

Between a taphonomic and erosion filter. The difficult research on Early Neolithic in the Iberian Peninsula

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*In memoriam Miguel Magalhães Ramalho
(2007–2021 director of the Geological Museum of Lisbon)*

On the afternoon of 11 May 2017, the Lisbon meeting was held at the Geological Museum in Lisbon. This is a special museum, because it has conserved its collections in the same place and in the same furniture as in the 19th century (Fig. 1). The first 6 chapters of this article are therefore a brief history of research on the Early Neolithic on the Iberian Peninsula.¹

It was very accommodating of the museum director at the time, Miguel Ramalho (1937–2021), to allow us to meet in his museum. That is why I wanted to thank him warmly with this article on behalf of Research Cluster 1. Unfortunately, he passed away on 8 March 2021. We dedicate this paper to him in his memory.

Works on the recent prehistory of the Iberian Peninsula before the 19th century

On the Iberian Peninsula, we know very little about the early history of prehistoric research compared to other regions in Europe. According to Barbara Sasse's research, prehistoric archaeology in the narrower sense began with Michele Mercati (1541–1593),² the Pope's physician at the time and director of the botanical gardens of the Vatican. Later on, mainly Scandinavian physicians developed further this science: Caspar Bartholin (1585–1629), Ole Worm (1588–1654), Thomas Bartholin (1616–1680), Olof Rudbeck (1630–1702) and Thomas

Bartholin the younger (1659–1690)³. At the same time, the Dane Nikolaus Stensen, called Steno (1638–1686), who had studied with Thomas Bartholin the elder, began to develop geology; it is therefore not the case, as is often claimed, that prehistory took over the observation of stratigraphy from geology, but that both sciences were developed simultaneously by medical scientists.⁴

On the Iberian Peninsula, too, archaeology began to be studied during the Renaissance. There, the first impetus probably came also from the clergy, and so it is

¹ This paper gives only a very short description of the history of investigation on the beginning of the Neolithic in the Iberian Peninsula (for the most part updated excerpts from my unprinted habilitation thesis at the Goethe University Frankfurt am Main, 1992), but because of space it is only possible to mention certain archaeologists and their publications, which in my opinion are important to mention, such as giving in the darkness of history some spotlights on them, but surely there were also others not touched by that spotlights, but also important! See also: López

1988; Hernando 1999; van Willigen 2006. On the other hand the quoted literature does provide the reader with an instrument to discover more information, and perhaps contradict my opinions. All ¹⁴C data mentioned below have been recalibrated with the program OxCal v4.4.4, Christopher Bronk-Ramsey (2021).

² Sasse 2017, 143–153. 266–270. 347–351; see also Simões 1878, 3; Tubino 1872a, 6–8; Cardoso – Gonçalves 2020.

³ Sasse 2017, 165; Sasse 2018, 227–228.

⁴ Sasse 2018, 20. 51. 272–230.



1 Lisbon, May 11, 2017; conference participants in front of the entrance to the building where the Geological Museum is located; from left to right: back row: Rui Mataloto, Reinders Neef, João Zilhão, Daniel Schyle, José Eduardo Mateus, Hermann Gorbahn, Norbert Benecke, Pablo Arias, Daniel van Calker, Carlos Tavares da Silva, two persons not identified; front row: Mariana Diniz, Oreto García-Puchol, Markus Reindel, Paula Queiroz, Joaquina Soares, Michael Kunst, Karin Bartl, Miguel Ramalho, Friedrich Lüth.

not surprising that the first known Portuguese archaeologist was a Dominican monk: André de Resende (1498–1573).⁵ In Spain, the historian and theologian Pere Antoni Beuter (1490–1554) from Valencia can be mentioned, who reported the discovery of a Stone Age mass grave – in my opinion probably Final Neolithic – in 1534, albeit with a geographical description of the location that is difficult to comprehend today.⁶ The largest megalithic tomb known to date, the Cueva de Menga (Antequera), was first mentioned by the Archbishop of Málaga as early as 1530. The Spanish king, Philip II (1527–1598; king from 1556–1598) ordered to collect local information of different kinds, published in 1575 as “Relaciones Topográficas de los Pueblos de España”. There, the archaeological monuments known at the time, such as for example spectacular megalithic tombs, were also included.⁷ In this context, Ambrosio de Morales (1513–1591), whose father was also a medical doctor, should also be mentioned. He was mainly a historian, but also worked with archaeological finds

and developed numismatics, especially in Spain, so he is considered the founder of archaeology in Spain.⁸ In the following only is mentioned what concerns the prehistoric archaeology.

