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## YOKUTS DIALECT SURVEY

BY

A. L. KROEBER

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## PREFACE

This monograph left Professor Kroeber's hands in almost final form in the summer of 1960, just before his departure for Europe to chair his symposium, "Anthropological Horizons," at the summer headquarters of the Wenner-Gren Foundation, Burg Wartenstein, Austria. It is a sad occasion to repay his many kindnesses by contributing a preface to a monograph, now posthumous, which we had discussed before the symposium and about which we could anticipate further talk after each had returned. Kroeber's death in Paris, on a vacation trip after the symposium, cut short a program of research and publication, based on long years of field work and much unique material, which would have continued to add notably to our knowledge of aboriginal California.<sup>1</sup>

This preface is a useful opportunity, however, to place the monograph somewhat in perspective, as well as to remark on a few aspects of its present form for which I must take responsibility.

Kroeber himself describes charmingly, in the first pages below, the history and circumstances of his Yokuts work. The account is an example that others could well follow in a day when the inescapable personal element with which anthropology begins and ends so often is either excised as irrelevant, or preciously cultivated, rather than, as should be the case, cogently described in the tones of a man speaking of what he has responsibly done. And, I cannot help but think, the personal element is introduced in the monograph not simply as self-expression, but as an intentional enhancement of the data it accompanies, making it the more attractive and rewarding for hoped-for later students of Yokuts and California languages. Each scholar needs to build his world in part of anecdote and memorabilia; where these are meager or lacking, investment of scholarship is often meager or lacking too. I imagine Kroeber's sensing this, and lending the data something of his own larger personality and career to this end.

One must be struck by the fact that the history of this Yokuts work spans the history of Kroeber's life and work with the Indians of California, from its beginnings in 1900 to the close of his life in 1960. Between came many accomplishments in one of the most outstanding anthropological careers of the century, and interests which took Kroeber along other, often broader, paths. But the California materials, and, one must note, the linguistic interests of his early years were returned to in his last decade. And in this, the final contribution from California field work to leave his own hand, there are joined the main elements of his particular constellation of interests in linguistics: ethnography, history, and meaning.

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<sup>1</sup>A retrospective commentary on Kroeber's work in the anthropology of California, to which so much of his life was devoted, is given in annotations to A. L. Kroeber, "Two Papers on the Aboriginal Ethnography of California" (Reports, University of California Archaeological Survey, No. 56), Berkeley, 1962. General accounts of Kroeber's anthropological career are to be found in articles stressing, respectively, ethnology, archaeology, and linguistics, by Steward (1961), Rowe (1962), and Hymes (1961).

References cited in the Preface are included in the bibliography at the end of the monograph.

It should be mentioned that the present monograph embodies the earliest major dialect survey ever undertaken for a native North American language; for that alone it has importance. Kroeber was indeed a pioneer in attention to aboriginal dialectology, led into it by ethnographic interests. An early paper treats, as an empirical and theoretical problem of American ethnology, the question of the degree and kind of dialect differentiation within California languages. Summarizing conflicting assumptions then current as to the nature of the unusual linguistic diversity in California, as projected at the dialect level, Kroeber made an empirical test with Miwok (Moquelumnan) data (Kroeber, 1906). In that paper he also examined the nature of the relationships between dialects, on the one hand, as linguistic units of differentiation, and political, social, and cultural units of differentiation, on the other, and showed that the nature of the relationship between the two kinds of units differed as between such peoples as the Maidu and the Yokuts. The Miwok (Moquelumnan) data for this paper were collected on one of the two field trips Kroeber made specifically for dialectological purposes. The other trip was that which resulted in the Yokuts material now published here. (Some of the same lines of interest show here in section 441, "Linguistic Criteria Differentiating Moities and Groups.")

One of the ethnographic interests of the Yokuts survey was geographic, Kroeber notes, and the data presented here, together with that still in notebooks, have value "if ever any one becomes interested in a finer cut and balance of Yokuts native geography." The joining of linguistic and geographic interests is indeed one of the notable features of the early California work, exemplified by Kroeber, Barrett, and Waterman, and, as self-conscious "ethno-geography," it anticipates the current surge of interest in "ethnoscience." Interest in geography of course may most readily suggest an interest in determinants, perhaps macro-determinants, of human life as resident in environment, ecology, technology, subsistence; but for American ethnology early in the century (Boas' Kwakiutl, Harrington's Tewa, as well as the California work), just as for current ethnoscience, the attention to linguistic terminology is an index of equal interest in the cognitive and experiential dimensions.

The systematic collection of vocabulary as part of ethnography can lead to basic contributions to the content and methodology of a science of culture, as is now occurring once again through formal and semantic analysis, which join the old interest with new tools. It is worth noting, however, especially in connection with Kroeber, that such work has a humanistic side. Future generations will come to the anthropology of peoples such as those of California not only, or even mainly, for the bricks it contributes to building a science of man. Often what will be wanted is the sense that such anthropology can give of a human reality, genuine and different in quality and scale from the qualities and scale of the spreading megapoli in which so many of our descendants will live. Especially when it is a question of continuity of human life within the same environment—the California of the Indians

and the California of the cities without center—then what anthropology can present of a sense of baseline and measuring stick may come to mean much indeed.

In any event, without a local habitation and names, descriptions of cultural pattern still convey something of a past way of life; but in some ways nothing is more telling, for the sense of human reality, than the names, their shapes, and what they clot out. When the names are geographic, simply their specificity and proliferation—spaced so closely and irregularly together, where our names often cut in artificial shapes or fall seven leagues apart—can give a sense of the fine-grained cultural mesh woven into landscape by peoples living on a hunting-and-gathering scale; and the contents of the names enumerate in terms of settings the interests and purposes of life. Not that a vocabulary is a perfect mirror, of course; but names are the only tangible artifacts we have for many parts of past ways of life, and stand shaped as indubitably by native mouths as pots and baskets by native hands. Such a value for word-collecting can be termed "romantic," disparagingly or apologetically, but we do such work a disservice if we think the romantic value will not justify it to a future deprived of other contact with the human past of its place.

Scientific and humanistic interests were combined in Kroeber's work, of course, as they were in those of his greatest contemporaries, Boas and Sapir. Equally combined were love of concrete data and of general import, and in this monograph we find them typically joined. The vocabularies are here, organized and in full; and at the same time they are exploited for what they can say of history and meaning, first within the Yokuts family itself, then within the framework, successively, of North American languages, and all languages.

The vocabulary data is rough hewn by contemporary standards of phonetic recording and phonemic analysis. Kroeber's ear was not specially gifted phonetically, and he collected the vocabularies in a period in which American ethnography was still working toward a phonetic schema adequate for Indian languages. Moreover, in preparation of the final manuscript, Kroeber tended to revise earlier spellings, often apparently under the influence of the later work of Stanley Newman, which he greatly admired; inconsistencies in the spellings of some words occur as a result. Some of these variations can be understood by reference to the section on Orthography (121). Some cannot, and students concerned with variant forms should compare the Tabular Vocabulary (210) and the vocabulary listed in section 220 with the Notes to Vocabularies (230). It might seem best to have modernized the form of the orthography, substituting contemporary symbols where symbols of the older Americanist usage occur. The result would have been speciously attractive. It seems much the best to let the overt shapes of the forms say plainly what they are—recordings of sixty years ago, imperfect but invaluable. The student who uses this material for technical purposes will have no difficulty, and indeed has likely had considerable experience, in making equations between orthographic conventions.

Where individual points of phonological shape are crucial, then, the words herein recorded will fail the descriptivist or comparativist, through uncertainty as to the precise phonemic form they reflect. But where the point is one of the presence or absence of a word, or of an etymological reflex, the data will often suffice.

Unless, indeed, a fresh and intensive last-minute effort is made in the next few years, this monograph will go down as our main source of lexical knowledge for one of California's major language families, since the main subsequent work, that of Newman, is lexically sparse. The monograph is likely to be cited often in the years to come, supporting sound correspondences and etymologies within the burgeoning literature of Penutian (the larger family to which the Yokuts languages belong), as well as in studies of the linguistic aspects of cultural diffusion within California.

For the problems of rate of change, and patterning of change, to which the last section of this monograph is devoted, recognizable identity of form is sufficient, so far as details of shape are concerned. Here there is indeed a different limitation, that of representativeness and comparability of the items themselves, for the vocabularies were collected long before the formulation of the present glottochronological list. The results obtained, however, even if not strictly comparable because of list variation, have interest in terms of the relative chronology of Yokuts differentiation, and in terms of the place of Yokuts time depth in relation to that of a well-studied North American family, Athapaskan. The results give us a rough calibration with absolute time for Yokuts, if not an exact one, and that is both new and not available by other means. (On the present status of glottochronological estimates, see my discussion of Knut Bergsland and Hans Vogt, "On the Validity of Glottochronology," in Current Anthropology 3:136-141 [1962]).

Kroeber calls attention (in the fourth paragraph of section 500) to his anticipations of the glottochronological problem in his first Yokuts monograph of 1907, and it is fair to note that Swadesh has referred to his development of lexicostatistics, including glottochronology, as a reinvention of an approach developed in the California ethnography and linguistics of Kroeber and his colleagues in the first two decades of the century. Tables of shared lexical percentages, in particular, as index of genetic relationship and its degrees are developed in a number of the early monographs of the University of California Publications in American Archaeology and Ethnology by Barrett, Kroeber, Dixon, culminating most importantly in Dixon and Kroeber, "Linguistic Families of California," UCP-AAE 16:47-118 (1919). (On the history of this, cf. Hymes, 1960, 1961, and Driver 1964.) The problem of glottochronology has indeed been adumbrated more than once (e.g., by Latham in England and by Broca in France, both in the mid-nineteenth century), but Kroeber's career is unique in having encompassed both an early and a later interest and development. Lexicostatistics and glottochronology figured prominently in his resumption of linguistic work in the last decade of his life, appealing to his two-fold interest in history and meaning, and the present monograph takes its place in a series of critiques and studies, joining caution and empirical contribution (Kroeber, 1955, 1958, 1959<sub>b</sub>, 1959<sub>c</sub>, 1960, 1961<sub>a</sub>, <sub>b</sub>).

Much of Kroeber's contribution to the development of lexicostatistics and glottochronology is no less than one would expect from a great ethnologist, the placing of a promising technique in perspective, bringing to bear on the evaluation and interpretation of its results a respect for its own contribution joined with a balanced knowledge of the broader spectrum of data and technique with which it must mesh. The balanced view, seeing in the new technique neither subversion nor panacea, might perhaps have been expected from scholars generally,

but it is both a tribute to Kroeber and a sad commentary on scholarship that he was one of the few able to be judicious during the early years of the development of what is now a fact of the intellectual landscape.

I well remember my first visit to Kroeber's house in Berkeley, to attend a linguistic talk I had just published the revised calculations for Athapaskan, which he cites in this monograph (Hymes, 1957). He, as he made known, had in press, but delayed, an interpretation of Athapaskan glottochronology of his own (Kroeber, 1959b). He drew me quickly aside, and so, dean and fledgling, we two eagerly discussed the problems of the new method, almost conspiratorially, before and after the talk (during whose discussion glottochronology was summarily scorned by those assembled in his living-room).

The most notable contribution of Kroeber, and of this monograph, to lexicostatistics and, indeed, general linguistics, is the seizing upon the novel contribution that lexicostatistics, and in particular, glottochronologic, data imply for semantic stability and change. It is difficult, as Kroeber notes, to press far at present, because of the limited number of case studies available to compare, and the difficulties in obtaining comparability. The samenesses and differences that now appear can be only suggestive. Indeed, the rankings and discussion of the semantic categories within Yokuts (p. 241, below), and their comparison with Athapaskan, and with Indo-European and Mon-Khmer, are not now in the form in which Kroeber left them, for a typographical error in the figure for one of the Yokuts categories ("Adjectives") was found to have entered unnoticed. Thanks to the scrupulous and thoughtful editorial work of Mrs. Anne Brower, the discrepancy was caught, and I undertook to revise accordingly the pertinent tables and comments. In doing so, it came to seem obviously desirable to insert two additional tables, one for Athapaskan alone (p. 244, below) and one for all four language groups (p. 250, below). In the manuscript as left by Professor Kroeber, the tables making comparisons among language groups (here, specifically tables 2 and 6) adopt a single rank ordering of semantic classes at the left, and show differences among groups by differences in the figures for each group in the row for each class. It seemed helpful to clarify the similarities and differences among the language groups by presenting tables in which the differences in rank-order position of named semantic classes as such were juxtaposed and given visual form. The additional tables, of course, change nothing of the data or interpretation. Where revision of comments has been necessary, I have tried to maintain Professor Kroeber's intent and style.

The changes just noted do not affect the value of the monograph, for, as we have noted, the specific results can be only suggestive. The individual ratios and rankings are much affected by single changes in the assignment of a meaning to a class, and hence, by any change in the initial determination of the semantic classes to which meanings are assigned. The teasing out of rank orderings and cross-language comparisons is fascinating, and typical of Kroeber; its main significance for general linguistics, and general anthropology, is as a path-breaking indication of what can and should be done, together with a contribution of original data for the task.

When we reflect on the path thus pointed out, it comes as no surprise to anyone acquainted with Kroeber's work to find ourselves concerned with questions in the forefront of current theoretical thought. For the questions of semantic persistence, as well as change, and of cross-language comparison in such terms, precisely fall into place as part of two major issues now gaining their proper attention: the integration of diachrony and synchrony, and the study of language universals. With regard to the first, as Roman Jakobson has so tellingly insisted (see, e.g., Jakobson, 1962), it is fallacious to collapse into one the oppositions of diachronic vs. synchronic, and dynamic vs. static. Although we tend to associate the diachronic with dynamics of change, the synchronic with systems of static equilibrium, equally vital are the dynamic aspects of synchrony, and the static aspect of diachrony. With particular reference to the degree of persistence within semantic classes, singled out in this monograph by Kroeber, it is as important and interesting to account for what does not change, as for what does.

With regard to language universals, it is fitting that there has only just been published a book on the subject, in whose anthropological chapter Kroeber's lifelong concern with the question has been signalled (Casagrande, 1963:233).

After a period of predominant concern with how different languages can be from one another, we see beginning a period of emphasis on what languages share. We must hope, of course, that the pendulum does not swing too far again, that contrariety will remain in view. For such a balance, combining love and respect of concrete data with concern and search for significant generalization, there is no better anthropological example than that of Kroeber, manifest in this monograph and throughout his work.

May 3, 1963

Dell H. Hymes

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# YOKUTS DIALECT SURVEY

BY

A. L. KROEBER

## 100. HISTORY AND PROCEDURE

### 110. HISTORY OF THE UNDERTAKING

I heard my first Yokuts speech in November 1900, when, transiently the Curator of Anthropology in the California Academy of Sciences in San Francisco, I visited the Tule River Reservation upstream from Porterville toward the south end of the San Joaquin Valley, and, during about a week's stay, filled parts of two notebooks with recordings in two dialects. "Visalia Bob" gave Wükchamni forms and José María Yawelmani ones. I was consciously laying a foundation for the future by this visit, as I did the same autumn with the Yurok and Mohave also.

When next I returned to Tule River, in 1903, it was as Instructor in Anthropology in the University of California. My notes of that year are silent as to Visalia Bob, but I began work with Peter Christman ("Salt Lake Pete"), an unschooled but excellent Yawdanchi informant on both language and culture. Yawdanchi and Wükchamni were very similar, and I could build the study of one on the beginning with the other. Peter Christman also visited me for a month in San Francisco, where I was living and where I could more easily find accommodations for him than in Berkeley,

which, off-campus, then was small, suburban, and unaccustomed to dark-complexioned people of rustic speech. While at Tule River, I also resumed work with José María and began with several aged Yawelmani such as Chalola and "Old Cow," although my work was directed at geography and ethnography rather than at speech. I also secured a Choynok, a Palewyami, and, near Lemoore, a Tachi vocabulary. Early in 1904 I looked up the Chukchansi farther north, in and near drainage of the San Joaquin proper, in foothill country around Coarsegold, and secured both linguistic and ethnographic data from them and also the Chawchila and an incomplete Gashowu vocabulary.

This gave my Yokuts studies spread, although a discontinuous one, and in January of 1906, when my descriptions of the Yawdanchi and Yawelmani dialects must have been essentially written and the third or comparative part of my monograph *The Yokuts Language of South Central California*<sup>1</sup> (1907) had presumably been begun, I resolved to undertake a systematic comparative survey of those Yokuts tribelets of which I could still encounter survivors.

### 120. THE DIALECT SURVEY

I drew up a basic vocabulary of some 300 items, which was not very different from the basic lists recently used for collecting lexicostatistical data. It was larger, partly because I included considerable of the specific flora and fauna of the San Joaquin Valley, which are pretty uniform in the Yokuts habitat, whereas formal glottochronology, aiming at something universally comparable, feels itself compelled to omit most species and even genera, however important or characteristic of an area, and to limit itself to recurring parts of plants and animals, like leaves and tails, and to generic classes of them, like tree, grass, fish, bird. I did not, however, know the fauna and especially the flora of the area so well as I should have known them; and our English descriptions differ from those of Indians; so a number of confusions and omissions occurred, some of which are discussed in section 230. I also felt more reliance in noun items than in verb forms, and more in numerals and certain classes of

"grammatical words" than in native equivalents of our adjectives; and in the 400 chapter I believe I have partly substantiated these leanings of 1906. After all, I had been collecting vocabularies all over California for more than five years by then, and had had experience with items that could and could not be presented with maximum sureness of identification to native informants, with least loss of time, and with minimum puzzlement and misconceptions. Also, I have by now acquired a genuine respect for Swadesh's understanding of a satisfactory representative vocabulary, and feel that he and I would be closer together in our lists if he were not under pressure to provide something of world-wide applicability, a requirement which, under the multiplicity and profound differentiation of languages, makes endless difficulties.

I usually included at the end of my list a few phrases

<sup>1</sup>UC-PAAE 2:165-378.

or short sentences, to determine quickly whether, for instance, the imperative was expressed by the stem or by the suffix -k'a, which is the criterion of a widespread dichotomy in Yokuts. But I made no systematic efforts in the direction of ascertaining structure during the dialect survey.

Culture as such I also did not inquire into on this trip in 1906, because, without presystematization, a day or two with an informant would not have sufficed to cover a culture even in outline or by a standardized sample; and our knowledge of California ethnography was not ready for much systematization by 1906. Thirty years later much more knowledge had been collected; it was fairly ordered, and our Culture Element Survey by questionnaire listing could be successfully undertaken between 1934 and 1938. The quality of data varied, of course, as they were secured with more or less tact, understanding, and previous knowledge—as in all other face-to-face field inquiries. We got from this culture survey no such spectacular statistical results as we had hoped, largely, I think, because the mass of data became too unwieldy; and yet, within areas, the coefficients pointed up or established many relationships. The main value of the Element Survey however was straight ethnographic, and most of this ethnography has never yet been extracted, partly because at first anthropologists were discouraged at the novel and seemingly mechanical form of inquiry and presentation, and later on because concern with ethnography itself became unfashionable, interest in cultural forms largely giving way to interest in dynamics, change, process, and actors.

If I omitted general culture from the 1906 Yokuts survey, I did however include ethnogeography, so far as it could be ascertained while sitting in one place. To actually cover, in company of an informant and with reasonable completeness, the land once owned by a tribelet—the ideal method—would take several days in the modern period of cars and roads—when there often are no longer any knowledgeable informants—and it might have required a week or two in the horse-and- buggy era. A summary of what I obtained as to tribal territories, place names, sites inhabited, and local resources went into my Handbook of the Indians of California, chapter 32.<sup>2</sup> But the great mass of primary data was too intricate and detailed to print in so general a work as that was, and much of the mass remains in my notebooks, or in incomplete handwritten extracts. It is naturally impossible to secure data of this highly particularized sort without some conflicting statements and some misunderstandings and plain errors. In summarizing for the Handbook chapter, I resolved these difficulties as best I could; but of course some of my judgments must have been wrong; and if ever any one becomes interested in a finer cut and balance of Yokuts native geography, the data exist for cutting it truer than it is now—unless the physical paper has crumbled away before then. Probably from a third to a half of my working time on this trip was devoted to geographical aspects.

I would merely add that if I had concentrated solely on words, or on geography, or on customs, my narrower information would obviously have been of better quality; but I did what I could to secure a measure of all three on the Yokuts, as in most of my contacts with the California Indians generally.

<sup>2</sup>Bulletin No. 78, Bur. of Am. Ethnology, Smithsonian Institution, 1925; reissued by California Book Co., Berkeley, 1953.

The survey began about January 7 and ended about February 3: my notebooks 63-65 contained dates only intermittently. Travel usually was first by train, then by livery-stable buggy, the final stages more often on foot than horseback. Overall rainfall is light in the southern end of the Great Valley, but the January-February month is normally the wettest in the year, and in 1906 precipitation was above normal. I crossed a swollen branch of Kings River with water running over the corduroy bed of the railless bridge; and in trying to leave the plateau of Squaw Valley to descend to Mill Creek, I rounded a turn of the road that overhung a canyon to find my passage blocked by a farm wagon abandoned in the mud of a slide from the hillside above. I had that afternoon for the first time myself harnessed a two-horse team; but there was no room to turn the team in the road, and I knew I could not back uphill a half mile. So I had after all to walk back up for help, or rather advice: to unhitch the horses, reverse the buggy by hand maneuvering, re-hitch, and drive off the plateau at the other end. This was the sort of travel then involved in reaching the out-of-the-way places where Indians were to be found.

I did not, in the systematic survey of 1906, revisit the Chukchansi or encounter Choynok or Chawchila informants. I did secure fuller data in 1906 on Paleoyami from the same informant, and on Gashowu and Tachi from new ones. I also, in 1906, systematically filled my lexical schedule on Yawdanchi and Yawelmani with my old excellent informants Salt Lake Peter Christman and José María, and used these new lists as more satisfactory for comparison than forms I had previously obtained in structural rather than lexical context. In fact I got a second Yawelmani list, from Frank Ryan, in the initial belief that it was of the Tuxoxi dialect of the Foothill Buena Vista group. This second Yawelmani vocabulary, being identical with José María's, has not been printed separately; but the resemblance of both to Newman's Yawelmani is closer than for any other dialects recorded by both Newman and me.

All in all, this makes data for eighteen dialects now published which were lexically recorded or rerecorded in 1906; two, Chukchansi and Chawchila, in 1904; one, Choynok, in 1903.

A summary and discussion of results of the 1906 comparative dialect survey constitutes Part III, "Other Dialects and Comparisons," of The Yokuts Language as it was printed within a year. This Part III contains a classification of dialects, a validation of the classification by percentaged counts of cognates (pp. 322-327), comparative grammatical notes (pp. 333-346), and notes and texts in various dialects (pp. 347-375). The lexical material obtained in the 1906 survey, however, is not given systematically, except for one sample of sixteen tabulated items (pp. 320-321).

## 121. ORTHOGRAPHY

Members of the University of California Department of Linguistics agreed in urging that I print the Survey vocabularies exactly as I recorded them, without normalization or attempts at modernization of orthography. I have followed their advice, with the result that the appearance of the Yokuts forms is reminiscent of Powell's days in the U.S. Bureau of Ethnology: c for š, tc for č, ts for c, fi for ŋ, no glottal stops in initial position. By 1906 I had given up the exclamation point (k!) to denote glottalized stops and wrote an

apostrophe instead after the stop (k').

At a few special points I have mechanically and uniformly altered my 1906 orthography. The alveolar retroflex *t* of Yokuts I then distinguished by a raised period after the consonant, such as is now used to denote length. This orthography still held in my *Yokuts Language* of 1907. To prevent confusion with the modern sign for length, especially when Newman and Kroeber forms are collocated, I have now consistently\* put the period under the *t* (1906 *t'*, here *ṭ*). In pre-1906 Yokuts, I sometimes wrote *t<sup>r</sup>*: the retroflexion is suggestive of English *r*.

In the first decade of the century, the macron or horizontal line over the vowel was still usual to denote vowel length in recording Indian languages. As a private amplification I so used it for *a*, and for *i*, *e*, *o*, *u* when they were close as well as long: *ī*, *ē*, *ō*, *ū*; but the grave accent when they were open and long: *î*, *è*, *ò*, *ù*. (Apparently I did not ordinarily venture to distinguish open and close quality when the vowel was short and unstressed; except for some scattering breves, *ĩ*, *ě*, *ǎ*, *ǒ*, *ǔ*, which presumably were short counterparts of the macron and which I seem to have abandoned by 1906). Modern linguists' typewriters, at least in Berkeley, come without the macron, so I have had to substitute the circumflex (*â*) in preparing final manuscript. They do come with graves, however, (*è*, *ò*), so these have been preserved. The typewriters also have acutes or "primes" (*á*) which has enabled me to indicate stress when I had written it in the few cases where it is the Yokuts antepenult that carries stress instead of the penult, and in other cases where I erroneously heard it in other than penult position, either through the informant's trying to bring out a vowel quality clearly, or because I mis-syllabized a word in hearing it. In the original notes, I had followed the anthropological custom of the time and wrote the acute in a space of its own over nothing, that is, after the vowel. This orthography is preserved here where the vowel itself bears a diacritical, as *è'*, or *ü'*; but where the original vowel stood clear, I have moved the stress sign on to it, as *á*, *í*.

In the big tabular vocabulary (210), I advise the reader to look first to the bottom lines of the columns, where the Newman forms, N1 and other N designations (a key to which follows) are given in Newman's more modern orthographies; this will soon help the correct apprehension or translation of the more outmoded symbols and inaccuracies in my lines 1 to 21 of that table.

The Newman forms given in the tabular vocabulary are:

N1	Yawelmani	N4	Gashowu
N2	Yawdanchi	N5	Chukchansi
N3	Choynimni	N6	Chawchilla

## 122. ARRANGEMENT

With a few minor variations, I followed Powell in the order of English meanings for which native equivalents were elicited. This order begins with persons, goes on to body parts, then artifacts, nature, plants,

\*[A few examples, e.g. Yawd *tâat'i*, have been found where the change was not made. (Cf. Kroeber 1907, p. 180 on the resemblance of this sound to "tc," and also p. 240, where the form was printed as *t'aatci*.)]

animals, and so on to end with verbs. This grouping by meaning is advantageous in eliciting from unwritten languages, and for several reasons. It is much easier for the informant, and leads him often to volunteer forms for related meanings; it tends to prevent confusion when the language of communication is poorly known to natives—neck, throat, nape, larynx come in juxtaposition and are more likely to be distinguished; it is easy to improvise expansion of the list with a good informant or interpreter; and altogether this classified order of meanings results in much more accurate vocabularies from new and untrained informants than from an arrangement in alphabetic order of the English meanings.

In my presentation I have adhered, with occasional slight variation, to this order of semantic grouping because it seems to me to present partial advantages for use by the linguist parallel to those which it has for eliciting. At any rate, it keeps semantically related items together. The one thing that is lost is an English index; but for 300 items, and those grouped, an index is hardly a prime need. And the columning of all forms for one item shows so much at a glance, both as to phonetic shifts and as to cognate shifts, that I believe my lack of an index will be forgiven.

In my 1906 notebooks, it was the forms and meanings that changed as one ran down a column devoted to a dialect. In print here, in section 210, each meaning is constant per column; one passes from dialect to dialect as one moves downward.

In the text and in the Tabulated Vocabulary (210) meanings are numbered in sequence and retain the same number throughout.

