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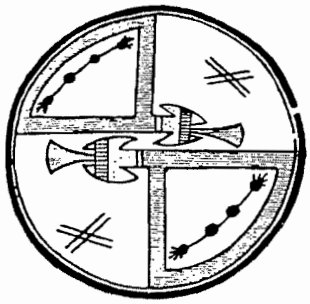
THE PROTOHISTORIC PERIOD IN THE NORTH AMERICAN SOUTHWEST, AD 1450 - 1700

DAVID R. WILCOX AND W. BRUCE MASSE,
EDITORS



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The logo for ANTHROPOLOGICAL RESEARCH PAPER No. 24 is a plan view of a Shape 1 Matsaki Polychrome bowl. Matsaki Polychrome was the predominant type of Zuni pottery during the pre-contact period, and continued to be used in abundance throughout the seventeenth century (see Smith, Woodbury, and Woodbury 1966).

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THE ENTRY OF ATHAPASKANS INTO THE AMERICAN SOUTHWEST: THE PROBLEM TODAY

David R. Wilcox
Arizona State University

INTRODUCTION

The entry of Athapaskan speakers into the American Southwest is one of the few cases of undisputed migration in American archaeology. This fact has long been cited to support a wide variety of theoretical interpretations of changes in Southwestern settlement systems. The effect on Plains archaeology has been less discussed, but there too the potential theoretical implications are significant. A paucity of data has long relegated these problems to the realm of speculation and conjecture. Today, however, advances in archaeology and ethnohistory, together with a great expansion of research, provide us with an opportunity to test alternative hypotheses and to assign relative probabilities to them. While such an exercise cannot resolve the various controversies involved, it can serve to reveal their structure and can identify what appear to be the most fruitful avenues for further research.

Controversies about the significance of Athapaskan entry to the Southwest began in 1852 when William W. Turner (1852; Harrington 1940: 508), on the basis of vocabulary comparisons, announced the discovery of a connection between the Apachean languages and those of the Canadian Athapaskans. To explain the isolation of one group from the other, one or more migrations must have occurred sometime in the past (see Mangalam and Schwarzweller 1970 for a useful definition of migration). After some initial uncertainty about the directionality of the movement (Morgan 1877a) that it went from north to south has now been solidly established by a broad array of linguistic, ethnological, and physical evidence (Boas 1897; Sapir 1915, 1936; Harrington 1940; Hoijer 1971; C. Turner 1971). The routes and times of entry, however, have been the focus of continuing debate. Four contending routes (Plains border, High Plains, Rocky Mountains, or Intermontane) and three times of entry to the Southwest (ca. A.D. 800-1000, 1200-1400, or post-Spanish) have been suggested, with various combinations, as possible alternatives. Processes of population aggregation or regional abandonment have been linked to several of these possibilities. On the basis of currently available evidence it is possible to show that a High Plains route of entry is most supported and a pre-Spanish date of entry is unlikely. The implications these developments have for new research on the theoretical significance of Athapaskan entry to the Southwest need to be explored.

This paper is a review of the controversies involving the entry of Athapaskans into the American Southwest. Its principal objectives are, first, to clarify the structure and current status of the debate concerning routes and the timing of entry; second, to propose a model to

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account for how the Athapaskans moved from the north into the Southwest; and, third, to discuss the theoretical implications the model has for a more general understanding of Southwestern and Plains prehistory. To understand the Southern Athapaskan 'migration' requires the construction of a cultural historical framework linking the Southwest to the Plains and the Arctic North to the arid and semi-arid South. Unlike Paleo-Indian migrations (e.g., Haynes 1967; Krantz 1977), the Southern Athapaskans did not pass through completely unoccupied areas. The question of how they were able eventually to enter and spread into the Southwest is of great interest in the general study of migration in non-state-level societies. How they adapted to new natural and social environments and what their affect on indigenous adaptive systems was, particularly as these interactions affected processes of sedentism and socio-political change, are of equal interest. On the Plains, it is suggested that the entry and persistence of the Athapaskans created a competitive situation that led first to an intensification on communal bison hunting and later to the development of sedentary village life along the Middle Missouri. In the Southwest, where a formerly pan-Southwestern interaction system was experiencing a gradual process of shrinkage and inward collapse (Wilcox 1979a; see below), it is suggested that the Athapaskans were accepted as hinterland residents by the Pueblos because they helped to counteract the economic decline of the large sedentary centers. Following the forced intrusion of the Spanish colony, the Pueblos' territorial claims and their ability to enforce them were severely constrained, permitting the Athapaskans to expand further into unoccupied hinterland and into wilderness areas throughout the Southwest. Several implications of this historical model for anthropological conceptions of Pueblo territoriality and polity are discussed in the concluding section.

HISTORICAL REVIEW

Nomads were required in Lewis Henry Morgan's (1877b) theories of ancient society to account for the defensive character of Puebloan architecture and to place the Puebelos in a "Middle Status of Barbarism." Early interpretations of Pueblo architectural development (Bandelier 1884; Cushing 1886) followed Morgan's lead, and Cosmos Mindeleff (1900) later identified these nomads as Athapaskans.

Opinions differed, however, as to when the nomads arrived. From an analysis of Spanish sources and the Navaho Origin Myth, Hodge (1895) suggested that the Navaho entered Northwestern New Mexico from the Plains no earlier than 1485 (the year of Cortez's birth: Gómara 1966: 7). Hodge (1895:234) went on to suggest that other Apache groups spread south from this base after 1540, when the Spaniards first entered the Southwest in force. Although J. W. Fewkes (1900:598) found this dating compatible with the theory that nomads caused the aggregation of the Pueblos into large "communal houses," P. E. Goddard (1907) rejected Hodge's method and conclusions. Like Matthews (1897), Bourke (1890),

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and Farrand (1904), Goddard favored an entry date several centuries before the Spaniards' arrival.

Most early opinion favored a Plains border route (Schoolcraft 1855: 202; Gatschet, cited in Thomas 1898:175; Franciscan Fathers 1910:30), but the archaeologist Cyrus Thomas (1907) pointed out that an intermontane route from the Northern Plains via Utah was also possible. A. V. Kidder's (1962) synthesis of Southwestern archaeology repeated Morgan's conclusions about nomads, but now the cultural sequence rested on the sounder basis of stratigraphic superposition and pottery seriation. Opposed to environmentalist explanations, Kidder, too, saw Athapaskan nomads forcing the aggregation of Pueblo populations, and he agreed with Nels Nelson that the later abandonment of large areas was probably also due to the same cause (Kidder 1962:340-341). A presumed pottery cross-dating of Pueblo Bonito with the Mexican center of Tula (Kidder 1962:351; but see Holien 1975), later to be confirmed by tree-ring dates (Douglass 1935), showed that these aggregations and abandonments occurred long before Hodge's postulated entry date of 1485. Maintenance of the "enemy-peoples hypotheses" was now necessarily linked to the hypothesis of an early entry date for Athapaskans.

The development of regional sequences of cultural phases, begun by Kidder and Nelson, provided an objective framework independent of linguistic classifications in which the questions of Athapaskan migration could be studied. The 1930s and 1940s also saw the linking of history with archaeology, the "direct-historical approach" of Duncan Strong (1940), and of history with anthropology, ethnohistory (e.g., Lewis 1942). Simultaneously, new kinds of empirical data were adduced in support of three different entry routes and three proposed dates of entry. The problem of Athapaskan entry to the Southwest began to move from the realm of pure speculation to that of hypothesis testing.

A Plains route gained credence when the historian A. B. Thomas (1932) demonstrated that Apacheans occupied large portions of the Western Plains in the early Spanish period (ca. A.D. 1600-1750). Additional support came when the application of Strong's methods led to the identification of the Dismal River Culture (Wedel 1935) as Plains Apache of ca. 1700 (Hill and Metcalf 1941; Champe 1946; see also Secoy 1951). On the other hand, with the discovery of several new archaeological complexes in the Southwest, evidence was presented in favor of an intermontane or Rocky Mountain route (Amsden 1932). Many "northern" traits in Steward's (1938) Promontory Point Culture in Northern Utah, the Huschers' (1942, 1943) Western Colorado sites, and particularly the association of pointed-bottomed pottery in Mera's (1938) Largo culture in Northwestern New Mexico--together with certain ethnological data--convinced many workers that an intermontane route was a distinct possibility (VanValkenburg 1938; Spencer 1947:27; Underhill 1953:38-39; Riley 1954). Mera (1935:35), however, inferred an entry from the northeast via the Plains of Eastern Colorado.

