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Prehistoric Exchange across the Vitiaz Strait, Papua New Guinea¹

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This paper summarizes some of the major results of archaeological research into the origins and evolution of the Siassi trading system (Lilley 1986), which at the time of European contact spanned the Vitiaz Strait to link northeastern New Guinea with the Bismarck Archipelago (Harding 1967) (fig. 1).

The investigations focussed on one site on each of Tuam and Malai Islands in the Siassi group and another at Sio on the New Guinea mainland. Much of the analysis of excavated cultural material examined changes in the stylistic and petrological characteristics of pottery. Attention was also paid to aspects of the stone artefact assemblages, particularly variations in the quantities, qualities, and sources of obsidian, as well as the shell and bone artefact assemblages and faunal recoveries.

If the sequences from the three sites are amalgamated, a culture-historical model of the development of regional exchange networks can be suggested (fig. 2). As Harding surmised (pp. 238–41), the earliest evidence for long-distance exchange in the Vitiaz Strait region dates to the time of the development and spread of Lapita pottery (for an overview of the Lapita cultural complex, see Green 1979; see also Pawley and Green 1984, 1973). The Lapita presence in the Siassi Islands may have been only intermittent, as very little cultural material from this period was recovered. Fragmentary though they are, the remains do suggest that the nature and range of activities pursued at that time are broadly similar to those recorded in the area by Harding and others. Pottery, obsidian, and probably pigs and horticultural products were imported, while the exploitation of local marine resources focussed on inshore fishing and shellfish gathering.

That, however, is where the similarities end. Although petrological analysis of pottery hints at limited cross-Strait activity during the Lapita phase, there is no evidence for two-way communication, the cross-Strait movement of anything other than pottery, or the involvement of Sio or any other community on the Huon

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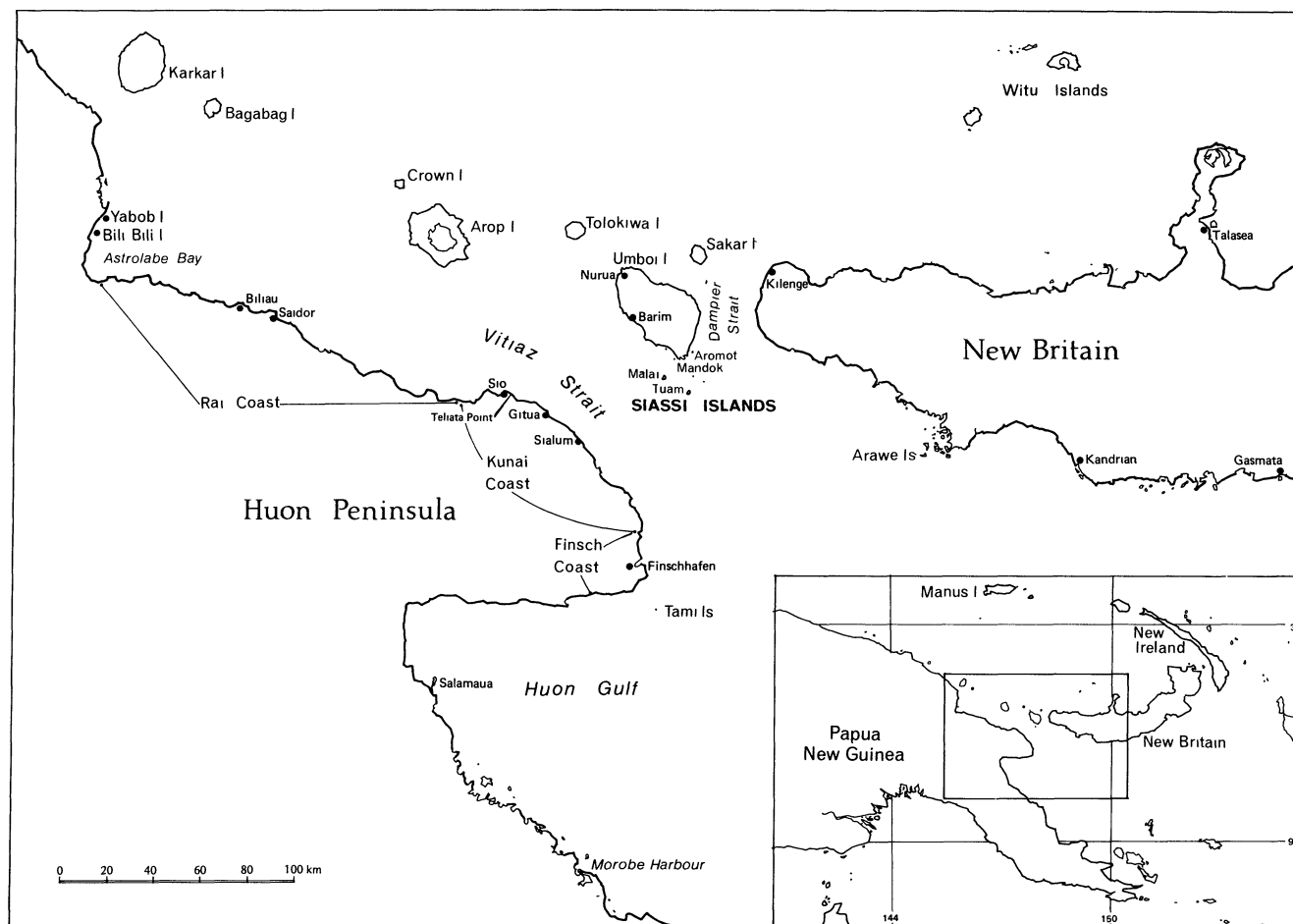