## 123. SOURCES OF THE TRIBAL VOCABULARIES IN ORDER OF THEIR NATURAL GROUPINGS

### BUENA VISTA GROUP OF FOOTHILL DIVISION

*Tulamni*. From an old woman *María* at the rancheria (called *Tolṭiu* in Yokuts) on Rancho Tejon. Notebook 6501, column 6, and 6521. Her father was a *Tulamni* (plural *Tulalmina*) from Buena Vista Lake; her mother, named *Usumlat*, was a *Yawelmani*. *María* spoke both languages and in addition to her *Tulamni* vocabulary gave a *Yawelmani* one which agrees fairly closely with those obtained from Frank Ryan and José *María*.

*Hometwoli* (*Xom-*, *Khom-*). From an old woman, *Marinacia* (*Maria Ignacia?*) allegedly a first cousin of *María*, at the same settlement on Rancho Tejon. Notebook 6501, column 5, and 6524. Her mother was from a (then) dry lake south of Buena Vista (viz., Kern Lake, called *Gawi?*); her father was a *Chumash* from *Tašlibun*, San Emigdio Canyon. *Gawi?* was evidently a settlement on Kern Lake, named after its communal house, the word for which is *gawi?*. *Marinacia* said her dialect was similar to that of the *Tulamni*; which is correct. Her pronunciation of alveolar *ṭ* resembled *č* and was at first frequently so written. She also tended to follow vowels with an aspiration or velar fricative, especially before consonants: thus, *coxtc*, belly, where *Tulamni* was recorded as *toṭ*; *doxc*, tripas; *muxc*, sweat-house, *Tulamni mo'c*, *Yawelmani môc*; woman's dress, *ü'mt<sup>x</sup>ya*, *Tulamni ime'ya*. (*Xometwoli*, "southerners," is presumably what more northern groups called *Marinacia's* tribelet, and was not their own name for themselves.)

### POSO CREEK GROUP OF FOOTHILL DIVISION

Palewyami. From Mrs. Solto on Tule River Reservation, as recorded on notebook 6533-52, column 1, in January 1906, supplemented by a briefer vocabulary, consistently corroborating the main one, which I had obtained from her somewhat more than two years earlier, in December 1903, notebook 5612-14. She called her tribe Peleuyi. She said she belonged to Kelsiu, a place near White River, south of Xosčiu, a prominent hill at the edge of the foothills. She said that only one other woman spoke the language in 1903. Mrs. Solto said that she was born at Shikidapau, above Altai, on or near Poso Creek. She learned Palewyami or Peleuyi from her father's mother. Her father understood but did not speak it. Her mother was of Old Cow's tribe, the Kumachisi-Giamina.

### TULE-KAWEAH GROUP OF FOOTHILL DIVISION

Yawdanchi. From (Salt Lake) Peter Christman of Tule River Reservation, my principal informant for the major Yawdanchi portion of The Yokuts Language (1907). The vocabulary is from notebook 6533-52, column 3, January-February 1906. It seems to have been entered in the comparative table as it appears in this notebook, not conformed to the somewhat normalized published grammar. Peter was born, of a Yawelmani father and a Yawdanchi mother, at Tushau on the South Fork of Tule River, on what became the reservation. He did not know his father's mother's affiliation; his father's father was no doubt Yawelmani. His mother was Yawdanchi from her father (as Peter's birthplace would suggest); her mother was a Yokod, who with the Gawia spoke Tule-Kaweah Foothill.

Wükchamni. From (Visalia) Bob Ogden, both of whose parents were Wükchamni, at Iron Bridge over the Kaweah River above Lemoncove. His vocabulary is from notebook 6401-20, column 5, with geographical and tribal notes at 6433. I spent a day with him. He was a very good informant.

### KINGS RIVER GROUP OF FOOTHILL DIVISION

#### A. On Kings River

Chukaymina. From Squaw Valley Jack, at Squaw Valley (which is really a plateau; the name has now been taken over by the winter sports resort much farther north, near Donner Pass). Jack's father was Chukaymina, his mother a Choynimni. They raised him at Squaw Valley and died there. He made the plural of Chukaymina Chokoyemi. Notebook 6401, column 4, and 6428; January 16, 1906.

Michahay. From Jennie Tom, of Squaw Valley, where she was raised. Her father was a Choynimni, her mother a Michahay. Notebook 6401, column 3, and 6427; January 16, 1906.

Ayticha. From Kings River Bill, notebook 6333, column 4, and 6476. He was interviewed in 1906 at Table Mountain, Fresno County. He said that both his parents were Ayticha, and that he was raised at K'ipayi, some ten miles below Tišeču, which the Choynimni owned.

Choynimni (1906). From an old woman at Table Mountain who was known to me only as Mary, notebook 6333, column 2, and 6363. Her father was a

Choynimni from č'audi'mau on Kings River, situated from four to five miles below the Tišeču just mentioned. Her mother was a Michahay from Maštinai, across Kings River, where Mary too was raised. Her dialect is close to Ayticha.

#### B. Between Kings and San Joaquin Rivers

Gashowu is somewhat transitional between the Kings River and the "Northern" (San Joaquin) dialects. This vocabulary was got in 1906 from an old woman, Guadalupe, at Table Mountain, Fresno County. It is in notebook 6333-52, column 1. Pages 6353-62 contain geographic, cultural, and folklore data contributed jointly by her and Blind Bill. Guadalupe said her father was Choynimni, her mother Gashowu. As to Blind Bill, Mrs. Mathews, the Dumna informant, said that he was Gashowu both from his father and mother. Mrs. Mathews' father's father was a brother of Bill's grandfather; in other words, they were second cousins. I also obtained an incomplete Gashowu vocabulary from Bill, whose mother was Chawchila (? or Pohonichi), his father Chukchansi, and who had lived on Dry Creek, the central territory of the Gashowu. Bill was then among the Chukchansi at Kataniu or Picayune near Coarsegold, where I had begun to visit January 13, 1904. Bill's vocabulary is in notebook 5771-77, and is not presented here, both because its range is somewhat different and because Gashowu was not Bill's native dialect.

### NORTHERN (SAN JOAQUIN) GROUP OF THE VALLEY DIVISION

#### A. Actually in the Foothills near the San Joaquin River

The Chukchansi vocabulary is a consolidation of two—in fact three—mainly corroborative lists obtained independently from Molly, an old woman on Fresno River five miles from Raymond (who also gave the Chawchila vocabulary); from Jim Johnson, at Raymond, where I interviewed him on January 12, 1904; and from Dick Neale at Picayune, whom I saw on January 13, 1904 and whose vocabulary is in notebook 5737-40. Molly's and Jim Johnson's vocabularies are in notebook 5709-21, columns 2 and 3. Molly's mother was a Hoyima.

The Kechayi vocabulary was obtained from Bill Wilson at Millerton, in notebook 6333-52, column 5, on January 13, 1906. He was a half-brother, by the same mother, of Mrs. Mathews, the Dumna informant. He asserted that both his parents were Kechayi (!); but Mrs. Mathews said that their mother was half Dumna and half Chukchansi. He was born at Millerton. His ancestors died, he said, at Kówichkówicho, on the south side of the San Joaquin, about eight miles above Millerton.

The Dumna vocabulary is from Mrs. Mathews, at Table Mountain, Fresno County, and was recorded on January 12, 1906. Her vocabulary is in notebook 6333-52, in column 3; ethnic and geographic information, in 6368-75, including the puzzling Toltichi list of words printed in The Yokuts Language, 1907, pages 354-357. I was not wholly sure whether the alleged Dumna vocabulary was not partly Pitkaṭi or influenced by Pitkaṭi. These Northern or San Joaquin dialects are rather close. Mrs. Mathews' father was raised among Gashowu,

from a Gashowu father and a Dumna mother. Her mother was raised among Chukchansi, of a Chukchansi father and a Dumna mother.

#### B. Actually in the Plains along the San Joaquin River

The Chawchila vocabulary, notebook 5709-21, column 1, is from the same Molly who contributed to the Chukchansi vocabulary in 1904.

#### SOUTHERN GROUP OF THE VALLEY DIVISION

The Wechihit vocabulary, by Tip of Sanger, with occasional aid by his housemate Pascual, is from notebook 6401-20, column 2, and was recorded January 14, 1906. Tip's father was a Wechihit, his mother a Chukaymina probably from Squaw Valley.

Nutunutu is from Mary, Tip's wife, who was born at Kingston but was living near Sanger in January 1906. Notebook 6401-20, column 1.

Tachi is from Bob Bautista at Lemoore, whose father and mother were both Tachi. Notebook 6533-52, column 5, and 6445-47, February 5, 1906. He was assisted by a Tachi named Bergen or Numo'ti. On ethnic matters, Bautista was a rather poor informant. A second Tachi vocabulary, less full, recorded late in 1903 from Tachi Tom, is not combined with the one from Bautista (except for an occasional deficiency, such as the numerals 11-19) in the tabulation, but is added separately below (320).

Chunut is from Bob Bautista's wife of 1906, and is entered in the adjoining column 6 in notebook 6533-52. She claimed that both her parents had been Chunut. The Chunut and Tachi dialects are close, and she may occasionally have assimilated further to her husband's dialect forms, but such differences as remain (except those due to my hearing) are presumably fully reliable.

Wo'lasi or Wowlasi (Wó'wolasi) is from notebook 6401-20, column 6, and 6441-44. It was obtained about

February 4, 1906, from Cross Creek Charlie, a man of about fifty, born of a Choynok (pl. čoyé'naki) father and a Wo'lasi mother, somewhere between Visalia and Farmersville, and raised at Visalia. He was a half-brother of Jim Fisher who had given me the Choynok word list. His wife was an Apyachl, which she said was "a Tachi tribe and spoke Tachi." Charlie was living at Dougherty's on Cross Creek, eleven miles due east and one mile north of the Lemoore Indian Reservation. For his age, he was a good informant.

The Choynok vocabulary was recorded on December 22, 1903, before I had worked out my full word lists, from Jim Fisher on Tule River Reservation. As Yawelmani was then the prevalent Yokuts spoken on the Reservation, I feared that Fisher, who was the only Choynok there, might have got his native dialect contaminated with it. But José María, a very able linguistic informant, told me that Fisher habitually spoke Choynok with the Yawelmani. Most of the Yokuts had parents of different tribelets, who seemed to continue each to speak his own dialect after marriage, or at least to retain it, and the women often imparted theirs to their children also. The record from Fisher was entered in notebook 5636-46, column 1.

My tabulated Yawelmani vocabulary is a combination of two obtained in early February, 1906, on Tule River Reservation, in notebook 6533-52, columns 2 and 4. When I obtained the first from Francisco or Frank Ryan, I was, as I have said, under the impression that I was securing a Ṭuxoxai or Ṭuxoxi (Truhohi) list, but it turned out to be pure Yawelmani. Frank Ryan was born at Tulamni, on Buena Vista Lake, of a Ṭuxoxi mother whose father had already lived there. Ryan's father spoke Yawdanchi. The vocabulary agrees completely with José María's in column 4, except for my imperfections of hearing and writing. José María was my excellent informant for the Yawelmani or Yaulamni (Yawelmani, Yawlamni) section (Part II) of The Yokuts Language, 1907. In entering the tabulations, I did not refer back to the Yawelmani grammatical sketch, but used the forms from the 1906 list.

#### 130. DIALECT NAMES AND ABBREVIATIONS

Yokuts dialect names are tribelet names, which appear also in ethnographic and geographic contexts, such as the maps and chapters of the Handbook of the Indians of California of 1925, and from this have spread widely into both scientific and popular literature. Newman in his Yokuts Language of California, 1944<sup>3</sup> took over my tribal names, with minor changes to conform to the linguistic rule that there are no vowel diphthongs in Yokuts: Choynimni for Choinimni, Chawchila for Chauchila, Yawelmani for Yauelmani, abbreviated by him Choy, Chaw, Yaw. I began by using his forms and abbreviations when citing him, while retaining my older ones in presenting my own data, but it was difficult to maintain the distinction when I was comparing him and me, and editors have a way of insisting on literal uniformity.

I have therefore worked out a compromise, in which I modify some of his six dialect names and all relevant

<sup>3</sup>Viking Fund Publications in Anthropology, No. Two (New York, 1944).

ones of my twenty-one, observing the nondiphthong rule. This at least achieves uniformity between Newman's and my linguistic presentations, whereas in historical and cultural situations, the alterations in established names are so slight as to cause no confusions; in fact, the reformed linguistic names might come to be generally adopted in works on culture and history: Palewyami, Yawdanchi, etc.

I do not know what to do about Wükchamni. Newman recognizes that this dialect has the sound which I wrote ü. He says it is "Slightly rounded," less so than in German Stück. In modern linguistic orthography it is usually written ĩ. Perhaps he wanted to get rid of the diaeresis in a geographical term, or decided it was properly i and not ĩ in this name, or his lone informant may have begun to assimilate ĩ, ë to general Yokuts i, e. Diacriticals sooner or later get lost in English, so the final outcome (except in linguistic concerns) will probably be either Wukchamni or Wikchamni; Gayton uses a third variant, Wukchumne: they are all too close to cause confusion.

However, distinct three- and four-letter abbreviations of dialect names can be confused if they begin with the same sounds. Newman's Yaw for Yawelmani would also stand for the Yawdanchi which I include; so I abbreviate Yawe and Yawd. Choy for Choynimni would also cover Choynok, so I abbreviate the latter Chnk. Similarly I retain Newman's Chuk for Chukchansi but am writing Chkm for Chukayimina. I append the dialect-tribelet names and their abbreviations in the order in which they appear in the word-list tabulations.

## FOOTHILL DIVISION

Buena Vista Group

- |              |                 |
|--------------|-----------------|
| 1. Tulamni   | Tul             |
| 2. Hometwoli | Home (for Xome) |

Poso Creek Group

- |              |     |
|--------------|-----|
| 3. Palewyami | Pal |
|--------------|-----|

Tule-Kaweah Group

- |              |                                    |
|--------------|------------------------------------|
| 4. Yawdanchi | Yawd ( <u>not</u> Yawe, see below) |
| 5. Wükchamni | Wük                                |

Kings River Group  
(On Kings River)

- |                |                                    |
|----------------|------------------------------------|
| 6. Chukayimina | Chkm ( <u>not</u> Chuk, see below) |
| 7. Michahay    | Mich                               |

- |              |                                    |
|--------------|------------------------------------|
| 8. Ayticha   | Ayt                                |
| 9. Choynimni | Choy ( <u>not</u> Chnk, see below) |

(Between Kings and  
San Joaquin rivers)

- |             |      |
|-------------|------|
| 10. Gashowu | Gash |
|-------------|------|

## VALLEY DIVISION

Northern (San Joaquin) Group

(In foothills near  
San Joaquin river)

- |                |                                    |
|----------------|------------------------------------|
| 11. Chukchansi | Chuk ( <u>not</u> Chkm, see above) |
| 12. Kechayi    | Kech                               |
| 13. Dumna      | Dum                                |

(In plains along  
San Joaquin river)

- |               |      |
|---------------|------|
| 14. Chawchila | Chaw |
|---------------|------|

Southern Group

- |               |                                    |
|---------------|------------------------------------|
| 15. Wechihit  | Wech                               |
| 16. Nutúnutu  | Nutu                               |
| 17. Tachi     | Tach                               |
| 18. Chunut    | Chun                               |
| 19. Wo'lasí   | Wo'l                               |
| 20. Choynok   | Chnk ( <u>not</u> Choy, see above) |
| 21. Yawelmani | Yawe ( <u>not</u> Yawd, see above) |

## 140. PHONETIC INSUFFICIENCIES

After Newman's Yokuts Language of California appeared in 1944, I became more aware of the phonological inadequacies of my materials gathered in the first decade of the century. As for the vocabularies, as soon as they were columned and collocated, a glance sufficed to make it apparent that they contained many nonconformities which for the most part did not actually exist in the dialects but were due to imperfect hearing on my part. I had been more or less aware of these discrepancies from the first, but, overoptimistic as the result of the bulk of material piling up, I thought vaguely that somehow the mass of comparative data would automatically straighten out the deficiencies of recording.

When I finally realized the vanity of such expectations, I turned to Newman's grammar and extracted from it many accurately transcribed forms in Yawelmani or his five other dialects, and then asked him whether he could supply additional words, which he kindly did. In the end this gave me, in most cases at least, one accurately transcribed Yokuts form, and sometimes several, to match against my lists. It also showed where my specific deficiencies chiefly lay.

In general my hearing of vowel qualities and of points of articulation of consonants was reasonably adequate. I got the alveolars as distinct from the dentals quite regularly, after the first year or two, even though I generally wrote the *c* currently used at the time for *ş* or *š*. I was conscious of vowel lengths and caught them fairly well when stressed, except for a tendency to introduce spurious length in stressed syllables and to overlook actual length in unstressed. As for stress, one of my notebooks of 1906 contains an

entry that stress falls so regularly on the penult, that unmarked forms can be assumed to carry it there. If nevertheless my vocabularies show antepenult or final stress more frequently than the examples in Newman's description, I lay this partly to actual aberrances from rule in the remoter dialects with which Newman could no longer work, and more largely to unintended deviations by informants in pronouncing isolated words. I think stress is one of the features of speech which I hear better than most features, as I hear tone level or shift worse.

I wrote diphthongs consistently from force of habit, but recognized at once the superiority of Newman's patterning of *y* and *w* as second members, and that the language does not tolerate bivocalic or triconsonantal clusters. If I sometimes retain spellings of tribal names like Yauelmani, Yaudanchi, Choinimni, it is because they have by now acquired a certain standardization in ethnological and geographic literature.

Many anthropologists were still deaf to glottal stops in 1906, or thought it unnecessary to write them, especially in initial position. We also left them out finally, and often even intervocalically. As Newman says (§1:16), Yokuts glottal closure tends to be incomplete, and *buʔus* (dog) will generally be heard as *bu's* with the vowel long and rasped. The concept of phonemes being still about two decades from emergence in 1906, we tried to write down what we "actually heard," and it was only the better endowed of us (no one was really trained) who were likely to hear enough significance in a rasp or burr to cause us to call for an abnormally sharp or slow repronunciation from informants. The trouble with writing *buus*, as I was likely to do, is

that it might stand for bu<sup>?</sup>us with normally somewhat slurred /'/, or for integral bu's in which the auditor happened to hear the vowel more or less geminated. It is in cases like this that a single instance of bu<sup>?</sup>us written by a glottally conscious and trained observer like Newman usually suffices to decide which the general Yokuts form is.

Incidentally, the stem bu<sup>?</sup>us occurs 7 times in my tabulated word lists, always in Valley dialects; 4 times the accent is on the final syllable. I doubt whether the word actually was spoken thus in these four dialects, buís or buíc; rather, I suspect the informant was slightly overemphasizing the final vowel to indicate dissyllabicity; which phonemically would imply the medial glottal stop: bu<sup>?</sup>us and not bu's.

Beyond the glottal stop as such, Yokuts possesses a full series of glottalized stops and affricates, plus the glottalized continuants w, y, n, m, ŋ, l. These last, as nearly as I remember, I did not know of as a class of possible sounds in any language until Newman told me of their occurrence, some time after his field work of 1930 and 1931. Naturally, with my total lack of phonetic training, I did not recognize them for what they were when I encountered them. In retrospect,

however, my acoustic hearing occasionally was better than my expectation; now and then I would write a glottal stop after or before the continuant. For instance, for "eight," Newman's Yawelmani is mu<sup>?</sup>no's, and I wrote <sup>?</sup>n 4 times,† n<sup>?</sup> 10 times, and plain n 7 times; from which n could reasonably have been inferred. But this was batting high. In 10 occurrences of no'no' "man," I wrote n<sup>?</sup>no (= no'no) 10 times; in 7 occurrences of 'aw<sup>?</sup>as "chin" there are 2 a'wac, 0 aw<sup>?</sup>ac, 0 auac, 4 awac, and 1 awas; for "night," which Newman writes to<sup>?</sup>no' (and presumably to<sup>?</sup>yon), I recorded 3 to<sup>?</sup>no, 3 toino, 1 to<sup>?</sup>yon, 3 toyo<sup>?</sup>n, 5 toyon, 1 (?) toyo'n, 2 tuyon; in "fox," 'awca' in Yawelmani, I wrote a glottal stop between u (= w) and the affricate 7 times out of 14.

By 1900 I was well aware of the glottalized stops as a class, but their glottalization is slack in Yokuts and I went widely astray with them. In initial position, I tended, on account of their feeble release, to hear them as unaspirated intermediates; medially, as aspirates; and finally also as aspirates, though not so overwhelmingly as medially. Sometimes I indecisively compromised and wrote b<sup>?</sup> or g<sup>?</sup>. A random sample count shows the following; using Newman's forms as touchstone of the actual sound:

	<u>Glottalized</u>	<u>Unaspirated</u>	<u>Aspirated</u>
Glottalized stop or affricate:			
<u>Initial:</u>			
ten, thigh, rump, tail, bone, arrow, arrowhead, beads, world, lake, leaf, dog, mouse, bluejay, worm—15 stems .....	75	72	54
<u>Medial:</u>			
six, man, youth, neck-throat (mikiš), stream, lake trout, bad—7 stems .....	10	5	64
<u>Final:</u>			
one, five, ear, heart, tail, water, whirlwind, prairie falcon, blackbird—9 stems .....	32	0	78

The variation is unaccountably great, although where there was a chance for interference by metathesis—of which more below—this increased the confusion. I cannot see any principle of sound context that would explain the variable apperception. I cite some instances.

	<u>Initial<sup>4</sup></u>	<u>Glottalized</u>	<u>Unaspirated</u>	<u>Aspirated</u>	
(146) p <sup>?</sup> a <sup>?</sup> a <sup>?</sup> world, land		8	6*	--	*all 6 b <sup>?</sup>
(148) p <sup>?</sup> a <sup>?</sup> a <sup>?</sup> i <sup>?</sup> lake		--	6*	2	*all 6 b <sup>?</sup>
(75) č <sup>?</sup> i <sup>?</sup> y <sup>?</sup> bone		14	--	6	
(176) č <sup>?</sup> e <sup>?</sup> ša <sup>?</sup> š dog		4	2	8	
(222) č <sup>?</sup> ay <sup>?</sup> č <sup>?</sup> ay, † <sup>?</sup> ay† <sup>?</sup> ay bluejay		4	1	13	
(10) † <sup>?</sup> i <sup>?</sup> y <sup>?</sup> ew ten		--	--	16	
(159) t <sup>?</sup> ap <sup>?</sup> - leaf		--	15	--	
(103) t <sup>?</sup> uyo's arrow		14	--	2	
(267) k <sup>?</sup> ew worm		5	--	--	
(111) k <sup>?</sup> e'xa beads		--	12*	--	*incl. 4 g <sup>?</sup>
(104) k <sup>?</sup> ac arrowhead (obsidian)		3	15*	1	*incl. 2 g <sup>?</sup>
(95) k <sup>?</sup> ut <sup>?</sup> tail		7	8	2	

†[Frequencies in this paragraph have been changed to accord with the Tabular Vocabulary (§210).]

<sup>4</sup>Since this monograph will be printed in photolithed typescript, the glottalizing symbol has been placed after the stops p, t, †, č, k (where Newman's printed forms have it in the letter), but it has been retained over the continuants w, y, l, m, n, ŋ; thus p<sup>?</sup>, t<sup>?</sup>, †<sup>?</sup>, c<sup>?</sup>, č<sup>?</sup>, k<sup>?</sup> but w, y, l, m, n, ŋ.

		<u>Glottalized</u>	<u>Unaspirated</u>	<u>Aspirated</u>
<u>Medial</u>				
(57)	mikʔiš neck, throat	10	1	3
(6)	čolipʔey six	--	--	20
(256)	ʔe·pʔis lake trout	--	--	15
(274)	doʔʔe· bad	--	2	13
<u>Final</u>				
(1)	yetʔ one	8	--	4
(5)	yitʔsinil five	--	--	20
(142)	ʔilikʔ water	7	--	14
(209)	limikʔ prairie falcon	1	--	13

Another deficiency was in regard to the intermediate stops, which Newman defines as "lenis unaspirated voiceless."<sup>5</sup> Not only did I tend to record these in place of initial glottalized stops, as just illustrated, but I tended also to confound the nonaspirates with aspirates, usually in favor of the latter. This is evidently the result of German's having been my first language, almost my only one up to the age of five.<sup>6</sup> In Yokuts I perceived initial unaspirate intermediates fairly well, though quite variably, but wrote almost all medial and final occurrences as aspirates.

(171)	dopin	buckeye	6 d	2 t
(79)	dip	liver	13 d	3 t
(73)	daʔaʔ	foot	11 d	1 t
(240)	go·lonkil	king snake	11 g	0 k
(265)	baʔo·nay	yellow jacket	10 b	0 p
(200)	tʔe·bik	beaver	11 b	4 p
(2)	bonoy	two	8 b	13 p
(4)	hotbonoy	four	0 b	21 p
(9)	soponho·d	nine	0 d	8 t
(31)	witeb	child	0 b	15 p

A very common source of errors in my recording is metathesis, toward which it is evident I have considerable proclivity—as indeed I have long been aware in dealing with other languages. I suspect this proneness is due to an endeavor to apperceive words as wholes instead of by breaking them into syllables. Particularly in words with three or four consonants, I was likely to recognize qualities of these, such as glottalization, aspiration, alveolarization, but to transpose or interchange them.

Newman's ʔimitʔ eyebrow (46) is a case in point. We have here an alveolar aspirate stop and a glottal-

<sup>5</sup>He says (§1.2) that in Gashowu however "they are thoroughly voiced," and that in Chukchansi a 15-year-old boy also voiced them consistently, though older informants pronounced them voiceless. I am sure that this influence is from English speech. Working with older people among both tribes in 1903-1906, my notes show no difference of Gashowu and Chukchansi from other dialects on this point.

<sup>6</sup>I recall that at the age of twelve I ironically called a schoolfellow "sweetey" (sweetheart), which was heard as "Swedey" and earned me the retort and temporary sobriquet of "Dutchy." At least from the age of sixteen when I entered college, my pronunciation encountered no ridicule or comment, but the effect on my apperception evidently endured much longer. Sapir once listened to my English for traces of German accent, but I remember only his coming up with some prevocalic glottal stops at internal juncture in compound words like "interaction."

ized dental. The initial ʔ appears in the following 8 forms in my record:

ʔ 2, ʔʔ 1, ʔ 2; t 2, t' 1, d 5; tc 3, tsʔ 2

This adds up to:

alveolar	5
dental	8
palatal affricate	5 (probably actual)
aspirated	7
glottalized	4
unaspirated	7

The final glottalized dental tʔ in ʔimitʔ I did not record once as dental, but as ʔ 7 times, tc or ts 5 times, and as continuant c or s 5 times. This last may be actual, but we should expect it would be ʔ, not t, that becomes tc, ts, c, or s. Of the 12 final stops or affricates recorded, only 2 were glottalized. My total record would seem almost to fit better with a basic form tʔimiʔ than with Newman's ʔimitʔ.

In 11 recordings of daʔaʔ foot (73) I missed all the presumptive 22 glottalizations, substituting intermediates 9 times and aspirates 13 times, and changed dental to alveolar 3 times out of 11 and alveolar to dental 4 times out of 22.

