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reprinted from: Don D. Fowler (ed.)

GREAT BASIN CULTURAL ECOLOGY, A SYMPOSIUM

Desert Research Institute Publications in the Social Sciences,
No. 8

Reno, Nevada
1972

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ABSTRACT

Comparative studies of plant and animal terminology in the various Numic languages indicate that Sydney Lamb was substantially correct when in 1958 he postulated a southern California homeland for Proto-Numic. Additional comparisons of the Numic forms with those from other Uto-Aztecan branches suggest that Tübatulabalic, Takic and Hopic probably also shared contiguous locations with Numic in the southern Sierra Nevada foothills.

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In recent years, the Great Basin literature has been seemingly replete with papers on linguistic prehistory. Each of several authors has proposed an hypothesis to account for the proto-historic language distributions of the area, as well as for some of the apparent disparities between the archeological and linguistic records. Each has also suggested, or at least alluded to, the possible location of a homeland, or *Urheimat*, for the Numic languages. Homeland areas thus far suggested, and their proponents, are: 1) somewhere in the vicinity of Death Valley, California, proposed by linguist Sydney Lamb (1958a), based on language and dialect distributions and on lexico-statistical counts; 2) an unspecified locality in the northeastern Great Basin, suggested by archeologist Walter Taylor (1961) in a paper utilizing archeological data, language distributions and additional lexico-statistical counts; 3) the southwestern Utah - northwestern Arizona area, suggested by archeologist James Gunnerson (1962), who sees a continuity between the various Numic language groupings and the Virgin Branch Anasazi, northeastern Utah Fremont and Sevier Fremont archeological "cultures"; 4) the general southeastern California - southern Nevada area, suggested by ethnologist-linguist Nicholas Hopkins (1965) based on his reexamination and recombination of the Lamb (1958a), Taylor (1961) and Gunnerson (1962) hypotheses; and 5) the eastern Idaho mountains, suggested by Earl Swanson (1966) as the homeland for at least the Shoshoni language of Central Numic, based on certain suggested archeological continuities in this region.

Of these various hypotheses, the one that has gained most general acceptance is Lamb's proposal of a southeastern California homeland for Proto-Numic (Goss 1968; Jacobsen 1966, 1968; Miller 1966). In this paper, some additional evidence is presented that also supports Lamb's hypothesis, at least in general outline. The evidence is derived from a comparative study (at this point in a preliminary stage) of plant and animal terminology in the various Numic languages, supplemented by investigations of terms in Hopi, Tübatulabal and the various Takic languages (Luiseño, Cupeño, Serrano, Cahuilla, etc.).[1] By reconstructing as much as possible of the plant and animal lexicon for Proto-Numic, we gain certain clues to the ecological character and possible location of Proto-Numic environments. By considering the Proto-Numic data in relation to forms from other northern Uto-Aztecan languages, we can make some suggestions about locations of earlier homelands as well. However, before proceeding, it is necessary to briefly review the distributional and lexico-statistical

MAP 1: Linguistic Distributions: Numic, Tübatulabalic, Hopic, Takic, Pimic

data that have led to the previous homeland proposals (see Miller 1966 for a more detailed review).

The Numic languages comprise the northernmost branch of the widespread Uto-Aztecan stock. Geographically, they extend in a great triangle, with the apex in the southern Sierra Nevada and the base along the Rocky Mountain chain (see Map 1). Based on the evidence at hand, linguists generally agree that there are six Numic languages, divided into three sub-branches of two languages each. Following Miller's (1966) terminology, the sub-branches are *Western, Central* and *Southern* Numic; the languages are Mono and Northern Paiute, Panamint and Shoshoni, and Kawaiisu and Ute, respectively. One member of each sub-branch, namely Mono, Panamint and Kawaiisu, occupies a small area in southern California in close proximity to the other two. The remaining three, Northern Paiute, Shoshoni and Ute, are spread over vast areas of the interior Great Basin, the Snake River Plain and the Colorado Plateau. In spite of territorial extent, there is little perceived dialect diver-

sity in the northernmost languages, while in the southernmost, diversity is more marked (Lamb 1958b; Miller, Tanner and Foley 1971; Zigmond 1938). The decrease in dialect diversity as one moves to the north suggests to some that a rather rapid northward expansion of Numic speech communities has taken place in the recent past.

In close proximity to Mono, Panamint and Kawaiisu is Tübatulabal, the closest linguistic relative of Numic. The Takic languages (Luiseño, Cupeño, Cahuilla, Serrano, etc.), also closely related, are nearby as well. Lexico-statistical counts (Hale 1958-59; Lamb 1958a) indicate a minimum period of divergence for Numic and Tübatulabal of about 2500 to 3000 years, with the splitting of Numic into its various sub-branches about one millennium later. Additional counts indicate the minimum period since divergence of the northernmost languages of the three Numic sub-branches at about 1000 years.[2] Based on the distributional and lexico-statistical data, Lamb (1958a) proposed a southwest to northeast migration of Numic speakers at about 1000 years ago, and Taylor (1961) suggested a northeast to southwest migration for about the same time period. The other hypotheses are also at least partially based on these same distributions and counts, with the exception of Swanson's (1966), which posits an *in situ* development for Shoshoni over the past several millennia.

The method of using plant and animal terms which can be reconstructed for a proto-language as a clue to locating the homeland of that language is by no means new. It has been applied by Indo-Europeanists with limited success (*cf.* Bender 1922), perhaps most recently by Paul Friedrich (1970) in his study of Proto-Indo-European tree names. It has not been widely applied in the study of American Indian languages, although Romney's (1957) preliminary attempt for Proto-Uto-Aztecan and Siebert's (1967) study of Proto-Algonquian can be cited as examples. Romney's (1957) paper was more suggestive of the possibilities of the method than concrete in its demonstration for Uto-Aztecan.[3] Siebert's (1967) study well illustrates the technique of comparative mapping used to establish the geographic center of gravity for the proto-language in question.

There are several problems with this type of approach, including some that may affect its use in Numic specifically. First, there is the general problem of making valid identifications of the referents for the modern Numic terms and, by extension, for those of the proto-forms as well. The process of comparative mapping, which is central to this method, depends heavily on accurate *genus* and, in some cases, *species* identifications of the plants and animals in question. As most ethnobiologists soon discover, native terms need not be, and in many cases definitely are not, isomorphic with those of modern biotaxonomy. Although there is often a good correlation between the names for individual plants and animals in the various Numic languages and the modern taxonomic concept of *genus* (see Berlin 1972; Fowler 1972), this is by no means always the case. Some Numic terms may either be more specific or less specific than this level. Examples of more specific terminologies include sets of independent terms for onions, all of the genus *Allium*, for ground squirrels, mostly *Spermophiles*, and others. Examples of less specific terminology include the use of a single term in most Numic languages for the bitterbrush *and* cliffrose genera (*Purshia* and *Cowania*), single terms for most ants, grasshoppers, spiders (either *orders* or *classes*) and others. Added to the possibility of confusion on this level of inquiry is the often bewildering number of identifications given the native terms in ethnographic sources. Some of these reflect changes over the years in biotaxonomic nomenclature or differences of opinion on the taxonomic placement of forms by biologists. Others may indicate a lack of precise inquiry into the biological inclusiveness of native terms on the part of the ethnographers. Yet others are valid regional differences that require further consideration. Regardless of origin, however, these problems of identification must be resolved as thoroughly as possible before attempting any reconstruction of proto-referents.

