

DEPARTMENT OF
ANTHROPOLOGY
UNIVERSITY OF ALABAMA

EXCAVATIONS AT MOUNDVILLE 1978 - 1979:

The University of Michigan Museum of Anthropology
Moundville Archaeological Project

C. Margaret Mosenfelder Scarry
Field Supervisor

June 1980

In June 1979, the University of Michigan Museum of Anthropology began a multifaceted research project focused on the Moundville archaeological system. The project, directed by Dr. Christopher S. Peebles, included two years of field work and collections research funded by the National Science Foundation (grant BNS 78-01733).

The Moundville project has three primary objectives. The first goal, essential to the accomplishment of the other goals, is the establishment of tight chronological control over the Moundville system through a ceramic analysis and seriation. The second goal is the elucidation of the relationship between Moundville and the other sites in the system by means of controlled surface collections and test excavations. The final goal is the examination of the subsistence base of the system utilizing two major approaches. Trace element analysis of human skeletal remains will provide a measure of the adequacy of the diet; while archaeozoological and archaeobotanical studies will address questions pertaining to the development and variability of the subsistence procurement strategies employed by the Moundville system.

This report describes the results of two seasons of fieldwork at Moundville itself. These excavations were conducted in order: 1) to recover ceramic samples from stratified contexts to supplement extant data from grave lots and 2) to collect floral and faunal remains for use in testing propositions concerning the development and operation of the Moundville subsistence system.

The major focus of the excavations was an area north of Mound R in the north west section fo the site (Map 1). Previous excavations in 1973 and 1974, by a field school under the direction of David DeJarnette, had disclosed a stratified deposit approximately two meters in depth in this area. The deposit contained large quantities of ceramics and, though neither fine screening nor flotation were employed by the field school, both floral and faunal remains were recovered.

Two major considerations dictated excavating in the deposit north of Mound R rather than beginning work elsewhere on the site. First, it was known that the data required by the current project were available in the deposit. Secondly, the stratigraphy visible in the walls of the earlier excavations could be used as a guide to keep tight control over the excavations.

Before beginning new excavations, the limits of DeJarnette's pit were mapped, and the location of the pit was established in relation to a permanent survey point. Next, the fill was cleaned out of the north end of DeJarnette's excavation, exposing a profile approximately six meters long and two meters deep. This north profile and the section of the west wall exposed by the trench were mapped in detail. The east profile was not drawn, as it had been badly damaged by use as a ramp into the field school excavations.

Using the stratigraphy visible in the walls of DeJarnette's pit as a guide, two, two meter by two meter units were opened adjacent to the old excavation area. The locations selected for the squares -- one west of the pit and one north -- were areas where

the stratigraphy was clear and where there was little apparent recent disturbance.

The excavation techniques employed were chosen to maximize fine stratigraphic control and data recovery. With the exception of the first level in each square, all excavating was done by trowel. In the upper levels of the deposit, where there was no clear stratigraphy, ten cm. arbitrary levels were employed. As soon as natural strata were encountered, they were used to define excavation levels. Features were pedestaled during the excavation and mapping of each level. Upon completion of a level, they were cross-sectioned, their profiles drawn and then they were removed. If a feature continued for more than one level, the process was repeated. This procedure was time consuming, due to the increased record keeping it entailed. However, it was the most reliable method for maintaining provenience control in an extremely complex deposit.

To maximize retrieval of subsistence remains, both flotation and water screening were employed. A SMAP type barrel (Watson, 1977), modified to allow the use of relatively low water pressure, was used for flotation. Standard volume (three liter) control samples were floated from every excavation level. In most instances, features were floated in entirety. Exceptions to this practice were limited to wall trenches and very large pits. In such cases, three liters of feature fill were floated per level. All dirt from level or feature contexts that was not floated, was water screened through 6.4 mm (1/4 inch) and 2 mm (1/16 inch) nested water screens.

Additional information, pertaining to the nature of the deposit north of Mound R, was obtained from a profile cut on the bluff face overlooking the Black Warrior River. The 1979 spring floods eroded the bank exposing a three by two meter stratigraphic section. At the start of the 1979 field season, this profile was cleaned and mapped. The stratigraphy visible in this profile was similar, but not identical, to that of the excavation units. An excavation unit was begun to investigate the stratigraphy revealed in the bank profile. Unfortunately, time constraints dictated that this unit be abandoned, in favor of test excavations elsewhere on the site.