ʔinikʔ nose (48) has a consonant scheme similar to ʔimitʔ, but k seems to our English ears further than t from the initial ʔ, so there is less confusion in my record, though only 2 of 21 of the final k's were properly glottalized.

talxaʔ tongue (50) involves only position of two aspirates, yet 2 writings were ʔ - t instead of t - ʔ. (Appearance of tc, ts, or s for ʔ half the time is no doubt a genuine shift. The s in Chukchansi is regular for ʔ according to Newman, and appears also in "nose" and "beard.")

da·mʔ beard (53) involves an unaspirated dental and an aspirated alveolar, the latter again shifting sometimes to ts, s, and especially c. The initial d appears in my record 13 times out of 21. One t is probably an error; 2 ʔ's might be due to infection of hearing from the final ʔ, but are also supported as perhaps real by 4 cases of dj.

There are 7 renderings of bidikʔ feces (91). Initial b- appears 2 times, p 5 times; medial -d- 5 times, -ʔ- 2 times; final k' only once, k 6 times.

mo:ʔak smoke (139) was not once recorded with glottalized middle consonant; q 14, ʔ 2, ts 1, dj 1. The final k was right 17 times, but glottalized once.

My metathesizing did not often cause wholesale error, but it seems a frequent minor disturbing factor, and is often difficult to pin down.

After this dispiriting review of phonological imperfections, I am nevertheless encouraged on comparing my Yawelmani word list on line 21 of the big tabulations with Newman's corresponding forms in the same Yawelmani dialect on the immediately following line N1. Allowing for somewhat different orthographies, and apart from my not hearing or rarely writing glottal

stops, glottalized continuants, medial and final glottalized stops, and final unaspirated stops, the two arrays of forms corroborate nicely. My list was compiled separately from two informants with one of whom I had worked previously on Yawelmani structure. He and I had trained each other—which fact shows in the list, which is certainly superior to most. If more of the other twenty vocabularies were of equal quality (Yawdanchi perhaps approaches it) I should be happier. All in all my renderings were perceptibly better in early 1906, when I collected 18 of the 21 systematic word lists, than they were in 1900-1904.

## 200. COMPARATIVE VOCABULARIES

### 210. TABULAR VOCABULARY

If ten or more of assembled vocabularies contained a Yokuts form for a given meaning, that stem was included in the main tabulation. This happened about 4 times out of 5. For about 60 items of meaning, 9 or fewer stems were recorded. Such were not tabulated, but are recorded in the following section, 220, in paragraphed lists, in which of course the abbreviated dialect name had to be cited for each form. The abbreviations for the names, and their order, are the same as in the tabulation in the present section.

The abbreviations have already been cited in section 130. Notes to both the tabulated and the paragraphed portions of the vocabularies appear in a single series in 230.

A key to the orthography used in this section follows:

c = š  
tc = č  
ts = c  
ñ = ŋ

Glottal stop (or glottalization) denoted by apostrophe. Alveolar retroflex t denoted by period under the t (ʔ); rarely by tʔ.

Inverted circumflex over vowel indicates close and long: ä, ĩ, ě, ǒ, ů.

Grave accent over vowel indicates open and long: à, ì, è, ò, ù.

Acute accent indicates stress and follows the vowel when it already bears a diacritical mark (è', ü'); where the original vowel is clear the stress sign falls over it (á, í).

	<u>1</u> <u>one</u>	<u>2</u> <u>two</u>	<u>3</u> <u>three</u>	<u>4</u> <u>four</u>	<u>5</u> <u>five</u>
1. Tulamni	yit	puñi	còop	tapañi	yitsiñ
2. Hometwoli	yit'	puñi	còop	tâ'pañi	yit-sũñul
3. Palewyami	yit'	poñoi	còopi'	hetpeñi	yet-sili
4. Yawdanchi	yet	bðñoi	còopin	hatbañi	yüt-siñut
5. Wükchamni	yeṭ	poñoi	cʳðpin	hatpañi	yit-ciñut
6. Chukaimina	yetc'	punoi	còpin	hatpanai	yiticnil
7. Michahay	yets'	bonoi	còpin	hatepanai	yiticnil
8. Ayticha	yetc	punoi	sðopin	hatpanai	yiticinil
9. Choynimni	yetc	punoi	sðopin	hátepanai	yíticnil
10. Gashowu	yet	ponoi	copín	hatpanai	yit-cinil
11. Chukchansi	yet	ponoi	còpin	hátpanai	yít-cinil
12. Kechayi	yet	bunoi	còpin	hatpanai	yit-sinil
13. Dumna	yet	punoi	sðopin	hatepanai	yítecinil
14. Chawchila	yet	ponoii	coopin	hotoponoii	yít-cinil
15. Wechihit	yet	bonoi	coopin	hotponoi	yit-sinil
16. Nutúnutu	yets'	bonoi	sðpi'n	hatponoi	yit-sini'l
17. Tachi	yetc	bonoi	coopi'n	hotponoi	yít-cinil
18. Chunut	yets'	bonoi	còopi'n	hotponoi	yít-sinil
19. Wo'lasi	yet'	bonoi	copi(n)	hotponoi	yít-cinil
20. Choynok	yeṭ	ponoi	coopin	hoṭponoi	yit-cinil
21. Yawelmani	yet	ponoi	coopin	hotponoi	yit-sinil
N1. Yawelmani	ye'f	bonoy	ʂo'pe'n	hotbonoy	yit'sinil

	<u>6</u> <u>six</u>	<u>7</u> <u>seven</u>	<u>8</u> <u>eight</u>	<u>9</u> <u>nine</u>	<u>10</u> <u>ten</u>
1. Tulamni	tsólipi	numtsin	munas	wutcat	ṭeu
2. Hometwoli		numts'i(n)	mu'nas	wutcat	ṭieu
3. Palewyami	tc'ilipi	nomtsi(1)	me'nuc	lik'iyi	ṭeu
4. Yawdanchi	tc'udipi	nomtcin	mu'noc	nònip	ṭieu
5. Wükchamni	tcodipi	nom'tcin	munoc	nònip	ṭieu
6. Chukaimina	tcolipi	nomtc'in	mon'oc	nònip	ṭeeu
7. Michahay	tcolipi	nomtc'in	mon'oc	nònip	ṭèu
8. Ayticha	tc'olipî	nomtc'in	mon'oc	nònip	ṭieu
9. Choynimni	tc'ólipî	nomtc'in	mon'oc	nonip'	ṭe'èu
10. Gashowu	tcolipi	nomtc'in	mon'oc	nònip	ṭiu
11. Chukchansi	tcolipi	nomtcin	munoc	nònip	ṭ'ieu
12. Kechayi	tc'olipî	numtc'in	mun'os	nònip	ṭ'ieu
13. Dumna	tc'olipî	nomtc'in	mon'oc	nònip	ṭs'ieu
14. Chawchila	tcolipî	nomtc'in	mon'oc	coponhót	ṭ'ieu
15. Wechihit	ts'ólipi	nomtc'il	monoc	sobonhot	ṭieu
16. Nutúnutu	tc'olipî	nomts'i'l	mon'os	sóponhot	ṭieu
17. Tachi	tcólipi	nomtcil	munoc	coponot	ṭieu
18. Chunut	tsólipi	nomtsil	munoc	sopon(h)ot	ṭieu
19. Wo'lasi	tc'olipi	nomtcil	mun'oc	coponxot	ṭieu
20. Choynok	tcòlipi	nomtcil	mo'noc	coponxot	ṭ'ieu
21. Yawelmani	tc'olipî	nomtsil	munoc	soponhot	ṭieu
N1. Yawelmani	čolipe'y	nomcé'l	muño's	soponho'd	ṭiye'w

	25 <u>person</u>	26 <u>white man</u>	27 <u>man</u>	28 <u>woman</u>	30 <u>girl</u>
1. Tulamni	toxy		kohòts	mug'es	guyòyam
2. Hometwoli	tox <sup>i</sup>		kohò'tc	muk'es	bónòtso, guyòyam
3. Palewyami	ṭâat		lòotep	xátneu	gadapcul, getep'al
4. Yawdanchi	ṭâat'i, mâi		góu'tcun	muk'ac	
5. Wükchamni	ṭaâti, mâi	melikâna	goo'tcún	muk'ec	guyòdum
6. Chukaimina	mai	mihikâna	botcon	moṭoihoi	
7. Michahay	mâyi	mehèkitc	botcon	moṭoihoi	
8. Ayticha	mayi	mèkana	botcón	moṭoihoi	hatcâmi
9. Choynimni	mâyi	t'ipni, t'epani	butcon	móṭoihoi	
10. Gashowu	mayi	mehèkitc	butcon	koyòlum	
11. Chukchansi	yukotc		nòno	muk'èla	gaina
12. Kechayi	yukotc	mikana	nòno	muk'èla	
13. Dumna	yokotc	mehèkitc	nòno	moke'la	gâ-ína, gâ-íta
14. Chawchila	yokotc		nòtco	muk'èla	gâit'a
15. Wechihit	yokotc	melikan	nòno	muk'èla	katcap
16. Nutúnutu	yokots	mehikana	nòno	muk'èla	
17. Tachi	yokòts		nòno	muk'èla	
18. Chunut	yokòts		nòno	muk'èla	gâ'itsa
19. Wo'lasi	yòkots	melikan	nòno	mok'èla	
20. Choynok	yokotc		nòno	mok'èla	
21. Yawelmani	yokots	melikano	nòno	gâ'ina	gâ'ita
N1. Yawelmani	yoko'č		no'no' 1, 5	ga'iína	ga'ita
N. var.			kuḥfun 2	goyo'lum 4	ga'ič 6
			bočon 3	moke'l 6	goyo'lum
	31 <u>child</u>	32 <u>old man</u>	33 <u>old woman</u>	34 <u>widow</u>	35 <u>father</u>
1. Tulamni	megok	tságanats	mokoyo		nòpop
2. Hometwoli	me'gok	tságanats	ts'ots'o		nòpop
3. Palewyami	wetcip	nèmhalatci	coti'l	húpna	mokotoi
4. Yawdanchi	wit'ep	moxodo	moxodo	ṭumiun, hupana	natèt
5. Wükchamni	witep	moxodo	motcoto	hupana	netet
6. Chukaimina	wetep	moxolo	motcatc	hupana	nopop
7. Michahay	wetep, ákedatc	mókedjo	bóhadja	hopana	nopop
8. Ayticha	witep	moxolo	moxolo		
9. Choynimni	witep, akdatc	moxolo	mótcodo	hupana	nopop
10. Gashowu	witep, akdatc	mokdo	motcdo	lolhon	nopop
11. Chukchansi	p'ai	moxelo, puyotatc	mocto		
12. Kechayi	p'ai	mokdjo	mokdjo	lolhon	
13. Dumna	ak <sup>e</sup> datc	poyòdatc	motsdo	lolhon	nopop
14. Chawchila	witep	poṭ'u, muṭa	motcto		
15. Wechihit	witcep	mox <sup>e</sup> lo	motcdo		nopop
16. Nutúnutu	wits'ep	mox <sup>e</sup> lo	motcdo	húp'nâ	nopo'p
17. Tachi		moxelo	motsdoi	ṭumiún	nobob
18. Chunut	wit'ep	móxelo	móxelo	ṭumiún	nopop
19. Wo'lasi	wit'ep	móxelo	móxelo	ṭumiun	nòpo
20. Choynok	wiṭep	móxelo	mok'nitc		nopop
21. Yawelmani	wit'ep	moxelo', dima	moxelo'	ṭumiun	nopop
N1. Yawelmani	witeb	moxo'lič		tumyun	nopop
N. var.	ṭay 5				naṭeṭ 2

	36	37	38	39	40
	<u>mother</u>	<u>chief</u>	<u>shaman</u>	<u>friend</u>	<u>ghost</u>
1. Tulamni	nâsus	túñi	malâcit	axma	ñfawi
2. Hometwoli	nâsus	túñi	má'lacitc	a'Xma	ñáau
3. Palewyami	nèxit	díya	eñteu	nòotci	elit
4. Yawdanchi	najoj	diya'a	añtu	nòtci	hiṭwâiu
5. Wükchamni	nacoc	díya'a	añtu	nòtci	
6. Chukaimina	noom	díya'	añtu	nòtci	tawaṭa
7. Michahay	noom	diya	añtu	notci	
8. Ayticha		díya	añtu	notci	hotcòwitic
9. Choynimni	noom	dia'a	añtū	kapac	
10. Gashowu	noom	dí'ia	añtu	kapac	
11. Chukchansi			tèyic		
12. Kechayi		díya	tèyis		
13. Dumna	noom	díya	tèic	nòtci	
14. Chawchila			tèyic		
15. Wechihit	noom	díya'	añtu	nòtci	huṭdūt
16. Nutúnutu	noo'm	díya'	añtu	nòtci	huṭdūt
17. Tachi	noom	díya'	añtu	nòotci	hutcòuts
18. Chunut	noo'm	díya'	añtu	nòotci	hiṭwaia
19. Wo'lasí	nòo	díya	añtu	nòtci	
20. Choynok	noom				
21. Yawelmani	noom	díya'	añtu	nòotci	hiṭwaiu
N1. Yawelmani	no'om 1, 4, 5, 6	diya' 1, 2, 4	'añtuw 1		hiṭwa'yu'
N. var.	naso's 2		ṭipne' 1		
	41	42	43	44	45
	<u>head</u>	<u>hair</u>	<u>forehead</u>	<u>ear</u>	<u>eye</u>
1. Tulamni	ṭdoi	òto	gúwit	suk'al	sasal
2. Hometwoli	dool	òto	gúwit	súk'al	sas
3. Palewyami		ṭuk	peleu	tok	ceca
4. Yawdanchi	tòot	oṭo	ṭúdu	tuk	caca
5. Wükchamni	dòot	oṭo	tideu	tuk'	cecá
6. Chukaimina	dool	oṭò	diliu	tok	cacá
7. Michahay	dool	oṭò'ᵘ	diliu	tok	caca
8. Ayticha	dool	oṭò'	til'ᵘ	tok	caca
9. Choynimni	dòol, dòots	oṭo	tiliu	tok	caca
10. Gashowu	do-il	cilis	tiliu	tok	ṭaṭa
11. Chukchansi	uṭòᵘ	cil'ic	piṭiu	tuk	caca
12. Kechayi	otc'ò'	cilis	pitcú	tuk	caca
13. Dumna	otso	silis	pitsiu	tuk	sasa
14. Chawchila	oṭò	cil'ic	pil'fu	t'uk	caca
15. Wechihit	oṭo	oṭo	piṭiu	tuk	cacá
16. Nutúnutu	oṭo	oṭo	piṭiu	tu'k	caca
17. Tachi	(óṭò)	oṭò		túk	caca
18. Chunut	(oṭò'ᵘ)	oṭò'ᵘ	piṭiu	túk	caca
19. Wo'lasí	òto	òto	piṭiu	tu'k	caca
20. Choynok	oṭo	oṭo	piṭiu	tuk	ṭaṭa
21. Yawelmani	oṭo	cilis	piṭiu	tuk'	sasa
N1. Yawelmani	'oṭow 1	ṣiliṣ 1, 6	piṭ'iw	tu'k	sasa
N. var.	'uṭow 6			to'k 3, 6	ṣaṣa 5

	46 <u>eyebrow</u>	48 <u>nose</u>	49 <u>mouth</u>	50 <u>tongue</u>	51 <u>tooth</u>
1. Tulamni	ts'imèsil	ṭiñak		a'lâdas	
2. Hometwoli	ts'imèsil	ṭiñák	sa'm	álâd'is	tèlix
3. Palewyami	tcimícel	ṭeñik	cema	talâpis	ṭile <sup>i</sup>
4. Yawdanchi	tcimèjid	ṭ'ũñük	cama	tadxat	tèdi
5. Wükchamni	tcimècit	ṭũñük'	cama	tadxatc	tèdi
6. Chukaimina	dimètci	ṭinik	camá	talxíṭ	tèli
7. Michahay	dimètci	ṭinik	camá	madaṭ	tèli
8. Ayticha	ṭemèṭi	ṭinik	camá	talxítc	tèli
9. Choynimni		ṭinik	cama	mataṭ	tèli
10. Gashowu	démèṭi	ṭinik	ṭama	ṭalxít	tèi
11. Chukchansi		sinik	cama	talxas	tèlī
12. Kechayi	ṭ'imèṭi	ṭinik	cama	talxítc	tèli
13. Dumna	ḍimits	ṭinik	cama	talxats	teli
14. Chawchila	ṭimèṭ'il	ṭiñik	cama	ṭalkat	tèlī
15. Wechihit		ṭinik	sama	talxatc	tèyi
16. Nutúnutu	ti'mitc'	ṭinik'	sama	talxatc	tèyi
17. Tachi	dimiṭ	ṭinik	cama	talxaṭ	tèyi'
18. Chunut	dimiṭ	ṭinik	cama	talxaṭ	tèyi
19. Wo'lasi	t'imitc	ṭinik	cama	talxaṭ	tèyi
20. Choynok	ṭimit	ṭinik		talxaṭ	tèi
21. Yawelmani	ḍimit	ṭinik	sama	talxaṭ	tèyi
N1. Yawelmani	ṭimif	ṭiñik	sama'	talxaṭ	ṭe'iyi
N. var.					

	52 <u>lips</u>	53 <u>beard</u>	54 <u>cheek</u>	55 <u>chin</u>	57 <u>neck</u>
1. Tulamni		dâmuc	dañai		gatiu <sup>h</sup>
2. Hometwoli		dâmuc		yûkul	gaṭi <sup>u</sup>
3. Palewyami		djamec		awac	xiñits
4. Yawdanchi	yipyapuṭ	djamoc	ṭâñi	awâci	kũñuts
5. Wükchamni		djamoc	ṭâñi	awâci	mük'ac
6. Chukaimina	yibèbit	djamoc	nâwi	awâdji	mik'ic
7. Michahay	yibèbiṭ	damoṭ	nâwi	awâdji	mik'ic
8. Ayticha	yebèbiṭ	damoṭ	nâwi	awaicil	mik'ic
9. Choynimni		damots		awaicil	mik'ic
10. Gashowu	yipèpiṭ	damoṭ	nâwi	áwâitcil	mik'ic
11. Chukchansi	yibètcil	dâmus	nâwai	u'gûsul	mikic
12. Kechayi		dâmuṭ	nâwi	awaitcil	
13. Dumna	yipèpits	dâbuts		awâtcil	xèwil
14. Chawchila		dâmuṭ	ṭ'anatanâi	ugûcul	
15. Wechihit	yèbiṭ	dâmoṭ	tòxíu	awas	mik'ic
16. Nutúnutu		dâmu'ṭ	mòu	a'wac	mik'ic
17. Tachi	yèbiṭ	dâmûṭ	tanatuî	awac	oguc
18. Chunut	yfbèibiṭ	dâmûṭ		awac	micic
19. Wo'lasi		dâmuṭ	moo	a'wac	mik'ic
20. Choynok	yibèbiṭ	tamuṭ	mòu	awâti	xiniṭ
21. Yawelmani	yèbiṭ	dâmuṭ	tòxiu	awac	ògun
N1. Yawelmani	ye'biṭ	da'muṭ	to'xiw	'awas	
N. var.			na'wiy 4 fanafñay 6		

	59 <u>shoulder</u>	60 <u>arm</u>	61 <u>hand</u>	63 <u>nail</u>	64 <u>belly</u>
1. Tulamni	gapasai	poṭoñ	poṭoñ		[toṭ]
2. Hometwoli	gá'pasai	pòṭu	pòṭu	gotcòyic	tco <sup>x</sup> tc
3. Palewyami	gepcil	axaṭ	axaṭ	xîsex	ṭòt
4. Yawdanchi	ṭapad	puṭoñ	puṭoñ	kècìk	ṭoṭ
5. Wükchamni	ṭapat	puṭoñ	puṭoñ	kècìk	toṭ
6. Chukaimina	ṭatal, bèwi	poṭon	poṭon	xècix	olok'
7. Michahay	ṭatal	potcon		xècix	olok'
8. Ayticha	ṭ'atal		poṭon	xècix	olok'
9. Choynimni	ṭ'atal	wèpin	poṭon	xècix	olok'
10. Gashowu	ṭatai	wèpin	poṭon	xècix	luk'in
11. Chukchansi	ganalhĩ	wép'in	b'unoc		balik
12. Kechayi		wèbin	b'onoc	xèsix	balik
13. Dumna	gapcal	wèpin	b'onoc	xècix	balik
14. Chawchila	ganal'hii	g'ap'cal	b'unṭ'uk		toṭ
15. Wechihit	ṭatai	bunḍuk	bunḍuk	xècix	toṭ
16. Nutúnutu	wogfil	buntcuk	buntcuk	xèsix	to't
17. Tachi	wògil	bunḍuk	bunḍuk	xècix	to't
18. Chunut	gapsai		bunḍuk	xèsix	to'tc
19. Wo'lasi	ṭapal	bunḍuk	bunḍuk	xècix	tò't
20. Choynok	ṭ'apal	punṭuk		xècix	toṭ
21. Yawelmani	gapsai	bunḍuk	bunḍuk	xesix	to't
N1. Yawelmani	kabsay			xe'six	toṭ
N. var.			puṭo'n 4	xe'six 3, 6	
	65 <u>back</u>	66 <u>breast</u>	67 <u>teat</u>	68 <u>thigh</u>	69 <u>knee</u>
1. Tulamni	wètca	piis	mèniṭ		kuyosu'l
2. Hometwoli	wüütç	umüna	mèniṭ	tci'au'	kuyòsu'l
3. Palewyami	peti	pi'etc	mînuts	epelyi	k'uyocil
4. Yawdanchi	k'ewèt	pöòtc	mèniṭ	yokotc, k'oco	kuyòcud
5. Wükchamni	k'ewèt'	pöòtc	mèniṭ	yokotc	kuyòcud
6. Chukaimina	k'iwet	piic	mintcix	yûkutc	upuc
7. Michahay	k'ewet	piic	mintcex	yokotc	upuc
8. Ayticha	cotox	piic	mentcix	yukutc	
9. Choynimni	k'èwet	piic	mintcix	k'ohoc	p'ocopeúi
10. Gashowu	cotox	piic	miniṭ	k'ûwi	opuk
11. Chukchansi	k'iwèt	piic		gòwi	bucon
12. Kechayi	cutox	piic	minic	k'owî'	òpuk
13. Dumna	cotox	piic		k'oi'	bocon
14. Chawchila	caluuk	piic		k'owoi	bucon
15. Wechihit	gadai	piic	mènitc	k'ohic	k'oyuṭ
16. Nutúnutu	gadai	piis		k'ohis	k'uyuy'
17. Tachi	gadai	piic	mèniṭ	wuwòloc	kuyuy'
18. Chunut	gadai	piic	mèniṭ	wulhui, wuwolhui	gûyuy'
19. Wo'lasi	gadai	pîic	mèniṭ	k'ohic	k'óyuy'
20. Choynok	k'iwîṭ	piic	mèniṭ	kohic	koyoy'
21. Yawelmani	wat'im	piis	mèniṭ	k'òwi	kuyuy'
N1. Yawelmani	wafim	pi'is		kowiy 1, 6	kuyuy'
N. var.					

	70	72	73	75	76
	<u>calf</u>	<u>ankle</u>	<u>foot</u>	<u>bone</u>	<u>heart</u>
1. Tulamni	wòtu	kuyu	tanahi	ts'ix	ucák'
2. Hometwoli	ga'las		tanahi <sup>h</sup>	ts'ix	ucák'
3. Palewyami	galca'	keyu	cayâtel	tc'î	hoñheñ
4. Yawdanchi	pudpudui	kuyo	wutoñ	tc'îi	hoñhoñ
5. Wükchamni	pudpudui	kuyú	wudoñ	tci	hoñhoñ
6. Chukaimina	la'k	koyó	woton	tc'èi	hò'n'oxon
7. Michahay	laak	koyo	woton	tc'èi	hònóxon
8. Ayticha			woton	tc'èi	ucuk'
9. Choynimni	búlupului	koyo	woton	tc'èi	hònox'on
10. Gashowu	xacic	xoto	dadaṭ	tc'èi	hò'nix'an
11. Chukchansi	daxic		tatsats	tc'ei	honhon
12. Kechayi	bau		ḍaḍaṭ	tc'èi	honhon
13. Dumna	xacic	dukwatc	dadats	tc'èi	honhon
14. Chawchila	xacic		ḍaḍaṭ	tc'èi	ucuk
15. Wechihit	la'k	kuyu'	daḍaṭ	tc'èi	ucuk
16. Nutúnutu	po'ṭ	kuyu	daḍaṭ	ts'î	ucuk
17. Tachi	puṭin	kuyu	daḍaṭ	tci'	ujuk
18. Chunut	bulbului	kuyu	daḍaṭ	ts'îi	ucuk
19. Wo'las	bulbului	kuyu	daḍaṭ	tc'î	hònnon
20. Choynok			ḍaṭat	tc'îi	honhon
21. Yawelmani	galasa, bulbul	kuyu	dadaṭ	ts'i'	ucuk
N1. Yawelmani	bok	kuyu'	daṭaṭ	ciy	'uṣuk
N. var.				čey 5, 4	

	77	78	79	82	83
	<u>blood</u>	<u>rib</u>	<u>liver</u>	<u>brain</u>	<u>fat</u>
1. Tulamni	hèpa	kòmoi	dix'p	ṭûuk	
2. Hometwoli	hũüp	kòmoi	dixp <sup>i</sup>	tcu'k	doats
3. Palewyami	hîba	xamat	dîp	bakcâati	hîga
4. Yawdanchi	hõpa	xamam	dip	tcòka	hèxa
5. Wükchamni	hõpa	xamam	dip	tcòga	hèxa
6. Chukaimina	hèba	xamam	dalâpic	hòga	hèxa
7. Michahay	hèpa	xamam	dalâpic	hòka	hèxa
8. Ayticha	hèpa		dalâpic	còyuk	hèxa
9. Choynimni	hèpa		dalâpic	hòga	hèxa
10. Gashowu	hèpa		dalâpic	hòga	hèxa
11. Chukchansi	pâyax		tip	tcok	
12. Kechayi	pâyax		dip	tcok	hèxa
13. Dumna	pâyax		dîp	ts'ok	hèxa
14. Chawchila	pâyax		tip	òkaa	
15. Wechihit	pâyax		dip	hûp	hèxa
16. Nutúnutu	pâyax		di'p	hò <sup>u</sup> p	
17. Tachi	pâyax	xamâbaṭ	di'p	hûp	hèxa
18. Chunut	pâyax		di'p	hûp	hèxa
19. Wo'las	pâyax	xâmaḍ	dî'p	ṭòga	hèxa
20. Choynok	pâyax		ṭip		
21. Yawelmani	pâyax	xâmaṭ	di'p	hûp	hèxa
N1. Yawelmani	pa'yax	xa'maṭ	dip 1, 5	huṭ	he'xa'
N. var.					