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The pointed-bottomed pottery found by Mera is highly unusual in the Southwest, and one of the few other types that resemble it, Dinetah Utility, comes from the same area. The question thus arose, was there a historical relationship between the two types? Since this area is also the traditional Navaho Dinetah (Harrington 1940:514-515), where many Navaho sites supposed to date to the Pueblo Revolt period were already known (Kidder 1920), it is not surprising that Mera's finds stimulated a great flurry of Navaho archaeology (Mera 1938; Malcom 1939; Keur 1941, 1944; Hurt 1942; Farmer 1942, 1946; Hall 1944a). Analysis of dendrochronological specimens from Mera's Largo Culture, and also from identical archaeological sites in the Gallina tributary of the Chama River (Hibben 1938), placed that culture in the twelfth and thirteenth centuries A.D. The earliest dates from a Navaho hogan, however, were A.D. 1491-1541, recorded by Hall (1944b:100, 1951) from one of three hogans at a site in Gobernador Canyon. With the dating of the Largo-Gallina and early Navaho cultures so divergent, an appeal had to be made to non-chronological data if a connection between them was still to be argued. Hall (1944a) did this on the basis of pottery, stockaded and burned sites, and certain other artifactual data. He argued that nomads, presumably Athapaskan speakers, entered the Southwest and drove out the Pueblos of the Rosa culture (who he had shown were the predecessors of the Largo-Gallina). The indicated time of entry was ca. A.D. 800-1000, a date already suggested by Diamond Jenness (1940) on the basis of other considerations.

These arguments appeared to confirm a test implication from one of Kidder's "enemy-peoples" hypotheses. Since it was believed the earliest Pueblo aggregation was in Chaco Canyon after A.D. 900, perhaps the Athapaskans did contribute to this aggregation after forcing the Rosa people to flee (Hall 1944a:103; Gladwin 1957). This hypothesis was immediately challenged by a strong alternative. Inter-Pueblo strife, not the raids of nomads, could account for the defensive character of large Pueblos and the destruction of several sites (Linton 1944; Ellis 1951; Farmer 1957). Aggregation, furthermore, occurred as early as the mid-eighth century on Alkali Ridge (Brew 1946) and during the ninth century in Chaco Canyon (Robinson, Harrill, and Warren 1974).

The hypothesis that enemy peoples caused abandonment of large portions of the Pueblo Southwest had also been countered by a strong argument. Discovery that a period of great drought and arroyo cutting was coincident with regional abandonment led to the hypothesis that these environmental factors were responsible for the population movements (Douglass 1935; Bryan 1941). If enemy people were important factors, Kirk Bryan (1941), following Morris (1939:41-44), asked why there was no evidence for destruction in the abandoned San Juan villages? In a brilliant reply, Eric Reed (1944) argued that guerilla warfare by nomads could have forced an orderly retreat, and he asked in turn why the abandoned areas were not re-occupied by Pueblos after the drought had passed and the arroyes had filled again? This question has still to be answered adequately (but see Schoenwetter and Dittert 1968).

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If Athapaskans were to be among those preventing re-occupation, Reed had to counter Hodge's argument for a late entry date. Like Goddard (1907), he challenged the veracity of the Navaho Origin Myth as history (Reed 1945). In the long run, however, unsupported by any shred of positive evidence, Reed's argument leaves the probability of a late entry unchanged (Schroeder 1952, 1954).

Several attempts have been made to formulate a compromise on the entry route problem by integrating several of the alternatives. One hypothesis sought support from Hoijer's (156) classification of Southern Athapaskan languages into two groups, eastern and western (see also Harrington 1940). A population of Athapaskans from Canada could have split at South Pass in Wyoming and come further south both via an intermontane route to become the Navaho and via the Plains to become the Plains Apache (Hyde 1959; compare Thomas 1907). A different compromise was proposed by Melvin Aikens (1967). His hypothesis had the Athapaskans entering Utah ca. A.D. 500 from the Northwestern Plains to become the people of the Fremont culture. The Promontory Point culture of Steward was also treated as Fremont, and ca. A.D. 1600 these people all returned to the Plains to become the Apache of the Dismal River culture (Aikens 1967; compare Champe 1949; J. Gunnerson 1956; Schlesier 1972).

THE PRESENT SITUATION

Nearly two decades ago, in an excellent discussion of Navaho culture history, Evon Vogt (1961:285) declared: ". . . as matters now stand, there is not a shred of solid archaeological evidence indicating which of a number of routes the Athapascans may have followed in their migration from Canada to the Southwest nor the time (or times) that the movement occurred." Today this statement is no longer as emphatically true. Progress in the last several years has virtually eliminated support for an intermontane or Rocky Mountain route, has confirmed a late entry date, and has opened up exciting new possibilities for tracing the Athapaskan migrations from Canada in greater detail than ever before envisioned. Elaboration and extension of regional sequences with improved dating and analytical techniques, settlement system and ecological analysis, and a finer integration of ethnohistory and archaeology provide the basis for these developments.

Data on the Fremont culture has more than tripled in the last decade and has led to a demonstration that both Promontory Point and Fremont are indigenous developments in Utah and that Steward's Promontory Point culture is merely a late regional manifestation of Fremont culture (Marwitt 1971; Aikens 1972; but see Madsen and Berry 1975). Of the four pottery types cited by the Huschers (1943) as Athapaskan, one is now identified as Fremont (Wormington 1955), one is Ute (Buckles 1968), one appears to be Dismal River (Gunnerson 1960), too late to be evidence of early migration, and the last is "Late Woodland" pottery attributed by most workers to Eastern Plains intrusion or influence (Irwin and Irwin 1959; Wood 1971). Belief that at least some of the

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Huschers' pottery is evidence of Athapaskan intrusion continues, however (Husted and Mallory 1967; Frison 1973), though it is seen as evidence for a Plains-border entry route (see also Hewes 1948:56).

Extensive archaeological work in the Navajo Reservoir District in Northwestern New Mexico turned up no solid evidence of Athapaskan occupancy prior to ca. A.D. 1700 (Eddy 1966:505-508) although a hypothetical "Dinetah Phase" has been suggested for the period A.D. 1550-1700 (Dittert, Hester, and Eddy 1961:262). Intensive dendrochronological studies made for the Navaho Land Claims case also revealed no well-dated hogans or other Navaho sites prior to A.D. 1700 (Stokes and Smiley 1963-1969). Additional data has been provided by work in linguistics and ethnography. Hoijer (1971), in a re-interpretation of lexico-statistical data, now considers that, except for Kiowa-Apache, all of the other Apacheans spoke dialects of a single language. This language, he claims, is most closely related to the Athapaskan languages of Canada. A trait-list analysis by Hester (1962) showed no Great Basin traits in the early Navaho trait list that could not have been derived from a Pueblo or Plains source.

These data suggest that hypotheses favoring Athapaskan entry via a Rocky Mountain or an intermontane route must be rejected. All of the evidence which once swayed opinion in favor of these hypotheses can now be better interpreted in different ways. It is my belief that until new data are produced to revive them, the hypothesis of a Plains entry route can be accepted as a sound foundation on which to base further research. Opler (1975) has recently opposed this view, but he has offered no new support for an alternative. (See, however, Perry 1980).[1]

It must be stressed that acceptance of a Plains route does not, in and of itself, rule out any of the hypotheses about time of entry. What it does do is provide a new framework in which more detailed alternatives may be tested. Did the Athapaskans come south along the foothills of the eastern Rockies (Franciscan Fathers 1910:30) or via the High Plains (Aschmann 1970; D. Gunnerson 1972)? When and how did they first enter the Plains and how long did they remain there before crossing the Rio Grande into the Southwest? Did they cross from the east, as the Perrillo Apache did shortly before 1630 (Hodge, Hammond, and Rey 1945: 85), or did some enter west of Taos from Southeastern Colorado (Mera 1935:35; Dittert, Hester, and Eddy 1961:247)? How early did Athapaskans arrive at an area on the Plains or Western Plains border that is contiguous to the Southwest? This latter question is an especially important issue because if Athapaskans were not in an area contiguous to the Southwest until the 1500s, hypotheses based on a pre-Spanish entry date must also explain how and why they crossed an intervening and probably inhabited area.

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THE PLAINS MIGRATION

Logically, to enter the Southwest via the Plains, the Athapaskans could have done it rapidly or slowly, early or late. The model constructed here maintains that, having entered the Northwestern Plains at least 1500 years ago, the Athapaskans took up residence in the Black Hills area for many centuries before extending their range into the Central and Southern Plains ca. A.D. 1450-1500, when they finally occupied an area contiguous to the Southwest. The argument is divided into three parts. First, Athapaskan presence on the Southern Plains in the late sixteenth century is discussed, establishing an historical "baseline" for the model. Then the intrusion onto the Northwestern Plains is analyzed and several implications of the Black Hills hypothesis are explored. Finally, the timing of the expansion onto the Central and Southern Plains is explained.

THE HISTORIC BASELINE

Apache bison hunters were first specifically identified on the Plains east of Northern New Mexico in 1601 by the Spanish colonizer Oñate (D. Gunnerson 1956:358-359). At that time they were not the semi-sedentary agriculturalists reflected in the Dismal River archaeological remains a century later (J. Gunnerson 1960; Gunnerson and Gunnerson 1971:7-11; Schlesier 1972). Spanish slave raids against Plains Apache in the mid-1600s apparently preceded the development of the horse-warfare complex that the Apache later employed effectively against their old friends the Pawnee and Wichita to supply the Spanish slave markets (Secoy 1953; Schlesier 1972). Their success led to an expansion of their territory eastward toward the one hundredth meridian where agriculture first became feasible. They may have been taught agricultural techniques by Pueblo refugees who fled from Spanish law to find refuge among the Plains Apache (Schlesier 1972; compare Opler 1971). Alternatively, the Apache may have long been familiar with the agricultural techniques of the Middle Missouri (Wood 1974; see below) and may have applied them in Western Kansas and Nebraska. If significant differences exist between the agriculture of the Pueblos and the Middle Missourians, it may be possible to test these alternatives.

