

The protohistoric research in Sardinia (Italy) between 1935 and 1950. The birth of the modern archaeology in the Sardinian island

Riccardo Cicilloni

Abstract: In this paper we analyse the birth and development of modern archeology, with particular reference to protohistoric research, on the island of Sardinia (Italy), at the center of the Western Mediterranean. In Sardinia, indeed, studies about protohistoric age have largely monopolized archaeological research until now, because on the island there is the well-known phenomenon of Nuragic civilization, which developed from the Middle Bronze Age to the first phases of the Iron Age. The analysis focuses on the period 1935-1950, years in which the most important Sardinian archaeologist, Giovanni Lilliu, of the University of Cagliari, began to operate. In these years we see the beginnings of a new scientific and cultural season that, from the 1950s onwards, will outline and demonstrate to the world the extraordinary importance of Nuragic civilization.

Keywords: History of Archaeology, Protohistory, Sardinia, Nuragic civilization, Giovanni Lilliu.

Riassunto: Nel contributo si analizza la nascita e lo sviluppo della moderna archeologia, con particolare riferimento alla ricerca protostorica, in Sardegna (Italia), al centro del Mediterraneo Occidentale. In Sardegna, infatti, gli studi di carattere protostorico hanno largamente monopolizzato la ricerca archeologica sino ai giorni nostri, in quanto nell'isola si sviluppò il ben conosciuto fenomeno della civiltà Nuragica, a partire dal Bronzo Medio sino alle prime fasi dell'età del Ferro. L'analisi si focalizza sul periodo tra gli anni 1935 e 1950, quando iniziò ad operare il più importante archeologo sardo Giovanni Lilliu, dell'Università di Cagliari. In questi anni si può osservare l'inizio di una nuova stagione scientifica e culturale che, dagli anni Cinquanta in poi, tratterà e mostrerà al mondo la straordinaria importanza della civiltà nuragica.

Parole chiave: Storia dell'archeologia, Protostoria, Sardegna, civiltà nuragica, Giovanni Lilliu.

INTRODUZIONE

On the island of Sardinia (Italy), in the western Mediterranean, during the protohistorical period, as is well known, the Nuragic phenomenon developed; an extraordinary civilization, characterized by the building of great monuments. It was a long-lasting civilisation that, despite the obvious differences in the various cultural phases that occurred from the Middle Bronze Age to the end of the Iron Age (XXIII-VI cent. BC), managed to retain its



characteristics and habits over centuries to such an extent that it can be considered as a unitary and homogeneous whole (USAI 2012).

This civilization is characterized by the construction of more than 8,000 nuraghi of various kinds: they are dry, cyclopean-type constructions, built with the use of large blocks arranged in approximately orderly rows (Fig. 1). They are simple buildings, consisting of a single wall structure in the shape of a tower, and tower complexes, with several towers, linked by curtain walls. The interior rooms are covered by a “tholos”, or a false dome, with an ogival section. These great buildings have multiple functions, but in particular, to surveil the whole island territory.

The same cyclopean technique is used in the funeral constructions called “Giants’ tombs”, which are collective tombs in the shape of a bull’s head with a corridor chamber preceded by an exedra. Nuraghi and giants’ tombs were built and used in the initial phases of the Middle Bronze Age (DEPALMAS 2009a) and Late Bronze (DEPALMAS 2009b). During the Final Bronze Age (DEPALMAS 2009c) and the Iron Age (UGAS 2009; IALONGO 2013), nuraghi and giants’ tombs were gradually abandoned while new monumental types such as “holy wells”, small rectangular temples (called “in antis”) and, within villages, “meeting huts” came to prevail. In the latter phases, burials took place in a necropolis where the dead were placed in small pits of a cylindrical shape, with a change in burial customs that showed the transition from an advanced tribal society to a chiefdom, with the coming to power of aristocratic elites of warriors (CAMPUS *et alii* 2010; VANZETTI *et alii* 2013).

Nuragic monumental emergences have always characterized the Sardinian territory, becoming fundamental elements of the landscape, making it distinctive and unique. It is therefore not surprising, how the immense whole of monumental remains, of which it was necessary to understand chronological, cultural affiliation, function, technical and constructive characteristics, has attracted the interest of scholars since the sixteenth century. For example, General Alberto Ferrero Della Marmora, Italian geographer and scientist of the ‘800, dedicated most of the second volume of his famous *Voyage en Sardaigne* (DELLA MARMORA 1926) to the protohistoric monuments on the island. In order to understand the evolution of the protohistoric discipline in Sardinia, the period from the mid-30s of the last century until the years of reconstruction, material and moral, subsequent to the end of the Second World War is particularly interesting. In fact, from these moments, a more modern and scientific archeology begins to develop, less and less tied to the romantic clichés that were derived from nineteenth-century taste in describing Sardinia as “barbaric”, proud and warlike, builder of mysterious and fascinating monuments (LILLIU 1981). Much of the credit for this change of vision is due to the greatest and most famous Sardinian archaeologist, Giovanni Lilliu, that in the period in question began his studies and his career (LILLIU 2000: 14).

The period under consideration is placed between phases 3 and 4 proposed by Guidi (2010) for Italian prehistoric archeology. This is a crucial period in which prehistoric archeology in Italy began to develop in a scientific way, increasingly taking on an autonomous dignity respect to the predominant classical archeology. Furthermore, after the Great War, a cultural and scientific awakening was witnessed that would lead to the emergence of numerous new scholars and the creation of various university chairs of prehistory in many Italian cities, such as Siena, Florence, Pisa, Ferrara, Cagliari (GUIDI 2010: 17).

THE PRODOMES: THE RESEARCH OF GIOVANNI PINZA AND ANTONIO TARAMELLI AT THE BEGINNING OF THE 20TH CENTURY

After the first “pioneering” research of the nineteenth century, nuragic civilizations began to be studied scientifically from the beginning of the 20th century by scholars such as Giovanni Pinza (1872-1940), who published an important piece of work summarising Sardinian prehistoric civilizations (PINZA 1901), but especially Antonio Taramelli (1868-1939), Director of the National Archaeological Museum of Cagliari and Superintendent of Antiquities in Sardinia from 1902 to 1933 (MORAVETTI 1993).

