



Minerva Access is the Institutional Repository of The University of Melbourne

Author/s:

O'REILLY, D;Shewan, L

Title:

Research at megalithic jar site 52 and the discovery of new jar sites in Xiang Khouang Province, Laos

Date:

2020

Citation:

O'REILLY, D. & Shewan, L. (2020). Research at megalithic jar site 52 and the discovery of new jar sites in Xiang Khouang Province, Laos. *Asian Archaeology*, 3 (1-2), pp.21-33. <https://doi.org/10.1007/s41826-019-00023-0>.

Persistent Link:

<https://hdl.handle.net/11343/258633>


# Research at Megalithic Jar Site 52 and the Discovery of New Jar Sites in Xiang Khouang Province, Laos

Dougald O'Reilly<sup>1</sup>, Louise Shewan<sup>2</sup>, Mailo Khamphouvong<sup>3</sup>, and Amphai Butphachit<sup>3</sup>

<sup>1</sup>School of Archaeology and Anthropology, The Australian National University, Canberra, 2601, Australia. dougald.oreilly@anu.edu.au, +61261250622

<sup>2</sup>School of Earth Sciences, University of Melbourne, Victoria 3010, Australia.

<sup>3</sup>Department of Heritage, Ministry of Information, Culture and Tourism, Lao P.D.R. Government

 These authors equally contributed to this work.

*Abstract: Ban Phakeo is a village in central Laos near which 415 megalithic jars and other associated lithic objects were discovered. There are over 80 such sites known in central Laos and this site was assigned the number 52 in the Lao National Inventory. Site 52 was excavated in eight discrete locations. Prospection was undertaken in the surrounds of Site 52 leading to the discovery of several previously undocumented sites which appear to be quarries or transport sites. The present paper focuses on the archaeological excavations undertaken at Site 52 and the newly discovered sites presenting the results of this research.*

*Keywords: Laos; megaliths; archaeology; Plain of Jars*

Running Title

Research at Megalithic Jar Sites in Laos

## 1.1 Introduction

Site 52, located in Paek District, Xieng Khouang Province, near the village of Ban Phakeo, was first recorded in 2005 by the Department of Heritage of the Ministry of Information, Culture and Tourism (MoICT) (Figure 1). The site comprises a collection of 415 megalithic stone jars, 219 discs, lids, and hundreds of boulders in six discrete groups located in elevated terrain (Figures 2 & 3). The archaeological research undertaken at Site 52 is part of a project entitled “Unravelling the Mystery of the Plain of Jars; Lao PDR,” a joint research initiative between the MoICT and Australian universities and funded by the Australian Research Council.

Megalithic jars in Laos were first recorded in the nineteenth century but it was not until the 1930s that research on these was undertaken. However, our understanding of these sites is rudimentary.

Dates for the creation of the monuments has been lacking, and nothing is known of the people who created them. The aim of the current research is to document the morphology of the megaliths, map selected sites, and undertake excavations to determine the nature of the archaeological deposits around the jars. The research comprises archaeological, geochronological, bioarchaeological, genetic, and isotopic analysis to 1) ascertain the date of the archaeological deposits, 2) investigate the mortuary population through an analysis of health, demography, and burial treatment, and 3) gain a greater understanding of the regional interactions represented by the archaeological material recovered. This paper presents the findings of excavations and survey at Site 52 and a discussion of the wider implications of the research.

**Figure 1. Location of Sites 1 and 52 (black dots represent other megalithic jar sites).**

Site 52 was selected for excavation as it provides a compelling comparison to a previously excavated site, Site 1 (c.f. O'Reilly *et al.* in press; O'Reilly and Shewan 2016; Shewan *et al.* 2016), near the provincial capital of Phonsavan. While Site 52 contains a similar number of jars, it is more typical of the majority of jar sites as most of the over 80 sites are located at elevations of ca. 1400 m asl on ridges, hill slope spurs or on the fringes of upland valleys (O'Reilly *et al.* 2018; Travers and Nuan, 2010). Site 1 by comparison, is located on an undulating plain, largely devoid of trees, at ca. 1100 m asl.

**Figure 2. Recumbent jars (most at the site are erect) in Group 1 at Site 52.**

**Figure 3. Location of jar groups and excavation units (based on map by K. Hanus).**

The research at Site 52 comprised mapping and cataloguing of all the archaeological features and the excavation of eight locations. Samples of grass, soil, water, and rock were also collected for isotopic analysis. Further prospection was undertaken in the surrounds of Site 52 leading to the discovery of several previously undocumented sites which appear to be quarries or transport sites, as indicated by the presence of unfinished jars and roughouts, from which stone was sourced to create the jars.

