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POSTULATED LATE PREHISTORIC HUMAN POPULATION MOVEMENTS
IN THE CENTRAL PLAINS: A CRITICAL REVIEW*

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Hypotheses which concern human "migration" within and without the Central Subarea of the Great Plains during the Late Prehistoric period are examined. The popular notion that peoples from central Nebraska migrated to the Panhandle region of Texas-Oklahoma is shown to be suspect if not false. The idea that peoples inhabiting the Missouri River trench in Nebraska were slowly migrating northwesterly finds support. Finally, evidence concerning postulated migrations of ancestral Pawnee and Arikara into the Missouri trench in South Dakota is reviewed, with two hypotheses emerging.

† † †

INTRODUCTION

This paper will explore aspects of postulated movements of human populations within and from the Central Subarea of the Great Plains. The paper might have been more economically named "The Prehistory of Certain of the Northern Caddoan Peoples," for such do I believe the archeological remains to be discussed represent; however, since the time period under discussion is wholly prehistoric, no certain proof exists to establish the ethnic identity of the people responsible for the archeology interpreted here.

The problem under discussion is one of historical relationships between archeologically apparent peoples, and is therefore somewhat old fashioned in a day of "processual" archeology. The study is germane to current archeological interests when it is realized that process is virtually undetectable and certainly indecipherable in the absence of sound historical-developmental models. And who will be so crass as to suggest that "history" is itself not process? Human migration, when it occurs, is almost always a response to some external cause, sometimes political, but more often related in some intimate way to biological necessity; migration is, thus, a real factor to be dealt with regarding the evolution of populations.

The Northern Caddoans are those groups exclusive of the Caddo proper who speak a Caddoan language. This includes the historically visible Tawakoni-Waco, Wichita, Kitsai, South Band Pawnee (including three dialects), Skiri Pawnee, and Arikara (Parks, 1976). The speakers of these languages were distributed from Texas to South Dakota at the time of first contact with Europeans and a number of lines of evidence can be marshalled to suggest strongly that these peoples had been residents of the Plains for at least 2,000 years (Hughes, 1968). It is possible, I feel, to suggest that the archeologically visible groups discussed below were Northern Caddoans at various stages of development during their residence on the Plains. Further, I feel that the groups below should be understood as ancestors of the people known to history as "Pawnee" and "Arikara," since the archeological record and the linguistic and distributional data support one another. Again, however, it should be stressed that there is virtually no way of being certain, and that possible ethnic identifications will not affect the discussion of the archeology to follow.

MIGRATION HYPOTHESES

A number of migrations have been postulated for the Late Prehistoric period, approximately equivalent with the Central Plains Tradition and the Initial Horizon (or Variant) of the Coalescent Tradition: about 800 A.D. to 1500 A.D. (see Krause, 1969; Gradwohl, 1969; Lehmer, 1971; Ludwickson, 1975; and Steinacher, 1976 for discussions of taxonomy and dating of complexes mentioned). I invoked the restriction that only data and hypotheses related, by inference, to the prehistory of the Northern Caddoans directly (and particularly the Pawnee and Arikara) or their ancestors would be used. It is unlikely that other archeological manifestations will ever prove to have been lineal antecedents to the Pawnee and Arikara; however, although we can not *prove* that the Central Plains Tradition and the Initial Coalescent were ancestral

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Caddoans, no disproof has ever been formulated. The study of the archeological phenomena under discussion is likely to enlighten us regarding the means by which the Arikara and Pawnee arrived at their early historic territories: the Pawnee in east-central Nebraska, the Arikara in central and northern South Dakota. A migration or other phenomenon must be invoked to explain this distribution.

A number of other suggested late prehistoric migrations have been ignored here. These include the movements of the Oneota peoples (presumably speakers of the Dhegiha and Chiwere Siouan languages, notably the Omaha, Ponca, and Oto in Nebraska) and the Dismal River peoples (presumably Athabascan speakers). It has been suggested that the Mill Creek and Steed-Kisker complexes represent migrants from the heartland of Mississippian development near Cahokia (O'Brien, 1972, 1975, 1976; Henning, 1967). These, too, have not been used.