Before these dramatic changes occurred, the Plains Apache of ca. A.D. 1600 were dog nomads, hunting the bison, and trading with sedentary neighbors to east and west. Oñate called them "Vaquero Apache." To the south were their enemies, the Plains Jumano, who were also bison hunters and traders. Before the end of the century the Apache had absorbed these Jumano (Kelley 1952:384).

When Coronado ventured onto the Southern Plains in 1541, he also observed two "nations" of bison hunters, the Querecho north of the Candian River and their enemy, the Teya, to the south (Bolton 1949:245-256). Who were the Querecho and the Teya? Many authors share the

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opinion that the Querecho were ancestral to the Vaquero Apache (Bandelier 1892:119; Harrington 1940:512; Bolton 1949:24; D. Gunnerson 1956: 353; Wedel 1961:104). The coincidence in the descriptions less than 60 years apart of culture, territory, and an adversary relation with people to the south does appear to make this a parsimonous interpretation. By the same criteria, however, the Teya should be considered ancestral to the Plains Jumano, as Bolton (1949:260) conjectured.

Several authors (Harrington 1940:512; D. Gunnerson 1956:351-352, 362) have presented linguistic evidence to support the conclusion that the Teya, too, were Apacheans. Two facts make this identification doubtful. First, the linguistic evidence has not been evaluated against the fact that the Apache later absorbed the Plains Jumano. Could not the new group have retained several old names? Secondly, a comparison of the descriptions of the Querecho and Teya shows that in spite of many close similarities, there were also several differences, one of which supports a Plains Jumano-Teya identification. The Querecho and the Teya were described both individually and collectively. When they were described individually, both were reported to be non-cultivators heavily dependent on the bison, to live in skin tents supported by poles in a tipi fashion, and to use dogs to transport poles, skin coverings, and other belongings (Hammond and Rey 1940:186, 235, 239, 301). The Querecho were skilled in the use of sign language, while the Teya made no pottery, painted (or tattooed) their bodies and faces, and traded with the Pueblos (Hammond and Rey 1940:186, 235, 238, 258). When they were described collectively, they reportedly traded with sedentary peoples to their east and west, painted themselves, were skilled in sign language, worshiped the sun, cooked meat in pots, and chipped flint with their teeth (Hammond and Rey 1940:261-262, 292-293). The close similarity between the Querecho and Teya cultures is clearly displayed in these descriptions, yet two important differences may be emphasized. While both are said to have used cooking pots, only the Teya are explicitly said not to make their own. Whether the Querecho made pottery is moot. Second, while the Teya body decoration stimulated detailed discussion by several Spanish chroniclers, that of the Querecho received only brief mention as a general trait shared by both groups. The latter difference appears to be significant, since a distinctive cultural feature of the Plains Jumano was facial and body painting--or tatooing (Scholes and Mera 1940), thus closely matching a trait specifically ascribed to the Teya. To summarize, it appears that the case for the Teya being Plains Jumano is stronger than that for them being Apacheans. In either case, Apacheans were certainly living on the Southern Plains in 1601 (though there is still no archaeological confirmation), and it is highly likely they were there in 1541 too.

THE BLACK HILLS HYPOTHESIS

The historic territories of the Canadian Athapaskans bordered near the Northwestern Plains, the area from Southern Alberta and Saskatchewan to Southern Wyoming and South Dakota that must have been crossed before

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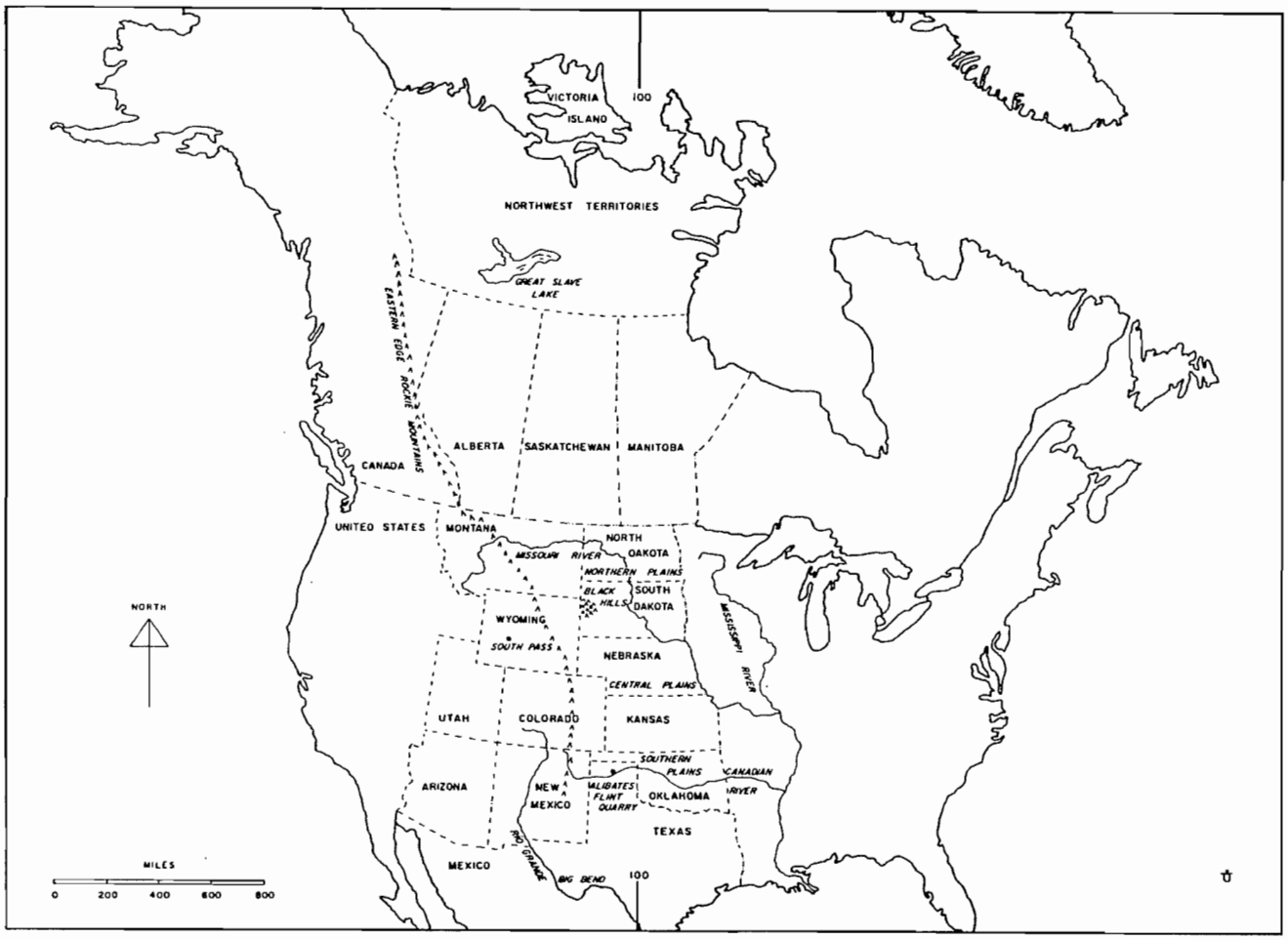

FIGURE 1. The Far West.

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Athapaskans took up their sixteenth and seventeenth century range on the Central and Southern Plains. Analysis of historical sources shows quite clearly that during the 1600s and until ca. 1750, the Southern Athapaskans occupied territories on the Plains from the Black Hills to Texas (Secoy 1953; J. Gunnerson 1960; Wedel 1961; Schlesier 1972). Dolores Gunnerson (1971:8) has recently suggested that droughts in the fifteenth century forced bison herds to seek refuge in the Northern Plains and this ". . . lured some Athabascans into becoming committed plainsmen." This hypothesis implies that Athapaskans adapted to life on the Plains in a remarkably short time, and it leaves unexplained why other occupants of the Northern Plains, such as the Blackfoot (Lewis 1942:7-15; Hewes 1948), neither impeded their movement nor competed for the niche they filled to the south. Wedel (1961:302-303) has drawn attention to the typical Plains character of the Querecho and Teya cultures and has emphasized the great time depth through which these cultures have existed. In this light, an alternative hypothesis requires exploration: The Querecho-Athapaskans entered the Central and Southern Plains from the adjacent Northwestern Plains where they had long since become adapted to Plains life.

