
12-1975

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Regional Data in Historic Archeology: Examples from Environmental Impact Surveys

Description

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Keywords

Archeological surveying, Environmental Impact Statement, South Carolina, Archeology

Disciplines

Anthropology

Publisher

The South Carolina Institute of Archeology and Anthropology--University of South Carolina

Comments

In USC online Library catalog at: <http://www.sc.edu/library/>

*REGIONAL DATA IN HISTORIC ARCHEOLOGY:
EXAMPLES FROM ENVIRONMENTAL IMPACT SURVEYS*

by

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Research Manuscript Series, No. 85

Paper given at the symposium:
"The Methodological Frontier in Historic Archeology"
Conference on Historic Site Archeology
Gainesville, Florida, November 6, 1975

THIS PAPER IS NOT ISSUED IN STANDARD FORMAT FOR OUR RESEARCH MANUSCRIPT SERIES.

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December, 1975

ABSTRACT

The emphasis on regional vs. single site data in prehistoric archeology is related to the assumption that culture is an adaptive behavioral system articulated with the natural and social environments. The testing of hypotheses and models about the nature of past societies in the historic period likewise requires regional data, not all of which may be available in the historical record. Archeological survey data--including those generated by Environmental Impact studies and other specific contract research--may be relevant to measuring cultural variables of historic period societies on a regional basis. Location, variability, and density of sites are some aspects of the historic archeological record which are especially amenable to measurement using survey data. Some examples of these aspects, derived from recent contract work in Arkansas and Missouri are discussed.

REGIONAL DATA IN HISTORIC ARCHEOLOGY:
EXAMPLES FROM ENVIRONMENTAL IMPACT SURVEYS

INTRODUCTION

Within prehistoric archeology in North America there has been in recent years an increasing emphasis on *regions* rather than individual archeological *sites* as the major focus of research. This change in emphasis can be attributed to two independent developments: First, a change within social science of our view of patterning in human behavior and the operation of cultural processes; and, second, new environmental legislation which presents us, as archeologists, with responsibility for cultural resource management in the face of massive land modification projects in unprecedented numbers and on an unprecedented scale (cf. McGimsey, Davis and Griffin 1968; Gumerman 1973). These parallel developments at first gave rise to a conflict of values and a disparity between theory and practice in American archeology (King 1971). We have begun to realize, however, that the two sets of goals can be harmonized and that our greatly expanded responsibilities present us with hitherto nonexistent opportunities for exciting and relevant research as well as with new problems and headaches (Lipe 1974, Schiffer 1975, Goodyear 1975).

Current land modification projects--Corps of Engineer reservoirs, levee systems and stream channelization projects, Soil Conservation Service Watershed development plans, etc.--threaten archeological sites of the historic period on a region-wide scope as well as prehistoric sites. In this paper I shall briefly review the theoretics and methodology of the regional approach in prehistoric archeology and indicate ways in which this approach may be relevant to dealing with archeological remains from the historic period as well. To illustrate these points, I will present some data generated by recent Environmental Impact surveys in northeast Arkansas and southeast Missouri.

REGIONS AND CULTURAL SYSTEMS

Archeological research strategy is closely related to an investigator's assumptions about the nature of human behavior. During the past decade or so, most prehistoric archeologists have come to see culture as an adaptive behavioral system--rather than as a set of learned, shared ideas governing human behavior--and have begun to attempt to operationalize this view in archeological research. We have come to emphasize the ways in which the behavioral repertoire of a society is participated in differentially by different social segments and the way in which various activities take place at different times and at different loci.

Turning to archeological applications, we accordingly expect variability in the archeological record to stem not only from changing ideas in time and space but from numerous other processes as well. We expect the archeological record produced by any given society at a single time in the past to exhibit considerable variability within and between sites; we attribute this variability to a complex set of behavioral processes including seasonality, performance of different tasks at different loci, division of labor by sex, and status differentiation within the society. Therefore, it is impossible to assume that data from a single site--or even a few sites in a region--can form a basis for *typifying* the cultural behavior of a past society during a given interval in time (cf. Binford 1964, 1965; Struever 1971).