More than 100 years later, we should mention Martinho de Mendonça de Pina Proença (1693–1743) from Portugal, who, in 1720, was a founding member of the “Academia Real da História Portuguesa”. In 1734, he published in its series *Memórias da Academia Real de História* a lecture on the megalithic tombs of Portugal, which he had given on 30 July 1733.⁹ In the same year, on 24 September 1733, Frei Affonso da Madre de Deus Guerreiro (born 1676) gave a lecture on a list of 315 megalithic tombs, probably outside Scandinavia the first inventory of megalithic tombs in Europe, which unfortunately fell victim to the earthquake of 1755.¹⁰ These representations were probably a consequence of the Monument Protection Law enacted by the Portuguese King João V on 13 August 1721,¹¹ one of the early monument protection laws after the first monument protection law was

5 Cardoso 2000, 9.

6 Beuter 1604, 116; Tubino 1872a, 8; on Beuter see Escartí 2010.

7 Sasse 2017, 216–217.

8 Sasse 2017, 191. 216–217. 292. 298; Sánchez Madrid 2002, 17.

9 Leisner – Leisner 1959, XIV.

10 Leisner – Leisner 1959, XIV, see also Cardoso 2000, 10 and Rhoné 1868b, 181–182.

11 Cardoso 2000, 10; Fabião 2021, 52.

enacted in Rome by Pope Eugene IV in 1439 and developed further on.¹² Some 200 years later Sweden enacted a law in 1666.¹³

Francisco María Tubino y Oliva (1833–1888)¹⁴ was the first Spaniard to publish a history of prehistoric archaeology¹⁵ in 1872, in which he described how the jurist Joaquín Marín y Mendoza (1727–1782) had already explained a kind of three-period system in 1755: the Stone, Copper and Iron Ages.¹⁶ One also learns that he was the first to introduce the Spanish translation “prehistórico” of the English term “prehistoric”, which he first published around 1867 in the journal “Andalucía” in Seville.¹⁷

The aforementioned works shed light on a dark area of research history that will reveal in the future many more insights into international connections, for a scientific connection via Italy to Central and Northern Europe can certainly be expected via the Catholic Church, and since Latin was mostly used as the language of science, the knowledge was also accessible to all interested parties.

So far, however, no continuous connection of these early works to the works of the 19th century is known, i.e. to the time from which the research history of prehistoric archaeology on the Iberian Peninsula is more accessible through publications.

Research on the Neolithic of the Iberian Peninsula in the 19th century

An important date for the development of prehistoric research in Europe was the publication of the three-period system by Christian Jürgensen Thomsen (1788–1865). As already mentioned by Tubino, the three-period system had various predecessors, probably all based on a work by the Roman poet and philosopher Titus Lucretius Carus,¹⁸ who lived in the first half of the 1st century BC. However, Thomsen was the first to prove this three-period system on the basis of empirical research¹⁹ and to make it known throughout Europe by placing the finds in his museum and above all by publishing the museum guide between 1836 and 1848.²⁰ In addition, were also important the works of Sven Nilsson (1787–1883),²¹ Bror Emil Hildebrand (1806–1884),²² (Georg Christian) Friedrich Lisch (1801–1883)²³ and finally the publications and travels of the younger Danish researcher, Jens Jacob Asmussen Worsaae (1821–1885), and the following English and French acceptance of the system.

In 1837, the Danish zoologist (Johannes) Japetus (Smith) Steenstrup (1813–1897) described for the first

time so-called “Kökkenmöddinger” (rubbish heaps) – today usually called “shell middens”.²⁴ On his initiative, the “Kongelige danske Videnskabernes Selskab” formed an interdisciplinary commission in 1848 to study these shell middens. It consisted of Steenstrup, the geologist (Johann) Georg Forchhammer (1794–1865) and Worsaae.²⁵ The excavation results of this three-man team were published in the reports of the Royal Academy of Copenhagen between 1848 and 1855.²⁶ In the same year, 1837, the nobleman and customs official Jacques Boucher (de Crèvecœur) de Perthes (1788–1868) began to collect roughly worked stones associated with bones of extinct animals in the gravel deposits of the Somme in the French town of Abbeville. He published them in two volumes,²⁷ in the second of which, from 1857, the title of the tenth chapter reads: “De l’âge de pierre, de sa durée. – Des indices servant à reconnaître l’origine et le plus ou moins d’ancienneté des instruments de pierre”. In it, it is stated – perhaps for the first time – that the polished stone axes only appear in a more recent period of the

12 Lanciani 1902, 52; Sasse 2017, 204.

13 Klindt-Jensen 1975, 26–27; Sasse 2018, 45.

14 Belén 2002; Ruiz Moreno – Salas Álvarez 2018.

15 Tubino 1872a, 9.

16 Marín 1776, 7; Tubino probably made a mistake with the date 1755, unless there was a first edition and the book used here from the “K.K.Hofbibliothek Österr. Nationalbibliothek” with the inventory number 71.Q.74 would have been a second edition.

17 Tubino 1872a, 19; on English and Scandinavian forerunners: Daniel 1975, 86; Sasse 2018, 330. 352.

18 T. Lucretius Carus, *De rerum natura*, lines 1283–1296; see Kunst 1982, 11–12; Kunst 2010, 111–112.

19 Thomsen et al. 1831; Kunst 2010, 112.

20 Thomsen 1836; Thomsen 1837; Thomsen 1848.

21 Worsaae 1859, 93; Daniel 1975, 42.

22 Daniel 1975, 42; Klindt-Jensen 1975, 61–62.

23 Worsaae 1859, 93; Eggers 1959, 46–52; Johann Friedrich Danneil (1783–1868) mentioned in Eggers 1959, 44–46 probably had little resonance and is therefore excluded from the present text.