A division of the Central Plains Tradition into six spatial/temporal Phases (as that term is defined by Willey and Phillips, 1958) is proposed: the Upper Republican Phase, the Smoky Hill Phase, the Loup River Phase, the Nebraska Phase, and the St. Helena Phase. Sites of Central Plains Tradition affinity on the High Plains are distributed well west of the small villages typical of the Central Plains Tradition and must represent seasonal utilization of this area by Upper Republican and Loup River Phase peoples.

The Coalescent Tradition postdates the bulk of the Central Plains Tradition. The Anoka and Arzberger Phases are expressions of the earliest forms of the Coalescent and are found on the Niobrara and Ponca Creek in Nebraska and in the Big Bend area of South Dakota. These sites all probably fall within 1350-1450 A.D. The Lower Loup Phase of east-central Nebraska is a slightly evolved expression of the same Tradition and can be clearly linked to the Pawnee. The phase may have begun by 1500 A.D. and lasted until ca. 1775, when it is recognized as historic Pawnee.

A POSTULATED MIGRATION OF UPPER REPUBLICAN PEOPLES TO THE SOUTHERN PLAINS

It has been suggested that the Panhandle Aspect (Phase) peoples of the Oklahoma and Texas Panhandles originated in the Upper Republican complex of southwest Nebraska/northwest Kansas, from which they emigrated in response to a drought in the eleventh, twelfth, or even thirteenth century (Baerreis and Bryson, 1965; Bryson, Baerreis, and Wendland, 1970). The idea of an Upper Republican to Panhandle migration probably began with Alex Krieger (1946) but was first stated unequivocally by Robert Bell several years before Bryson and Baerreis gave the idea a wide audience (Bell, 1961). Bell later recanted (Bell, 1973). At the time parallels were first drawn, the Upper Republican sites in Nebraska

were perhaps the best known of Plains Village manifestations and comparisons were inevitable. The similarities between complexes are at a rather general level: similar jar forms and cord-marked exterior vessel surface, similar bone and stone tool assemblages, and broad similarities in architecture. These are shared by, and have even become part of, the definition of all of the early Plains Village Tradition sites in the Southern and Central Plains. It is asserted that these similarities are of a nature which suggests a common origin at a relatively distant time, or better, that they were the result of parallel evolution from closely related Plains Woodland Tradition progenitors rather than being the result of migration.

Upon close examination, the parallels between the Upper Republican and Panhandle Phases cannot be supported in detail. Even the Oklahoma sites conceded to be most like Upper Republican (Stamper, Roy Smith, Two Sisters, McGrath) have very few authentic Upper Republican traits, if any (Lintz, 1976).

There have been several alternative suggestions regarding the origin of the Panhandle Phase which provide a more parsimonious explanation than the Upper Republican migration. First, it has been suggested that the Panhandle Phase emerged on the Chaquagua Plateau of southeastern Colorado; this has been termed the Apishipa "focus" (Campbell, 1966). Lintz feels that this theory requires the Apishipa people to borrow too much of the characteristic Panhandle Phase material culture inventory for this to be a likely hypothesis (Lintz, 1976).

The second hypothesis would have the Panhandle Phase peoples migrating from the Caddoan heartland area (i.e., the Caddo proper) in east Texas and Louisiana in post-Gibson Aspect times. This is another suggestion by Robert Bell (1961) but can be traced back to Warren K. Moorehead (1931). This hypothesis is effectively refuted by recent radiocarbon dates from the Washita River Phase (another expression of the Plains Villagers on the Southern Plains), which is supposed to have been transitional into the Panhandle Phase but is known now to have been contemporary (Hofmeier, 1978, and from the Caddoan area, where the "ancestral" sites are also known to have been too young.

The third hypothesis was suggested first by Jack Hughes and recently by Chris Lintz. It states that Panhandle Phase origins are to be sought in a preceding Plains Woodland complex (Hughes, 1962, 1968; Lintz, 1974, 1976). The resemblances between early Panhandle Phase materials and Plains Woodland are strong enough to suggest that this is currently the most promising suggestion.

There are also better suggestions regarding the immediate fate of the Upper Republican peoples. I feel that these peoples moved northward and slightly eastward into the Loup River drainage basin, peopling the lower courses of most of the

mainstems and tributaries. Areas along Wood River and Shell Creek also seem to have been settled. A detailed model for this movement will be suggested a little later in this paper.