The initiation of a program of archeological research guided by these assumptions would involve a survey of a region and an attempt to gather reliable data on the totality of archeological sites formed by the past society under consideration. Information on site *location* would be relevant to inference of the specific natural resources critical to the system and possibly other aspects such as communication and defense. Information on

site *variability* would be relevant to inference of the total range of behavioral variability within the past society, and information on *density* of various classes of archeological phenomena would be a prerequisite for quantifying behavioral variables and testing hypotheses about past cultural processes.

The relevance of these three themes--*location, variability, and density*--in historical archeology will be developed below. It should be emphasized that probabilistic *sampling* in archeological survey is a prerequisite for obtaining truly reliable information on all three parameters of the archeological record (cf. Mueller 1974).

IS SURVEY DATA NECESSARY IN HISTORIC ARCHEOLOGY?

The necessity of gathering survey data in prehistoric archeological research is obvious. It might be asked, however, to what extent the existence of maps, land patents and other documentary records relied upon by social historians and cultural geographers makes survey data on historic remains unnecessary and redundant for investigation of most problems. Until some comprehensive sets of corresponding documentary and archeological survey data have been collected and compared, this question will be impossible to answer with any certainty. I will only offer a few suggestions, based on my own recent survey experience, as to ways in which archeological survey data might prove indispensable to investigation of historic problems.

In addition to the usual problems with reliance on documents (i.e., documents may be concerned with only specific things; they may be falsified, lost or destroyed: etc.; cf. Bloch 1953, Deetz 1971), several disparities between what is recorded in documents and what can be observed by inspection of the ground have been noted. First, historical records--census records,

land patents, etc.--may not contain all of the information on human/land relationships of interest to a social scientist. Second, records from frontier situations may be especially incomplete. "Squatter" homesteads, for instance, are not recorded in land patents. Furthermore, as shall be demonstrated later on in this paper, some ephemeral settlements and other activity loci, while nonetheless economically important, may be very poorly documented, even within the relatively recent past.

THE MANAGEMENT OF HISTORIC ARCHEOLOGICAL RESOURCES

The sheer number and diversity of contract projects which we are becoming responsible for is threatening to overload the capacities of most archeological research institutions. In attempting to avert chaos or recourse to shoddy research--or both--some institutions are trying to streamline their contract programs and maintain a research orientation by formulating regional research designs on various topics into which specific contract projects, as they arise, can be integrated (King 1971, Goodyear 1975, Price, et al 1975). Environmental Impact Statements (the initial estimates of the extent and significance of the resources to be affected by a proposed project) are seen as the first stage of a *de facto* multistage research program involving both later "mitigation" stage work on the same project and research on future projects in the same locality. Carrying out these aims in regards to historic archeological resources will require, of course, considerable input of historic archeological expertise at all stages of contract research planning and execution.

This approach has barely begun to be applied to historic archeological problems thus far. Experience over the last year or so, however, strongly indicates that systematic gathering of historic site data during Environmental

Impact surveys can yield kinds of region-wide data which have hitherto been unavailable in historic archeology.

THREE RECENT EIS'S IN THE CENTRAL MISSISSIPPI VALLEY

The examples presented during the remainder of this paper are derived from three recent Environmental Impact surveys for land modification projects in northeast Arkansas and southeast Missouri. These projects are:

1. The Cache River-Bayou De View Channelization Project: A Corps of Engineers drainage project in a 2000 mi² basin in the Mississippi Alluvial Valley in northeast Arkansas (Schiffer and House 1975).
2. The Little Black River Watershed Project; a large-scale Soil Conservation Service flood control project spanning the Ozark Highlands/Mississippi Valley ecotone in southeast Missouri and northeast Arkansas (Price et al. 1975).
3. The Poinsett Watershed Project: a relatively small-scale Soil Conservation Service flood control project in northeast Arkansas on Crowley's Ridge, an upland remnant within the Mississippi Valley (House 1975).