## 2.1 Geographical Description

The plateau on which most of the megalithic jar sites are found comprises limestone, sandstone with minor conglomerates, and shales of unknown age. Shallow soil covers limestone, sandstone, and siltstone formations although weathering into red soils can be, locally, very deep. The hills and mountains attain elevations of up to 2800m. The mountains were formed by the tectonic uplift of a series of interbedded limestone, mudstone/shale, and sandstone, whilst a large granitic intrusion dominates the southeast of the area. The foothills and mountains are heavily wooded although very little primary forest exists indicating a long history of human activity in the

plateau. The mountains are deeply incised by steep sided, relatively straight, and heavily wooded river valleys. Much of the colluvium at the bottom of the foothill slopes has been developed into rice paddy fields. It is possible that some of the foothills may have been cleared and terraced for wet rice cultivation as early as the Iron Age (ca. post-500 BCE) (Van Den Bergh n.d.). Site 52 is located on a mountain top ca. 1300 m asl in woodland, some of which has been cleared by local swidden agriculturists.

### 3.1 Previous Research

The megaliths of Laos have long been noted in the Western literature (McCarthy 1994; Pavie 1919), but the first published archaeological research at sites comprising megalithic stone jars was undertaken by Madeleine Colani (1935) who documented over 20 sites and excavated around the megaliths at several of these (see O'Reilly *et al.* 2018; Shewan and O'Reilly 2019). The jar sites came to be known by the term 'the Plain of Jars' based on the location of three of the best-known sites, (Sites 1, 2 and 3), which are located in a broad plain in Xieng Khouang Province. The term is, however, a misnomer, as many sites are known outside this plain, mostly found in mountainous locations (O'Reilly *et al.* 2018) such as Site 52 which only came to light in the 2000s. The jar sites vary in terms of the number of jars at each, some hosting over 300 jars and others only one or two. Recent research indicates that there are potentially 119 megalithic jar sites in northern Laos (O'Reilly *et al.* 2018) covering an area of approximately 7000km<sup>2</sup>, and the recent discovery of several new sites (Khamphoumy 2013, Genovese 2018) suggests that there may be many more yet to be identified. As well as jar sites, quarries have also been identified, sites at which incomplete jars have been identified, in some cases partially removed from the bedrock. Some other locations have been identified as 'transport sites' at which no evidence of a propinquity lithic source has been identified and may represent partially completed jars that were abandoned on the way to their intended destination. To date, no evidence for residential occupation has been found that relates to the megalithic sites or quarries. Given the paucity of archaeological data, it is difficult to offer any interpretation of the socio-political organization of the society responsible for the creation of the jar sites, nor do we have any evidence of who these people were, although it appears that they were engaged in inter-regional exchange based on the presence of semi-precious stone and glass beads found in some contexts.

Colani (1935) excavated several megalithic jar sites but focused her efforts on Site 1. She concluded that the jars were used for a mortuary purpose and that the limestone cave that dominates Site 1 was used as a crematorium. The material culture recovered comprised glass and carnelian beads, ceramics, spindle whorls, ceramic ear-discs, iron, bronze, jewelry, and ground stone artifacts. The first research undertaken since Colani was led by Nitta (1996) who excavated Site 1 in 1994. Human remains associated with iron knives and glass beads were found around two stone jars. Nitta also recovered an incised ceramic jar which contained fragments of bone and three teeth. Three excavations were conducted at Site 1 by Sayavongkhamdy in 1996

(Sayavongkhamdy and Bellwood 2000) revealing 11 burial contexts. The material culture recovered was similar to that found by Colani.

Minor rescue excavations were undertaken at Site 1 in 2004 by Van Den Bergh and Luangaphay during the clearance of unexploded ordnance. The team identified burial assemblages adjacent to quartz breccia boulders at Site 1 and documented further megalithic sites in Xieng Khouang Province, greatly expanding the corpus of known sites. Subsequent work by Genovese (2015) has enhanced our understanding of the geographic extent of the sites.