The Baerreis/Bryson/Wendland-Upper-Republican-to-Panhandle migration hypothesis has received a great deal of attention and is offered as a main supporting argument for what they term the Pacific I climatic episode. If the migration hypothesis is considered disproven, and it is by most workers intimate with the archeological complexes involved, then what effect does that have on the climatic model? First, a great deal of evidence has been accumulated which can certainly be used to fill the gap created by the refuted migration, but it must be remembered that this hypothesis was a major foundation concerning the character and timing of the Pacific I episode.

The entire climatic change model can probably be attacked on historical-climatological grounds, something that is beyond my expertise. I do feel, however, that an examination of recent evidence offered in support of this hypothesis is useful in obtaining some insights into the abuse of methodology.

The original attempt to provide validation for the migration hypothesis consisted of a series of radiocarbon dates from Panhandle Phase sites which set a temporal range for the Phase and established that it did in fact post-date the span of Upper Republican Phase dates then available. This, of course, would allow the migration hypothesis to be valid, since the proposed ancestral manifestation was shown to be older than the proposed descendant, but it does not *prove* the hypothesis, as has often been asserted.

The strongest evidence supporting the migration hypothesis seemed to come from an analysis of faunal debris from Panhandle Phase sites done by Lathel Duffield (1970). The study has severe problems, however. Data adduced by Duffield to affirm the Baerreis/Bryson/Wendland hypothesis are contained in his Table 35 (Duffield, 1970) which presents "Relative Frequencies of Deer, Antelope and Bison" from the sites analyzed. The sites were believed to be bracketed by radiocarbon dates from ca. A.D. 1240±70 to 1400±90 and included the five levels from the Canyon City Club Cave, a stratified site well south of the other sites discussed by Duffield (Panhandle Plains Historical Museum number A251). The stratigraphic levels of the cave give Table 35 its structure and orientation, the other sites being fitted in on the basis of the frequency of Bison remains. On the basis of this table, Duffield states:

After the seemingly sudden onset of a moist regime (Level 4, Canyon City Club Cave), the area gradually became drier until about 1300 A.D. when there was a rapid increase in drought conditions. . . . The trend continued until the area was drier than today. . . .

(1970)

The levels from the Canyon City Club Cave were subsequently dated by radiocarbon (Bender, Bryson, and Baerreis, 1971). These data reveal that Level 1 dated to around 1600 A.D., Level 2 to about 1270 A.D.; Level 3 produced two dates, suggesting that either 690±55 or 1330±45 A.D. was accurate. The critical Level 4, dated A.D. 300±55 to A.D. 700±60, and two of the three dates from Level 5 suggested dates in the pre-Christian era. The data from the cave cannot be used to structure the faunal analysis, and, therefore, the climatic change suggested cannot be supported. It should be noted that a prairie vole was found in Level 4, which suggests that there was more precipitation during the time represented by that level, even though it was not within the time range of the Panhandle Phase (Duffield's identification, 1970).

Again, the empirical "hands on" evidence for the climatic change evaporates. I do not mean to suggest that there was not a somewhat different climatic regime in the Plains 700 years ago; indeed, recent work has suggested that global temperatures were higher (Lamb, 1972; Eddy, 1977). Rather, I question the expression of the climatic regime in the Plains. Climatic change is the most frequently cited cause of human migration in the literature of the Plains (beginning with Wedel, 1940, and perhaps earlier). A close examination of the empirical data upon which such migration hypotheses are based usually results in the formulation of alternative explanations at least as viable as the climatic hypothesis. The two issues of climatic change and human migration are in fact separate points of contention, and the validity of climatic change and the validity of human migrations must each be established independently before the results are compared. Archeologists are vitally concerned with climatic change, since it probably was a major factor in the dispersal of peoples on the Plains, but this concern must not bias discussion in favor of climatic change hypotheses over other equally promising hypotheses. Finally, archeological data sources reflecting climatic change must be used with the greatest caution in building climatic change models, since both natural and human behavioral filters operate to confound many of the favorite data sources (the faunal analysis example above, for instance).

MOVEMENT OF PEOPLES INTO THE LOUP RIVER DRAINAGE BASIN

I have suggested previously (1975) that the old term "Upper Republican" be reaffirmed in its usage and that Krause's "Classic Republican" Phase be dropped from usage. The reasons for this are made explicit in the earlier paper. It should be noted that the way archeological data are classified (lumped, split, etc.) affects our perception of dynamic interplay of selective forces upon the people whose debris is being studied. In this paper I would like to suggest that there is insufficient cause to separate what Krause called the "Solomon River" Phase from the Upper Republican Phase. The Solomon River Phase appears to be merely an early expression of the Upper Republican Phase.