It should be emphasized that only the survey of the Cache Basin involved any type of probabilistic sampling. The other two surveys were confined to specific zones in which direct project impacts are expected to occur. This non-probabilistic sampling can be assumed to be biased and to provide less reliable estimates of regional parameters than would probabilistic sampling (cf. Mueller 1974). These biases, however, can be specified and can be taken into account and it is likely that the intensive on-the-ground investigation of a number of dispersed, areally-bounded impact zones in a region can provide a much more reliable basis for measurement of most variables than could hit-or-miss intuitive sampling.

The data generated by these three surveys are not adequate for testing any hypotheses about early historic occupation in the regions involved. They

do, however, suggest patterning in historic site location, variability and density in various portions of the central Mississippi Valley area.

SITE LOCATION

One of the major research designs operationalized during the survey of the Little Black Watershed Project was an investigation of determinants of historic site location. In particular, the data gathered in the field and obtained from documentary sources were used to partially test some hypotheses about the location of nineteenth century homesteads in relation to such environmental variables as arable land, wild food resources for domestic animals, fresh water sources and access to communication routes (Price, et al. 1975: 77-78).

In the Ozark Highlands portion of the Watershed, present evidence suggests that through the mid-nineteenth century, American homesteads tended to be located on high terraces or low hilltops overlooking rivers and major creeks. The settlement seems to be earliest in proximity to the Natchitoches Trace, a major communication route of the old Louisiana territory. In addition, there seems to be a strong association of early to mid-nineteenth century homesteads with permanent springs (Price et al. 1975: 146-160).

When the data on early historic site locations in the lowland portion of the Watershed are compared with data on thirteenth and fourteenth century A.D. Mississippi occupation, a particularly interesting pattern seems apparent. Sites of both occur on high, sandy terrace remnants, known locally as "sand ridges," rather than on the intervening lowlying flats (Figure 1) and the location of the early historic homesteads seems to correspond more with that of the Mississippi hamlet sites rather than with the sites of the larger villages (cf. Price 1974). This suggests that in both cultural systems--the