A second problem in using this method arises from certain complications within the Numic languages themselves. Many of the plant and animal terms which form the basis for our comparisons are substantially the same in the various languages. From the studies available (Dayley 1970; Davis 1966; Goss 1962; Kim 1968; Liljeblad 1950, 1967; Sapir 1930), the phonological systems of the modern Numic languages also appear quite close, so that it is often difficult to detect, by phonologic clues, intra-Numic borrowings from legitimate proto-forms. The possibility that many terms may be borrowings is further enhanced if we consider the socio-cultural situation in the Great Basin, i.e. the semi-nomadic subsistence patterns, low population density, and local group exogamy (Steward 1938, 1970). Bilingualism probably characterized most border areas, as did dialect mixing within each language unit (Miller 1970). In the absence of more detailed studies of Proto-Numic[4] that might contribute a solution to this problem, we have attempted to correct for it by distributional means, i.e. by comparing the various Numic forms with those from Hopi, Tübatulabal and the Takic languages. If related forms are found in one or more of these languages, the case for terms reflecting recent intra-Numic borrowings should be weakened considerably. However, this procedure raises the complex question as to whether we are now dealing with Proto-Numic, or whether the data represent some earlier speech form. According to the principles of historical

linguistics, the latter is probably the case. However, rather than include at this stage of inquiry plant and animal referents whose names may reflect later intra-Numic borrowings, we will take a conservative position and focus attention on forms with other northern Uto-Aztecan distributions. These biota nonetheless should have been present in Proto-Numic homelands, based on the Numic linguistic evidence. A more detailed evaluation of the natural history data for all of Uto-Aztecan is in preparation (Fowler n.d.).

Other problems with the method include the possibility of effects on identifications brought about by changes in species distributions through time, changes in subsistence patterns and orientations by the speakers of these languages, influences from migration, and others (see Fowler 1972).

Keeping in mind that the method has various shortcomings which could affect ultimate interpretations, we now proceed to the comparisons. If we compare the terms for plants and animals in the various languages and in the other northern Uto-Aztecan branches, we find a substantial number of correspondences. These are listed according to various distributional sets in Appendix A. Forms summarized under Set I are found in at least one language of each of the three Numic sub-branches, plus at least one other northern Uto-Aztecan language. Those of Set II are found in languages of two Numic sub-branches plus at least one other northern Uto-Aztecan language. (In some cases data are missing in one Numic sub-branch; however, in others, forms are divergent.) Forms in Set III appear to be restricted to Numic languages only, although they are widespread among these, occurring in at least one language of each of the three sub-branches. The starred forms provided for Sets I, II, and III (see Appendix A), as well as the referents, should be regarded as tentative. The notation used is based on the Numic forms only and does not necessarily account for phonological problems.[5] A fourth grouping (Set IV) is also given, listing by common name only a few additional forms for which we have scattered distributions; i.e. correspondences occurring in two adjacent Numic languages, one Numic language and one other northern Uto-Aztecan language, or some other combination.

Sets I and II, for which forms are well reflected in Numic and also found in one or more other northern Uto-Aztecan language, appear to offer the strongest distributional evidence for reconstruction as members of a Proto-Numic environmental set, if not one correlated with an earlier proto-language (see above). All of these forms should pre-date the divergence of a recognizable Proto-Numic dialect from one or more other early northern Uto-Aztecan speech forms. Some may even predate the divergence of any of the northern Uto-Aztecan branches (see, also, Appendix A for suggested correspondences to other reconstructed proto-languages). Set III, with forms well reflected in Numic only, is also a strong set, although, given the possibility of later inter-language and inter-dialect exchange, it is probably less reliable. More systematic study in the languages for which data are missing, as opposed to divergent (Sets II and IV), might reveal additional early correspondences. The remainder of the discussion will focus on the forms of Sets I and II as conservative estimates of forms that should have been represented in Proto-Numic environments. Reference will also be made to some of the forms of Set III, especially when these seem to indicate some ecological discrepancy with Sets I and II.

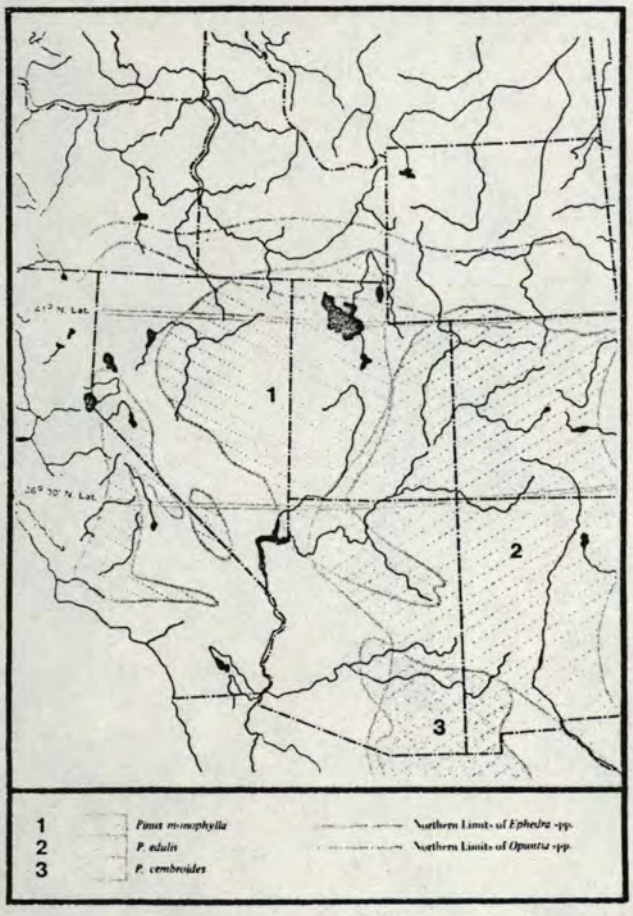
Table 1 gives the correspondences of the suggested Proto-Numic plant and animal forms with those of the three other northern Uto-Aztecan language branches. The forms are arranged in descending order of distribution, from those found most widely to those that appear most localized. Of these various forms, nineteen are found in all branches (Table 1, nos. 1-19). These are: thistle, cane, pine, oak (two forms), ephedra and pinyon for plants, and badger, wolf/coyote, woodrat, wildcat, squirrel, cottontail, owl, eagle/hawk, buzzard, crow, an unidentified bird (see no. 17), fish and ant for animals. Of these, seven evidence yet broader Uto-Aztecan distributions, according to the data gathered by Miller (1967), supplemented by the author's evaluation of the post-1967 published and a few additional unpublished sources. These are: thistle, cane, pine, wildcat, buzzard, bird and fish. These forms, along with the others cited above, seem to indicate a much older sub-stratum of relationships, perhaps one that can be correlated with some very early phase in Uto-Aztecan history.[6]

Thirty-three other forms given in Table 1 (see nos. 20-53) are also widely distributed, being well reflected in Numic and occurring in languages of two of the three other northern Uto-Aztecan branches. Several seed and berry producing plants are among these, including sunflower, Lycium, chia, and several grasses, as well as a number of small rodents (see mouse, chipmunk, bat, several ground squirrels). This stratum of relationships should also pre-date the emergence of a distinctive Proto-Numic dialect, although until several distributional problems are resolved, it is probably premature to suggest that they represent any definite level of relationship. This comment is also pertinent with reference to the remaining forms in Table 1, those evidencing relationships between the Numic languages and one other northern Uto-Aztecan language or branch. Some of these forms (see especially Proto-Numic-Tübatulabalic set, nos. 70-89) may reflect the period of the first emergence of Proto-Numic, although additional inquiry is needed to validate their limited distributions.