The descriptions, of the field school excavations, indicated that the deposit north of Mound R was a result of midden accumulation. It had been suggested that the depth of the deposit was a result of proximity to the bluff edge. It was postulated from the apparent dirth of midden on other portions of the site that the settlement had been kept clean by dumping refuse over the bluff edges (Peebles personal communication). The deposit north of Mound R was, thus, seen as an accumulation of refuse, which had fallen short of its intended destination. An examination of the walls of the field school excavation, made after the pit had stood open and subject to erosion for several seasons, suggested that there might also be occupation floors present in the deposit.

Re-examination of the freshly cleaned profiles, with all but the most serious effects of erosion removed, led to the belief that the situation was considerably more complex than previous notes implied. The upper portion of the deposit, as it appeared in the

profile, had scattered lenses but no clear cut stratigraphy. Seventy-five centimeters below ground surface, a thick layer of burnt daub extended across almost the entire exposure. Below the daub were numerous thin strata, also continuous across large portions of the profile. These strata formed a band at least 70 centimeters thick. In addition to the horizontal stratigraphy, several large pits and post molds were visible in the profile.

Subsequent excavation confirmed the complexity of the deposit. The depositional sequence in the two units was quite similar but not identical (Figures 1 and 2). Although the depth varied between the two units, the upper portion of the deposit was composed of midden accumulation. At 30 to 45 centimeters below ground surface, traces of sand floors were encountered. Associated with these floors were indications of in situ burning, post molds and wall trenches. The relative locations of the wall trenches and the floors suggested that, in all probability, the floors in the two units represented separate structures. The daub layer visible in the profile was reached at 75 centimeters below ground surface. The unconsolidated nature of the daub indicated that it was a product of a wall fall rather than a burnt floor. Burn traces immediately below the daub indicated that the daub was in situ. Upon removal of the daub, it became clear that the thin strata visible in the profile were a series of superimposed sand floors. These floors were divided into three sets separated by relatively shallow midden deposits. Immediately under the daub, were five or six floors. Approximately 20 centimeters of midden separated these floors from the next set of four floors. This second set of floors was followed by five to seven centimeters

of midden and then another set of at least five floors. (It was not always possible to separate floors during excavation, the numbers are thus approximations.) The close correspondence between the series of floors in the two squares suggested that for each series, both units were within a single structure which was responsible for the floors. Each set of floors seemed to be the product of re-sanding or possibly rebuilding a typical, Mississippian, rectangular, wall trench structure. Beneath the third series of floors in one of the units, traces of a semi-subterranean, wall trench structure were encountered. Three floors and two adjacent wall trenches were associated with this "pit house". It appeared that during the occupation of the structure, the north wall was rebuilt and moved outward and a new floor was laid. The semi-subterranean structure had been filled and the area leveled, prior to the construction of the original sand floor structure. In the second unit, refuse pits but no structural evidence, were encountered at a depth corresponding to that of the "pit house".

In all, the excavation of the two units encompassed 28 levels per unit and a total of 201 Mississippian features. The features include: 123 post molds; 8 wall trenches; 19 ash and/or burn lenses; and 51 refuse pits.

The ceramics recovered from the excavation have been analyzed by Vincas Steponaitis. The results of the analysis are being integrated into his study of the whole vessels from extant Moundville collections. Though his dissertation is not yet complete, Steponaitis reports (personal communication) that all three of the phases he has defined, on the basis of the ceramics from

burial contexts, are represented in the deposit north of Mound R. The stratigraphic order of the excavated sample supports the chronological sequence he has postulated through seriation of the whole vessels. However, the three phases are not equally represented in the deposit. Below the daub layer, the assemblage is pure Moundville I. Immediately above the daub, the predominant ceramics associated with the sand floor traces are also Moundville I. Moundville II and Moundville III ceramics seem to be primarily confined to the upper midden zone. It is significant to note, that not only is the ceramic assemblage below the daub pure Moundville I, but Steponaitis (personal communication) has been unable to discern any change in the ceramics associated with the various structures. This suggests a relatively short time span -- on the order of 100 to 150 years at the outside -- for the accumulation of the lower 1.15 meters of the deposit.

The chronological position of Moundville I is not yet firmly established. On the basis of ceramic cross-dating and Carbon 14 determinations, from Terminal Late Woodland West Jefferson sites, Steponaitis (1980:47) provisionally dated Moundville I to the period from A.D. 1100 to A.D. 1250. Seven Carbon 14 determinations (Dicarb 1241, 1242, 1243 and Beta 1105, 1106, 1289 and 1290) have been run on charcoal samples taken from the deposit north of Mound R. Two of the samples (Dicarb 1241 and 1242) produced nineteenth century dates. Examination of the data suggests that these dates were affected by recent contamination and small sample size. Figure 3 illustrates the

