Douglas R. Connor

The Kiseiba Plateau: a systematic surface survey in Egypt's Western Desert

A systematic surface survey of Neolithic sites on the Kiseiba Plateau of Egypt's Western Desert was conducted in 1980 by members of the Combined Prehistoric Expedition (Southern Methodist University, USA and Institute for the History of Material Culture, Poland). The survey mapped and recorded more than five hundred archaeological features (hearths, lithic scatters, faunal remains) in two transects totaling 5.0 km^2 in area. Controlled sampling of lithic remains suggests that most of the sites recorded are Late or Advanced Neolithic in age (c. 6,000 - 5,000 B. P.). Isolated finds suggest the area was also used, albeit infrequently, by Middle Neolithic groups (c. 7,500 - 6,000 B. P.).

Bir Kiseiba, one of a series of small oases in the southern portion of the Egyptian Sahara, lies approximately 200 km. west of Abu Simbel and 350 km. south of Kharga Oasis (Fig. 1). Physiographically, the Kiseiba region divides itself naturally into two parts (Issawi, 1971). To the south and east it forms an internally drained basin of c. 1,900 km^2, called the Nakhlai-Sheb pediplain, which during the Holocene wet phase contained numerous and extensive playa lakes. To the north and west, it consists of a featureless plateau of more than 1,100 km^2 standing 60 - 90 m above the pediplain. The plateau surface is heavily deflated and broken only by low sand ridges covered with lag gravels. Further north, the plateau descends gradually toward the area of Bir Mur, the northernmost playa in the region.

Prior research in the region had established the existence of numerous sites in the pediplain which spanned the entire Neolithic era (c. 9,500 - 5,000 B. P., cf. Wendorf and Schild, 1980). Preliminary reconnaissance of the plateau during 1979 demonstrated the presence of numerous surface features of unknown date or cultural affinity (though the absence of modern debris and the extreme aridity of the historic environment precluded association with historic populations). The first objective of the survey, then, was to establish the relationship of sites on the plateau to those in the pediplain basin. To this end, we needed to establish the distribution of sites

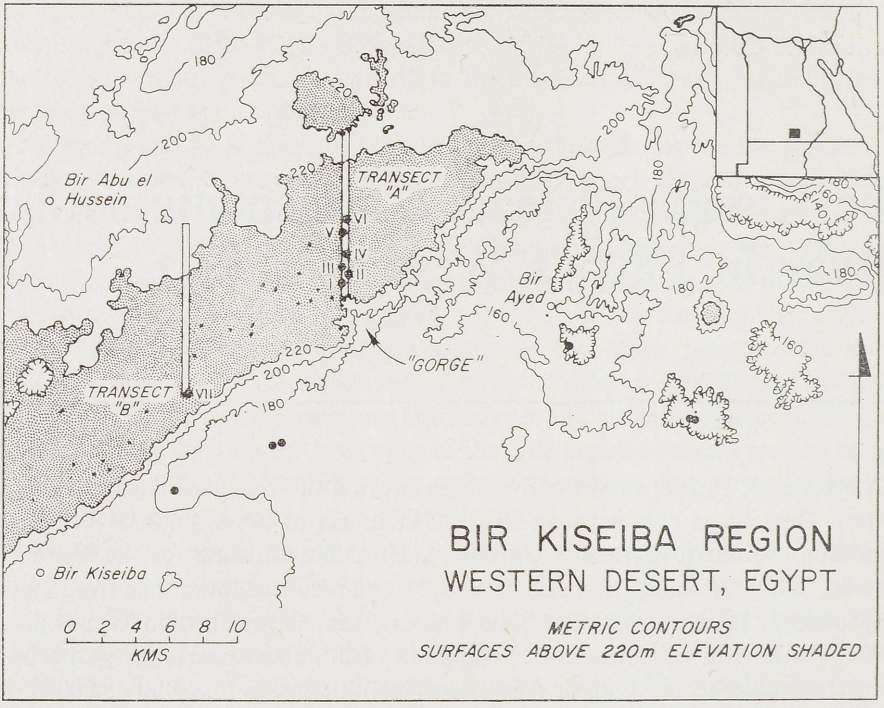

FIG. 1. Bir Kiseiba Region

on the plateau, their chronology, the typological and technological structure of their assemblages and, insofar as possible, their economic bases.