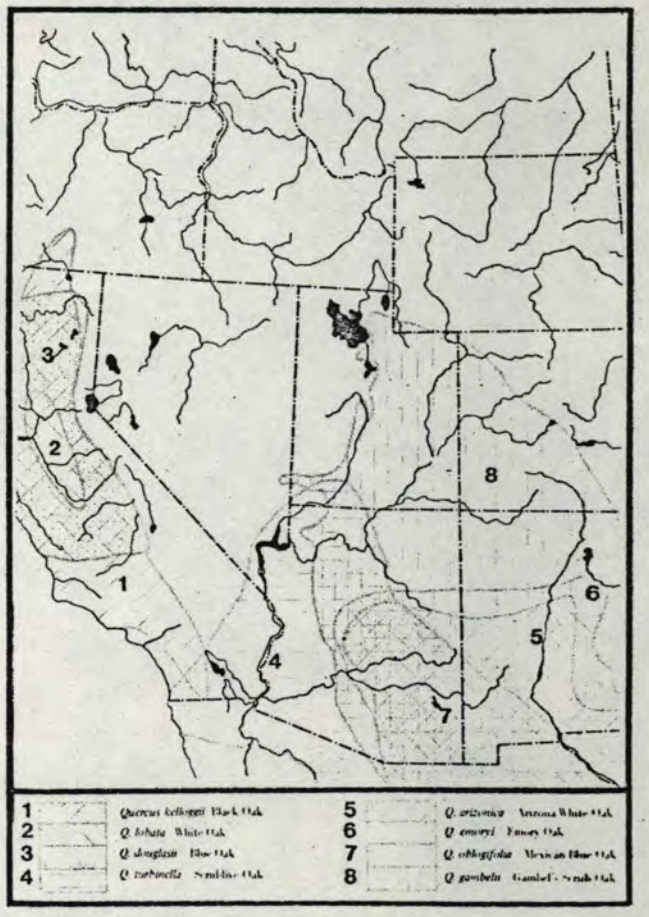
Assuming for the present that most of the forms given in Table 1 represent valid cognate relationships, we

can now examine them more closely for ecological clues to early homeland situations. The following generalizations seem pertinent, based on forms 1-53 of Table 1: One, the homeland area for Proto-Numic and probably for proto-forms of one or more of these other northern Uto-Aztecan language branches as well, must have been diverse in elevation, allowing for stands of pine and pinyon, but also for such mid- to low-altitude forms as cottonwood, oaks, chia, cholla and tortoises; two, the homeland area was probably in or near desert zones capable of supporting prickly pear, chia, lycium, ephedra, cholla, tortoise, but not necessarily an assemblage of other cacti, agaves and yuccas;[7] and, three, based on the presence of proto-forms for cane, crane, heron, mudhen, tule, cattail and fish, the area probably also contained marshes or some other substantial water sources. With reference to possible locations, we can add the following: One, based on the distribution of pinyon, prickly pear and ephedra (Map 2), the homeland area was somewhere to the south of about 41° N. latitude, which marks the northern limits of these plants, and two, based on the distribution of turtle/tortoise, chia, lycium and cholla, the homeland was probably also south of about 36°30' N. latitude, which marks the northern limits of the "hot deserts" (Shelford 1963). We may also note here the absence of a strongly reflected form for big sagebrush, a northern "cold desert" plant, although the more widespread "hot desert-cold desert" rabbitbrush is well represented (see Table 1, no. 24).

Given these general indications, we can now suggest some areas where these conditions are met and where preliminary comparative mappings for several of the genera and species associated with the forms show overlapping distributions. One such grouping of particular interest is the oaks, for which we suggest two proto-forms (see Table 1, no. 2). At present, oaks are found in concentration in proximity to deserts and mountains in only two major western areas: in the Sierra Nevada and its foothills in California, and in the White Mountains and areas immediately to the south in southeastern Arizona (see Map 3). Smaller scrub oaks also occur in parts of central Arizona, adjacent southern Nevada and central Utah (Map 3), but were rarely the focus of aboriginal economic activities (Fowler 1972; Kelly 1964; Whiting 1939).[8] Palynological evidence for southeastern Arizona (Martin 1963) indicates no significant changes in oak distributions in that area in the recent past (3000-4000 years ago), although there may have been some significant shifts in boundaries as early as 9000 years ago. Comparable evidence is lacking for



MAP 2: Pinyon Distributions



MAP 3: Oak Distributions

southern California, although data for the adjacent Mojave Desert (Mehringer 1965) suggest no major changes in the past 5000 years. We thus assume, at least for the present, that the distribution of oaks about 3000-4000 years ago was not significantly different from modern times.

If we compare the distributional evidence for the oaks (Map 3) with that provided for the pinyons (Map 2), we find overlap in the same two areas, i.e. in the Sierra Nevada of California and in the mountainous and foothill zones of southeastern Arizona and northern Mexico. Further considerations of the forms in Table 1 does not lead to major distinctions between the two areas.[9] Both areas are in the immediate vicinity of desert zones (the Mojave in the north and the Sonoran in the south), and both contain forms such as chia, lycium, seepweed, cholla and tortoise. General descriptions of the physiography, vegetation and hydrology for each area (Munz [and Keck] 1963; Jaeger 1960; Kearney and Peebles 1960; Martin 1963) suggest additional points of similarity. Only the distributions for bitterbrush/cliffrose and service-berry may favor the northern over the southern locality.[10]

That both areas are suggestive of homeland locations may follow, given that many of the forms noted have broader Uto-Aztecan distributions. After an extensive examination of plant terminology, Romney (1957) concluded that the upper Gila drainage or general Arizona-Sonora border area was probably the homeland for Proto-Uto-Aztecan. We may thus be dealing with two homeland regions, one in the south as an early point of origin for Proto-Uto-Aztecan and a second area in southern California that served as a locus for subsequent dispersion of the proto-languages or dialects that gave rise to the various northern branches of the modern stock. The question as to whether other proto-languages with modern representatives may also have been present in the northern area would seem to be of interest.

In that the oaks seem to be significant distributional indicators, we also examined additional published sources on the Sonoran languages of Uto-Aztecan (Pima, Papago, Tarahumara, Cora, Huichol, Tepecano, Tepehuan) for terms for these forms. None of the Sonoran languages suggests a cognate for the forms of oak shared by Numic, Tübatulabalic, Hopic and Takic (see Table 1, no. 2). The most common stem in the Sonoran languages appears to be related to Pima-Papago /tua/ (also in Cora, Huichol, Tepehuan, Tepecano; Miller [1967:49] gives *tua, oak tree). This suggests a discontinuity in the terms for oaks that may indicate that the northern languages form one cluster for this feature and the southern languages another. The northern languages also share the terms for pinyon (see Table 1, no. 3), not found in the southern languages. This may further indicate that proto-forms of the Numic, Tübatulabalic, Takic and Hopic languages dispersed at least at some time in the past from a different area containing oaks and pinyons than did the Sonoran groups. It is suggested that this is the case and that the area of dispersal for the northern groups is in the vicinity of the southern Sierra Nevada, perhaps in the foothills above the Mojave Desert (see Map 4).

Further consideration of the forms in Table 1 and a brief review of those in Set III (Appendix A) seem also to indicate Sierran environments. Several forms in Set III specifically may also reflect the gradual northward expansion of the early Numic dialects into "cold desert" environments. A form for big sagebrush appears, although it is weakly reflected (Western and Southern Numic only; the Central Numic form is different). Forms for giant rye, spiny hop sage, wild rose, buffalo berry, currant, great basin goose, and additional ground squirrels are also present. Separate forms for deer and jackrabbit are found (compare Table 1, nos. 89, 90 with Set III), as is a highly problematical form for bison and a divergent set for mountain sheep.[11]

