

OBSIDIAN STUDIES IN 1984

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Twenty years have elapsed since the publication of the first papers showing that the sources of obsidian glass could be determined by physico-chemical methods. Since that time, the quality of the analytical determinations has improved, leading to real confidence in the source assignments; provenience determinations have been correlated with dating procedures, thus complementing archaeological information, and criteria have been suggested that allow those interested to assess the reliability of the determinations. Data banks representing detailed compositions of obsidian sources are being established in many regions and cost effective procedures are being developed which enable the user to reduce the cost of determining provenience. Attempts to use computer techniques to improve interpretation of results, or further to reduce the cost, continue to be made. Finally, other physical measurements have been developed which have contributed to the information desired, such as the measurement of obsidian hydration to determine the time at which the obsidian was last worked. My specific comments on the papers in this volume will be restricted primarily to those dealing with obsidian source analysis, since obsidian hydration analysis is covered in detail in the following paper by Meighan.

Hughes' paper fittingly sets the tone by emphasizing that producing high quality data is more important than using sophisticated statistical, computerized methods for their interpretation. The statistics needed to make valid provenience assignments on the basis of high quality data are relatively simple; if the data are not sufficiently discriminating to make such assignments, this fact is normally quite obvious without the use of complex techniques. I think it was very worthwhile for Hughes to have gone to the trouble of pointing out in detail how treacherous it can be for the non-expert in statistics to use advanced methods and how, in the few ambiguous cases, mismatch by computer is at least as likely as mismatch on the basis of simpler calculations.

Nelson's article reflects careful work, and his data generally compare very well with data obtained by other workers on some of the same sources. They provide a useful addition to the data bank on Great Basin obsidian already available in the literature. However, given the reservations expressed by Nelson on page 29 of his paper, I am unsure why the author used discriminant analysis to distinguish between sources. In my estimation, computers are useful in obsidian analysis for cataloging data and for performing routine analytical calculating and evaluating functions, but in the interpretive techniques that have become so fashionable in this type of study, the pitfalls for many practitioners are far more significant than the benefits they are likely to gain, as noted previously by Hughes.

Hampel's paper is much to the point, concisely and competently discussing some problems in x-ray fluorescence analysis that are most commonly ignored in obsidian analytical studies.

Bettinger, Delacorte and Jackson explore the utility of visual sourcing. They make the point that in a limited geographic area, some obsidian sources can