24 Steenstrup 1848, 7; Daniel 1975, 87.

25 Daniel 1975, 87; Klindt-Jensen 1975, 71.

26 Steenstrup 1848; Steenstrup 1851; Steenstrup et al. 1851; Worsaae 1852a; Worsaae 1852 b; Steenstrup et al. 1853; Worsaae 1853; Steenstrup et al. 1854; Steenstrup 1855.

27 Boucher de Perthes 1847; Boucher de Perthes 1857; G. Daniel erroneously stated that Boucher de Perthes published this in five volumes under the title “De la Crétation: essai sur l’origine et la

Stone Age. This classification was taken up internationally, what naturally included the acception of the rough paleolithic stone implements as artefacts, as can be seen from a lecture given by Worsaae on 18 March 1859 at the “Kongelige danske Videnskabernes Selskab” on the subject of “a new subdivision of the Stone and Bronze Ages”, which was published at the meeting of 4 November²⁸, and also the description of the travel from John Evans (1823–1908) and Joseph Prestwich (1812–1896) to Abbeville in 1859 and their publications.²⁹ That was in the same year, when Charles Darwin’s evolution theory appeared.

Against the background of this generally known development, the question is now, what was the development specifically on the Iberian Peninsula and especially in Portugal? According to Mariano Ayarzagüena Sanz and Jesús Salas Álvarez, the mining engineer and geologist Casiano de Prado y Vallo (1797–1866)³⁰ must be singled out for the beginning of prehistoric research in Spain, apart from the aforementioned precursors. He had been collecting Palaeolithic stone implements in the valley of the Río Manzanares since 1851, which he published in 1864. As early as 1862, he had led two French palaeontologists, Édouard (Armand) Lartet (1801–1871) and (Philippe) Édouard (Poullietier de) Verneuil (1805–1873), to the later famous site of San Isidro (Madrid) in the Manzanares Valley, from where they were allowed to take a find back to Paris. As a result, this site also became known in France and England.³¹

In his above-mentioned history of research, Tubino described which foreign prehistorians had exerted the greatest influence on Spanish research. For him, Boucher de Perthes was the first, then for geology Charles Lyell (1797–1875), Hugh Falconer (1808–1865) and Joseph Prestwich (1812–1896); from Sweden Nilsson, from Denmark “Momsem”, probably he means Thomsen, Forchhammer, Worsaae and Steenstrup with their investigations of moors, burial mounds, dolmens and ‘Kökkenmöddinger’; from Switzerland, with the pile-dwelling research of Frédéric (Louis) Troyon (1815–1866), Charles Adolphe Morlot (1820–1867), Ferdinand Keller (1800–1881) and Ludwig Rüttimeyer (1825–1895); from France, the above-mentioned É. Lartet with his system of classification; in relation to megalithic buildings Henri Martin (1810–1883), Bosteten, probably

meaning Baron Gustav Karl von Bonstetten (1816–1892), Alexandre (Louis Joseph) Bertrand (1820–1902) and James Fergusson (1808–1886); from Italy, he mentions the geologists Giovanni Capellini (1833–1922), Igino Cocchi (1827–1913), Giuseppe Ponzi (1805–1885), Francesco Anca (1803–1887)³² and the archaeologist Luigi Pigorini (1842–1925); he also mentions Édouard Dupont (1841–1911) and Philippe-Charles Schmerling (1790–1836) from Belgium, John Lubbock (1834–1913) from England with his ethno-archaeological research and finally some Irish researchers on the Crannogs, among them William Robert (Wills) Wilde (1815–1876).³³ It is interesting to note that no Germans had been mentioned, and also in the International Congresses of Anthropology and Prehistoric Archaeology German anthropologists or archaeologists are underrepresented. This was surely a consequence of the wars between Germany and Denmark (‘Second Schleswig War’ from 1 February 1864 to 30 October 1864)³⁴ and Germany and France (‘Franco-Prussian War’ from 19 July 1870 to 28 January 1871),³⁵ possibly because anthropology and prehistory have often a nationalistic side,³⁶ which is not so frequent in Classic Archaeology and Philology. The first Congress of Anthropology and Prehistoric Archaeology was held in Neuchâtel, Switzerland, in 1866,³⁷ after having been founded a year earlier, probably at the suggestion of É. Lartet and G. de Mortillet,³⁸ at a meeting of the Italian Natural Science Society in La Spezia.³⁹ I think this is reflected in Tubino’s list of names.

It is almost like a confirmation of Tubino that in the same volume in which his article just mentioned appeared, Juan Vilanova y Piera (1821–1893) (Fig. 2) published two papers, one on the Palaeolithic and Mesolithic epochs and the other on the Neolithic epoch, or the ‘polished stone epoch’, in which several of the authors mentioned by Tubino are quoted. Vilanova divides the prehistoric period into the following epochs:⁴⁰

- 1) Archaeolithic: time of the pre-glacial, i.e. Pliocene or Miocene man.
- 2) Palaeolithic: the time of the mammoth and cave bear.
- 3) Mesolithic: the time of the reindeer and aurochs and the flint blades.
- 4) Neolithic: the time of today’s mammals, also domesticated, and polished stone

progression des êtres” 1838–41, but there in volume 5 is only mentioned a ‘prediluvial’ human being.