The results of the investigations above have led most to agree that the megalithic jars served some role in mortuary practice. Some have suggested that the jars were used to hold cremated remains (Colani 1935) or that they were used to decompose human remains for later secondary burial (Van Den Bergh pers. comm.). The issue may never be resolved as core samples taken from the interior of jars at Site 52 were inconclusive regarding the presence of lipids which may have lent support to Van Den Bergh's hypothesis. Colani (1935) does report finding human remains and other items of material culture in some jars but none have been reported since. It is clear that the matrix around the jars (but not directly beneath them) did serve a mortuary purpose as human remains have been found in the form of secondary bundle burials, ceramic jar burials, and even extended inhumation (Sayavongkhamdy and Bellwood 2000; Nitta 1996; O'Reilly *et al.* in press).

With regard to Site 52, the only previous research undertaken there was by a team led by Van Den Bergh and Luangaphay in 2007 in collaboration with the MoICT (Van Den Bergh and Luangaphay 2008). The purpose of the 2007 research was to document the site for possible inclusion in the submission to have the jar sites incorporated into the UNESCO World Heritage list. While most of the research entailed mapping and documenting the archaeological assets, some minor excavations were undertaken with limited artifacts being discovered (Van Den Bergh pers. comm.). Van Den Bergh and Luangaphay (2008) documented four discrete groups of jars at the site, most located in a saddle in the mountain and one at a higher elevation to the south of the other three groups. Survey undertaken in 2017 led to the discovery of five further jars which lay apart from these four main groups, and these were labelled as Group 5 (comprising four jars in various states of preservation) and Group 6, a lone jar (Figure 3).

Van Den Berg and Luangaphay (2008) recorded a number of sites in the vicinity of Site 52, including one quarry site, Site 9, and two sites, Site 10 and Site 12, which Van Den Bergh (pers. comm.) feels are "transport sites." A jar site, Site 6, is also noted but no details are recorded by Van Den Bergh and Luangaphay (2008) and the site was not visited by the authors. Site 9 is ca. 1.01 km southwest of Group 3 at Site 52. Site 10 is ca. 1.28 km southwest of Group 3 at Site 52. Site 12 is ca. 1.36 km south of Group 3 at Site 52 (Figure 9).

#### 4.1 Methodology

Eight units, located in Groups 1, 2, and 3, were selected for excavation at Site 52. The location of the units was determined by the presence of above-ground features including jars, discs, and boulders explained for each unit below. The excavations were undertaken using arbitrary 10 cm spits. As each spit was removed, the location of artifacts and features were noted. Where the soil color changed noticeably a new layer designation was assigned. The layer and spit designations are presented herein as layer:spit (e.g. Layer 1, spit 1 is denoted as 1:1). Artifacts were assigned a catalogue number and features were assigned a number by spit (e.g. 1:1 F1). A table of artifacts discovered is included (see Table 1).

<b>CAT. #</b>	<b>PROVENIENC E</b>	<b>DESCRIPTION</b>	<b>WEIGHT</b>
300	U1 1:1	Ceramic sherds (5)	10g
301	U1 1:2	Shale flake	7g
302	U1 1:2	Ceramic sherds (4)	8g
303	U1 1:1	Hammerstone (round)	197g
304	U1 1:1	Shale flake	7g
305	U1 1:1 F3	Quartz lump	107g
306	U 1 1:3	Ceramic sherds (2)	4g
601	U2 1:2	Whetstone fragment	16g
602	U2 1:2	Quartz flake	8g
603	U2 1:2	Quartz flakes (2)	3g
604	U2 1:2	Hammerstone (Figure 11)	553g

605	U2 1:3 F1	Quartz flake	3g
606	U2 1:3 F1	Chert flake	11g
607	U2 1:3 F1	Quartz flake	5g
608	U2 1:3 F1	Adze converted to whetstone (Figure 12)	244g
709	U3 1:1	Hammerstone (Figure 11)	231g
710	U3 1:1	Stone flake	3g
711	U3 1:1	Whetstone fragment	25g
712	U3 1:1	Stone flake	15g
713	U3 1:1	Limestone fragment	128g
714	U3 1:2	Quartz fragment	-
715	U3 1:2	Stone flake	8g
716	U3 1:2 F1	Whetstone fragment	34g
717	U3 1:2	Stone flake	4g
718	U3 1:2	Whetstone	139g
719	U3 1:2	Stone flake	3g
720	U3 1:2	Whetstone	99g
401	U4 1:1	Ceramic sherds (2)	8g