Taramelli, who joined the Fascist movement and was also Senator of the Kingdom of Italy, as well as professor of archeology at the University of Cagliari and member of the prestigious “Accademia Nazionale dei Lincei”, in over thirty years of permanence in Sardinia wrote several scientific papers on the prehistory and protohistory of the island (over 230). He made numerous discoveries and carried out a series of archaeological excavations in some of the most important sites of Nuragic Sardinia, including the nuraghi Lugherras (Paulilatino), Losa (Abbasanta), Santu Antine (Torralba) and especially the village-sanctuary of Santa Vittoria at (Serri) (TARAMELLI 1910, 1914, 1916, 1939).

THE SCHOLARS OF EXTRA-INSULAR ORIGIN: DORO LEVI, PAOLO MINGAZZINI, MASSIMO PALLOTTINO

In the period under consideration (1935-1950), in light of Taramelli’s work, some scholars who came from mainland Italy undertook further studies of Nuragic Sardinia. First of all, Doro Levi (1898-1991), the great archaeologist and historian of Greek and Roman Art who, between 1935 and 1938, worked in Cagliari and around the island, as professor at the University of Cagliari in Archaeology and History of Greek and Roman Art and, at the same time, Superintendent of Antiquities and of Medieval and Modern Art in Sardinia (LILLIU 1995; LO SCHIAVO 1995).

Among his research related to the protohistory of the island are: the excavations at the Nuraghe Cabu Abbas in Olbia (Fig. 2), the “holy wells” of Sa Testa at Olbia and Milis in Golfo Aranci, in the Nuragic villages of Serra Orrios in Dorgali and Punta Casteddu in Lula (LEVI 1937-38) and the studies of some nuragic figurative bronzes: a group from Nule, in

the province of Sassari (LEVI 1937), including the famous “bull with human head”, which Levi likened to the centaurs of the classical myth, a figurine interpreted then by Lilliu as a demon or a god (LILLIU 1966: 379-383) (Fig. 3); a figurine from Dorgali (LEVI 1949), in which Levi saw a leather craftsman working a tanned leather, while currently the interpretation of a “boxer” prevails: a victorious athlete rejoicing (LILLIU 1959; 1966: 128 - 130) (Fig. 4). This type would also be found in the statuary of Monte Prama, Cabras, discovered in the seventies of the last century (see BERNARDINI, TRONCHETTI 1990: 213; USAI 2014). Racial laws would force the scholar to leave Sardinia and Italy in 1938, but Doro Levi continued to be involved in studies of the island in subsequent years.

Another Roman scholar, Paolino Mingazzini (1895-1977), who taught for some years at the University of Cagliari from 1939 and also held the role of Superintendent of Antiquities, despite being predominantly interested in the Punic and Roman phases, published some works regarding nuragic civilization (Fig. 5). Above all, a work on the Nuraghe Santu Antine at Torralba must be remembered (MINGAZZINI 1947), in which the author presents a reconstruction hypothesis of the monument, which was later resumed, enriched and proposed again, for example by Contu (1971).

This paper is particularly important because Mingazzini makes an attempt of chronological organization of the Nuragic civilization; in particular, he proposes a rather bearish chronology, believing that most nuraghi could be placed between the tenth and at least the third century BC, also proposing influences first by the Phoenicians and then by the Greeks on the nuragic structures (MINGAZZINI 1947: 15-22). Speaking of the nuraghe S. Antine (Fig. 1), he argues that «a plant of such clarity and structure... requires knowledge of the drawing and rational methods of the more evolved Greek civilisation» (MINGAZZINI 1947: 19). Moreover, unlike other scholars, Mingazzini doesn't think that the nuraghi constituted a regular defensive system against invaders (Ligurian, Carthaginians and Romans). For this scholar, each family group, in fact, built a nuraghe to live, with purely defensive purposes, in a period of social anarchy dominated by uninterrupted family feuds (MINGAZZINI 1947: 23-25). It is apt to recall, moreover, a paper by Mingazzini on two famous nuragic bronze figurines from Olmedo and Ittireddu, which are interpreted as blast furnaces by this scholar (MINGAZZINI 1950-51). In the same volume, however, Lilliu, in polite controversy with Mingazzini (LILLIU 1950-51), argues, rightly, the interpretation of such bronzes as models of nuraghi (hypothesis today considered valid by all scholars).

During World War II, precisely in the years 1941-42, the great Etruscologist Massimo Pallottino (1909-1995), also came to Cagliari as a professor at the University of Cagliari and, for a short period, as Superintendent of Antiquities and Art Works of Sardinia (LILLIU 2000). His short sojourn on the island would bring him anyway to publish a book of extreme importance, a summary work on the Nuragic civilization (PALLOTTINO 1950).

In his work, the researcher, on the basis of previous studies by Taramelli, Pinza, Levi, Mingazzini and, especially, of the “young Sardinian archaeologist” Giovanni Lilliu

(PALLOTTINO 1950: 13), traces an updated overall picture of data and knowledge with scientific rigour and critical capacity, where the author recognizes the extraordinary importance even in comparison to the other pre-classic civilisations of the Mediterranean. Great importance is given to the linguistic aspect, given that the author was also an expert in Etruscan language and this led him to analyse the place names relating to a likely Paleo-Sardinian lexicon, which the author frames within the Pre-Indo-European substrates of the central area of the Mediterranean. Perhaps as a “non-Sardinian” archaeologist, also, Pallottino rightly emphasizes the relationship between the nuragic world and the civilizations outside the island, especially with the Etruscan civilisation.

THE FIGURE AND THE STUDIES OF GIOVANNI LILLIU BETWEEN 1935 AND 1950

In this period, we would see the beginnings of the activities, as scholar and archaeologist, of the figure who would dominate the field of Sardinian archaeology in the following decades, Giovanni Lilliu (1914-2012) (Fig. 5). The late scholar completed his university studies in Rome, where, in 1938, he graduated in Literature and Philosophy, with a thesis on primitive religion in Sardinia. His mentors were the palethnologist Ugo Rellini, and the historian of religions Raffaele Pettazzoni. In 1942, in the University of Rome, he also specialised in archeology with the archaeologist Giulio Quirino Giglioli (MORAVETTI 2012: 61).

