

found in the red-brown sand. Other than these two “renegades” which the author suggests are intrusive, all artifacts including those from the surface are either unifacially flaked cobbles or crude flake tools. A decreasing frequency of flake tools from the lowest to highest terrace is noted, as is the absence of flake tools in the small (7 cobble tools) collection from the highest terrace. No dating is attempted other than the acceptance of a “post-Pleistocene” date for the deposits in which the artifacts occur.

This report does little more than document the presence of a tradition of unifacial manufacture of crude flake and cobble tools in river terraces high above the present level of the Fraser River. This in itself is of considerable importance, but the report is disappointing in the lack of typological analysis of the specimens, and in the absence of an attempt at dating more precise than mere “post-Pleistocene” which embraces a rather lengthy period of time. I personally fail to see how on a geological basis the deposits could be any younger than 7,000 B.C., the oldest date for the lower levels of the Milliken site just upstream, and that they could be considerably older. Hopefully, a final report will inform us more fully on these aspects.

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The Quantitative Approach to the Relation between Population and Settlement Size. S. F. COOK and ROBERT F. HEIZER. Reports of the University of California Archaeological Research Facility. Berkeley, The University of California Press, 1965. 99 pp., 10 figs., 9 tables.

This publication contains a number of short papers all treating specific studies investigating the correlations between numbers of people in a settlement, the amount of life space occupied, and the amount of space protected by housing.

The first paper outlines the statistical methods employed in the subsequent analysis. Linear regressions of both raw data and log transformations are discussed, together with correlation coefficients and standard errors of the estimate. This well-presented discussion will aid readers unfamiliar with these techniques.

The second paper is a restudy of data regarding the form, size, and internal structure of seventeen Yurok settlements. These data are analyzed by the techniques discussed in the first paper, using varying conventions for establishing the bounds of a settlement. The findings demonstrate the strong correlation between the gross size of the settlement (living space) and the number of houses in the settlement, regardless of the conventions employed.

The third paper provides an analysis of similar data provided by S. K. Lothrop regarding the peoples of Tierra del Fuego. In this case the data were taken from site maps and tabulations of numbers of house pits per site.

Analysis of these data confirmed the strong correlation between numbers of houses and gross size of settlements.

In the fourth paper, "Settlement Area as a Clue to Regional Population", data from the historic documentation of Chumash Indian settlements are used in conjunction with archaeological data on the size of identified historic sites. A strong correlation is demonstrated between size of site and numbers of houses reported historically which is summarized as a log-log regression. This is then discussed as to its potential for arriving at a regional population estimate, given the proper archaeological data. However, the actual population estimate offered for the region in question was reached by multiplying the average number of individuals per house by the average number of houses per village, and then multiplying this figure by the estimated number of villages occupied at the time of the Spanish exploration along the southern California coast.

The fifth paper, "House and Village Sizes in the Aboriginal Central Valley of California," is primarily an organized presentation of data on size and distribution of single-family dwellings in the central California valley as reported historically and archaeologically.

The final paper, "House Size, Settlement Area, and Population Throughout Northern and Central California," is an assembled mass of data presented in two large tables regarding house size, village size as recorded archaeologically, and the population as calculated from the average number of persons per house, multiplied by the number of documented houses per settlement. These data are organized by ethnic regions, which are grouped into categories of single versus multi-family house areas. Mean figures on site size, numbers of houses per site, numbers of families and individuals per house, and the amount of floor space per house are computed for each ethnic region (thirty in all). These *means* were then used in the calculation of log-log regressions for the relationship between floor space and population, as well as for site area and population. The relationship of floor space to site area was treated in terms of a ratio and plotted graphically.

The conclusions reached from these analyses are roughly as follows: (1) There is a demonstrable allometric relationship between mean population estimates per village and mean area of roofed dwelling space, regardless of ethnic affiliation, geographic area, and type of house; (2) there is a demonstrable allometric relationship between mean population per village and mean site area but the form of the allometry varies with adaptive area, e.g., whether houses are multi-family or single-family and whether they are in desert, hill, or coastal environments.

Readers seeking to understand the demonstrated relations are informed that the interpretation of these findings must await further analysis.

A review is not the best place to enter a detailed criticism of the analytical techniques employed; nevertheless, I consider it appropriate to point out certain lines of questioning which persons making use of the data and conclusions

presented in this publication could profitably pursue. For example, the validity of the first conclusion cited above might be questioned on purely methodological grounds, since the "variables" employed do not in some cases appear to be truly independent observations. Population estimates are based on house counts and estimates of average size of family per house, which in turn may in some cases be estimated from the size of the houses. If on analysis it could be shown that there were not in fact independent observations, then a demonstrated allometric relationship could be a measure of their non-exclusiveness rather than of their correlation. In addition to the questioning of the stated results, one may also question the rationale for the use of regional means in regression analysis as opposed to actual tabulations by site. Further, it would appear necessary to study the distributions of the several variables by region to determine whether or not they were in fact unimodal distributions for which a mean value would have some summary meaning. Such checks do not appear to have been made by the authors.

In spite of some questionable methods, this study marks one of the few attempts in archaeology to study the relationships between variables and to specify in quantitative terms such relationships. As such this is a major contribution and one which can be viewed as a pioneer in a field to be further developed. In addition, it is a good source of tabulated and organized data presented in usable form so that those interested in the problems of settlement and demography can find abundant comparative data.

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Readings in Early Anthropology. J. S. SLOTKIN, ed., Chicago, Aldine, 1965. xv-530 pp. \$9.75.

As Sol Tax points out in the foreword to this volume, the late J. S. Slotkin was a scholar of great erudition and considerable linguistic fluency. In the course of his career he systematically followed the habit of recording from original sources and maintained a classified file. One of Slotkin's great interests was in the history of anthropology, in all of its branches and aspects. The present work is a posthumous product of this interest. Although the work was substantially completed in 1946, publication was delayed until 1965. Until his death in 1958, Dr. Slotkin added to the manuscript.

This is a most welcome volume, partly because of the historical range of its coverage and, also, because it fills a need in the anthropological literature as the expansion of programs of training of graduate students proceeds rapidly these days. Most anthropologists perhaps think of the history of anthropology as dating from the late nineteenth century and no doubt there is much justification for this view if one thinks of anthropology primarily in the sense of a separate well-organized and professionalized field of endeavour. It is, however, well to remind ourselves that our discipline, as we know it, from the nineteenth