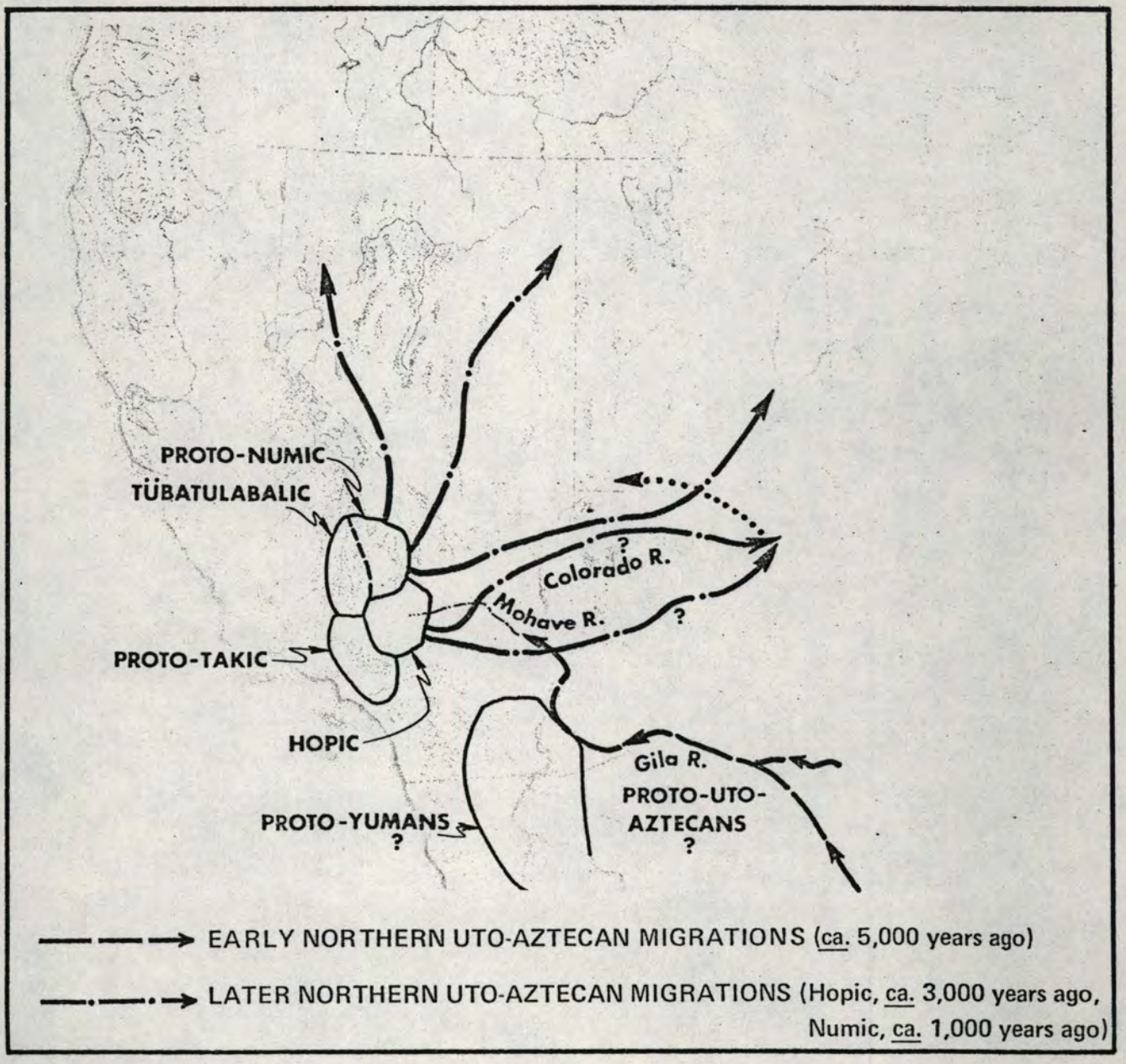
All of the above seems to favor Lamb's (1958a) hypothesis of southern California origins for Proto-Numic, with the following exceptions: One, that the data suggest an area of dispersion slightly to the west of Lamb's Death Valley locus, to take advantage of the maximal distributions of oaks, pinyons and other forms, and two, that we would go beyond Lamb's proposal and include proto-forms for Hopi and the Takic languages as also sharing this general location at some time in the past--perhaps at about 3000-4000 years ago.

In order to further account for the lexical distributions and the various other shared features within the languages of this northern grouping, we can expand on Lamb's discussion of the probable linguistic conditions in the homeland area. Lamb (1958a) suggests that at about 3000 years ago, the area near Death Valley (which we now shift slightly to the west) may have been characterized by a set of mutually influencing dialects. Among these were the newly emerging Numic dialects (presumably those which gave rise to the sub-branches) and Tübatulabalic. We would add here that in all likelihood, Hopic and various Takic dialects were also present in the region as well. Ancestors of all of these groups may have ultimately dispersed from a southeastern Arizona-northern Sonora homeland at some earlier time, perhaps following the natural water courses such as the Salt and Gila rivers, the Colorado, and even the partially dry Mojave. Upon reaching the Sierra foothills, their distribution pattern may have approximated that shown on Map 4, with Tübatulabalic and Takic to the west and Numic and Hopic to the east.

Soon after 3000 years ago, the various dialects began to develop more distinctive features. Hopic speakers may even have begun to disperse, either across

the deserts of southern California and the Colorado River and into the Arizona plateau, or, north and eastward, skirting the right bank of the Colorado River (Map 4). Sometime after they arrived in these eastern regions, they adopted maize agriculture, probably from groups already in position. Miller (1966:100) also concludes, based on the lack of cognate terms for corn in Hopi and the Sonoran languages, that the Hopi were probably non-agricultural when they arrived in northeastern Arizona. He notes that "it is probably not coincidental that the Hopi and their Sonoran cousins do not share the word for 'corn,' and that the earliest races of corn in the Anasazi and Sonoran areas are not the same."

By A.D. 1, according to Lamb (1958a), Tübatulabal and Numic were distinct, and Numic speakers may have begun to disperse northward and eastward (see forms in Set III, noted above). Southern Numic may have remained in proximity to Tübatulabal for some longer time, thereby accounting for a higher number of lexical correspondences (Fowler 1972) and certain grammatical features (Goss 1968) which they share. By about A.D. 1000, all Numic branches were beginning to show dialect divergences into the units that would ultimately develop into the pairs of languages that each branch now displays. Also, at about this time, the speakers of the northernmost Numic dialects may have begun a fairly rapid northward expansion into the Great Basin, proba-



MAP 4: Proto-Numic Homelands

bly following the natural geographic corridors of the region. The Western Numic speakers spread along the Sierran uplift into west-central Nevada and beyond; the Central Numic speakers followed the north-south trending Basin ranges into central Nevada, and the Southern Numic speakers followed the Colorado River and its tributaries on the east. In particular, the historic distribution of the Southern Numic speakers parallels rather closely the major right bank tributaries of the Colorado River system in both the Basin and Range and the Colorado Plateau (Map 1). The Southern Numic speakers probably again contacted the Hopi, who were by this time fully agricultural and living in the Virgin-Kayenta region.[12] The northern and eastward expansion of the Southern Numic and particularly the Ute speakers may have, in part, accounted for the withdrawal of the pueblo agriculturalists to the south and east, as has been suggested on numerous occasions (Euler 1964; Goss 1968; Miller 1966). Whether the proximity of bison in the Great Basin was the impetus for Numic expansion, as Lamb (1958a) suggests, cannot be ruled out based on the lexical evidence (see note 11). However, thus far, archeological investigations have not shown that bison were present in the central Basin in any numbers (Fowler 1968).

