Then one wants to know about Boas and the Indians. How did he interact with them?

> Today the Tsimshian woman . . . was unwilling to tell me anything. I had to give up after several attempts and left in anger [1886; p. 27].
>
> I had trouble in Somenos this morning because I wanted to make a drawing. The Indians always try to bluff strangers with their impudence [1886; p. 51].
>
> My informant was very unsatisfactory the first two days until I gave him a piece of my mind. Today he was all right. He was not punctual enough for my taste. This is a typical fault of the Indians. I am very strict with them when I pay them [1894; p. 158].

Another aspect of Boas's attitude is to be found in the description of an Indian wedding at the mission village of Kincolith:

> I went with them to the church . . . and saw the happy couple getting married, entirely European fashion with orange blossoms, white veil, and white dress; the groom had no top hat, however. *It was truly comical* to see how out of place the bride and groom, the bridesmaids, and the best man felt [1894; p. 156 (italics supplied)].

Comments of this sort, and these are not the only ones, are more frequent in letters from the early trips than from the later ones but are not replaced by anything more positive. Although Rohner elsewhere (*Pioneers of American Anthropology*, 1966, June Helm, Ed., p. 210) has said that friendship colored the relationship between Boas and George Hunt that lasted from 1888 to Hunt's death in 1933, it does not show through in these letters. Although occasionally in the later years there are statements that Hunt was "very useful," disparaging remarks prevail (pp. 183, 237, 243–44, 289, *et passim*). George Hunt, a remarkable man in his own right and Boas's good right hand in Northwest Coast ethnography for decades, seems never to have been anything but cheap hired help to the scholar.

Reading through these letters inevitably produces a reaction. These were private utterances not intended for public consumption. Besides the information on Boas's field procedures, the letters are filled with familial intimacies—abundant phrases of love and affection, a clumsy apology after a quarrel, anxieties about money, disclosures of petty meannesses, and other things that are really no one else's business. As one reads, a feeling of embarrassed discomfort grows, a guilt feeling, as though one were peeking through a keyhole at intimate scenes. This discomfort is compounded by the thought that the editor-compiler foresaw just this reaction on the part of readers and assumed his Olympian aloofness to avoid his share of guilt. I would rather Rohner had done the keyhole peeking and then summarized what he saw.

PHILIP DRUCKER
Department of Anthropology,
University of Kentucky,
Lexington

On the Origins of Agriculture

The Domestication and Exploitation of Plants and Animals. Proceedings of a meeting of the Research Seminar in Archaeology and Related Subjects, London, May 1968. PETER J. UCKO and G. W. DIMBLEBY, Eds. Aldine, Chicago, 1969. xxvi + 582 pp., illus. $17.50.

Food in Antiquity. A Survey of the Diet of Early Peoples. DON BROTHWELL and PATRICIA BROTHWELL. Praeger, New York, 1969. 248 pp., illus. $8.50. Ancient Peoples and Places, vol. 66.

Although the domestication of plants and animals was perhaps the most important human achievement until modern times, the origins of domestication remain enigmatic. *The Domestication and Exploitation of Plants and Animals* includes papers given at an international symposium as well as some papers specially written for the volume. Despite minor flaws, it is an excellent book. To a large extent the essays grapple with the problems of the domestication process. The exploitation of domestic animals is discussed by the authors only cursorily, insofar as they consider it relevant to the origins of domestication. The exploitation of nondomestic plants and animals is given little attention by the majority of contributors, although it is probably of considerable relevance to the domestication process. Thus in spite of the range of topics (fruit size of Swiss prehistoric apples, the exploitation of mollusks, fungi and Southeast Asian food technology, the introduction of baobab into India, changes in the fleece of sheep after domestication, to mention a few) and the varieties of disciplines from which the authors come (archeology, botany, ethnography, geography, history, zoology, and others), the book is more unified than most collections of essays based on comparable interdisciplinary conferences that I have seen.

But although the book is focused in its concern, no consensus emerges. There does seem to be general agreement that previously advanced environmental interpretations of domestication, mainly based on the assumption of postglacial desiccation, are wrong, yet that environment is not irrelevant. But how the "environment" might have induced hunters and gatherers to domesticate is left as problematic as ever. The essay of C. Vita-Finzi, "Geological opportunism," puts the formerly exaggerated emphasis on climatic changes in a corrected perspective, succinctly stating what ought to have long been obvious, namely that "human populations at the hunting and gathering stage . . . are not vulnerable to climatic blackmail."

An emphasis on ecology is replacing the older one on climatic change. There are a number of reasons for this, advances in ecological method being only one. Others, I suspect, have more to do with the ecology of university environments than anything else. Indeed, this is as much as stated by W. F. Grimes: "the ecological approach is achieving for archaeology full status as a science, with the incidental benefit that sources of research grants previously closed are now beginning to open." The difficulty with putting too much weight on ecology is that ecology can only specify the conditions under which domestication could occur; it is helpless to explain why domestication did in fact occur when it did, so very long after suitable conditions, ecologically and genetically

defined, had evolved. J. G. Hawkes, who attempts a summary of the ecological background of plant domestication, touches upon this point, but it is more fully developed in Charles A. Reed's masterly and original analysis of the environmental, evolutionary, and cultural aspects of animal domestication.

