

Archaeology

The Hoard from the City-Site of Vani

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(Presented by Academy Member David Lordkipanidze)

ABSTRACT. A hoard containing bronze and iron objects was discovered at the Vani city-site – one of the centers of the 8th-1st cc. BC Colchis, by the Vani expedition of the Georgian National Museum in 2007. The nature of the hoard is a source of ongoing research and in recent years the Georgian National Museum has collaborated with the Institute for the Study of the Ancient World (ISAW) in New York, the J. Paul Getty Museum and Getty Conservation Institute (Los Angeles), and the Ferdinand Tavadze Institute of Metallurgy (Tbilisi) on the treatment and study of the hoard. The hoard was composed of a bronze bowl, four stands, an incense burner, four lamps, and 10 sets of couch legs, as well as two iron lamp stands, a fire-dog, and dozens of spear-heads and arrowheads. The date of the hoard and the items it contained was determined by means of stratigraphic and radiocarbon methods, as well as through analogy. The hoard seems to have been buried in the middle of the 1st century BC. Some of the treasure from Vani must belong to the temple inventory, other parts to offerings. Technical study revealed that the lamps were made of lead-tin bronzes with a range of compositions using different lost wax methods; the smaller of two large vessel stands was cast from a leaded bronze, the other stands by casting a tin bronze. The large bowl may have been cast as a general shape and finished by turning; its decorated rim was probably cast and attached separately. Some of the couch parts were made of unleaded tin-bronze, the rest of leaded tin-bronze. Through study of the iron objects, it was estimated that they were manufactured from steel with a low carbon content which has to be received through cold blow process. There is no major difference between the materials. The artifacts were produced by means of free hammering; no traces of thermal treatment were identified. The material is not homogeneous in terms of structure, which is confirmed by microhardness data too. The Vani hoard was also investigated using palynological methods (the Institute of Palaeobiology of the Georgian National Museum). On the grounds of iconographical analysis, it can be proposed that the human busts and elephant heads decorating the bronze six-nozzle lamp correspond to Heracles with a lion skin and Dionysus and his wife Ariadne in the famous mythological scene of Dionysus's expedition in India. © 2016 Bull. Georg. Natl. Acad. Sci.

Key words: hoard, the Vani city-site, incense burner, couch, fire-dog, spearhead, arrowhead, stratigraphic data, radiocarbon date, lost wax process, palynological method



Fig. 1. General view of excavations

A hoard containing ritual metal objects was discovered at the Vani city-site – one of the centers of the 8th-1st cc. BC Colchis, - by the Vani expedition of the Georgian National Museum led by D. Kacharava. In 2007, excavating a section of the defensive wall on the north-eastern edge of the site (plot 203, grid a₇₋₈, b₈), a team headed by Dimitri Akhvlediani discovered a pit (length – 1.9m, width – 0.85m, depth – 0.9m) cut deliberately in the bedrock. The pit was filled up with dozens of bronze and iron artefacts (Fig. 1).

The nature of the hoard is a subject of ongoing research and in recent years the Georgian National Museum has collaborated with the Institute for the Study of the Ancient World (ISAW) in New York, the J. Paul Getty Museum and Getty Conservation Institute (Los Angeles) on the treatment and study of the hoard.

The hoard was composed of the following bronze items:

1. a bowl (inv. N 07:1-07/315) – large, hemispherical with a foot and handles. One handle has survived (the place the other one was attached to is clearly



Fig. 2. Large bronze vessel

visible). The handle attachment is in the form of a gorgoneion. Rim diameter – 0.68 m, height (including foot) – 0.38 m (Fig. 2).

2. stand (inv. N 07:1-07/319) – a fluted column on a quadrangular pedestal; it is flared at the top and is decorated with an Ionic cymation; there is a cylindrical brace fitted in the column which was probably used for holding a certain object (vessel?). Height – 0.33 m, width of the bottom – 0.385 m (Fig. 3).

3. stand (inv. N 07:1-07/320) – similar to the one described above, but smaller and without a flared top. Height – 0.185 m, width of the bottom – 0.29 m (Fig. 4).

4. stand (inv. N 07:1-07/321) – circular, decorated with a Lesbian cymation. Height – 0.07 m, bottom



Fig. 3. Bronze stand



Fig. 4. Bronze stand

diameter – 0.265 m (Fig. 5).