It is possible, I believe, to subdivide the Upper Republican Phase into three temporal subphases (I, II, III)—a model based on an as yet unpublished study of the Shipman site, 25WT7—in the Guide Rock locality, where all three subphases are believed to be expressed (Ludwickson, MSa). The model is based as well on other work in the Wood River valley (Ludwickson, MSc), and (somewhat indirectly) the Fullerton locality (Ludwickson, MSb).

Subphase I comprises the earliest Upper Republican settlements dated between A.D. 800 and 1000. Settlements occur in the more easterly localities (Glen Elder and Guide Rock) and can be distinguished from the following subphases primarily in the low frequency of rim decoration. This is essentially Krause's "Solomon River" Phase. Krause has suggested that settlements of up to ten lodges occur in the Glen Elder locality and that such settlements are typical of the Solomon River Phase (1969, 1970). The largest village, in fact, contained but five lodges, well within the range for later Upper Republican villages. Lippincott has recently analyzed most of the material from the Glen Elder locality (Lippincott, 1976). The thrust of much of Lippincott's analysis was toward reducing the apparent contrasts between the Glen Elder locality and the other Upper Republican localities.

Subphase II was virtually identical in most respects to what has been said above. There were more decorated jars manufactured, however, and this can be seen as part of a clinal change throughout Upper Republican Phase development. Upper Republican settlements spread as far west as Red Willow Creek (perhaps farther) and into the Loup River basin. Settlement and community patterns remained unchanged, as did architecture and aspects of lithic and bone tool technology. Subsistence orientation seems to have remained stable. This appears to have been a period of radiation throughout available river valleys. A time span of A.D. 1000-1250 can be suggested.

Subphase III is marked by an increase in decoration of rims of vessels to over 90 percent and a retraction of territory to the Guide Rock locality (that, at least, is the only place where it has thus far been identified). A dating of after 1250 A.D. can be suggested.

The prehistoric behaviors expressed archeologically as the three temporal subphases are felt to reflect the ebb and flow of Upper Republican Phase peoples through time. The few and easterly sites of the earliest subphase, contrasted with the more abundant and widely distributed sites of Subphase II, are consistent with a model of population increase and adaptive radiation. Sites in the Wood River valley with a high frequency of plain rimsherds appear closely related to Subphase I sites; the temporal range appears to be later based on the one dated component, falling within the time of Subphase II. Perhaps some populations moved northward earlier than we suspect with a relatively conservative ceramic industry. Subphase III

is again restricted to the easterly localities, and only a single component has been identified. This is felt to reflect a general abandonment of the Republican River valley by Upper Republican Phase peoples who were moving northward into the Loup River basin, where intense contacts with Nebraska and Smoky Hill Phase peoples and peoples from northwest Iowa and central South Dakota (Mill Creek and Anderson/Grand Detour Phase peoples) were responsible for changing these peoples into what is recognized as the Loup River Phase. Subphase III Upper Republican peoples appear to have been relatively conservative and apparently content with receiving stimulation from without but remaining relatively unaffected.

INTERNAL EXPANSION OF THE NEBRASKA PHASE PEOPLES

Blakeslee and Caldwell have provided a strong case for the movement of Nebraska Phase peoples in a northwesterly direction along the course of the Missouri River in eastern Nebraska (northwest Missouri/northeast Kansas to Thurston County, Nebraska), and this argument has been made in the earliest work on the villages of eastern Nebraska (Blakeslee and Caldwell, n.d.; Sterns, 1915). There is a strong positive correlation between geographic location of sites from southeast to northwest (sites from along the Missouri River were kept separate from sites from tributary streams), radiocarbon dates, and temporally sensitive pottery frequencies. There are, in addition, geographically correlated trends in other material culture categories and architecture which add strength to the implication that a movement of peoples is the most parsimonious explanation of the phenomenon. The conclusion is a strong case for a migration from the northeast Kansas/northwest Missouri area to northeast Nebraska during the course of the Late Prehistoric. This much seems secure, but the Nebraska Phase was part of a network or sequence of related phases.