FIG. 1. *The study area.*

Peninsula coast. Simply put, this means that the two-way cross-Strait links between Sio and Siassi that formed such a fundamental part of the historic trading system cannot be derived from patterns of exchange during Lapita times. Moreover, the posited Lapita exchange system disappeared about 1,000 years before the emergence, in what will be called the Sau-Tambali phase, of an exchange system that can be considered ancestral to the historic network.

The emergence of this "protosystem" some 1,600 years ago is signalled by the sudden appearance in the archaeological record of three distinct ceramic wares and evidence for cross-Strait transfer of mainland pottery, New Britain obsidian, and (unsourced) chert. That the historic trading network evolved from this protosystem is indicated by fundamental continuities in most aspects of material culture and in the nature of local subsistence strategies. There are, however, five noteworthy differences between the "protosystem" and the historic trade network. First, a third pottery industry operated in addition to the Sio and Madang industries, both of which persisted well into the ethnographic period. Second, only very limited quantities of pottery and obsidian were moved, and the pottery exhibits none of the characteris-

tics of high-volume semi-specialist production for trade shown by recent wares. Third, the configuration of trade connections was not the same. Madang pottery appears at Sio but not in Siassi, while the ware from the third industry (labelled Type X) comprises a considerably greater proportion of the pottery in Siassi than at Sio. This suggests that Siassi's strongest cross-Strait links were not with Sio but with the makers of Type X, who appear to have been located towards the eastern end of the Huon Peninsula. Indeed, it is possible that there were no direct links between Siassi and Sio and that Madang and Sio pottery was moved to Siassi and New Britain obsidian to the mainland via the producers of Type X. Fourth, there was only low-level and probably occasional rather than intensive and permanent occupation of the Siassi Islands and low-level rather than intensive activity at Sio.