5. stand (inv. N 07:1-07/322) – consists of a circular base (with the claw overlapping it) and a protome in the form of a Siren. Height – 0.29 m, bottom diameter – 0.15 m (Fig. 6).

6. incense burner (inv. N 07:1-07/323) – three-nozzle, decorated with elephant heads. Height – 0.195 m,



Fig. 6. Bronze stand with Siren



Fig. 5. Bronze stand

width – 0.44 m (Fig. 7).

7. lamp (inv. N 07:1-07/324) – six-nozzle, three nozzles decorated with human busts (two male and one female) and the other three with elephants' heads. Height – 0.11 m, width – 0.42 m (Fig. 8).

8. lamp (inv. N 07:1-07/326) – three-nozzle, with a scene of abduction of Ganymedes by Zeus in the form of an eagle. Height – 0.135 m, length – 0.34 m, width – 0.31 m (Fig. 9).

9. lamp (inv. N 07:1-07/327) – three-nozzle, adorned with four figurines of Erotes. Height (including the figurines) – 0.27 m, width – 0.42 m (Fig. 10).

10. lamp (inv. N 07:1-07/325) – one-nozzle, decorated with representations of vine branches, leaves



Fig. 7. Bronze incense burner



Fig. 8. Bronze lamp with representations of Heracles, Dionysus and Ariadne



Fig. 9. Bronze lamp with representation of eagle and Ganymedes



Fig. 10. Bronze lamp with Erotes

and bunches of grapes. Height – 0.165 m, length – 0.35 m, width – 0.135 m (Fig. 11).

11. covers of a leg of a couch (inv. N 07:1-07/328-337) – ten sets, one is of relatively small size (inv. N 07:1-07/330) and may belong to a different object. Height of the complete items – 0.79-0.80 m (Fig. 12).

Apart from these, as noted above, iron items were found in the pit, namely:

12. lamp stand (inv. N 07:1-07/316) – consisting of



Fig. 11. One-nozzle bronze lamp

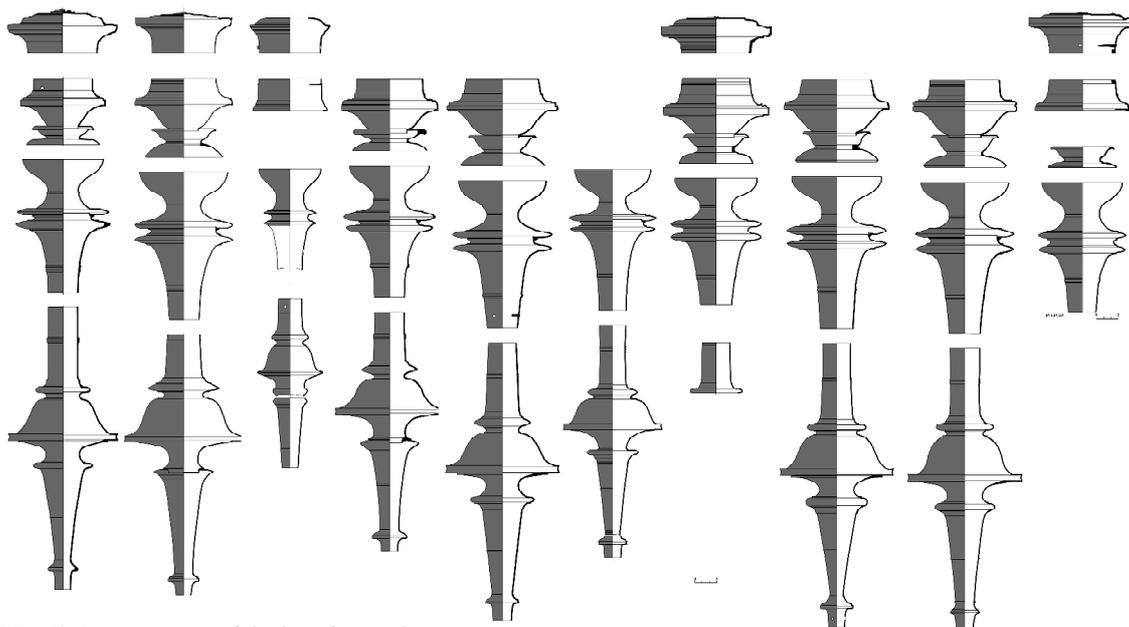


Fig. 12. Bronze covers of the leg of a couch

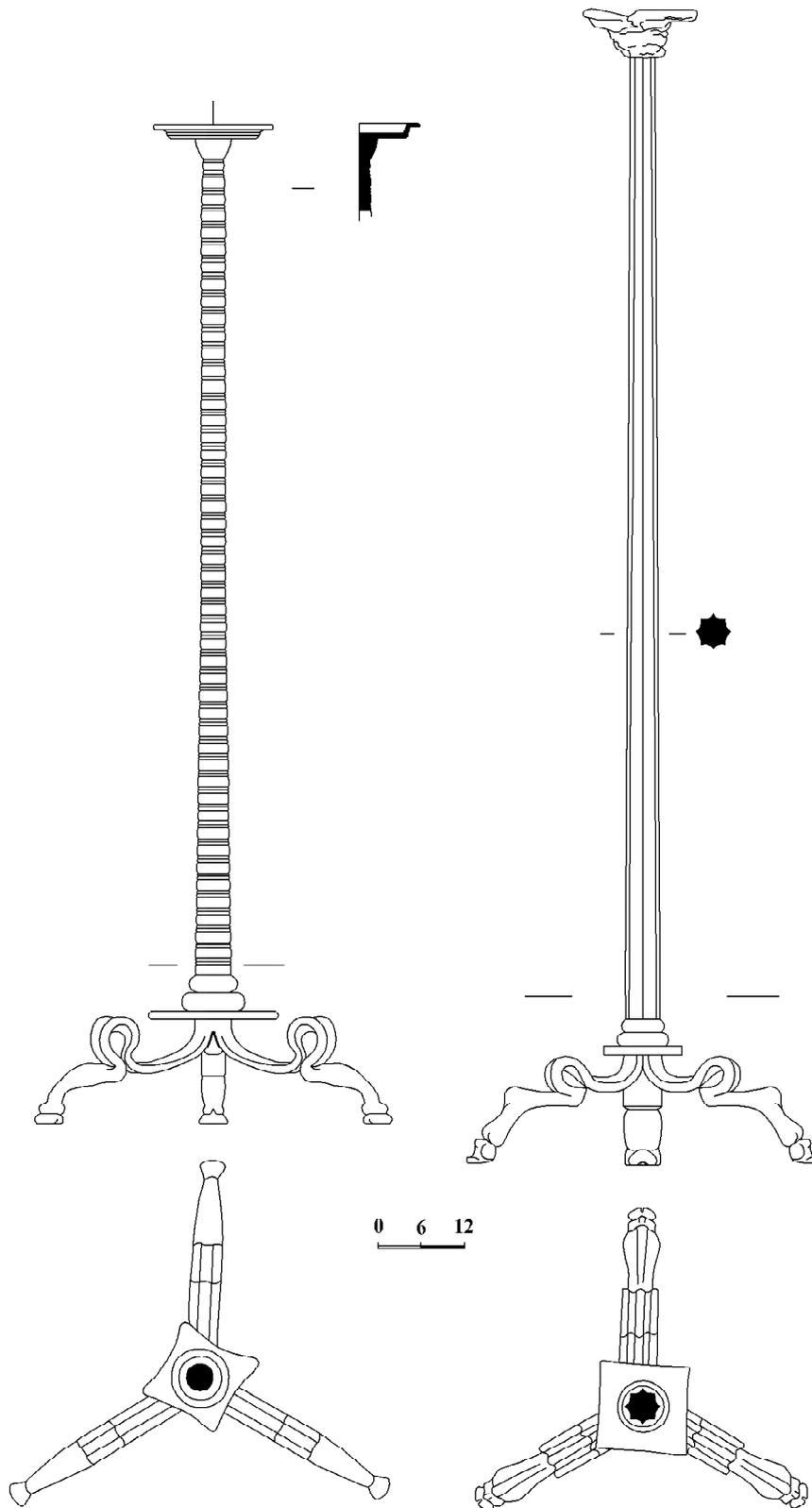


Fig. 13. Iron lamp stands

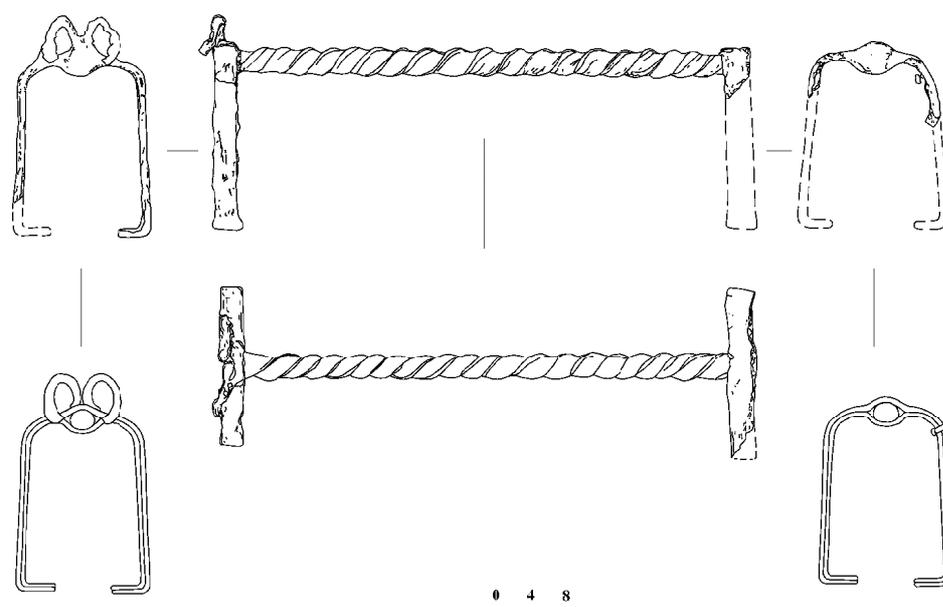


Fig. 14. Iron fire-dog

a plate, fluted stem and a three-legged base. Height – 1.72 m, width of the base – 0.5 m (Fig. 13).

13. lamp stand (inv. N 07:1-07/317) – consisting of a plate, a stem decorated with beads and discs and a base. Height – 1.5 m, width of the base – 0.5m (Fig. 13).

14. fire-dog (07:1-07/318) – consisting of a twisted rod ending in arched hoop-like bases. Length – 0.65 m (Fig. 14).

15. spearheads (07:1-07/338-352).

16. arrowheads (07:1-07/214, 233-234, 245, 260). The arrowheads and spearheads are currently being cleaned in the restoration laboratory of the Georgian National Museum.

The date of the hoard and the items it contained was determined by means of stratigraphic and radiocarbon methods, as well as using analogies.

The stratigraphic data attest to the fact that the pit, in which the hoard was hidden, was intruded into the debris of the defensive wall, after a trench had been cut in the mass of burnt adobe to collect foundation stones for secondary use (Fig. 1). Based on what had been uncovered during excavations, this part of the defensive wall seems to have been destroyed in the mid-1st century BC, together with the

other parts of the old city [1]. Accordingly, this date must be the lower chronological limit.