## ANTHROPOLOGICAL RECORDS

	84 <u>skin</u>	89 <u>navel</u>	90 <u>anus</u>	93 <u>sinew</u>	94 <u>horns</u>
1. Tulamni	k'âpac	tsutas			ècil
2. Hometwoli	gapac	tsòtus	xo'ts		ùcul
3. Palewyami	p'âlai				e'cil
4. Yawdanchi	tcudui	tcudocui	tèda	piked	ùcad
5. Wükchamni	tcudui			piket	ùjad
6. Chukaimina	tcului	tcutkuc	toxop	pikil	koyec
7. Michahay	ʔòʔop				koyec
8. Ayticha	ʔâpia				koyec
9. Choynimni	ts'òtsop	tcutkuc	tcoxop	pikil	koyes
10. Gashowu	ʔ'odot	tcutkuc	tcòto	pikil	xoyes
11. Chukchansi					
12. Kechayi	tcònot	tcutkuc	tsòti	pikil	koyes
13. Dumna	ts'ònot'			pikil	xoyec
14. Chawchila					
15. Wechihit	ʔ'apla	ʔ'utus	ʔòoto	pikil	koyis
16. Nutúnutu	ʔ'apla				k'oyes
17. Tachi	ɖaplan		ʔòoco		k'oyec
18. Chunut	ɖaplan				koyec
19. Wo'lası	ʔap <sup>e</sup> lan			pikil	icel
20. Choynok		tc'utuc	ʔiʔit		
21. Yawelmanı	tsului	tsutus	ʔidit	pikil	i'cel
N1. Yawelmanı	ćuluy	ćutus	ʔo'fo'	pike'l	'iʂel'
N. var.				pikil	'iʂel'
	95 <u>tail</u>	96 <u>saliva</u>	97 <u>tears</u>	98 <u>sweat</u>	99 <u>house</u>
1. Tulamni	gu't		mâñal		ʔe
2. Hometwoli	tâpak	güllüyi	mañal		ʔe'
3. Palewyami	got	kelyi	meñal	miiña	ʔi
4. Yawdanchi	k'ut	hõxutc	mañad	dumkun	ʔe
5. Wükchamni	gut'	tuh'nañitc	mañad	dumkun	ʔi
6. Chukaimina	kot	kileʔ	manal	ʔumun	ʔi
7. Michahay	got	kèliʔ	manal	ʔumun	ʔi
8. Ayticha	k'ot	putcuk	manal	ʔumun	ʔi
9. Choynimni	k'ot	k'elets, keliʔ	manal	ʔumun	tomox
10. Gashowu	k'otoc	hèxit	manal	ʔumun	ʔi
11. Chukchansi		hèdjil			xo
12. Kechayi	k'ut	hèdjil	manal	tcumkan	xo
13. Dumna	k'ut	hèdjil	manal	tsòmak	sâmic
14. Chawchila		hèxil			ʔe
15. Wechihit	kutus	tuhux	manal	ʔòpax	tci
16. Nutúnutu	k'ut'uc	tuhix	mana'l	câmak	tsi
17. Tachi	gut'uc	tuhuxk	manal	ʔòpox	tci
18. Chunut	gutoc	tux	manal	ʔòpox	tsi
19. Wo'lası	gut'uc	tuhux		ʔumkunut	tci
20. Choynok		hèlawat			ʔi
21. Yawelmanı	gut'oc	hè'lawat	manal	ʔòpox	ʔi
N1. Yawelmanı	kufuş	tuhwiyi	manal	ʔo'pox	ʔi' 1, 6
N. var.	kuf' 5				xo' 5

	100 <u>sweathouse</u>	101 <u>shade</u>	102 <u>bow</u>	103 <u>arrow</u>	104 <u>obsidian</u>
1. Tulamni	mu'c	ts'inau	gátsiñil	wòhai	ga'ts'
2. Hometwoli	muxc	ts'inau	ga'tsiñil	wo'hai'i	ga'ts'
3. Palewyami	muucañ		getsñil	g'elg'el	gats
4. Yawdanchi	moc	tc'iniu	dayap	t'uyoc, cikid	k'atc
5. Wükchamni	moc	djinawa	dóyeti	cikid	tcâacip
6. Chukaimina	moc	djemel	ðalip	t'oyoc	gatca
7. Michahay		lâlu	dalip	t'oyoc	gatca
8. Ayticha	moc		ðalip	t'uyoc	gatc'á
9. Choynimni	moc	lâlu	dalip	t'uyoc	gatc'a
10. Gashowu	moc	lâlu	dalap	t'uyoc	gatc'a
11. Chukchansi			talap, nuk'on	tuyoc	g'atc
12. Kechayi	moc	lâlu	nuk'on	t'uyoc	k'atc
13. Dumna	moc	lâlu	nuk'on	t'uyoc	katc
14. Chawchila			ðalap	duyoc	gatc'a
15. Wechihit	mus	tc'iniu	ðalap	t'uyoc	gatc
16. Nutúnutu	mo'c	lâlu	ðala'p	t'uyos	k'ats
17. Tachi	moc	tc'iniu	ðalap	t'uyoc	ga'tc
18. Chunut	moc	ts'ineu	ðalap	tuyoc	ga'tc
19. Wo'lasí	mò'c	djiniu	ðala'p	t'uyoc	g'âatci
20. Choynok			talip	t'uyoc	
21. Yawelmani	moc	ts'iniu	ðalap	t'uyos	gats'
N1. Yawelmani	mo's	ciñiw	ðalap	tuyo's, ðikil	ka'c 1, 5
N. var.					

	105 <u>boat</u>	106 <u>moccasin</u>	107 <u>woman's dress</u>	108 <u>pipe</u>	109 <u>tobacco</u>
1. Tulamni	û'win	doyohi	íme'ya	bo'm'	sògon
2. Hometwoli	u'wi'n	doyohix	ümü <sup>x</sup> ya	bòmots	sògon
3. Palewyami	o'won			bamuñ	còg'en
4. Yawdanchi	owon	dahitci	tc'uñic	badáwuñuñ	sòkon
5. Wükchamni	owon	woñkodo	tcuñic	cukmai	còkon
6. Chukaimina	owon		nâwac	bica	cok'in
7. Michahay		lahâitc	tc'unuc	bica	cokin
8. Ayticha	owon			cukut	còkin
9. Choynimni	owon	sonolwicui	guyul	cukut	còkin
10. Gashowu	owon	tcaplúwic	guyul	cukut	còkin
11. Chukchansi				cukut	baum
12. Kechayi	owon			cukut	còkon
13. Dumna	owon	tcaplúwic	tc'onic	cukut	baom
14. Chawchila				cukut	cògon, canic
15. Wechihit	owon	lahâitc	tconic	cukmai	còkin
16. Nutúnutu	owo'n			sukmai	sòkon
17. Tachi	owòn			b'ic	pòdit, pònit
18. Chunut	owòn			b'ic	cogon
19. Wo'lasí	òwon	damai	tconic	cikil	còkon
20. Choynok	owon			xala	còkon
21. Yawelmani	owon				sògon
N1. Yawelmani	'owon	tañay	çonis	ba'mo'	so'gon
N. var.					

	110	111	113	114	115
	<u>awl</u>	<u>beads</u>	<u>mortar, bedrock</u>	<u>mortar, portable</u>	<u>pestle</u>
1. Tulamni		tsèts <sup>a</sup>		bâyic	logòwus
2. Hometwoli		tsüüts		bâyic	logòwis
3. Palewyami	bâwek	gîxa			
4. Yawdanchi	bâwuk	cuyut'	põwac	k'oiwoc	pádudi
5. Wükchamni	bâwuk	guitc'	põwac	koiwoc	pádui
6. Chukaimina	bâuk	gèxa	pewic	k'oiwoc	palui
7. Michahay	bâuk	gèxa	pèwic		palui
8. Ayticha	b'âuk	gèxa	pewic		palui
9. Choynimni	bâwuk		pèwic		palui
10. Gashowu	bâuk		dinel		palui
11. Chukchansi			dinel		tcèi, sèi
12. Kechayi	p'iwel	gèxa	dinel		tcei
13. Dumna	biwel	gèxa	denel		tcei
14. Chawchila					
15. Wechihit	bâwu	gèxa	pèwis		polwoi
16. Nutúnutu	tsîi'	g'èxa		k'owic	polwoi
17. Tachi	hutuc	g'èxa	p'ewac	k'oiwoc	polwoi
18. Chunut	bâwuk	g'èxa		k'oiwoc	polwoi
19. Wo'lasi	tci'i	g'èxa		k'oiwoc	polwoi
20. Choynok					
21. Yawelmani	bâuk	gèxa, cuyut'	dinel	k'oiwoc, baic	polwoi
N1. Yawelmani	pá'wuk	po'lay	tinil	koywos	polwoy
N. var.		ke'xa' 6			
	116	117	119	120	121
	<u>meat</u>	<u>name</u>	<u>north</u>	<u>south</u>	<u>east</u>
1. Tulamni		waâcit	xosmoi	xoiwetaxniu	(nòtu?)
2. Hometwoli	cècat	waâcit	xosmin	xomòt	xitatesasel, mayetiwetatc
3. Palewyami		waacet	xosom	xomot	nut
4. Yawdanchi	cècat	hoyòwoc	xucim	xomot	not
5. Wükchamni	cècat	hoyòwoc	xucim	xomot	(domto)
6. Chukaimina	bòic	hoyòwoc	xucum	xomot	not
7. Michahay			xucum	xomot	not
8. Ayticha	bòuc		xucum	xomot	not
9. Choynimni	bouc	hoyòwoc	xucum	xomot	not
10. Gashowu	bouc	hoyòwoc	xucum	xomot	not
11. Chukchansi		hoyòwoc	xocim	xomòtin	nòt
12. Kechayi			xosim	xomòti	nòtu
13. Dumna	bòuc	hoyòwoc	xocim	xomòti	nòtu
14. Chawchila		hoyòwoc	xocim	xomot	nòt
15. Wechihit	hoyòlis	hohòwos	xocim	xomòti	nòtu
16. Nutúnutu	hoyòlis	hoyòwos	xosi'm	xomòti	notu
17. Tachi	hoyòlic	hoyòwoc	xojim	xomòti	nòtu
18. Chunut		hoyòwoc	xozim	xomòti	nòtu
19. Wo'lasi		hoyòwoc	xocim	xomòti	notu
20. Choynok					
21. Yawelmani	tsixil	hoyòwos	xosim	xomòti	nòtu
N1. Yawelmani	ćixil	hayo	xosim	xomo'ti'	no'to'
N. var.		hoyo'wos 2			

	122 <u>west</u>	123 <u>sky</u>	124 <u>sun</u>	125 <u>moon</u>	126 <u>star</u>
1. Tulamni	(latu?)	tipan	calát		tsoyòtos
2. Hometwoli	xitamelakmel mayetiwetatc	tipan	yet hiwetatc mai	calať	ts'óyòtos
3. Palewyami	xono	dulau	hicta	opoc	tsoyòtis
4. Yawdanchi	daťu	tipin	opodo	upic	tc'oitoc
5. Wükchamni	daťiu		opodo	upic	tcaitac
6. Chukaimina	wákilyu	níhinau	upuc	upuc	tcoitoc
7. Michahay	wákilyu	tipi'n	upuc		tcaitoc
8. Ayticha	wák'lyu	k'álaunac	upuc	upuc	tc'aitac
9. Choynimni	wákilyu	walal	upuc	(toyònomni) upuc	tcoit'oc
10. Gashowu	wák'lyu	wâ'la	upic	upic	tcayatac
11. Chukchansi	toxil	wâla	op	(toiyènamni) op	tcaitac
12. Kechayi	toxil	tipin	op	op	tceyâtac
13. Dumna	toxil	wâ'la	op, xapil	(toyenimni) op	ts'ayâtac
14. Chawchila	toxil	d'òoton	op	(toyènem) op	t'ayâdac
15. Wechihit	toxil	tipin	op	(toinòn) op	tcaitac
16. Nutúnutu	tox'l	tipi'n	o'p	o'p	ts'eitas
17. Tachi	toxil	tipin	o'p	(toinoon) o'p	tcaitac
18. Chunut	toxil	tipin	o'p	(toinoin) o'p	tsâitas
19. Wo'lası	toxi'l		o'p	o'p	daidatc
20. Choynok		p'aan tipin	op	(toinon) op	g'otol
21. Yawelmanı	toxil	tipin	dâak	op	ts'aitas
N1. Yawelmanı	baluw	tipin	da'ak	'op	çaydas
N. var.					

	127 <u>day</u>	128 <u>night</u>	129 <u>wind</u>	130 <u>thunder</u>	131 <u>lightning</u>
1. Tulamni	tana'l	toyon	silak		
2. Hometwoli	tana'l	to'yon	si'lak	tcálaatc	
3. Palewyami		toyon	tc'imi	loñlo	
4. Yawdanchi	opdi	toyono	tcidaca	mimiať	gulwi deudat
5. Wükchamni	upiu	toyon	tcidaca	mimiať	walamwida
6. Chukaimina	obòliu	toyon, niwo	tcelec	k'onoyo	wetcèlan
7. Michahay	obóyi'i	toyo'n	tcelec	k'onoyó	
8. Ayticha	obol	tóyòni	tc'elec	k'ónoyo	walamwilaa
9. Choynimni	obòyi	toyòni	tc'elec	k'onoyó	wálamá
10. Gashowu	hai'li	toyon	cókuwo	dâlak	wal'ma
11. Chukchansi	hai'li	toi'no		mémias	walma
12. Kechayi	hai'li	tuyon	sokuwo		
13. Dumna	hai'li	tuyon	cókuwo	mèmiyats	wal'ma
14. Chawchila	hayal	toi'no	cokuwo	mimiať	walma
15. Wechihit	hai'li	toino	cokiu	memèyať	walamwiya
16. Nutúnutu	hai'li	toyo'n	cokiw	mimiats	walamwiya
17. Tachi	haiili	toyòn	cokíu	mimèyať	
18. Chunut		toino	cokíu		
19. Wo'lası	hai'li	toyo'n	cokiu	mi'miať	
20. Choynok	haiili	toino	ocwilit		
21. Yawelmanı	hayal, hai'lêin	toi'no, toi'nêin	cokiu	mimiať	golwi mimiaťin
N1. Yawelmanı	hayal	toyno'	şokiw	mimyať, gomwiyi 1	
N. var.				konoy'o' 3	

	132 <u>earthquake</u>	133 <u>whirlwind</u>	134 <u>cloud</u>	135 <u>rain</u>	136 <u>snow</u>
1. Tulamni	wiyawe tiñal			gònot ilak	
2. Hometwoli	wiyawe tiñal		p'íap'ai	guneal	cawâya
3. Palewyami	yèlyal		k'eli	xot'o	sawâyin
4. Yawdanchi	yèlyal	mòyak	k'údai	xotoo	ponpon
5. Wükchamni	wókiyad p'ân	mòyak	teheñ	xotóo	ponpon
6. Chukaimina		mòyak	k'ilei	xotoo	ponpin
7. Michahay	wokoyac		k'eli	xotoo	ponpin
8. Ayticha		p'òyetc	tcehen	xotoo	ponpin
9. Choynimni		mòyak	k'ele <sup>i</sup>	xotoo	ponpin
10. Gashowu		p'òyetc	k'elê <sup>i</sup>	g <sup>c</sup> òn'o	ponpon
11. Chukchansi	yuncunxon holki		so'm	cèal	èni
12. Kechayi			tcom	sèal	èni
13. Dumna		bòyats	tsom	sèal	èni
14. Chawchila	yelyal				haiyaw
15. Wechihit	wúkui p'ânin	p'òyats	tom	ceel	ponpon
16. Nutúnutu	yelya'l	poyets	k'ilei	gòno	hâyau
17. Tachi	yelyal		ceèl	gòono	camic
18. Chunut			k'ilei	gò'no	hâyau
19. Wo'lasi	yèliyal	b'oyatci	k'ilei		ponpon
20. Choynok			tc'eheñ	cèel	p'onp'on
21. Yawelmani	yelyal		k'ilê <sup>i</sup>	ceel	ponpon
N1. Yawelmani	yalyal	mo'yak	k'iley	şe'el	ponpon 1, 2
N. var.		mo'yak 3		go'no' 4	

	137 <u>hail</u>	138 <u>fire</u>	139 <u>smoke</u>	140 <u>ash</u>	141 <u>coal</u>
1. Tulamni		ucit	mòðak		soólin
2. Hometwoli		ucit	muðak	silats	so'òlin
3. Palewyami	xoweð	ocot	muðka	hapac	simîta
4. Yawdanchi	xówofo	ucit	mòðak	hap'ac	câpan
5. Wükchamni	xowóto	ucit	mòðak	hapac	câpan
6. Chukaimina	xò'owofo	ucut	mòðak	het'el	cal'an
7. Michahay		ucut	mòðak	het'el	cal'an
8. Ayticha	xowofo	ucut	moðak	het'el	cal'an
9. Choynimni	hòwots	usut	mòtsak'	het'el	sal'an
10. Gashowu	hòwot	ucit	moðak	het'el	câlu
11. Chukchansi		ocit	djèhan	hacin	câlu
12. Kechayi		osit	tsèhan	hit'el	câlu
13. Dumna	xòwots	osit	tsèhan	hitel	câlu
14. Chawchila		ocit	mòðak	hitel	câlu
15. Wechihit	xòwofo	ocit	moðak	hitel	câlu
16. Nutúnutu		oci't	mòdjak	hit'el	sâlu
17. Tachi	xòwið	ocit	mòðak	hit'el	câlu
18. Chunut		ocit	mòðak	hit'el	sâlu
19. Wo'lasi	xòwi'tc	oci't	mòðak	hit'el	câlu
20. Choynok		ocit	moðak	hiðel	câlu
21. Yawelmani	xòwið	ocit	mòðak	hit'el	sâlu
N1. Yawelmani	xo'wið	'oðit 1, 5	mo'ðak	hiðel	sa'luw
N. var.					

	142 <u>water</u>	143 <u>ice</u>	144 <u>sand</u>	145 <u>earth</u>	146 <u>world</u>
1. Tulamni	ilak			cò'	diñal
2. Hometwoli	ila'k'			haman	tiñal
3. Palewyami	elik	gañgeñ	hitsa	hapil	nema ha'pil
4. Yawdanchi	idik	buyoñ	wâgas	dũñt	bâan
5. Wükchamni	idik	puyoñ	wâgac	dũñit	p'âan
6. Chukaimina	ilik'	calipina	wâkic	xotol	b'âan
7. Michahay	ilik'	boyon	wâkic	xotol	baan
8. Ayticha	ilik	bayon	wak'ec	xotol	p'âan
9. Choynimni	ilik'	bayon	wak'ic	xotol	p'aan
10. Gashowu	ilik	bayon	cuxcui	xoʔoi	p'a-in
11. Chukchansi	ilik			xutcoi	
12. Kechayi	ilik'	tcòpol	suxcui	xotsoi	holgi
13. Dumna	ilik'	tsòpol	cuxcui	xotsoi	holki'
14. Chawchila	ilik			xoʔoi	holkee
15. Wechihit	ilik	ʔopol	suxsai	xoʔoi	p'âan
16. Nutúnutu	ilik'	ʔopo'l	suxsai	xoʔoi	p'aan
17. Tachi	ilik	ʔopòl	suxsai	xoʔoi	b'aan
18. Chunut	ilik	ʔopòl	wâgac	xoʔoi	b'aan
19. Wo'lasi	ilik'	ʔopo'l	cuxsai	xoʔoi	bâan
20. Choynok	ilik	ʔopol		xoʔoi	p'âan
21. Yawelmani	ilik	ʔopol	suxsai	xoʔoi	p'aan
N1. Yawelmani	'ilik' 1, 3	ʔopol	suxsay	xoʔoy	pa'an' 1, 3
N. var.				xu'coy 5	
	147 <u>ocean</u>	148 <u>lake</u>	149 <u>stream</u>	150 <u>plain</u>	151 <u>mountain</u>
1. Tulamni	bies diñal	baac		baenaʔ	gopupat, tiñuk
2. Hometwoli	bixʔ		hulas	bòðnaʔ	gopupat, lumit
3. Palewyami	nema elik		elik	xolgal	lomat
4. Yawdanchi	bâ'aji	bâ'aji	idik	tcodòwin	domit
5. Wükchamni	baâ'ji	baâ'ji	hudacèdik		dumit
6. Chukaimina		koiwi	baluu	ɖala	dulau
7. Michahay			balu	d'ala	dulul
8. Ayticha	hò'ʰho	coxi	palu	t'alâ	dulul
9. Choynimni	hòúho	còxi	palwu	b'âas	dulul
10. Gashowu	hòúhò	còxi	palwu	bâac	dulul, dulau
11. Chukchansi			wakai, ʔolʔiu	pâac	dulul
12. Kechayi	hòúhò		wagai	p'aac	dulul
13. Dumna	hòuhu	t'â-î	wagai	baac	dulul
14. Chawchila		dèyil	ʔolʔe	baal	dulul, lomit
15. Wechihit	maʔak ilik		ʔolits	bâ'asi-u	lomit
16. Nutúnutu	hip'èki	baâji	ilik	ak'í'	lomi't
17. Tachi	pèni ilik	paâji	dèyil	walal p'aan	lomî't
18. Chunut		paâji	ʔòliʔ		lomi't
19. Wo'lasi	hòhu'	baâji	wèkitc	walal	lomi't
20. Choynok					lumit
21. Yawelmani		baâji	ʔòliʔ	tsolòwin	lomit
N1. Yawelmani		pa'a'si' 1, 2	ʔòliʔ	colowin	lomit
N. var.			wakay 5 tołte 6		

	152	153	154	155	157
	<u>rock</u>	<u>salt</u>	<u>wood</u>	<u>tree</u>	<u>brush</u>
1. Tulamni	xalu'l	salim'	gòlot	tc'imat	
2. Hometwoli	odoxix	ts'us'is	bònoc	tc Coxok	
3. Palewyami	xelul	kèyu	etis		
4. Yawdanchi	yakau	kuyo	hütac	yapkin	yâwud
5. Wükchamni	yakau	kuyu	gòyotc	тата	yâwuṭ
6. Chukaimina	yakau	koyo	hit'ic	ut'û	djoxiu
7. Michahay	yakau	koyo	hitic	utû	
8. Ayticha	yakau	koyo	hit'ic	ut'ú	tc'ayâxi
9. Choynimni	yakau	koyo	hit'îc	ut'u	tc'ayâxi
10. Gashowu	cilil	koyo	hit'îc	ut'u	tc'ayâxi
11. Chukchansi	silel		hitec		
12. Kechayi	cilel	kuyu	hit'es	ut'û	tc'ayâxi
13. Dumna	cilel	kuyu	hit'ec	ut'u	cutconau
14. Chawchila	cilel		hitec		yâwil
15. Wechihit	cilel	kuyu	hit'ec	culun	
16. Nutúnutu	sile'l		hite's	sulu'n	
17. Tachi	cilel	kuyu	hit'ec		
18. Chunut	cile'l	kuyu	hit'es		
19. Wo'lasi	yakau	kuyu	hit'ec	culul	yâwil
20. Choynok	yakau		hitec	yapkin	
21. Yawelmani	silil	kuyu	hit'es		yâwil
N1. Yawelmani	sile'l	kuyu' 1, 3	(wiçet)	'utu 1, 5	
N. var.					
	158	159	160	166	167
	<u>grass</u>	<u>leaf</u>	<u>sugar pine</u>	<u>plains oak</u>	<u>live oak</u>
1. Tulamni	puxan				
2. Hometwoli	puxan				
3. Palewyami		dapdap		kimiax	
4. Yawdanchi	yâwud	dapdap	djoñðxic	k'õmiux	tc'axic
5. Wükchamni	yâwuṭ	dapdap	tconðxic	k'èmyux	djaxic
6. Chukaimina	âyax	dapdap	tc'onðxic		djaxic
7. Michahay		dapdap			
8. Ayticha	yâwil	lep'an			
9. Choynimni	âyax	dapdap	ts'onðxis	k'emix	tc'axic
10. Gashowu	dunic	dapdap	tconðxic	k'emix	tcaxic
11. Chukchansi	ṭèam		tconðxic		
12. Kechayi	sukoi	dap'ac			
13. Dumna	sðkoi	dapdap	tconðxic		tc'axic
14. Chawchila	cukoyu		tconðxic		
15. Wechihit	tciuga, yâwil	dapdap	ts'onðxic	k'emyix	tcaxic
16. Nutúnutu	sutsûn	dapdap			
17. Tachi	cutcûn	dâpdap		k'inim	ts'axic
18. Chunut	sutsûn	dâpdap		k'emiyix	ts'iti
19. Wo'lasi	yâwil	dapdap		k'inim	
20. Choynok	yâwil				
21. Yawelmani	yâwil	dâpdap	tsonðxis	k'inim	ts'iti
N1. Yawelmani	ya'wil	fa'p'paş	cono'xis	k'inim	çidiy
N. var.					

