The Millstone Quarries: An Unknown Industry of Rioja." An earlier study by Pascal Mayoral and Moreno Arrastio (1980) was "Roman Oil Presses in La Rioja." Reyes Mesa (2006) dealt with millstone quarries in "The Hydraulic Mills: Flour Mills of the Province of Granada." Rodríguez Rodríguez, Martín Rodríguez, Mangas Viñuela, González Marrero and Buxeda-Garrigós (2006) wrote a study entitled "The Exploitation of the Lithic Resources in the Grand Canary Islands. Towards the Reconstruction of the Social Relationships of Production in the Pre-European and Colonial Epochs." Three studies dealing with the quern industry on the Island of Menorca are published in French (Sanchez Navarro 2001, 2005, 2006). Two other studies for Spain include Barbera Miralles' (2003) study of Catalan millstones and Harrison's (2002) article entitled "Quernstones from a Survey Around Nájera, Spain."