From 1937, Lilliu began to deal with the Nuragic age, first as a student at the University of Rome, then as a collaborator of the Superintendent of Sardinia; from 1943, as a professor of Prehistory at the University of Cagliari and simultaneously, until 1955, as Inspector initially, and then Director of the Superintendency of Antiquities in Sardinia (MORAVETTI 2008: 12; TANDA *et alii* 2015: 22).

His studies in Rome were fundamental for Lilliu’s archaeological activity in Sardinia. It allowed him to have a wider and more profound knowledge of the prehistoric and protohistoric panorama of the Mediterranean and the whole of Europe, which would serve him well for his studies on Nuragic civilization and its relationships with coeval contexts outside the island. Moreover, from the training with Ugo Rellini, he learned the rigorous application of the stratigraphic method, convinced that the archaeological data would serve towards the historical reconstruction of ancient times (MORAVETTI 2012: 62-63).

The early works, mostly published in the prestigious journal “Studi Sardi”, but also in the equally important “Monumenti antichi dei Lincei” and “Notizie degli scavi di Antichità”, focused mainly on research done on the territory: in the municipality of Barumini, his home town (LILLIU 1936), in the territories of Siniscola (LILLIU 1940a, 1941b, 1943), Gesturi (LILLIU 1940b), Setzu (LILLIU 1940c), Siddi (LILLIU 1941a), Gergei (LILLIU 1944a) and Las Plassas (LILLIU 1944b), reporting numerous prehistoric and protohistoric monuments such as nuraghi (among them Su Nuraxi at Barumini and Sa Fogaia at Siddi; LILLIU 1936: 150; 1941a: 145-146) and Giants’ tombs (for example the Giants’ tomb Sa Domu ‘e S’Orku at Siddi; LILLIU 1941a: 136-140).

In some of these monuments, the archaeologist also carried out excavations: at the site of Su Iriu at Gergei (nuragic site with an archaic nuraghe and a village: LILLIU 1940b); in the Giants' tomb of Pregante, again in Gergei (a 1946 excavation published only in the 1980s; see LILLIU 1981-85); at the site of Pranu at Las Plassas (village, Giants' tomb and nuraghe: LILLIU 1944b) (Fig. 6); in San Vero Milis (nuraghe complex of S'Uraki; LILLIU 1948-49: 399-406) (Fig. 7); in Barumini, in the nuraghe Marfudi and at Su Nuraxi, the most famous Sardinian nuraghe (now World Heritage Site of UNESCO) (Fig. 8), a monument that Lilliu would investigate in depth in the following decades and that would give him notoriety even outside Sardinia (LILLIU 1946; 1948-49: 396-398).

In this line of studies on the monuments of the Sardinian territory, several insights were made regarding particular nuragic sites. First, the village of Serra Orrios in Dorgali (LILLIU 1947), already known due to the publication of Levi (LEVI 1937), which Lilliu examines and describes briefly. Some of his ideas regarding the methodology of excavation and restoration techniques are particularly interesting. The author, denoting a rather advanced scientific approach for that time suggests, in fact, that, respect to previous excavations, "greater care must be taken in gathering excavated artifacts, both lithic and ceramic... greater attention in the emptying of the huts, which must be done layer by layer, may also provide elements to reconstruct the appearance of the upper parts of the structure and the roof" (LILLIU 1947: 243). Regarding the means to carry out the excavation, he suggests using rails to remove the resulting material, and recommends avoiding "repeating the system ... of raising the walls of the huts above the original height of degradation: a harmful system because it creates confusion and it will be not possible to distinguish, in the future, over time and with the imprint of its characteristic patina, the original structures from the overlapping ones." (LILLIU 1947: 243). These methodological reflections are still absolutely valid today.

Lilliu then studied the Giants' tomb of Goronna at Paulilatino (Fig. 9), which is described and analysed in detail, taking as inspiration an old excavation from 1892 (LILLIU 1948a). In this paper, dense and rich in news, he also takes on the themes of the chronology and function of the Giants' tombs: in the wake of Mingazzini (MINGAZZINI 1947), the scholar believes that the use of this type of tomb coincides with the period of major development of the Nuragic civilization, corresponding to a period between the eighth and sixth centuries BC, while recognizing, in the ceramic materials found, generic comparisons with artifacts from the Bronze Age (LILLIU 1948: 63). Another problem addressed is that of the destination of the Giants' tombs: emphasizing the collective burial characteristic, the scholar, alongside the interpretation (at that time current) as the tomb of dominant families, proposes the hypothesis of a funerary monument for the whole population, without distinction of social character (LILLIU 1948: 67-70). The question would recur until the present day, above all due to the lack of clear archaeological indicators of social complexity (see for example PERRA 2009).

The chronological issue and that of relations with other cultures outside the island, especially with the Phoenicians, were then handled in two far-reaching works.

In the first, the scholar deals with the theme of nuragic chronology (LILLIU 1941-42a): on the base of the limited data known at that time and, in some way, influenced by the “classicistic” vision of that period, the author, highlighting his great knowledge of archeology outside Sardinia, distinguishes two main moments of nuragic civilization. Firstly, a “prehistoric” phase, preceding to 1000 BC, to which he attributes nuraghi with a single tower, some nuraghi complexes and the first Giants’ tombs. Secondly, a phase of wide-scale development, during the “protohistoric” age, after 1000 BC until at least the V-IV century BC (with later moments until the III-II century BC), in which contact with extra-insular cultures grew strongly (especially with the Phoenicians and the Carthaginians, but also with the Etruscan and Italic world). The monuments already present in the previous phase were perfected, new architectural forms arose (such as the “holy wells”) and the figurative bronzes developed.

The theme of the relationship with Eastern populations is discussed in detail in the second essay (LILLIU 1944d), in which the author rejects a heavy Semitic influence in the formation of the nuragic civilization (a very popular hypothesis in the nineteenth century: see, for example, SPANO 1871), especially with regard to art and religion, while he emphasizes the presence of contact elements (which Lilliu calls “interferences”), owing to exchange relations between nuragic populations and oriental ones.