402	U4 1:1	Ceramic sherds (18)	52g
403	U4 1:1 F6	Ceramic sherds (4)	16g
404	U4 1:1	Basalt fragment	2g
405	U4 1:1	Ceramic sherd	4g
406	U4 1:2	Ceramic sherds (10)	19g
407	U4 1:2	Ceramic sherds (7)	14g
408	U4 1:2	Ceramic sherds (7)	13g
409	U4 1:3	Ceramic sherds (6)	8g
410	U4 1:3	Ceramic sherds (3)	19g
411	U4 1:2 F1	Ceramic sherds (4)	7g
412	U4 1:3	Quartz fragment	-
500	U5 1:1 F1	Ceramic sherds (4)	24g
502	U5 1:2 F1	Quartz fragment	3g
503	U5 1:2 F3	Ceramic sherds (2)	17g
504	U5 1:3	Ceramic sherds (2)	3g
506	U5 1:3	Quartz fragments (5)	5g
508	U5 1:2 F3	Ceramic sherds (7)	41g

510	U5 1:2 F3	Whetstone fragments (2) (Figure 12)	83g
511	U5 1:2 F3	Ceramic sherds (13)	132g
512	U5 1:2 F3	Ceramic sherds (6)	61g
513	U5 1:2 F2	Spindle whorl fragment	5g
514	U5 1:2 F2	Quartz fragment	-
515	U5 1:2 F3	Human molar enamel	-
517	U5 1:3 F3	Ceramic sherds (3)	129g
518	U5 1:3 F3	Glass bead	-
519	U5 1:3 F3	Ceramic sherds	71g
521	U5 1:2 F3	Quartz flake	2g
801	U7 1:1 F2	Ceramic sherds (3)	54g
802	U7 1:2 F1	Complete ceramic vessel	70g

**Table 1. Artifacts recovered from Site 52, Xieng Khouang, Laos.**

#### 4.2 Excavations in Jar Group 1

##### 4.2.1 Unit 1

Unit 1, a 4 x 5 m area, located in Group 3, was selected for excavation on the basis of the presence of a large sandstone disc measuring 98 x 118 cm and a sandstone jar in association with some smaller stones (representing possible burial markers). This configuration of jars and a disc was similar to that encountered where an excavation unit at Site 1, excavated in 2016, was located (O'Reilly *et al.* in press).

The first 10 cm of matrix was removed and no features were encountered and the only material culture comprised five coarse, quartz-tempered ceramic sherds.

The aforementioned large sandstone disc was removed from the unit (Figure 4) but nothing was found beneath the disc. Several artifacts were recovered in the second 10 cm spit including four ceramic sherds, a hammerstone, and two pieces of shale that appear to be debitage. The matrix around a boulder located on the south baulk contained three pieces of chipped stone and a fragment of limestone. Beneath the same boulder a limestone pebble, several sandstone chips, and a piece of non-local gabbro were revealed and the arrangement of stones was purposeful. The top-most stone was carved, with the underside shaped into a “T” that bears a resemblance to zoomorphic figures found on some of the discs at Site 52. The matrix around this feature contained two ceramic sherds. Another stone feature along the south baulk was excavated but nothing was uncovered below the feature.

#### **Figure 4. Unit 1, Layer 1, spit 1.**

The soil at the surface of the third spit changed color slightly and no artifacts were recorded in this spit nor the following spit which appeared to be soil undisturbed by human activity, a fact confirmed by the excavation of a 98 cm test pit in the southwest corner of the unit.

#### **4.2.2 Unit 2**

A second unit of excavation was selected for excavation on the basis of the presence of an upright jar (labelled 52/3/064) which was determined to be a suitable candidate for optically stimulated luminescence (OSL) dating as the jar was presumably undisturbed since its placement. The trench was 1 x 2 m, the longer side aligned 28° North. On the west side of Unit 2 at the south end sat a large, unmodified sandstone boulder.

There were no notable features or artifacts encountered in the first 10 cm of the deposit in Unit 2. After the removal of this first 10 cm spit, a rounded boulder was visible at the south end of the unit near jar 52/3/064. Further to the north of this a smaller stone was visible in the center of the unit.

Some artifacts were recovered in the excavation of the second 10 cm spit including a whetstone fragment, three quartz flakes, and a hammerstone.

The northern portion of the third spit in the unit contained more fragments of sandstone than did the south. Four artifacts were recovered at this depth including two quartz flakes, a chert flake, and a possible adze fragment.

