cene overkill'' hypothesis? There is no reason to doubt Binford's view that the Nunamiut represent an extreme case of utilitarian rationality applied to the procurement and use of meat supplies, but does this imply that true wastage of game in a big-game hunting society cannot occur? In other words, are we to believe that circumstances can never arise in which hunting societies overexploit their resource base? By ignoring the ecological aspects of Nunamiut predator-prey relationships, Binford has left us with no way of assessing the long- and short-term impacts of different hunting strategies on game populations. At some point in the analysis it would have been useful to take a more ''caribou's eye'' view of Eskimo hunting behavior.

I must disagree, too, with Binford's abrupt dismissal of stone artifacts as indicators of adaptive behavior. Certainly there is nothing wrong with his having chosen to study faunal remains instead of stone tools, but it is simply not true that ''results of lithic studies overwhelmingly demonstrate that wear-pattern analysis yielded ambiguous results'' (p. 7). I would call his attention to the recent work of Lawrence Keeley and his associates at Oxford, where convincing, unambiguous results have been achieved. Moreover, the parting shot at the end of the book, where Binford cites recent work by Vierra as a cautionary argument against further studies in lithic technology, is valid but by no means final. There is plenty of scope for ethnoarcheological studies in technology, lithic and otherwise, provided we apply the same utilitarian frameworks, empirical observations, and ingenuity as Binford has in his faunal studies.

In an effort to anticipate the kinds of criticism his book might engender, Binford engages in a kind of academic ''preemptive strike'' in the last chapter. He attacks his critics, both real and imagined, for failing to understand the basis of his approach, especially in relation to his use of observational data in a society that is deeply involved with Western culture and cannot be viewed as providing an unsullied or ''pristine'' analog of ancient big-game hunting. (The Nunamiut sometimes even charter aircraft to assist them in their pursuit of caribou.) The assumptions Binford attacks here are already outmoded in ethnoarcheology, and it is most unlikely that he will ever be faulted for his choice of either the people or the subject he has studied.

In short, Binford provides us with an elegant treatment of the general relations of Nunamiut subsistence behavior and the archeological signatures of different seasonal and activity-oriented aspects of this adaptation. The book is a major contribution to ethnoarcheology and is a landmark in the application of current ethnoarcheological theory to explaining the complexities of human behavior vis-à-vis material discards. But, as in much of Binford's earlier work, there is a persistent and high level of ego-involvement that affects the presentation of his findings. In a case like this, where we have a book that will be referred to often by archeologists in their efforts to explain their own faunal evidence and by ethnoarcheologists for comparison with findings for other contemporary human societies, this becomes a matter of some concern.

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Farming Among the Maya: A Revised View

Pre-Hispanic Maya Agriculture. PETER D. HARRISON and B. L. TURNER II, Eds. University of New Mexico Press, Albuquerque, 1978. x, 414 pp., illus. $20.

The 17 papers in this volume mark a watershed in our understanding of the support base for Maya civilization of the Classic Period (A.D. 300 to 900). It was not many years ago that most Mesoamericanists believed that swidden, or slash-and-burn, farming centering on maize, beans, and squash was the only system of cultivation that could have been practiced in the Maya lowlands. It is certainly true that the modern subsistence farmers of Yucatan and adjacent regions know only the swidden technique of shifting cultivation. But it now appears that this picture is at least in part wrong for the ancient Maya.

The first dissident voice to be raised against the simplistic scheme was that of Bennett Bronson, who suggested in 1966 that root crops might have been just as important as seed crops to the Classic Maya. Then, in his 1968 doctoral dissertation, the late Dennis Puleston showed that the seeds of the breadnut tree (*Brosimum alicastrum*), stored in chultuns or underground chambers, could have been a food resource almost as valuable as maize. More recently, in 1972, Puleston and the geographer Alfred Siemens discovered through aerial reconnaissance that in favorable parts of the Maya lowlands agriculture had been intensified through the construction of chinampa-like raised fields.

In an introductory chapter to the book, Peter D. Harrison emphasizes the variability of food production systems available to any one group of Maya, a point of view taken up later in a paper by

''Remnants of ancient terraces near Lake Yaxha, Peten, Guatemala. The men are standing on three of the six visible terraces (flat surfaces), which have been constructed across a steep ravine.'' [From a paper by B. L. Turner II and P. D. Harrison in *Pre-Hispanic Maya Agriculture*]

T. Patrick Culbert, Pamela C. Magers, and Maria L. Spencer. B. L. Turner II follows the same theme and shows how the evidence contradicts the swidden theory as an explanation of either the floruit or the demise of Maya civilization. The spatial, temporal, and specific expansion of Maya agriculturalists is examined by Norman Hammond, using data from excavations in Belize. Four papers concentrate on the variability of geology and vegetation in the central Maya lowlands. Don S. Rice is concerned with explaining ancient settlement patterns in the Peten as the result of pressure on various kinds of land over time. Frederick M. Wiseman looks to kinds of systems that could have been used: intensive swidden, "artificial rain forest," arboriculture, terracing, and raised fields. Through analysis by computer simulation, Wiseman concludes that no one of these could have been the sole technique practiced by the Classic Maya. Siemens analyzes the role that karst topography might have played and relates this to the overall scheme of water management and agriculture. Through paleolimnological studies in lowland lakes, Alan P. Covich demonstrates that biotic communities are cultural artifacts and not at all stable over time.