²⁸ Worsaae 1859.

²⁹ Gamble 2021, 41–86.

³⁰ On Casiano de Prado, see Puche – Ayarzagüena 2016, 19.

³¹ Ayarzagüena – Salas 2017, 27.

³² The life data of the Italian geologists and their first names I owe to Fedra Alessandra Pizzato of the Università degli Studi di Verona, for which I am very grateful to her.

³³ Tubino 1872a, 12–13.

³⁴ Malettke 1969, see also Showalter 2015.

³⁵ Epkenhans 2020; see also Showalter 2015.

³⁶ See e.g. Worsaae 1848, see also Wahle 1951, 98.

³⁷ from 23 to 25 August 1866; at that time it had the title “Congrès International Paléoethnologique”.

³⁸ Junghans 1987, 52.

³⁹ Cornalia – Stoppani 1868; Junghans 1987, 52.

⁴⁰ Vilanova 1872, 136.

This division of the Stone Age into epochs was obviously influenced by that of Jules Rebourg (?-1882),⁴¹ presumably a consequence of the 4th International Congress of Anthropology and Prehistoric Archaeology in Copenhagen (1869), at which Rebourg for the first time also used the term “Mesolithic”, although he understood it to mean an older epoch than we do today.⁴²

Vilanova and Tubino took also part in this congress. Vilanova, however, used the term “Archaeolithic” for a period still prior to the mammoth and cave bear and took up the term “Palaeolithic” proposed by Lubbock for the mammoth period. As a geologist, however, his understanding of the epochs is not, as in Rebourg’s case, predominantly shaped by archaeological observations of typical changes in the finds, but follows the proposal of É. Lartet, which is based on palaeontological changes. For the differentiation of the last two epochs, Mesolithic and Neolithic, however, he relies, like Rebourg, on the changes in stone working techniques – whether chipped or ground.

Vilanova and Tubino combined their participation in the congress with a scientific journey⁴³ that took them to the most famous museums for prehistoric finds of their time. Beside a lot of new insights, they brought back various objects for the Natural History Museum of Madrid. In 1871, they published a detailed account of the trip and the details of the congress that they considered important; this publication also contains an introduction, a history of prehistoric research in Spain up to 1869,⁴⁴ the biographies of Boucher de Perthes, Lubbock, Carl Vogt (1817–1895) and Worsaae,⁴⁵ and a list of the objects brought to Spain.⁴⁶

Their journey is of great importance in terms of research history. This was the first time that two scientists from the Iberian Peninsula who worked on prehistory and early history had seen with their own eyes the finds and sites of the north that were decisive for the three-period system and also the other chronological classification attempts of the time. After the first shell middens from Muge (Portugal) had recently been published, they had even experienced first-hand the latest ideas of Worsaae and Steenstrup in Copenhagen, and had also brought sample material to Madrid they had collected themselves. Furthermore, they had the opportunity to meet the Swedish creators of the typological method⁴⁷ – Nilsson, Bror Emil Hildebrand and Hans Hildebrand (1842–1913), as well as Oscar Montelius (1843–1921). It



2 The Spanish geologist Juan Vilanova y Piera; courtesy of María Jesús de Pedro Michó (Museu de Prehistòria de València, photo No.: 101_0328_Vilanova).

can be assumed that their discussions had a great influence on subsequent research on the Iberian Peninsula.

Conversely, they contributed to bringing Spain’s prehistoric research to international attention. Whereas, there was already information from Portugal and Spain⁴⁸ and also the British Crown Colony of Gibraltar⁴⁹ at the International Congresses of Prehistoric Archaeology and Anthropology of Paris (second) in 1867 and of Norwich and London (third) in 1868, it is not clear whether colleagues from Spain and Portugal were also present in person.⁵⁰ In 1867, however, Francisco António Pereira da Costa (1809–1889) (Fig. 3) sent plaster casts of prehistoric objects and human skeletal remains from the Casa da Moura Cave of the Cesareda plateau and from megalithic tombs and shell middens to Paris, which were commented on at the congress by Gabriel de Mortillet.⁵¹ Skeletal remains coming from the Cabeço da Arruda near

41 Rhoné 1868a, 107; Rebourg 1875, 316; on Jules Rebourg, see Schlanger 2013.

42 Rebourg 1875, 316.

43 See also Puche – Ayarzagüena 2016, 26.

44 Vilanova – Tubino 1871, V–XXXIX.

45 Vilanova – Tubino 1871, 217–238; in that presentation, the first names of the corresponding persons were translated into Spanish.

46 Vilanova – Tubino 1871, 241–265.

47 Kunst 1982, 11–12.

48 Boyd Dawkins 1869.

49 Busk 1869.

50 de Mortillet 1868, 8. 14–15, 19, 22, 24, 31–33, 44; da Costa 1869; Machado 1869; Vilanova 1869.