The early end of the Nebraska Phase sequence has been sought in two quarters. First, Waldo Wedel's study of the Steed-Kisker site near Kansas City, Missouri, suggested that culture type had direct input into the origin of the Nebraska Phase (Wedel, 1943). This thesis has found extreme expression in the works of Patricia O'Brien and F. A. Calabrese. O'Brien's recent syntheses of the Steed-Kisker complex have argued that these peoples were migrants from the Mississippian ceremonial center at Cahokia (O'Brien, 1976). Calabrese (1969) has taken this suggestion to its logical conclusion by reasoning that the Steed-Kisker complex was transformed into the "Doniphan Phase" (a now disused synonym for the early segment of the Nebraska Phase continuum). The second position, however, first enunciated by Wedel, suggests that the Nebraska Phase evolved from what he named the Smoky Hill Aspect (here *Phase*; Wedel, 1959). The Smoky Hill Phase was seen by Wedel as a source for the Upper Republican Phase also, but this idea is effectively blocked by the research in the Glen Elder Reservoir, Kansas. Terry Steinacher has recently provided a detailed critical analysis of these hypotheses.

(Steinacher, 1976) and states that although there are some traits of Mississippian derivation in the Nebraska Phase, its origin is to be sought among the Smoky Hill peoples of north-central Kansas. Steinacher suggests also that Smoky Hill peoples contributed to the composition of the populations we call the Loup River Phase.

The late end of the Nebraska Phase continuum is also clouded in debate. The Nebraska Phase appears, somehow, to be intimately related to what has been called the "St. Helena Phase" (focus, complex, etc.). This phase of northeast Nebraska seems to bear the same sort of relationship to the Nebraska Phase that the Loup River Phase bears to the Upper Republican. It is relatively late in time (fifteenth century A.D.) and thus seems to reflect a continuation of the northwesterly drift of Nebraska Phase populations, but the peoples' lifeways appear to have been altered by innovations from without the Central Plains or brought in by recent immigrants:

The Saint Helena sites that appear to be earliest, those in Dixon County (Nebraska), are basically the same as sites in the Nebraska Phase. The later sites differ from the Nebraska Phase primarily in the extent to which they have been influenced by the Middle Missouri and Oneota Traditions. Putting this another way, the Saint Helena sites exhibit a progression from Central Plains Tradition to very early Coalescent Tradition, a progression that is also present but less marked in the Nebraska Phase.

(Blakeslee, 1978)

The subsequent history of these peoples is confused by the remarkable transformation in material culture, and probably in social and economic lifeways as well, which we recognize as the "Coalescent Tradition."

POPULATION MOVEMENTS DURING THE EARLY COALESCENT TRADITION

The final stage of the Late Prehistoric to be dealt with here is represented by sites of the Coalescent Tradition (Lehmer, 1954, 1971; Lehmer and Caldwell, 1966). The area between Chamberlain and Pierre in South Dakota contains a number of sites representing components of the "Initial Horizon" of this Tradition. Five of these have received study sufficient to allow statements regarding the character of this complex (The Talking Crow Site: Smith, 1978; the Crow Creek Site: Kivett and Jensen, 1976; the Black Partizan Site: Caldwell, 1966; the Farm School Site: Neumann, 1961; and the Arzberger Site: Spaulding, 1956). One component has also been excavated in Boyd County, Nebraska, which seems to be near or at the southern limit of the complex: the Lynch Site (Witty, 1962). Caldwell has suggested that this complex be termed the Arzberger Phase (Caldwell, 1966); Witty has suggested the Anoka Phase (focus); and Smith, the Campbell Creek Phase. Today, most students of the complex would suggest that the Anoka Phase be used to refer to the southern

sites (Lynch), while most of the northern sites can be grouped into the Arzberger Phase (Kivett and Jensen, 1976).

Two settlement patterns exist within the Northern Phase: unfortified hamlets or solitary lodges, and the larger, heavily fortified villages. In both cases the lodge structures found show strong ties with Central Plains Tradition structures, and the artifact inventory includes Central Plains, Middle Missouri, and new forms (see Lehmer, 1971). The Lynch site is in a defensible hilltop situation but is not fortified, nor are the other Anoka Phase sites in Boyd County. The material culture is also more conservatively Central Plains-like.