Lilliu began to develop, finally, a theme that he would become fond of and that he would address over the following decades, i.e. Nuragic bronzes. In this period, there are 4 works on the subject.

First he published a work on the “Pre-Roman bronzes in Sardinia” (LILLIU 1941-42b), in which the scholar analyzes the figurative bronzes and the bronzes of common use in the protohistoric age, highlighting the problems concerning the chronology of these metal artifacts, also due to the lack of contextual data for all samples known up to that time. First, in polite disagreement with the purely evolutionary vision of Nuragic bronzes by von Bissing (1928), Lilliu highlights how we should consider the existence of “schools” or workshops related to the various areas of the island, which could also have varying degrees of skill and knowledge, with episodes of mutual interaction being difficult to detect, making it therefore difficult to outline a constant evolutionary series in the art of the Sardinian bronzes. Then, with the aid of comparisons with cultural contexts outside the island, the author tries to trace the chronological framework of Nuragic bronzes, in which he identifies the various phases, from the ninth century BC for the most ancient samples, through the Orientalizing period until the third century BC.

The scholar returns to this subject in an article a few years later, published in “Studi Sardi” (LILLIU 1944c), in which twenty nuragic statuettes are catalogued, conserved both in

mainland Italy and abroad, in some way the first core of the complete catalogue that Lilliu would publish in the following years (LILLIU 1966).

On the nuragic bronzes Lilliu, together with Gennaro Pesce, then Superintendent of Antiquities in Sardinia, set up an exhibition in Venice that was very successful and was later exhibited in many Italian and European cities: Rome, Florence, Milan, Zurich, Hamburg, Paris, Lyon, Antibes, Amsterdam, London, Cambridge (MORAVETTI 2008: 12).

A catalogue of this exhibition is published with the bronzes exposed, with an essay in which Lilliu underlines the great aesthetic value «barbaric and anti-classic» of the Sardinian bronze statuettes, and of these he tries to identify workshops, masters and iconographic styles (LILLIU 1949).

Another work concerns a bronze candelabrum probably originating from S. Maria di Tergu at Castelsardo (LILLIU 1948b). Lilliu describes and analyses the artifact, made up of a candelabrum with two curved arms decorated with two little human faces, and he dates it in the seventh and sixth centuries BC (later the same author will raise the chronology to VIII-VII century BC; LILLIU 1966: 372-374).

It should be also noted that Lilliu, in these years, thought of combining the Archaeological Map of Sardinia of Taramelli (discontinued) with an archaeological Catalogue of the Sardinian monuments (LILLIU 1988: 586). The scholar promoted, as a teacher of the University of Cagliari, the compilation of this catalogue entrusting it to his students. The said students, for their thesis, noted and charted the archaeological monuments in the various territories assigned to them, each one having one or more maps (scale 1:10.000) of the I.G.M. (Military Geographical Institute of Italy) as a base reference.

The initiative began in the years 1944-45 and continued over the years: in all, during the years of Lilliu's teaching, 73 degree theses of this type were compiled (MORAVETTI 2008: 12).

The activities of cataloging then continued almost until the present day through the work of several undergraduates and researchers of the two universities on the island (Cagliari and Sassari), which have tried to bring forward the immense work begun by Lilliu and his students (see CICILLONI 2009: 294-295). This operation permitted the discovery of numerous new sites and monuments of the prehistoric and protohistoric ages, providing data which Lilliu brilliantly often made use of in his reconstruction of the Nuragic civilization.

Unfortunately, very few of these works have been followed by scientific publications (we can cite as an example the work of Diana on some territories in Southern Sardinia: DIANA 1958-59). The data which came to light thanks to these studies, therefore, may not have been used by the universality of the scholars.

The research of Giovanni Lilliu would continue in the following years until his death in 2012. Until the end of his activity, the scholar published over 350 works, mainly focused on the study of Nuragic civilization.

OTHER RESEARCHERS WHICH OPERATED IN SARDINIA DURING THE PERIOD IN EXAMINATION

In the late 1940s there is also the debut of Ercole Contu as a scholar, a student of Lilliu. He graduated in Cagliari in 1948 and immediately became an appointed assistant of Archaeology and History of classical art at the University of Cagliari, and later archaeologist collaborator at the Archaeological Superintendence first in Bologna and then in Cagliari (MASTINO 2003). His first work involved a particular nuragic monument, the temple “in antis” in Cuccureddi-Esterzili (Fig. 10), of which he had already spoken in his dissertation and which would not be investigated scientifically until the 1980s (FADDA 2001). On the basis of the comparison with similar monuments at Serra Orrios in Dorgali, already known from the work of Levi, Contu rightly places this building, interpreted as a temple, in the Nuragic Age (CONTU 1948, 1949).

The framework of the studies on the protohistoric period in Sardinia is completed by a work of the Irish scholar Olivier Davis, an expert on megalithism, who visited the island in May 1938. His article, proof of the Anglo-Saxon interest in archeology in Sardinia, taking Duncan Mackenzie’s papers as a starting point (1910; 1913), mainly deals with giants’s tombs, among which the author cites, for example, the megalithic graves of Biristeddu at Dorgali, Imbertighe at Borore and Perda ‘e S’altare at Bortigali. Davies also suggests a close contact between the Irish gallery tombs and the Sardinian giants’ tombs (DAVIES 1939).

Among the works of a more popular nature, it is possible finally to mention a volume by Antonio Bonu (1942), which Lilliu praised as up-to-date with the most recent scientific studies (LILLIU 1944c: 23).

CONCLUSIONI

In conclusion, during these years we are witnessing the resumption, in a tiring but somehow enthusiastic way, of the research activities conducted until 1933 by Antonio Taramelli, with Levi before the war and then, during the postwar period, with the works of Mingazzini and especially of Lilliu, who, in his studies, began to give shape to his vision of the nuragic world. Taramelli, together with Pinza, however, regarding both chronological and cultural framework and material evidence, remain the starting point on which protohistoric studies of this period are based, also due to the absence of new excavation data of any particular importance.