Data were collected in two transects, 10 km. in length and 250 m. wide, running north-south from the southern edge of the plateau (Cf. Fig. 1) [1]. All surface features within the transects were mapped and recorded. The transect locations were chosen to test a hypothesis concerning access to the plateau from the pediplain. If a single population had used both areas, we assumed that over a long period of time, a larger number of encampments would be found near places where the scarp slope of the plateau could be easily surmounted. If the plateau had ever been used for pasturage, this hypothesis would be reinforced by the need to find easy access for livestock. The contour lines in the area map show the location of a "gorge" in the scarp slope. The gradient of ascent here is significantly less than elsewhere along the escarpment. Transect "A" was located at the head of this gorge, near the scarp edge. Approximately ten kilometres west of this point (and near the scarp edge) a series of hearths and lithic scatters had been sampled in 1979 and were known to contain both datable

[1] Ten kilometers was chosen as a suitable length since further than ten km. to the north, the surface falls in elevation and has been severely dissected by erosion.

charcoal and stone tools. Transect "B" was laid out so that these features would be included. The scarp at this point is quite steep and diffcult to scale. If ease of access to the plateau was not a significant determinant of Neolithic camp location (as, for example, if the plateau population was different from that of the pediplain and had made no use of the basin), we assumed that the density and distribution of sites in both transects should be nearly identical.

The work of recording, description and sampling was carried out by two teams of three archaeologists, a mapping crew of three, plus six to eight experienced Egyptian workmen who searched the hearts to recover charcoal, for radiocarbon dating, as well as organic remains. Since some surface configurations of hearths and lithic cover 250,000 m^2 while others are 50 m^2 or less, the term "site" was not used in the descriptions. While the smaller configurations are probably "sites" insofar as they represent single episode camps, the larger are almost surely multicomponent aggregations from which deflation has obliterated the sedimentary context. The descriptive term "occurrence" was applied to groups of features located close to each other (whether in isolation or within a larger aggregation) – in practice, this meant within a circle of 20 - 30 m. diameter, since this was the practical limit for sketch mapping by tape and compass. In most cases, each "occurrence" in the survey area consisted of one to five features, whether hearths, lithic scatters, pottery, ostrich eggshell or bone fragments. For each occurrence field description included a sketch map (as noted above), number, diameter and height of hearths (as an index of deflation), size of lithic (or other) scatters, approximate proportion of various raw materials, number and approximate size of cores, number and class of tools, presence of organic remains (and suitability for collection). At selected occurrences, lithic samples were collected for analysis. Since the number of tools per scatter was usually small (30 or less), sampling was aimed first at providing a technological sample (debitáge) of at least 200 pieces; tools were included when present.

After completing the description, the survey team left a steel pin with a numbered tag at the origin point for the sketch map. A plane table map at 1 : 2,000 recorded the exact location of each pin. This procedure provided the most accurate and efficient use of mapping and survey personnel. Survey on the plateau was completed in a total of eleven days.

Analysis of the survey results is still in progress, yet some conclusions have already emerged. First, the density of sites differs between the two transects. Transect A, near the gorge, produced a total of 403 archeological features; Transect B, to the west, a total of 119. Second, despite density differences, the distribution of features was remarkably similar. Figure 2 shows the number of features recorded in each kilometer of the two transects. Note that in both cases, the majority of features occurred near the southern edge of the plateau. Deflation is severe on the plateau and it is unlikely that superficial masking of features to the north could account for this difference. Moreover, the condition and scattering of surface features does not differ from south to north.

With occasional exceptions, features tend to occur in aggregates of 20 to 100 hearths. These aggregates distinguish themselves by location, and have been termed "Localities". Figure 1 shows the distribution of these localities within the transects, designated by Roman numerals. A dropoff in the number of features and localities as one moves north or west from the gorge was observed not only within the transects,

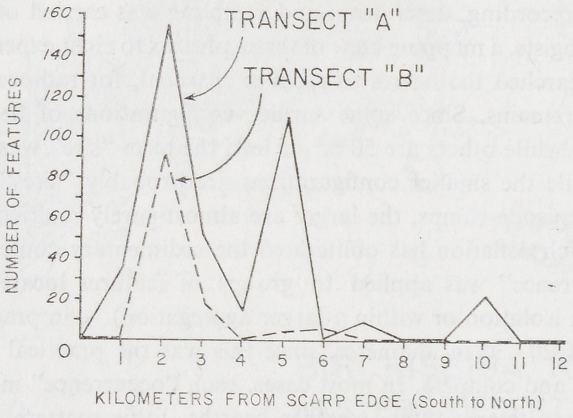

FIG. 2. Bir Kiseiba. Number of features recorded in Transect A and B

but also in a series of east-west sweeps by vehicle, connecting the transects. During the sweeps, localities were recorded on a topographic map (by odometer reading) and were sketch mapped to record approximate size and number of features. Two sweeps to the east of Transect A suggest a similar dropoff in size and number of features in this direction as well.

