

Fig. 1. Abu Hureyra & major Anatolian obsidian sources

## (1) Introduction and Aims

Located on the Middle Euphrates in N. Syria (Figs. 1-2), Abu Hureyra spans the transition from hunter-gatherer to farming economies in SW Asia (Moore *et al* 2000).

Our aim is to map common traditions of consumption as a means of reconstructing the interaction networks that produced the ways of life we refer to as ‘the Neolithic’.

To clarify Abu Hureyra’s relations over 4000 years, we sourced 261 obsidian artefacts from Pre-Pottery Neolithic A [PPNA] - Pottery Neolithic [PN] strata (Table 1).

The results are located within a larger study on obsidian consumption and socio-economic networks from the Epi-Palaeolithic to Bronze Age (Fig. 1).

## (2) The Abu Hureyra Obsidian Study

While only <0.1% of the site’s chipped stone, our ability to source obsidian makes this a powerful means of studying regional interaction.

Obsidian was an exotic resource for the community, the nearest sources being located in eastern and central Anatolia, at linear distances of 390 – 450 km (Fig. 1).

Our study provides a detailed assemblage characterisation by integrating sourcing data with techno-typological analyses (Fig. 3).

## (3) The Elemental Characterization

Each artefact was analyzed non-destructively at the MAX Lab by an Energy-Dispersive X-Ray Fluorescence spectrometer, recording 15 major and trace elements.

Raw materials were provenanced by comparing chemical signatures of artefacts with source samples.



Fig. 2. Trenches D & E: Study assemblages

Sub-Period	Phase	Dates	Cultural Phase
	9	post 7000 BP	Pottery Neolithic A 7,600 - 6,500 BP
AH2C	8	7,300 - 7,000 BP	
AH2B	7	8,300 - 7,300 BP	
	6		Pre-Pottery Neolithic C 8,000 - 7,600 BP
	5		Pre-Pottery Neolithic B 9,600 - 8,000 BP
AH2A	4	9,400 - 8,300 BP	
Uninhabited	-	10,000 - 9,400 BP	
AH1C	3	10,400 - 10,000 BP	Pre-Pottery Neolithic A 10,000 - 9,600 BP
AH1B	2	11,000 0 10,400 BP	
AH1A	1	11,500 - 11,000 BP	Epi-Palaeolithic 2 12,500 - 10,000 BP

Table 1. Phasing, dates, & regional terminology



Fig. 3. Selection of artifacts by source (D. Mihailović)

## (4) Results

Using strontium (Sr), and zirconium (Zr) contents, four compositional groups are distinguished (Fig. 4).

One group’s chemical signature matches that of Göllü Dağ obsidian from central Anatolia (n=60). The largest data-set (n=123), matches Bingöl B in eastern Anatolia (Fig. 1).

73 artefacts have the high Zr values, and green colour of peralkaline obsidian. Elemental ratios discriminate them into Bingöl A (n=26), and Nemrut Dağ (n=47).

Five artefacts match the ‘Group 3d’ source of Renfrew *et al* (1966); while the location is unknown, its distribution suggests an origin in eastern Anatolia, or Iran (Fig. 5).

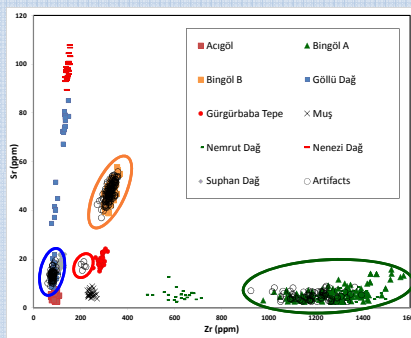


Fig. 4. Bivariate contents plot of Zr vs Sr (parts per million)

## (5) Consumption Through Time

Throughout the Neolithic the people of Abu Hureyra procured obsidian from both central and eastern Anatolian sources, the latter dominant (Fig. 5).

Phase 6 (c. 8,000 BP) views a significant increase in the relative importance of Bingöl B obsidian, with less reliance on peralkaline products from Bingöl A / Nemrut Dağ.

Quantities of Central Anatolian obsidian are consistent through time.

Phase 7 (c. 7,000 BP) sees the first ‘Group 3d’ obsidian.

There is little evidence for the working of obsidian in any period, the assemblages dominated by unipolar pressure-flaked blades (Fig. 3).

These blades’ shared technology, and scale might suggest a common centre of production working both central and eastern raw materials.



Fig. 5. Distribution of ‘Group 3d’ products

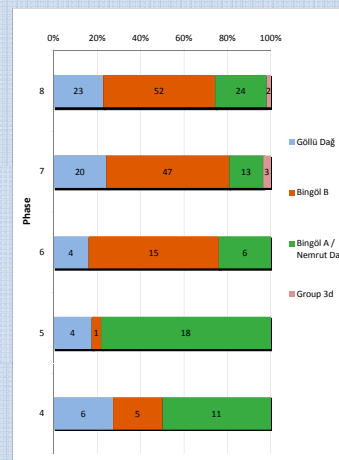


Fig. 6. Relative proportions of raw materials through time (Phases 2 and 3 only 7 pieces)

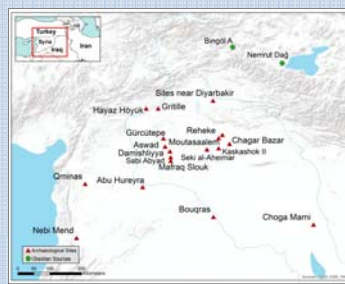


Fig. 7. Distribution of ‘corner thinned blades’ (after Nishiaki 2000; Fig. 8.15)

## (6) Discussion and Future Directions

Abu Hureyra’s consumption of both eastern and central Anatolian obsidian forms part of a northern Levantine PPN - PN tradition.

Comparable assemblages are attested at Cheikh Hassan, El Kowm 2, Mureybet, Qdeir 1, and Tell Kosak Shamali *inter alia* (Chataigner 1998).

Next we need to move from discussing the circulation of raw materials *per se*, and to consider their specific forms of consumption.

For example, using eastern Anatolian obsidians to make ‘corner thinned blades’ (Fig. 3, a & j), is a distinct N. Levantine / Upper Mesopotamian practice (Fig. 7).

It is this elucidation of such closely shared practices that is our major objective.

These traditions reflect close community interaction - perhaps part-articulated via inter-marriage - i.e. the social networks that underpinned the construction and reproduction of these Neolithic societies.

## References

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