TABLE 1
PROTO-NUMIC, TÜBATULABALIC, HOPIC AND TAKIC
(including *Proto-Cupan)
PLANT AND ANIMAL CORRESPONDENCES

	Referent	*Proto-Numic	Tübatulabalic	Hopic	Takic
1.	pine (long-needled)	*woko-	wohombo.-l	löqö	*wexet (+Sr)
2.	oak a.	*wiya			*wi?a (+Sr)
	b.	*kwia	winiya	kʷi:ŋvi	*kwinila (+Sr)
3.	pinyon	*tiba	tiba-t	tiva	*tevat
4.	ephedra	*tutu-	u'tu.dul	ösvi	tutut (Ca)
5.	cane	*paka-	paha.bi-l	pa:kavi	*paxa (+Sr)
6.	thistle	*cinna	ciniya-l	ciniŋa	cun.ala (L) cuna (Cu) canaka?a (Sr)
7.	badger	*huna	?u.nal	honani	*hunwət (+Sr)
8.	wolf/coyote	*issa	ist	?i:sawi	*iswət
9.	woodrat	*kawa	ha.wa-l	qa.la	*qawala
10.	wildcat	*tuku-	tugu.kʷit	tokoci	*tukut
11.	squirrel	siku- (SN)	?isi?iga-l	sakina	*sVkawet
12.	cottontail	*tabu-	tahpuhun-t	ta.vo-t	tavut (Ca)
13.	owl	*mu?u, *muhu	muhumbis-t	moŋʷi	*muhuta
14.	eagle/hawk	*kʷana eagle	wa.?a-l hawk	kʷa:hi eagle	*kʷa hawk
15.	buzzard	*wiko	wisokombist	wisoko	pawicokot (Ga)
16.	crow	*ata, *kata	?akapis-t	?aŋʷisi(?)	*alwVt
17.	(a bird)	*wiki-	ciki-t	ciro-t	wikikmal (Ca) wikat (Sr)
18.	fish	*kuyu	kuyu-l	pa:kiw	*keyul
19.	ant	*ani	?a.nin, pa.nin-t	a:ni	*anVt
20.	prickly pear	*nabu	–	na:vu	*navət (+Sr)
21.	elderberry	*kunuki	ku.hupi-l	–	ku.ta (L) ku?ut (Ca) kuuhuuti (Sr)
22.	chia	*pasi	pasi.l	–	*paṣal (+Sr)
23.	sunflower	*paki, *?aki	–	a:qawu	*pa?aq- (+Sr)

TABLE 1 (Continued)

	Referent	*Proto-Numic	Tübatulabalic	Hopic	Takic
24.	rabbitbrush	*sibu-	siba-pul	sivapi	–
25.	Lycium sp.	*pici-, *ʔici-	piʔis-t	–	ʔi.ci-s (L)
26.	grass a.	*huki	ʔuugibi-l	ho:ki	
27.	b.	sihu (S)	–	sihi	*samVt (+Sr)
28.	basketry fiber	*siʔi-	si-l	si:vi	silit (Ca)
29.	willow	*kana-	ha.-l	qahavi	–
30.	juniper	*waʔa-	wa.dul	–	waʔat (L) iswat (Ca)
31.	onion	*siwi	si.wi-l	si:wi	–
32.	cattail	*toʔi-	to.ibi-l	–	te.ʔis (L, Cu)
33.	tansy mustard	*aca	–	ʔa.sa	as-il (Ca)
34.	service berry	*tiwa	–	tuwavi	təwa (Cu)
35.	tule	*sai-	siʔi.bi.-l	–	siʔi (Cu)
36.	bitterbrush/cliffrose	*hina-	–	hu:nvi	hun-la (L) henily (Ca)
37.	cottonwood				
	a. broad-leafed	*soho	ʔu.ut (?)	söhövi	–
	b. narrow-leafed	*saka-	sa.ha-t	–	saxat (L)
38.	cholla	uusi (SP)	ʔu.si-l	ʔö.so	–
39.	gopher	*miyi	–	mi-yi	*məhəta (+Sr)
40.	fox	*woci?a	–	le:taya	*qawe...ic
41.	bat	*paca	paca.wai	sawya	
42.	mouse	*puʔica	–	po:sa	paʔa-s (L)
43.	skunk	*poni	ponihw	–	ponyavat (Sr)
44.	chipmunk	*taba	tapa.ya-l	–	tapas-mal (L)
45.	bluebird	*cai-	ʔa.zayibis-t	–	*caʔic
46.	heron	*wasa	wasa.l	–	we.sa (L)
47.	mudhen	*saya	sa.ya-l	–	sayla (L)
48.	dove	*howi	ʔowi-t	höwi	–
49.	quail	*kaka, *takaka	takah	–	*qaxal (+Sr)
50.	tortoise/turtle				
	a.	*koyo	ko.yo-t	yonosona	–
	b.	*aya	–	–	*ayily
51.	frog a.	*waga	wa.ga.ist	–	*waxa
	b.	pakʷa (SN)	–	pakʷa	pakʷari-t (L)
52.	spider	hukʷampi (SN)	–	ko:kaŋʷ	kula (L, Sr)
53.	grub worm	*piʔagi	piʔagin-t	piʔaki	–
54.	hemp	*wiha	–	–	*wica
55.	spruce	*yiwi-	–	–	*yuyila
56.	squirrel	*kimpa	–	–	*qenic
57.	burrowing owl	*kuku	–	–	kuku.l (Ca, L)
58.	tick	*mata	–	–	*mac-
59.	grasshopper larvae	*woʔa-	–	–	wöʔöh-t (Sr)
60.	biscuitroot	*tunna	–	tumna	–
61.	ricegrass	*waʔi	–	le:hu	?*wavic (foxtail)
62.	seepweed	*wata	–	la:tci	–
63.	greasewood	*tono-	–	te:ve	–
64.	porcupine	*miha	–	miŋʷawi	–
65.	ground squirrel	yinazi- (NP)	–	yinʸaya	–
66.	hawk sp.	*kini	–	ke:le	–

TABLE 1 (Continued)

	Referent	*Proto-Numic	Tübatulabalic	Hopic	Takic
67.	horned toad	*maca	–	maca.k^{w}a	–
68.	mosquito	*wipo, *mipo	–	wipacovi	–
69.	louse	*poci	–	pesec$^{?}$ola	–
70.	Mentzelia	*ku$^{?}$a, *kuma	ku.l	–	–
71.	salt grass	*tisi	tu.-t	–	–
72.	juniper	*wa$^{?}$a	wa.dul	–	wa$^{?}$a-t (L)
73.	Indian potato	*yampa	yamba-l	–	–
74.	tobacco mix	*timaya	tu.mayu.t	–	–
75.	sego	*sigo	siko.nist	–	–
76.	currant	*pogo-	$^{?}$opo.bo-l	–	–
77.	buckeye	pa$^{?}$asi:bi (K)	pa.su$^{?}$u-l	–	–
78.	a medicinal plant sp.	tudunzi- (S, NP)	tondonzi-l	–	–
79.	jimson	momo- (SN)	mo.mo.h-t	–	–
80.	alder	pawicu (NP, S)	pawicu.l	–	–
81.	a grass	soni- (S)	so$^{?}$ihih	–	–
82.	racoon	*pa-taka-	kata.-l	–	–
83.	meadowlark	*hito	ci.do.bilah	–	–
84.	racer snake	*pasi-ko	pisu-ga.-t	–	–
85.	trout	agai (NP, S)	ha$^{?}$ayal	–	–
86.	lizard	sigi- (SN)	siko.-l	–	–
87.	wolf	tibaci (SP)	tibaic	–	–
88.	two-striped squirrel	oco-picici (SP)	picili.t	–	–
89.	deer a.	*ti$^{?}$i	tohii (to hunt)	–	–
	b.		ti-sib (deer hide)		
90.	jackrabbit	–	simin-t	ci$^{?}$a	*səwət (+Sr)
91.	mountain sheep	–	pa.$^{?}$a-t	paŋ^{w}i	*pa$^{?}$a-
92.	screech owl	–	tukluluh	tokori	tukyapa (L)

NOTES

1. Research for this paper was made possible through a dissertation grant from the National Institutes of Health, through the University of Pittsburgh. This support is gratefully acknowledged.