stratigraphic positions of the remaining five Carbon 14 samples. A date of A.D. 1260 ± 60 (Dicarb 1243) was produced by a sample taken from immediately below the daub layer. A sample, from the initial floor in the final sequence of floors below the daub, yielded a date of A.D. 1125 ± 65 (Beta 1299). These dates fit well with expectations based on ceramic considerations. The other three dates are problematical. Beta 1105 and Beta 1290 produced dates of A.D. 663 ± 105 and A.D. 860 ± 80 respectively. These samples were taken from pits originating in the basal levels of the two units. A date of A.D. 779 ± 80 (Beta 1106) was produced by a sample taken from the midden separating the lower two sets of sand floors. These three dates are not only significantly earlier than expected, but also, taken in conjunction with the A.D. 1260 ± 60 date, indicate a maximum 600 year span for the Moundville I phase and the deposition of the lower meter of the deposit. Given the lack of discernable change in the ceramics and the nature of the deposit, this seems highly unlikely. The possibility of contamination of the samples, and other possible sources of error, are currently being investigated.

The function of the area north of Mound R changed through time. The structure floors present both in the excavation units and the bank profile, leave little doubt that the area was residential during the Moundville I phase. Several lines of evidence suggest that though the area was continuously occupied during Moundville I, individual house sites shifted through time. Above the daub layer, the Moundville I floors in the two units clearly represent two separate structures; while below the daub

the two units seem to be within a single structure. The midden zones which separate the three series of floors below the daub, may well have accumulated during intervals when that location was not occupied by a structure or structures. The topography of the area also suggests that house sites shifted through time. Given the depth of the deposit, if house sites were permanent, one would expect residence mounds to have developed. Instead, the area as a whole seems to have built up gradually, as a result of shifting structures and midden accumulation. In the Moundville II phase, the area appears to have been little used; its function at that time is uncertain. The area seems to have served as a refuse dump and to some extent as a cemetery during the Moundville III phase. It should be noted, that although C. B. Moore tested Mound R (1965: 220) no diagnostic artifacts were recovered. Therefore, we do not know when the mound was constructed, or how it related to the area north of it.

Despite its wealth, the deposit north of Mound R is a limited representation of the variability present on the site. In the 1979 field season an effort was made to gain greater chronological and spatial control over the site as a whole. A power auger and test pits were used in this endeavor.

The need for subsistence data dictated a non-random selection of areas to receive testing. Field notes from previous excavations and the Moundville site report (Peebles, 1977) were used to identify areas apt to yield residential debris. Once such areas had been identified, selection of areas to

recieve testing was based on the pragmatic consideration of avoiding previous excavation areas, underground pipes and electric lines. Using these criteria, five areas were selected for investigation (Map 2).

A power auger with a ten inch bit was used in the initial testing of these areas. Within each area, the intervals between auger tests were selected opportunistically based on the size, shape and topography of the area. In each case, paired holes one meter apart were used to aid in determining whether deposits encountered were localized features or more general accumulations. As each auger hole was drilled, its walls were cleaned, a profile was drawn and the soil was screened for artifacts.

The use of the auger proved to be an efficient means of evaluating the areas of interest. In four of the five areas, the auger tests pinpointed locations worthy of further investigation. In the fifth area -- the area in the extreme south west on Map 2 -- the tests revealed significant historic disturbances. The information gained from the auger tests was used to select locations for test excavations.

The area south of Mound D was initially selected for investigation in the hopes of relocating a large refuse deposit encountered, but not excavated, by WPA work in the area. The auger tests did not reveal rich midden, but did indicate the possible presence of a burnt floor. However, a test pit, opened in the vicinity of this supposed floor, proved so unproductive from the standpoint of subsistence remains that the unit

was closed out after the completion of two excavation levels. Based on the limited excavation completed, it may be suggested that the deposit in the test pit was part of a man-made plaza associated with Mound B. This possibility could easily be investigated by someone interested in the overall organization of the site.

Excavations conducted in preparation for the construction of the roadway and the administration building, revealed residential structures in the area south of Mound I. The auger tests pinpointed a possible midden deposit approximately one meter in depth. Subsequent excavation, of a two meter by two meter test pit, in this midden revealed a hearth, a wall trench, which post dated the hearth, and a line of post molds not clearly associated with either the hearth or the wall trench. Although the general density of material in the midden was low, small samples of sherds and floral remains were recovered. The chronological placement of the midden south of Mound I is not yet known. Archaeomagnetic samples collected from the hearth have been submitted for dating but their analysis is not yet complete. Neither the ceramics nor the floral remains have been analyzed as yet.