An hypothesis similar to this has been put forward by Thomas Kehoe (1966:839). The Avonlea complex of Northern Montana and Southern Alberta and Saskatchewan, Kehoe suggests, represents an intrusion of Athapaskan speakers from further north who adapted their culture to a life of Plains bison hunting in the early centuries A.D. (Kehoe 1973; Kehoe and Kehoe 1968). Avonlea projectile points are small, delicately chipped arrowpoints that contrast sharply with the indigenous, heavy dart points (Kehoe 1966; Wormington and Forbis 1965:194). Avonlea points mark the first appearance of the bow and arrow on the Plains and this technology may help to explain how they were able to successfully compete with indigenous Plains populations (Krantz 1977). Avonlea bison-kill components, dated ca. A.D. 100-300 to 650, are contemporaneous in this region with the Besant culture, which contains indigenously-derived dart points and is apparently related to Middle Woodland components in North Dakota and Southwestern Manitoba (Kehoe and Kehoe 1968; Reeves 1970; Joyes 1970; Neuman 1967). Although late Avonlea points are typologically similar to the arrowpoints that replace them by ca. A.D. 700, several students of the Canadian Plains doubt that Avonlea knappers made the later Prairie side-notched points (Wormington and Forbis 1965:194), and others suggest further that the Besant knappers were responsible (Kehoe and Kehoe 1968:30; Reeves 1970). Sites are known in Montana and Wyoming from the period A.D. 650-900, however, that contain "Avonlea-like" points (Husted 1969:93-95; Frison 1970:32; Kehoe 1972). This evidence is the principal basis for the hypotheses of Kehoe (1966:839) and Husted (1969:93-95) that the Avonlea populations shifted southward into Southern Montana and Northeastern Wyoming in the period A.D. 650-900. How they were able to do this is unexplained. One possibility is that competition between Avonlea and indigenous groups for bison may have resulted in warfare relations with some groups and alliances with others. Perhaps such alliances facilitated the southern

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shift, with the Athapaskans absorbing their allies as they did so often later in the Southwest.

Once the Avonlea shifted south, perhaps displaced by the late Besant peoples (Kehoe 1972:81), I suggest that the center of their new territory was the Black Hills, where they remained until A.D. 1450-1500 when they extended their range southward. This is a testable hypothesis. One line of inquiry would be to initiate detailed technological analyses and comparisons of whole assemblages from the Canadian Plains and Montana, Eastern Wyoming, and the Western Dakotas in an effort to identify meaningful systemic boundaries and to trace their history. In this way, the continuity of the Avonlea may be traced. Similarly, the antecedants of the Dismal River culture should be found in the same Black Hills area. Other ways to test this hypothesis should also be explored.

Arctic Connections

Before discussing several important implications of the Black Hills hypothesis, it may be useful first to consider how close is the linkage of the Avonlea complex with Northern Athapaskan culture and then to contrast it with several alternative hypotheses. The Kehoes (1968) have not linked Avonlea to a specific antecedant cultural assemblage further north. Reeves (1970) has suggested that Avonlea derives from the earlier but indigenous Pelican Lake culture. Empirically, the issue is presently moot (Syms 1977). If only to provoke more interest in this problem, I suggest that Avonlea may be linked to a cultural tradition antecedant to certain Northern Athapaskan cultures. The Northern Athapaskans are part of a larger linguistic grouping called "Na-Dene" (Dumond 1969). Without attempting to discuss the general problems of Na-dene prehistory, nor the place of Athapaskan speakers in it (see Dumond 1969, 1977; Irving 1962; Anderson 1970; Workman 1978; Turner 1979), a more ad hoc discussion should serve the purpose here. A recent survey by William Noble (1971) north of Great Slave Lake in the Northwest Territories led him to the definition of the Canadian Tundra tradition that he thinks derives from the Buchanan complex on Victoria Island ca. 1230-930 B.C. (Taylor 1964, 1967). He shows that his tradition develops through four complexes into the Taltheilei Shale tradition ca. 200 B.C. This latter tradition in turn develops through ten more complexes into historic Northern Athapaskan culture of ca. A.D. 1830. The dating is based on beach ridge sequences, seriation, cross-dating, and a few C-14 dates. Projectile points illustrated for the Rocknest Lake and Amora River complexes, dating ca. 1230-700 B.C., in measurements, shape, and appearance look like good candidates for antecedant Avonlea points (compare Noble 1971:fig. 5, a-c, fig. 6, a,b with Kehoe 1966). Connections between the Great Slave Lake region and the Plains are as yet unknown, but it appears reasonable at this time to suggest as a working hypothesis that the Avonlea complex, like the Athapaskan Taltheilei Shale tradition, may derive from Noble's Canadian Tundra tradition. If borne out by new

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survey work, excavation, and analysis, Kehoe's hypothesis that the Avonlea complex represents an intrusion of Athapaskan speakers into the Northern Plains would be confirmed.[2]

Alternatives and Implications

The Black Hills are a strategically located mountainous habitat on the southern end of the Northwestern Plains midway between the Rocky Mountains and the Middle Missouri. Early in the eighteenth century the Black Hills were known to be the territory of the Gattaka, who are well identified as a Plains Apache group later called the Kiowa Apache (Gunnerson and Gunnerson 1971:13-27; Schlesier 1972:107-109). The objections of Opler (1975; see also Perry 1980) to a Plains entry route are partially answered by a Black Hills hypothesis since it is the association with mountains on which he places great importance. The Black Hills hypothesis also fits well with the linguistic inferences of Dyen and Aberle (1974) that the proto-Southern Athapaskans remained together for a long period after they separated from other Athapaskan groups but before they differentiated into separate dialect groups in the Southern Plains and the Southwest. This is not true for D. Gunnerson's (1971) hypothesis. If it could be shown that the linguistic shifts noted in Southern Athapaskan are a function of contacts with groups on the Northern Plains, the Black Hills hypothesis would be partially confirmed.

A general thesis in keeping with the Black Hills hypothesis is that the Plains border route, so often hypothesized as the most likely, is in fact less likely than a High Plains one because the Plains border was much more densely occupied throughout prehistory (Lewis 1942; Wedel 1961; Buckles 1968; Wright 1978; but see Perry 1980). The alternative is to argue that Athapaskans occupied part of this border zone and have been displaced only relatively recently. Gordon Hewes (1948) suggested that either Athapaskans dominated all of the Northern High Plains and border, or at least the Rocky Mountain border zone. The latter idea has recently been taken up by Gary Wright (1978), who is primarily concerned to show that Shoshoni migrated into the Plains only as late as the fifteenth century. Prior to that, however, Wright sees a continuity of occupation in Central and Western Wyoming and Southeastern Idaho from the period of the Altithermal; Athapaskans, he suggests, are the people involved. Several facts weaken this hypothesis. First, he fails to account for the linguistic data emphasized by Dyen and Aberle (1974:202, 210, 213). Second, implicit in Wright's (1978) discussion is an assumption that his problem area is culturally homogeneous until the fifteenth century. To the contrary, it is, as he (1978:128) indicates, environmentally diverse; it may easily have been culturally differentiated for many millenia. If so, Wright's argument that Jackson Hole and Southeastern Idaho were not occupied by Shoshoni until the nineteenth century may be correct, but his inference of a late Shoshoni migration elsewhere in Wyoming is not supported. Although rejected by Wright (1978:131), if Shoshoni, Athapaskan, and Salish groups are ruled out, a hypothesis that appears to fit the facts is that the ancestors of the Kiowa occupied the

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Jackson-Hole-Southeastern Idaho area until the middle seventeenth century when they began to shift into the Plains. Jelinek's (1967) hypothesis, cited favorably by Wright (1978:131), that the Kiowa developed from groups on the Middle Pecos River (in New Mexico) fails to explain the great linguistic divergence of Tanoan and Kiowa. Nor is it apparent why no early mention of Kiowa can be found in Spanish documents. In fact, the Middle Pecos bison hunters more likely became the Teya-Plains Jumano. Nevertheless, much more detailed reconstructions of adaptive systems along the Plains border, as Wright (1978) recommends, are needed before the question of Athapaskan migration via the Plains is finally resolved.

If only to stimulate research, it may be useful to consider several important implications of the Black Hills hypothesis. The timing of the hypothetical shift of Athapaskans into the Black Hills is also the period when sedentary agricultural village life began on the Middle Missouri (Lehmer (1971). Pacific coast shells in several of the earlier villages (Lehmer 1971:99) are evidence for a trans-Pacific exchange system linking the Middle Missouri with the Great Basin and beyond. The Black Hills Athapaskans would have been intermediaries in this system. A suggestion of Ewers (1968) that such exchanges generally involved an "intensification" on agriculture in the villages and on bison procurement on the Plains is supported by the great increase of communal bison-kill sites during the Late Prehistoric period (Mulloy 1958; Frison 1978). Wood (1974) has postulated that such exchanges occurred throughout the Late Prehistoric, but his model implies a rather static equilibrium. To the contrary, establishment of such exchanges may have been a significant factor in the emergence of full sedentism along the Middle Missouri.