It is possible, however, to identify the beginnings of a new scientific and cultural season which, since the 1950s, will outline and demonstrate to the world the extraordinary importance of Nuragic civilisation, unique in the Mediterranean and able to compare itself with the great European civilisations of the Bronze and Iron Age.

ACKNOWLEDGEMENTS

I wish to thank Glenn Patrick Deering Bryan (I Speak English School, Elmas/Sestu), for the linguistic revision.

RICCARDO CICILLONI

Department of Humanities, Languages and Cultural Heritage, University of Cagliari
r.cicilloni@unica.it

REFERENCES

- BERNARDINI, TRONCHETTI 1990: P. Bernardini, C. Tronchetti, *L'effigie*, in E. Atzeni (ed.), *La civiltà nuragica*, Electa, Milano 1990, pp. 211-228.
- BONU 1942: A. Bonu, *Nell'isola dei nuraghi*, Sodalizio Ed. Cantagalli, Siena 1942.
- CAMPUS *et alii* 2010: F. Campus, V. Leonelli, F. Lo Schiavo, *La transizione culturale dall'età del bronzo all'età del ferro nella Sardegna nuragica in relazione con l'Italia tirrenica*, «Bollettino di Archeologia online» I/2010, pp. 62-76.
- CICILLONI 2009: R. Cicilloni, *L'archeologia del paesaggio pre-protostorico in Sardegna*, in C. Lugliè, R. Cicilloni (eds.), *La Preistoria e la Protostoria della Sardegna*, Atti della XLIV Riunione Scientifica dell'Istituto Italiano di Preistoria e Protostoria (Cagliari, Barumini, Sassari 23-28 novembre 2009), Volume I - Relazioni generali, Istituto Italiano di Preistoria e Protostoria, Firenze 2009, pp. 293-303.
- CONTU 1948: E. Contu, *L'edificio megalitico rettangolare di Domu de Orgia in località Cuccureddi, Esterzili (Nuoro)*, «Studi Sardi» VIII, 1948, pp. 313-317.
- CONTU 1949: E. Contu, *Esterzili (Nuoro), edificio megalitico rettangolare di Domu de Orgia in località Cuccureddi*, «Fasti Archeologici» IV, 1949, p. 207.
- CONTU 1971: E. Contu, *Commenti e precisazioni a proposito di certe recenti teorie sulla funzione dei nuraghi*, «Bollettino della Società Sarda di Scienze Naturali» VIII, 1971, pp. 1-22.
- DAVIES 1939: O. Davies, *The horned cairns of Sardinia*, «Ulster Journal of Archaeology» III ser., 2, 1939, pp. 158-169.
- DELLA MARMORA 1926: A. Della Marmora, *Viaggio in Sardegna*, Ed. Fondazione il Nuraghe, Cagliari 1926.

- DEPALMAS 2009a: A. Depalmas, *Il Bronzo medio della Sardegna*, in C. Lugliè, R. Cicilloni (eds.), *La Preistoria e la Protostoria della Sardegna*, Atti della XLIV Riunione Scientifica dell'Istituto Italiano di Preistoria e Protostoria (Cagliari, Barumini, Sassari 23-28 novembre 2009), Volume I - Relazioni generali, Istituto Italiano di Preistoria e Protostoria, Firenze 2009, pp. 123-130.
- DEPALMAS 2009b: A. Depalmas, *Il Bronzo recente della Sardegna*, in C. Lugliè, R. Cicilloni (eds.), *La Preistoria e la Protostoria della Sardegna*, Atti della XLIV Riunione Scientifica dell'Istituto Italiano di Preistoria e Protostoria (Cagliari, Barumini, Sassari 23-28 novembre 2009), Volume I - Relazioni generali, Istituto Italiano di Preistoria e Protostoria, Firenze 2009, pp. 131-140.
- DEPALMAS 2009c: A. Depalmas, *Il Bronzo finale della Sardegna*, in C. Lugliè, R. Cicilloni (eds.), *La Preistoria e la Protostoria della Sardegna*, Atti della XLIV Riunione Scientifica dell'Istituto Italiano di Preistoria e Protostoria (Cagliari, Barumini, Sassari 23-28 novembre 2009), Volume I - Relazioni generali, Istituto Italiano di Preistoria e Protostoria, Firenze 2009, pp. 141-160.
- DIANA 1958-59: A. Diana, *Esplorazione archeologica nel Campidano: (Decimoputzu, Samassi, Serramanna, Serrenti, Villasor)*, «Studi Sardi» XVI, 1958-59 (1960), pp. 317-349.
- FADDA 2001: M. A. Fadda, *I templi a Megaron della Sardegna: un esempio particolare nel territorio di Esterzili*, in M. Sanges (ed.), *L'eredità del Sarcidano e della Barbagia di Seulo: patrimonio di conoscenza e di vita*, B & P, Cagliari 2001, pp. 156-158.
- GUIDI 2010: A. Guidi, *The Historical Development of Italian Prehistoric Archaeology: a brief outline*, «Bulletin of the History of Archaeology» 20 (2), 2010, pp. 13-21.
- IALONGO 2013: N. Ialongo, *L'inizio dell'età del Ferro in Sardegna*, «Rivista di Studi Fenici» 41, 1-2, 2013, pp. 43-53.
- LEVI 1937: D. Levi, *Bronzi proto sardi rinvenuti fortuitamente in località Santu Lesci presso Nule*, «Notizie degli Scavi di Antichità» 1937, pp. 83-90.
- LEVI 1937-38: D. Levi, *Scavi e ricerche archeologiche della E. Soprintendenza alle opere d'Antichità e d'Arte della Sardegna (1935-1937)*, «Bollettino d'Archeologia» XXXI, 1937-38, pp. 193-210.
- LEVI 1949: D. Levi, *Il cuoiaio sardo di Gonone*, in *Mélanges d'archéologie et d'histoire offerts à Charles Picard*, Presses universitaires de France, Paris 1949, pp. 644-658.
- LILLIU 1936: G. Lilliu, *Scoperta di una tomba in località Bau Marcusa ed altre tracce archeologiche in Barumini (Cagliari)*, «Studi Sardi» III, 1936 (1937), pp. 147-155.
- LILLIU 1940a: G. Lilliu, *Alcuni monumenti preistorici di Siniscola (Nuoro)*, «Studi Sardi» IV, 1940, pp. 14-24.
- LILLIU 1940b: G. Lilliu, *Gesturi. Tombe di giganti in regione Ollastedu e Scusorgiu e sepolture dell'età del ferro in contrada Nerbonis*, «Notizie degli Scavi» I, ser. VII, 1940, pp. 234-238.
- LILLIU 1940c: G. Lilliu, *Setzu. Domus de janas di Domu s'Orku e nuraghi alle falde della Giara*, «Notizie degli Scavi» I, ser. VII, 1940, pp. 239-247.
- LILLIU 1941a: G. Lilliu, *Siddi. «Su Pranu» di Siddi e i suoi monumenti preistorici*, «Notizie degli Scavi» II, ser. VII, 1941, pp. 130-163.
- LILLIU 1941b: G. Lilliu, *Siniscola (Nuoro). Ricerca e scavi*, «Notizie degli Scavi» XVI, ser. VII, 1941, pp. 164-171.
- LILLIU 1941-42a: G. Lilliu, *Appunti sulla cronologia nuragica*, «Bullettino di Paleontologia Italiana» V-VI,