	169	172	173	174	176
	<u>willow</u>	<u>manzanita</u>	<u>round tule</u>	<u>flat tule</u>	<u>dog</u>
1. Tulamni	pokòles			gatsiw	ts'èses
2. Hometwoli	susūnayas		cūk'lu	ga'tsiwi	tsèses
3. Palewyami		opto	koldlis	gatswei	tcicuc
4. Yawdanchi	caxatc	ap̄tu	cuyo	goṭ	tcèjeje
5. Wükchamni	caxatc	ap̄tu	cuyu'	gâbi	tc'èjeje
6. Chukaimina		uptu	coyo'	pâtak	djèjec
7. Michahay		uptu	coyo'		djèjeje
8. Ayticha		uptu	soyo'	pâtak	tcècec
9. Choynimni	k'awa'a	uptu	coyo'	pâtak	tc'ècec
10. Gashowu	k'awa	ap̄tu	k'oyuc	pâtak	tc'ècec
11. Chukchansi		ap̄tcu	gōyus		tcèxa
12. Kechayi	k'awa	ap̄tcu	bumuk	k'oyic	tcèxa
13. Dumna	k'awa	ap̄tsu	bumuk	koyis	tcèxa
14. Chawchila		ap̄tû			buúc
15. Wechihit	kawa	ap̄tu	bumuk	pooton	bûuc
16. Nutúnutu	caxaṭ	ap̄tu	bumuk	pooton	buú's
17. Tachi	caxaṭ	ap̄tu	bumuk	pòton	bûuc
18. Chunut	caxaṭ	ap̄tu	bumuk	pòton	bûuc
19. Wo'lasi	caxâtc		bumuk	gòṭ	bûuc
20. Choynok			pomok		tcèjec
21. Yawelmani	caxaṭ	ap̄tu	bumuk	gòṭ	buus
N1. Yawelmani	ṣaxaṭ	'ap̄tuw			bu'us
N. var.					če·šaš 4; bu'uš 6
	177	178	179	180	181
	<u>bear</u>	<u>grizzly bear</u>	<u>coyote</u>	<u>wolf</u>	<u>fox</u>
1. Tulamni		bîawas	hulapinsas	wohont	gaudat
2. Hometwoli		dagatsan	wòdotóc	û'wileats	
3. Palewyami		t'enci	keiu		
4. Yawdanchi	dûuxun	ñohoo	kaíu	iwèyiṭ	au'tca
5. Wükchamni	duuxun	ñohoo	kayu	iwèiṭ	au'dja
6. Chukaimina	dónohop	nohoo	huucú	iweyiṭ	audjá
7. Michahay	dínohop	nohoo	huucú	iwèyiṭ	audjá
8. Ayticha	dónohop	nohoo	hûcú		au'dja
9. Choynimni	dónohop	nohoo	hûucu	iwètits	au'tca
10. Gashowu	dónohop	nohoo	hûucu	iwèitc	au'tca
11. Chukchansi		nohoo	kayu, kâiu	iwèitc	audja
12. Kechayi	donohop	nohoo	kaiu		
13. Dumna	uyum	nohoo	kaiu	iwèits	audja
14. Chawchila	ului	(iwèṭ)	kaíu	iwèyiṭ	
15. Wechihit	dónohop	nohoo	kayu	iwèiṭ	audja
16. Nutúnutu	donoho'p	nohoo	kayíu	iwèiṭ	autsa
17. Tachi	ului	nohoo	kaíu		k'im
18. Chunut		nohoo	kaíu		au'dza
19. Wo'lasi		nohoo	kaiyíu		â'widja
20. Choynok	moloi	nohoo	kaiíu	yuwèiṭ	auudja
21. Yawelmani	moloi	nohoo	kaiu	yaulits	au'tca
N1. Yawelmani		noh'o' 1, 3	kaíiw	yawlič	'awca'
N. var.		ṇoho'o 2	hošú' 3		
			kaýu 5		

	182	183	184	185	186
	<u>puma</u>	<u>wildcat</u>	<u>deer</u>	<u>elk</u>	<u>antelope</u>
1. Tulamni	wehèsat	alxai	gámasi	ícalan	mû'xotani
2. Hometwoli	wôhôsats	alxái'	gamase'	tsâwâ'ts	muxotaní
3. Palewyami	wihîcit	oñiok	citcilhal	oñat	
4. Yawdanchi	wôhôcit	t'uñod	xoi	coxgoi	coyod
5. Wükchamni	wôhôsít	ţoñod	xoi	coxgoi	coyod
6. Chukaimina	wehècit	t'onol	xoi	coxgoi	coyol
7. Michahay	wehècit	t'onol	xoi	coxgoi	soyol
8. Ayticha	wehèjit	t'onol	xoi	coxgoi	
9. Choynimni	wehecit	t'onol	xoi	coxkoi	soyol
10. Gashowu	wehecit	t'unol	xoi	còxkoi	coyol
11. Chukchansi	wehècit	t'unol	xoi	coxkoi	cuyol
12. Kechayi	wehèsit	t'unol	xoi	aikîim	
13. Dumna	wehecit	t'onol	xoi	sòxgoi	soyol
14. Chawchila			xoi	cokoi	coyol
15. Wechihit	wehècit	t'onol	xoi	coxgoi	coyol
16. Nutúnutu	wehèsi't	t'unul	xòì	soxgoi	coyol
17. Tachi	wehècit	t'unul	xòì	maţwiyis	coyòl
18. Chunut	wehècit	t'unul	xòì	soxgoi	coyòl
19. Wo'lasí	wehèci't	t'unul	xoî	coxgoi	coyol
20. Choynok	wehècit	tunul	xoi	còkoi	còyol
21. Yawelmani	wehèsit	t'unul	xoi	soxgoi	coyol
N1. Yawelmani	wehe'sit	t'unul	xoy	sohgoy	şoyol
N. var.			xo'y 3, 5	şohgoy 4, 5	
	187	188	190	191	192
	<u>jack rabbit</u>	<u>cottontail</u>	<u>ground squirrel</u>	<u>tree squirrel</u>	<u>gopher</u>
1. Tulamni	tc'abakú		sixetal		
2. Hometwoli	tc'a'ba'gei	gu'na	sixètal		
3. Palewyami	tokcoc	tiu	sextel	gidîets	
4. Yawdanchi	dopod	ti'w	bohád	yoñxo	hunxut
5. Wükchamni	dopol	tiu	bòhad	cañcañwidèitc	hunxut
6. Chukaimina	xumux	teu	citxil		hunxut
7. Michahay	xumux	tèu	citxil		hunxut
8. Ayticha	xumux	teu	citxil		hunxut
9. Choynimni	xumux	tèu	citxil	mau	hunxut
10. Gashowu	xumix	ţeu	citxil	mau	hunxut
11. Chukchansi	xomix	teu	citkil	mau'	tcâmil
12. Kechayi	xumix	teu	sitkil	mau	tcâmil
13. Dumna	xumix	teu	citkil	t'uit'ui	tsâmil
14. Chawchila	xomix	ţèu	citkil		
15. Wechihit	xomex	tiu	wuţei		hunxut
16. Nutúnutu	xumix	tîu'	wuţei		hunxu't
17. Tachi	xomix	tcîu	witcei		hunxut
18. Chunut	capal	tcíw	witcei		hunxut
19. Wo'lasí	capal	tcíu	wiţèi		hunxût
20. Choynok	capal	tcíu	wiţ'ei	sansanwièitc	honxot
21. Yawelmani	dopol, túkuyun	tsíu <sup>w</sup>	bohal	yonxo	hackiwèits
N1. Yawelmani	dobol, túkuyun	çí'iw	po'hal	yonxo'	haşkiywe'ic
N. var.			şitxil 3		

	193 <u>skunk</u>	194 <u>polecats</u>	195 <u>raccoon</u>	196 <u>badger</u>	197 <u>weasel</u>
1. Tulamni	tsox			ʃaniu	
2. Hometwoli	tsox			ʃaniu	
3. Palewyami	tsox				
4. Yawdanchi	tcòx	tcitcèu	kūti	huyaktʃtsi	pohòot
5. Wükchamni	tcoux	tcèutciu	kūitcú	ʃanau	pohòot
6. Chukaimina	tcoux	tcètcu	kiʃi´	ʃanau	camim
7. Michahay	tcoux	tcètcu	canhai		samim
8. Ayticha	tcoux		canhai		camim
9. Choynimni	tcoux	tc'ètcu	canhai	sanau	camim
10. Gashowu	tcoux	tc'ètcu	kiʃi´	ʃanau	camim
11. Chukchansi	tcoux	wèdjidje	canhai	tc'aniu	camim
12. Kechayi	tcoux	tcètcu	kiʃi	tc'anfu	
13. Dumna	tcoux	tsètsiu	kiʃi	ʃaniu	camim
14. Chawchila	tcoux			d'aniu	
15. Wechihit	tcoux	tc'ètcu	xótats <sup>e</sup> mi	ʃanau	pohò´t
16. Nutúnutu	tsox	tsèetsiu	xitsi	ʃaniu	pohò´t'
17. Tachi	tcòx	tsitseu	xidji	ʃaniu	pohò´t
18. Chunut	tsòx	tsitseu	kitsi	guyò´guyuts	pohò´t
19. Wo'lası	tcò'x	tcitcèu	kidji	ʃaniu	pohòod
20. Choynok	tc'ox		kiʃi	ʃ'anıfu	pohòot
21. Yawelmanı	tcoux	tsitseu	kiʃi, ʃitʃi´in	ʃaniu'	pohòit
N1. Yawelmanı	cox		kıftin	ʃaniw	ʃoho'ııʃ
N. var.	čo'x 6				

	198 <u>wood rat</u>	199 <u>mouse</u>	200 <u>beaver</u>	201 <u>otter</u>	202 <u>bird</u>
1. Tulamni					
2. Hometwoli					we'túts
3. Palewyami			dibek		wiwitsi
4. Yawdanchi	dumòdumutc		töpük	nahâaʃ	tènip
5. Wükchamni	dumòdumutc	bitcdu	döbuk	nahâaʃ	dètcip
6. Chukaimina	hòmıca	gótcoyi	dèbik	nahâaʃ	dènip
7. Michahay	hò´mutca	gototci	dèbik	nahâaʃ	dènip
8. Ayticha			tèbik		d'ènip
9. Choynimni	hò´mıtc'a	gót'otcı	tèbix	nahâtsi	dènip
10. Gashowu	hò´mıtcı	g'otcoi	tèbik	djòniui	dètcip
11. Chukchansi	homıtc	kosoi			
12. Kechayi					tc'enpai
13. Dumna	hòmıtc	gotcoi	tèbik	náhâits	dètcip
14. Chawchila					
15. Wechihit	hòmıtcı	gótcooi	tèbik	nahâaʃ	wéukıtc
16. Nutúnutu		kótotsi	dèbik	nahâaʃ'	wéuku'ts
17. Tachi	dumòdumutc	yaya'k	ʃèbik	nahâaʃ	wè´wutsoi
18. Chunut	hitccıts	p'ıtsauwıyu	tèpik	nahâaʃ	wè´wutsoi
19. Wo'lası	ya'ya'k	kıtcui	t'èpik	nahâaʃ	dégu'ıtc
20. Choynok					
21. Yawelmanı	hitsıts	sapsabıts	tèpik	nahâıʃ	wèwutsoi
N1. Yawelmanı	hıdsıć	sapsapıć, ʃıslı'	ʃe'bik	naha'ııʃ	wewıcoy
N. var.		kóčo'yi' 3 kóč'oy 4			

	203 <u>condor</u>	204 <u>eagle</u>	205 <u>bald eagle</u>	206 <u>buzzard</u>	207 <u>hawk sp.</u>
1. Tulamni				céañdũ	
2. Hometwoli	wi'ts <sup>e</sup>	baâc		p'â'na tool	
3. Palewyami	wêts	bò uca	owik	ceñhi	esem
4. Yawdanchi	witc	ðoxid	owik	ʃanka	cuxup
5. Wükchamni	witc	djuxit		ʃanka	cuxup
6. Chukaimina	wètc'	ðoxil	uwik	hoʃ	cuxup
7. Michahay	wetc	ðuxil	owik	hoʃ	suxup
8. Ayticha	wetc	ðuxil	owik	hoʃ	coxup
9. Choynimni	wetc	tcoxil	owik	hots	coxup
10. Gashowu	wetc	ʃoxil	owik	hoʃ	hũunal
11. Chukchansi		wi'ucul		kâ'ʃwia	bou, bũu
12. Kechayi		ʃoxil		hots	
13. Dumna	witc	wi'usul	owik	hots	bũnal
14. Chawchila		ʃoxil			coxup
15. Wechihit	wetc	ʃoxil	owik	hoʃ	cuxup
16. Nutũnutu	wĩtc	ʃ'oxi'l	owik	ʃanka	cuxup'
17. Tachi	witc	ðoxil	owik	hoʃ	cuxup
18. Chunut	wĩts	ðoxil	owik'	g'otèla	cuxup
19. Wo'lasì	wi'tc	ðoxil	bonoxwocmin	ʃanga	cuxũ'p
20. Choynok	wiʃ	ʃuxil		ʃ'anka	
21. Yawelmani	ðim, ʃim, wits	ʃoxil	owik	koʃèya	cuxup
N1. Yawelmani	ðim, wić 1, 6	toxil	soxsox	ko'ʃe'ya', ʃańka'	suxup'
N. var.					bu'unal 4
	209 <u>pr. falcon</u>	213 <u>hawk sp.</u>	214 <u>owl, large</u>	217 <u>owl, ground</u>	218 <u>raven</u>
1. Tulamni					xotoi
2. Hometwoli			himihim		
3. Palewyami	tcanyiʃit		heleʃi		xotai
4. Yawdanchi	dimik	póhiyon	[hutulu]	bogò'kudetc	gò'kudetc
5. Wükchamni	(limik)	p'ò'hiyon	hutudu	bogòkno	xotoi
6. Chukaimina	limik	póiyon	hò'tulu	wèdjidji	xotoi
7. Michahay	lim'ik	po'yon	hu'tulu	wèdjidji	xotoi
8. Ayticha	limik				xotoi
9. Choynimni	limik		tcídik <sup>e</sup> li	wè'lili	xotoi
10. Gashowu	limik		hi'hĩna	wè'djidji	xotoi
11. Chukchansi					gaknai
12. Kechayi			hihĩ'na		xotoi
13. Dumna	limik		hihina	wè'tsitsi	xotoi
14. Chawchila		póxoyon			xotoi
15. Wechihit	limik	p'oyon	hotulu	wè'djidji	xotoi
16. Nutũnutu	likik'	p'o'yon	hi'im	wèđiđi	xotoi
17. Tachi		póhiyon	hi'mhim	wèđidji	xotòi
18. Chunut	limik		hu'tũlu	wètiti	xotòi
19. Wo'lasì	limik	póhoyon	hũ'tulu	bògũgna	xòtoi
20. Choynok	limik				
21. Yawelmani	limik	poh'yon	hutuluwèitc	bokòwets	xotoi, gòkwetc
N1. Yawelmani	limik, moʃka'	pohyon	huddulu'		
N. var.			hihhina' 4	bogo'we'iʃ 4	

	219 <u>crow</u>	220 <u>magpie</u>	221 <u>blackbird</u>	222 <u>bluejay</u>	223 <u>meadowlark</u>
1. Tulamni				ʔayəʔai	
2. Hometwoli	galáuc			ʔayaʔai	
3. Palewyami	xotai	otcote			widjúkulu
4. Yawdanchi	áduuʔ	otcote	tcak	ʔáicudətc	tcakudu
5. Wükchamni	áduuʔ	otcote	tc'ak'	ʔayícna	tcakudu
6. Chukaimina	alwuʔ	otcote	tc'ak	ʔaiʔi	djakulu
7. Michahay	alwuʔ	otcote	tcak'	ʔaiʔi	djakulu
8. Ayticha	gakagolèta	otcote	dj'ak	tc'aitc'í'	
9. Choynimni	alwuʔ	otcote	dj'ak	ts'aits'i	djakulu
10. Gashowu	alwuʔ	otcote	tc'ax'lal	ʔaitai	oluʔu
11. Chukchansi	alwute			djaidjai	olotca
12. Kechayi	gákenai	otcote	tc'ax <sup>e</sup> lal	tc'aitc'ai	
13. Dumna	alwuʔ	otcutc	tc'axlal	ts'aitsai	oluʔu
14. Chawchila	alwute	otcote			
15. Wechihit	alwuʔ	otcote	tcak	ʔaitai	ólaʔa
16. Nutúnutu	alwuʔ	otsots	tsak'	ʔaitai	úlaʔa
17. Tachi	gangac	otcote	tcak	ʔaitai	uladi
18. Chunut	gangac	òtsots	tsak	ʔaitai	ulocgui
19. Wo'lasi	alwuʔ	otcote	tcâ'k'	ʔaitai	ulaʔa
20. Choynok	aluuʔ	otcote	picaka		
21. Yawelmani	alwuʔ	otcutc	tsak	ʔaitai	ulucgui
N1. Yawelmani		'oúú	ćak		'uluskuy
N. var.	'alwuʔ 4		ća'k 4	ʔayʔay 4 ćayćiy 6	
	225 <u>hummingbird</u>	226 <u>quail</u>	227 <u>mountain quail</u>	229 <u>woodpecker</u>	230 <u>yellow-hammer</u>
1. Tulamni	bèmax				
2. Hometwoli	gūmax				
3. Palewyami		humñol	ʔepid		
4. Yawdanchi	bèmamgutc	humnud	ʔipdi	palâdat	ʔ'íwica
5. Wükchamni	dè'mamtcui	humud	ʔ'ipdi	padâdat	ʔupicna
6. Chukaimina	kû'mkumna	humnul	tcipití	palâdad	ʔiwec
7. Michahay	kûmkumna	humnul	tcipit	palâdad	ʔewec
8. Ayticha		hum'nul	tc'ipit		ʔewec
9. Choynimni	kumkumna	humnul	tc'ipit	palâdat	tsewés
10. Gashowu	dèmamuku	humnul	tc'ipit	páladad	ʔewíc
11. Chukchansi		humnul	tc'ipit	pladat	tcíusa
12. Kechayi		hum'nul	tcipit		
13. Dumna	dèmaitcu	hum'nul	tcipit	palâdat	tsí'wuca
14. Chawchila					
15. Wechihit	bè'manduts	humnul	tcipití	palâdad	ʔewés
16. Nutúnutu	bè'mamdots	sakâka		palâdat	ʔiwica
17. Tachi	bè'mamdui, hóhotcui	sagâga, humnul		palâdata	
18. Chunut	bemamdjuí	sagâga		palâdat	
19. Wo'lasi	bè'mamtcui	dahâka		ag'na	
20. Choynok	pè'mamdjuí	tahâka		palataʔ	ʔiwica
21. Yawelmani	bè'mamgutcu	humnul	ʔopno	palâgak, gowoxgoyits	ʔiwica
N1. Yawelmani		humnul	ʔopno'	pala'kak	ʔiwissa'
N. var.	be'mamguč 2				

	231	232	234	235	236
	<u>road runner</u>	<u>crane</u>	<u>goose</u>	<u>duck</u>	<u>mallard</u>
1. Tulamni			la'la'n		
2. Hometwoli		go'lwila	la'la'n		óxoox
3. Palewyami	uiuiwiléits		la'la		oxuxum
4. Yawdanchi	oiui	wâxiṭ	la'la	hayana	waṭwaṭ
5. Wükchamni	oiui	wâxiṭ	la'la	hayana	hayana
6. Chukaimina	uiui	waxaṭ	lâ'la		waṭwaṭ
7. Michahay	oiui	waxaṭ	la'la	haina	waṭwaṭ
8. Ayticha		waxaṭ	la'la	waṭwaṭ	
9. Choynimni		wâxats	la'la	watswats	
10. Gashowu		wâxaṭ	la'la	waṭwaṭ	
11. Chukchansi		waxaṭ	lala	waṭwaṭ	
12. Kechayi			lâ'la	waṭwaṭ	
13. Dumna		wâxats	la'la	waṭwaṭ	
14. Chawchila	óiyuyi				
15. Wechihit	oiui	wâxaṭ	lâ'la	haina	waṭwaṭ
16. Nutúnutu	oiui	wâxaṭ	la'la		waṭwaṭ
17. Tachi	oiúí	wâxaṭ	la'la		
18. Chunut	oiúí	wâxaṭ	k'ipal	bântsa	
19. Wo'lasi	oiui	wâxaṭ	la'la	haina	waṭwaṭ
20. Choynok		waxaṭ		haiina	
21. Yawelmani	oiui	wâxaṭ	la'la	hai'na	oxuxum
N1. Yawelmani	'oy'o'y 1, 6	wa. xaṭ	la'la'	hay'na'	
N. var.	'oy'uy 2, 5				
	237	238	239	240	242
	<u>mudhen</u>	<u>rattlesnake</u>	<u>water snake</u>	<u>king snake</u>	<u>snake sp.</u>
1. Tulamni		ṭíwṭiw	citan		
2. Hometwoli	ho'yò'lis	ṭíwiṭi <sup>W</sup>			
3. Palewyami	concen	ṭiel	yax		
4. Yawdanchi	datcai	ṭööd	yax	godoñkid	capacipitc
5. Wükchamni	datcai	ṭööd	yax	gò'loñkil	dèlamdèlam
6. Chukaimina	datcai	ṭeel	wüxnai	gólonki	capâcapelitic, dèlamdèlam
7. Michahay	datcai	ṭeel	wüxwanâyu		
8. Ayticha	datcai	ṭèl	wüxnâyu		
9. Choynimni	datsai	tseél	wixnâyu		dèlamdèlam
10. Gashowu	datcai	ṭèl	k'èṭayit		dèlamdèlam
11. Chukchansi		nasis	k'eutais	gololki	
12. Kechayi	datcai	natcitic	k'èṭayit		
13. Dumna	datdatc	natcitic	k'eutayits		delîtsdelîtsna
14. Chawchila		naṭiṭ			
15. Wechihit	datcai	ṭaiäl	yax	golonki	dèlamdèlam
16. Nutúnutu	datcai	ṭeel	yax	golonti	dèlamdèlam
17. Tachi	hai'na	naṭiṭ	yâx	golwonti	
18. Chunut	concon	ṭamxana	yâx	golwonti	lapâ'lipiṭ
19. Wo'lasi	datcai	ṭeel	waki'k	gò'lonki	
20. Choynok		ṭèl	yax	golontil	
21. Yawelmani	hoyòlis	naṭiṭ	yax	gòlankil	lapálipiṭ
N1. Yawelmani		naṭiṭ	yax	go'lankil	lapá'lipiṭ
N. var.					

	243 <u>lizard</u>	245 <u>lizard sp.</u>	248 <u>"lizard"</u>	249 <u>frog</u>	250 <u>turtle</u>
1. Tulamni					bagal
2. Hometwoli					ba'gal
3. Palewyami	contèya				
4. Yawdanchi	kóndjèdja		wilèli	koyòyiṭ	ṭoto
5. Wükchamni	kondjèdja		hukâhi wa	ogugu	cawâxit
6. Chukaimina	kondjèdji	colotoi	wulolu	óguku	koikoyoṭ
7. Michahay	kóndjodjuwi		wulòlu	oguku	kóikoyoṭ
8. Ayticha		cólotoi		ogukú	koikoyoṭ
9. Choynimni	k'ondjodjuwi	colotoyi	wululu	okukú	kóykoyoṭ
10. Gashowu		tálaṭai		okuku	cawâxit
11. Chukchansi		tè'cai	wòoci	watáksaai	o', ow
12. Kechayi					
13. Dumna		tètsai	wòcoi	ókuku	ou
14. Chawchila				wataksaái	
15. Wechihit		coltòyi	wileli	koyetwuṭ	koikoyoṭ
16. Nutúnutu		colotòi	wileli	koyetwoṭ	kóikoyoṭ
17. Tachi		colotoi	wilèli	o'o'uyitc	
18. Chunut	kondjedji	colotoyi	wilèli	koyotwoṭ	
19. Wo'las	k'onḡeḡi		wilèli	goyodwoḡ	cawâxiṭ
20. Choynok	kondjedji	soltèṭi		okuko	sawâxiṭ
21. Yawelmani	gondjòwi		wilèli	uguku, koyotwoṭ	ṭoto
N1. Yawelmani	kónco'cí'		wile'li'	'uguggu', koyotwoṭ	ṭodo'
N. var.		ṭesa'ay 5			sawa'xit 4
	251 <u>fish</u>	253 <u>sucker</u>	254 <u>trout</u>	256 <u>lake trout</u>	260 <u>fly</u>
1. Tulamni	lupiṭ	ḡaxdu?		èpac	b'â'nusgai
2. Hometwoli	lupiṭ	púluxui		üpac	b'anisgai
3. Palewyami	lopaṭ				b'onitskai
4. Yawdanchi	dopiṭ	ticaa	dadim	èpic	p'anuckai
5. Wükchamni	dopitc	podxui	dadim	èpic	ṭéuṭiu
6. Chukaimina	lupuṭ	polxui	dalim	èpic	mò'noyi
7. Michahay	lupuṭ	polxui	dali'm	èpic	mò'noyi
8. Ayticha	lupuṭ	polxoi	depic		mònoyi
9. Choynimni	lupuṭ	polxui	dalim	èpis	mò'noiyi
10. Gashowu	lopiṭ	polxui	dalim	epic	gaṭu
11. Chukchansi	lopis				
12. Kechayi	lopitc	polxui		èpic	g'amâsi
13. Dumna	lopitc	sò'dututs	dalim	èpis	gamâsi
14. Chawchila	lopiṭ				
15. Wechihit	lopitc	polxoi		èpis	gâ'masi
16. Nutúnutu	lopi'te	polxui		èpic	mònoí
17. Tachi	lopiṭ	cigògu		èpic	mònoi
18. Chunut	lopiṭ	polxui		mâaḡa	mònai
19. Wo'las	lopi'tc	polxui		èpi'c	mònâ'i
20. Choynok	lopiṭ				gamâca
21. Yawelmani	lopiṭ	polxoi	dalim	èpic	mònai, g'amâca
N1. Yawelmani	lopiṭ	polxoy, tis'a'	dalim	'e'piṣ 1, 4	mo'ñay
N. var.	lopis 5	polxuy 6			

	261	262	263	264	265
	<u>spider</u>	<u>flea</u>	<u>louse</u>	<u>grass hopper</u>	<u>yellowjacket</u>
1. Tulamni			ṭehaṭ		
2. Hometwoli		gutò'ats	ṭahaṭ		
3. Palewyami		b'âk'el	tiheṭ		
4. Yawdanchi	mutca	b'akid	teeṭ	tc'anèkac	baðnai
5. Wükchamni	mutcá	b'akid	teheṭ	tcanèkac	baâunai
6. Chukaimina	mèdja, conoiip	b'âkil	tihit	gò'mitci	báunayi
7. Michahay	mèdja	bâk'il	tihitc	dâ'naiwuṭ	
8. Ayticha	mèdja	bâkil	tiiṭ	dâ'naiwutc	
9. Choynimni	mèdja	bâk'il	tihits	danâiwutc	báunayi
10. Gashowu	mèdja	bâkil	tihit	dânuwutc	baúnayi
11. Chukchansi					
12. Kechayi			tihite		
13. Dumna	mèdja	bâk'il	tihits	t'anuwatc	baunay
14. Chawchila					
15. Wechihit	mèdja	b'âkil	tfitc	dâ'naiwat	gomonyotc
16. Nutúnutu	mètsa	b'âki'l	tihit	ṭoṭutoi	
17. Tachi		b'âkil	tîhit	ṭanèwac	
18. Chunut		b'âkil	tîhit	tsánaiwuc	baðnai
19. Wo'lasi	mèdja	b'âgil	tî'tc	ḍoḍotic	baâunai
20. Choynok					baaunai
21. Yawelmani	mètsa	b'akil, ts'ants'an bâkil	tiiṭ	t'anauwuṭ	baðnai
N1. Yawelmani		pa'kil	ti'it	ṭanawat	ba'o'nay
N. var.					
	266	267	268	269	270
	<u>butterfly</u>	<u>worm</u>	<u>white</u>	<u>black</u>	<u>red</u>
1. Tulamni			xo'coñ	sakiwal	xa'wal
2. Hometwoli			tcawañ	sakiawal	xa'wal
3. Palewyami			ṭeuña(n)	moṭka	holòtsgai
4. Yawdanchi	laulau	gaṭu	tcodod	ṭümgütan	bátcigin
5. Wükchamni	walwal	gaṭu	tcodod	djümgütan	baidjikin
6. Chukaimina	dabádaptcûi	kâtu	ḍoyeyi	mótczewik	habak'a
7. Michahay		gâṭu	tcoyöyi	motckewik	habak'a
8. Ayticha		k'èwackewas	djoyeyi	moṭkiwik	hábak'a
9. Choynimni	dobadoptcî'	k'ewask'ewas	djoyoyi	mótkiwik	hapak'á
10. Gashowu	dabâ'dabtcui	k'èu	dololi	motkon	hapílkayi
11. Chukchansi			sikwin	limik	habilkai
12. Kechayi			sikwin	motskon	habilkai
13. Dumna	wâlaptcui	k'èu	djolol	motsgon	habilkai
14. Chawchila			cak'an	lim'ik	tcoyîkin
15. Wechihit	dabâ'daptcui	wikwik k'èwask'ewas	tcolol	matcchik	xabiswai
16. Nutúnutu	wògègi	wikwik	tsolol	limi'k'	xabilwai
17. Tachi	wògègi	westca	djolol	limik	golik'lai
18. Chunut	wògògic	wekwik	dzolol	djámikin	batsiki'n
19. Wo'lasi	wògèki	wekwik	djòlòl	motcko	xabilwai
20. Choynok					
21. Yawelmani	wò'gaigic	wekwik	djolol, tsolol	moṭgiwik	bâ'tsigin
N1. Yawelmani	wo'gaygic	wekwek		moḍokwiyi	
N. var.		ke'w 6			