Initially, competition for bison between Athapaskans and indigenous Plains groups may have led to warfare, selecting for larger groups sizes and more communal bison hunting. Allies among neighboring groups would have had strategic value and the increased dependability of resources brought about by such contacts may have made riverine environments less marginal for sedentary life. The advantages of the bow and arrow over the atlatl and dart (Frison 1978:223-224) include military ones, and this factor may account for the relatively rapid spread of bow and arrow technology on the Plains following the appearance of the Avonlea complex. As the Middle Missouri villagers intensified agricultural production, their relations with plainsmen and other neighboring groups should have changed. Attention to these changes may lead to better explanations for the appearance of village aggregation, fortified settlements, and the expansion of the Crow into the Northern Plains.

Range Expansion into the Central and Southern Plains

When did Athapaskans first occupy a position on the Plains contiguous to the Southwest? Even if these populations held a territory in

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the southern end of the Northwestern Plains, Eastern Colorado would still have separated them from the Southwest. While there may have been cultural contacts and a certain amount of gene flow, current opinion holds that Eastern Colorado was inhabited by non-Athapaskans and then was uninhabitable until after A.D. 1450 (Wedel 1961; Barerreis and Bryson 1965). Cultural sequences in Eastern Colorado from the Woodland through the Upper Republican cultures appear to be related most closely with complexes to the east in Kansas, Nebraska, or Oklahoma and Texas (Withers 1954; Wedel 1961; Wood 1971; Lintz 1978). The Upper Republican occupation apparently receded eastward after ca. A.D. 1250 or so (Breternitz 1969; Wedel 1970), or it moved southward (Baerreis and Bryson 1965). This abandonment of riverine areas in the Western Central Plains has been taken as evidence that a wedge of drought conditions was pushed eastward across the Central Plains ca. A.D. 1200-1450 by strong westerly winds (Baerreis and Bryson 1965; Bryson, Baerreis and Wendland 1970). This change in wind currents is thought to have improved conditions on the Southern Plains--and such improvement is evidenced by a sudden, widespread appearance of bison bone in archaeological sites on or along the Southern Plains (Jelinek 1967:155-159; Dillehay 1974) and by the flourescence of the Panhandle-aspect cultures ca. A.D. 1200-1450+ (Krieger 1946; Baerreis and Bryson 1966; Lintz 1978). It is only with a return of better conditions ca. A.D. 1450-1550 that large bison herds again filled the Central High Plains and the Black Hills Athapaskans were able to expand into a now unoccupied territory from their base in the Northwestern Plains (compare D. Gunnerson 1956, 1972). Another factor in their expansion at this time may have been the movement of early Crow groups into Montana (Frison 1970:32), thus displacing the Athapaskans from some of their hunting ranges. There is also some indication that bison density on the Northwestern Plains was relatively low in this period (Reher 1978), which perhaps should be expected if the Central Plains were refilling with bison.

At about the same time Upper Republican groups were coalescing into the sedentary agricultural Lower Loup focus in Central Nebraska, in Central Kansas the Great Bend aspect was apparently incorporating Panhandle aspect people and others (Wedel 1961, 1968, 1970). While trade had already begun between Panhandle-aspect villages and the Pueblo towns (Krieger 1946; Baerreis and Bryson 1966), much archaeological evidence confirms a marked increase in trade between Pueblos and the Great Bend aspect villages (D. Gunnerson; Terry and Terry 1961; Wedel 1970). The Athapaskans may well have acted as middlemen in this expanding exchange network. In fact, this may be another factor in their expansion southward, particularly since it was virtually impossible to winter out on the Plains. They solved this problem by arranging to winter with the sedentary groups.

Dolores Gunnerson (1956), in an excellent paper, has shown how archaeological and ethnohistorical data may be combined to support this hypothesis. At Pecos Pueblo in trash middens dating ca. A.D 1550, there is a great increase in the incidence of Plains-related artifacts (such as stone end-scrapers and certain bone tools), including artifacts made

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from Alibates agatized dolomite. The quarries for this stone are located in the Texas Panhandle near the Canadian River, an area formerly controlled by Panhandle aspect people until ca. A.D. 1450 (Krieger 1946: 17-74). This area was also the boundary zone between the Querecho and Teya bison hunters when Coronado entered the area in 1541 (Hammond and Ray 1940). Gunnerson (1956, 1972) argues that it is not until ca. A.D. 1525 that Athapaskans entered the Southern Plains and came into possession of the Alibates quarries. The increased incidence of Alibates 'flint' and other Plains tools at Pecos is explained by the trading these bison hunters did with the Pueblos. They brought those tools with them, not to trade, but to use and discard while they spent the winter there (D. Gunnerson 1956:350-351). A similar hypothesis may also explain the marked increase of heavy skin-working tools about the same time in the proto-Pawnee Lower Loup focus of Central Nebraska (D. Gunnerson 1972). Together, these data document the beginning of the Querecho and Teya cultural pattern described by Coronado (Hammond and Rey 1940). The enmity of the Querecho and Teya apparently was a product of competition between the intrusive Athapaskans and indigenous Southern Plains bison hunters for the niche newly opened up in the late fifteenth century. Before this there is no substantial basis for inferring the Athapaskans were living in an area contiguous to the Southwest.

ENTERING THE SOUTHWEST

Just as no support for a pre-Spanish entry date for Athapaskans living in the Southwest is available in Plains prehistory, neither is there any support in archaeological data from the Southwest. Extensive dendrochronological surveying of Navaho hogans and related sites on all projects to date has not turned up any cutting dates prior to the Spanish period (Stokes and Smiley 1963-1969; Robinson, Harrill, and Warren 1974). When critical standards are applied to interpret the archaeological meaning of the dates (Smiley 1951:9-13; Dean 1978), the earliest well-dated Navaho site known was built in Largo Canyon in the 1690s. A hogan was apparently built in A.D. 1690 and immediately adjacent to it a publito was built in 1694 (Wilson and Warren 1974).[3] In general, dates from all sites in the Largo-Gobernador region cluster in the early 1700s, not before (Carlson 1965; Robinson et al 1974). The three famous dates that Hall (1951) reported, A.D. 1491-1541, were not cutting dates, and although they all came from one hogan, they did not form a tight cluster. The specimens are now lost (Robinson 1974:3). It is not clear, therefore, what these dates may mean; they may be deadwood incorporated into a hogan at a much later time than the dates suggest.

The post-1700 clustering of dates from early Navaho hogans has led Brugge (1968) to suggest that hogans were not invented until ca. A.D. 1700. Yet Oñate clearly records Apaches west of the Rio Grande a hundred years earlier, in 1598, and both Benavides (Hodge, Hammond and Rey 1945:86-87) and Zárate Salmerón (Lummis 1900:183) identified Navaho populations north of Jemez and northwest of the Tewa towns in the late

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1620s. Coronado, however, recorded no Querecho or any other probable Apache groups living west of the Rio Grande, and when he passed through the modern Western Apache area of Arizona he reported it was a desplob-lado, an uninhabited area (Hodge 1895). Querecho were first reported living in the Southwest (near Acoma) in 1583 (Hammond and Rey 1966:224). Where, then, were the Apache living in the Southwest between 1583 and 1690 and how may their habitation sites be identified? If Southwestern Apache sites in the seventeenth century have not been identified, when we know they were there, how can we deny that Apaches may have been in the area long before the Spanish period? The Plains data discussed above provide some reassurance, but then too, early Plains Apache sites have yet to be identified either. Negative evidence alone is not sufficient to resolve these issues.

What is needed is a model of testable hypotheses explaining how the Athapaskans first came to inhabit areas of the Southwest, where they settled, how they lived, and what then happened to them and their culture. Such a model is suggested here. How well it fits with three of the earliest documented cases of Athapaskans living in the Southwest is then discussed and evaluated. The implications of the model for an understanding of Pueblo society and polity at contact are briefly considered in the concluding section.