A one by one meter test unit was excavated on the western edge of the site. It had been proposed that a north-south ridge on the western perimeter of the site was a remnant trace of the palisade which surrounded the site. At the request of Dr. Joseph Vogel (Director of the Alabama Museum of Natural History) a line of auger tests was run perpendicular to and crossing this ridge. With one exception, these auger tests produced scant evidence of

midden or occupation debris. The exception was the test in a dip immediately to the west of the ridge. This hole revealed approximately 30 - 40 centimeters of deposit, which may represent accumulation in a ditch associated with the exterior of the palisade. A one by one meter test unit was excavated adjacent to this auger test to further explore the deposit. The test unit revealed roughly 45 centimeters of cultural deposit containing a low density of artifacts and plant material. At 45 centimeters below ground surface, interfingering lenses of fine sand and iron concretions were encountered. The iron deposits were formed in the presence of water, but given the limited extent of the excavation, it was not possible to determine whether they were a product of standing water or of ground water fluctuations (Farrand, personal communication). Due to insufficient time, it was not possible to extend the excavations. Thus, it is still unclear, whether this deposit represents accumulation in a palisade ditch. Analysis of the materials from this unit has not yet begun, so the chronological position of the deposit is uncertain.

The most productive test excavations were two adjacent two meter by two meter units on the north west section of the site. The auger tests in this area located a midden deposit approximately 60 centimeters in depth. Artifacts recovered from the auger tests included both grog and shell tempered ceramics as well as fragments of mica. Initially one two meter ^{square} unit was excavated. The deposit in this unit consisted of a 10 - 15 centimeter plow zone followed by 25 centimeters of midden. Beneath the midden

two (Possibly three) superimposed structure floors were encountered. Associated with these floors were several puddled clay hearths. (Originally two hearths were noted, but during the course of collecting archaeomagnetic samples, a third hearth was revealed under one of the original two.) In order to further explore the floors associated with the hearths and to recover larger samples of ceramics and plant remains, a second two meter unit was excavated adjacent to the first. This unit proved to be entirely within the structure so little new information was gained pertaining to the floors. However, the second goal, of augmenting samples of ceramics and plant remains was accomplished. The ceramics from these units have not yet been analyzed. However, preliminary inspections indicate that the vast majority are Moundville I types. Based on this, the midden and floors can provisionally be assigned a Moundville I date. A Carbon 14 sample taken from the midden above the floors produced a date of A.D. 915 \pm 80 (Beta 1107). This is somewhat earlier than anticipated. Archaeomagnetic samples were collected from the three hearths and submitted to Dr. Duboise at the University of Oklahoma archaeomagnetic laboratory. When analysis of these samples is complete, they should serve as a check on the Carbon 14 determinations.

Most of the analyses of the data from the two seasons of excavation are still in process. With the possible exception of the ceramics, it is not yet possible to draw from the data any conclusions concerning the major research questions of the project. It is possible, however, to make a few provisional observations.

As noted above (p. 7) the ceramics from the units north of Mound R support the ceramic sequence constructed by Steponaitis from the vessels found in grave lots. The excavated samples complement the extant collections since the Moundville I phase was the most poorly represented in the burial materials. Steponaitis has not yet analyzed the ceramics from the test units. However, they will ultimately be worked into his chronology.

The only well preserved faunal material was recovered from the deep units north of Mound R; little bone was recovered from any of the other test units. Lauren Michals (University of Michigan Museum of Anthropology) is analyzing the faunal material from north of Mound R as a basis for her honors thesis. Michals' work is not yet complete. However, she reports that the only large mammal present is deer (Odocoileus virginianus). Other mammals include squirrel (Sciurus sp.) and rabbit (Sylvilagus sp.). The relatively large quantities of fish bone that were recovered were almost exclusively from freshwater drum (Aplodinotus grunnius) and catfish (Ictalurus sp.). All of the bird bone recovered was turkey (Meleagris gallopava). Finally, turtle bone and carapace fragments were recovered.

An excellent sample of floral remains was recovered; primarily from the units north of Mound R and from the two ^{test} units on the north west section of the site. These materials will serve as the basis for the author's dissertation. The focus of the archaeobotanical analyses will be the Moundville I phase materials and the transition from terminal Late Woodland to Mississippian

subsistence procurement strategies. The Moundville data will be supplemented with local, Terminal Late Woodland (West Jefferson) data. The analyses of the plant materials is in process and has been greatly expedited by a National Science Foundation dissertation support grant (BNS-8007130) and by a University of Michigan, Horace H. Rackham School of Graduate Studies dissertation support grant.

The analysis of the plant materials is far from complete. No quantitative assessment is possible yet. However, a brief discussion of some of the material is possible.

