

LATE PLEISTOCENE AND HOLOCENE CLIMATES AS VIEWED FROM VERLORE VLEI*

by

John Parkington

Department of Archaeology, University of Cape Town

SUMMARY

Evidence from a number of sites along the lower reaches of the Verlore Vlei and the adjacent coastline is interpreted as reflecting considerable environmental change since about 18 000 B.P. In particular seven points are relevant.

1. The faunal sequence at Elands Bay Cave (EBC) from about 18 000 B.P. clearly indicates terminal Pleistocene environmental change. At the beginning of this period the fauna is dominated by terrestrial forms, including *Equus capensis* and *Pelorovis antiquus*, large grazing ungulates which subsequently became extinct. This situation is presumed to reflect the inland location of the site with the sea level as much as 140 m lower than at present and the shoreline up to 37 km further west. Equatorward shifts in climatic belts at this time probably resulted in greater rainfall at this latitude and a more year-round distribution (van Zinderen Bakker 1976, Tankard and Rogers 1978). Soils west of EBC may have been in part derived from Malmesbury shales and must have given rise to vegetation with a substantial grass component. In the terminal Pleistocene this situation was drastically altered with the sea level rising to its present height and climatic belts moving poleward. The changing catchment of EBC is marked by the gradual appearance of estuarine and marine elements in the faunal assemblage until they come to dominate it by 8 000 B.P. Browsing forms replace grazing forms.
 2. At 8 000 B.P. there is a very conspicuous break in deposition at EBC, and it seems clear that the site was not extensively reoccupied until after 4 000 B.P. No deposits are known from this period, but it is fairly certain that carnivores occupied the site and burrowed into older deposits, introducing animal bones of their preferred prey species in the process.
 3. After 4 000 B.P. EBC was reoccupied and deposits between then and about 300 B.P. are extensive. The faunal remains from this period reflect a situation very similar to that of today, suggesting an environmental context of modern character.
 4. Excavations in three other sites near the mouth of the Verlore Vlei illustrate the shortness of local depositional sequences. All three seem to reflect occupation extending back just prior to the local appearance of pottery, which is fairly well documented at about 1 600 B.P. It seems certain that these occupations are contemporary with the post-hiatus deposits at EBC, underlining the absence of occupation in the early- to mid-Holocene.
 5. Although other interpretations are possible, it is tempting to relate the dearth of early and mid Holocene occupation to that documented by Janette Deacon (1974) for the Karoo. More specifically, perhaps the terminal Pleistocene change evidenced at EBC continued into the Holocene, resulting in hyperarid conditions along the west coast which dissuaded prehistoric populations from occupying the Atlantic shoreline to the extent that it had been or subsequently was.
 6. It is suggested that a rise in sea level combined with a drop in rainfall would have turned the Verlore Vlei into something resembling the modern Langebaan Lagoon: with salt water penetrating a 10–20 km inlet, coastal freshwater would have been difficult to locate; with lowered rainfall, the sandveld streams would have been less useful routes; and with fewer northwesterly winds aridifying upwelling may have been more common.
 7. Some evidence that early and mid Holocene groups avoided the sandveld and adjacent coastline may be found in the pattern of sandveld assemblage composition (Mazel 1978). The fact that such a clear pattern of typological characteristics emerged from this study may reflect relatively short term occupation with little time for resource changes and thus related tool-kit modification.
- The urgency of a multi-disciplinary project to investigate such environmental change is underlined.

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