While the notion of differential access could account for the radial decrease in density as one moves away from the gorge, the higher density near the scarp edge is not as easily explained. Stratigraphic trenches, dug within the transects, showed slightly higher accumulation of silts nearer the scarp. While there is no bedding or induration of silts to indicate episodes of running or standing water, infiltration or sheetwash may have settled in topographic lows near the southern edge of the plateau, supporting heavier vegetation and perhaps a longer growing season than elsewhere on the plateau.

Technological studies of the lithic are not yet complete, but preliminary studies of the tools, grouped by class and locality, showed highest proportions of notches and denticulates, followed by retouched pieces; present but in lower frequencies were perforators (on flakes, shouldered, not backed) and endscrapers. Other classes of tools were only sporadically represented. Loglinear chisquare tests of counts for he classes named, by locality, showed no significant differences for localities I - IV. Differences for localities I - VI were significant at a rejection level of 0.05, but not att 0.01. Differences were significant at a level less than 0.005 when locality VII was

added to the test. Differences appear to be due in large measure to the proportion of notches and denticulates observed (very high in locality VII). There is, it appears, some tendency for localities near each other to resemble each other typologically. Whether this similarity is due to function or some other variable may be resolved by forthcoming technological studies.

Raw material analysis suggests nearly exclusive use of locally available chert nodules. Indeed, several flaking stations were recorded in which partially reduced nodules were surrounded by flakes – all apparently undisturbed since the flaking episode. Occasional flaking scatters consist of high quality flint available only from the Eocene plateau 30 km or more to the northeast. Two such scatters have been reconstructed. The reassembled nodules show flake decortification followed by production of blade blanks with a single platform, change orientation technology. As blade blanks are characteristic of the local Middle Neolithic but are rare in later phases, these cores may pertain to Middle Neolithic presence on the plateau. Reconstruction of several of the local chert cores is now under way and suggests a technology of unpatterned flake reduction.

Ceramics are rare and mostly undecorated. The few decorated examles appear to be of Late or Advanced type (Banks, 1980).

Faunal remains are few but include some identifiable classes now under study. Surface scatters of ostrich eggshell fragments are common while shells of the land snail *Zootecus insularis* occur in more than half of the hearths examined. The shells of another bird were found in two locations, but may not pertain to the Neolithic habitation of the plateau. Bone remains include birds, large and small mammals. On analogy with sites in the basin, these are likely to include *Gazella* sp. (cf. *dorcas*) and *Bos* sp. (cf. *taurus*) (Gautier, 1980).

While some ash or charcoal was found in perhaps 4% of the hearths examined, charcoal suitable for dating was found in only about 1% of the total. Two charcoal samples are now being processed by the SMU radiocarbon laboratory along with two further samples of ostrich eggshell.

The broad affinities of the plateau campsites seem to lie with the late end of the regional Neolithic spectrum. A cluster analysis comparing major tool classes in the plateau assemblages with those of 27 other Neolithic assemblages ranging from 9,500 to 5,000 B. P. placed them, without exception, among assemblages of Late or Advanced date. If the radiocarbon dates confirm the suggestions of the pottery and lithic typology, settlement on the Kiseiba Plateau must be explained in relation to a Late Neolithic pastoral economy based on cattle and caprovids, with domesticated wheat and barley cultivated in and around the playa basins (Wendorf and Schild, 1980). Since the Late-Advanced Neolithic is a phenomenon of the later half of an extended moist interval (c. 7,500 - 5,000 B. P.), the development of playa basins and their surrounding floral communities must have reached its maximum during this period. Pediplain sites of the period are larger than their predecessors and probably represent increased population as well as reoccupation of the localities.

The appearance of settlements on the plateau may betoken pressure on the resources of the pediplain, forcing seasonal use of marginal pasturage on the plateau (which must have provided the best of its Holocene resources during this period). Other possible explanations, such as a shift to more widely circulating settlement during the Late Neolithic, or the arrival of new populations seem less likely, but must be tested in light of further faunal, technological and radiocarbon evidence[2].

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