Some organic material was sampled and radiocarbon dated using accelerator mass spectrometry in the J. Paul Getty Museum and Getty Conservation Institute (USA). The calibrated date of a mass of beeswax discovered with the large bronze vessel (basin) was determined to be 1st century BC. Charcoal recovered from the lamp with Eros and wood from one of the couch-leg (kline) covers produced calibrated dates ranging between the 3rd-2nd centuries BC. The date of the wax is close to the archaeological stratigraphic dating, while those results obtained from the Eros lamp and the leg of a couch suggest an earlier date of manufacture for these objects [2].

At this stage of study it became possible to date several items of the hoard. Representations similar to the lamp with Ganymedes belong to the group of imitations of a well-known sculpture by Leochares which are generally dated to the Hellenistic period [3: 110-114, Taf. 36]. As for the lamp with Eros, we have found no exact analogy thus far. As an independent artistic image, Eros appears at the end of the 4th century BC and soon becomes popular on relief pottery as well as on the samples of artistic bronze,

goldsmithery and glyptics [3: 90-106; 4: 65-66, 135, figs. 83-84; 5: 101, 226, 230, 281; 6: 192-193; 7: 163; 8: 110-118, nos. 68-7.5; 9: 34, no. 10; 10: 45]. The bronze couch legs are close to other examples of the 1st century BC, such as those found on the ships sunk off the coasts of Mahdia and Formigue [11: 573-606; 12: 71-81; 13: 5-143] and in the material from the Fontevole burial (Gubbio) [14: 298-323]. The Vani examples are very close to couch-leg from Bourgoin-Jallieu [15: 171-193] and those in the Walters Art Museum in Baltimore [16: 48-61]. Consequently, it can be concluded that the objects included in the treasure were made during the Hellenistic period and hidden after the destruction of the city.