51 de Mortillet 1868, 31–33.



3 The Portuguese geologist Francisco Pereira da Costa; courtesy of the Geological Museum – Lisbon of the Laboratório Nacional de Energia e Geologia – Amadora.

Muge⁵² were commented on by the physician and anthropologist Franz Ignaz Pruner, also Pruner-Bey (1808–1882),⁵³ thus drawing attention to the occurrence of shell middens in Portugal, as shown by the interest of Worsaae in the dating of these shell middens.⁵⁴ Moreover, in a session reported by the Egyptologist Arthur(-Ali) Rhoné (1836–1910), which dealt with megalithic buildings, it became clear that numerous megalithic tombs, called “antas” there, and also menhirs and cromleques, from various regions had been known in Portugal – as mentioned above – since the 18th century, because Pereira da Costa had also compiled plaster casts of corresponding finds and provided a report on these.⁵⁵

52 See contribution by Gonçalves et al., this volume.

53 de Mortillet 1868, 33.

54 de Mortillet 1868, 33.

55 Rhoné 1868b, 181–184.

56 Lubbock 1869, 339.

57 Prado 1865.

58 King Amadeus I (1845–1890) ruled Spain from 1870 to 1873.

59 Dölemeyer 2003, 78, note 19.

60 Tubino 1872b, 48.

61 E.g. Simões 1878, 56–60.

62 Pastor – Pachón 1991, LXIII; Góngora 1868, 53.

Significantly, even in the second edition of Lubbock’s “Pre-Historic Times”, Spain had been mentioned only once in connection with Palaeolithic hand-axes.⁵⁶ He quotes a report by Casiano de Prado from the first volume of the journal “Matériaux pour l’histoire primitive et naturelle de l’homme” edited by (Louis Laurent) Gabriel de Mortillet (1821–1898).⁵⁷ In 1871, the situation changed. At the suggestion of Vilanova and Tubino, the government of King Amadeus I⁵⁸ awarded baron Rosenorn – i.e. probably Rosenørn-Lehn – the “Great Cross of Isabella the Catholic”, and Worsaae, Steenstrup, Bror Emil Hildebrand, Olivecrona – i.e. probably the judicial councillor Samuel Detlof Rudolf Knut Olivecrona (1817–1905),⁵⁹ Nordenskyöld – i.e. probably the baron Adolf Erik Nordenskiöld (1832–1901), Gustaf von Düben (1822–1892) and Oskar Theodor Sandahl (1829–1894) each the title of Commander with Plaque.⁶⁰

Unfortunately, however, Manuel de Góngora y Martínez (1822–1884) is mentioned very seldom.⁶¹ He was a Spanish polymath, first a natural scientist and jurist, later a historian and archaeologist who held the chair of university history at the University of Granada. Through his work in the field of epigraphy, he belonged to the Spanish friends of Emil Hübner (1834–1901). On the other hand, he was familiar with Lubbock’s book of 1865 in the French translation by Barbier.⁶² His book “Antigüedades Prehistóricas de Andalucía” is the first comprehensive monograph of Spanish prehistoric antiquities.⁶³ It refers mainly to the province of Granada, but also includes some neighbouring areas of Andalusia. The presentation, which is extremely unprejudiced for its time, is admirable and it must be regretted that his work has – until today⁶⁴ – hardly been taken note of internationally, although it represents an important source of partially lost antiquities. Moreover, Góngora was a good methodologist, as the following quotation shows:

“Happy explorers, ignorant of what treasure fortune has bestowed upon you...: for a few hours let go, so that science may observe and record piece by piece the objects, the position of the skeletons, the appearance and measurements of the clothing, the placement of the weapons, the shape of the utensils made of clay, and that from which safe conclusions can be drawn about the race, the religion, the grave rites, the costume and the pottery of these unknown people!”⁶⁵

63 Góngora 1868; now also available in digital form on the internet: http://www.bibliotecavirtualdeandalucia.es/catalogo/es/catalogo_imagenes/grupo.do?path=1009570.

64 Carrasco – Pachón 2009, 228.

65 The original text reads: “Descubridores felícimos, ignorantes del verdadero tesoro con que os brinda la fortuna...: por breves horas dejad que la ciencia observe y anote uno por uno los objetos, la posición de los cadáveres, la traza y medida de los trages, el lugar de las armas, la forma de los utensilios de barro y que pueda sacar consecuencias firmes y decisivas acerca de la raza, de la religion, de las prácticas funerarias, de la indumentaria, de la cerámica de esta gente desconocida!” Góngora 1868, 35–36.



4 Cueva de los Murciélagos de Albuñol: some finds from the cave: the golden diadem and some objects made of esparto grass (*Lygeum spartum*) (Góngora 1868, 28–29 pl. I).