The quantity of material caught in the two millimeter water screens, was so great that for the purposes of analysis it was necessary to subsample. For the archaeobotanical analyses, a subsample of 500 grams was drawn from each provenience unit. These subsamples were then floated in a zinc chloride solution (Struever, 1968) to separate the carbonized plant remains from the small artifacts, bones and pebbles. Sorting and identifying of the materials thus separated is currently underway. All of the samples which have been processed, contain corn (Zea mays) cupule and kernel fragments as well as hickory (Carya sp.) shell, acorn (Quercus sp.) shell and wood charcoal. Other plant remains identified to date are beechnut (Fagus americana) husks, grass (Graminaea) culms, blackberries (Rubus sp.) and a variety of seeds including: grape (Vitis sp.), persimmon (Diospyros virginiana), hackberry (Celtis sp.), knotweed (Polygonum sp.), maypop (Passiflora incarnata), morning glory (Ipomoea sp.), plum (Prunus americana) and pokeweed (Phytolacca americana). The

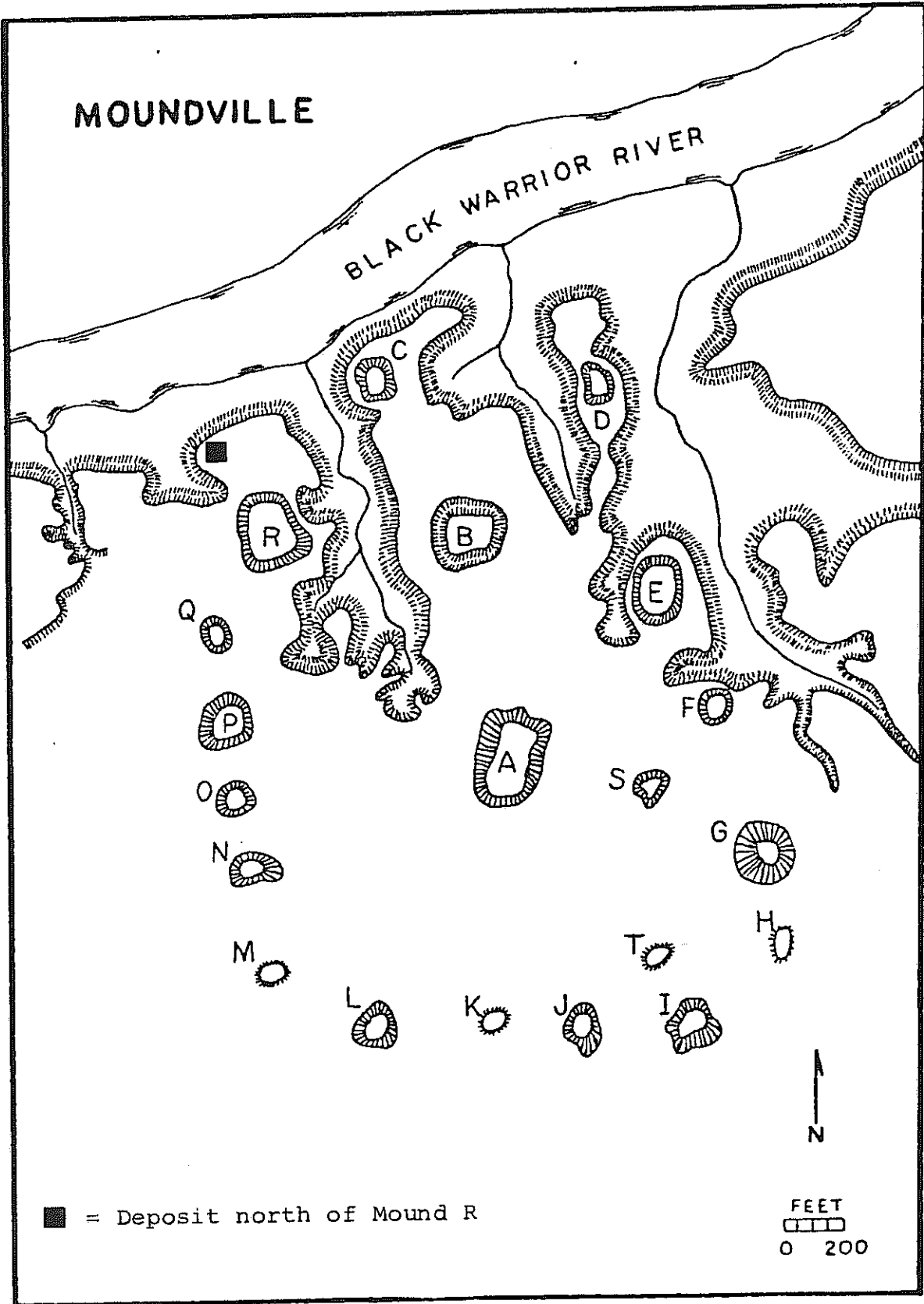
samples also produced a few as yet unidentified seeds and seed fragments.