Generally speaking, according to mythological characters and function, the items belong to the Hellenistic cultural circle. It was from the second half of the 3rd century BC to the middle of the 1st century BC that Vani experienced the influence of Hellenistic culture. Most likely, the human busts and elephant heads decorating the six-nozzle lamp correspond to Heracles with a lion skin and Dionysus and his wife - Ariadne in the famous mythological scene of Dionysus's expedition in India. This theme of the Triumph of Dionysus served as a model for Alexander the Great for his expedition in India [17: 21-24].

Part of the treasure from Vani must belong to the temple inventory, another part to offerings. This provokes the question: which temple or shrine must these objects have belonged to? Given the material available to us, it could be the so-called temple with a mosaic floor, which was excavated about 50 meters away from the place the treasure was buried. It was in the ruins of this temple that artifacts like those in the hoard were discovered: bronze parts of the leg of a couch – not only the bronze cladding, but braces for wooden frames, and a large bronze vessel decorated with appliques. It has to be mentioned, too, that the ruins of the temple with a mosaic floor seem to have been dug like those of the defensive wall, with the aim of secondary use of the building material [18: 175-185]. We propose therefore that part of the in-

ventory was originally located in the so-called temple with a mosaic floor and reburied in the debris of the defensive walls.

Technical study of the artifacts of the hoard was carried out at the J. Paul Getty Museum and the Getty Conservation Institute in order to examine the technology of production of the bronze items and the content of the material using microscopy and radiography. The material characterization of the objects began with x-ray fluorescence (XRF) spectroscopic studies and continued using inductively coupled plasma mass spectrometry (ICP-MS). Technical study revealed that the lamps were produced using different lost wax methods. On the grounds of analysis of the metal alloy, it turned out that the lamps from the hoard were made of lead-tin bronzes with a range of compositions. The six- and one-nozzle lamps contained a higher percentage of lead (> 14 wt% lead). It is worth noting that alloys with higher lead are thought to be more suitable for post-cast working. The smaller of two large vessel stands with fluted stems was cast from a leaded bronze (approximately 5 wt% Pb), the bigger one by casting a tin bronze (< 1% Pb). As for the stand in the form of a Siren, compositional analysis points to a negligible lead content (< 1 wt%), indicating a tin-bronze casting. The stand decorated with the Lesbian cymation was cast in a tin-bronze. The large vessel (basin) may have been cast as a general shape and then finished by turning. Its decorated rim was probably cast and attached separately. A repair to the rim has a low lead content (< 1 wt%) and a slightly higher tin content than the rim itself. The gorgoneion handle attachment was soldered to the body with a lead-tin alloy. Some of the bronze couch-leg parts were made of unleaded tin-bronze, others of the leaded tin-bronze [2].

In the framework of the project “The Vani Hoard” (headed by Dimitri Akhvlediani) grant-supported by the Shota Rustaveli National Science Foundation (2012-2015), iron lamp stands from the hoard were studied by a team of the Ferdinand Tavadze Institute

of Metallurgy (Tbilisi). It was estimated that the artifacts were manufactured from steel with a low carbon content, which has to be received through cold blow process. There is no major difference between the materials. The artifacts were produced by means of free hammering; no traces of thermal treatment have been identified. The material is not homogeneous in terms of structure, which is confirmed by microhardness data too.

Within the bounds of the same project, the Vani hoard was also investigated using palynological methods (the Institute of Palaeobiology of the Georgian National Museum). Apart from the plant dust and spores discovered in organic remains of the hoard objects, non-palynological-type palynomorphs have

been studied as well. In addition to the vegetation contemporary to the hoard, the palynological spectrum of the beeswax that was found in association with the large bronze vessel revealed dust of Pliocene Age vegetation. This was an unexpected and rather significant discovery. The wax had a mixture of clay particles of the Tertiary period, which contained dust of the same period. Palynological study of the wax present in the hoard reinforced the possibility that the lost-wax casting technique had been used. Vani is situated on Tertiary sediments that include clay, and there are remains of a workshop (2nd-1st centuries BC) for casting bronze, which included a casting pit with a mold base inside, slag, chaplets and other casting debris [19: 14-18].

