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The Nature of Prehistoric Obsidian Importation to Anir and the Development of a 3,000 Year Old Regional Picture of Obsidian Exchange within the Bismarck Archipelago, Papua New Guinea

GLENN R. SUMMERHAYES

Research School of Pacific and Asian Studies,
Australian National University, Canberra ACT 0200, Australia
glenn.summerhayes@anu.edu.au

ABSTRACT. The results of obsidian sourcing studies from the Anir Island assemblages are presented and compared with other studies to develop a regional picture of obsidian distribution and use over a three and a half thousand year period for the Bismarck Archipelago, Papua New Guinea. Predicted changes in technology and mobility patterns are correlated with regional changes in the frequency and distribution of obsidian from particular sources in the region. Early Lapita assemblages in most parts of the archipelago were dominated by west New Britain obsidian. In the Middle Lapita period changes occurred in the northern and eastern Bismarck Archipelago and assemblages here became dominated by Admiralty Islands obsidian. In later periods, west New Britain obsidian re-gained dominance in some areas. Nevertheless, in the Lapita phases pottery assemblages suggest exchange was between culturally similar, socially related groups.

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Tracing the transport of obsidian in Melanesia's past has played an important role in identifying prehistoric exchange networks and understanding levels of interaction between communities (Ambrose, 1976, 1978; White, 1996). Obsidian has a naturally restricted occurrence. In the Bismarck Archipelago it is found in three regions: the Admiralty Islands, the Willaumez Peninsula and Mopir (Fig. 1). Within both the Admiralty Islands and the Willaumez Peninsula sources, chemically distinct sub-groups are identified. Because of their restricted natural distribution and distinct chemistry, obsidian found in archaeological sites can be matched (or traced) to their geological sources, thus providing archaeologists with important distribution information. By identifying the sources of obsidian from distant sites over select periods of time, the changing nature of distributions can be mapped and social and economic models to account for those changes can be developed and tested.

The earliest evidence for the movement of obsidian in this region comes from Matenbek, a cave in southern New Ireland. Obsidian flakes found in contexts dated to 20,000 B.P. were sourced to outcrops in west New Britain, a distance of 350 km in a straight line (Summerhayes & Allen, 1993). For the next sixteen and a half thousand years obsidian was transported from its source areas to a number of sites in New Britain and