The fifth difference between the "protosystem" and the historic network lies in the tentative proposal that key aspects of sociopolitical organization may not have been the same (cf. Lilley 1985). Ethnographically recorded valuables such as pig, dog, drilled dog and pig teeth, and shell beads (*N-M tambu*) occur in only minimal quantities in or are absent from Sau-Tambali-phase

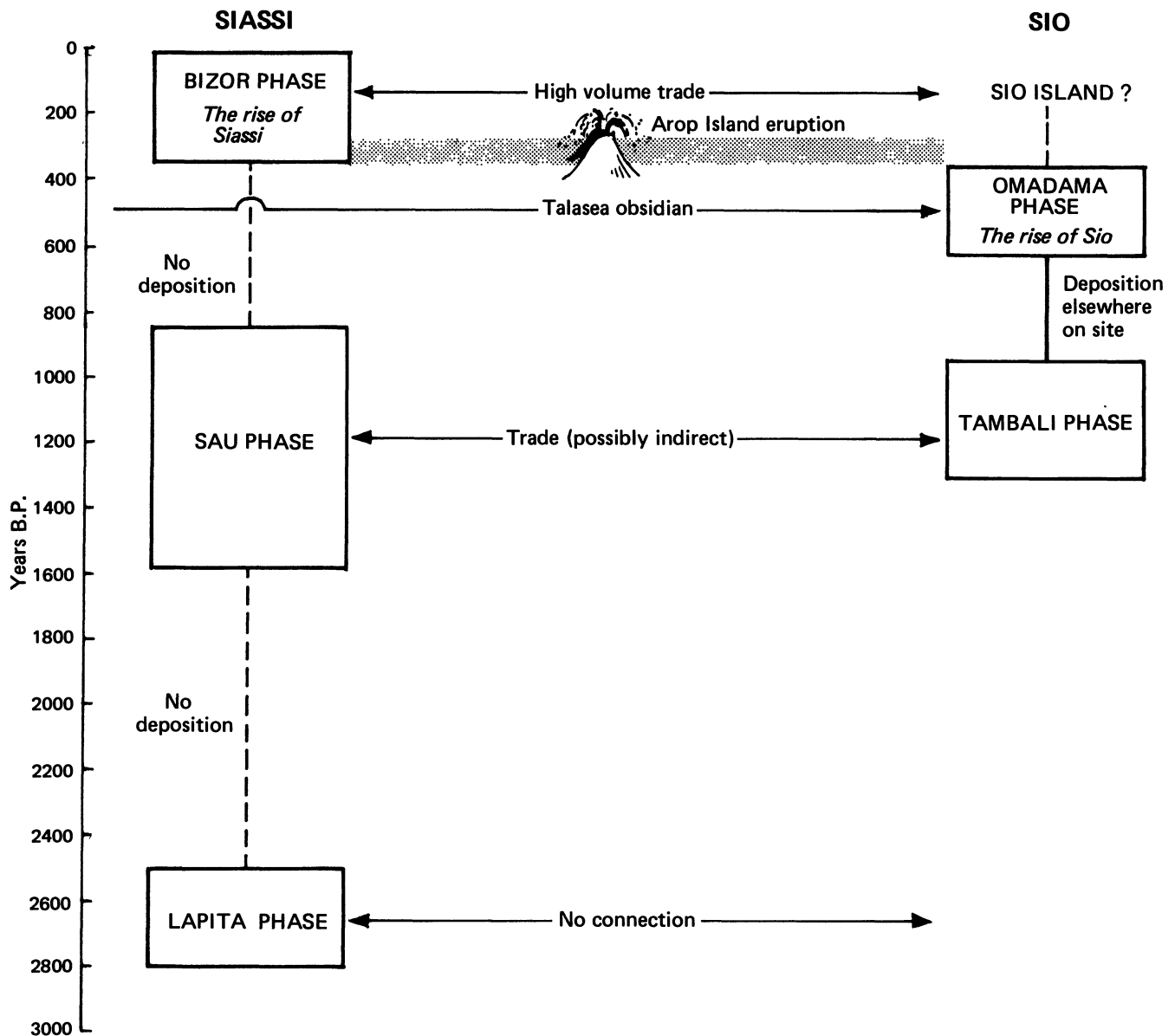


FIG. 2. A sequence of change in past patterns of exchange in the Vitiaz Strait region. Deposition at the mainland site at Sio appears to have commenced at the start of the Tambali phase and ceased at the end of the Omadama phase. Local legends and (problematical) radiocarbon dates from Sio Island suggest that the Sio population moved to the island following a geologically well-documented eruption of Arop (Long) Island. Population movement associated with this eruption may also be implicated in the rise of Siassi (a possibility which will be taken up elsewhere).