The book begins with the description of a cave find which is one of the most special finds in European prehistory and early history, but which unfortunately did not receive due attention for a long time, because it was thought to be a fake due to its unusual nature⁶⁶, until finally ¹⁴C dating confirmed its great age.⁶⁷ The cave in question is the Cueva de los Murciélagos near Albuñol (Granada, Spain) (Fig. 4). The necropolis of corpses dis-

covered in this cave, which had been mummified by the saltpetre deposits in the cave, gave Góngora an age of more than 4000 years,⁶⁸ i.e. older than 2000 B.C. Unfortunately, it is not clear from his statements how he arrived at this age, but this assumption shows that Góngora was at the most recent state of research of his time. The ¹⁴C data known so far are presented here sorted by age, calibrated according to the new version OxCal 4.4 (Tab. 1):

C.S.I.C.– 247	2 samples of a wooden tool	7440 ± 100 BP ⁶⁹	=	6455 – 6081 calBC (95.4%)
C.S.I.C.– 1133	Esparto, Sandal, Inv.No.598	6086 ± 45 BP ⁷⁰	=	5208 – 5158 calBC (11.0%)
				5124 – 5092 calBC (3.4%)
				5082 – 4881 calBC (77.1%)
				4827 – 4847 calBC (4.0%)
C.S.I.C.– 1134	Esparto, Sandal, Inv.No.609	5900 ± 38 BP ⁷¹	=	4886 – 4870 calBC (1.9%)
				4848 – 4690 calBC (93.6%)
C.S.I.C.– 1132	Textile Fragment, Inv.No.616	5861 ± 48 BP ⁷²	=	4843 – 4598 calBC (94.7%)
				4565 – 4555 calBC (0.8%)
C.S.I.C.– 246	Esparto, 2 samples:	5.400 ± 80 BP ⁷³	=	4440 – 4424 calBC (1.0%)
				4366 – 4042 calBC (93.2%)
				4015 – 3996 calBC (1.2%)

Table 1 The ¹⁴C data known so far are presented here sorted by age, calibrated according to the new version OxCal 4.4.

From these findings Góngora made the following observations, from some of which he also drew further conclusions, which sometimes go a little too far:

- 1) The careful deposition of the dead speaks for a belief in the immortality of the soul, a resurrection and a life after death.
- 2) The people of the Cueva de los Murciélagos are said to have been cave-dwellers, like various other peoples of Spain, past and present.
- 3) and 4) The tools of the cave dwellers would have been made of flint or serpentine, bone and wood; they would also have had relatively coarse pottery and very simple jewellery.
- 5) He points out that they did not use copper, iron or precious stones, but gold, as evidenced by a golden diadem. At this point he quotes J. Lubbock, who gives further examples in his book that gold came into use before the other metals. Moreover, the Iberian Peninsula had been a supplier of gold since ancient times, as the ancient writers Strabo and Pliny reported, and the people of the Albuñol Cave could have found it in the streams coming from the Sierra Nevada.
- 6) After enumerating the items and garments made from esparto grass, he goes on to talk about the technical details of their manufacture. He reports that the esparto grass was obviously dyed, as one could distinguish between green and red stalks, that some items were hand-woven, others made on a vertical loom, for which he sees a small clay disc, which he interprets as a weaving weight, as further evidence.
- 7) Finally, he describes as gifts for the deceased blossoms, small plants, small snail shells and shells, fragments of conspicuous or transparent or coloured stones and hair tufts, which he notes were certainly from loved ones; all in all, these gifts are for Góngora an expression of gifts of hope and love. He interprets the many poppy fruit clusters found, mostly in small esparto bags with the dead, as a symbol of sleep or as a representation of death. He adds that the Romans called the Spanish poppy *papaver ibericum* and extracted a strong opium from it. His book also deals with other caves and rock paintings⁷⁴ which today would be classified as schematic rock art.⁷⁵ In the aftermath of the Paris Congress of 1867, his explana-

66 Pastor – Pachón 1991, LVII; Carrasco – Pachón 2009, 229.

67 López 1978, 50.

68 Góngora 1868, 36.

69 López 1978, 50.

70 Cacho et al. 1996, 116.

71 Cacho et al. 1996, 116.

72 Cacho et al. 1996, 116.

73 López 1978, 50.

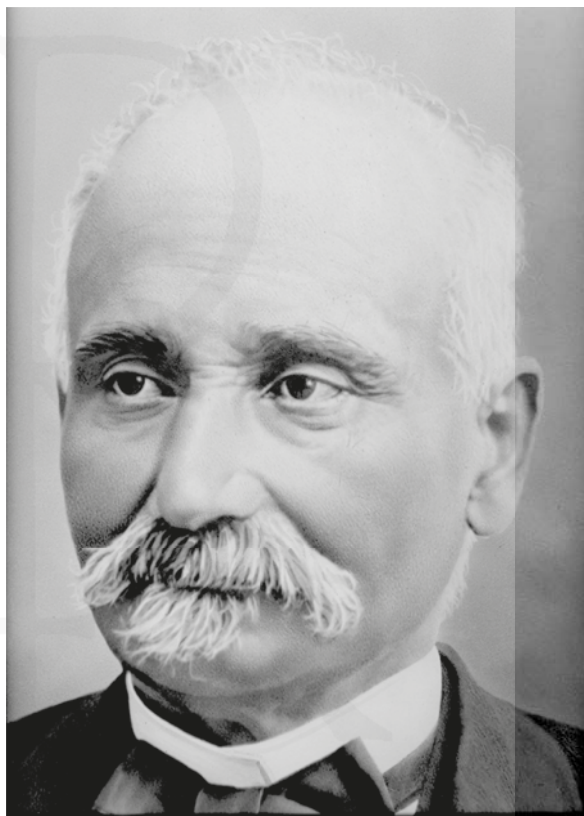
74 Góngora 1868, 62–75.