	271	272	273	274	275
	<u>large</u>	<u>small</u>	<u>good</u>	<u>bad</u>	<u>alive</u>
1. Tulamni	wi'	me'tsots	meṭ	ṭahaiyic	
2. Hometwoli	nohoṭ	mè'dot	meṭ	ṭáhaiyic	
3. Palewyami	noma	muṭutu	insis	deṭi	
4. Yawdanchi	mèṭ	pûunun	injiṭ	doṭe	dâada
5. Wükchamni	meṭ	bûunun	injiṭ	doṭei	daidji
6. Chukaimina	woṭî	widjî	incic	doṭî	dâala
7. Michahay	woti	widjî	incic	doṭî	dâala
8. Ayticha	wot'î	widjî	incic	doṭi	
9. Choynimni	woti	widjî	incic	dòtsî'	dâ'la
10. Gashowu	guti	mitcî	incic	duḍi	dâ'la
11. Chukchansi	gòṭii, made	golis	metc, gayis	batcix	hòyol
12. Kechayi	goṭî'	gotetc	gâ-itc	batcix	hòyol
13. Dumna	goṭî'	gotetc	metc	batxal	hòyol
14. Chawchila	maṭek	gudjidja	gayîl	paat	hoyòlo
15. Wechihit	maṭek	kotîṭ	incic	doṭei	dâla
16. Nutúnutu	matcexk	witî	insis	doṭi	dâ'la
17. Tachi	heuṭi	mit'i	incic	doṭî	hoile-xo
18. Chunut	maie'k	wit'i	insis	doḍe	daala
19. Wo'lasi	mâyek	mit'i	incic	doṭei	dâala
20. Choynok	mèṭ	wiṭi	insis	dòṭei	
21. Yawelmani	maiek	gudzi, koti	insis	doṭi	dâala
N1. Yawelmani	(maýa'hay)	gudi'	'insis	doṭi', pa'aṭ	
N. var.					
	276	277	278	279	280
	<u>dead</u>	<u>far</u>	<u>all</u>	<u>much</u>	<u>who?</u>
1. Tulamni	tawaṭ	wa	k'umui	wûx	wât
2. Hometwoli	tawaṭ	wa	gumui	wûx	wât
3. Palewyami	tauṭa	wa	kumui	waxe, wexi	wat
4. Yawdanchi	tawaṭa		k'umui	wûxe	
5. Wükchamni	táwaṭa	wa		wûxî	wat
6. Chukaimina	tawaṭa	wahâ'	k'umui	wixî'	wat
7. Michahay	tauâtac	wahâ'	k'umui	wixî	wat
8. Ayticha	tawâṭac			wixî'	wat
9. Choynimni	táwaṭa	wahâ'	kumui	wixî'	wat
10. Gashowu	tauṭa	wahâ'	(kumayantau)	wixi	wat
11. Chukchansi	hac'wana				wat
12. Kechayi	hácwana	wa, wâ	hitia	p'umún	wat
13. Dumna	hacawana	wa	hitîa	p'umun	wat
14. Chawchila	taweṭi	waa			wat
15. Wechihit	tauṭa	wa	yèṭau	maṭin	waṭoku
16. Nutúnutu	tauṭa	waa	yeṭau	maṭin	waṭukui
17. Tachi	tauṭa	wa	yèṭau	maṭin	watuk
18. Chunut		wâ	yèṭau	maṭin	waṭûk
19. Wo'lasi	tauṭa	wa	yèṭau	maṭin	waṭûk
20. Choynok		wa	yèṭau		
21. Yawelmani	tauṭa	wa	yèṭau	mani	watuk
N1. Yawelmani	tawaṭ	wa'	ye'ṭaw	mani'	watuk 1
N. var.	tawṭa 6				wat 4, 5, 6

	281	282	283	284	285
	<u>what?</u>	<u>where?</u>	<u>greeting</u>	<u>here</u>	<u>up</u>
1. Tulamni	hanwil	hèl	hîl ?	xits	tipan
2. Hometwoli	hanwil	hè'l	hèl	xits	tipan
3. Palewyami	hân	helieu		xiu	
4. Yawdanchi		hideu	hidé		tipin
5. Wükchamni	han	hidéu	hide		tipin
6. Chukaimina	hân	hileu	hilèle	keua	tipin
7. Michahay	han	hiléu		keua, keu	tipin
8. Ayticha	hanta	hiléu			tcipin
9. Choynimni	hanta	hiléu	hile	keu	tipin
10. Gashowu	hanta	hiléu	hile		tipin
11. Chukchansi			hili		
12. Kechayi	hâta	hiléu		heu	tcipin
13. Dumna		hiléu		heu	tcipin
14. Chawchila			hili		waat
15. Wechihit	hanuku	hiyeu-	hîyi	hetâm	tipin
16. Nutúnutu		hiyeu	hîyi	heha'm	tipin
17. Tachi	hanuk	hiyeuk			tipin
18. Chunut	hanuk	hiyeuk		hetam	tipin
19. Wo'lasi		hiyòku, hiyéuk	híyekîi		tipin
20. Choynok			hîuk		
21. Yawelmani	hâuk	hiyòk			tipin
N1. Yawelmani	ha'uk	hiyuk			tipin
N. var.	han' 4, 6	hele' 4 hili' 6			
	286	287	288	289	290
	<u>down</u>	<u>today</u>	<u>tomorrow</u>	<u>yesterday</u>	<u>yes</u>
1. Tulamni	xoniú	hèts	hiémdja	wilin	hân <sup>n</sup> , hò <sup>n</sup>
2. Hometwoli	xuniú <sup>x</sup>	hèts	húmdja	wilin	hú <sup>n</sup>
3. Palewyami	upleu	hècit	tointani	go'liu	ò <sup>n</sup> o <sup>n</sup>
4. Yawdanchi	adid	hètci	hiemxác	wâwau	hòuu
5. Wükchamni	adid	upíu	hiémxác	wâwau	hòu
6. Chukaimina	adil	hèitci	hiemxác	ganinitau	hòu
7. Michahay	adi'l		hiemxác	ganinitau	hòwe
8. Ayticha	atil	(obol)	hiemxác	lakuu	hòwe
9. Choynimni	atil	(obòyi)	hiémxác	lakuu	hòwe
10. Gashowu	atil	(hai'li)	hiémxác	lakuu	húhu
11. Chukchansi					hòhu
12. Kechayi	adil	hai'li	hîkau	lakuu	hòuhu, húhu
13. Dumna	atil	hatcá	hîkau	lakuu	hòuhu
14. Chawchila					hâ <sup>n</sup> ha
15. Wechihit	adil	hai'li	b'aíu	lakuu	òwu
16. Nutúnutu	adi'l	hai'li	bayíu	lakuu	òuwu
17. Tachi	adi'l	hai'lèni	paiyíu	lakuu	húu
18. Chunut	adil	hètsi, hai'lèni	p'aiyiu	lagiu	uwu
19. Wo'lasi	adi'l	hai'li	baiyiu	lagiu	úwu
20. Choynok					hò
21. Yawelmani	adil	hètsi	hitsi	walan	hò <sup>n</sup> hu
N1. Yawelmani	'adil	he'zi'	hi'zi'		
N. var.					

	291	292	293	294	295
	<u>no</u>	<u>eat</u>	<u>drink</u>	<u>run</u>	<u>dance</u>
1. Tulamni	a <sup>n</sup> ha <sup>n</sup>	luy-	ugûn	kitèn	wutèi
2. Hometwoli	uhu <sup>n</sup>	luy-	ukòn	kütö'ón	suk'ò's
3. Palewyami	k'ami	na-	okon	lolhin	wod-òyits
4. Yawdanchi	k'amu	duy	ukun	dawit	ka'm
5. Wükchamni	k'amu	duy-	ugun	dawit	woti-yot
6. Chukaimina	k'amu	naha-n	ukun	lawit	ka'm
7. Michahay	gâmu	naha	ugun	lawit	kam-a
8. Ayticha	gařú	naha'	ugun	lawit	kam-a
9. Choynimni	k'amu	naha'a	ukun	lawit	kam-îni
10. Gashowu	k'amu	naha'	ukun	yawitc	kam-îni
11. Chukchansi	ohóm	xat	ukun	lihim	wotî
12. Kechayi	ohom	xat	ugun	lihim	woři
13. Dumna	ohóm	xat	ugun	lihim	ka'm
14. Chawchila	ohò'm	luy	ukun	lihim	wotî
15. Wechihit	ohòm	xat	ugn-	lihim	hatm-
16. Nutúnutu	ohò'm	xat	ugun	lihim	hati'm
17. Tachi	ohom	xât	ugun	lihim	hâti'm
18. Chunut	ohom	xat	ugun	lihim	hatim
19. Wo'lasi	ohom	xat	ugu'n	lihim	hâtim
20. Choynok	ohom	xat	ukun	lîm	yayu
21. Yawelmani	ohom	xat	ugun	lihim	hatim
N1. Yawelmani		xata	'ugun	lihim	ha'tam
N. var.		xat 5			
	296	297	298	299	300
	<u>sing</u>	<u>sleep</u>	<u>talk</u>	<u>see</u>	<u>kill</u>
1. Tulamni	ilèk	iñař	xahay-	o'l	tawařl ( <u>sic</u> )
2. Hometwoli	ülö'k	iñaři	xahâ'i	ò'al	tawatcal
3. Palewyami	hatam-its	k'enèu-ji	xai-si	dîleu	
4. Yawdanchi	üdük	eñřam	xâi	öka	
5. Wükchamni	üdük	mañřsat	xahî	öka	tauřad
6. Chukaimina	ilik	eñřim	xahai	èka	tauřa
7. Michahay	ilik	è'niřam	xahai	èka	
8. Ayticha	ilik	eñřim	xahai	èka	řauřac
9. Choynimni	elk-ac	eñřim	xahi-ac	ikâ-ac	tauřac
10. Gashowu	hatâm-ic	eñřim	xahi-ac	ikâ-ac	tauřac
11. Chukchansi		woi		(taac-), taic-	hacaw
12. Kechayi	hâtim	wòi	yat	tais	hacawahan-t
13. Dumna	hatim	wuúi	yet	taic	hacawahan-a
14. Chawchila		woi		dai-	wok-
15. Wechihit	wipl-	wò'y	řexal	sil	tauřa-
16. Nutúnutu	wipi'l	woói	řexa'l	cil	tauřa-
17. Tachi	wipil	wòi	řexel	cil	tauřen
18. Chunut	wipil	wòui	řexil	cil	tauřâ
19. Wo'lasi	wipil	wò-i	řexil	cil	tauřa
20. Choynok	puřutc	woi			tauřa
21. Yawelmani	ilik	wuui, wúi	řexal	cil	tauřa
N1. Yawelmani	'ilik	wo'uy	ře'xal	řil'i	řoko
N. var.					

	301 <u>sit</u>	302 <u>stand</u>	303 <u>lie</u>	304 <u>walk</u>
1. Tulamni	xo'	wowa'l		hewiṭ
2. Hometwoli	akak			tanâa'l
3. Palewyami	hò'	wîwel		tiutiu
4. Yawdanchi	xo	wòwud	k'ûnu	hiwet
5. Wükchamni	xo	wowud	k'ûnúu	hiwet
6. Chukaimina	xo-on	wòwul	k'ániu	hewet
7. Michahay	xo	wòwul	k'aníu	hewet
8. Ayticha	xo	wowul	k'ániu	hewet
9. Choynimni	xo-	wowòl-ac	k'anu-wac	heut'uc
10. Gashowu	xo-òoc	wowul-ut	k'anu-wac	heut'-ic
11. Chukchansi				hiwét
12. Kechayi	holoc	wowul	wòi	hewet
13. Dumna	holoc	wowul	wòi	hewet
14. Chawchila				hiwè't
15. Wechihit	holuc	wow'l-		hiwet
16. Nutúnutu	holoc	wowul	woû'i	hiwet
17. Tachi	huloc	wowul	gonú	hiwet
18. Chunut	huloc	wowul	gonú	hiwet
19. Wo'lasi	huloc	wòwul	wò-i yehècin	hiwet
20. Choynok	huloc			hiwet
21. Yawelmani	huloc	wowul	banân-	hiwet
N1. Yawelmani	hulo's	wo'wal	bana'na'-	hiwe't
N. var.				

	305 <u>work</u>	306 <u>give</u>	307 <u>laugh</u>	308 <u>cry</u>
1. Tulamni	tcówoto	wa'an	haya	k'ehet
2. Hometwoli	tcówotco	wa'ân	hayá' 'l	gehè't
3. Palewyami		wa'en	hayau	ah-an
4. Yawdanchi	tcòwo	wakî	ha-i	ah-in
5. Wükchamni	tsòwo	wakî	hai-wúc	ah-in
6. Chukaimina	dáuhali	wan	hai	wâxil
7. Michahay	tcòuwo	wan-'a	há'y-uac	waxâl-ac
8. Ayticha	dauhali	wan	háâi	waxil
9. Choynimni	dáw'hali-xo	wan-âac	hayá-wic-ac	waxal-ic
10. Gashowu	dáw'hali-xo	wan-âac	haná-wic-ac	waxal-ic
11. Chukchansi				
12. Kechayi	dauhal	wan	hai	wâxil
13. Dumna	dauhal	wan	hai	waxil
14. Chawchila				
15. Wechihit	tcow <sup>u</sup> -xo	wan	hay-a	waxil
16. Nutúnutu	tsòwo-'n	wan	háy-â-	waxil
17. Tachi	tcòwo	wakèi	háy-a-	waxil
18. Chunut	tsòwò	wagîi	háy-â-	waxil
19. Wo'lasi	tcòuwo	wan	háy-a-	waxil
20. Choynok	tc'owo-			
21. Yawelmani	tsòwo	wan	háya	waxil
N1. Yawelmani	óowo		há'ya'	wa'xal
N. var.				

## 220. PARAGRAPHEDED LISTS OF NINE OR FEWER FORMS

11, 12. Eleven, Twelve. Home dōwāp culokai. Yawd yetcam cuyukai. Chkm, Dum yetcam potcdom. Choy yetcam botcdom. Gash yetcam potcdom. Wech yetcam. Tach yetcam batsdòm.

13-19. Thirteen to Nineteen. Home ſieu ya coop, +4, etc. Yawd copyom hatcpam yüt-cam tcođpom nomtcom mu'ncam, nonpom. Chkm copiom hatcpam yitcam tc'olpom nomtcom mun'tcam nonpom. Choy copiom hatcpam yit-tcam. Gash cophiom hatcpam yit-tcam tcolpom nomtcom muntcom nonpom. Dum copiom hátcecam yit<sup>e</sup>tcam tcolpom nom<sup>e</sup>tcom mun'tcam non'pom. Tach cópiom hotcpam yitcam tcolpom nom<sup>e</sup>tcom mun'tcam coponhotmin. (This Tach count was recorded in December, 1903, from Tachi Tom as part of a second Tachi vocabulary, printed separately below. Bob Bautista's vocabulary of 1906, which represents Tachi in the columned tabulation, has the count only up to 10.)

20. Twenty. Home puñi ſieu. Yawd boñoi ſieu. Chkm ponoi ſiéu. Gash ponoi ſiu. Dum ponoi tsieu.

21. Twenty-one. Chkm ponoi ſiéu yet. Gash ponoi ſiu yet. Dum ponoi tsieu yetcam (sic).

22. Thirty. Home cōop ſieu. Yawd cōopin ſieu. Chkm copin ſeu. Gash copin ſiu. Dum sōpin tsieu.

23. One hundred. Home yit demènitc. Chkm, Gash yet pitca. Dum yet pitc.

24. Two hundred. Chkm punoi pitca. Gash ponoi pitca. Dum ponoi pitc.

26. White man ("American" and "Mejicano" have tended to assimilate). Wük melikāna. Chkm mihikāna. Mich, Gash, Dum mehèkitc. Ayt mèkana. Choy ſipni, ſepani (pl?). Kech mikana. Wech melikan. Nutu mehikana. Wo'l melikan. Yawe wōpibit "hatted"; háxadji "stink," melikano.

29. Youth, young man. Pal kohūtem. Wük, Ayt notco. Dum, Tach nōtco. Dum nonkoi. Chun nōtso. Yawe nōto. N1 no't'ō. N3 no'čō'. N6 no'čō.

47. Eyelid. Gash dokoſkil. Dum lémelmai. Wech lemél'mitc. Yawe tsimètsimyl (confused with eye-brow?).

56. Nape. Yawd see neck. Chuk, Chaw uk'ūt. Kech uk'ut. Nutu uku'ts. Yawe xinits (neck?). N1 xinić.

58. Throat. Yawd hocod (mükuc larynx). Chkm, Mich sō'lolo. Ayt, Gash, Dum cō'lolo. Chaw hucil. Wech hocil. Tach mikic (see neck). N1 hoſil (wind-pipe). N4 miķič. N5 miķis.

62. Finger. Tul xipa'l. Home tcúlokac. Yawd xapad. Chkm xálalnit. Mich xá'lilit. Chnk xapal. N1 xappal.

71. Shin. Yawd gádaca. Chkm gelic. N1 kalassa' (leg).

74. Leg. Chkm woton (also foot). Dum dadats (also foot). N1 kalassa' (see shin).

80. Kidney. Tul, Home ts'inèk'al. Chuk gohic. Chaw bopoc. Tach tsilamgui. Chnk gulamatc. Yawe tsiliuxai. N1 čiliwxay.

81. Lungs. Tul comomk. Home comomku. Pal cōmat. Yawd hacpayan. Chuk sumuk. Tach hasoski. Chnk hacpèl. Yawe haspayal. N1 haſba'yal.

85. Penis. Yawd bōoto. Chnk, Yawe pōoto. Chkm, Choy putun. Gash putin. Kech cot. Tach ſotoi. Yawe (also) tcotoi; (also) tsuyuwi (urinator, polite). N1 bo'do?

86. Testicles. Yawd hoñoc. Chkm, Gash ciť. Choy, Kech siť. Tach, Yawe honoť. Chnk honoc. N1 honoť.

87. Vagina. Home umat. Yawd umťu. Chkm, Choy, Gash umut. Kech godotc. Tach kodoť. Chnk kotoť. Yawe godoť.

88. Pubic hair. Yawd ſumot. Chkm ſomot. Tach, Yawe ſumut. Chnk ſumut. N1 ſumut.

91. Feces. Chkm, Yawe bidik. Chnm [Choy?], Gash pidik. Kech pidik'. Tach, Chnk piťik. N1 bidik.

92. Urine. Chkm ſuyon. Chnm [Choy?] tsúyun. Gash ſ'uy'un. Kech tcuyon. Chnk tc'ulon. Yawe ts'uyon. N1 čuyo' (verb).

112. Long shell beads. Home tcatcayal. Yawd, Wük, Chkm xumána. Wech, Tach, Chun, Yawe xumna. N1 xumna'.

118. Road. Tul, Home pi'l. Pal pièl. Yawd pi't. Tach, Chun piil. Yawe pi'l. N1 pil. N2 pid. N5 pe'l.

156. Timber, forest. Chkm ut'ū (tree). Gash ut'u (tree). Dum ut'óa (= pl?). Wech culólani. N1 'utu (tree).

161. Yellow pine. Yawd kanad, idiñit (?). Wük idnit. Chnm [Choy?], Gash, Dum tcèpin. Wech tè'capxui. Yawe kanal, bakam.

162. Digger (bull) pine. Yawd tòñac. Chnm [Choy?], Gash, Dum ton (Dum also tunâ, pl.). Yawe tōnos. N1 to'nus (pine nut), tun ("mountain pine"), N4 to'n (digger pine)

163. Pine nut. Tul tsak'ès. Pal wetek. Yawd, Wük, Tach, Chun watak. N1 watak (origin of place name Wahtoke?).

164. White oak. There is confusion between a subgenus and a particular species, both called White oak, and between acorn and tree. (see also §230, nos. 164-167.) Yawd tò'wixit. Wük towūxit. Chkm, Wech tòxit. Dum ut'u (see tree, 155). Chaw cawa. Tach hòwixit (sic). Chun tòwixit. Yawe towixit. N1 to'wixit.

165. Black oak. There was confusion between proper black oak, "mountain" oak, and the acorns which were traded to the valley tribes from the hills (see §230, nos. 164-167); I list under one caption all obvious cognates; but there may be noncognate forms in dialects which are blank now. Tul èsan. Home ūsa'n. Pal isen. Yawd òcūn. Tach ècin. Chun èsin. N1 'e'ſiñ.

168. Acorn. There may have been a generic concept for acorn, but more likely not. The actual terms may have depended on those for tree species, or been additional. Pal xoxit. Yawd, Wük, Chkm, Chaw, Wech putuc. N1 putuſ (k'inim large plains oak). N6 buduſ.

170. Buttonwillow. Home salemayas. Yawd, Wük cadam. Chkm calim. Wech calam. Tach, Chun, Wo'l pukul (Wo'l also calam). Yawe salam. N1 salam.

171. Buckeye. Yawd, Wük topoñ. Chkm dupun. Chnm [Choy?] dúpun. Gash d'opin. Dum, Wech, Yawe dopin. N1 dopin.

175. Jimsonweed, toloache, Datura. Chnm [Choy?], Gash, Dum tanai. Chaw mòmu'. Wech danai. N1 da'nay.

189. Brush rabbit. Pal mâ'dei Yawd, Mich, Dum mâdji Wük madji. Chkm madjī' (sic). Gash mâ'tci. Yawe moťgiwik.

208. Chicken hawk. Yawd, Yawe watcwatc. N1 cakcak.

210. Hawk sp. 1. Yawd kúxudetc. Wük kuxwudèitc. Yawe guxwetc.

211. Hawk sp. 2. Yawd, Wük tciauna. Chuk tc'iona. Wech ts'iona.

212. Hawk sp. 3. Yawd, Wük ūdatc. Yawe iditc. N1 'it'ič.

215. White owl. Yawd còtcudètc. Wük, Chkm còdoṭ. Wech codoṭ. Yawe co'twèitsi.  
 216. Small owl. Yawd gugotcup. Tach colili. Chun solili.  
 224. Swallow. Yawd taipālutc. Wech daipinmin. Yawe dánabak'yits.  
 228. Dove. Yawd upyayi. Tach, Chun, Yawe uplali. N1 ?uplalli?  
 233. Pelican. Yawd hòhuimuc. Wech xahal. Nutu, Wo'l xâhal. Chnk kâhai.  
 241. Gopher snake. Yawd hû'cudètc. Wük xótuñuṭ. Chkm xò'doniṭ. Chaw xotòniṭ. Wech xodonis. Tach kòtonyic. Chnk kotnot. Yawe koṭònot. N1 go'ṭonit.  
 244. Lizard sp. Chkm djanak. Mich djenak.  
 246. Lizard sp. Yawd, Yawe xolpòyi. N1 xo'lpòyi?  
 247. Salamander (waterdog, "red lizard.") Yawe

gaṭanat. Yawd kahuṭwai. N1 kaṭa'naṭ, kahuṭway.

252. Salmon. Ayt, Chnm [Choy?] gaixit. Gash, Chaw, Wech gayaxat. Kech, Dum gâ'yaxit. (Salmon lacking in Tulare Lake drainage.)

255. Lamprey eel. Chnm [Choy?] k'ewask'ewas. Gash, Dum westca. (There may be confusion with "worm," q.v. There were no lampreys beyond San Joaquin River drainage proper.)

257. River trout, small lake trout. Yawd, Yawe djakòmon. Chun ts'agòmai. N1 cáko'man.

258. A small fish. Home xatsix (boneless). Wük, Chkm dakitc. Mich, Wech dagitc. Chun daxic. Wo'l ḍalap.

259. Perch. Yawd, Chun, Yawd [Yawe?] gòpa. Chun (also) ḍaxdu. Wo'l ḍaxdu. N1 kò'pa'.

## 230. NOTES TO VOCABULARIES

1. One. See the section on the count.  
 4. Four. The hot-, hat- may or may not be the same as -hot, -xot in "nine."  
 11-19. See the section on the count.  
 23. Hundred. pić is "count."  
 25. Person. Or people.  
 26. White man. Loan words for Mejicano and (A)merican may have been confused. Yawd [Yawe? See §220, no. 26] also wo'pibit, said to mean "hatted," and háxadji, translated as "stinkers."  
 28. Woman. moke'l may be < Span. mujer; muk?ec also, or it may be the source of moke'l. The ga'y- and koyo'- stems recur in "girl."  
 29. Youth, young man. no'fo, no'čo may be from the same base as no'no' man (27), and, even more likely, is related to no'či' friend (39).  
 30. Girl, young woman. (See woman, also Plural Noun Themes, Newman, §24:18.)  
 32. Old man. Yawe moxo'lić < mo'xol "to grow old," which includes women. Pal nèm- is probably "great."  
 34. Widower. Probably includes "widower." -hana' is a passive verbal noun: Newman, §20:7.  
 35, 36. Father, Mother. The first syllable is a frozen, unremembered "my." The dissyllable is used with possessive pronouns.  
 37. Chief. According to Newman, < deyi, to lead, be ahead of.  
 38. Shaman, doctor, witch doctor, medicine man. N1 ṭipne' verb stem, to have magic.  
 39. Friend, partner, mate (among men). See "youth" (29).  
 41, 42. Head, Hair are one term in many American languages. N1 'oṭow means head hair, ṣiliṣ body hair < be hairy.  
 45. Eye. While Chuk ṭ, ḑ, ḍ in general > s(č), č', s (Newman, §1:5), Gash, Chnk ṣ > ṭ in this word, if the record is correct.  
 50, 51. Tongue, Tooth. Note that in all Southern Valley dialects ṭ- was heard for "tooth," as also in Gash, but in all others, t-. Much the same distribution occurs for -ṭ in the preceding word "tongue," except that -ṭ crops out also in Yawd, Chkm, Gash (for ṭalxit read talxiṭ), Chaw (for ṭalkat read talkaṭ); elsewhere, -ṭ appears as -tc, ts. Chuk talxas as per Newman. Mich, Choy madaṭ, mataṭ are puzzling.

53, 54. Beard, Cheek. Newman's long a' was pretty consistently recorded as â, no doubt because stress falls on it.

56, 57, 58. Nape, Neck, Throat. Variation is due to semantic shifts as well as loose understandings of the English tendered. Yawd kũñat seems to refer to neck tendons, cognate Yawe [Pal?] xiñits to the nape, hocil to the windpipe, mik'ic to larynx (< swallow?).

59. Shoulder. In Chuk, which with Chaw has ganalhi, gapsal was given for upper arm (compare Tul, Home, Pal, Dum, Nutu [Chun?], Yawe; and in Chaw for simply arm).

60, 61. Arm, Hand are expressed by the same word, except for Chaw, and except Choy, Gash, Chuk, Kech, Dum wèp'in for arm (cf. Chkm bèwi alternant for shoulder?).

64. Belly. Chkm, Mich, Ayt, Choy olok'; Gash luk'in and Chuk, Kech, Dum balik may prove to be cognates.

66. Breast, chest, poitrine.

67. Teat, mamma, also milk. Kings River mintc-ix < me'nit?

68. Thigh. Wech k'ohic, Nutu k'ohis was said to mean rump primarily, and was given for "buttocks" in Chkm; perhaps in Wo'l, Chnk also, and even in Yawd alternant koco. Tule-Kaweah, Kings River yokote may be < gen'ïok' yokote' person, which was replaced by mayi < (?). Tach, Chun wuwol- may be < "stand," q.v.

69. Knee. Not cognate with 72, kuyu' "ankle," because the initial is k' instead of k.

70. Calf of leg. Newman gives bok, "muscle, calf of leg," which has no parallels in my list except the very dubious Kech bau and Chkm, Wech la'k. My galasa, etc, reappears as Yawd gádaca, Chkm gelic in 71, shin, and Newman's kalassa', "leg." There seem to be at least a half-dozen noncognate stems assembled under the present "calf."

72. Ankle. Most of the forms, including Newman's, seem to be exact homonyms of the renderings of "salt," even to minor vowel changes. I got the word also in Chaw, but for "wrist." I have no notion whence the aberrant Gash and Dum forms; perhaps misunderstandings. I do not believe Wük, Chkm really accent the final; no doubt, I misheard the abruptness of closure of -u' as stress.

