

## SUGGESTIONS FOR THE QUANTIFICATION OF POTTERY STUDIES IN THE LABORATORY

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As it is felt that objective descriptions would prove of value in describing the pottery of a district and would aid in the comparative study of pottery, the following suggestions are offered:

*Body Composition.*—The study of a thin section or a powder of a representative sherd with the aid of a petrographic microscope would not only indicate the physical composition of the body which, with most primitive pottery, approximates that of the unfired ware, but would also aid, together with the study of State Geological Survey bulletins, in the identification of the clay beds used. With this information it could be determined whether or not the non-plastic tempering material occurred naturally in the clay. The nature of the non-plastic material, the percentage present in the body, and the range of grain size might be determined either by means of the thin section or by an X-ray photograph of the sherd.

*Texture.*—The determination of the porosity of a ware would furnish a means of describing its texture, the coarser ware having the higher porosity. In reporting the surface texture of the sherds, a hard needle might be drawn over the surface under controlled conditions with its vertical motion amplified and recorded, the resulting curve then being mathematically analyzed.

*Hardness.*—Among the methods for determining hardness are scratching, grinding, boring, and pressure and impact tests. For pottery studies, Moh's scale of hardness which is used by mineralogists, seems to be quite satisfactory. Where necessary, some intermediate minerals can be added to this scale to further limit it. As the "skin effect" of the surface of the pottery may greatly influence the hardness, the tests should be made on undamaged surfaces of sherds. The hardness of the sherd will give some indication as to the temperature to which the clay was fired.

*Color.*—There are many methods which might be used to define color or color variation in a sherd series, such as Munsell's color sphere with its three variables—hue, value, and chroma; a book of standard color shades; a color top; or a recording photo-electric analyzer which will automatically plot a color curve in less than a minute showing the amount of each wave length of light reflected from a surface when illuminated from a standard source. Although the analyzer would be the most accurate, the book of colors would probably be the most practical to use in studying sherds. A series of sherds selected from those found at a site might be used to illustrate the color variations in the pottery of that place, and to determine the percentages of the different colors found.

*Density.*—A statement as to the bulk density of the sherds would be a useful addition to a report.

If a series of objective standards were adopted by archaeological laboratories studying primitive pottery, the resulting uniformity of reports would greatly aid workers in this field.