One of the most interesting contributions, containing much new material, is by Ray T. Matheny and focuses on the hydraulic engineering shown by the northern Maya. There is now evidence for ancient canals, raised fields, wells, reservoirs, and so forth from Campeche, and Matheny suggests that the purposes these waterworks (discovered in some cases from the air) served were to promote communication, encourage pisciculture, drain and irrigate low-lying fields, and provide drinking water throughout the dry season. David T. Vlcek, Sylvia Garza de González, and Edward B. Kurjack examine the problem posed by the dense settlement pattern of the agriculturally poor region of northernmost Yucatan and conclude that the salt trade stimulated this concentration of population. Puleston pulls together the data on terracing, raised fields, and tree cropping but cautions that not all linear patterns discernible from the air might actually *be* raised fields or chinampas and suggests ground confirmation. Nevertheless, the visual evidence for extensive raised fields in the *bajos* (swampy, low areas) of southern Quintana Roo presented by Harrison seems convincing.

In a comparative study of subsistence and settlement pattern in four tropical forest civilizations—Angkor (Cambodia), Anuradhapura (Sri Lanka), Prambanan (Java), and Tikal (Guatemala)—Bronson provides an Asian perspective; he argues that the Maya were economically in the least favorable position of the four, since draft animals were absent and land transport was difficult.

Summary papers are provided by David R. Harris, who downgrades swidden in the Maya case as but a marginal and pioneering type of cultivation; by Gordon R. Willey, who says that the swidden theory was becoming untenable anyway as archeological population estimates began to outstrip estimates of the population that could have been supported by the slash-and-burn technique alone; and by Turner and Harrison, who suggest future avenues of research opened up by these investigations.

In spite of its occasional repetitiveness, this volume is an admirable wedding of anthropological archeology with the sister sciences. It should be read by all concerned with the comparative study of ancient civilization. Its appearance calls for the rewriting of a lot of general texts on the Maya (including my own). Nonetheless, the iconoclastic enthusiasm displayed by the authors should not lead the nonspecialist to think that the Classic Maya never grew or ate maize, or that the lowlands were a sea of chinampas, or that ancient Maya clearings were never set to the torch. The real message of this book is the great variability and complexity of the Maya realm.

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Max Born

My Life. Recollections of a Nobel Laureate. MAX BORN. Scribner, New York, 1979. xii, 308 pp., illus. $17.50. English edition of *Mein Leben: Erinnerungen des Nobelpreisträgers* (Munich, 1975).

Born once spent an evening drinking port with Rutherford and his friends. Each in turn declared what profession he should have preferred and why. Many named careers other than their own. "When the circle closed with Rutherford he hit the table with his fist and shouted: 'I shall be damned if I ever thought of being anything but what I am.' " This vigor and decisiveness, and the sure touch in physics that supported them, are the obverse of the traits Born identifies in himself in this posthumously published autobiography: timidity, sickliness, and mistrust of his own judgment. He allowed his junior colleagues to bully him. Oppenheimer sneered at his inability to compute; Jordan forced him to leave wave mechanics out of their book on quantum mechanics; Teller demanded his way "with the same stubbornness as he now [1948] insists on his political concepts."

Born traces his want of confidence to the early death of his mother, which deprived him of the natural source of encouragement and recognition. His father, an anatomist at the University of Breslau, though kindly and concerned, could not spare the time to protect his son's delicate psyche. Born grew up shy; he made few friends in school and found his social life in his large, wealthy, German-Jewish family. He wanted to be an engineer, as he enjoyed making toys on a lathe given him by his grandfather. But his father insisted that he attend the local university. There he discovered his taste for mathematics. He continued his studies at the University of Göttingen, then the stronghold of German mathematics, garrisoned by dozens of bright students commanded by Felix Klein, David Hilbert, Carl Runge, and Hermann Minkowski.

Born began well as assistant to Hilbert, but soon recovered his habitual malaise. Klein invited him to compete for a prize; he declined, irritated the master, and cut himself off, he thought, from a career in pure mathematics. He took his doctor's degree in applied mathematics under Runge. With no prospects at Göttingen, he returned to Breslau to work at his own expense in the physics laboratories of the university. Fortunately he was wealthy enough to pay for the severe damage he did. He turned to the only subject remaining, theoretical physics. He tried to work out certain problems in relativity, failed, and applied to Göttingen for guidance; Minkowski had got no farther than he, and offered him an assistantship. Two months after Born returned to Göttingen Minkowski died.

Once again Born stood unprotected before Klein. He was now rescued by Waldemar Voigt, the professor of theo-