The soil color appeared to change at ca. 30 cm below surface and ca. 40 cm below surface no further archaeological deposits were present.

### **Figure 5. Unit 2, Layer 1, spit 3.**

As the unit had reached the archaeologically sterile substrate at this point the decision was taken to expand the unit by 50 cm to the north to incorporate a modified boulder and a layer of chipped sandstone. No artifacts were encountered around these.

#### 4.2.3 Unit 3

Unit 3 was chosen for excavation based on the presence of a number of large, apparently, unaltered boulders. At Site 1 similar boulders were found to sit above mortuary contexts. The unit was located 20 m to the west (at 285°) of Unit 2. Unit 3 was 1.5 m x 3 m and orientated 60°North. The unit abutted a large boulder at the east end and ran between two large boulders to the north and south.

After the removal of the first 10 cm spit a group of five rocks was apparent in the southeast corner of the unit which appeared to form a rough circle. This feature was labelled as 1:1 F1 and comprised sandstone and limestone fragments, the sandstone chips more angular than the limestone. Ten of each type of stone were noted totaling 3.9 kg of sandstone and 0.7 kg of limestone. Each piece of stone averaged 2 x 2 x 1cm.

A number of artifacts were recovered from the first spit including a hammerstone, two sandstone flakes, a piece of rounded limestone, and a whetstone fragment.

A further 10 cm was removed from the unit and in the northwest corner sandstone bedrock was encountered. In this spit, several artifacts were found including a chert flake with evidence of heat exposure, a whetstone fragment, two sandstone flakes, and two fragments of a sandstone whetstone.

Unit 3 terminated at archaeologically sterile soil/sandstone bedrock at between 50 cm in some areas and 20 cm below surface in other areas of the trench. Although no evidence of mortuary activity was apparent there is significant evidence of other human activity surrounding these large boulders.

#### 4.2.4 Unit 4

Unit 4, measuring 4 m E-W x 2.5 m N-S, was located 4.5 m north of Unit 1. The location was selected based on the presence of a number of sandstone discs and boulders (Figure 6).

### **Figure 6. Unit 4, Layer 1, spit 1.**

Prior to excavating, two discs were removed from the unit and on the underside of both a pommel was discovered, similar to several other such “lids” found at Site 52. While no artifacts

were discovered under one of the discs, the second had an arrangement of angular sandstone cobbles beneath it. The cobbles were removed but no further artifacts were encountered.

As the first spit was removed in Unit 4, eighteen ceramic sherds with the remains of an organic coating on their exterior (Figure 10) were found along the north baulk and two small plain quartz-tempered ceramic sherds were found under a stone jar. Similar organic-coated ceramics are also found at Site 1.

With the removal of the first spit it was apparent that there was a linear arrangement of cobbles running diagonally out of the west baulk into the south baulk. Ten further ceramic sherds, similar to those previously found, were found near the west baulk in the area under one of the discs.

In excavating the second spit in Unit 4, further ceramic sherds were encountered including seven quartz-tempered sherds, some with organic coating, from the northwest corner of the unit. Six similar sherds were found in the northeast corner of the unit near the broken stone jar 52/3/022. The stones apparent at ca. 20 cm below surface were removed and nothing of import was noted.

In removing the next spit three quartz-tempered ceramic sherds were uncovered along the west baulk and seven similar sherds were found near the north baulk in the western part of the unit. Three new features were uncovered including a small sandstone fragment near the west baulk and small pieces of sandstone near the middle of the south baulk.

At a depth of ca. 40 cm below surface the unit was largely archaeologically sterile aside from four small ceramic sherds. The features identified above contained nothing beneath them. There was no evidence of human activity below this depth.

#### 4.3 Excavations in Jar Group 2

##### 4.3.1 Unit 5

Unit 5 was established on a knoll in Jar Group 2 in order to provide comparative data between the jar groups at the site. The location of the unit was selected in a flat area to the north of two erect jars (inventory # 52/2/051 on the east and # 52/2/052 to the west). A 3 x 2 m unit, the longer side running east-west, was laid out and included within it a sandstone boulder/slab in the southwest corner and another in middle of north baulk. Two smaller sandstone boulders were visible at the surface closer to the west baulk.