The people responsible for these sites clearly represent an intrusion of Central Plains populations into the area of central South Dakota. The time of the intrusion can be fixed with radiocarbon dates. The Arzberger Site has been dated in the fifteenth century (M-1126: A.D. 1450±150, and M-1126a: A.D. 1529±200), the Lynch Site in the same approximate time by both radiocarbon and dendrochronology (M-842: A.D. 1700±150 [rejected]; dendro dates: Lodge 2, A.D. 1473; Lodge 3, A.D. 1485; Lodge 1, A.D. 1508, 1510, 1511); the Crow Creek Site is also in the same period (M-1079a: A.D. 1390±150; dendro date: A.D. 1441), and the Black Partizan Site (dendro date: A.D. 1468±5 years) is also of the same time. All radiocarbon dates are stated at the ±2 sigma range of early Michigan dates (Crane and Griffen, 1963). The Arzberger and Anoka Phases are fifteenth or early sixteenth century phenomena and thus post-date most Central Plains Tradition sites in Nebraska.

It is suggested that the Initial Coalescent phases are the archeological expressions of the first intrusion of the ancestors of the Arikara into the lands that group occupied during the early historic period (ca. 1700 A.D. onward). It is clear from early records that there was a diversity of dialects among Caddoan speakers during the early historic; thus the Arikara, as described by the early nineteenth-century observers, were the peoples who remained after the effects of European diseases and nomad marauding. Other Caddoan peoples certainly were present in these South Dakota villages, probably including groups and individuals of the Pawnee and Skiri (or their ancestral stocks). This issue of heterogeneity of ethnically/linguistically Caddoan peoples should be separated from the larger issue of broad patterns in the development of the Northern Caddoans. The question resolves itself around whether or not the fourteenth to sixteenth-century ancestors of the Pawnee migrated into the Big Bend region of central South Dakota, where the Arikara split away and remained, the Pawnee returning to Nebraska. As an alternative to this, I must suggest that a case can be made that this split occurred earlier, and that the Pawnee remained in Nebraska throughout this period.

It has been suggested that the Central Plains was almost or entirely abandoned during some of this time (Wedel, 1940,

1961), the people going to South Dakota where the Arikara split from the Pawnee. The Pawnee were certainly capable of making such a trek in the course of a single season for the purpose of trading or hunting (Weltfish, 1965). There is, thus, no mechanical reason to reject such a postulated emigration, and the sites exist in South Dakota which could support such a contention. However, I believe that there is sufficient reason to suggest that the Pawnee never abandoned the Loup River basin for a long-term hegira with the Arikara.

First, there is no mechanical reason to reject an *in situ* transformation of the material culture typical of the Loup River Phase into that of the succeeding Lower Loup Phase (ca. 1500-1750 A.D.), regardless of the fact that the two are very different. The ease of travel between Nebraska and South Dakota to the Pawnee has been noted above, and visitation for the purpose of trade or warfare with the Arikara could have provided sufficient motivation for the importation of new ideas from the Big Bend region, a locus of intense change. Second, there is no reason to believe that the Central Plains were entirely abandoned. Sites exist which might be typical of just such a transitional situation; 25BF210, for instance, on the Wood River, in which check-stamped body sherds and rims resembling Hughes Beveled have been excavated (see Bleed, 1977). The postulated late component at the Shipman Site mentioned earlier may also represent this late Central Plains Tradition transitional period. Some aspects of settlement and subsistence patterns suggest that a reorientation of the Loup River Phase adaptation had already occurred in the direction of the historic Pawnee pattern, with a growing reliance upon Bison as prey. The growth of village size and situation of villages in ridge-top topography are identical to that found in both the Initial Coalescent and Lower Loup Phase (Ludwickson, 1978). These observations hold true also for the Saint Helena Phase.

Finally, in the lowest levels of Lower Loup midden mounds, a pottery assemblage reminiscent of Loup River Phase has been found which is an integral part of the earliest segment of the Lower Loup ceramic sequence (Grange, 1968).