77. Blood. I consistently caught the length of the

first vowel in pa'yax because it was also stressed. On the same ground I am confident that the first vowel of the Foothill stem hēpa, which Newman did not record, is also long.

79. Liver. The two Buena Vista renderings are evident attempts at hp. To connect Kings River dala'pic with dip would be venturesome, but I would expect evidence for it to turn up elsewhere in Penutian, as Dixon and I long ago intimated.

80. Kidney. Chuk gohic probably is the same as Nutu k'ohis, rump, buttocks under 68 "thigh," my gesture of pointing to the place of the kidney having been misunderstood. The half-dozen three-syllable forms are very characteristic of the variation between Yokuts dialects, especially when words are long.

81. Lungs. Often got for "lights," as usual in rural U.S. The scattering entries clearly show two stems.

82. Brain. A puzzling series hup', ho'ga, tcoka, tcuk', ʔuk, co'yuk may or may not prove to be cognates.

83. Fat, grease. This seems to be unanimously he'xa, except for Pal hi'ya (g sonant fricative) and wholly erratic Home do'ats. Stems subject to least interdialectic variation are dissyllables ending in a vowel, or in Newman's "protective" final glottal stop. Cf. no'no' man, di'ya' chief, ʃaʃa eye, sama' mouth, kuyu' ankle, kuyu' salt, 'awca' fox, la'la' goose.

92. Urine. The N1 form is a verb.

95. Tail. The monosyllabic form seems to be Northern Valley and Foothill, the derived dissyllabic form Valley, with Home isolated.

96. Saliva. N1 tuhwiyi is a verb, pointing to a noun morpheme tuh, saliva, cf. Chun, Wük. Another stem is represented by the chain Yawe, Chnk he'lawaʃ, Choy, Mich ke'liʃ, Chkm kileʃ, Pal kelyi, Home güläyi, with which Yawd hö'xutc (for hö'xuʃ), Gash he'xit (for he'xiʃ), Chaw he'xil, Chuk, Kech, Dum he'djil are probably more distantly cognate by changes that remain to be demonstrated.

97. Tears. Remarkably uniform, and, in the absence of stops, uniformly recorded.

98. Sweat. Another chain; ʃo'pox, ʃo'pax, tso'mak, ca'mak, ʃumun, tcumkan, dumkun, ʃumkunut, with only Pal aberrant with mi'qa and Buena Vista unfortunately not represented.

100. Sweathouse. Mich ya'wil recorded, but Chkm informant explained that this denoted a species of grass or brush used as thatch. N1 has the vowel long; I wrote it as such only in Pal!

101. Shade, arbor, a leafy roof, ramada. The N1 form is a verb "to be in shade." The word for shadow was unfortunately not in my list.

103. Arrow. Yawd t'uyoc war arrow, unforeshafted; cikid, deer arrow with foreshaft.

104. Arrowhead, really obsidian, perhaps including flint.

105. Boat, tule balsa, shaped raft of rushes.

106. Moccasin. N1 means "sandal," which seems to have been the usual footgear, if any, along Tulare Lake and perhaps on the plains generally. The foothills Indians used buckskin moccasins, but they were worn only occasionally. Elkhide soles are mentioned, but may not have been aboriginal. The variety of designations partly reflects variation in kind of object and in environment.

107. Woman's dress or skirt. This may denote the larger apron worn over hips and buttocks or the narrower one worn in front, possibly the two together. N1 says merely "apron."

108. Pipe, of wood or cane, a short tube. N1 means to smoke tobacco. Cf. Chuk and Dum tobacco.

110. Awl. The Nutu and Wo'l forms mean bone.

111. Beads, disk beads of clam shell. N1 gives po'lay, small beads; olivella univalves may have been meant, or minute disks made from them.

112. Long beads, cylindrical, from columella of large univalves.

113. Bedrock mortar. N1 tinil, animal hole, i.e., badger's or ground squirrel's. In the valley there would be no exposed bedrock, but the hill tribes' habits would be known.

114. Portable mortar. This was probably mostly made of a section of oak log.

115. Pestle of stone. Chuk, Kech, Dum tcei suggests "bone," but is probably not cognate, as the forms for that were recorded with glottalized affricate, but I specially noted that those for pestle were aspirated.

116. Meat. N1 ćixil is from ćexla, to roast, but the term has not been recorded outside Yawe. There are three other stems. One of these, hoyo'lis, must not be derived from xoy deer, because the initial x of this is consistent in all records. Meaning permitting, it would connect better with widespread hoyo'wos, 117, name.

117. Name. N1 hayo verb "to name," N2 hoyo'wos, noun.

121, 122. East, West. Most, perhaps all, of the terms also mean "up, down" in the sense of "upstream, downstream"; contrast ʔipin ʔadil (285, 286), "up, down" vertically. Wük domto is "in the mountains." The five wákilyu forms probably have stress recorded on the first syllable because they base on wakil, with locative case added. The Home forms were translated "there rises (sets) the sun"—probably correctly, cf. no. 124. In the sloughs at the far south head of the valley where the Hometwoli lived at the foot of east-west trending ranges, the slope of the land was no longer westward from the Sierra Nevada, and a term meaning "downstream" might have been confusing. I have parenthesized the Tul forms because the first is almost certainly Yawe and the other perhaps Yawd. N1 Yawe baluw west is paralleled by Yawd (1907:235)<sup>1</sup> padu downstream, inside(?), padu'unun those living below, with which the tribal name Paleuyami is also connected; and see, under 149, the Kings River and Gash forms balu, palwu for "stream, river" itself.

123. Sky. The commonest stem is ʔipin, which means also "up, above, magical, mysterious, never seen before." Pal dulau, Chkm nihinau, perhaps Ayt k'alau-naš [k'álaunac] contain the locative case of unidentified stems. Choy, Gash, Chuk, Dum walal, wa'la recur in Tach, Wo'l, walal plain, flat valley (150); the sky is conceived as a level land. Thus Wo'l p'aʔan ʔipin land, world above.

124, 125. Sun, Moon. There is one basic stem for both, ʔop, ʔupiš, ʔupuš, 'opodo. The moon is distinguished, where clarity demands, by preposed toynon, "of the night." Dum xapil is "hot." Home uses a phrase containing the verb stem hiwe't, walk, go, travel; yet perhaps from ye't "one," cf. Yawd yitca "alone" (1907:245); mai probably is Home mayi, "we, incl. pl." (1907:350); yet hiwetac mai would then be "our traveler alone." But I have no etymology for N1 da'ak corroborated by my Yawe form.

<sup>1</sup>This and following references to 1907 refer to pages in Kroeber, UC-PAAE 2:165-378.

126. Star. One stem, varying between two and three syllables, except for g'otol (k'otol) in Chnk alone, which is one of my earliest and poorest vocabularies.

127. Day, daytime, daylight. Tule-Kaweah and Kings River have a term derived from sun; beginning with Gash, Northern and Southern Valley dialects all go back to N1 ha'yal.

128. Night. The forms probably vary between the abstracted verb stem "to be night" and some form thereof such as "at being night." Yawe, the first form was the response to "night," the second to "at night."

129. Wind. Tach cokfu was recorded as "north wind"; the stress is almost certainly wrong.

130, 131. Thunder, Lightning. Chuk, mémias, a bull-roarer toy, said to mean "thunder." Yawe golwi mimiãt-in is "thunder's golwi"; cf. Yawd gulwi deudat.

132. Earthquake. Chuk holki earth, cf. Kech, Dum, Chaw, world (146); yuncunxon then is a verb.

134. Cloud. Tul same as "rain."

135. Rain. Tul gñot ilak "falls water," also given for "cloud." Home guneal "lluviendo, raining." Gash g-rough breathing written for voiced fricative (gomwa).

139, 140. Smoke, Ash. The stressed long first vowels were pretty consistently recognized in 1906.

141. Coal of fire, charcoal.

142. Water. Yawe ilik; the statement (1907: 280) as to a difference of vowels between ilik sing (296) and ilik' water being imperceptible to me must of course have referred to /k/ as against /k'/; the vowels are indeed identical.

145. Earth as material, soil. Newman, "ground, soil."

146. World, land. The first syllable reappears in lake (148), plain, valley (150). Pal nema is "big," as in the following "ocean."

147. Ocean. Wech ma'atak, cf. large (271).

149. Stream, river, canyon, ravine. Wük hudacèdik, cf. Home hulas stream, Yawd idik water. Tach wai, slough; Yawd, koyowuda (?) slough.

150. Plain, valley, open place.

151. Mountain, hill. Gash nòt dulau, eastern mountains, Sierra Nevada; d'ulul [dulul] foothills. Chaw and one Chuk informant also distinguished lomit mountain from dulul hills.

152. Rock, stone.

153. Salt. Homonym of kuyu' ankle.

154. Wood, firewood. N1 Yawe wiçet stick.

155. Tree. utu is probably one of the common oaks.

156. Timber, forest.

157, 158. Brush, Grass. ya:wil and cutcun appear under both captions.

160. Sugar pine of mountains, Pinus lambertiana.

161. Yellow pine, P. ponderosa.

162. Digger pine of foothills, bull pine, P. sabiniana. Dum tuná, pl.

163. Pine nut. Both the sugar pine and the digger pine have nuts that were prized. It is not known which species watak is from. There is also the famous piñon nut—P. monophylla (or cembroides var. monophylla)—from the mountains in the desert; some of the Yokuts may now and then have got this by trade.

164-167. The English nomenclature of California oaks varies locally, the Indians may have used diverse variants, and I could distinguish by eye only some of the fifteen species recognized by Jepson. He lists another fifteen subspecies, besides characterizing some species (Q. chrysolepis) as extremely variable in habitus and in the acorns. So far as possible, I have grouped together the Yokuts cognates and left

their final botanical identification to the future. I asked for white, black, plains or valley, and live oak. The evergreen live oak (167), is probably the surest in identity: Q. wislizenii, Interior Live Oak. The plains oak (166), would come next: Q. lobata, Valley Oak, the largest species, and characteristic of water courses and deltas in the Yokuts valley land. It is the Spanish roble, but Americans call it also Water, White, and Mush Oak. Black Oak (165), strictly would be Q. kelloggii, which has a very wide distribution except in the valley plains. It is further identified by Newman as well as my main Yawdanchi informant Christman giving "black oak" for 'e'sin, òcin. However, some of my valley informants may not have known this hill and mountain species as "black oak" and have called it, descriptively, "mountain oak." "Mountain Oak" however proves to be a settlers' variant in use, along with Iron Oak, for the Blue Oak of the botanists, Q. douglasii. This may be to'wixit (164). On the other hand, to'wixit may be Q. chrysolepis, the Maul or Canyon Oak of the botanists, which has the widest and most varied distribution of any California oak, and has at least five variant English names in addition to the two already mentioned, one of which is White Live Oak. It is however a mountain and not a foothill tree, according to Jepson, and would thus not have been of prime importance to the Yokuts. Christman, who was from the hills, called towixit simply "white oak." I should have included in my vocabulary the easily identifiable Scrub Oak, Q. dumosa.

168. "Acorn," on the other hand, should never have been on the list, except as a possible generic asked about after specifically different acorns had been recorded. I do not know what species putus and k'inim denote. Christman said the acorns of both òcin and towixit were called putus. Tach, Chun ècin, èsin were obtained for "acorn," but I have put them with their cognates under "black oak (tree)" (165).

169. Willow. The Yokuts terms may refer to Yellow, Red, or Black willow, Salix lasiandra, laevigata, nigra.

170. Button willow. Cephalanthus occidentalis.

171. Buckeye. Aesculus.

172. Manzanita. Arctostaphylos.

173, 174. Round tule, Flat tule. The Indian descriptions in much of California distinguish cross sections of stem; round, flat, three-cornered. The two first probably cover Typha latifolia, Common Cattail, and Scirpus acutus, Common Tule. The third may be Cyperus, Sedge.

175. Jimson weed. Datura meteloides, Mexican Spanish toloache, used ceremonially for its drug content.

177. Bear, black or cinnamon. The tribelets from which no word was obtained lived in the treeless plains or the tulares, from which the grizzlies probably kept away the smaller species, as they did from much of the Sacramento Valley. A black bear's only refuge from a grizzly is up a tree.

178. Grizzly bear. Newman gives an alternative Yawe term, fen, which recurs in Pal. Tul bíawas is confirmed by the second Tach vocabulary's bí'wasü. Chaw iwèt is an error for "wolf."

180. Wolf. N1 ya'wliç < yawa'l, to follow, chase.

181. Fox. The second Tachi vocabulary has auudja, so Tach k'im may be a misunderstanding of gloss.

186. Antelope. The two Buena Vista forms are evidently the same word; the stress variation is of the kind likely to be heard in words pronounced without context.

189. The brush rabbit is smaller and darker than the cottontail and probably has a hill habitat.

190, 191. Ground squirrel, Tree squirrel. These are the popular terms I used in eliciting. Newman's informants used "squirrel" and "gray squirrel." The ground squirrel is much the commoner, and in the treeless plains the only one. It is not a true squirrel but a spermophile.

192. Gopher, pocket gopher. Yawd x in hunxut is printed for manuscript g followed by a rough breathing (reversed apostrophe) which I wrote for the sonant fricative now usually represented by gamma.

193. Skunk. Yawe tsox would be expectable. I happened to record the form from one informant only.

194. Polecat. This is the smaller species of skunk.

195. Raccoon. N1, "stingy," name also of the mid-winter month.

197. Weasel. The Wech, Nutu, Tach, Chun forms were recorded as stressed finally because the last syllable ʔi was missed, or perhaps it was assimilated to o and ó'o heard as ð'.

199. Mouse. Two or three different species of mouse or rat are probably represented by the forms. N3 was translated as "rat," N4 as "mouse." The wood rat, 198, is easily identified by its large "nests" of sticks.

200, 201. Beaver, Otter. The former has long since been exterminated in the San Joaquin Valley, the latter must now be rare. Newman's informants translated the first by "seal," the latter by "beaver."

202. Bird. Generic. de'nip and de'tcip seem to be remotely cognate forms, which may be connected with N1 wewcoy by forms like Wech wewkutc [weukutc], Wo'l dewgu?tc [deugu'tc].

204. Eagle. The initial is consistently alveolar in Kroeber, but dental in Newman. The latter's "American bald eagle" is an informant's confusion, not unlike that in the American emblem.

205. The bald (white-headed) eagle is a fish eagle. Newman's soxsox was called fish hawk, which is a name for the osprey, which is similar to but distinct from the bald eagle. Cf. Wo'l coxcux, fish eagle (viz. osprey), but bonoxwocmin, white-headed eagle (viz. bald eagle).

206. Buzzard, turkey vulture. Home was said to mean "head of the world," but p'a'na for world must be from another dialect (Yawe?), or an unrecorded synonym of tiñal.

207-213. The hawk species are time-consuming and difficult to identify without a picture book. The surest is the prairie falcon, Falco mexicanus; watcwatc may be Falco columbarius (cf. §310); cuxup (§310) is a large species, perhaps the redtail; pohyon may be Cooper's hawk; údatc, iditc the sparrow hawk (§220); 210 kuxwudetc (cf. §§220, 310), "kux-maker," produces the sound kux in parting the brush in pursuit of birds, and is probably to be identified as Accipiter velox. Tc'iauna is Circus hudsonicus (§§220, 310).

214-217. The species of owls are also scarcely identified. In addition to the captions used and shown, night owl, hoot owl, and screech owl were used by informants. Peter Christman, Yawd, from stuffed specimens identified hutulu as horned owl, Bubo virginianus, and cõtçudètç as snowy [white] owl, Nyctea nyctea.

218-219. Raven and Crow are occasionally confused or interchanged: cf. Chuk, Kech. Yawe also uses maik alwuť, large crow, for raven.

220. Magpie. Newman has both affricates glottalized; I did not record one glottalization in eighteen!

222. Bluejay. I got the alveolar position but missed the glottalization except in Ayt, Choy, Kech, Dum. In Yawd and Yawe a second form xaixai was obtained for an alleged larger-crested species.

229. Woodpecker is redheaded.

234. Geese. la'la' was most regularly obtained in asking for (wild) goose. This may be the black brant, Branta nigricans. A large species was sometimes mentioned as nèyil, and is presumably the Canada goose, Branta canadensis. Another, described as white or mainly white, wau or wâw, may be the Snow goose, Chen hyperboreus, or the White-fronted goose, Anser albifrons. Home halim, "ansa grande," may be the Canada goose, or possibly a swan.

235, 236. "Duck," generic, and "Mallard" tend to be used interchangeably, but waťwať (like "quack-quack") primarily denotes the mallard (it has a "pretty head"), whereas hai'na is from hayin "to fly" (Yawd) and is the term for all ducks. Some specific names are:

Wech tøgugu teal; gogo sprig?; iyèyitc wood duck

Tach guigui a small duck (sprig?); Chun gougou

Tach hòťuc white diver; Chun tsaleiwiyeits  
Home camaan female (hembra) mallard;  
oxoox under 236 denotes the male only

Newman k'o'yoť "water duck" may be for "wood duck"; or possibly a more exact rendering for the forms for sprig just given.

Wo'l uxelum or waťwať.

238-242. Snakes. There are at least two stems for rattlesnake. Since Newman secured only one, it is not clear whether my țeel represents țe'el or geminated țe'l; the Pal, Choy, Wech forms suggest the first reconstruction. The 239 forms were got by asking for "watersnake," but yax, at least, also means snake generically, or perhaps even reptile. (As the survey progressed, I began to ask for "the snake that other tribes call yax.") The Wech informant volunteered that the Nutu said wixnaia for yax, though the Nutu did not so confirm. The kingsnake is striped transversely and is a boa, killing rattlesnakes by constriction. According to Newman, 242 is a banded "whipper" or "racer"; the latter are lithe, swift tree-climbing boas. The two stems were equated, and the Chkm informant gave both for his dialect. One Yawe informant called it "blue racer." No. 241, gopher snake, in the paragraphed lists (§220), refers to a large snake, presumably living on pocket gophers. The Wük informant gave țumkitin or xotuñuť for a "big black watersnake," yax being used for a small one; the second element means gopher snake. Yawe twice gave tsânit as being similar to the gopher snake.

243-248. Lizards. The term most frequently given in response to indeterminate "lizard" is 243 k'ondo'çi', which however denotes a particular species. No. 245, coltoyi or țesa'ay seems to be one species, the alternate name being known from neighboring dialects. No. 246 xo'lpoyi' was obtained only a few times, but is said to be a large animal; 248 wile'li' is described as long and spotted. No. 247 kaťa'nat' is a salamander (amphibian), and so is 247 kahuťway "waterdog" or "red lizard (in water)."

249. Frog shows at least three stems: it is not known whether these denote different kinds or are different forms for frog-toad in general.

250. Turtle shows four stems. One should expect

at least water turtles and land tortoises to be distinguished. One of the stems seems similar to one of those for frog: cf. *koykoyot* and *koyotwoŋ*.

251. Fish, *lopiŋ*, is generic, though it may also, here and there, have denoted a particular species.

252. Salmon has a limited occurrence in Yokuts nature, namely in the specific San Joaquin River drainage. As an anadromous fish, it cannot ordinarily enter Tulare Lake or Kings and Kern rivers which drained into the lake.

253. Sucker. Newman's Chawchila informants gave *polxuy* for carp, which has been introduced in the Yokuts area, but is also a sluggish fish. His Yawe translated *tis'a?* as "emerger," i.e., after winter is over.

255. Lamprey eel. This anadromous cyclostome occurs in Yokuts territory only in the San Joaquin and immediate affluents. Of the tribes from which a native term was obtained, only the Dumna and possibly the northernmost Gashowu lived in such drainage. I was not aware of the limited distribution, else would not have included the term in the comparative vocabulary. I dropped it when I realized the difficulties it introduced. The forms recorded seem really to mean earthworm.

256. This is a sizable fish that did occur in Tulare Lake and its affluents, as well as in the San Joaquin drainage. The name however may be a local one for a species not allied to the trouts or Salmonidae.

257. "River trout" was so called by me to distinguish from the lake "trout." I assume the native species were the Cutthroat and Rainbow trouts, *Salmo clarkii* and *gairdnerii*.

259. Perch. There is a native species, the River perch, *Hysterochilus traskii*, which occurs also in the Tulare basin. The *ɬaxdu* forms may be related to the *daxic*, *dakitc*, *ɬalap* of 258.

260. Fly. Newman gives also *ka'ma'sa'* for botfly.

261. Spider. Yokuts appears to have a generic term more or less corresponding in semantic range to English spider.

262, 263. Flea, Louse, also hardly vary in stem. The latter really denotes the head louse. To judge by other Californian languages, there was a wholly separate stem for body louse or grayback.

265. Yellow jacket is the yellow-striped wasp. Newman gives *k'umunyut* for hornet.

267. Worm, presumably earthworm. Cf. 255, lamprey eel.

269. Black. *N1 moɬok?*, blacken; *moɬok?wiyi*, be black.

271. Large. *N1 maya'hay*, big ones. The forms *goŋi'*, *woŋi*, *meŋ*, *maŋek*, *mayek* may all prove to be cognate.

273. Good. Tul, Home *meŋ*, Dum *metc*—cf. *meŋ*, etc., cf. 271 "large."

275. Alive. Chun [Tach?] *hoile xo*, be alive (?).

276. Dead. *N1 tawaŋ*, die.

278. All. *Gash kumayantau* seems to be *kumuy banta-u*, "all what-at, everything." Similarly, *Kech hitia watau*, "all who-at," is everybody.

279. Much. *N1 Yawe mani'*, "many."

285. Up. For *ŋipin* cf. Sky (123), Shaman (38), also Supernatural. Upstream, *no'to?*, serves also for East (121).

286. Down: *ʔadil*. For downstream, see West (122), where at least *daŋu*, *latu* refers to the flow of water.

287. Today. Some forms are probably verbal, those in *-u* locative. Forms in *hay-* are presumably cognate with 127, day, daytime, daylight, those in *up-* or *ob-* with 124, 125, Sun, Moon, luminary. The *he'ts*, *he'tsi* form may be cognate with the *heu* and *xits* forms of "here" (284) and "this."

288, 289. Tomorrow, Yesterday. The *-u*, *-w* ending is probably the locative case.

292 seq. Verbs. Often the stem or theme was abstracted by informants. In other cases conjugational forms were given, which have been rendered either with the suffix hyphenated off, or merely by a hyphen to indicate that a suffix has been omitted. The only verbs here listed that go back to a single stem in all dialects are Drink (293), 'ugun; Stand (302), *wo'wal*; Give (306) *wan* or *waki'*, and Laugh (307), *ha'ya'*.

295, 296. Dance, Sing: *hatim* occurs with both meanings, but in separate dialects. There are two other major stems, and one or two dialectically sporadic ones, meaning only "dance"; and the same for "sing."

300. Kill. Cf. Dead (276).

305. Work. Probably all the forms are adaptations of Spanish *trabajar*.

### 300. ADDITIONAL LEXICAL MATERIALS

#### 310. VARIOUS RESIDUAL LEXICONS

(From Newman and Kroeber)

This section includes vocabulary outside of the 300-word list systematically collected in 1906, mainly forms for meanings not in that list. Sometimes these forms were volunteered for a particular dialect during the recording of the list; sometimes they had been written down, in a variety of contexts, linguistic or ethnographic, before or after. These are all of my own recording.

In addition there have been included all forms appearing in Newman's printed grammar that have not already been included in the large Tabulated Vocabularies (§210). These are from a slip-file lexicon with English index, extracted from Newman's printed volume by the Department of Linguistics of the University.

These Newman Yawelmani forms are identified here by "N1" as in the Tabulated Vocabularies.

"Yd 4" designates Yawdanchi forms recorded not in the systematic vocabulary collecting of 1906, but previously, in 1903, when I heard Yokuts more crudely than in 1906 but was securing a mixture of grammatical phrases, unsystematic lexicon, and ethnography, in which occur forms for a fair number of meanings not otherwise obtained.

Forms designated by Yawe, Chuk, Chaw, and occasionally other tribal abbreviations, are from a field trip made in December 1903 and January 1904 to Tule River Reservation and to the Coarsegold region in which the objective was again mixed linguistic, cultural,

and ethnogeographic data, mainly from Yawelmani, Chukchansi, Chowchila, and Gashowu informants.

I considered making an English index for these residual and supplementary lexical forms, but decided it would add more length than utility, in view of the basic organization of this paper.

The general order of presentation of terms is:

Persons

Body Parts, including animals'; also functions and secretions

Artifacts (structures, weapons, dress, basketry, cord and cordage, tobacco, beads and measures, various implements, food and preparation, games, ritual objects, in that order)

Nature

Plants, including parts.

Animals, including list of bird identifications from stuffed specimens

Adverbial (directions, space and position, time)

"Adjectives"

Verbs

Interjections

Language and Tribal Names

Ritual (persons, rites, after-life)

### 310.1. Persons

(Except ritual personages, q.v. under "Ritual")

Relatives, kin. N1 yokića ex yokoc', person, people.

Person. Mich mâyi. Wük mâs. Yawd mâyi, somebody.

Tribe. N1 țipis. Yawe (per Tul informant) tcipis, town, communal house.

People. Pal țâat. Yawd țâati.

Town, village. Home tce tcaatci. Tul țeam. Yawe ți.

Transvestite. N1 t'onotim. Yd 4 t'oñotcim, buriers. Gash tundsim.

Messenger, crier. N1 wina't'um. Yd 4 winâtum.

Ally, partisan, comrade. N1 ța'ța? (cf. people, town?).

Husband. N1 po'lum.

Wife. N1 mokiý. Yd 4 yiwin.

Great-grandparent (also "ghost" in Vocab.). Yd 4 hitswayu.

Twins. N1 ʔade'yasi.

Virgin (?). Yd 4 wëtit.

Orphan. N1 wagtal.

### 310.2. Body Parts

(including Animals'; also Functions and Secretions)

Body. N1 po'lut. Yawd pòdut

Belly full. Yd 4 dokon. Gash lokònoc [< luk'in].

Navel. Gash tcetkos.

Navel string. Gash doc.

Rump, hip. N1 k'ohis.

Thumb. Yd 4 ómoťotco.

Index. Yd 4 țudukui ex țuduk, to point.

Middle Finger. Yd 4 toiñinin puťoñ.

Little Finger. Yd 4 pínatuk.

Toe, big. N1 no'miť?

Footprints, tracks. N1 tana'iy.

Gall bladder. N1 p'o'r.

Bile. N1 ț'e'sa'.

Marrow. N1 bas.

### Privates

Penis. N1 țot'oy (second stem to bo'do?; cf. the same two stems obtained in Yawe by Kroeber).

Glans penis. Chkm ik'it. Choy èk'at. Kech èkit.

Semen. N1 p'ut'wiw (a -wi "make" stem, apparently). Chkm hapai.

Clitoris. Chkm dineť. Yawe t'iyit (these two probably cognate). Yawd t'ipan).

Anal hair. Yd 4 țuñ.

### Animal Parts

Gizzard. N1 ț'ilil.

Skin (cast skin? scales? of rattlesnake). Chuk natsin tc'onot.

Hoof. N1 dať'ať?

Wings, feathers. N1 xa'pal (same as "fingers!")

Downfeathers (ritually important). N1 ța'yi'. Yd 4 tc'ai (for țai).

Egg. Yd 4 ho'ñ.

(Fish) Roe. N1 xontol.