One of the traditionally most challenging questions in the field of domestication—Was domestication the achievement of a single geographic area and dispersed from there, or were there multiple hearths?—receives comparatively little attention in this volume. This question has of course been central in the wider culture-historical debate between the diffusionist and independent-though-parallel-stages schools. On the whole, the second view has been abandoned, at least in Western scholarship, which recognizes secondary and substitute domestications, which came about through the spread of domesticating cultures into areas that were unsuitable for the oldest domesticates. The customary and I think valid division between seed crop and "root" crop agriculture is no longer taken necessarily to mean at least two unrelated hearths of agriculture or the historical priority of root crop farming. The two complexes are, I believe, historically connected, and the historical priority of seed crop domestication is supported by a good many data, as these essays make clear. For C. D. Darlington there "is the decisive evidence . . . that agriculture in the Old World arose in a single connected region, a Nuclear Zone, of Anatolia, Iran and Syria . . ." and conversely "South-east Asia was not a centre of origin of agriculture." It is regrettable that no contributor analyzed I. N. Vavilov's theses, which haunt studies on domestication. The widespread identification of historical centers of domestication with Vavilovian gene (or multiplicity, or variability) centers at a time when it can be shown that even for wild plants multiplicity centers are *not* generally centers of speciation continues to bedevil research in the history of domestication.

On the whole, archeological evidence for domestication in the form of actual plant and animal remains receives greater attention than other cultural remains, even though the very authors who deal with the former often stress that the latter may be more significant. Some of the essays dealing with remains of domesticates are strikingly well paired. S. Bökönyi's essay, which centers on the statistical analysis of animal remains from the Carpathian Basin to determine their domestic status in the absence of morphological criteria, is followed by Raymond E. Chaplin's study, which analyzes some of the hazards of interpretation of the statistical method. The cursory treatment that is meted out to remains other than those of domesticates is in line with the general omission of ethnological viewpoints in this volume. The inclusion of the papers "Animal husbandry: the evidence from ethnography" by B. A. L. Cranstone and "Animal domestication and animal cult in Dynastic Egypt" by H. S. Smith only serves to emphasize the overall deficiency.

The omission of culture-historical or ethnological approaches to the problem of domestication is a more serious drawback than the one-sidedness of the archeological contributions. We can dismiss economic necessity as the root of domestication (for the same "economic necessity" operated millennia before the first domestications occurred), and can be dubious generally about utilitarian motives, these generally becoming apparent only long after domestication; all the greater importance then must be attached to ethnological analysis. A revolution in *Weltbild* may have preceded the one in economy, and there are those who maintain that its traces can be uncovered by a variety of ethnological methods.

With the exception of William C. Sturtevant's "History and ethnography of some West Indian starches" the contributors dealing with New World plant domesticates are almost severely botanical. It may be taken for granted that A. Krapovickas conclusively established the New World origin of peanuts, but the intriguing problem of possible connections between Old and New World domesticating cultures is not laid to rest —how can it be, for it was not raised in this conference.

It is regrettable that in a book of this price there are so few maps. Instead there are photographs of objects, most of them by now quite familiar to students of domestication.

Food in Antiquity focuses on the subject which is the last to be dealt with in the domestication seminar, dietary habits. One of the authors, Don Brothwell, is also represented in the seminar, and I found his contribution there (on dietary variation and the biology of earlier human populations) considerably more stimulating than his book. Perhaps the difficulty is that the book has no thesis but simply treads over well-worn paths. The series in which the book appears is not intended for the specialist, although some of the volumes have achieved a genuine distinction despite this. Perhaps the topic puts this book at a disadvantage compared, for example, with others in the series such as Tamara Talbot Rice's *The Seljuks* or Raymond Bloch's *The Etruscans*. Brothwell's subject is uncomfortably broad, and it is also one with which many people have at least some familiarity. Nonetheless, the authors have gathered a wide range of information and provide interesting tidbits. Ordinarily one would be hard put to learn that Emperor Nero ate quantities of leeks to keep his voice in trim. On the other hand, geophagy, the eating of earth, though this quite widespread behavior has interesting implications and research possibilities, is nowhere mentioned.

ERICH ISAAC
City College of New York, New York City

Ecological Archeology in Iran

Prehistory and Human Ecology of the Deh Luran Plain. An Early Village Sequence from Khuzistan, Iran. FRANK HOLE, KENT V. FLANNERY, and JAMES A. NEELY. University of Michigan Museum of Anthropology, Ann Arbor, 1969. xvi + 440 pp. + plates. Paper, $8. Memoirs of the Museum of Anthropology, No. 1.

Prehistoric archeologists are still a long way from fully understanding the processes which in both hemispheres led some human groups to change from hunting and collecting to food-producing and to go on from there to urban life and civilized society. We think we know when and where it happened in the Old and New Worlds, and some of us in our optimistic moments imagine that we know why. For some time now the main emphasis in research on the earlier stages of this long process in one undoubted center of evolution, southwestern Asia, has been on the upland regions, where presumably the plants and animals to be domesticated were found in the wild state in late Pleistocene and early Holocene times. This is still a tenable hypothesis, but for some years it has been realized that the lowland regions also could throw a great deal of light on the mechanisms