არქეოლოგია

განძი ვანის ნაქალაქარიდან

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(წარმოდგენილია აკადემიის წევრის დ. ლორთქიფანიძის მიერ)

2007 წელს საქართველოს ეროვნული მუზეუმის ვანის არქეოლოგიურმა ექსპედიციამ ვანის ნაქალაქარზე, ძვ. წ. VIII-I საუკუნეების კოლხეთის ერთ-ერთ ცენტრში, გამოავლინა განძი, რომელიც შეიცავდა ბრინჯაოსა და რკინის ნივთებს. განძის ხასიათი მიმდინარე კვლევის საგანია. უკანასკნელ წლებში საქართველოს ეროვნული მუზეუმი თანამშრომლობს ძველი სამეაროს შემსწავლელი ინსტიტუტთან (ნიუ-იორკი), ჯ. პოლ გეტის მუზეუმსა და გეტის კონსერვაციის ინსტიტუტთან

(ლოს ანჟელესი), აგრეთვე ფერდინანდ თავადის მეტალურგიის ინსტიტუტთან (თბილისი) განძის გაწმენდა-კონსერვაციისა და შესწავლის საქმეში.

განძი შედგებოდა ბრინჯაოს დიდი ზომის ჭურჭლის, ოთხი სადგარის, სასაკმევლის, ოთხი ჭრაქის, კლინეს ფეხების გარსაკრავების 10 კომპლექტისაგან, ასევე რკინის ორი თიმიატერიონის, კერიის, ათეულობით შუბისპირისა და ისრისპირისაგან.

განძისა და მისი შემადგენელი ნივთების თარიღი განისაზღვრა სტრატეგრაფიული და რადიოკარბონული მეთოდებით, აგრეთვე ანალოგიების მეშვეობით. განძი ძვ. წ. I საუკუნის შუახანებში უნდა იყოს ჩაფლული. განძის შემადგენელი ნივთების ნაწილი სატადრო ინვენტარს წარმოადგენს, ნაწილი - შემოწირულობას.

ტექნიკურმა შესწავლამ გვიჩვენა, რომ ჭრაქები დამზადებული იყო სხვადასხვა შემადგენლობის ტყვია- და კალანარევი ბრინჯაოსაგან, სხვადასხვა სახის ცვილის დაკარგვის ტექნიკის გამოყენებით. ჭურჭლის ორი დიდი სადგარიდან უფრო პატარა ნიმუში ტყვიანარევი ბრინჯაოსგანაა ჩამოსხმული, სხვა სადგარები - კალიანი ბრინჯაოსგან. დიდი ზომის ჭურჭელი შეიძლება ჯერ საერთო ფორმის სახით იყო ჩამოსხმული და შემდეგ დასრულებული დაზგაზე. შესაძლოა, მისი ორნამენტირებული პირის კიდე ცალკეა ჩამოსხმული.

რკინის ნივთების შესწავლის შედეგად დადგინდა, რომ ისინი დამზადებული იყო დაბალ-ნახშირბადიანი ფოლადისაგან, რომელიც მიღებული უნდა იყოს ცივბერვითი პროცესით. ნივთები დამზადებულია თავისუფალი ჭედვით. არ ჩანს თერმული დამუშავების გამოყენების ფაქტები. მასალა სტრუქტურულად არაერთგვაროვანია, რაც აგრეთვე მიკროსისალის მონაცემებით დასტურდება.

განძი პალეონოლოგიური მეთოდითაც იქნა გამოკვლეული. განძის ნივთებიდან აღებულ ორგანულ ნაშთებში აღმოჩენილ მცენარეთა მტვრის და სპორების გარდა შესწავლილია არაპალეონოლოგიური ტიპის პალეონომორფებიც.

იკონოგრაფიული ანალიზის საფუძველზე მიჩნეულია, რომ ადამიანთა ბუესტებიანი და სპილოს თავებიანი ჭრაქი ასახავს დიონისეს ექვდიციას ინდოეთში (დიონისეს, არიადნესა და ჰერაკლეს მონაწილეობით).

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