75 See e. g. Acosta 1968.

tions of the megalithic structures of Andalusia are particularly noteworthy.⁷⁶

It was not until the end of the last century that the finds of the Cueva de los Murciélagos de Albuñol, which today are mainly deposited in the “Museo Arquelógico Nacional” in Madrid, received renewed attention. In 1980, two works were published, a more descriptive work on the pottery, bone and stone implements⁷⁷ and a very interesting study of the objects woven from esparto grass.⁷⁸ The poppy plant remains from the Cueva de los Murciélagos were also part of the research of Elisa Guerra, who dealt with drugs and prehistoric rituals.⁷⁹ Today, poppy remains are known from various Neolithic sites on the Iberian Peninsula.⁸⁰ Finally, a detailed new evaluation of the finds from the cave has been produced, in which the above-mentioned Carrasco Rus and Pachón Romero compare all previous investigations with finds and findings in the entire south and southeast of the Iberian Peninsula, leading to important new insights.⁸¹

In Portugal, as in Spain geologists set prehistoric research in motion. Their work, too, did not have an international echo at first. An important date is certainly 1872, namely when Carlos Ribeiro (1813–1882),⁸² together with the royal architect Joaquim Possidónio Narciso da Silva (1806–1896),⁸³ took part in the 6th International Congress of Anthropology and Prehistoric Archaeology in Brussels, where Ribeiro gave two lectures on Palaeolithic finds.⁸⁴ Carlos Ribeiro (Fig. 5) came from a modest family and as a young man he completed an apprenticeship as a merchant.⁸⁵ With the help of his master and a member of the military, he began to study in 1833. During the Portuguese Civil War (1828–1834), he joined the Liberal army on 4 August 1833, against his father’s wishes.⁸⁶ After the end of the war, he continued his studies, but remained loyal to the artillery. After finishing his studies, he took part in the struggles of the ‘Maria da Fonte Revolution’ in 1844. Thus, he began a military career: first lieutenant in 1840, captain in 1851, major in 1866, lieutenant-colonel in 1872, colonel in 1875, he was dismissed as a general shortly before his death. Through his acquaintance with the officer J. Vitorino Damásio, he gained profound insights into metallurgy and in 1852 became head of the mining section in the technical department of the newly founded Ministry of Public



5 The Portuguese geologist and archaeologist Carlos Ribeiro; courtesy of the Geological Museum – Lisbon of the Laboratório Nacional de Energia e Geologia – Amadora.

Works. At the same time, the Geological Commission – Comissão dos Trabalhos Geológicos – was founded, which he initially headed together with the above-mentioned Pereira da Costa – professor at the Technical University (Escola Politécnica de Lisboa). Assistant became Joaquim (Filipe) Nery (da Encarnação) Delgado (1835–1908).⁸⁷ After the dissolution of this commission in 1869, the Department of Geology was founded under the direction of Ribeiro. One of his most important deeds for the Portuguese government was the development of water sources near Belas, which secured Lisbon’s drinking water supply. While working on the geological map of Portugal, he came across findings that he believed proved the existence of Tertiary man in Portugal. His presentations of these discoveries at the Brussels Inter-

76 Góngora 1868, 79–106.

77 López 1980.

78 Alfaro 1980; later also presented in her monograph, Alfaro 1984.

79 Guerra 2005; Guerra 2006.

80 E.g. from the Early Neolithic at Ambrona, vide Stika 2007, 54, pl. 12, 7, or from the Middle Neolithic at Can Tintorer (Gavà, Catalunya), see Juan-Tresserras – Villalba 1999.

81 Carrasco – Pachón 2009.

82 Fabião 2011, 106–111.

83 Fabião 2011, 117, 155.

84 Ribeiro 1873a; Ribeiro 1873b.

85 J. L. Cardoso writes that Ribeiro began working as a clerk apprentice at the age of 10, see Cardoso 2015, 4.

86 Cardoso 2015, 5, there Cardoso also mentions a novella “of the busy personal and professional life” of Carlos Ribeiro, published in 1884 by Camilo Castelo Branco, Ribeiro’s former schoolmate.

