

Chapter I

Introduction

Archaeological survey is often the first stage of a long-term archaeological project. At other times it is the principal method for studying some aspect of the past. Survey allows archaeologists to discover sites they may wish to excavate, to assess potential damage to archaeological resources from construction, road-building or other development, and to assess aspects of past settlement systems and regional economies. Survey can range from very informal exploration to detailed and explicit prospection or sampling strategies designed to maximize the probability of detecting sites or artifacts over a region, or to provide representative samples of cultural materials. It also ranges from visual inspection of fairly obvious features and artifacts on the modern surface, sometimes called “fieldwalking,” through dispersed excavations (“shovel testing”), to geophysical remote sensing of buried materials.

Survey is not simply a poor substitute for archaeological excavation, or meant only to discover sites for us to excavate. In fact, it is uniquely able to address some research questions that excavation alone will never answer. Only regional survey is capable of producing the data we need to investigate prehistoric use of landscapes, settlement hierarchies, and human behaviors that were dispersed in space instead of concentrated within the more obvious kinds of “sites.”

This book will introduce concepts and methods relevant to investigating archaeological phenomena at the regional scale. It will deal with some of the common goals of regional archaeological survey, the characteristics of archaeological remains that surveys are meant to discover or document, and how these and the way we design a survey affect the survey’s results. It will not specifically address survey at the smaller, site-specific, scale, although some of the same concepts are applicable to both regional and intra-site survey.

We will begin with a brief history of archaeological survey, including some case studies that will help to emphasize points in later chapters. A discussion of the role of regional survey in archaeology will follow. The next section will deal briefly with models or assumptions of the ways cultural material can be distributed in space, and on exposed surfaces or in buried deposits. Then a brief section on general aspects of research design in archaeological surveys will set the stage for later chapters.

1. A BRIEF HISTORY OF ARCHAEOLOGICAL SURVEY

1.1 Early Archaeological Reconnaissance

European curiosity about the visible remnants of past civilizations led to documentation of archaeological landscapes from at least the 16th century. In the United Kingdom, the Ordnance Survey began to include antiquities on its detailed maps as early as 1801, and the *Gentlemen's Magazine* published articles on discoveries of English archaeological sites in the 18th century.

Leaders of some early archaeological surveys did not explicitly conceive of them as such. Often archaeological observations were only adjuncts to geographical exploration, as in early Russian expeditions to Siberia, or even military expeditions, such as Napoleon Bonaparte's in Egypt. Even so, some of these explorers laid the ground-work for methods that archaeologists have used ever since. At first, these were usually explorations by Europeans in non-European parts of the world; indigenous people, after all, already had long familiarity with their ruined monuments and had oral traditions about their significance. In some cases, as in 18th-century expeditions to relocate and study ruined cities in Central America, the European antiquarians relied on guides and porters to take them to sites that were already well known locally.

As the United States expanded its frontier westward, its settlers found considerable prehistoric monuments. One of the major questions was the origin of the "mound builders." Expeditions by Squier and Davis (1848) and later the Bureau of American Ethnology (Thomas, 1894) devoted considerable time to exploration and survey of these mounds. Exploration of the American Southwest also led to study of both contemporary Hopi villages and the ruined pueblos that preceded them (e.g., Cushing, 1890).

Other Europeans and Americans turned to exploration of the antiquities of the Holy Land. The earliest of these were mainly itineraries by pilgrims to the Middle East's holy places, such as accounts by Theodericus (ca. 1172), Frescobaldi (ca. 1390), Gucci (ca. 1390), and Bertrandon de la Broquiere (1457). There were also similar early accounts by Arab writers, such as Ibn Jubayr (1185). Later and more influential 19th-century surveys of Ottoman Palestine, Syria, Transjordan, and Arabia included ones by Buckingham (1821; 1825), Burckhardt (1822; 1829), Conder (1889), and Robinson (1856). These documented mainly quite obtrusive sites, such as Roman ruins, and tried to identify them with historical or biblical place-names, usually on the basis of their modern Arabic names. At the time, there was no way for them to date sites except in the rare instances when inscriptions were visible, and the sites they discovered were ones already quite well known locally.

1.2 Fieldwalking in Britain

One of the first authors to describe the methods of archaeological survey, and possibly the first specifically to address methods for surveying artifact scatters, was W. G. Clarke (1922:24-32), in a guide to amateurs interested in prehistoric lithics. Although he does not discuss any explicit research design, he does give good advice on fieldwalking for surface scatters, and notes the importance of fire-cracked rock as evidence of prehistoric cooking activity.

An examination of an arable field in a suitable district, a sufficient time after it has been ploughed for the soil to have settled and a considerable proportion of the stones to be lying on the surface, will disclose a perplexing quantity [of lithics] (Clarke, 1922: 25).

In describing one day's survey in southwestern Norfolk, he notes that, while walking over a heath, surveyors could only find artifacts where the burrowing of moles and rabbits had thrown them up (Clarke 1922: 30). In a newly plowed field, by contrast, their method was as follows.

Following our usual practice we walked across the middle in each direction, trusting to get some indication of the best portion of the field. Scattered flakes occurred in all parts, but were much thicker at one place than others, and to this spot we returned and endeavoured to delimit the area which would best repay detailed searching. This was soon revealed by a careful inspection and a systematic search was then made, almost every yard being scrutinised (Clarke, 1922: 31).