REFERENCES

- Baerreis, D., and R. Bryson. 1965. Climatic episodes and the dating of the Mississippian cultures. *Wisconsin Archeologist*, 46:203-220.
- Bell, R. E. 1961. Relationships between the Caddoan area and the Plains. *Bulletin of the Texas Archeological Society*, 31:53-60.
- _____. 1973. The Washita River Focus on the Southern Plains. In D. W. Lathrap and J. Douglas (eds.), *Variations in anthropology: essays in honor of John C. McGregor*. Urbana, Illinois Archeological Survey: 171-187.
- Bender, M. M., R. A. Bryson, and D. A. Baerreis. 1971. University of Wisconsin radiocarbon dates IX. *Radiocarbon*, 13:475-486.
- Blakeslee, D. J. 1978. Assessing the Central Plains tradition in eastern Nebraska: content and outcome. In D. J. Blakeslee (ed.), *The Central Plains tradition: internal development and external relationships*. Iowa State Archeological Report, 11:134-143.
- Blakeslee, D. J., and W. Caldwell. MS. The Nebraska phase. Department of Anthropology, University of Nebraska-Lincoln.
- Bleed, P. 1976(?). *A report on 1973 archeological investigations in the Wood River Valley, Buffalo County, Nebraska*. Report to National Park Service in partial fulfillment of a contract.
- Bryson, R., D. A. Baerreis, and W. M. Wendland. 1970. The character of late-glacial and post-glacial climatic changes. In *Pleistocene and Recent environments of the Central Great Plains*. Department of Geology. University of Kansas Special Publication, 3:53-74.
- Calabrese, F. A. MS., 1969. Doniphan phase origins. Columbia, University of Missouri.
- Caldwell, W. W. 1966. The Black Partizan Site. *Publications in Salvage Archeology*, 2. Lincoln, The Smithsonian Institution.
- Campbell, R. G. MS., 1969. Prehistoric Panhandle culture on the Chaquaqua Plateau, southeast Colorado. Ph.D. Dissertation, Boulder, University of Colorado.
- Crane, H. R., and J. B. Griffen. 1963. University of Michigan radiocarbon dates VIII. *Radiocarbon*, 5:228-253.
- Duffield, L. 1970. Some Panhandle Aspect sites: their vertebrates and paleoecology. Ph.D. Dissertation, Madison, University of Wisconsin.
- Eddy, J. A. 1976. The Maunder minimum. *Science*, 192 (4245):1189-1202.
- Gradwohl, D. M. 1969. Prehistoric villages in eastern Nebraska. Lincoln, *Nebraska State Historical Society Publications in Anthropology*, 4.
- Grange, R. T. 1968. Pawnee and Lower Loup pottery. Lincoln, *Nebraska State Historical Society Publications in Anthropology*, 3.
- Henning, D. R. 1967. Mississippian influences on the eastern Plains border: an evaluation. *Plains Anthropologist*, 12(36):184-194.

