A GEOPHYSICAL SURVEY OF THE ARCHAEOLOGY OF BULLS PARADISE

By

C.J.WEBSTER

Somerset County Council, Department for the Environment,
County Hall, Taunton, Somerset TA1 4DY.

INTRODUCTION

During work forming part of an extensive survey of the island south of Quarter Wall (Schofield 1988; Schofield and Webster 1989; 1990) an opportunity arose to survey the field known as Bulls Paradise. This field contains the remains of several features of known archaeological interest and has been the subject of several small-scale excavations over the years. It was hoped that a geophysical survey might help enhance understanding of the excavation evidence. A report on the main survey work, which included investigations in Tillage Field, the Airfield and Lighthouse Field, is not yet complete but will appear in the next Annual Report.

BULLS PARADISE

Bulls Paradise has been recognised as an area of archaeological significance since at least the mid-nineteenth century when the so-called Giant's Graves were excavated, probably to the east of the field in the area now occupied by Shippens Yard. A row of skeletons, including the two "giants" in stone cists, were excavated together with what is described as a mass grave (Gardner 1961). Later work by Bristowe, Dollar and Lethbridge in 1928 and 1933 located more human remains in Bulls Paradise and to the east. These were dated to the fourteenth and seventeenth centuries (Gardner 1961).

The most recent investigations were carried out in the 1960s under the direction of Keith Gardner and short reports were published (Gardner 1961, 1962, 1963-64, 1965-6, 1968). Several earthwork sites were identified and small excavations conducted. These located disturbed medieval deposits in the south of the field but a better preserved structure to the north. A linear trench located two massive (2m wide) walls running east-west and enclosed by a ditch with rounded corners. A wall possibly linking the west ends of the main walls was located although this does not seem to have been of the same construction. The structure was dated to the thirteenth century and interpreted as the stronghold of the Mariscos before the forfeiture of the island to the Crown and the building of the present castle in 1243. These investigations are summarised by Gardner (1987) in his guide to the archaeology of Lundy.

THE RESISTIVITY SURVEY

The survey was carried out using a Geoscan RM4 twin-probe resistance meter with automatic data-logging. An area of over 4000m^2 was covered with readings taken on a 1m grid using 0.5m probe spacing. Parts of the eastern side of the field were impossible to survey due to the presence of redundant farm equipment. The results are presented as a dot-density plot and interpretation. High resistance is shown dark on the dot-density plot (fig. 1). The principle of resistivity survey is simple; different soils conduct electricity to differing degrees. The current is carried by mineral salts dissolved in water and measuring the resistance gives an indication of the soil moisture content. Archaeological features such as walls and rubble, being composed of rock, have a low moisture content and thus a high resistance. In contrast, features such as filled-in pits and ditches have a high humic content and tend to collect moisture. Complications may arise due to the influence of soil depth and other non-archaeological features.

INTERPRETATION

The most obvious features visible on fig. 1 are two linear, low-resistance anomalies (A and B) running from north-west to south-east with a possible similar anomaly at right angles (C). These do not seem to relate to the features suspected from the surface survey of the field (Gardner 1961, fig. 1). However in the north end of the field Gardner's plan