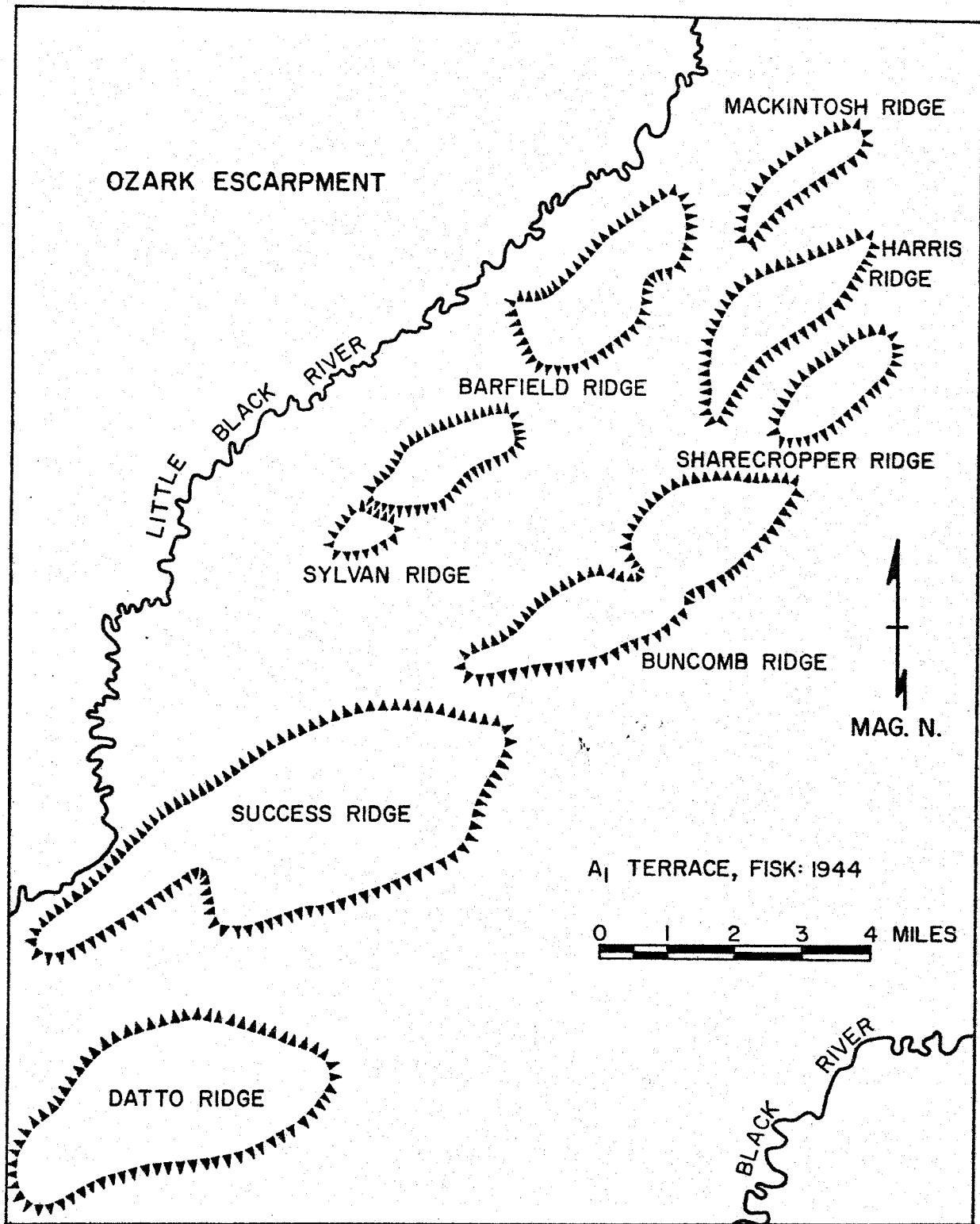


Figure 1
 SAND RIDGE SYSTEM OF THE LOWLAND PORTION OF THE LITTLE
 BLACK RIVER WATERSHED, MISSOURI AND ARKANSAS

prehistoric Mississippi and the early nineteenth century frontier Anglo-American--the requirements of settlement location may have been similar. Both economies were based on maize agriculture and the requirements for arable land, a water source and elevation above seasonal flooding probably operated in both systems (Price et al. 1975; cf. Lewis 1974: 29-32).

SITE VARIABILITY

Reliable data on variability among sites formed by a single past cultural system is a prerequisite for inference of the behavioral variability within the system and understanding of the articulation of that behavioral variability into a systemic whole. The survey of numerous proposed catchment basin sites and drainage channel routes throughout the Little Black Watershed brought many aspects of historic site variability in the Watershed into much sharper focus than was possible previously.

The most common type of historic site located during the survey was, as might be expected, sites of houseplaces. One cabin probably dating to the 1850's was still standing but many other were completely in ruins and only recognizable by the observation of scattered foundation stones and the subsequent use of a metal detector to locate buried metal artifacts.

Other types of sites were located, too. These include two probable barn sites such as the mid-nineteenth century example illustrated in Figure 2. We also relocated the site of the ephemeral logging town of King Bee, dating to the turn of the century. The site contained almost no standing structures. We were able to map the site only because an elderly local resident showed us the location and indicated the position of numerous structures he remembered from his childhood (Figure 3).

