Alex Steensberg, *New Guinea Gardens: A Study of Husbandry with Parallels in Prehistoric Europe.* London: Academic Press, 1980. Pp. xxiii, 222, maps, illustrations, bibliography, subject index. $25.00.

By necessity archeological data are always incomplete. The function and use of material culture often cannot be gleaned unequivocally from the available artifacts, structures, skeletal remains, and stratigraphy. To obtain this information archeologists have resorted to experiments by using replicas of stone, wooden, or bone archeological tools for working on wood, bone for carving meat, or they have observed contemporary neolithic or paleolithic people as they chopped down trees, butchered animals., built shelters, tilled soil, or hunted with their primitive implements. The author of this book made use of both of these methods. In Europe he pioneered experiments with stone tools, and in the New Guinea Highlands he studied the people's use of tools and techniques associated with the construction of houses, cooking, clearing of land, gardening, and the digging of drainage ditches. Findings from both of these endeavors--the experiments and ethnological data--are used to explain the archeological records of his research in Europe. The similarities of tools from both places (e.g. stone axe and adze blades, double spades, earth oven, and architectural features such as roof-thatch, roof-slope, and shelves inside of the house) and the limited possibilities for the use of them in the mentioned activities are regarded as justifications for comparisons for what the *Kulturkreislehre* people used to call *Fern interpretation.* Similar problems of food acquisition and building shelters with equipment of the same technology are assumed to elicit similar responses.

This book on ethnoarchaeology--the use of ethnographic data to explain archaeological remains--tries to show what can be gained by a European prehistorian's observation of tribal life of neolithic people of New Guinea. Thus, this account's purpose is not a systematic survey of the New Guinea Highlands material culture, neither is it an exhaustive review of the literature. Rather, it tries to demonstrate how observation of the actual use of tools gives clues to understanding the size and shape, hafting, and choice of material for tools in the past. The ethnographic material is recorded not only in the notebook of the author but also in photography, drawings, and films that function not only as illustrations, but also as analytical tools and explanations of the text. They portray in detail not only the work technique but also the body posture and movement of the worker. Timing of the individual tasks adds another dimension to the analysis. By means of all this detail and precision the author attempts to place himself into the situation of the manufacturer and user, and he wants to learn and understand their skills. Thus, he can explain the function and necessity of a particular feature of hafting of a stone ax that prevents splitting of the handle and provides elasticity.

The research which supplied the data for this book shows a great disparity between its European and New Guinea components. Whereas the author spent most of his professional life on "archeological, historical and ethnographic study of the material conditions of life and work among temperate Europeans, particularly Danish peasants," his New Guinea fieldwork, as a contrast, was indeed brief. It was accomplished in three separate installments: in 1968 two weeks were spent in viewing contemporary settlements and archeological sites in the upper Wahgi Valley and Alipo village, in 1971 five days were reserved for "visiting villages around Wewak and Maprik and along the Sepik River," and in 1975 twelve days were used for collecting data on tree-felling, house construction, fencing, and gardening of the Duna (pp. vii-viii), and a subsequent twenty days were devoted to the study of gardening tools and the felling of trees east of Mt. Hagen. The brevity of this investigation accounts for the fact that most of the New Guinea data deal only with technological aspects of the material culture and quest, presenting these of necessity out of ethnographical context.

The brevity of the research, the non-holistic approach of the interpretation of the data, and the fact that many of the localities had been "pacified" and exposed to a prolonged contact with, and control by agents of Western Civilization are primarily responsible for the following criticism. First, some of the work was done with steel tools, and generalizations about neolithic cultures were made on the basis of adjusting these

to presumed stone age conditions (p. 13). Second, some described activities are of necessity incomplete and supplemented by guesses (p. 81). Third, experiments with wooden tools were made in areas where these went out of use long before the arrival of the author, so that the indigeous peoples had to be instructed how to use these artifacts while conducting the experiment (p, 89). It would have been better to rely on literature in which the behavior of actual neolithic peoples was precisely recorded. Fourth, the examples of land-clearing, house building, and cultivation techniques are relatively few, taken from places scattered throughout New Guinea and presented out of their agricultural and socio-politial context. As a consequence, some of the generalizations are not quite correct, as, for example, the contention that "in New Guinea the cultivation of sweet potatoes is normally women's work." Kapauku Papuans hold this statement to be true because planting, weeding, and harvesting of sweet potatoes should and is usually done by women. But what about clearing the grounds, cutting the trees, and preparing the sweet potato garden for planting the crop? What about the laborious digging of the drainage ditches, building fences, and construction of the mounds, not to mention the fertilization of the fields, guarding the crops, and disassembling the fences after the crop has been harvested, or don't these activities exerted on the sweet potato gardens deserve to be included in an account of the plant's cultivation?

There are a few factual mistakes. A handle of an axe is treated with fire not to make it flexible but to make it harder (p. 6). Neolithic people (contrary to the statement on page 59) could cut grass either with a stone tool or tear it off with their hands as the Kapauku used to do during my first investigation in 1954. Furthermore, the use of the word "spade" should be limited to tools that are stepped on and applied to leaf-shaped wooden broad blades driven into the soft ground by the swing of arms and used for caving out blocks of dirt lifted out by both hands (esp. pp. 83-4, 99-100). A better word seems to be earth-knife (like the Eskimo snow knife, which is used in similar fashion). Although pigs may be housed under the same roof as man, they usually stay on the ground underneath the sleeping platforms or even under the elevated house floor; thus, they actually are outside of the house. In Europe one does not have to go back to the Iron Age to find cattle housed in the same building with the farmer's family. In modem Tyrol the cow shed is an integral part of the farmhouse (p. 126).

My last criticism pertains to the description of the people that I studied--the Kapauku Papuans. The author makes reference to my work, but

in his analysis he seems to have ignored it. He claims that domesticated pigs are shot with arrows only on ceremonial occasions. Kamu Kapauku usually killed pigs by shooting them unceremonially (as my monograph as well as photographs and films document, p. 111). Furthermore, in describing Kapauku house plans (Fig. 30) he shows a dwelling with three fireplaces in three rooms (p. 161). In actuality, Kapauku houses may have eight rooms and even more with an equal amount of fireplaces depending on how many married women reside in the particular household. What is even more remarkable is that the author treats the Kapauku and Ekari as if they were two different peoples (pp. 86, 160, 161, 206) in spite of the fact that in my monographs and case study I state, usually right on the first page, that Kapauku is the name given to Papuans of the Wissel Lakes by the Mimika Papuans, and the Moni Papuans, their neighbors to the east, call them Ekari, while the Kapauku Papuans call themselves Me--The People. Finally, the bibliographical reference to my work is a hybrid of two books put into one. Whereas, *Kapauku Papuan Economy* is a monograph of Yale University Publications in Anthropology, it certainly has not been published by Holt, Rinehart, and Winston, the company responsible for publishing another book of mine: *The Kapauku Papuans of West New Guinea.*

Despite these particular criticisms, the book is valuable for several reasons. Those descriptions of parallels between pre-historic Europe and Stone Age New Guinea that are used are meticulously detailed and precise, and they are accompanied by helpful photographs and drawings. The parallels are not regarded as related due to diffusion, no matter how intriguing the resemblance, but as similar responses of different peoples to similar ecological conditions (p. 208). No speculative theories and no "isms" mar the matter-of-fact presentation. Aside from the ecological implications and conclusions the book is also important for archaeologists because it shows clearly and empirically the limits of archeological reconstruction.

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