# Protohistoric Disease

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*Pestilence and Persistence: Yosemite Indian Demography and Culture in Colonial California.* By Kathleen L.Hull. Berkeley: University of California Press, 2009.

The 1990s were a turbulent time in California anthropology, as they were for the discipline as a whole. The heated debate over the role of science in anthropological research that has of late caught the attention of the national press can trace its roots directly to the intense postmodernist critiques of the 1990s. In California, one of the epicenters of postmodern antiscience was UC Berkeley, the former flagship department of western North American anthropology founded by A. L. Kroeber. Those of us still enamored of science who suffered through that period were convinced that nothing positive would ever come of it, but Kathleen Hull's beautifully written and meticulously researched book, *Pestilence and Persistence*, a product of her research and training at Berkeley in the 1990s, shows that expectation to be quite wrong. Tension between science and empathy is palpable throughout the volume, but Hull's ultimate reliance on a hypothetico-deductive structure and rigorous use of empirical evidence in the end provide a boost to scientific approaches.

Hull's study is a reworking of her 2002 dissertation in which she combines an empathetic reading of regional ethnohistory with an exceptionally rigorous demographic study in order to develop a highly plausible scenario for the past 5,000 years of prehistory and the early historic era in the Yosemite Valley of central California. Owing to the valley's remote location, direct cultural contact between Euroamericans and indigenous populations did not occur until 1850, more than 80 years after the establishment of Spanish missions in more accessible parts of coastal California. Hull's primary contention is that Yosemite's native populations were subjected to catastrophic disease-induced population decline before they had actual face-to-face encounters with nonnatives. Known as the protohistoric plagues hypothesis, this is not a new idea; other scholars have suggested that Native American populations outside of the actual contact points started to feel the effects of European diseases as early as the 1500s (e.g., Dobyns 1983; Erlandson and Bartoy 1995; Preston 1996). Hull's ver-

sion of the hypothesis is less extreme than that advocated by some scholars, however, in that she suggests that diseases made their way to Yosemite only four or five decades before the Euroamericans themselves did, at a time when the Spanish and other Europeans had a substantial presence less than 330 km away. Indeed, it would be hard to imagine a way for diseases not to have spread to Yosemite in the first half of the nineteenth century, given the archaeological evidence for long-standing trade and other social relations between the coastal regions and the Sierra Nevadas prehistorically. Hull makes her case based on a thorough review of written and oral accounts of Yosemite Indians, combined with an archaeological settlement analysis using obsidian hydration dating. Hull's empathetic perspective is most apparent in her introductory chapters, where she places her study in theoretical and global context. In her reading of the ethnohistoric record, she carefully considers all sources of information on Yosemite's native peoples, including oral history. Dismissal of the latter as a source of historical fact was a hallmark of some modernist/scientific anthropology, yet Hull considers oral traditions on an equal footing with the other sources. Significantly, local oral history includes a brief passage that suggests that diseases had ravaged Yosemite's populations before 1850. Seizing on this, Hull structured her archaeological study to try to determine whether this devastation could be recognized in the material record.

Of course, in the best of all worlds, Hull would have focused her study on bioarchaeological evidence that might speak directly to the relative health and size of populations in Yosemite Valley over time, but as she acknowledges, such information does not exist for the Yosemite area. At 1,200 m in elevation in the conifer-covered Sierra Nevada, Yosemite Valley does not provide a good environment for the preservation of bone, and the archaeological record consists almost exclusively of obsidian tools and debitage (derived from volcanic sources 50–60 km east of the valley), making Hull's decision to focus on hydration analysis a reasonable one. Indeed, obsidian studies have a long history in the Yosemite area, as they do throughout California. Hull's research was innovative, however, in that she explicitly attempted to link the archaeological record with ethnohistory and to use a time series of hydration readings as a proxy for human population. Of course, Hull recognized the innumerable potential problems associated with such an analysis and tried to correct and/or mitigate as many of these as possible. Her sampling methods and statistical analyses were extremely rigorous and convincing, while the number of readings relied on in her study (ca. 3,000) eliminated any issues about sample size. Disappointing, however, was the degree to which the hydration results actually suggested a catastrophic decline in population in the late 1700s or early 1800s. Owing to the brief window during which the decline is thought to have occurred and the low temporal resolution of obsidian hydration dates, the record provides less than compelling support for a protohistoric demographic event. In light of these results, Hull devotes most of the rest of her volume to a summary of evidence from other parts of North America that show more substantial evidence for protohistoric and early historic plagues. Hull essentially builds a case that the protohistoric decline happened virtually everywhere else in North America in order to make the archaeological findings from Yosemite more convincing. While this procedure again reflects a certain tension between science and empathy, it is hard to disagree with Hull's overarching conclusions. While the Yosemite archaeological findings on their own are not as compelling as one would like, the overall case that Hull makes by incorporating substantive data from many other regions is.

It is a shame that more studies rooted explicitly or implicitly in postmodernist theory are not like this one. The original excuse offered by many for the postmodernist attack on science was that ultimately a better, stronger, healthier scientific anthropology would emerge. With Hull's study, this is truly the case, as she balances an empathetic reading of the ethnohistoric record with an exceptionally rigorous use of empirical evidence to arrive at plausible conclusions.

## References Cited

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