2. Lexico-statistical figures for languages within the Numic branch are as follows (see Appendix A for language abbreviations): 1) Swadesh's figure for M and U, as cited by Lamb (1958a) at 1900 yrs.; 2) Hale's (1958-59) figures, including NP and U at 1328 yrs.; NP and (SP) at 1748 yrs., NP and (C) at 1046 yrs., NP and S at 1427 yrs.; S and (C) at 424 yrs., U and (SP) at 618 yrs., U and (C) at 954 yrs., U and S at 1481 yrs., (S) and (C) at 1092 yrs. and (SP) and S at 1198 yrs.; 3) Goss' (1965) figure for (SP) and U at 294 yrs.; and 4) general estimates of time depths for Kawaiisu and Ute at about 700 to 1000 yrs. (Goss 1965; Lamb 1958a), and for Panamint and Shoshone and Northern Paiute and Mono at about 700-500 yrs. ago (Lamb 1958a).

3. In this paper, Romney suggests that forms for pine, juniper, oak, cane, prickly pear and beargrass can be reconstructed for Proto-Uto-Aztecan. He does not provide reconstructed forms or distributions. Miller (1966) attempted to document these and other suggestions made by Romney in an unpublished manuscript (Romney n.d.), but could find evidence only for prickly pear, cane, pine, oak, and pinyon nut. Miller (1966:96-97) was able to find a number of other potential cognates to expand Romney's list. Miller's (1967) later publication of Uto-Aztecan cognate sets suggests a number of others as well.

4. There have been no systematic attempts in the reconstruction of Proto-Numic thus far, although several people have provided cognate sets and/or preliminary statements relative to several aspects of the task (e.g. Davis 1966) on Numic consonantal correspondences; Klein (1959) on Proto-Mono-Kawaiisu, and Nichols (1970) on Proto-Western Numic. Voegelin, Voegelin and Hale (1962) and Miller (1967) also provide information of relevance from a broader perspective.

5. Starred forms are provided for convenience of discussion only. Problems such as medial consonant alternation and loss, the distribution and quality of nasals, etc., remain to be worked out.

6. Since distributions are incomplete for many forms, it seems premature to suggest that any particular set relates to any particular time period in Uto-Aztecan history. More systematic survey needs to be conducted in all languages, perhaps using standardized lists of plant and animal referents.

7. Two species of yuccas and one of agave are reconstructed by Bright and Hill (1967) for Proto-Cupan. None appears to have a Numic cognate, even in those Numic languages whose speakers utilized these species.

8. It seems unlikely that the two reconstructed forms *k^{w}ia and *wiya would refer to these oaks (*Quercus gambelii* Nutt. and *Q. turbinella* Greene), given the absence of significant use of these forms by native peoples. All the other reconstructed plants and most of the animals were known to be highly significant foci of exploitation (Fowler 1972).

9. Comparative mapping is incomplete at this stage in the research. Some genera are also so ubiquitous in western North America that they provide little help in pinpointing specific homeland locations.

10. Kearney and Peebles (1960:391) indicate that *Purshia tridentata* (Pursh) occurs from Apache County to Coconino County, Arizona at elevations of 4000 to 9000 ft. The genera *Amelanchier* and *Cowania* are also given as most widely distributed in northern Arizona, mid-southern California and adjacent Nevada and Utah, although they show some extension into the upper Gila region (Kearney and Peebles 1960:377; Benson and Darrow 1954:143).

11. The form for bison, *kucu, is found in Northern Paiute, Southern Paiute and Shoshoni. It does not occur in any other Uto-Aztecan language, at least as far as the author is aware. The Numic languages in which it occurs are all northern, possibly indicating that the term is borrowed. It is also applied by Northern Paiutes and Southern Paiutes outside the traditional range of bison to modern cattle, again perhaps suggesting recency. Until more is known of the origins and distributions of the term, it cannot definitely be concluded that it is Proto-Numic.

Forms for mountain sheep differ in the three Numic sub-branches. However, the apparent semantic parallels in the forms may suggest that word taboos are operative. The Northern Paiute form /koipa/ is probably derived from /ko$^{?}$i-~koi-/ "to kill (pl.)." Shoshoni /wasipi/ is from /wasi-/ "to kill (sg.)." A second Shoshoni form, /tuku/, seems to reflect a related idea in that it is apparently from /tuhku/ "meat, flesh" (see also UAC # 279, *tuhku, meat, flesh). An additional parallel may be provided in the Tübatulabal forms /paa$^{?}$a-t/ "mountain sheep" and /pa$^{?}$agin-/ "to hit, beat" (see also Takic and Hopi cognates for mountain sheep [Table 1, no. 91]).

12. Hopi and Southern Paiute share a number of correspondences in plant and animal terminology, including some generalized forms not found elsewhere in Numic (Fowler 1972). Some of the forms that can be recognized in all of the Southern Numic may date to a very early period of contact in the "homeland." Others appear to be more recent, perhaps indicating sustained contact between the Southern Paiute and the Hopi of the type suggested in legend (see Pendergast and Meighan 1959; Goss 1968).

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APPENDIX A

PROTO-NUMIC DISTRIBUTIONAL SETS

Herein are the distributional sets on which the preceding discussion of Proto-Numic homelands is based. There are four sets in all, each with varying Numic and non-Numic northern Uto-Aztecan language distributions. Forms within each set are listed with suggested referents and a tentative Proto-Numic reconstruction. Reconstructions are based on a preliminary examination of the plant and animal terms in the various Numic languages, as derived from field studies of Northern Paiute, Southern Paiute and Shoshoni ethnobiology and as contained in various published and unpublished ethnographic and linguistic sources (see Fowler 1972 for Numic cognate sets). The notation used in the reconstructions does not necessarily account for all the phonological problems in Proto-Numic (see footnote 4), and is provided at this point primarily as a convenience for discussing forms. A more detailed treatment of the Proto-Numic homeland question is also underway (Fowler n.d.).

Authorities for the binomial nomenclature used in the identification of plant and animal referents are contained in the following sources: Munz [and Keck] (1963) and Kearney and Peebles (1960) for plants; Hall and Kelson (1959) for mammals, and Peterson (1961) for birds. Designations for insects and reptiles are derived from various other sources and require additional field verification.

The following language abbreviations are used (see also Fowler 1972:205 for a list of sources for each language): M = Mono; NP = Northern Paiute; P = Panamint; S = Shoshoni; (C) = Comanche, added as a separate Shoshoni dialect; K = Kawaiisu; (SP) = Southern Paiute, as a separate cultural sub-division of Ute; U = Ute, also as a cultural sub-division; WN = Western Numic; CN = Central Numic; SN = Southern Numic; H = Hopi; L = Luiseño; Cu = Cupeño; Ca = Cahuilla; Sr = Serrano; T = Tübatulabal; P-M-K = Proto-Mono-Kawaiisu, as reconstructed by Klein (1959); P-C = Proto-Cupan, as reconstructed by Bright and Hill (1967) [(+Sr) added to Proto-Cupan indicates Serrano correspondence]; UAC # = Uto-Aztecan Cognate Sets, cited by number from Miller (1967).

SET I.

The following are strongly reflected in the Numic languages, with forms occurring in at least one language of each Numic sub-branch (see Fowler 1972 for cognate sets). Corresponding forms are also present in at least one other northern Uto-Aztecan language, thus minimizing the possibility that these forms are intra-Numic borrowings. The forms, with identifications and distributions, are as follows:

Plants

*paki-~*ʔaki-, a sunflower, probably *Helianthus annus* (seeds). M, NP, S, (SP), U, Cu, Ca, L, (P-C *paʔaq-?,sunflower), Sr, H.

*pogo-, a currant, probably *Ribes aureum* (berries). M, NP, S, (C), K, (SP), U, T (UAC # 38, *poko, berry).

*tiba, pine nut, probably *Pinus monophylla*. M, NP, S, K, (SP), U, Cu, Ca, L (P-C *tevat, conifer sp.), H, T. (UAC# 319, *tepa, pine nut).

*tiwa-, service berry, *Amelanchier utahensis* and/or *A. pallida*. NP, S, K, (SP), U, Cu, H.