deposits. This may indicate that status competition, if it existed at all, was not a prominent feature of sociopolitical activity, which implies that the protosystem may not have been motivated by the demands of big-man rivalry in the way that the historic system was (Harding 1967:246-51). In view of the association of status competition and loose "lattice" social structures documented by Freedman (1967) in the Siassi Islands and Harding (1967:64-71) at Sio, the foregoing reasoning can be very tentatively extended to suggest that formal lineage-based structures, which persisted only as relicts

in historic times, may have been more prominent aspects of social organization during the Sau-Tambali phase. The alternative explanation is that sociopolitical organization was similar to that recorded ethnographically but different, and presumably perishable, valuables were used.

Although no deposits dating to the period were excavated, it is apparent that a number of developments occurred at Sio between the end of the Sau-Tambali phase and the start of the Omadama phase about 550 B.P. First, the Sio pottery industry probably attained levels of

intensity and specialization similar to those witnessed historically, which seems to have led to the demise of the Type X industry. Second, although there is no evidence for deposition in Siassi, increasing amounts of New Britain obsidian began reaching the site. Third, local subsistence activity intensified. Finally, a dramatic increase in the variety and rate of deposition of ornaments and valuables (including pigs and dogs as well as manufactures) intimates that status rivalry may have emerged or intensified. In line with my proposals above, the latter suggests that the importance of formal lineage structures may have begun to decline at the same time. Despite these developments on the mainland, there is no evidence for occupation in Siassi or a resumption of Sio-Siassi exchange until approximately 300–350 B.P. In other words, a general intensification of activity, possibly accompanied by other major changes, occurred at Sio about two centuries before the emergence of an exchange system exhibiting a pattern of linkages like that recorded ethnographically.

Although no very recent evidence was recovered from the mainland site at Sio, a marked increase over the last 200 years in the deposition of Sio pottery on Malai clearly indicates that during recent times there was a significant increase in the quantity of pottery transferred across the Strait, which suggests the possibility of further intensification of production on the Huon Peninsula coast. The Malai data also indicate that the bulk of Madang pottery transported across the Vitiaz Strait was moved during historic times. These developments are associated with increased deposition of an expanded range of utilitarian artefacts and faunal remains and the first appearance of ornamental and valuable manufactures in Siassi. As at Sio, it can be tentatively inferred that the appearance of valuables signals the emergence or intensification of big-man rivalry and perhaps changes in social organization. The relatively late appearance of such items may also mean that more formal sociopolitical structures persisted in Siassi for longer than they did at Sio. In short, while the "ground-plan" of the exchange system documented by contemporary observers may have first emerged some 300–350 years ago, the data suggest that pottery production at Sio, cross-Strait trading activity, and status competition in Siassi did not reach levels of intensity like those recorded ethnographically until about the time that Tasman, Dampier, and other Europeans began to explore the Bismarck Archipelago.

The foregoing sequence is broadly similar to those formulated by researchers working on other western Melanesian exchange systems, such as the *hiri* (Allen 1984, Dutton 1982), the *kula* (Irwin 1983), and the Mailu network (Irwin 1985). Of particular note is the fact that while networks ancestral to all these systems appeared between 1,500 and 2,000 years ago, their ethnographically recorded configurations and levels of intensity and specialization developed only within the last few hundred years. As other scholars have suggested (e.g., Ambrose 1978; cf. Leach 1983:537–38), this point should be borne in mind by researchers interested in Melanesian

exchange systems, especially those who would use ethnographic descriptions of the systems to inform archaeological studies in the Pacific and other parts of the world.

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Cultural Behavior and Extractive Foraging in *Macaca fascicularis*¹

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The discovery of cultural behavior in Japanese monkeys (*Macaca fuscata*) has been called one of the "brightest achievements accredited to Japanese researchers in primatology" (Kawai and Ohsawa 1983:97). The washing of sweet potatoes in the Koshima troop, referred to by its

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