occur more frequently as very young individuals, and it is likely that the Middle Stone Age hunters took mainly the more vulnerable members of the herds.

Klasies is especially important because it is one of a very few sites to have yielded human skeletal remains in firm association with Middle Stone Age tools. Human bones from the MSA I and II levels are mostly rather fragmentary, but several mandibles are reasonably well preserved. One from MSA I deposits is quite complete, with a heavily built corpus and a projecting bony chin. There is no development of an internal shelf or transverse buttress behind the symphysis, and this jaw probably represents modern *Homo sapiens*. Other specimens from MSA II levels tend to support this conclusion. A piece of frontal bone is much less robust than the corresponding brow parts of the famous Florisbad cranium from the Free State. Several jaws are also rather different from archaic African fossils and from Neanderthal mandibles from Europe. This evidence from Klasies, perhaps along with material from Border cave in the Natal Province, suggests that at least some Middle Stone Age populations of southern Africa were modern anatomically. While there are still questions concerning both the provenience and the anatomical significance of some of the remains, it now looks as though modern *Homo sapiens* was present in southern Africa at a surprisingly early date. This of course raises questions about the origin and dispersal of recent humans across the Old World. Such questions may be answered as more sites are examined in as much detail as Klasies River Mouth.

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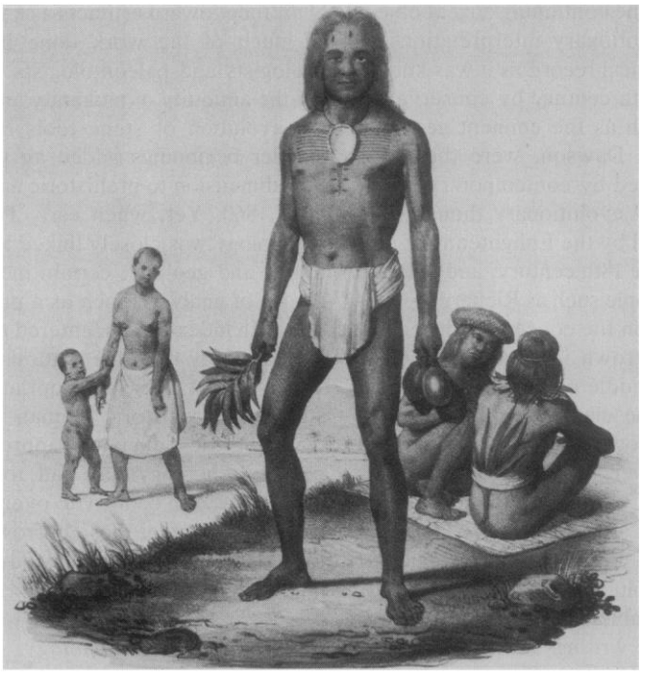
A Pacific Island

Tikopia. The Prehistory and Ecology of a Polynesian Outlier. PATRICK VINTON KIRCH and D. E. YEN. Bishop Museum Press, Honolulu, 1982. xviii, 398 pp., illus. Paper, $28. Bernice P. Bishop Museum Bulletin 238.

Within the last two or three years some high-flyer archeologists have urged the discipline to "get back to the basics." *Tikopia* is by two scientists who have never left them and who, between them, show how interesting and useful the results can be.

Tikopia's 4.5 square kilometers lie in the western Pacific, about halfway between the Solomon Islands and Fiji. Several islands are within two days' sail, and many have influenced its history, but it is quite isolated even today.



"Tikopia ornaments and bodily adornment. The standing figure wears a pearl-shell breastplate and carries in his right hand a sheaf of aromatic leaves. Similar leaves are also inserted in the *maro* of the seated figure at right. Note also the tattooing of forehead and breast." [Reproduced in *Tikopia* from J. S. C. Dumont d'Urville, *Voyage de la corvette* l'Astrolabe, *Atlas* (Paris, 1833); artist, M. de Sainson]

In 1929 its 1300 people hosted ethnographer Raymond Firth, who described their life, especially its social and religious aspects, in a series of classic analyses. The present book, the result of research by archeologist Kirch and ethnobotanist Yen in 1977 and 1978, gives a historical dimension to Firth's analyses. Kirch and Yen's research was concerned with elucidating Polynesian cultural adaptation to a small, high island and the role of microenvironmental adaptations in this; the dates and origins of contributions from elsewhere (if such there were) to the island's history; the persistence and direction of trade and exchange and its effects on the island's history; and the history of subsistence strategies. The successful pursuit of these goals required a single underlying approach, namely to find evidence of the interaction between humans and their environment.

