A long-term perspective on the exploitation of Lipari obsidian in central Mediterranean prehistory

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ARTICLE INFO

Article history:
Received 10 May 2017
Received in revised form 26 September 2017
Accepted 10 October 2017
Available online xxx

Keywords:
Lipari obsidian
Central Mediterranean prehistory
Exchange networks
Redistribution
Geoarchaeology
Longue durée

ABSTRACT

Of the four major island sources of obsidian in the central Mediterranean, Lipari raw materials have the widest distribution, being found at over 200 archaeological sites throughout mainland Italy, southern France, northern Africa, and Sicily. As a means of contextualizing the importance of Lipari obsidian within broader cultural processes, this paper discusses the long-term exploitation of the island’s raw materials from the sixth to second millennia BC, in turn emphasizing the reflexive relationship between the movement of Lipari obsidian and the broader circumstances that mediated its use.

Over the past 50 years, a large number of studies have been published on obsidian in the central Mediterranean, the majority of which relate to the sourcing of archaeological objects. In total, over 10,000 artifacts have been elementally or visually characterized from well over 400 archaeological sites. Using a newly compiled database of prior obsidian studies, this paper highlights the importance of Lipari obsidian within wider networks of interaction. Through a diachronic overview of the distribution of Lipari obsidian along with a consideration of how these materials were consequently reduced and used, this paper highlights the impact of the spread of Neolithic lifeways on the establishment of large-scale obsidian circulation networks as well as the effects that shifting value regimes associated with the adoption and proliferation of metal technology had on the collapse of long-distance exchange networks.

By the second millennium BC, the use of Lipari obsidian becomes a localized phenomenon largely restricted to sites on Sicily and increasingly associated with human burials. While it is easy to explain the continued use of obsidian in these areas as being the result of its ease of procurement, the last vestiges of a dying practice, this paper demonstrates that the situation is slightly more complex.

In many ways, the exploitation history of Lipari obsidian mirrors that of other central Mediterranean sources. However, this paper brings to light unique factors that allowed raw materials from a relatively small Aeolian island to become an object of value throughout the entire central Mediterranean.

1. Introduction

Lipari is one of the Aeolian Islands, situated about 30 km north of the Italian island of Sicily and occupying an area of slightly less than 40 km². A long history of volcanic activity on the island has led to the formation of numerous outcrops of obsidian, an excellent raw material for the production of stone tools that was widely exploited by prehistoric peoples of the central Mediterranean. As a means contextualizing the importance of Lipari obsidian within broader cultural processes, this paper discusses the long-term exploitation of the island’s raw materials from the sixth to second millennia BC, in turn emphasizing the reflexive relationship between the movement of Lipari obsidian and the broader circumstances that mediated its use.

In the central Mediterranean, there are four geological island sources of obsidian: Lipari, Monte Arci (Sardinia), Palmarola, and Pantelleria (see Fig. 1, inset). The next closest archaeologically significant sources are located to the east in the Aegean (i.e., Melos) and to the northeast in the Carpathian Mountains (Milić, 2014). At present, the vast majority of obsidian artifacts found at archaeological sites in the central Mediterranean were made of raw materials from one of these four sources, although a small quantity of items made of Carpathian obsidian have been documented from several Neolithic sites in northern Italy (Kendle et al., 1993; Williams-Thorpe et al., 1979), while a few possible pieces of Aegean (Melian) obsidian have been reported at Grotta del Leone (LU; see Supplementary Material, Table A for geographic

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https://doi.org/10.1016/j.quaint.2017.10.014
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abbreviations) and elsewhere in the province of Tuscany, Italy (see Avino and Rosada, 2014; Bigazzi et al., 1986).

Fig. 1 shows a map of archaeological sites in which obsidian has been reported in the central Mediterranean from the sixth to second millennia BC. To date, it comprises 1199 open-air settlements and caves spread over a large area that includes modern-day Italy, France, Slovenia, Croatia, Bosnia and Herzegovina, Albania, Tunisia, Algeria, Malta, and Spain. This spans an area of about 2100 km east to west and 1800 km north to south. Most of the sites where obsidian has been documented are residential in nature.

Of the four major island sources of obsidian in the central Mediterranean, Lipari raw materials have the widest distribution, being found at over 200 prehistoric archaeological sites throughout mainland Italy, southern France, northern Africa, and Sicily. Through a diachronic overview of the distribution of Lipari obsidian, along with a consideration of how these materials were consequently reduced and used, this paper highlights the importance of Lipari obsidian within wider networks of interaction.

1.1. Obsidian geology of Lipari

Lipari has a long history of volcanic activity dating back to the upper Pleistocene and features multiple outcrops of obsidian. The geology of Lipari, and the Aeolian Islands more broadly, is well documented (Albert et al., 2017; Bigazzi et al., 2005; Lucchi, 2013), and while there are several obsidian outcrops on the island only two are of archaeological importance: Gabellotto Gorge and Canneto Dentro (Fig. 2; see Freund et al., 2015, 2017; Tykot et al., 2006). An obsidian ‘source’ in this sense represents one or more volcanic events within a restricted area (Pollard and Heron, 2008: 77). When as geoarchaeologists we refer to a ‘subsource’ of obsidian, we are specifically talking about the products of a distinct eruptive event from the same area; these products can be distinguished from those associated with other flows on the basis of their date and/or their different physical and chemical properties. For archaeologists, the differentiation between these subsources is relevant because there are distinct differences in the human exploitation of various outcrops through both time and space.

1.1.1. Gabellotto Gorge

Gabellotto Gorge is located on the eastern half of the island and...
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