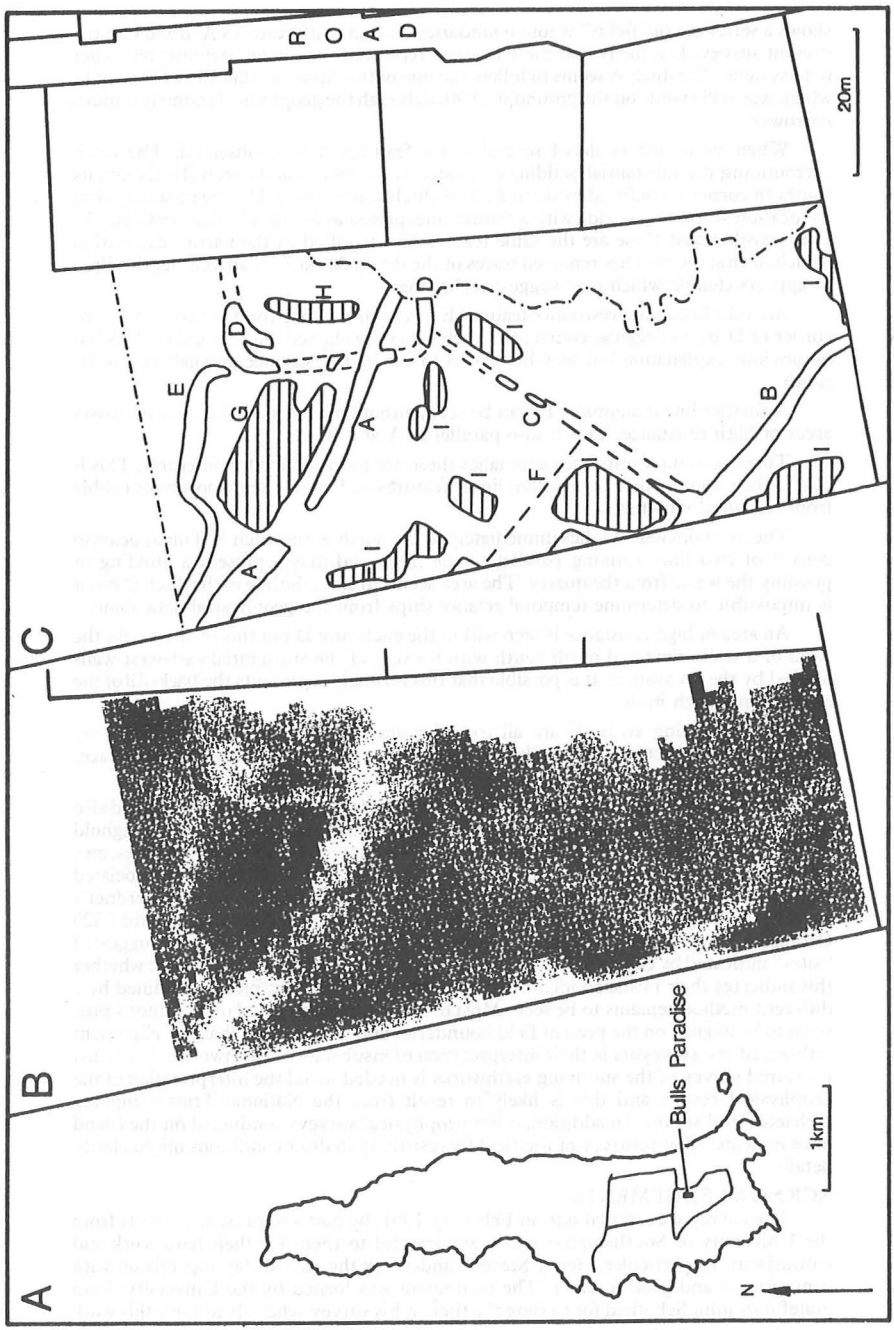

Fig 1: The results of resistivity survey in Bulls Paradise; see text for interpretation.

shows a series of "old fields" whose boundaries do align with features A, B and C in the present survey. It is likely that these features represent the ditches defining an earlier field system. The ditch A seems to follow the line of the "quarry" (Gardner 1961, fig 1), which was still visible on the ground in 1990, although the geophysical anomaly is much narrower.

When examined in detail several other features can be observed. The ditch surrounding the substantial building excavated in the 1960s can be seen (D) though its southern corner is confused by ditch A. This ditch was not found by the excavators but its location seems to coincide with a feature interpreted as a well (Gardner 1987, fig. 2). It is possible that these are the same feature misidentified in the narrow excavation trench or that the well has removed traces of the ditch. At the northern corner the ditch D appears double which may suggest realignment.

Another linear low-resistance feature (E) is visible running from the north-western corner of D by an irregular course, although generally aligned on A, B and C. This has no obvious explanation but may be related to the high resistance anomaly (G) to its south.