Yen's opening chapters show clearly that the surface of the volcanic island is now almost totally a managed environment. Some indigenous flora are cultivated for their use and beauty, like the *Calophyllum* trees that stabilize sand dunes; the crater lake, Te Roko, separated from the sea by a tombolo of sand, is annually and manually joined to it for fish restocking; the steep slopes of Faea are covered with multilayered orchards of harvestable plants that maintain soil enrichment and limit erosion; along the flatlands, accreting dunes are barricaded with coral blocks. Yen's description of the Tikopian risk-minimizing system of Oceanic agriculture elegantly complements his earlier one of nearby Anuta.

But how did this environment come into being? Tikopia's own historians do not account for it: to them, the island has always been similar. Answering this question is Kirch's contribution.

Kirch starts with straightforward archeology. The smallness of the island, much of it steeply sloping and therefore not a depositional environment, allowed for an intensive surface survey. This produced two areas of potsherds, not made in historic Tikopia. Between them, these sites of Sinapupu and Kiki revealed a cultural sequence of some 3000 years' duration, starting with settlers drawn from the same pool that supplied many other Pacific islands, namely people making Lapita pottery. Kirch's sampling and excavation techniques, as well as his analysis of artifacts and discussion of their demonstration of changing relationships with the outside world, are elegant and well presented. Occasionally he falters, as when, having provided the best analysis of shell adzes to date and shown that those aspects (such as bevel shape) that are clearly related to use continue unchanged throughout the se-

quence, he refuses to take the plunge into what the changes in other aspects, whose occurrence he clearly demonstrates, might mean.

Kirch then moves to the major question and shows, most convincingly, that in the last 3000 years the area of the island has increased by nearly half and the subsistence patterns have changed in unexpected ways. The first occupants dined off turtles, wild flightless birds, and giant shellfish. Within a few hundred years at most these had gone, the birds to extinction and the shellfish and turtles to much smaller sizes and numbers, and people lived off pigs, dogs, and fowls and gardens of largely imported plants. It is this period that provides evidence of swidden horticulture, in the form of extensive spreads of charcoal, and erosion of soil from the volcanic slopes. The latter helped create today's highly productive Rakisu lowland garden area. Over 2000 years perhaps a million cubic meters of earth were moved by this cause. Kirch also argues that although natural forces—tectonic uplift, high-energy transport of reef bioclastics and sand—initiated the enlargement of the land area and were primarily responsible for the tombolo, it was humans who, by eroding, conserving, and gardening the land, transformed those gains into the present environment.

The costs of these changes are also demonstrable. In the long-term there was a decline in protein intake—today's inhabitants have found the physical and social costs of keeping even pigs too high, and only fowl survive. In the shorter term, specific changes can be linked to events reported in oral histories, and Kirch shows that changes in balances of power between chiefly lineages can be related to such events as the closing of the crater lake.

Pacific islands have long been touted among anthropologists as laboratories wherein many of the difficulties of studying large land and social units are removed. What Kirch and Yen have done is to point out that they are also part of the real world, where land and people live in a close embrace. The particular history of Tikopia, we are beginning to find out, was repeated time and again throughout the Pacific. Industrial humans are not the only environmental manipulators.

Tikopia is an exemplar of archeology, able to use garbage, natural history, and people's memories to help explain the world around us, and us to ourselves.