*tono-, greasewood, *Sarcobatus vermiculatus* var. *Baileyi*. NP, S, (SP), U, H.

*tutu-, Ephedra, *Ephedra* spp. NP, S, K, (SP), U, T, Ca, H?

*tunna, a biscuitroot, *Lomatium* sp. (*L. macrocarpum, L. nevadense*), perhaps several but not all. NP, S, (C), K, (SP), U, H.

*kuʔa~*kuma, blazing star, *Mentzelia albicaulis*. NP, S, K, (SP), T.

*kunuki, elderberry, *Sambucus melanocarpa*. M, NP, S, (SP), U, T, L, Cu, Sr.

*timaya-, tobacco mix, probably manzanita (*Arctostaphylos* spp.). NP, S, (C), (SP), U, T.

*toʔi-, cattail (*Typha* spp., but perhaps only *T. latifolia*). NP, S, P, K, (SP), U, L, T, Cu.

*hina-, bitterbrush *and* cliff rose, *Purshia tridentata* and *Cowania mexicana* var. *Stansburiana*. NP, S, K, (SP), U, H, L, Ca.

*huki, wheat grass, *Agrophyron* spp., but perhaps not all. M, P, S, K, (SP), H, T. (UAC #203, *huk^{w}i, grass).

*sai-, tule, *Scirpus acutus*. M, NP, S, (C), (SP), U, T, Cu (Nichols 1971 suggests *saki, and matches to UAC #328, *saki, popcorn).

*saka-, narrowleafed cottonwood or tree willow, *Salix lasiandra*. NP, S, (SP), U, T, L, Ca, Sr, Cu.

*sigo, sego or *Calochortus Nuttalli*. M, NP, S, (C), (SP), U, T.

*sibu-, rabbitbrush, probably *Chrysothamnus* spp. M, NP, S, K, (SP), U, T, H.

*soho-, cottonwood, *Populus Fremontii*. M, NP, S, P, (C), K, (SP), U, H, T? (UAC #104, cottonwood tree).

*cinna, thistle, *Cirsium* spp., but perhaps not all. NP, S, (C), (SP), U, H, T, L, Cu, Sr.

*si?i-, basketry fiber, probably squawbush, *Rhus trilobata*. M, NP, P, S, (C), K, (SP), U, H, T, Ca. (P-M-K, *si(h)ipi, willow, squawbush).

*nabu, prickly pear, *Opuntia* sp. NP, S, K, (SP), H, Ca, L, Cu, Sr. (P-C *navət, prickly pear) (UAC #70, *nap, cactus [prickly pear]).

*wata, probably seepweed, *Suaeda depressa*. M, NP, S, (SP), H.

*wa?a, juniper, *Juniperus* spp. M, NP, S, (C), K, (SP), U, L, T, Ca.

*wa?i, Indian rice grass, *Oryzopsis hymenoides*. M, NP, S, K, (SP), U, H. (P-C *wavic, foxtail).

*wiha, hemp, *Apocynum* spp. NP, S, (SP), U, L, Ca, Cu.

*woko-, pine, probably *Pinus ponderosa*. M, NP, P, S, (C), K, (SP), T, H, L, Ca, Cu, Sr. (P-C *wexet-, pine) (UAC #320a, *woko, pine).

*yampa, Indian potato, *Perdiderdidia* spp. M, NP, S, (C), K, (SP), U, T.

Animals

*tabu-, cottontail, *Sylvilagus* spp. M, NP, P, S, (C), K, (SP), U, Ca, H, T. (UAC #334a, *tapu, rabbit, cottontail).

*tuku-, bobcat, *Lynx rufus*, but also mountain lion as a compounded form (various). M, NP, P, S, (C), K, (SP), U, L, Ca, Cu, T, H. (P-C *takut, wildcat) (UAC #460, *tuku, wildcat).

*poni, skunk, *Mephitis mephitis*. M, NP, P, S, K, (SP), U, T, Sr. (P-M-K *po... skunk) (UAC #382, *poni, skunk).

*huna, badger, *Taxidea taxus*. M, NP, P, S, (C), K, (SP), U, L, Ca, Cu, Sr, T, H. (UAC #18, *huna, badger) (P-C *hunwət, badger).

*kawa, woodrat, *Neotoma lepida*. M, NP, P, S, (C), K, (SP), U, T, H, L, Cu, Ca. (P-M-K *ka(wa) woodrat) (P-C *qawala(?), rat) (UAC #340, *ka, *kawa, rat).

*taba, antelope ground squirrel, *Ammospermophilus* spp. NP, P, K, (SP), T, L. (UAC #89, *tapa, chipmunk).

*wiko, buzzard, *Cathartes aura*. M, NP, P, S, K, (SP), U, T, Ca, H (UAC #67, *witu, buzzard).

*mu?u, *muhu, owl, probably horned owl, *Bobo virginianus*. M, NP, P, S, (C), (SP), U, H, T, L, Ca, Cu (P-M-K *muhu-, owl) (P-C, muhuta, owl) (UAC #312, *muhu, owl).

*kuku-, burrowing owl, *Speotyto cunicularia*. NP, S, (SP), L, Ca.

*ata, *kata-, crow, *Corvus brachyryhynchos*. M, NP, S, (C), K, (SP), U, T, H(?). (Possibly P-C *?alwVt, crow) (UAC #111, *?at).

*cai-, blue bird, *Sialia mexicana*. M, P, S, (SP), T, L, Ca, Cu (P-C *ca?ic, blue bird sp.).

*waga-, frog, *Rana* spp. M, P, S, K, (SP), L, Ca, Cu, T (P-M-K *wa...(ka)..., frog) (P-C *waxa, frog) (UAC #192, *waka, frog).

*maca-, horned toad, *Phrynosoma* spp. NP, S, (SP), U, H.

*ani, ant, family *Formicidae*. NP, S, K, (SP), H, T, L, Ca, Cu (P-C, *?anVt, ant) (UAC # 4, *?ane).

*poci, louse (*Pediculus* spp.). NP, P, S, K, (SP), U, H? (UAC #175, *tepu, *tepuc, "flea"?).

*mata-, tick (*Dermacentor* spp.). NP, S, K, (SP), U, L, Ca, Cu. (P-C, *mac-?, tick).

*pi?agi, a grub worm. M, S, K, (SP), H, T.

*wo?a-, a locust with larvae. M, NP, S, (C), K, (SP), Sr. (Sr form is for "grasshopper").

SET II.

Set II includes forms that are found in languages of at least two of the Numic sub-branches, and also in at least one other northern Uto-Aztecan language. In some cases, data are missing for these forms in one of the Numic sub-branches. However, in other cases, there seems to have been a change in one of the sub-branches, due either to extra-Numic borrowing or perhaps to innovation. Tentative Proto-Numic reconstructions, suggested referents and distributions for Set II are as follows:

Plants

*aca, tansy mustard, *Descuriana Sophia*. M, NP, K, (SP), U, H, Ca.

*ici~*pici, a berry, either boxthorn, *Lycium* sp. or perhaps squawbush, *Rhus trilobata*. S, (C), K, (SP), U, T, L.

*pasi, chia, *Salvia columbariae*. M, K, (SP), U, L, Ca, Cu, Sr, T (P-C *pasal, chia).

*tisi-, salt grass, *Distichlis stricta* Rydb. NP, S, T.

*siwi, a small onion, *Allium* sp. NP, (SP), H, T (UAC #311, *siwi, onion).

*kana-, willow, *Salix* spp., but not including tree forms (see *saga-, above). SP, U, T, H, Ca (UAC #461, *ka, *kan, willow tree).

*kʷia, oak, *Quercus* sp., probably *Q. Kellogii*. K, (SP), U, L, Ca, Cu, Sr, H, T (UAC # 1, *kwi, *kwini, acorn) (P-C *kʷinila, oak sp.).