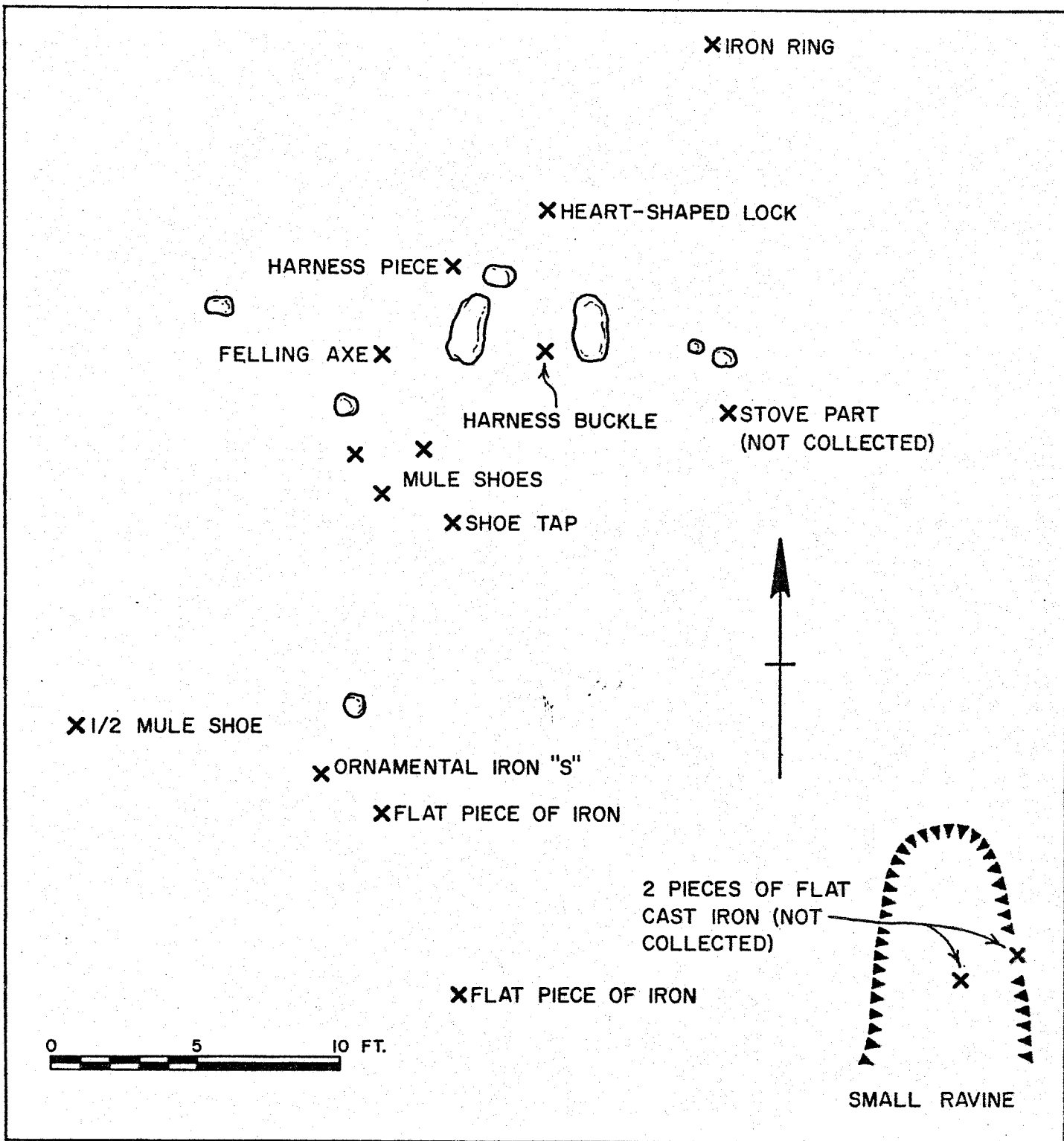


FIGURE 2
 SKETCH MAP OF PROBABLE MID-NINETEENTH CENTURY BARN SITE (23RI-H42),
 LITTLE BLACK RIVER WATERSHED, MISSOURI

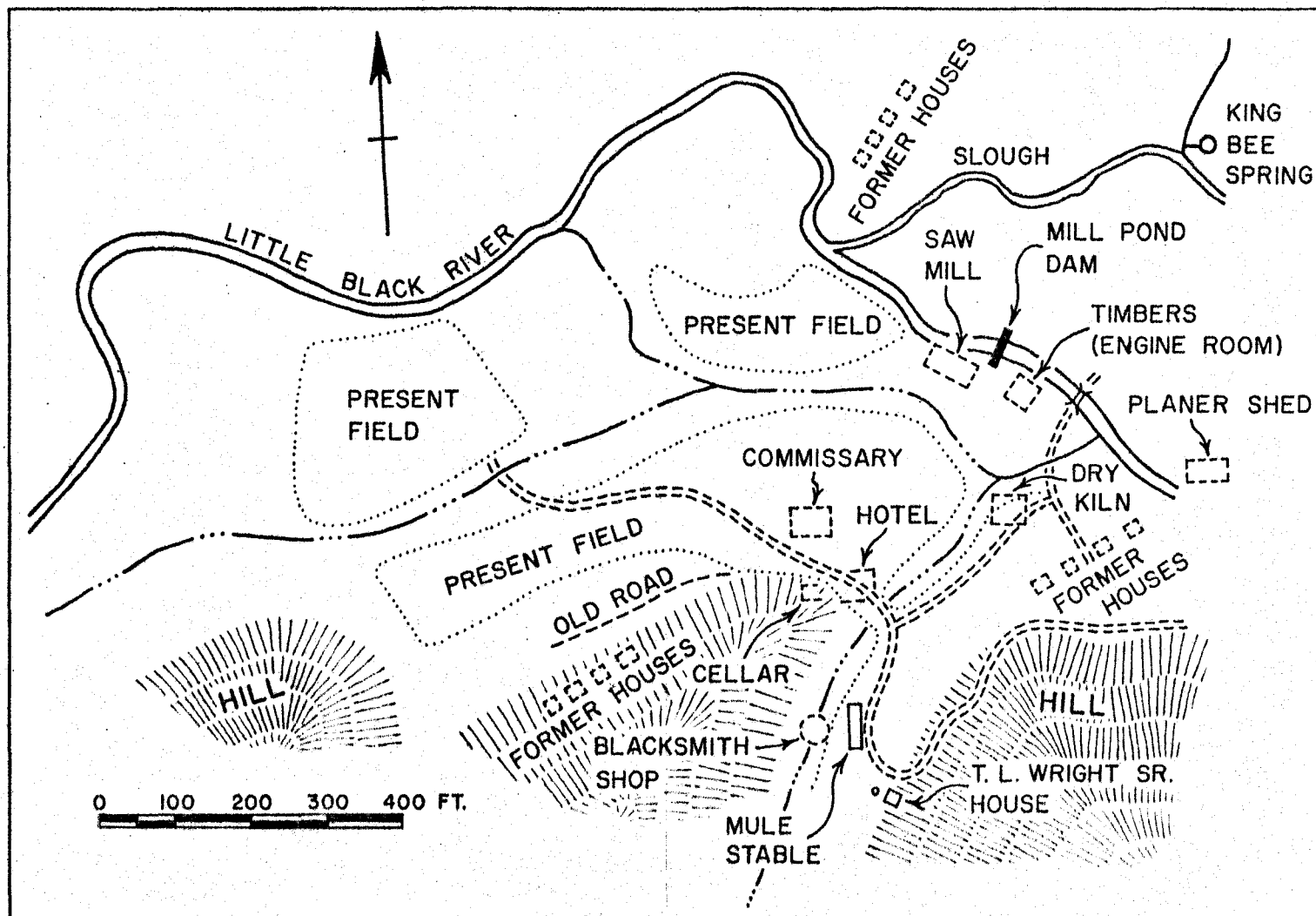


Figure 3
 SKETCH MAP OF THE KING BEE LUMBER VILLAGE SITE (23RI-H3I) IN THE LITTLE
 BLACK RIVER WATERSHED, MISSOURI

One quite important economic activity from the even more recent past is poorly documented--for obvious reasons. Sites of at least three moonshine stills, probably dating to the 1920's and 30's, were found within the basins surveyed. The site illustrated in Figure 4 represents a particularly large operation; numerous mash barrels are indicated by the piles of barrel hoops and two cookers are represented by the two hearths.

SITE DENSITY

Testing models and hypotheses of past cultural behavior will almost invariably require quantitative vs. presence-or-absence, or "trait," data. On a regional level, this may take the form of measurements of the density of various classes of archeological phenomena, though a number of other measures of locational structuring (cf. Haggett 1966) may also be relevant to the analysis of survey data. It is in measurement of this parameter that probabilistic sampling is particularly crucial. In the absence of probabilistic sampling, however, really marked differences in observed density may nonetheless indicate underlying patterning. Such marked differences in density are apparent from comparison of data on early to mid-nineteenth century occupation generated by the Cache River Archeological Project and the Poinset Watershed survey.

These two projects, as noted above are in two highly contrasting environmental zones with the Mississippi Alluvial Valley in northeast Arkansas. The Cache Basin is predominantly a flat, lowlying, poorly-drained area which has very little land suitable for maize or cotton cultivation and which remained mostly wooded until the last 20 or 30 years. This type of environment is, in fact, typical of much of lowland northeast Arkansas. Historical sources (Goodspeed Brothers Publishing Co. 1963, Williams 1930) indicate that prior to