In removing the first 10 cm spit, 18 sandstone chips were found in the southwest corner. Just to the south of this feature, four quartz-tempered ceramic sherds were discovered. The matrix contained 51 pieces of chipped stone weighing approximately 4 kg. A small piece of limestone was noted in the south baulk near, but not beneath, the stone jar #52/2/052.

Two further features were revealed at 10 cm below surface (Figure 7), a piece of sandstone in the southeast corner below jar # 52/2/051 and a ceramic scatter to the south of the limestone slab (measuring 53 cm L x 17 cm W x 45 cm W). The limestone slab had some evidence of rough carving on the south face. Forty-nine ceramic sherds, some of which bore evidence for an organic coating, were found in association with the limestone slab along with two chips of sandstone, a quartz flake, an orange glass bead, a globular ceramic vessel with an organic coating, and the enamel casing of a human molar. The continued excavation of this feature revealed that the artifacts were placed to the south of the limestone slab that sat at a 45° angle in the matrix. Also found around this feature were 15 chips of sandstone each ca. 7-10 cm in size. The presence of the aforementioned artifacts and the human molar suggest that this represents a human interment, the only possible evidence of mortuary activity at Site 52 discovered. A further two spits were excavated in this unit but no artifacts or features were recovered.

### **Figure 7. Unit 5, Layer 1, spit 2.**

#### 4.4 Excavations in Jar Group 1

##### 4.4.1 Unit 6

A small 1 x 1 m test pit was established at the bottom of a slope to the south of jar Group 1. The aim of this test excavation was to investigate whether any material culture had washed down the slope. The unit was excavated by 10 cm spits down to 30 cm and nothing was encountered.

##### 4.4.2 Unit 7

Unit 7 was located at the highest point in Group 1 based on the presence of visible surface features including sandstone boulders. The unit was a 1 x 3 m unit with the short axis aligned north-south. A large sandstone disc fragment was present on the surface in the center of the unit (inventory # 52/1/D029). In the east end of the unit were some pieces of limestone and a sandstone boulder.

Ceramic sherds were found to the north of the limestone boulder in the first 10 cm spit (Figure 8) and as this area was excavated it became clear that the uppermost limestone piece sat atop another larger piece of limestone (measuring 40 x 15 cm) and another smaller piece was found adjacent to it (measuring 8 x 8 cm). There was very faint evidence of a pit having been dug into the archaeologically sterile contexts (clay) around these fragments of limestone. Further ceramic sherds were found within this apparent pit.

### **Figure 8. Unit 7 and 8, Layer 1, spit 1.**

The sandstone disc was removed and beneath it lay a broken, partial ceramic vessel of quartz-tempered ceramic. No other artifacts or features were encountered in Unit 7.

#### 4.4.3 Unit 8

Unit 8 was established as an extension, to the south, of Unit 7. The unit was the same size as the former and on the same orientation. There were three visible features on the surface of the unit, a sandstone block at the west end, a smaller sandstone piece closer to the north baulk and an even larger sandstone block near the south baulk (Figure 8).

Nothing was found beneath any of the features noted on the ground surface and no artifacts were discovered in the excavation of the unit to a depth of 30 cm after which the matrix was archaeologically sterile.

#### 4.5 New Megalithic Jar Site Discoveries

During the 2017 fieldwork season, the research team was led to four undocumented sites with megalithic jars by one of the residents of Ban Phakeo. These sites were given provisional “Q numbers” for on-site documentation purposes and it is expected that these new sites will be given inventory numbers in the future (Figure 10). Nearly all the jars at these sites were incomplete, hindering robust morphological comparison to the completed jars at Site 52. All were fashioned from sandstone, and the fact that they were mostly incomplete suggests these sites were either quarry sites or locales where jars were abandoned in transport (Figure 9).

**Figure 9. Photographs of jars discovered at the “Q sites”. A. Damaged jar at Q1; B. Rough-out at Q2; C. Apparently complete jar at Q2; D. Partially complete jar at Q2; E. Rough-out at Q2; F. Fractured rough-out at Q3.**

Q1 (N19.48744 E103.43291) is a possible quarry site comprising 21 jars and 16 boulders located ca. 900 m south of Group 3 at Site 52.

Q2 (N19.48678 E103.43903) is a quarry or transport site with more than 20 nearly complete and incomplete jars located ca. 1.2 km southeast of Group 3 at Site 52. The pinkish-brown sandstone jars and rough-outs at this site are widely dispersed. The sandstone of Q2 is notably different in color and texture from that used for the jars at Site 52.

