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Mechanisms and Trends in the Decline of the Costanoan Indian Population of Central California. Ann Lucy Wiener Stodder.

Salinas: Coyote Press *Archives of California Prehistory* No. 4, 1986, vi+ 78 pp., 5 figures, 11 tables, bibliography, \$4.95 (paper).

Reviewed by:

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Sherburne Cook explained so many aspects of California Indian demography on the basis of so much information, and with so specialized a group of techniques, that few of us are prepared to challenge any of his conclusions. That does not mean that he was always right. As detailed and comprehensive as they were, his works were merely steps in a process of examination and rediscovery about California's past. Others are coming forward to test his conclusions, armed with better demographic techniques and, in some cases, with different class, ethnic, or gender perspectives.

Ann Stodder challenges Cook's explanation for the rapid decline of the California Indian population under the Franciscan mission system. While she agrees with Cook that disease was the main cause of the drop, she emphasizes the role of poor nutrition as the critical element in reduced disease resistance, which he did not do. Furthermore, she suggests that female fertility fell severely during the mission period. According to Stodder (1986:52), "the selective factors that acted to reduce the number of young women and their childbearing capacity constitute the fundamental mechanism in the decline of the neophyte population." Cook believed that fertility did not change at all.

Stodder focuses on the Costanoan-speaking peoples who went to the coastal missions of San Carlos, Santa Cruz, and San Fran-

cisco. A good part of the paper is taken up with the construction of sample menus, one set for people living as gatherer-hunters, another set for mission people. On the face of them, both sets of menus are somewhat low in calories, and definitely low in certain vitamins and minerals. Stodder believes that the people in the native state had a number of other food sources which overcame these deficits. On the other hand, she dismisses as unimportant the alternative food sources which may have been available to the mission people. Thus, the carefully constructed menus do not end up being key elements in her argument.

This paper ignores a large body of evidence suggesting that mission diets were plentiful and at least somewhat varied at most missions. Stodder argues that meat was lacking in the mission diet. She does not address Cook's (1976:45) conclusion that mission diets included at least one pound of meat per person per day. Important eyewitness quotes are not mentioned. George Heinrich von Langsdorff, a visitor to Mission San José in 1806, wrote

Their principal food is a thick soup made with meat, vegetables, and pulse . . . It appeared to me incomprehensible how any one could three times a day eat so large a portion of such nourishing food [Langsdorff 1814:160].

Cook did conclude that the prevalence of disease at the missions suggested that mission diets were "below the optimum necessary to provide a high resistance to infection" (Cook 1976:55).

I was not persuaded by Cook, nor have I been persuaded by Stodder, that malnutrition played a key role in the decline of the mission populations. One may speculate that the shift from gathering to plantation style agriculture resulted in a reduction of diet, but the controlled evidence necessary to

prove it is just not available. Furthermore, the assumption is not necessary to explain the devastating effects of mission life. The toll of contagious smallpox, measles, and syphilis would be terrible on the healthiest of newly exposed populations. Unsanitary and overcrowded condition, such as those documented for the missions, would be conducive to the spread of dysentery and cholera among the best fed people. I suggest that psychological deterioration due to the forced lifestyle alteration was a much more important factor in reduced disease resistance than was diet, per se.

Stodder is on the right track in her challenge of Cook's conclusion that fertility decline played no role in the overall population drop. Mortality and fertility play independent roles in generating a growing, shrinking, or stable population. Most of Cook's work concentrated on the mortality effect on crude death rates, which jumped from 45 per thousand outside the mission to 70 or 80 per thousand. Cook indicated a birth rate drop from 45 to 30 per thousand. He attributed it not to a drop in fertility but to an increase in the ratio of adult men to adult women in the population at large. His data indicates no change in the reproduction rate of women over time in the mission (Cook 1976:415). Stodder interprets the birth rate figures as evincing decreasing fertility due to syphilis, malnutrition, and the systematic abuse of women. Stodder offers no quantitative data to contradict Cook's fertility rate figures.

