

## Further Analyses of Southern French Flint Industries

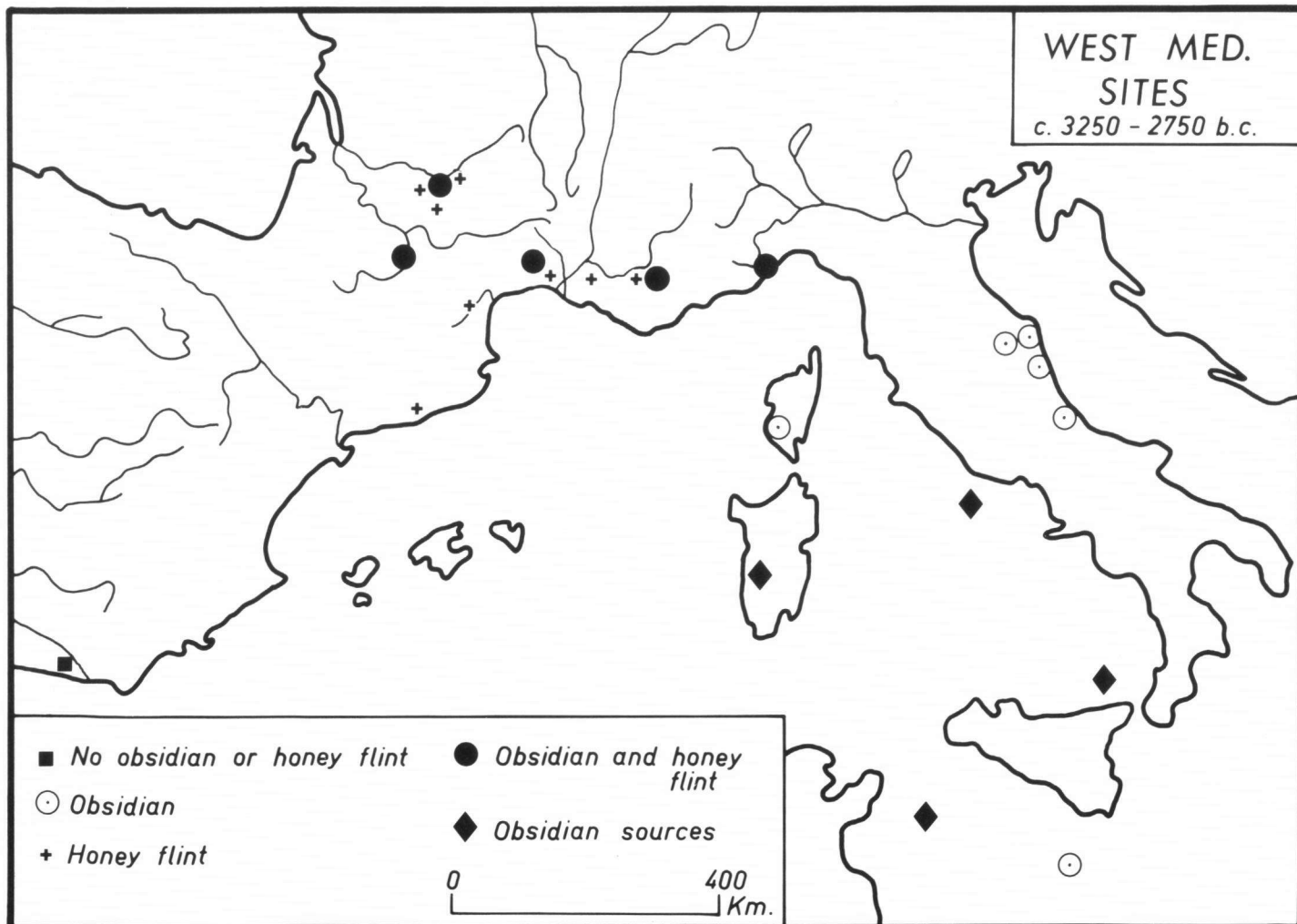
A. Aspinall, S.W. Feather & A.P. Phillips