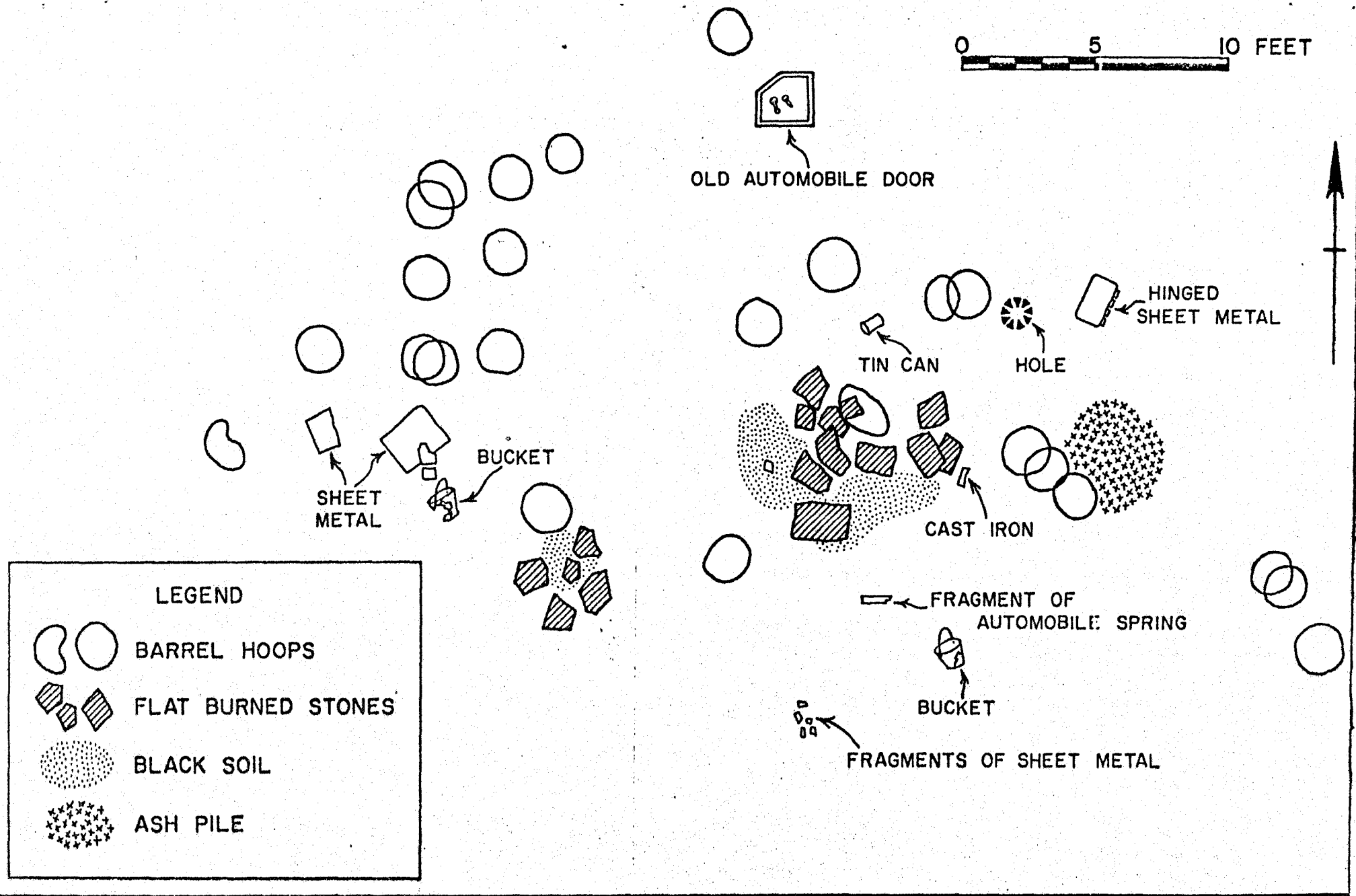


FIGURE 4

SKETCH MAP OF A MOONSHINE STILL SITE (23BU-H13) IN THE LITTLE BLACK RIVER WATERSHED, MISSOURI

the Civil War, non-aboriginal occupation of the region was especially concentrated on Crowley's Ridge, an extensive, hilly upland remnant which stands isolated in the heart of the Central Mississippi Valley.

Comparison of the archeological data gathered by the Cache Project in 1973-74 and the survey of the Poinsett Watershed Project in 1975, respectively, revealed differences in historic site density quite consistent with this suggested patterning. In the Cache survey, a total of more than 10 mi.² throughout the basin was intensively surveyed. In this area, only two sites produced recognizable evidence of early to mid-nineteenth century occupation. The Poinsett Watershed survey, on the other hand, covered a total of about 200 acres associated with twelve proposed floodwater retarding structures on Crowley's Ridge. During the latter survey, three early to mid-nineteenth century homestead sites were located within this limited area.

CONCLUSION

The surveys discussed above were carried out by persons whose primary research interests are in anthropology and North American prehistory. The research was a learning process and a challenge to all, both in that we had to strive to learn to recognize early historic artifacts and features in the field and to learn to use available documentary sources. We did, however, find our archeological survey skills and perspectives, developed in prehistoric research, to be quite useful and productive of insights into the cultural systems of the historic past as well.

I regard the inferences presented above as part of a cumulative process of inferring patterns and acquiring testable models and hypotheses relevant to historical archeology in the regions involved. Hopefully, in the future we will work with better formulated research questions and better definition

of the data classes--both archeological and documentary--relevant to their solution. I feel that these examples do indicate something of the potential of survey data in historic archeology. I would suggest that if our programs of contract research can be integrated into on-going regional research designs concerning the archeology of the historic past, we can use these programs to make a meaningful contribution to the nomothetic study of human behavior.

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