- 1941-42 (1942), pp. 143-177.
- LILLIU 1941-42a: G. Lilliu, *Bronzi preromani in Sardegna*, «Bullettino di Paletnologia Italiana» V-VI, 1941-42 (1942), pp. 179-196.
- LILLIU 1943: G. Lilliu, *Vestigia preistoriche in territorio di Siniscola (Nuoro)*, «Bullettino di Paletnologia Italiana» VII, 1943, pp. 97-102.
- LILLIU 1944a: G. Lilliu, *Gergei (Sardegna). Villaggio nuragico di Su Iriu*, «Notizie degli Scavi» IV, ser. VII, 1944, pp. 166-170.
- LILLIU 1944b: G. Lilliu, *Las Plassas (Cagliari). Villaggio preistorico di Su Pranu, il gruppo preistorico di Simaxi e nuraghi e tombe megalitiche del falsopiano di Pauli*, «Notizie degli Scavi» IV, ser. VII, 1944, pp. 170-182.
- LILLIU 1944c: G. Lilliu, *Bronzi figurati paleosardi esistenti nelle collezioni pubbliche e private non insulari*, «Studi Sardi» VI, 1944 (1945), pp. 23-41.
- LILLIU 1944d: G. Lilliu, *Rapporti fra la civiltà nuragica e la civiltà fenicio-punica in Sardegna*, «Studi Etruschi» XVIII, 1944 (1945), pp. 323-370.
- LILLIU 1946: G. Lilliu, *Barumini (Cagliari). Saggi stratigrafici presso i nuraghi di Su Nuraxi e Marfudi; «vicus» di S. Lussoriu e necropoli romana di Su Luargi*, «Notizie degli Scavi» VII, ser. VII, 1946, pp. 175-207.
- LILLIU 1947: G. Lilliu, *Dorgali (Nuoro). Villaggio nuragico di Serra Orrios. Impressioni ed osservazioni*, «Studi Sardi» VII, 1947, pp. 241-243.
- LILLIU 1948a: G. Lilliu, *Uno scavo ignorato dal Dott. Ferruccio Quintavalle nella tomba di giganti di Goronna a Paulilatino (Cagliari)*, «Studi Sardi» VIII, 1948, pp. 43-71.
- LILLIU 1948b: G. Lilliu, *D'un candelabro paleosardo del Museo di Cagliari*, «Studi Sardi» VIII, 1948, pp. 5-42.
- LILLIU 1949: G. Lilliu, *I bronzetti figurati paleo sardi*, in G. Lilliu, G. Pesce, (eds.), *I bronzetti nuragici*, Alfieri, Venezia 1949, pp. 17-42.
- LILLIU 1949-49: G. Lilliu, *Scoperte e scavi di antichità fattisi in Sardegna durante gli anni 1948 e 1949*, «Studi Sardi» IX, 1948-49 (1950), pp. 394-561.
- LILLIU 1950-51: G. Lilliu, *Modellini bronzei di Ittireddu e Olmedo (nuraghi o altiforni?)*, «Studi Sardi» X-XI, 1950-51 (1952), pp. 67-120.
- LILLIU 1959: G. Lilliu, *Cuoiai o pugilatori? A proposito di tre figurine proto sarde*, «La parola del passato» LXVII, 1959, pp. 294-304.
- LILLIU 1966: G. Lilliu, *Sculture della Sardegna nuragica*, La Zattera, Cagliari 1966.
- LILLIU 1981: G. Lilliu, *Bronzetti e statuaria nella civiltà nuragica*, in G. Pugliese Carratelli (ed.), *Ichnussa. La Sardegna dalle origini all'età classica*, Libri Scheiwiller, Milano 1981, pp. 179-251.
- LILLIU 1981-85: G. Lilliu, *Tomba di giganti di Preganti (Gergei-Nuoro)*, «Studi Sardi» XXVI, 1981-85 (1986), pp. 51-61.
- LILLIU 1988: G. Lilliu, *La civiltà dei Sardi dal Paleolitico all'età dei nuraghi*, Nuova ERI, Torino 1988.
- LILLIU 1995: G. Lilliu, *Doro Levi e l'archeologia della Sardegna*, in P. Cassola Guida, E. Floreano (eds.), *MNEMEION. Ricordo triestino di Doro Levi*, Edizioni Quasar, Roma 1995, pp. 131-146.