In this he employs an assumption that archaeologists continued to use for decades: that high-density clusters of artifacts on the surface are somehow more important or more likely to correspond with the places where prehistoric activities were concentrated. He notes that in some areas lithic densities are so high that selective collection is "inevitable" and provides advice on how to recognize culturally produced flakes and to detect retouch quickly in the field. He also provides recommendations on recording provenience:

On arrival home, surface implements such as these are washed and scrubbed, and the locality in which each flint was found either indicated by a number, corresponding to that in a register, a gummed label with parish and collectors's initials printed thereon, or a written locality. A method by which the particular field in which the implement was found can be ascertained is to be recommended, as variations in the industries of sites only a few hundred yards from each other, are thus made obvious (Clarke, 1922: 32).

1.3 Early Air Reconnaissance

One of the great boons to archaeological survey was the advent of aerial reconnaissance during the First World War. Archaeologists were quick to apply this new technology to archaeological discovery in regions ranging from England (Crawford, 1929; 1953) to Syria (Poidebard, 1934). Not only was it easier to discover earthworks and detect patterns in their distribution by viewing landscapes from the air in raking light, sometimes buried ditches and building foundations were detectable in vegetation patterns called “crop marks” (Bewley and Rackowski, 2001; Dassié, 1978; Deuel, 1969; Kennedy, 1995a, 1995b; Kennedy and Riley, 1990).

1.4 Surveys in Northwest Europe

Northwest Europe has long had a tradition of landscape archaeology, focussed largely on the distribution of small farms, villages, burial monuments, pathways, field walls and ditches. Since the 1920s, “fieldwalking” has benefited from aerial reconnaissance and amateur documentation.

One of the interesting features of the European tradition of survey is its treatment of whole landscapes, and especially evidence for agricultural land use, and not only of settlement sites. Even before, but especially after aerial reconnaissance became available, European archaeologists noticed traces of old fields at different orientations than the modern ones. Some of these old fields also had distinctive shapes, such as the “Celtic fields,” and sizes, corresponding, for example, to the traditional field unit of an “acre.” Some were bounded by parallel heaps of stone, called “reaves,” or by “lynchets,” sediment that naturally accumulated on the downslope edges of fields plowed for many years.

Some early research in British field archaeology dealt with the formation of lynchets and “ways” or tracks (Clay, 1927), others with “Celtic fields” and other kinds of field systems (e.g., Curwen, 1927), and still others with evidence from crop marks over buried roads and buildings (Crawford, 1929).

In Scandinavia, archaeology had close links with natural history even in the late 19th century, and this sometimes led to a more ecological perspective on site distributions. By the first quarter of the 20th century, regional settlement archaeology had become more common (e.g., Almgren, 1914; la Cour, 1927), and later regional settlement surveys by Therkel Mathiassen (1948; 1959) used large numbers of amateurs to help search out sites in Denmark.

1.5 The Virù Valley Survey

Gordon Willey’s classic study of the ancient Virù Valley in Peru took archaeological survey well beyond the simple prospecting for interesting sites. With some resemblance to the European fieldwalking surveys, it focussed on “settlement pattern,” which Willey defined as

... the way in which man disposed himself over the landscape on which he lived. It refers to dwellings, to their arrangement, and to the nature and disposition of other buildings pertaining to community life. These settlements reflect the natural environment, the level of technology on which the builders operated, and the various institutions of social interaction and control which the culture maintained (Willey, 1953:1).

This definition's emphasis on the distribution of sites and buildings on the landscape, without explicit reference to how it "reflects" human behaviour, does not do justice to the actual research Willey and his colleagues conducted. Willey concerned himself, not merely with the distribution of sites in space, but with site functions, population sizes and sociopolitical organizations. This survey and other studies of settlement patterns in the 1950s had already begun to address the identification of "community patterns" with temporal, functional, ecological and social components in addition to the spatial one (Willey, 1953).

This survey had a profound influence on Americanist archaeology, leading to the kinds of spatial samples and environmental orientations that were particularly common in surveys of the 1970s, and eventually even to the kinds of landscape archaeology that became popular in the late 1980s.

1.6 Diyala and Uruk Surveys, Iraq

Surveys in the Diyala and central Euphrates floodplains of Iraq inspired a whole generation of archaeologists in the Near East (Adams, 1965; 1981; Adams and Nissen, 1972). From 1956 until 1975, these surveys' designs were based on

the premise that in a semiarid country like ancient Mesopotamia settlement would have been possible only where water was available — along rivers and canals. Where the settlements of a period showed linear patterns, it could be assumed that the lines reflected the water-courses upon which the settlements depended (Jacobsen, 1981:xiii).

In addition, traces of canal levees visible in aerial photographs provided a framework for finding less obtrusive sites, which could be assumed to occur along these canal routes. In the aerial photographs, often "a pattern of linear discolorations emerged, generally consisting of the faint traces of ancient levees" (Adams, 1981:28). Since a major goal of these surveys was to document changes in agricultural land use in the region, linking the survey so explicitly to the most limiting agricultural resource — water — was a highly effective strategy. We will return to surveys of this type in discussion of purposive survey, sampling frames, and the detection of spatial structure in chapters 4, 6 and 7.



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