Q3 (N19.48306 E103.43021) is located ca. 1.4 km southwest of Group 3 at Site 52. This is a possible quarry on the steep slope atop a mountain ridge comprising more than 23 jar roughs.

Q5 (N19.48306 E103.43021) is a possible quarry near a seasonal pond ca. 1.09 km southeast of Group 3 at Site 52. Time constraints did not allow for an accounting of jar numbers.

**Figure 10. Topographic map showing location of Site 52 and newly discovered jar sites.**

#### 4.6 Discussion

The research mission in 2017 to Xiang Khouang Province, Laos PDR, aimed to excavate and document Site 52 located near the village of Ban Phakeo to provide comparative data to the research conducted in 2016 at Site 1. In total, eight locations were excavated, including four units in Jar Group 3, two in Jar Group 1, and one in Jar Group 2. These excavations revealed a paucity of archaeological evidence in contrast to the excavations undertaken at Site 1 (c.f. O'Reilly *et al.* in press). Although there was less recovered in terms of material culture, similarities in the suite of artifacts between the two sites are apparent. Ceramic sherds with an organic coating were found in both locations and the temper of the low-fired earthenware is also similar, comprising fragments of quartz (Figure 11). Hammerstones (Figure 12) were encountered at both sites as were whetstone fragments (Figure 13). In terms of archaeological features, both sites, of course, host megalithic jars and evidence for sandstone chip “pavements,” and limestone blocks or slabs were found at both locations. These features at Site 52 suggest a similar mortuary ritual to that undertaken at Site 1. The presence of ceramic sherds with an organic coating in close proximity to the limestone blocks is another similarity, as these were found in mortuary contexts at Site 1. The lack of human remains is probably the result of taphonomic factors, including high soil acidity. The soil registered as being strongly acidic with pH (water) ranging from 4.8 to 5.2. If these features are indeed related to mortuary practice it is interesting to note that very little material culture was recovered in comparison to what was found at Site 1. At Site 1, the secondary burials were found in association with carnelian, agate, and glass beads (although very few) as well as miniature ceramic vessels, ceramic earplugs, and spindle whorls. Another feature of Site 1 was the presence of secondary burials placed in ceramic vessels with lids. These were not encountered at Site 52, nor was any evidence of primary burials found. The only artifacts recovered during the excavation of the possible mortuary features and the one positively identified mortuary feature were ceramic sherds. Burial 1, found in Unit 5, was associated with a large slab of limestone, surrounded by ceramic sherds and half a ceramic spindle whorl and one glass bead. Regrettably no material suitable for radiocarbon dating was recovered during the excavation of Site 52 and the samples taken for OSL dating were not fruitful.

**Figure 11. Ceramic sherds from Site 52 and Site 1, Xieng Khouang, Laos.**

In addition to the excavation of Site 52, major new discoveries were made in the 2017 field season, including four previously unknown megalithic jar sites comprising in excess of 60 megaliths. While time limitations precluded detailed study of these sites, it is indicative that there are likely many undiscovered sites throughout Xieng Khouang and probably Luang Prabang provinces. The newly discovered sites all comprised jars in various states of completion indicating that they were either quarries or transport sites where jars were abandoned in-transit for unknown reasons.

**Figure 12. Hammerstones from Site 52 and Site 1, Xieng Khouang, Laos.**

The fact that features including sandstone chippavements, limestone blocks, and ceramic deposits were discovered that were similar to those representing mortuary activity at Site 1 may indicate that a similar mortuary ritual was practiced at Site 52. Whether these possible mortuary contexts are contemporaneous to the placement of the megalithic jars is currently unknown.

With regard to the broader understanding of the megalithic sites of Laos, the excavations at Site 52 have failed to provide further information on the chronology of the site due to the absence of datable material. Nor was any evidence of residential occupation near the site identified (a situation common to all recorded jar sites). The discovery of further quarry or transport sites does, however, indicate that the spatial distribution of megalithic jar sites may be broader than presently understood. The lack of human remains and artifacts does not allow any interpretation of socio-political organization in the culture or the extent of inter-regional exchange.