- LILLIU 2000: G. Lilliu, *Prefazione*, in M. Pallottino, *La Sardegna nuragica*, Reprint on *La Sardegna nuragica* by M. Pallottino, 1950 (G. Lilliu, ed.), Ilisso, Nuoro 2000, pp. 7-60.
- LO SCHIAVO 1995: F. Lo Schiavo, *L'attività di Doro Levi nella Soprintendenza alle Antichità della Sardegna*, in P. Cassola Guida, E. Floreano (eds.), *MNEMEION. Ricordo triestino di Doro Levi*, Edizioni Quasar, Roma 1995, pp. 91-96.
- MACKENZIE 1910: D. Mackenzie, *The dolmens, Tombs of the Giants and Nuraghi of Sardinia*, «Papers of the British School at Rome» V, 1910, pp. 87-137.
- MACKENZIE 1913: D. Mackenzie, *Dolmens and nuraghi of Sardinia*, «Papers of the British School at Rome» VI, 1913, pp. 127-170.
- MASTINO 2003: A. Mastino, *Ercole Contu*, in P. Melis (ed.), *Studi in onore di Ercole Contu*, Editrice Democratica Sarda, Sassari 2003, pp. 9-17.
- MINGAZZINI 1947: P. Mingazzini, *Restituzione del nuraghe S. Antine in territorio di Torralba*, «Studi Sardi» VII, 1947, pp. 7-26.
- MINGAZZINI 1950-51: P. Mingazzini, *Santuari o alti-forni? (note su due bronzzetti sardi)*, «Studi Sardi» X-XI, 1950-51 (1952), pp. 52-66.
- MORAVETTI 1993: A. Moravetti, *Introduzione*, in A. Taramelli, *Carte archeologiche della Sardegna*, Reprint on *Carte archeologiche della Sardegna* by A. Taramelli, 1929-1939 (A. Moravetti, ed.), C. Delfino Editore, Sassari 1993, pp. VII-XII.
- MORAVETTI 2008: A. Moravetti, *Nota biografica*, in A. Moravetti (ed.), *Sardegna e Mediterraneo negli scritti di Giovanni Lilliu*. C. Delfino Editore, Sassari 2008, pp. 11-15.
- MORAVETTI 2012: A. Moravetti, *Ricordo di Giovanni Lilliu*, in M. B. Cocco, A. Gavini, A. Ibba (eds.), *L'Africa romana: trasformazione dei paesaggi del potere nell'Africa settentrionale fino alla fine del mondo antico*, Atti del XIX convegno di studio (Sassari, 16-19 dicembre 2010), Carocci, Roma 2012, pp. 61-72.
- PALLOTTINO 1950: M. Pallottino, *La Sardegna nuragica*, Ed. del Gremio, Roma 1950.
- PERRA 2009: M. Perra, *Osservazioni sull'evoluzione sociale e politica in età nuragica*, «Rivista di scienze preistoriche» LIX, 2009, p. 355-368
- PINZA 1901: G. Pinza, *Monumenti primitivi della Sardegna*, «Monumenti antichi dei Lincei» XI, 1901, pp. 1-146.
- SPANO 1871: G. Spano, *Paleoetnologia sarda, ossia L'età preistorica segnata nei monumenti che si trovano in Sardegna*, Tipografia dell'Avvenire di Sardegna, Cagliari 1871.
- TANDA et alii 2015: G. Tanda, G. Paulis, R. Cicilloni, *Giovanni Lilliu e l'Università*, in M. Minoja, G. Salis, L. Usai (eds.), *L'isola delle torri. Giovanni Lilliu e la civiltà nuragica*, Catalogo della Mostra (Cagliari-Barumini-Roma 2014-2016), Carlo Delfino Editore, Sassari 2015, pp. 22-26.
- TARAMELLI 1910: A. Taramelli, *Il nuraghe Lugherras presso Paulilatino*, «Monumenti antichi dei Lincei» XX, 20, 1910, cc. 9-90.
- TARAMELLI 1914: A. Taramelli, *Il tempio nuragico ed i monumenti primitivi di Santa Vittoria di Serri (Cagliari)*, «Monumenti antichi dei Lincei» XXIII, 1914, cc. 313-436.
- TARAMELLI 1916: A. Taramelli, *Ricerche nel Nuraghe Losa nel comune di Abbasanta*, «Notizie degli Scavi» 7, 1916, pp. 236-261.

- TARAMELLI 1939: A. Taramelli, *Nuraghe Santu Antine in territorio di Torralba (Sassari)*, Hoepli, Milano 1939.
- UGAS 2009: G. Ugas, *Il I Ferro in Sardegna*, in C. Lugliè, R. Cicilloni (eds.), *La Preistoria e la Protostoria della Sardegna*, Atti della XLIV Riunione Scientifica dell'Istituto Italiano di Preistoria e Protostoria (Cagliari, Barumini, Sassari 23-28 novembre 2009), Volume I - Relazioni generali, Istituto Italiano di Preistoria e Protostoria, Firenze 2009, pp. 163-182.
- USAI 2012: A. Usai, *Per una riconsiderazione della Prima Età del Ferro come ultima fase nuragica*, in P. Bernardini, M. Perra (eds.), *I Nuragici, i Fenici e gli altri. Sardegna e Mediterraneo tra Bronzo Finale e Prima Età del Ferro*, Atti del I Congresso Internazionale in occasione del venticinquennale del Museo "Genna Maria" di Villanovaforru (14-15 dicembre 2007), C. Delfino Editore, Sassari 2012, pp. 165-180.
- USAI 2014: L. Usai, *Le statue nuragiche*, in M. Minoja, A. Usai (eds.), *Le sculture di Mont'e Prama. Contesto, scavi e materiali*, Gangemi Editore, Roma 2014, pp. 219-262.
- VANZETTI *et alii* 2013: A. Vanzetti, G. Castangia, A. Depalmas, N. Ialongo, V. Leonelli, M. Perra, A. Usai, *Complessi fortificati della Sardegna e delle isole del Mediterraneo occidentale nella protostoria*, in G. Bartoloni, L. M. Michetti (eds.), *Mura di legno, mura di terra, mura di pietra: fortificazioni nel Mediterraneo antico*, Atti del Convegno Internazionale (Roma, 7-9 Maggio 2012) = «Scienze dell'Antichità» 19, 2/3, 2013, pp. 83-123.
- VON BISSING 1928: F. W. von Bissing, *Die sardinischen Bronze*, «Mitteilungen des deutschen archaeologischen Instituts» 43, 1928, pp. 19-89.