*wiya, oak, *Quercus* sp. M, NP, P, K?, L, Ca, Cu (UAC #2, *wi, acorn) (P-C *wi?a, oak sp.).

*paka, cane, *Phragmites communis*. (SP), U, M, (C), T, H, Sr, Ca, Cu (UAC #334, *paka, reed).

*yiwi-, spruce? (*Picea engelmannii*). M, K, (SP), L, Ca, Cu (P-C *yuyila, spruce).

Animals

*issa, coyote, *Canis latrans*. M, NP, S, P, T, H (P-C *ʔiswat, wolf, aug. of coyote) (UAC #109, *ʔis, coyote).

*wocia, kit fox, *Vulpes Macrotis*. M, NP, K, (SP), H, L?, Cu?, Ca? (P-C *qawe...ic?, fox) P-M-K, *...wohcV ..., fox).

*miha, porcupine (*Erethizon dorsatum*). M, NP, H [S, (SP)?] (UAC #329, *me, porcupine).

*miyi, gopher, *Thamomys* spp. M, K, (SP), H, L, Ca, Cu, Sr (P-C, *məhəta, gopher) (P-M-K, *miji, gopher) (UAC #202, *meye, gopher).

*pa-takadi, racoon (*Procyon lotor*). M, NP, SP, T.

*kʷina, eagle, *Aquila chrysaetos*. M, NP, S (UAC #146b, *kʷi, eagle, hawk, etc.).

*kʷana, eagle, perhaps the same (see discussion, footnote A1). K, (SP), U, H, Sr (UAC #146a, *kʷa, eagle, etc.).

*wasa, heron, blue? (*Ardea herodias*). M, NP, P, T, L (UAC #146a, *kʷa, eagle, revised).A1

*kaka-, *takaka, quail (*Lophortyx* spp.). M, K, (SP), U, L, Ca, Cu, Sr (P-C, *qaxal, quail) (UAC #332, *kaka (?), *takaka, *kakata, perhaps imitative).

*howi, dove, *Zenadidura macroura*. M, NP, P, S, K, (SP), T, H (inter-Numic borrowing indicated) (UAC #138, *howi, dove).

*kini, chicken hawk (*Bruteo* spp.). M, S, H.

*saya, mudhen or coot (*Fulica americana*). M, NP, S, K(?), T, L.

*puʔica(?), mouse, *Peromyscus* spp. M, NP, P, K, (SP), U, T, H. Irregular. (P-M-K, *puCicca, mouse) (UAC #292, irregular, mouse).

*koyo, tortoise and/or turtle, *Gopherus agassizi*. NP, T, H(?), Sr (UAC #446, *ko, turtle).

*aya, tortoise and/or turtle. M, P, SP, U, Ca, L, Cu (P-C, *ʔayily, turtle) (UAC #445, *ʔay, turtle).

*wipo, *mipo, mosquito (*Culex* spp.). NP, S, (C), H.

SET III.

Set III consists of forms that are strongly reflected in Numic only, being found in at least one language of each of the three sub-branches. At present, they are not known to occur in any other northern Uto-Aztecan language. Many of the forms in Set III are probably Proto-Numic, although in the absence of phonological clues to indicate later inter-language borrowing, it may be premature to draw this conclusion. They will be presented here as Proto-Numic, recognizing that more work is needed to clarify their status. The forms of Set III are as follows:

Plants

*toca-, Indian balsam, *Lomatium dissectum* var. *multifidum*. NP, S, (SP).

*tuʔu, broom rape, probably *Orobanche fasciculatta*, but perhaps generic. NP, S, K, (SP), U.

*tuna-, mountain mahogany, *Cercocarpus* spp. M, NP, S, K, (SP), U.

*kana, bitterroot, *Lewisia redivivi*. NP, S, (SP).

*kaŋi-, shadscale, *Atriplex confertifolia*. NP, S, (SP).

*kinka, a large onion, probably *Allium acuminatum*. NP, S, (C), (SP), U.

*huʔu, a boxthorn, probably *Lycium andersonii*. M, NP, P, S, K, (SP), U.

*ciʔa-, wild rose, *Rosa* spp. M, NP, S, K, (SP), U.

*saŋʷa-, big sagebrush, *Artemesia tridentata* (Western and Southern Numic only; Central Numic differs). M, NP, (SP), U.

*siŋa-, aspen, *Populus tremuloides*. N, NP, S, (SP), U.

*mono-, a grass, possibly dropseed, *Sporobolus* spp. or foxtail (*Hordeum jubatum*?). M, NP, S, (SP).

*waha-, giant rye, *Elymus condensatus*. M, NP, S, (SP), U.

*wiʔa-, buffalo berry, *Shepherdia argenta*. NP, S, (SP), U.

*muʔa-, an onion, probably *Allium pleianthum*. NP, S, (SP).

Animals

*tiʔi, deer, *Oceocoilus hemionus*. M, NP, P, S, (C), K, (SP), U.

*kucu, bison, *Bison bison* (see note 10). NP, S, (C), SP), U.

*kammi, jackrabbit, *Lepus californicus*, also *Lepus* spp. M, NP, S, K, (SP), U.

*waŋi-, gray fox, *Urocyon cinereoargenteus*. NP, S, (SP).

*sadi-, dog, *Canis* sp. NP, S, (C), K, (SP), U.

*sissika, weasel, *Mestela frenata* (Southern languages only). M, P, K.

*kimpa, ground squirrel, *Spermophilus townsendii*. NP, S, (SP).

*woʔi, ground squirrel, *Spermophilus lateralis*. M, NP, S, K, (SP).

*ekʷi, ground squirrel, *Spermophilus* sp. M, NP, P, K, U.

*yipa, red fox, *Vulpes fulva* (irregular). NP, P, S, (SP).

*cipi, a ground squirrel, referent unclear. NP, S, (SP).

*nakaʔi, marsh hawk, *Circus cyaneus*. NP, S, (SP).

*nagi-, goose, *Branta canadensis*. NP, P, S, K, (SP).

*hito, meadow lark, *Sturnella neglecta*. M, NP, S, K, (SP).

*suku, robbin, *Turdus migratorius*. M, NP, S, (SP).
*cogo- ?, a blue jay (irregular). M, S, K, (SP).
*patici, a water bird, probably ouzel (*Cinclus mexicanus*). M, NP, S, (SP).
*koko, bull snake (*Pituophis* spp.). M, S, K, (SP), U.
*ki?a, locust. M, NP, S, (SP).
*pina, (?), yellowjacket (*Vespa diabolica*). M, NP, P, S, U.

SET IV

Several remaining forms constitute Set IV. These are weakly reflected, at least according to the data currently available. Most are found in one or more adjacent Numic language, or one Numic language and one other northern Uto-Aztecan language. Additional inquiry may eventually suggest wider distributions. Listed by common name only (see Fowler 1972 for native designations), they are as follows:

Plants

manzanita, 2 chenopods, clover, tobacco, chokecherry, fir tree, lupine, moss, 2 biscuitroots, mushroom, birch, and atriplex.

Animals

mountain sheep (probably because of word taboos), antelope, bear, wolf, ground hog, four additional ground squirrels, field mouse, turkey, junco, mocking bird, duck, lizard, and salmon.

NOTES

A1. Miller's (1967:31) UAC # 146a is as follows: "eagle *k^{w}a. SP k^{w}ana-; Tb waa?a-l 'hawk'; waasa-l 'grey crane'; Ls k^{w}a-la 'blue heron'; Sr k^{w}aa?-t 'condor'; Hp k^{w}a:hi 'American eagle'; k^{w}a.yo 'small eagle'; Pg ba?ag; NT bagai; Tr waco 'heron'; Hch k^{w}aazuu 'heron'." Relationships are not clear, but it appears that Tb "grey crane," Tr "heron" and Cr "heron," and Hch "heron" may be part of a second set, related to Proto-Numic *wasa, heron.