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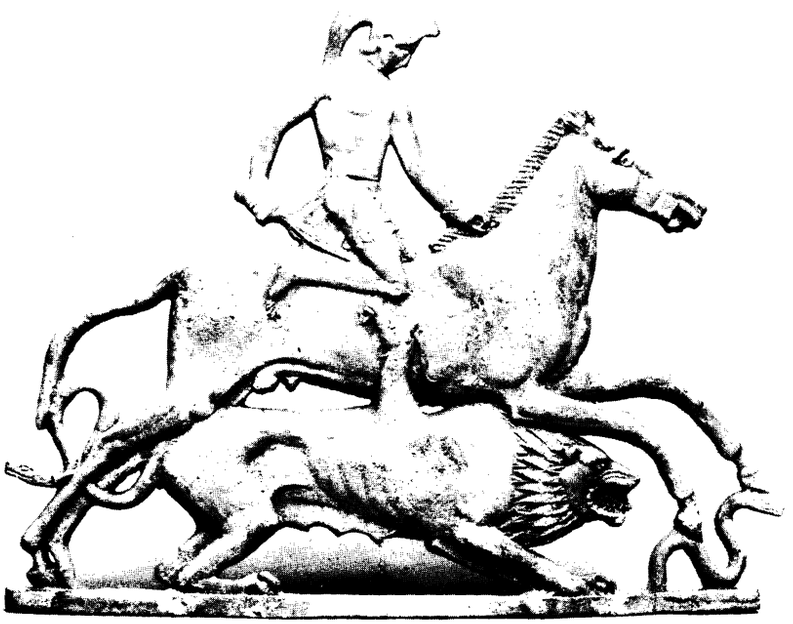
Cultural Change in the Aegean

An Island Polity. The Archaeology of Exploitation in Melos. COLIN RENFREW and MALCOLM WAGSTAFF, Eds. Cambridge University Press, New York, 1982. xiv, 362 pp., illus. $65.

The island of Melos is the most southwesterly member of the Cyclades group in the Aegean Sea. Archeologically it has been known since the discovery of the famous statue the "Venus de Milo" in 1820; the British School at Athens undertook excavations at the ancient town of Melos and at the prehistoric sites of Phylakopi and Pelos in 1895–99, and sporadic excavations and chance finds have been made during the present century. But prior to the project that forms the subject of the present review, no detailed archeological survey, coupled with environmental studies, had ever been undertaken on the island.

The project treated here was carried out as part of the overall program of renewed excavations at the site of Phylakopi in the years 1974–77. For archeological readers it should be stressed that this volume does not constitute an excavation report; rather it concentrates on the development of settlement and society in Melos from the earliest period to the present century, and on explanations that may be adduced to account for the observed changes. The work is divided into four major sections covering the history of society in Melos from earliest prehistory through the post-Roman period; environmental considerations including geology, resources, land-use, and other aspects; the relationship of the inhabitants of Melos to their island environment; and trade in all periods in raw materials and manufactured goods between Melos and other areas of the Aegean world.

The underlying aim of the work is to investigate changes in the spatial and temporal patterns of human culture and the emergence of complex society "in a particular, well defined area of study where a flourishing urban society, with its own individuality and originality, twice developed upon well-attested local foundations" (Late Bronze Age Phylakopi and the Melian city-state of the mid-first millennium B.C.). Such a study should cast light more generally on the dynamics of cultural change in the Greek world and beyond. A systemic approach is adopted to the study of cultural change on Melos, and in diachronic perspective a certain degree of underlying regularity is seen in the factors governing the evolution and decline of the two major phases of urban settlement on the island. Data pertinent to this study have been



Terra-cotta relief from Melos, about 440 B.C., depicting Bellerophon on Pegasos. Height, 14 centimeters. "In the fifth century the major clay products connected with Melos are the so-called Melian reliefs. . . . They are mould-made panels, painted with a variety of colours . . . and consisting of scenes from myth and domestic life. . . . Their purpose seems to have been as decoration for furniture or boxes and chests, and for nailing on to house walls as 'pictures.' About one-fifth of the total known are said to have been found on Melos, and their fabric has been connected with that of 'Melian' vases. . . . The preponderance of finds from the islands makes the suggestion of local production plausible." [From *An Island Polity*; reproduced courtesy of the Trustees of the British Museum]