An initial investigation into aspects of preservation potential of the Bradshaw rock-art system, Kimberley, northwestern Australia

P.P. BIRO, T.W. EBERSOLE, M.A.J. FELDER, I.B. JENSEN, P. MICHAELSEN, N.W. SMITH & T. VON LIPTAK*

* Michaelsen, School of Earth Sciences, James Cook University, Townsville QLD 4811, Australia.
Per.Michaelsen@jcu.edu.au

ANTIQUITY 75 (2001): 257–8

FIGURE 1. Regional distribution of Tassel and Sash Figures (modified from Walsh & Morwood 1999).

FIGURE 2. Early phase Tassel Figures.

The Bradshaw rock-art system comprises a complex, unique and remarkably advanced form of art, signifying the work of highly skilled artisans. The paintings, unique to the Kimberley, northwestern Australia (FIGURE 1), possibly represent the world’s largest concentration of rock art (c. 100,000 sites). The large number of paintings indicates an explosion of artistic creativity. Bradshaws are extraordinarily advanced both in technique and breadth of style (Michaelsen et al. 2000; FIGURE 2). Bradshaw art depicts human-like figures, characterized by extensive headdresses and elaborate body ornamentation. They have been classified into four associations (modified from Walsh & Morwood 1999), which vary according to detail of ornamentation and stylization of figures: 1 Tassel; 2 Sash; 3 El-

FIGURE 3. Tassel Figure rejuvenated by overpainting.

FIGURE 4. Example of a vandalized Tassel Figure. The entire head has been destroyed, probably by a rock.
Elegant Action; and 4 Polychrome Clothes Peg Figures (see www.bradshaw.dk).

Bradshaw panels are associated with King Leopold Sandstone (Michaelsen & Ebersole in press), painted on exposed, near-vertical outcrops or in small rockshelters. Many are shaded from direct sunlight, demonstrating the painters' preference for protected locations. They are predominantly executed in hues ranging from reddish-brown to crimson. A large proportion are characterized by a high degree of weathering.

In this note we summarize preliminary research of preservation aspects of the Bradshaw rock-art system. Is weathering of Bradshaw panels significantly influenced by a characteristics of the host rock, including geographical location, grain size, strike, sorting, dip, sedimentary structures and bedding thickness, and/or b characteristics of the method of paint application, as in undercoating or paint composition?

The database for this study consisted of 66 Bradshaw panels, documented between August and September 2000. Degree of weathering of each panel was ranked on a scale from 1 to 5: 1 very well-preserved (8); 2 well-preserved (16); 3 moderately-preserved (21); 4 poorly-preserved (16); 5 very poorly-preserved (5). Data analysis has indicated that paintings on the fluvial plain have a higher proportion of better-preserved paintings than those areas near the present coastline. Preliminary Analysis of Variance found no statistically significant difference between differentially weathered panels in terms of geological characteristics. It could be concluded that no significant correlation exists between the geological aspects analysed and the degree of weathering exhibited by Bradshaw paintings in this sample. However, additional investigation has indicated that some non-significant linear relationships may exist. These factors will be analysed in greater detail in a future contribution.

The lack of correlation suggests that the nature of the paint might have had a profound influence on preservation. In this context, the question of painting materials and technique has hitherto received very little attention. Experimental research utilizing paint substances identified in the literature indicates that, without a binder, these mixtures do not have the permanence required by the suggested age of the Bradshaws (Roberts et al. 1997; Watchman et al. 1997). When applied to well-sorted, medium-grained, quartz-rich sandstone, they wash off almost immediately with water. Further work has identified possible paint constituents that could have been utilized as a medium, as one of the major requirements appears to be presence of enough binder to render the paint water-resistant after drying. Subsequent mineralization could then act to preserve a latent image in the rock, whilst acting to remove all or nearly all of the initial binder.

We are currently studying the chemical and physical mechanisms of the intricate interplay of climate and weathering. Precipitation is likely to be highly important as both the vehicle and the implement of chemical and physical events that eventually 'petrified' and subsequently preserved the Bradshaws. Other possible aspects of lithology and microenvironment may have played an important role in preservation of the paintings (e.g. Stanton 1998; Pope 2000). Our work also reveals that some Bradshaws were preserved through episodes of overpainting and restoration (FIGURE 3).

The question of how the Bradshaw paintings were preserved is fundamental in the attempt to date them. Our working model for painting preservation is based on the idea that primary damage caused by natural processes occurred when the paint was still relatively fresh and thus susceptible to forces of erosion and similar processes. Subsequently, incorporation of the paint layer into the rock by crystallization would minimize the impact of weathering on the painting. Preliminary data analysis appears to support this concept.

Some Bradshaw panels appear to have been vandalized. Scars, possibly created by thrown stones, are evident in some panels (FIGURE 4). Approximately 9% of Bradshaw panels have been damaged to some extent. All Bradshaw associations, except for Elegant Action Figures, have indications of possible vandalism for reasons that are unclear, but may include aspects of ritual mutilation or defacing. Superposition of recent images is another common form of vandalism, or conversely a form of preservation, and is developed throughout the Kimberley.

It can be concluded that the Bradshaws clearly deserve a prominent position in global art history. However, numerous questions remain unanswered. We hope they can be resolved with further research.

References
http://www.bradshaw.dk

MICHAELSEN, P. & T.W. EBERSOLE. In press. The Bradshaw rock art system, NW Australia — a window into material culture, social and belief systems of hunter-gatherers in Kimberley during the last Ice Age. Adoranten — Journal of the Scandinavian Society for Prehistoric Art.