A number of light fraction flotation samples have also been sorted, including a corn pit and the control samples from 20 levels from one of the units north of Mound R. The "corn pit" contained more than 70 grams of cob fragments -- several complete cross-sections and numerous cupules -- as well as corn kernels, one squash seed (Cucurbita pepo), half of a legume which is probably a common bean (Phaseolus vulgaris), acorn meat and hickory shell. The control samples all contained corn cupules and kernel fragments and wood charcoal. Nut remains thus far identified in the flotation samples are hickory shell, acorn shell, hazelnut (Corylus sp.), and beechnut husks. Seeds from persimmon, maypop and honeylocust (Gleditsia triacanthos) have also been identified. Most of the control samples contained a few small seeds which are as yet unidentified. It should be noted, however, that such small seeds do not seem to occur in significant quantities.

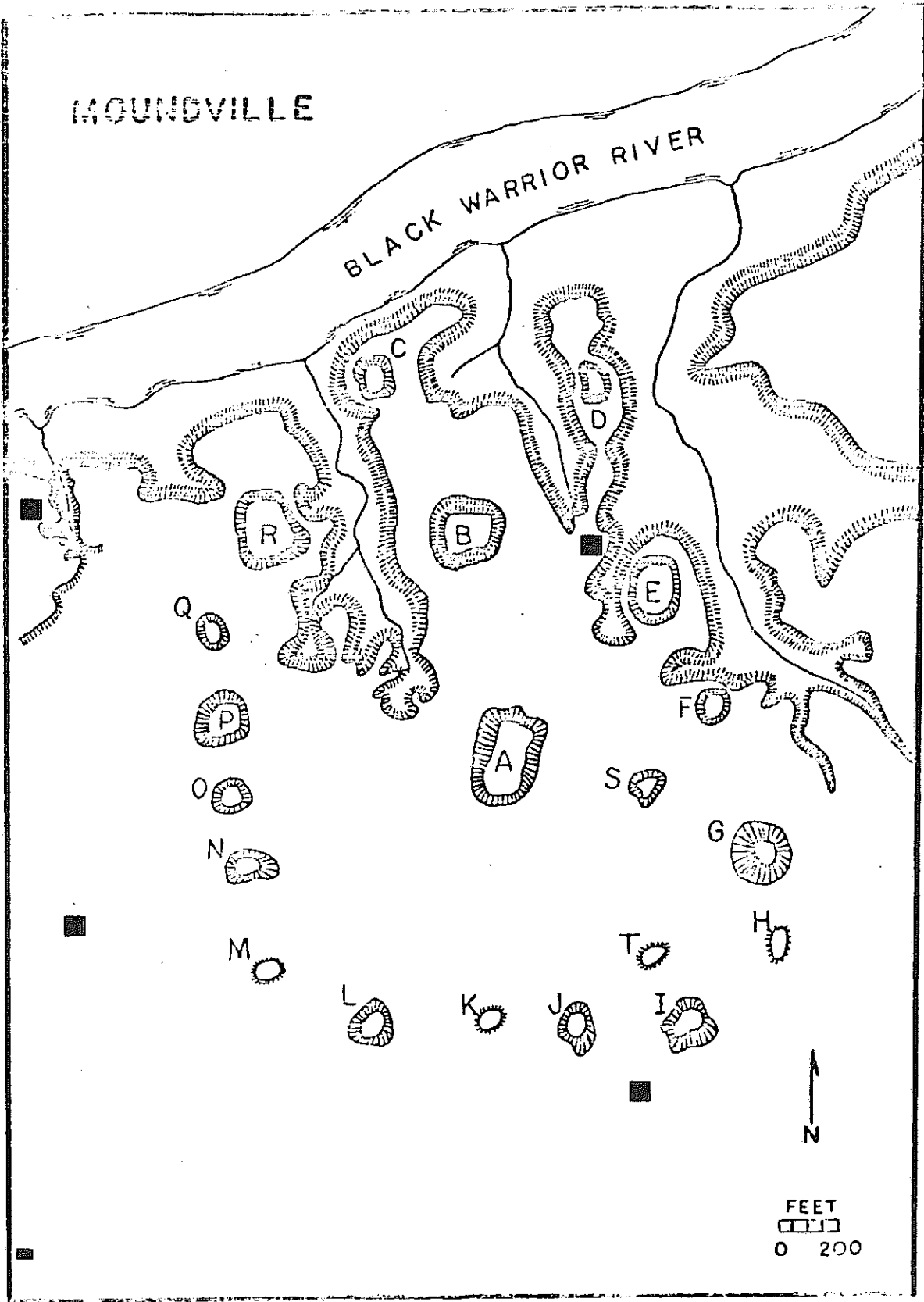
In summary, as the preceding pages have shown, the field-work at Moundville produced a wealth of data. The preliminary analyses indicate that these data will significantly contribute to the projects goals of gaining a greater understanding of the chronology and subsistence base of the Moundville system.