A rigorous quantitative re-examination of the mission data would probably provide the evidence Stodder needs to strengthen her case. Cook never did compare the fertility careers of individual women born in the mission with those of women who came into the mission system after they had become adults. To arrive at his fertility statistics, Cook

(1976:408-415) aggregated data on births for all women at a mission. The results showing lack of change in fertility through time are probably a function of the constant replacement of new adult women from the hinterland, women less likely to have been affected by syphilis or poor living conditions.

This paper contains some critical misinterpretations of demographic material. Perhaps most important is the interpretation of Table 7a (Stodder 1986:49) taken from Cook (1976:121). Contrary to Stodder's statement, the life table does not reflect a high death rate at all ages. Actually, the probability of death shown in the table falls within the typical range for gatherers in all but the 0-4 and the post-45 age groups (see Weiss 1973:28).

The fertility rate issue that Stodder raises can be clarified on the basis of family reconstitution studies using mission data, as can the problem of why adult males increase relative to adult females in most mission populations. Mission vital statistics could also be used to check Stodder's suggestion that weanling diarrhea was a major element in infant mortality. If such were the case, we would expect to see an anomalous jump in probability of death among two to four year olds on a curve that would otherwise be rapidly falling from the high mortality in the first year of life. Hopefully, Stodder will go forward with her work in California demography, incorporating a rigorous quantitative technique to increase our overall understanding of California history and human history.

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The Martis Indians: Ancient Tribe of the Sierra Nevada. Willis A. Gortner. Foreword by Albert B. Elsasser. Woodside: Portola Press, 1986, xxiii + 145 pp., 31 figures, 4 tables, Appendix, Index, \$14.50 (paper).

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This is the second volume by Willis Gortner dealing with the prehistory of the north-central Sierra Nevada. The first volume (Gortner 1984) was concerned with petroglyphs found in the North Fork American River locality, and provided an opportunity for Gortner to present his interpretation of the "who, what, when, where, and why" of this distinctive rock art. The volume reviewed here covers a much broader subject, the Martis Complex (or Martis Tribe, as Gortner refers to it), and represents Gortner's synthesis of information concerning this enigmatic archaeological complex.

Chapter 1 begins with a brief consideration of how the Martis Complex came to be recognized and the principal features that distinguish it archaeologically. The more well-known archaeological studies are referenced, along with radiocarbon dates to establish the time frame for the Martis

Complex. In Chapter 2, Gortner examines the origins of the complex and explores various arguments relating to whether the Great Basin or California was the ancestral homeland of the Martis culture. Chapter 3 presents evidence concerning the relationship of Martis to later complexes and ethnographic groups. Chapter 4 contains a lengthy discussion of neighboring "tribes" who lived at the time the Martis Complex flourished in the north-central Sierra Nevada. Chapters 5 through 9 are devoted to discussions of Martis subsistence patterns, homelife, and social and religious practices.

Archaeologists will particularly enjoy the Foreword by Albert Elsasser in which he describes, in anecdotal fashion, his early work with Robert Heizer and the unfolding of the concept of the Martis Complex.

Gortner is an amateur archaeologist who has spent many summers exploring the upper reaches of the North Fork of the American River. The book is directed toward the layman and other amateur archaeologists in order to fill what the author rightly sees as a void in the literature on the prehistory of California. Despite recurrent pleas within the archaeological community to do a better job of communicating archaeological knowledge to the public that supports our work, we fairly consistently fail to do so. Gortner recognizes this shortcoming and is critical of archaeologists for their failure to go beyond mere description of archaeological sites and artifacts to syntheses that present a picture of the culture responsible for the archaeological materials being studied. To reach this level, according to Gortner, requires that archaeologists must indulge in intuitive speculation to fill the inherent gaps in the archaeological record and tell the whole story.

Gortner's treatment of the Martis Complex includes ample evidence of intuitive speculation, as well as facts drawn from the