HOW ATHAPASKANS ENTERED THE SOUTHWEST

The importance of trade to the Querechos (D. Gunnerson 1972:6) suggests that initial contact between them and the Pueblos was largely based on a network of cautiously amicable social and economic arrangements. The plainsmen wintered near their patron-clients, trading bison products for maize and cotton goods (Hammond and Rey 1940:261, 293). Some of these campsites (but probably from a later period) have recently been identified near Pecos Pueblo (Gunnerson and Gunnerson 1970). As a working model, I suggest that some of these winter visitors decided to settle permanently and so made new arrangements with various of the Pueblos to reside in nearby mountain hinterland areas and to trade the products of hunting, gathering, and collecting for Pueblo agricultural and manufactured goods. This model is an alternative to the widely accepted assumption that the Athapaskans were able to freely invade new territories quite independently of Pueblo sanction (Hodge 1895). Homer Aschmann (1970), for example, argues that "Apache expansion was really an Unterwanderung, the poorest people seeking ecologic niches that the established residents had neglected because of their unattractiveness." To the contrary, the earliest movement of Apacheans into the Southwest was into territorial domains recognized by the Pueblos; any movement into those areas would have necessitated arrangements with the Pueblos. It is only after the establishment of the Spanish colony disrupted Pueblo society and polity that the Apaches moved farther afield into wilderness areas beyond the effective reach of Spanish and Pueblo authority. The Navaho, the Querecho near Acoma, and the Apache de Xila near Senecu are among the earliest Apache groups reported living in the

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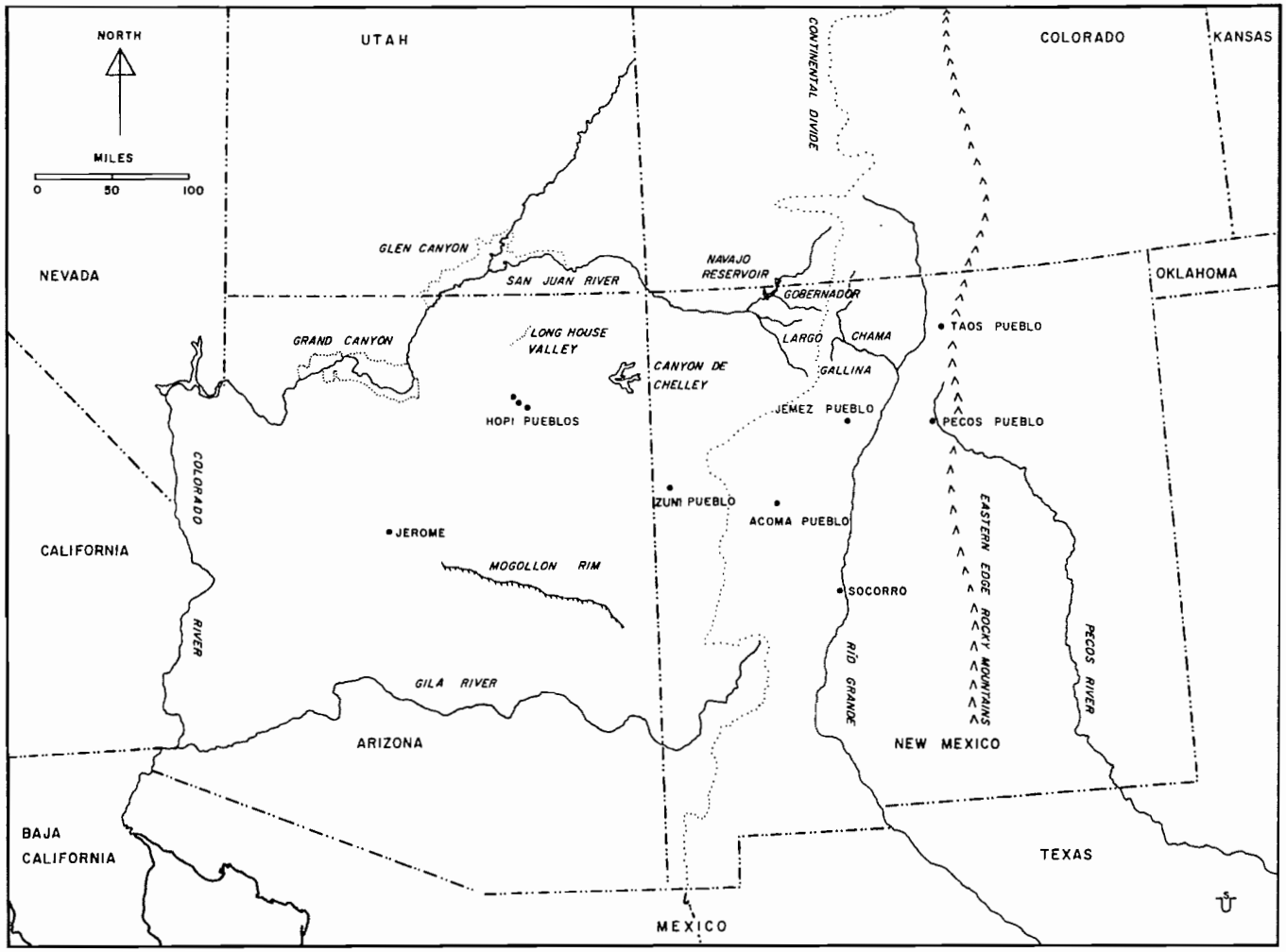

FIGURE 2. The American Southwest.

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Southwest. It is shown that existing data on these groups best supports the entry model suggested here.

The Navaho

Zárate Salmerón, a priest at Jemez (1621-1626), is the first Spaniard to mention the term "Apachu de Nabaju" as referring to a place up the Chama but east of the San Juan River (Lummis 1900:183; Reeve 1956). Salmerón also noted that the Navaho "had seen all that world" of the San Juan and west (Lummis 1900:183), and it seems reasonable to infer that they ventured far and wide, hunting, exploring, and perhaps trading. Another priest, Alonso de Benavides, contacted Navaho who in 1629 were living a little over a day's journey up the Chama from the Tewa pueblo of Cappoo, which is thought to be near the present-day Santa Clara (Hodge, Hammond and Rey 1945:86-87, 307-309). Frank Reeve (1956, 1957) in a masterly discussion of early Navaho geography has shown that by the 1640s the term Navaho was used by Spanish officials to designate the region on either side of the continental divide from the Piedra Lumbre valley on the Upper Chama on the east to the Southeastern tributary canyons of the San Juan on the west. The Spaniards launched military actions across the continental divide on numerous occasions, including the years 1643, 1663, and 1678 (Reeve 1956:195, 300; 1957:45). At least by the middle seventeenth century, then, according to Spanish sources, at least some Athapaskans were living west of the continental divide in Northwestern New Mexico in the Navaho's Dinetah (Harrington 1940).

The concept of a pure-Navaho Dinetah phase dating at least after 1640 (to 1700) is justified by these data and, although there is room to question it (Eddy 1966:505-508; Brugge 1973:2), Dittert's (1958; Dittert, Hester and Eddy 1961:262) assignment of several sites to that phase may also be justified (see also Keur 1944; Eddy 1966:507, 508, 513). These sites should thus be considered in any comparisons designed to identify early Athapaskan sites. Exactly how early they are, however, remains uncertain.[4]

The first usage of the term Navaho may indicate that the region later clearly meant was also occupied in the 1620s. Alternatively, expansion of Navaho across the continental divide in the second quarter of the seventeenth century may have resulted in an expanded or modified referent for the concept. In either case, the fact remains that there is currently no solid evidence for Athapaskan occupation west of the continental divide prior to the 1620s (compare Schaafsma 1978).

Evidence for an early and persistent association of Apaches and Pueblos is substantial (Reeve 1957). When a priest was first assigned to Jemez in 1598, he also was given jurisdiction over "all the Apaches and Cocoyes of the neighboring Sierras and settlements" (Hammond and Rey 1953:345). Schroeder (1963:6) has shown that the Cocoyes were probably ancestral Navaho, but so too may have been the Apache near Jemez.

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Modern anthropological ethnic classifications of Athapaskans reflect the historical process of contact; there is little reason to believe these ethnic categories can be projected too far into the past (Opler 1975). Throughout the seventeenth century the Apachu de Navaju had close social and political relations with the people of Jemez (Ellis 1964; Schroeder 1963). Brugge (1969) has suggested that this cooperation involved Navaho with an anti-Spanish faction, which provides a way to explain several Navaho attacks on people at Jemez. It may also be significant that the ancestral lands of the Jemez, which archaeologists have shown were in the regions of the Largo-Gallina and Rosa cultures (Mera 1935; Reiter 1938; Ellis 1964; Ford, Schroeder and Peckham 1972), are the same areas in the upper San Juan occupied by the Navaho. When many Jemez fled the returning Spaniards after the Pueblo Revolt of 1680, they joined their Navaho friends in their own ancestral area.

Early Navaho may also have occupied ancestral Tewa territory. The Piedra Lumbre valley on the Upper Chama between Arroyo Seco and the Puerco of the East was part of the traditional Tewa domain but it was occupied by Cocoyes or Navaho during the seventeenth century (Reeve 1956; Schroeder 1963; Schaafsma 1978). The term "Nabaju" may be taken from a Tewa place name (Hewett 1906; Haile 1949; Hodge 1949; Reeve 1956) --though it would be worthwhile to have an anthropological linguist systematically review this question. As for archaeological evidence, Schaafsma (1978) has recently studied a series of sites in the Piedra Lumbre valley that he attributes to early Navaho occupation dating to the period A.D. 1650-1710. They contain evidence of goat and sheep husbandry and are architecturally similar to later Navaho sites west of the continental divide. Tewa Polychrome and other material evidence of exchange with Tewa groups also occurs. There is still some question whether or not these may actually be Tewa sites or even Spanish herding camps (Curt Schaafsma, personal communication). If they are confirmed as early Navaho sites, another close link with the Pueblos will have been documented.

The Querecho Near Acoma

Quercho Indians were observed living in the mountains east of Acoma in March and June, 1583, by Antonio de Espejo and Gaspar de Luxan (Hammond and Rey 1966:181-181, 189, 200-201, 224). While Luxán concluded that Acoma was built on its high mesa "because of its conflict with the Querecho Indians" (Hammond and Rey 1966:182), Espejo reported that (Hammond and Rey 1966:224):

> In the adjacent mountains there are indications of mines and other riches, but we did not go to inspect them because the natives there were numerous and warlike.
>
> The mountain dwellers, who are called Querechos, came down to serve the people in the towns, mingling and trading with them, bringing them salt, game (such as deer, rabbits,

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and hares), dressed chamois skins, and other goods in exchange for cotton blankets and various articles accepted in payment.