Map 1

Location of Deposit North of Mound R



Locations of Auger Tests and Test Excavations



- = Auger tests and test excavations
- = Auger tests only

References

- Moore, Clarence B.
1905 Certain aboriginal remains of the Black Warrior River. Journal of the Academy of Natural Sciences of Philadelphia 13:125-244.
- Peebles, Christopher S.
1979 Excavations at Moundville 1905 - 1951. University of Michigan Press, Ann Arbor, Michigan.
- Struever, Stuart
1968 Flotation techniques for the recovery of small-scale archaeological remains. American Antiquity 33(3):353-362.
- Steponaitis, Vincas
1980 Some preliminary chronological and technological notes on Moundville pottery. Southeastern Archaeological Conference Bulletin 22 pp. 46-50.
- Watson, Patty Jo
1977 In pursuit of prehistoric subsistence: A comparative account of some contemporary flotation techniques. Mid-Continental Journal of Archaeology 1(1):77-100.

Figure 1

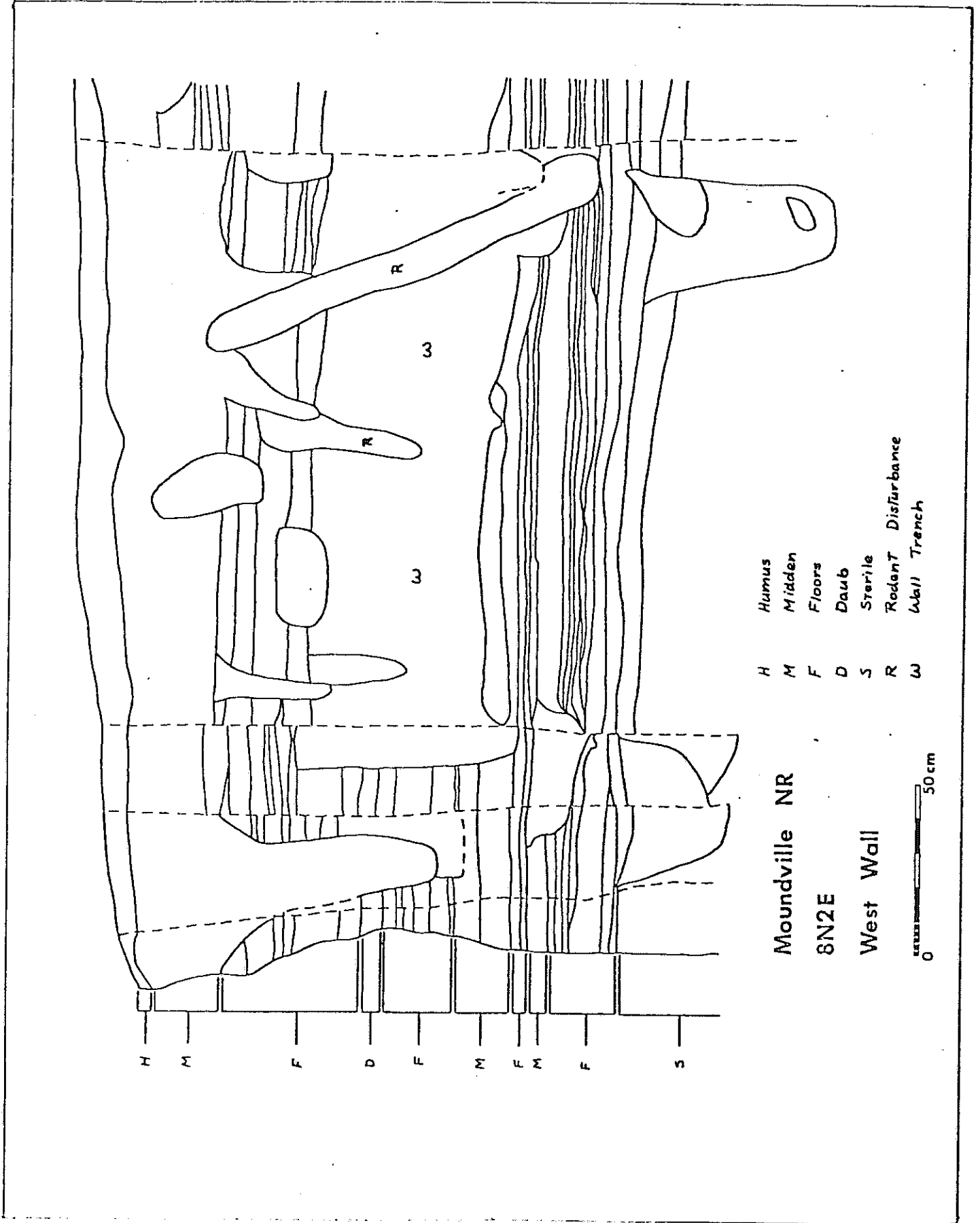


Figure 2

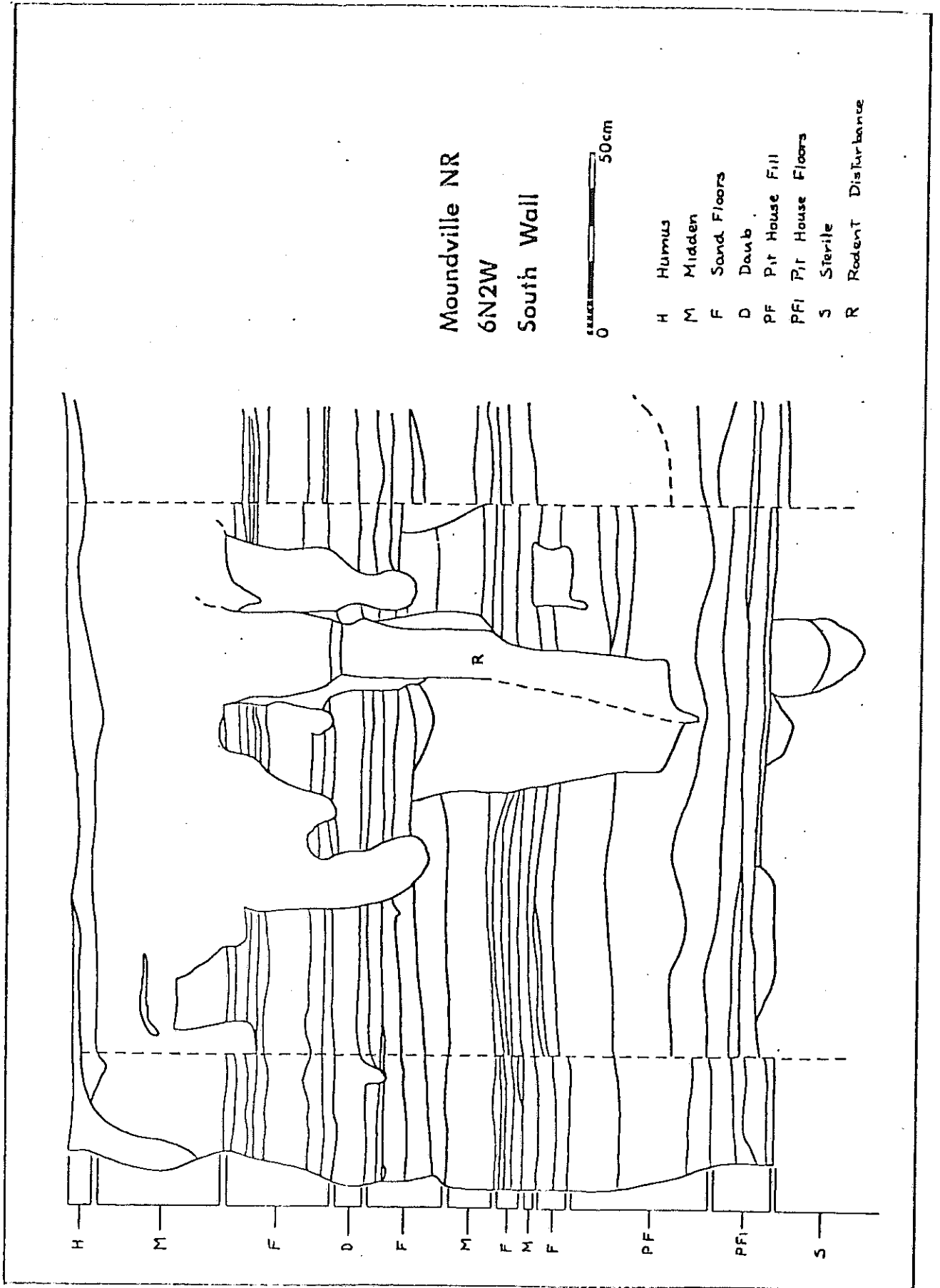


Figure 3