### **Figure 13. Whetstone fragments from Site 52 and Site 1, Xieng Khouang, Laos.**

#### 4.7 Conclusion

Although only limited evidence of mortuary practice was encountered, including a paucity of human skeletal remains, the material culture and anthropogenic arrangements mirrored those found at Site 1 and indicate that similar cultural practices were evident at Site 52. There was a notable difference in the amount of material culture uncovered at Site 52 compared to that recovered at Site 1 which cannot be explained by differences in taphonomy alone. This may indicate that the people who lived in proximity to Site 52 did not have ready access to trade goods like glass and semi-precious stone beads (or chose not to inter them with the dead). Other items that were perhaps less valuable such as ceramic ear discs and miniature ceramic vessels, which were found in mortuary contexts at Site 1, were also not encountered at Site 52 nor were the varied interment practices represented. In conclusion, the authors believe, based on the recovered evidence, that Site 52 served a similar purpose as Site 1 in that there is some evidence for mortuary behavior among the megaliths. Further research to be undertaken elsewhere in Xieng Khouang Province will shed light on mortuary assemblages at other sites.

#### ACKNOWLEDGEMENTS

We would like to express our gratitude to the people of Ban Phakeo for their kind cooperation and especially to Mr. Ta-eun who led the team to several undocumented megalithic sites. We also thank the Ministry of Information, Culture and Tourism (MoICT) of Xieng Khouang and the District offices as well as the Department of Heritage MoICT, especially Than Thongbay Phothisan, Than Viengkhaou Souksavatdy, and Dr. Thonglith Luangkoth. We dedicate this paper to Khambai Yonglorya of the District office of the MoICT who worked closely with the team and sadly passed away in 2017.

#### FUNDING

This work was supported by the Australian Research Council [DP150101164].

## REFERENCES

Colani, Madeleine (1935). *Mégalithes du Haut-Laos (Hua Pan, Tran Ninh)*. Paris: *Ecol. Fran. Ext. Or.*, XXXV.

Genovese, Rosalia (2015). *The Plain of Jars of North Laos: beyond Madeleine Colani*. Ph.D.dissertation, SOAS, University of London.

Nitta, Ejji (1996). "Comparative study on the jar burial traditions in Vietnam, Thailand and Laos." *Bulletin of the Department of Archaeology, Faculty of Letters, Kagoshima University* 43:1-19.

McCarthy, James (1994). *Surveying and Exploring in Siam*, Bangkok: White Lotus Press [first published in 1900 by John Murray, London].

Pavie, A. (1919). *Mission Pavie: Indo-Chine 1879-1895*, Géographie et Voyages VII, Journal de Marche (1888-1889), Événements du Siam (1891-1893). Paris: Ernest Leroux.

O'Reilly, Dougald, Louise Shewan, Kate Domett, Siän Halcrow and ThonglithLuangkoth (in press). "Excavating among the megaliths: recent research at 'Plain of Jars' Site 1, Xieng Khouang, Laos." *Antiquity*.

O'Reilly, Dougald, Louise Shewan, Julie Van Den Bergh, Samlane Luangaphay, ThonglithLuangkoth (2018). "Megalithic sites of Laos: a comprehensive overview." *Journal of Indo-Pacific Archaeology* 42: 1-31.

O'Reilly, Dougald and Louise Shewan (2016). "The mysterious megalithic jars of central Laos." *The Journal of the Asian Arts Society of Australia* 25 (4), 12-13.

Sayavongkhamdy, Thongsa and Peter Bellwood (2000). "Recent archaeological research in Laos." *Bulletin of the Indo-Pacific Prehistory Association* 19:101-10.

Shewan, Louise, Dougald O'Reilly, and Thonglith Luangkoth(2016). "Recent excavations at a megalithic jar site in Laos: Site 1 revisited." *Antiquity Project Gallery*. June 2016; 90. <https://www.antiquity.ac.uk/projgall/shewan351>, accessed April 02, 2019.

Shewan, Louise and Dougald O'Reilly (eds.) (2019). *Madeleine Colani's Megaliths of Upper Laos*. Melbourne: Barcaray International Publishing.

Travers, Robert and Mone Nuan (2010). *Safeguarding the Plain of Jars Phase IV; Final Appraisal*, Unpublished Report for United Nations Educational, Scientific and Cultural Organisation.

Van Den Bergh, Julie. n.d. *Mission Report Site One*. Unpublished Report to UNESCO and the Ministry of Information, Culture and Tourism.

Van Den Bergh, Julie and Samlane Luangaphay (2008). *Plain of Jars Archaeological Landscape: Heritage Management Plan*. Unpublished Report to UNESCO and the Ministry of Information, Culture and Tourism.