Perhaps this trade is the source of the maize for tortillas offered to the Espejo party by the mountaineers they encountered before reaching Acoma and learning their name (Hammond and Rey 1966:181). Those tortillas thus do not prove that these Querecho were growing corn themselves, though Luxan (Hammond and Rey 1966:201) later attributed two corn fields to them. When they passed Acoma again in June, the Spaniards were no longer welcome and the people of Acoma were joined by the Querecho to drive them away (Hammond and Rey 1966:200-201).

Who were these Querecho and what were they doing near Acoma? Many scholars identify them as early Navaho (Reeve 1956; Hammond and Rey 1966:182), but Schroeder (1963) has argued pursuasively that they were more likely early Gila Apache, a generic category in the eighteenth century for those Apache groups living south of Zuni and Acoma between the Gila River and the Mogollon Rim. Their presence near Acoma in the spring seems late if these Querecho were still plainsmen wintering with a Pueblo client. Espejo's clear description of Querecho trade with Acoma is strong evidence that by 1583 new arrangements of economic and social benefit to both parties had been made. This is the first probable record of Apacheans living west of the Rio Grande and it nicely fits the model suggested here.

Virtually no Gila Apache archaeology has been conducted, except for a little work done at Point of Pines, Arizona, on late sites (Gifford 1957; Asch 1960; see also Vivian 1970). This is an area greatly in need of systematic research (see Gregory, this volume). In 1540 the modern Western Apache area eastward from the White Mountains to the Verde River was described as uninhabited (Hodge 1895). Why Yuman groups had not moved into this area from the west is unexplained. Apparently it became a wilderness after the Pueblo occupation ended ca. A.D. 1400-1450. Indian shrines on several peaks in the White Mountains, however, contain Zuni glaze ceramics that may have been made as late as the middle seventeenth century (Greenwood and White 1970). Apaches were attacking Zuni in the 1670s (Hodge 1895) and the absence of later Zuni pottery in those shrines may indicate a loss of territory by the Zuni to the Apache. This implies that, probably as a result of processes set in motion by the establishment of a Spanish colony in New Mexico, the basis of Apachean occupancy of land in the Southwest changed dramatically during the seventeenth century.

The Apache de Xila

The third group to be considered here, the Apache de Xila, were reported by Benavides as living in a pueblo only some fourteen leagues west of the Piro Pueblo of Senecu near Soccoro, New Mexico, in the late 1620s (Hodge, Hammond and Rey 1945:82-85). Little is known about their culture, except that they hunted and did not cultivate (Forrestal 1954:

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45). Their "chief captain," called Sanaba, "oftentimes comes to Senecu to gamble" (Hodge, Hammond and Rey 1945:82). This does not sound like the leader of an invading force but he does appear to lead a group with close relations with a client Pueblo.

EVALUATION OF ALTERNATIVES

The question of Athapaskan entry into the Southwest has now been briefly discussed, and a model that this entry is to be understood in terms of changes in certain social and economic arrangements made between Querechos and various Pueblos has been proposed. A review of the three earliest documented cases of Athapaskan settlement in the Southwest shows that the Querecho model suggested here stands up well against the earlier "invasion hypothesis." It provides a coherent framework in which all the evidence of early Apache settlement may be evaluated, and it opens up new avenues for archaeological and ethnohistorical research. The first Querecho immigrants were probably small in numbers and had barely worked out a foothold in the Puebloan hinterland when the Spaniards began their colonizing efforts in New Mexico. If the Querecho appearance on the Southern Plains only occurred in the early 1500s (D. Gunnerson 1956), they may have entered the Southwest only 2-3 generations after leaving the Black Hills. Life on the Central and Southern Plains was different from that in the Black Hills, if only because of the necessity of wintering elsewhere. It is quite possible that these changes caused ideological stresses that influenced some Querecho to seek new arrangements permitting a "return" to more mountainous and forested habitats. This hypothesis is perhaps supported by Dyen and Aberle's (1974) finding that the Navaho and San Carlos Apache preserve more features of early Apache kinship terminology than do the Chiricahua or Mescalero (see also Mangalam and Schwarzweller 1970).

It is beyond the scope of this paper to investigate the complex interaction of demographic, economic, and sociological changes that ensued following Athapaskan entry to the Southwest (see Snow, Wilcox, this volume). Spanish colonial policies demanded a revolution in existing Pueblo-Apache relations, and nearly a century of struggle among Spanish administrators, colonists, priests, Pueblo factions, and Apache groups finally culminated in the Pueblo Revolt of 1680. One of the principal issues appears to have been the question of rights to land, which was finally settled when the Pueblos were given land grants following the revolt (Swadesh 1974). The model of Athapaskan entry into the Southwest proposed here may provide a fresh perspective on this century of human struggle and thereby help to explain subsequent events in Apachean history.

Contrary to the present model, as Brugge (this volume) cogently points out, are the high population figures for Apaches given by Benavides (Forrestal 1954). If the Apaches numbered in the tens of thousands in the 1620s, it is difficult to argue that they were present

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in only small numbers in the late 1500s. I presently see no non-tautological way to avoid this point, except to reject it arbitrarily (Reeve 1957) or to suggest that a lot of Pueblo refugees were counted as "Apaches," neither of which are satisfactory arguments. This point does not, however, affect the potentially heuristic value of my model, and, from that standpoint, Brugge has the greater difficulty explaining the general failure to locate early Apache sites. The model I have presented has the merit of suggesting a rational framework for deliberately testing the hypotheses it implies about where early Apache sites should be found: they should occur in the hinterlands around many of the sixteenth century Pueblos. Once some of these sites are identified--or are shown not to exist--it will be possible to better evaluate this model and alternatives to it.

THE PUEBLOS AT CONTACT

Early speculation about Athapaskan entry to the Southwest linked that process with significant changes in the structure of Pueblo society. Clearly, however, if they did not reach the Southwest until the time of Spanish contact, Athapaskans can have had nothing to do with the aggregation of Pueblos into large communities nor the abandonment of the San Juan basin or the Mogollon Rim country. To understand the affect on the Pueblos of Athapaskan entry into the Southwest it is necessary to consider that process in the context of a model of Pueblo society and polity at contact. Only a sketch of such a model can be presented here (see also Wilcox, this volume).

After a period of extreme regionalization in the thirteenth century during which the diverse Pueblo ethnic groups recognized at contact fully crystallized (Ford, Schroeder, and Peckham 1972), by the beginning of the Pueblo IV period ca. A.D. 1300, a pan-Southwestern economic system involving long-distance exchanges developed that linked the Pueblo polities not only to one another but also to comparable polities in Southern Arizona, Northern Mexico, and Central California. The structure of this system remains to be described in detail, but preliminary analysis (White 1974; Riley 1976; Wilcox 1979a, 1979b) suggests that it primarily involved a complex network of cross-cutting alliances among elite groups in each of the participating societies. It is further inferred that the great increase in the size of Pueblo towns in the fourteenth century is directly related to the success of this system. A continuous network of quite regularly spaced large towns replaced a cultural landscape dominated by farmsteads and hamlets (Euler and Gummerman 1978). This must have entailed significant changes in the nature of economic flows between sites. The average distance between sites apparently increased, which may mean that the average frequency of exchanges among adjacent sites was reduced, but the average volume may have increased. Dependencies created by the new economic system may also have created the conditions for wide-scale regional abandonments in the following century. The geographical structure of collapse is not

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yet well described, except that communities on the Colorado Plateau and along the Rio Grande River in New Mexico survived while those in the basin and range country of Arizona, parts of Northern Mexico, and Southwestern New Mexico did not (Wilcox 1979a). There is some indication that the northern edge of the forest along the Mogollon Rim was occupied somewhat longer than the interior. Tree-ring dates from the latter sites imply abandonment by A.D. 1400, while at the Show Low ruin there are cutting dates from the last quarter of the 1300s (Bannister and others 1966:39-47) and Matsaki Polychrome, which dates after A.D. 1475 (Reed 1955; Ferguson this volume) is reported there (Carlson 1970:114). A sherd of Matsaki Polychome is also reported at Table Rock Pueblo (Martin and Rinaldo 1960). If this shift to the forest edge is a general process, it implies a gradual inward collapse toward the surviving Pueblos. The abandonment of the lower Chama in the early 1500s (Robinson and Warren 1971) is further evidence of inward collapse. Some sites of the Civano and Cliff phases in Southern Arizona may have lasted until A.D. 1450 or 1500, respectively (Fitting 1972; Doyel 1974), suggesting that the principal trade routes remained viable the longest.

