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REGULARITIES AND ANOMALIES IN PATTERNS OF PREHISTORIC LITHIC PROCUREMENT IN ABORIGINAL AUSTRALIA

This paper summarizes results of recent archaeological studies of procurement and transport of lithic materials from quarries and other sources by ancient Australian Aborigines. Data from four principal sites are compared; two Australian desert sites (Puntutjarpa Rockshelter, near the Warburton Ranges, Western Australia, and James Range East Rockshelter, about 80 km. south of Alice Springs, Northern Territory), the Mt. William Axe Quarry, near Melbourne, Victoria, and Rocky Cape, Northwest Tasmania. The two desert sites were excavated by the author, while the Mt. William site is being analyzed by I. McBryde (Australian National University, Canberra), and Rocky Cape was excavated by R. Jones (Australian National University, Canberra). Mention will also be made of work by H. Allen (University of Auckland, New Zealand) at Burkes Cave and Lake Mungo, New South Wales.

Patterns of transport of isotropic stones at each of these sites are examined in relation to utilitarian questions of efficiency of procurement, manufacture, and use. Such questions are best answered by means of controlled, laboratory experiments that reveal the utility of different lithic materials vis-a-vis different mechanical applications (i.e., angles of force, degrees of force applied, different materials being worked, etc.), and the results of experiments of this sort are reviewed in relation to the raw materials and tool types from these archaeological sites. These "by-product" experiments (to use a term coined by Tringham) should tell us to what extent the lithic materials chosen by the ancient inhabitants of these sites actually conform to utilitarian expectations.

Although regularities in the selection of types of stone generally conform to utilitarian expectations with regard to such factors as ease of procurement, edge-holding properties, etc., there are notable anomalies at cer-

tain sites that are harder to explain yet are potentially of considerable interest. In some cases, lithic raw materials that were technically inferior to locally available stones were, nevertheless, transported from distant sources and used to produce implements for which they were, from a utilitarian point of view, inappropriate. Such anomalies make it possible to infer behavior based upon ideational or social-organizational variables which this paper explores. Such hypotheses take two principal forms; adaptational, mainly with respect to the need to mitigate or overcome stresses imposed by specific limiting factors in ecologically stressful habitats, and sociological, with respect to boundary behavior between different ethnic, social, or linguistic groups. Characteristic anomalies in the transport of lithic raw materials are posited as archaeological signatures of particular kinds of adaptive or social behavior, using data gathered from contemporary studies of desert-dwelling Australian Aborigines and other ethnographic societies.