A further linear anomaly (F) can be seen, although less clearly because it crosses areas of high resistance. This is also parallel to A and B.

Turning to high resistance anomalies these are more difficult to interpret. This is due to their cause which is less often linear features and more often amorphous rubble from collapsed structures.

The most obvious (G) lies immediately to the north of the ditch A. This appears to consist of two lines running parallel to the ditch and may represent a building or possibly the waste from the quarry. The area seems to cross the line of the ditch D but it is impossible to determine temporal relationships from the geophysical data alone.

An area of high resistance is seen within the enclosure D but this seems to take the form of a wall orientated north-south with no sign of the substantial east-west walls located by the excavation. It is possible that this anomaly represents the back-fill of the excavation trench itself.

The remaining areas (I) are all irregular and difficult to interpret. They may represent human activity or simply areas where the rock comes close to the surface.

CONCLUSIONS

This survey of Bulls Paradise has both supported previous interpretations and also indicated new features. The line of the ditch around the supposed Marisco stronghold has been traced as has a series of field or property boundaries, indicated by ditches, on a different alignment to the present one. It is possible that stone buildings were associated with these. Other examples of boundaries on this alignment can be seen in Gardner's survey (1961, fig. 1) and also on early maps of this area of Lundy, for example the 1820 Ordnance Survey Map illustrated by Langham (1990, fig. 2). Several of the suggested "sites" indicated by Gardner in his survey of the field have not been located but whether this indicates their mistaken identification or merely a different picture obtained by a different method remains to be seen. Most of the features indicated on Gardner's plan seem to be aligned on the present field boundaries and it is possible that this alignment influenced the surveyors in their interpretation of insubstantial earthworks. A detailed measured survey of the surviving earthworks is needed to aid the interpretation of the geophysical results and this is likely to result from the National Trust's ongoing archaeological survey. In addition, other geophysical surveys conducted on the island have indicated that resurvey of the field by resistivity in drier conditions might clarify details.

ACKNOWLEDGEMENTS

The survey was carried out, in February 1991, by past and present students from the University of Southampton and I am grateful to them for their hard work and enthusiasm. In particular, Henry Stevens undertook the day-to-day supervision with commitment and good humour. The equipment was loaned by the University. I am grateful to John Schofield for finding the time in his survey schedule to allow this work

to take place. We are both grateful to the Lundy Field Society for funding the work and to the Landmark Trust for generously waiving their charges for accommodation and travel.

REFERENCES

Gardner, K.S. 1961. Preliminary report on archaeological investigations in the Bulls Paradise, Lundy 1961. *Annual Report of the Lundy Field Society* 14, 22-26.

Gardner, K.S. 1962. Archaeological investigations on Lundy 1962. *Annual Report of the Lundy Field Society* 15, 22-33.

Gardner, K.S. 1963-64. Archaeological investigations, Lundy, 1964. *Annual Report of the Lundy Field Society* 16, 29-32.

Gardner, K.S. 1965-6. Archaeological investigations, Lundy, 1966/7. *Annual Report of the Lundy Field Society* 17, 30-31.

Gardner, K.S. 1968. Lundy archaeological investigations 1967. *Annual Report of the Lundy Field Society* 19, 41-44.

Gardner, K.S. 1987. *The Archaeology of Lundy.* Landmark Trust.

Langham, A.F. 1990. Newtown, Lundy: A lost Georgian settlement. *Annual Report of the Lundy Field Society* 41, 55-64.

Schofield, A.J. 1988. Archaeological fieldwork 1988: the results of test-pit excavations and geophysical prospection south of Quarter Wall. *Annual Report of the Lundy Field Society* 39, 31-45.

Schofield, A.J. and Webster, C.J. 1989. Archaeological fieldwork 1989: further test-pit excavations south of Quarter Wall. *Annual Report of the Lundy Field Society* 40, 34-47.

Schofield, A.J. and Webster, C.J. 1990. Archaeological fieldwork 1990: further investigations of artefact concentrations south of Quarter Wall. *Annual Report of the Lundy Field Society* 41, 34-52.