87 Cardoso 2015, 2.

national Congress⁸⁸ made him famous in Europe and made him one of the most important founders of prehistoric research in Portugal.⁸⁹

This chapter will only briefly touch on his first prehistoric monograph, which he published in 1878 on the settlement of Leceia⁹⁰ – then spelled Licêa – which is now known as a Copper Age fortified site⁹¹. At the very beginning of this work, a chapter deals with prehistoric stone tools in general. In this chapter, the author concluded that flint implements occurred throughout the entire Stone Age, that their shapes depended on the starting material, and that they were therefore – at least in Portugal – not suitable for the classification of epochs. As an example, he points to the similarity of the flint tools from the shell midden Cabeço da Arruda (Muge) to such tools from the Pliocene strata in the Tagus Valley. Muge was called Mugem at that time.⁹² The only criterion for distinguishing between the Palaeolithic and the Neolithic, on the basis of stone tools, is the absence or presence of polish, otherwise, he says, “it is the fauna, the circumstances of the deposit of the objects collected, and the criterion that presides over the exploration, which can serve as a guide in determining the age of these objects”.⁹³

Findings and their circumstances from the shell middens at Muge, which, as the current project by Nuno Bicho and his collaborators shows, are once again the focus of questions about the Mesolithic and early Neolithic in Portugal,⁹⁴ had already been published in 1865 in a bilingual monograph – Portuguese and French – by Pereira da Costa, which contributed to the further dissemination of knowledge, especially after the Paris Congress of 1867. However, as João Luis Cardoso was able to prove, the results of this publication were based on the work of Ribeiro,⁹⁵ which, unfortunately, was not mentioned in a word by Pereira da Costa! Pereira da Costa was a scientist of merit, but a cabinet researcher,⁹⁶ whereas Ribeiro was a thoroughly empirical scientist who mainly carried out field research and thus also excavations,⁹⁷ excavations which he documented as

precisely as possible (Fig. 6) in order to depict the find circumstances. He also used photography for archaeological documentation for the first time in Portugal (Fig. 7).⁹⁸ The international importance of Ribeiro is also shown by the fact that a necrology written by Nery Delgado was published in German translation in a renowned scientific journal in Austria.⁹⁹ The 19th and 20th century research history of the shell middens of Muge has been treated in great detail by João Luis Cardoso and José Manuel Rolão,¹⁰⁰ and a research history of the Upper Palaeolithic and Mesolithic of Portugal has also been written by Nuno Bicho and Cardoso.¹⁰¹

Excavations in caves of the above-mentioned Nery Delgado (Fig. 8) also contributed to further knowledge of the Neolithic, on the one hand on the plateau of Cesareda near Serra d’El-Rei (Peniche, Leiria)¹⁰² and on the other hand in the Gruta da Furninha near Peniche.¹⁰³

In 1878, the first summary monograph on prehistoric archaeology in the Iberian Peninsula was published,¹⁰⁴ written by the physician Augusto Filipe Simões (1835–1884): born in Coimbra on 18 June 1835, graduated in philosophy and medicine (1872), doctor of medicine (1872), substitute professor (1873) and full professor (1882) at the Faculty of Medicine of the University of Coimbra and acting librarian of the university library from 1883 until his death on 1 November 1884.¹⁰⁵ In the preface to the aforementioned book, he wrote something methodologically very significant:

“The conditions of the archaeologist who studies the prehistoric eras are identical to those of the naturalist, and as a naturalist he must proceed if he wants to reach the knowledge of the truth. In the first place, he lacks entirely the verbal or written tradition; he has to limit himself to the exact and rigorous meaning of the traces he observes. In the second place, the quality of these traces, the way they are found in the superficial layers of the earth’s crust, the fossil remains associated with them, make prehistoric archaeology a part of human palaeontology. Here the difference between the archaeologist and the naturalist disappears completely”.¹⁰⁶

88 See also above, Ribeiro 1873a; Ribeiro 1873b.

89 Biographical informations according to the Grande Enciclopédia Portuguesa e Brasileira (Lisboa – Rio de Janeiro 1945) and Cardoso 2015 and Delgado 1883; on Portuguese history, see J. H. Saraiva, *História concisa de Portugal*, Publicações Europa-América⁴ 1979.

90 Ribeiro 1878; Ribeiro 1991 (reprint); Cardoso 1991.

91 E.g. Cardoso 1989; Cardoso 1997.

92 See, for example, Ribeiro 1878, 16.

93 Ribeiro 1878, 17: “é a fauna, as circunstancias de jazida dos obectos colhidos, e o critério que preside á exploração, que podem servir de guia na determinação da idade d’estes obectos”

94 See Gonçalves et al., this volume.

95 Cardoso 2015, 15.

96 Cardoso 2015, 6.

97 Cardoso 2015, 4.

98 Cardoso 2015, 15.

99 Delgado 1883.

100 Cardoso – Rolão 2000.

101 Bicho – Cardoso 2018.

102 Delgado 1867.

103 Delgado 1884; see also Cardoso – Carvalho 2011.

104 Simões 1878; see also Fabião 2011, 82–83.

105 <https://www.uc.pt/bguc/DocumentosDiversos/AugustoFilipeSimoes>

106 In the original text – Simões 1878, II – it says: “As condições do archeologo que estuda as epocas prehistoricas são identicas ás do naturalista, e como naturalista ha de proceder se quizer chegar ao conhecimento da verdade. Em primeiro lugar falta-lhe inteiramente a tradição verbal ou escripta; tem de cingir-se á significação