Explanations for the collapse of the Pueblo IV pan-regional system are also uncertain. I infer it was fundamentally a political process in which various local elites were unable to meet their commitments. Warfare, internal revolt, environmental disasters, and other factors all may have helped to initiate the process. Once begun, however, it was too difficult to stop and only the Hopi and the New Mexico Pueblos survived. Perhaps the more interesting question is, "Why did they not collapse too?"

A locational strategy common to most of the surviving Pueblos was to cluster many large communities quite close together (Spicer 1962: 153). This probably reduced many transportation costs while increasing the manpower easily available for intensified farming, communal construction projects, and warfare. The spread of the Katchina cult appears to be related to this change (Schaafsma and Schaafsma 1974) and it is likely that changes in political organization to bind the villages in each cluster together were also necessary. Beyond these organizational innovations, however, the apparent success of the surviving Pueblos may have been due mainly to their ability to arrange for new inputs of energy to the remaining system. The principal source of this new energy was the Southern Plains (see also Snow, Wilcox, this volume).

The lazy T-shaped distribution of the surviving Pueblos, with the head of the T along the Rio Grande facing the Plains and the shank extending westward toward California, well expresses this new dependence. By providing bison meat, hides, and other Plains products to the Pueblos, the Teya-Plains Jumano and the Querecho-Athapaskans significantly helped the Pueblos to survive into the historic period. Is it any wonder, then, that the Spaniards worked so hard to control this trade (Reeve 1957)?

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There can be little doubt that the Pueblo clusters at contact held well-defined territories that they vigorously defended against any encroachments (Ellis 1964b). Why, then, would they have allowed Athapaskans to move onto their lands and begin a life of hunting and gathering there? The increased aggregation of the Pueblos into clusters of towns or villages in the fifteenth century probably meant that only the choicest resources in areas of former occupancy were considered worthy of regular exploitation. They were probably most important as resource areas that could be fallen back upon during periods of severe conditions in the central areas. Hopi removal to Canyon de Chelly (DeHarport 1953), for example, or their residence near the Havasupi during a three-year drought in the late eighteenth century (Spicer 1962:195), illustrates this. Each year, then, far more resources were naturally produced in the Pueblo domains than could be effectively exploited due to transportation costs and conflicts in scheduling other procurement activities. The entrance of the Querecho-Athapaskans provided a way to intensify the exploitation of this over-abundance of natural resources. By establishing certain social and economic arrangements with the Querechos, the Pueblos were able to widen their exchange networks and thus to increase the overall productivity of their declining economic systems.

Spanish colonization interrupted this process and imposed a new set of conditions. By the end of the seventeenth century, most of the Pueblo clusters had either disappeared or had collapsed into a single large Pueblo (Spicer 1962). The first century of struggle ended with the acquisition of land grants by the remaining Pueblos. Increasing village autonomy and social conformity followed as the Pueblos sought to hold on to what they had left. The Athapaskans in the meantime had gained their independence from the Pueblos by moving into distant wilderness areas or by taking over portions of Pueblo territory by force. Raiding and warfare now became the principal theme of Pueblo-Apache relations.

NOTES

[1] As this paper was about to go to press, the PLAINS ANTHROPOLOGIST arrived with Richard Perry's article on "The Apachean Transition from the Subarctic to the Southwest" (1980). His interpretation revives the hypothesis of a Rocky Mountain route of entry and is thus markedly different from the hypotheses presented here. Empirical relations posited by the alternative theses may now be the subject of more detailed and far-reaching comparative analyses and new field work. Theoretical issues are also present, however, and a brief discussion may help to bring them into focus.

Two reasons the Athapaskan-entry problem is interesting are that an effort is necessary both to integrate data from all four fields of anthropology and to synthesize the cultural historical structures of

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several regions of the Far West with those of the Plains and the Arctic. From this standpoint, several comments on Perry's (1980) thesis serve to identify issues concerning how such integration and synthesis is best accomplished.

a. To prevent an argument from being ad hoc, the effects of a hypothesized process on all the participants in the macro-regional cultural-historical landscapes must be systematically considered. If, for example, the Besant cultural assemblages on the Northwestern Plains in Alberta and Wyoming are to be identified with Athapaskans (Perry 1980), how is it that they are so similar to early Besant assemblages in the northeastern periphery of the Plains (Kehoe and Kehoe 1968; Reeves 1970; Joyes 1970; Neuman 1967)? If, on the other hand, Besant points are part of a widespread technological tradition, what basis is there for identifying some and not other assemblages with Athapaskans? In the Avonlea case (see below), although these assemblages too were widely distributed, the relations indicated by their early intrusion (from the north?) and the introduction of bow-and-arrow technology are the principal evidence for the inference that Avonlea marks the intrusion of Athapaskan speakers onto the Northwestern Plains.

What populations were in the Rockies 2000 years ago and how were Athapaskans able to penetrate areas south of their putative home ranges? No mention is made, for example, of proto Kutenai or the Kiowa problem. Shoshoneans are pictured entering the Rockies in late prehistoric times, but how they were able to displace presumably-resident Athapaskans is not explained (Perry 1980).

b. The hypothesis of late Shoshonean migrations that brought populations adapted to Great Basin habitats into the Rocky Mountains and into proximity with the Western Plains derives from an age-area analysis of synchronic patterns in linguistic variability (Lamb 1958). Just as the Northern Athapaskans were all interconnected by dialect chains, however (Kraus 1973), and thus illustrate how a great range of linguistic variability may be maintained for long periods over a vast area, so too may the speakers of Numic "languages" have been widespread for millenia (Dumond 1969). If so, the presumptions of the age area hypothesis should not be adopted as assumptions by archaeologists.

[2] The intrusion of Athapaskans onto the Plains raises interesting questions about their dogs and how they compare with indigenous breeds. Although work dogs strong enough to pack or drag heavy loads were essential to the development of a High Plains nomadism (Wedel 1961:302-303), little is known about them. Glover Allen's (1920) classic monograph of over half a century ago is still the major work (Olsen 1972: 51). Allen relied primarily on sketchy historical descriptions and virtually no comparative statistics on dogs from High Plains sites have been published since then. Allen defined three sizes of dogs, the large, wolf-sized, Eskimo dog of the Arctic, a medium-sized dog and

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various small dogs. His "Plains-Indian Dog," the one used by the dog nomads, was medium-sized, and slightly smaller than the Eskimo dog, but larger than the small Basketmaker dog from the Southwest (Allen 1920: 449-456; see also Colton 1970; Olsen 1972). A "Sioux Dog" found on the Central Northern Plains was larger than the Plains-Indian Dog, and grey rather than tawney (Allen 1920:455). These descriptions may be supplemented by the testimony in 1601 of one of Oñate's men who reported that Vaquero Apache dogs were "not much larger than water spaniels. Most of the dogs are very white, others have black spots" (Hammond and Rey 1953:660). An important contribution to knowledge of High Plains adaptations could be made if all Canis specimens from archaeological sites on the High Plains were submitted to a competent zoologist for comparative analysis.

[3]It is not certain that the cutting dates of 1690 pertain to a hogan, although this is a reasonable inference. Wilson found no hogan on the site in 1972, but Stallings and Hall, who first collected specimens there in 1941, show a hogan adjacent to the pueblito on their sketch map (Wilson and Warren 1974:9-10, 14). While Wilson's collections confirm that dates in the 1694 cluster all pertain to the pueblito, the provenience at the site of the eight 1690 dates remains uncertain. Since the latter specimens are all pinyon of appropriate diameter, they probably come from Stallings and Hall's hogan (William Robinson, personal communication).

[4]The evidence for a pure-Navaho occupation consists chiefly of sites with no pottery other than Dinetah Utility (Keur 1944; Dittert 1958:19; Brugge 1963). What are the antecedents of this culinary ware? If the Navaho, like the Dismal River peoples, derive from Querecho populations, according to a hypothesis of the Gunnersons' (1971:9), they should have learned their pottery-making from their sedentary friends. In fact, the texturing style of Gobernador Indented, an early variety of Dinetah Utility (Brugge 1973:2), is similar to that of Jemez culinary ware (Dittert 1958:20; Carlson 2965:68). On this basis, Carlson (1965:68) has suggested that "Gobernador Indented may well be the original Navajo pottery stimulated by Jemez wares, rather than of ancient Woodland derivation as has long been thought" (compare Brugge 1963:2). If, on the other hand, the Avonlea, and later the Querecho, made pottery, this would provide a "Woodland" source for Navaho ceramics. Association of pottery with Avonlea assemblages has been suggested (Kehoe and Kehoe 1968), but no Querecho sites are identified. However, the Querecho used pots to cook meat (Hammond and Rey 1940:262) and there is no specific statement in the Coronado documents that they did not make pots themselves. Nor was pottery-making unusual among dog nomads, as Blackfoot evidence shows (Ewers 1945). The evidence cited by the Gunnersons (1971) and by Carlson (1965) pertains to decorative style only. While we may thus accept a hypothesis positing stylistic influence by sedentary groups on Apache ceramic production, I believe it is too early to judge the stronger thesis that pottery-making *per se* was also taught to the Apacheans by these groups. More evidence from new field work and more comparative studies are needed first.

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