- Hofman, J. 1978. The development and northern relationships of two archeological phases in the Southern Plains subarea. In D. J. Blakeslee (ed.), *The Central Plains tradition: internal development and external relationships*. *Iowa State Archeologist Report*, 11:6-35.
- Hughes, J. T. 1962. Lake Creek: a Woodland site in the Texas Panhandle. *Bulletin of the Texas Archeological Society*, 32:55-74.
- _____. MS., 1968. Prehistory of the Caddoan-speaking tribes. Ph.D. Dissertation, New York, Columbia University.
- Kivett, M. F., and R. E. Jensen. 1976. Archeological investigations at the Crow Creek Site (39BF11), Fort Randall Reservoir Area, South Dakota. Lincoln, *Nebraska State Historical Society Publications in Anthropology*, 7.
- Krause, R. A. 1969. Correlation of phases in Central Plains prehistory. In W. R. Wood (ed.), *Two house sites in the Central Plains: an experiment in archeology*. *Plains Anthropologist Memoir*, 6(14-44):82-96.
- _____. 1970. Aspects of adaptation among Upper Republican subsistence cultivators. In *Pleistocene and Recent environments of the Central Great Plains*. Department of Geology, University of Kansas Special Publication, 3:103-115.
- Krieger, A. D. 1946. Culture complexes and chronology in northern Texas. Publication 4640. Austin, The University of Texas.
- Lamb, H. H. 1972. *Climate: present, past and future*. London, Methuen, 1:1-613.
- Lehmer, D. J. 1954. Archeological investigations in the Oahe Dam area, South Dakota, 1950-51. River Basin Survey Paper, 7. Washington, D.C., *Bureau of American Ethnology. Bulletin*, 158.
- _____. 1971. Introduction to Middle Missouri archeology. Washington, National Park Service. *Anthropological Papers*, 1.
- Lehmer, D. J., and W. Caldwell. 1966. Horizon and tradition in the Northern Plains. *American Antiquity*, 31:511-516.
- Lintz, C. R. 1974. A re-analysis of the Custer Focus and its relationship to the Plains Village Horizon in Oklahoma. Norman, University of Oklahoma. *Papers in Anthropology*, 15(2).
- _____. 1976. The McGrath Site of the Panhandle aspect. *Bulletin*, 25:1-111.
- Lippincott, K. MS., 1976. Settlement ecology of Solomon River Upper Republican sites in north-central Kansas. Ph.D. Dissertation, Columbia, University of Missouri.
- Ludwickson, J. MS., 1975. The Loup River Phase and the origins of Pawnee culture. M.A. Thesis, University of Nebraska-Lincoln.
- _____. 1978. Central Plains tradition settlements in the Loup River basin: the Loup River Phase. In D. J. Blakeslee (ed.), *The Central Plains tradition: internal development and external relationships*. *Iowa State Archeologist Report*, 11:94-108.
- _____. MS(a). The Shipman Site: an Upper Republican Phase village in Webster County, Nebraska.
- _____. MS(b). Loup River phase villages in the Fullerton locality, Nance County, Nebraska.
- _____. MS(c). Description of artifacts from the archeological Thompson, South Dakota. *Plains Anthropologist*, 6(13): culture. Lincoln, Nebraska. Paper delivered at 30th Annual Plains Conference.
- Moorehead, W. K. 1931. *Archeology of the Arkansas River valley*. Andover, Massachusetts, Phillips Academy.
- Neuman, R. W. 1961. Salvage archeology at a site near Fort Thompson, South Dakota. *Plains Anthropologist*. 6-13: 189-200.
- O'Brien, P. J. 1972. A preliminary review of Steed-Kisker culture. Paper delivered at 30th Annual Plains Conference, Lincoln, Nebraska.
- _____. 1975. A seriation of Steed-Kisker ceramics. Paper delivered at the 39th Annual Meeting of the Society for American Archeology. Washington, D.C.
- _____. 1978. Steed-Sisker and Mississippian influences on the Central Plains. In D. J. Blakeslee (ed.), *The Central Plains tradition: internal development and external relationships*. *Iowa State Archeologist Report*, 11:67-80.
- Parks, D. R. 1976. Historical relationships of the Caddoan languages. Paper delivered at the Caddoan Origins Symposium, Washington, D.C., 39th Annual Meeting of the American Anthropological Association.
- Smith, C. S. 1978. The Talking Crow Site: a multicomponent earthlodge village in the Big Bend region, South Dakota. Lawrence, *University of Kansas Publications in Anthropology*, 9.
- Spaulding, A. C. 1956. The Arzberger Site, Hughes County, South Dakota. Ann Arbor, University of Michigan. *Oc-*

casional Contributions of the Museum of Anthropology,
16.

- Steinacher, T. L. MS., 1976. The Smoky Hill phase and its role in the Central Plains tradition. M.A. Thesis, University of Nebraska-Lincoln.
- Sterns, F. H. MS., 1915. The archeology of eastern Nebraska, with special reference to the culture of the rectangular earth lodges. Ph.D. Dissertation, Cambridge, Harvard University. *Smithsonian Miscellaneous Collections* 100: 291-352.
- Wedel, W. R. 1940. Culture sequences in the Central Great Plains. Washington, D.C. *Smithsonian Miscellaneous Collections* 100: 291-352.
- _____. 1943. Archeological investigations in Platte and Clay counties, Missouri. Washington, D.C., *United States National Museum Bulletin*, 183.
- _____. 1959. An introduction to Kansas archeology. Washington, D.C., *Bureau of American Ethnology Bulletin*, 174.
- _____. 1961. *Prehistoric man on the Great Plains*. Norman, University of Oklahoma Press.
- Weltfish, G. 1965. *The lost universe*. New York, Basic Books.
- Willey, G., and P. Phillips. 1958. *Method and theory in American archeology*. Chicago, University of Chicago Press.
- Witty, T. MS., 1962. The Anoka Focus. M.A. Thesis, University of Nebraska-Lincoln.