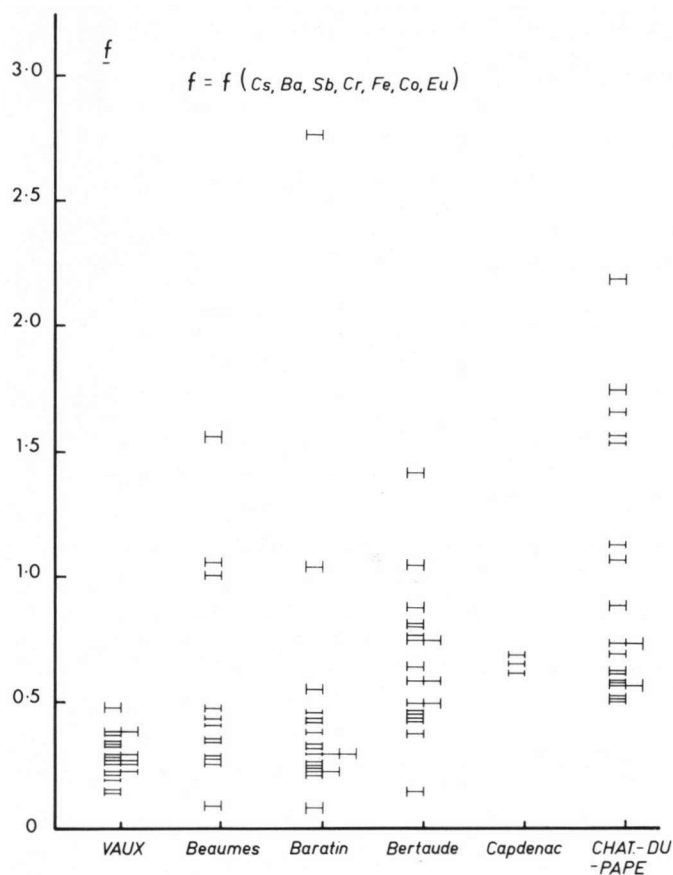
In the Early Neolithic c. 4500 B.C. populations living on a few West Mediterranean sites - particularly in Italy - used obsidian from Lipari and other obsidian sources, and a couple of groups in the Rhone Valley area used translucent honey coloured flint like that from the source site at Chateauneuf-du-Pape. Others used flint of different colours, or stones described as cherts. Big blade-flakes, transverse arrowheads with marginal retouch, scrapers and a few burins and borers provided the bulk of the industry. Middle Neolithic industries, on the other hand, include a large number of fine blades and bladelets. The blades are often made in honey-coloured flint, as the map of sites with C14 dates around the turn of the 3rd millennium B.C. indicates (Fig. 1). Blades and other tools, such as transverse arrowheads with invasive retouch, scrapers, burins and borers, are found overwhelmingly in honey-coloured flint on big open-air sites (St. Michel-Du Touch at Toulouse, La Condamine near Montpellier, La Bertaude near Orange, and Escanin II in the Alpilles hills). In cave sites from Eastern Provence to Western Languedoc a third or more of the tools are usually made in honey-coloured flint. The neutron activation analysis of Southern French flint, introduced at the last Symposium, has been considerably broadened to include many more samples from the Chateauneuf-du-Pape and Vaux-Malaucene sources and from archaeological sites (Fig. 2). The source analyses and those of the sites at Beaumes-de-Venise and La Bertaude (Vaucluse) have already been reported by us (P.P., A.A. and S.F. 1977). Recently we have extended our studies to a third site, Le Baratin some 5 km and 25 km from Chateauneuf and Vaux respectively, and to a site, Capdenac-le-Haut, in South West France which is remote from both defined sources (courtesy of Dr. JEAN CLOTTES). Study of the data from the two sources suggested that the ratio of two linear functions of several non-correlated element concen-

trations would enable us to characterise the sources. The linear functions involved the elements Sb, Ba, Sc, Co and Cr, Eu, Fe. The data were presented in the form of simple distribution diagrams for sources and sites on a single diagram, so that the degree of success in assigning artefacts to sources could be readily seen. This approach has now been extended to include our current results and in Fig. 3 we show the distribution for all analyses so far undertaken.

As in our previous communications, any discussion of the results must be prefaced with cautionary remarks on the exceptionally low concentrations of elements, leading to low measurement accuracy and also the significant "within sample" inhomogeneities encountered in the neutron activation analysis of flint. Bearing in mind such limitations, the discrimination between the Vaux and Chateauneuf sources appears reasonably defined. It should be remembered, however, that the Vaux samples originated from an isolated geological horizon, whilst those from Chateauneuf represent a random field collection of geological samples. It is interesting to observe that the majority of artefacts from La Bertaude show the characteristics of Chateauneuf flint, whilst those from Beaumes-de-Venise and Le Baratin are predominantly identifiable with the Vaux sources. The results of the analyses suggest that at least some of the honey coloured flint found on the 5th millennium B.C. site of Le Baratin came from the more distant Vaux-Malaucene source. This would be acceptable if we assume an at least partly seasonal life-cycle for these people, since the Vaux-Malaucene area represents nearby high ground for animal pasturing in the summer, and the flint could have been collected then. However, we intend to study more samples from this site, and we are grateful to the excavator, Dr. JEAN COURTIN, for his encouragement of his work.

The results of the Capdenac analyses are potentially very exciting and we intend to examine further samples from sites in the South-West to see if a similar pattern develops. As we have already indicated, there are other limestones with deposits of similar Jurassic flint throughout the Southern French region, but no major exploitation sources have been indicated outside the





RESULTS OF FLINT ANALYSES

Rhone Valley. We are therefore interested to know if the sudden spread of honey-coloured flint after c. 4000 B.C. represents trade, or a series of simultaneous local searches for flint of this colour. As the map shows, obsidian was widely distributed throughout West Mediterranean sites at the turn of the 3rd millennium B.C. It is not at least a possibility that trade in fine flint was also in operation at this time? We intend to test many more sources and artefacts in an effort to find out.

#### REFERENCE

PHILLIPS, A.P., ASPINALL, A. & FEATHER, S.W., 1977 - Stages of 'Neolithisation' in Southern France: Supply and Exchange of Raw Materials. *Proceedings of the Prehistoric Society* v. 43, pp. 303-316.

A.P. Phillips, University of Sheffield.

A. Aspinall, University of Bradford.

S.W. Feather, Bradford Museum.