Fig. 1: Nuraghe Santu Antine at Torralba (Photo by G. Lilliu, 1960: Photographic Archive of the Department of Humanities, Languages and Cultural Heritage - University of Cagliari).



Fig. 2: Nuraghe Cabu Abbas at Olbia (Photo by C. Zervos, 1954: Photographic Archive of the Department of Humanities, Languages and Cultural Heritage - University of Cagliari).



Fig. 3: Nuragic bronze statuette of bull with human head (demon?), from Santu Lisei at Nule (Photo by G. Lilliu, 1956: Photographic Archive of the Department of Humanities, Languages and Cultural Heritage - University of Cagliari).



Fig. 4: Nuragic bronze statuette of "boxer", from Cala Gonone at Dorgali (Photo by G. Lilliu, 1956: Photographic Archive of the Department of Humanities, Languages and Cultural Heritage - University of Cagliari).



Fig. 5: Paolino Mingazzini (on the left) and Giovanni Lilliu (on the right) in front of the “Chief Hut” in the nuragic sanctuary of Santa Vittoria at Serrì (Photo by E. Contu, 1954: Photographic Archive of the Department of Humanities, Languages and Cultural Heritage - University of Cagliari).



Fig. 6: Giant’s Tomb of Pranu at Las Plassas (Photo by G. Lilliu, 1938: Photographic Archive of the Department of Humanities, Languages and Cultural Heritage - University of Cagliari).



Fig. 7: Nuraghe S'Uraki at San Vero Milis (Photo by G. Lilliu, 1954: Photographic Archive of the Department of Humanities, Languages and Cultural Heritage - University of Cagliari).



Fig. 8: Nuraghe Su Nuraxi at Barumini (Photo by R. Cicilloni, 2014: Photographic Archive of the Department of Humanities, Languages and Cultural Heritage - University of Cagliari).



Fig. 9: Giant's Tomb of Goronna at Paulilatino (Photo by A. Corrias, 1960: Photographic Archive of the Department of Humanities, Languages and Cultural Heritage - University of Cagliari).



Fig. 10: Temple "in antis" of Cuccureddi at Esterzili (Photo by E. Contu, 1947: Photographic Archive of the Department of Humanities, Languages and Cultural Heritage - University of Cagliari).

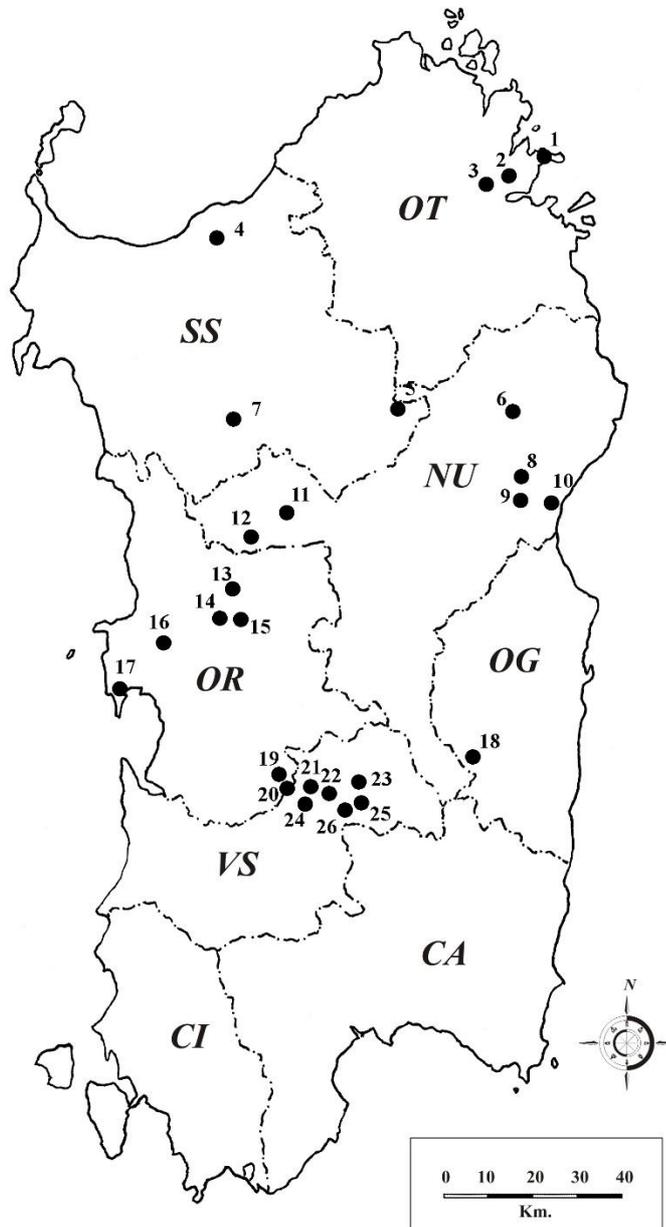


Fig. 11: Distribution of Sardinian sites mentioned in the text. 1. Milis (Golfo Aranci); 2. Cabu Abbas (Olbia); 3. Sa Testa (Olbia); 4. S. Maria di Tergu (Castelsardo); 5. Santu Lisei (Nule); 6. Punta Casteddu (Lula); 7. Santu Antine (Torralba); 8. Serra Orrios (Dorgali); 9. Biristeddu (Dorgali); 10. Cala Gonone (Dorgali); 11. Perda 'e S'altare (Bortigali); 12. Imbertighe (Borore); 13. Losa (Abbasanta); 14. Lugherras (Paulilatino); 15. Goronna (Paulilatino); 16. S'Uraki (San Vero Milis); 17. Monte Prama (Cabras); 18. Cuccureddi (Esterzili); 19. Sa Fogaia (Siddi); 20. Sa Domu 'e S'Orku (Siddi); 21. Su Nuraxi (Barumini); 22. Marfudi (Barumini); 23. Santa Vittoria (Serri); 24. Pranu (Las Plassas); 25. Pregante (Gergeri); 26. Su Iriu (Gergeri).