### Functions and Secretions

Snot. N1 țoñop'.

Menstruate. Yd 4 hõpud (< hõ'pa blood).

Menstruant. Yawe paixinxòn. Chuk pa'iximxon.

Afterbirth. N1 xo'it'.

Breath. Chaw ukuyat.

Blind. Chaw țama.

Name (No. 117 in Tabulated Vocabulary, 210, hoyo, verb). N1 guççun, noun (perhaps by error from another dialect).

### 310.3. Artifacts

#### Structures

Communal house, contiguous thatch-gabled houses (cf. Powers fig. 39). Tul gawi<sup>x</sup>. N1 ka'wiw, wigwam, tent.

House of (cedar?) bark. Chuk sâmíc; cf. No. 99 Dum in Tabulated Vocabulary, 210.

House of thatch. Chuk xo; cf. No. 99 (210) Chuk, Kech.

Door. Chuk tisetç ("entry").

Granary (for acorns). N1 řu'un.

Well (for water). N1 dibin.

Bed. N1 'axiç.

#### Weapons

Bow. Yawe ðalap; sinew-backed bow Yawe ðap.

Arrow, for war, no foreshaft, double-barbed point. Yd 4 djibak. Long, fighting arrow. Yawe t'uyos.

Arrow for large prey, foreshaft merely set in socket, not fastened. Yd 4 wuk'ud.

Foreshaft of arrow. Chkm boloi.

Quiver. N1 dimaha'.

#### Dress

Footwear (most likely skin moccasins in hills, fiber sandals in plains; cf. No. 106, 210. Home doyohix. Tul doyohi. Yawd dahitci. Yawe dâ'mai'.

Woman's back dress (hip skirt) of buckskin. Chuk wëtsxal, wëtsxil.

Woman's front apron of a long, sharp grass, pounded and bruised, one set of ends tucked into belt, other falling like curtain. Chuk tcuľòtcuľ (not clear if this denotes the grass, the garment, or both; may or may not be cognate with the tc'oníc-tc'unuř-tc'ufic forms of No. 107).

"Breech clout." Yawd guyuṭ seems cognate with Choy, Gash guyul, woman's apron dress and may denote that.

Belt. Yd 4 wocok.

Coat. Yd 4 kapâtañ (Spanish capote rain cloak).

Blanket. Yd 4 copon. Chaw yèki<sup>c</sup> or yèkic rabbit-fur blanket.

Man's head net. Yd 4 wadak. Dum walak. (This may have been largely for ritual dance use.)

Comb (of several tûmu stems lashed together).

Chuk wîsèx.

Buckskin. Chuk sèp, cep. N1 wa'yu? (also denotes yellow).

Tattoo. Chuk cepos (cf. Buckskin).

Cradle, baby carrier. N1 waças.

#### Basketry

Conical carrying basket for loads on back. N1 'anas. Chuk, Chaw anac.

"Large basket" (tray?). N1 'e'çi?

"Basket." Chuk dèwitc (perhaps mortar hopper—see below).

Bottleneck basketry. Chaw tomoṭ.

Flat round basket tray. Chaw tcapit. N1 copit?, gambling tray.

Gambling tray. Yd 4 t'aiwan. N1 t'aywañ, basket smaller than 'e'ç'?

Acorn gruel basket. Chuk t'èwis.

Seed beater. N1 xa'lay. Chuk xâlai (this last a handled openwork scoop).

Seed beater. Yd 4 tcâiji.

"Beating basket" (seed beater?). Chaw copocîi.

Small flat basket. Chuk tc'aihi (possibly two last and t'aywañ above confused).

Sifting tray. Yd 4 kaiadju.

Parching tray. Chuk bamana; Chaw tcapâyil (cf. "beating basket" above).

Round openwork (twined) tray for half-dry acorn-meal dough. Chuk damoc.

Basketry mortar hopper. N1 t'e'wiṭs (cf. dèwitc "basket" above).

"Woven" basket? Twined ware? Chuk contât.

#### Cord and Cordage

Cord, string. Yd 4 xuic. Yawe tc'ikei.

Dipnet for fish. Chuk t'unoi.

Carrying net (or tumpline?). Yd 4 tcutia.

Knot. Yd 4 tc'ik.

Net mesh. Yd 4 cokod ("hole").

#### Tobacco and Smoking

(Cf. Nos. 108, 109 of Tabulated Vocabulary, §210.)

Tobacco plant. N1 so'gon.

Prepared tobacco. N1 sohow.

Something to smoke. Yawd baum.

To smoke. Yawd bâmuñut.

Pipe. badawuñut.

#### Beads and Measures

(Cf. Nos. 111, 112.)

Shell money, generic. N1 liña?. Yawe lîl'na.

Disc beads. Yd 4 pòde, pòdai (cf. 111 N1 po'lay).

Length of string of shell beads measured around hand (ca. 4 feet), also 25-cent coin. Yd 4 hista.

Half a hista. Yd 4 òk.

Half a òk. Yd 4 k'onomo.

Fathom, two-arm reach. Yd 4 kabábañitc (error, confusion with next?).

Half. Yd 4 tcuup, tcâbana, tcâpana.

Midway, in middle. Yd 4 toḍpau.

#### Various Implements

Knife. Yawe nogots.

Ear-piercing "needle" (sliver, thorn?). Yd 4 bopoitc.

Cane, old person's. Yd 4 citet.

Mush stirrer of looped stick. Chuk cawai.

Digging stick. Yd 4 tcapai. Chuk djupui (of âtcai wood), âsai (the tool may have sometimes been called simply "mountain mahogany").

Arrow straightener. Chaw walái.

Cage for live decoy pigeon. N1 cò'mis; bag or case of cuyò tule, Yd 4 tc'omis.

Long hooked pole for pulling down tree limbs. Yd 4 t'oek (for t'o'ek).

Pliable withe of tcop brush, slightly hooked at end, for raking small animals out of their holes. Chuk yucútul.

#### Food and Preparation

Pound up acorns. Yawe piwes; portable mortar

Yawd pōwac; wooden mortar Tach p'ewac (undoubtedly cognate, but one meaning may be inaccurate).

Portable stone mortar (cf. last). Tach, Chun k'oiwoc; wooden indoor mortar, Chuk kōwis.

Mortar, unspecified. Yawe, Home, Tul bâyic.

(Compare the foregoing with Nos. 113, 114.)

Metate, grinding slab. Yawe hisets.

Muller. Yawe lowoṭ.

Handstone for cracking acorns. Chuk pucon.

Stone heated and dropped in water to boil it. Chuk pakoyon.

Ground acorn meal. N1 'ip'in.

Acorn mush or gruel. N1 't'e'pin. Yd 4 'típín given as acorn bread cooled on tray, tipnin acorn mush (possessive case); tcipinca, let's eat acorn mush; Yd 4 dik, acorn mush.

Acorn bread baked in earth oven. Yd 4 câcañitc.

Soft acorn bread cooked lightly on hot stones. Yd 4 t'adic.

Soapstone pot. Chuk pakoyon.

"Bowl" carved of white oak, mortar for acorns.

Chuk kōwic reported to denote pottery vessel South of Chuk.

Meat (No. 116). N1 cîxil from cêxla, to roast.

Chewing gum from milkweed. Yd 4 câkat; same, also Yd 4 hōñatchhōñatc.

To gather chewing gum from milkweed. dōna.

#### Games

Playground. N1 hik'e'yiy.

Handgame, guessing bones hidden in hand. N1 'allewas (the bones). Yawe a'liwac (the game). Yd 4 hiúniwitc, hí'uniwitc (the game also called straw game); cited by Yd 4 as the name in "northern dialects" ctoken (which sounds Chumash). Chuk wexlawas; the bones, Chuk awi.

Another guessing game, number of fingers spread under a tray (Spanish). Yd 4 tcomoc.

Buckskin hoop, has darts thrown at it. Yd 4 hòtçuwic. N1 huwṭuwus, a game.

Ball. N1 'olol. N samaywas. Yd 4 odot (for odod).

Lacrosse (racket). Yd 4 tc'itèi, the game tc'ityuwic.

Shinny, ground hockey. Yd 4 t'aduac.

Billet and dart game. Yd 4 aikuitc.

Billet of dart game. Yd 4 t'fetc.

Throwing darts over brush fence at invisible mark.

Yd 4 xadu'ûuc.

Sliding game on smooth rock. Yd 4 cataimuk.

Women's dice (walnut shells). Yd 4 hûetc; Yd 4 are

playing dice, huatcuwaci. Chuk (the game, with six split acorn kernels) huutcu'us [for hu'tcu'was?].

Women's dice game with eight split canes. Yd 4 tatcnûwic.

Women's dice with six split elder sticks. Chuk dalak.

Nine men's morris (three enclosing squares, derived from Spanish). Yd 4 aikuwitc; pebbles or clay pellets used as men Yd 4 aiek.

Bull-roarer toy. Yd 4 huhû'udètç, hmhm'udètç. Gash welbukna. Chaw ximximna. Chuk wímias ("thunder").

Musical bow, jaws' harp. Yd 4 manwúui. Gash, Chaw mâwu.

#### Ritual Objects

Image, figure of dead in mourning commemoration. Yd 4 nawac.

(Hawk) bone whistle. Yd 4 pucac.

Bone whistle with pitch in it. Chaw busopsul.

"Flute" Yd 4 au'atc (cf. "sparrow hawk," ütac—reference to a tale or to kind of bone used?).

Split clap-stick rattle. Chuk tawet.

Cocoon rattle. Chaw saniç.

Dance skirt of ropes of eagle down. Yd 4 tcoxun, tcokun.

"Eagle belt" (skirt? a single rope of down?). Dum tcunucúfi.

Rope of down feathers. Gash, Dum piccan; hair tie of string with eagle down spun in, worn around hair bunched at nape, Chuk pisèsin, pesèsin.

Feather elbow band. Dum unaina.

Feather ornaments carried in hand in dance. Yd 4 sonolo, watcam.

Head ring of down. Yd 4 cèma.

Headband of owl feathers. Dum pinekí'i.

Yellowhammer quill headband, flat. Chaw t'òdopon.

(See also "head net" under "dress" above.)

#### 310.4. Nature

Pleiades (?). Yd 4 mòxumxai.

Windstorm. Gash homhoi.

Fine rain. Yawd ciwaxa.

Fog, mist. N1 gumun.

Rainbow. Yawe c<sup>r</sup>ayup [çayup].

Sand. Yawd wagac, wakec.

Mud. N1 ðibe'kil.

Earth (No. 145). N1 xoç'oy, rendered "ground, soil"; Dum earth xotsoi, land holki.

Ocean (add to Tabulated Vocabulary, 210, No. 147).

Chuk hòhò, hò<sup>u</sup>hò<sup>u</sup>. Gash paa'ju.

Slough (freshwater). Tach wâi.

Spring (of water). Yd 4 pokdo-hin "where many springs."

Plain, floor of valley, No. 150. Add to N1, çolo'win (also "flat open place"). Chun tsoldwin island. Yd 4 tc'odwon-hin (treeless) plains.

Hills, as distinct from mountain(s). Home, Tul gopuput.

Talus, rocky stretch. Yd 4 doxmad-hin rock pile.

Salt (add to No. 153 kuyu'). Yd 4 ayap, saline deposit on rocks in river. Chuk ipèkil, salt scraped off banks of creeks in plains. Chuk âlit, salt from salt grass âlit.

Bitter or salty spring. Chaw saatsa.

Quartz. Yd 4 t'oldho.

Asphalt, got from a spring near Poso Creek. Yd 4 câkey.

"Chalk," white earth for paint. Yd 4 pûnun. Dum xosetç.

Red paint. Chaw wackil.

Wood (No. 154). Add N1, wicet "stick." Yd 4 wicet "stick." Yawe witset, witset-al "wood." Also Home tcoxok; Tul tc'imat, Spanish "palo," stick.

#### 310.5. Plants (including parts)

To Tree (No. 155), Yawd yapkin, add yapkanhin "where many trees."

Digger pine nuts. Chnk ton.

Cedar (?), in hills, bark used for houses. Chuk tc'èpin.

Sapling oak. N1 we'çiyip?

Oak sp. Home gutcilet.

To Acorn (No. 168) add Chuk acorns: of white oak k'è'mixi (cf. No. 166 plains oak), of bitter hill acorns sawa, of hill live oak tc'axis (cf. No. 167), of water oak wimí.

Elder tree. Yd 4 wicèta. Chuk ucèta.

Mountain mahogany. N1 ?a'cay. Chuk âtc'ai.

Poison oak (Rhus). N1 çiwik.

Soapweed. Yd 4 tcoxotç.

Wild grapes. N1 sono'dip.

Clover sp. N1 xolom. Yawe place name xolmi-u. Yd 4 xodòmo

Clover sp. Yd 4 tcidat.

Clover sp. Chaw mâlitç.

A seed, tiny, edible. Chuk golgul.

Two seed sp., from white flowers, edible. Chuk cèek'in, k'aunum.

Wild onion seeds, eaten raw, unground. Chuk cèetin (cf. preceding item).

Five seed sp., gathered and eaten. Chuk kacyn, djidjidjna, tc'ânit, wèni, owin.

Edible seed from plains, on plant resembling tc'ânit. Chuk tcilèlak.

Large edible seeds from plains. Chuk xèlic.

Black edible seeds from plains. Chuk gací'in.

Bush with red berries. Chuk gòco.

Sour red berry eaten with salt. Chuk taxâti.

Edible "wild potatoes." Chuk dèna.

Fungus, boiled and eaten. Chuk pèti.

Grass for thatch. Chkm, Mich yâwil, cf. Nos. 157, 158.

Brush for roofing. Yd 4 câ'damatç.

Tall weed for thatching. Wech mexya.

Wormwood, or mint sp. (?), used for thatch and for doors. Yd 4 mâtuñi. Wech meçeni. Chaw mètçeni.

Sword grass, cane. N1 xala?. Yawe xalau, place name. Home galèkil, galak'al, carrizo.

Cane, carrizo, used for pipes. Yd 4 katkit.

Salt grass. N1 ?a'lit, cf. additions above to No. 153 (§210).

Similar. N1 çawni?

Tule, round in cross section, used for house thatch. Yd 4 cuyo'. For storage or carrying case, Dum bumuk'.

Indian hemp (probably), Apocynum. Chuk tc'aka. Yawd cax.

Milkweed used for string. Yd 4 tcitik.

Large shrub, inner bark used for string. Yawd hox.

"Wire grass," basket material, probably Epicampes rigens. Yd 4 tc'akac (but see Apocynum above). Chuk wotowiç.

Bush, bark used for twining. N1 çigeçiy.

Stems of plant used for warps of openwork twining. Chuk wètci'p.

Plant for weft of twining. Chuk tcop, cop.

Plant materials for coiled basketry. All Chuk, red wrapping mōnēxil; black-dyed wrapping capacep (?); white wrapping, split roots, hōpul.

Wild pumpkin seeds, burned for black face paint. Chaw dawāxil.

A fish poison. Chuk nadème.

Plant with fine twigs. Chuk tūmu, used as comb and to control burning hair short in mourning.

#### Plant Parts

Flower. N1 ?elam.

Seed (generic?). N1 xa'tac̣.

Bark, rind. N1 ṭ'ōdad.

Log. Yd 4 woxono.

Stump. N1 biṃta'na'.

#### 310.6. Animals

Animal. N1 ha'he'taw.

Grizzly bear. N1 t'ēn̄, noh'o'; largest kind of, Yd 4 p̄waca (cf. 320, Tachi II, bī'wacū; 210:178).

Pronghorn antelope. Yd 4 coyit.

Mountain sheep. Yd 4 diwēsip.

"Porcupine." N1 kenkin.

Groundsquirrel town (colony). Yd 4 tiñed-han.

Bird. Yd 4 dētēcip.

Osprey (?-like hawk, eats fish, "red" head). Yawe b'at̄lāwu.

Ducks. Wech teal tēgugu, sprig gogo; wood duck iyēyitc.

Heron, large plumed. Chuk dēxnic.

Meadowlark. Chuk olotca. Chaw weski.

Feather, down. see Body Parts.

#### Yawdanchi Identifications of Birds from a Collection of Stuffed Specimens, 1903<sup>1</sup> (All Yd 4, Notebook 699 w-x)

Crow, adwutc.

Raven, k'ò'kudētēc (kòk-sayer).

Pigeon, acofin.

Mourning dove, upyayi.

Himantapus mexicanus, tcuiditna.

Duck, generic, hayina.

Merganser serrator "male," hoxodo.

Lophodytes cucullator "female," hoxodo.

Wood duck, Ais sponsa, uyoî'tc (cf. Wech iyēyitc, above).

Mallard, watcwatc.

Crane, Ardea herodias, waxitc.

Owl, Sarnia ulula, yo'mdjac.

Owl, Glauclidium gnoma, duktcatî.

Owl, horned Bubo virginianus, hutulu.

Snowy owl, Nyctea nyctea, cōtcudētēci.

Owl, Strix pratincola, b̄tcutc cōtcudētēci (little cōc-sayer).

California condor, witc.

Eagle, tcoxit.

Buzzard, turkey vulture, tcadka (210:206 țanka).

Hawk, Buteo lineatus, meț tcaktcak.

Hawk, Buteo swainsoni, tcimkitōn.

Hawk, Accipiter cooperi, Cooper's hawk, p'oym (corrupt for pohyon).

Hawk, Accipiter velox, k'uxudētēci, produces the sound "k'ux" as it pursues birds through brush.

Circus hudsonicus, tc'iauna.

Two unidentified California birds resembling tropical vulture hawks: u'ik', cuxup.

Falco columbarius, watcwatc (sic., cf. mallard duck).

Sparrow hawk, Falco sperverus, ütātēc.

Prairie falcon, Falco mexicanus, limik.

Red-tail hawk, Archilato ferrugineus, batcikin tcuxit ("red eagle").

Unidentified bird țayudētēc, "țay-sayer."

(End of specimen identifications)

#### Reptiles, Invertebrates

Kingsnake, red and white cross-banded. Yd 4 gōlōngil.

Roe of fish: see Body Parts.

Honey bee. Chuk minil.

Honey. Chuk duitc.

Hornets. N1 k'umunyuț.

Ant, large, red, used as counterirritant. Yd 4 kakau.

Fly sp. Yd 4 p'â'nuckai.

Gnat. N1 ma'na'.

Mosquito. N1 k'asup'.

Dung beetle. Yawe kilaț.

Stink bug, small, black. Yawe bodōdiwaț.

Dragonfly. N1 ?isla'lu'.

Spider sp. Wech sonō'ip. Chkm conōi'ip.

Deer tick. Yd 4 tabak. Yawe tibik.

Millipede, black. Chuk itwayu.

Abalone (Haliotis). Chaw daa. Yawe dap. Yawe per Tul informant cāwī. Tul gabap (cf. following item).

River mussel, Sp. osteoncito, bivalve in lake. Home gabap (cf. preceding item).

#### 310.7. Adverbial

##### Directions

West. N1 toxil; baluw (downhill).

Downstream. Yd 4 dațu (west). Yawd padu (toward water).

East, upland. Yawd not.

Up out of stream. Yawd t'ican (t'ic, emerge).

Across stream, over the hill, pitsu.

##### Space, Position

On top. Yd 4 țipin.

Down. N1 ?adil down, ?ada:l to lower (cf. baluw downhill; hadli' bottom, under).

Top, summit. N1 p'e'p'at?; summit Yd 4 p'ēpatiu (on top of).

Notch. N1 t'inew.

Slope (n.) N1 dil'al.

Indoors. Yd 4 baduwun'un indoors, badá'wau cave, rockshelter.

Outdoors. Yd 4 munau. N1 ?isel.

At the door, at front of house. Yd 4 pidau.

Opposite door, at rear of house. Yd 4 k'acuw.

Away. Yd 4 xonon.

Right there. Yd 4 mamau.

Together, joined. Yd 4 wadik.

Inside my . . . . Yd 4 cik'áu'nim ("inside" or "in flank"?).

Across river. Yd pōwo, bōwo.

On this side of a stream (?). Yd 4 xamñi (on other side of?).

<sup>1</sup>Some of the Latin binomials have probably been altered since 1903, but have been preserved to accord with the 1903 record. The latter differs in detail from that of Yawdanchi in the columned vocabularies, but serves item identifications.

Time

Already. Yd 4 hiám.  
 Long ago. Yd 4 hiámu. Chaw wòyu.  
 Again. Yd 4 yò.  
 Yesterday. Yd 4 wâwau.  
 Now. Yd 4 hetci.  
 Tomorrow. Yd 4 hiam-xai.  
 Day after tomorrow, over there, farther off than,  
 Yd 4 xunò'tau, xunoutau.  
 Day before yesterday (?). Yd 4 xunotcau.  
 In spring time. Yd 4 (< t'ic emerge).  
 Winter. Yd 4 tumixci.  
 Summer. Yd 4 hayâdi.  
 Never. Yd 4 heta (?); haudau (ever?).

310.8. "Adjectives"  
 (in English)

Many. Yd 4 wûxé, wûxín (sic stress), wûxnad very.  
 Few. N1 hawçin.  
 True. Yd 4 mètç (for meç ?); miçana, true one.  
 Bad, no good. Yd 4 dòtè (t for t ?).  
 High. Chaw waat, not tipin (for wa'at ?).  
 Long. Yawd sikid ~ sikil.  
 Short. Yawd wahayi.  
 Heavy. Yd 4 müküç.  
 Light. Yd 4 tcamuk.  
 Hot. Chuk kapiç. N1 k'abit?.  
 Cold. Chuk huciu. Chaw hociú. N1 liwiç.  
 Slow. Chaw gotcenak.  
 Quick. Chaw aixâk.  
 Straight. Chaw dukal.  
 Crooked. Chaw waxat.  
 Round. Chaw getawâxo.  
 Sharp. Chaw watjò'ucho.  
 Green. N1 çiyugay.  
 Sweet. N1 hapay.  
 Jealous. Yd 4 inmitckiitc.  
 Afraid. Chaw onmil.  
 "Mean," warlike, aggressive. Chuk hakwit.  
 Lazy. Yd 4 kapâti.  
 Zigzag, wavy. Chuk k'oik'oi, koikoi. Yd 4 nuitc.  
 Design of line of rhombi or "diamonds." Chuk  
 sè'lausèlau.  
 Dead ones. Yd 4 coxon.  
 Dead one, corpse. Chaw haswana.  
 Thin one, thin man. Yd 4 sũñana.  
 Greedy one. N1 hamna?.  
 Left side. N21 f'a'tca?; left-handed Yawd tatchnaya.  
 Someone. Nutu wafukui.  
 Something. Yd 4 hañitau.  
 Others. Yd 4 djâpa.

310.9. Verbs  
 (in Yokuts alphabetic order)

aññaŋwaç. Yd 4 a dream, deverbal noun (cf. añtu  
 shaman, doctor).  
 butswi. Yawe spit.  
 dakâ. Yd 4 stay the night, pass night, sleep at.  
 demdim-, dimèdim. Yd 4 think; demdam thoughts.  
 dui, doyard. Yd 4 eat (generic; also, at midday);  
 waid, to breakfast; dañktcum, eat supper.  
 hicin. Yd 4 to hide.  
 lo'wos. N1 war (n. ? v. ?).  
 münún. Yd 4 forget.  
 piiji. Yd 4 finished.

p'up'widen. Yd 4 will kiss ("make p'up").  
 tawad. Yd 4 pay.  
 t'ic, tic. Yd 4 emerge.  
 tũjün, tũjũ'juc. Yd 4 turn into, change, become.  
 tun. Yd 4 shut door.  
 tcabopwe. Yd 4 lie flat!  
 uyayet'. Yd 4 mourn for.  
 waik. Yd 4 lose.

310.10. Interjections  
 (in Yokuts alphabetical order)

akam. Yd 4 I guess.  
 amun. Yd 4 I think.  
 hawé. Yd 4 well! what do you say now?  
 haksi. Yd 4 say, now I ask you!  
 wica. Yd 4 bye and bye! soon!  
 wilka. Chuk, Gash welac ain't it? yes?

310.11. Language and Tribal Names

ne'okla. Chaw Miwok speech.  
 he'ama. Chaw Yokuts; Chuk hi'ama.  
 (Both these mean: "that's he; here this")  
 hiyukwiya?. N Yawelmani (saying "hiyuk" in greeting).

Tribal. (All N1, Yawelmani by Newman; cf. 340)

coýnuk. Choynok.  
 çunut. Chunut.  
 de'lamni. Telamni.  
 hiyukwiya?. Yawelmani (cf. Speech, ante).  
 nutú'nutu?. Nutunutu.  
 t'aŋŋŋŋŋŋ (sic). A Tachi.  
 wikŋamni. Wükchamni.  
 yaŋlamni. Yawelmani (pl.).  
 yawlançi'. Yawdanchi.

310.12. Ritual

Persons

N1 ŋipna, power magic.  
 Yd 4 ŋipni, something never seen before; vision  
 animal, monster which speaks to a man.  
 Chaw ŋepani, miraculous.  
 Chuk tcipni, tcèpani, having power, one who can  
 eat fire.  
 Chuk tèci, Chaw tèic, curing shaman, sucking doctor.  
 Gash beniçi, clairvoyant.  
 Yawe hilèetits, ritual clown.  
 N1 holiç, characters in myth.  
 Yd 4 üdam, myth people, myths.  
 Yd 4 wè'tapkul, a great fish with large eyes, takes  
 a man under water, makes him a doctor.  
 N1 xot'o?, rain prophet.  
 Yd 4 xopodno, rain maker.  
 Yd 4 t'ec, rain maker (t'ic emerge).  
 N1 ŋiylun, snake charmer, rattlesnake doctor.  
 Yd 4 ŋü'üdum, rattlesnakers, rattlesnake doctors  
 (< ŋö'öd rattlesnake).  
 Yd 4 kuyòxotc, doctor shooter, shaman killer,  
 shaman in contests of magic.

Rites.

Mourning dance over dead. Chuk axnan.  
 Mourning anniversary. Chaw lakinson.  
 Burning of baskets and property for dead at mourn-  
 ing anniversary. Chuk yû'yahin.

Property destruction. Chaw tulo.  
Rattlesnake taming rite. Gash dațela.  
Jimsonweed rite. Yd 4 tañyuwic; be drunk tañyin.  
Large circle dance. Yd 4 oyowid.  
A northern dance, with yellowhammer headbands.  
Yd katâtcañitc.

After-life

World of the dead. Yawe dipiknits.

Bridge to the world of the dead. Yd 4 tibiknitc  
tcêdoñdu.

World of the dead. Yawe (per Tul informant) k'anal  
"casa de los muertos."

Ritual Objects

These are listed in the last section of "Artifacts,"  
310.3.

## 320. A SECOND TACHI VOCABULARY

This word list is additional to the one got in 1906 from Bob Bautista at the Lemoore Reservation, which represents the Tachi dialect in the tabulated Vocabulary (210). The present list was recorded on December 25 or 26, 1903, from Tachi Tom. It contains somewhat fewer items than the prepared lists used in 1906, and its forms differ in detail from Bautista's, though generally corroborating them. It has the same content and omissions as the Choynok list. It is recorded in notebook pages 5636-47. Ethnographic and ethnic information by Tom is on pages 5691-99<sup>F</sup>, results of two days' conference, filling 33 notebook pages. Tom was an excellent informant. His data went into the Yokuts chapters of the Handbook and into pages 209-218 of my "Indian Myths of South Central California" (1907, UC-PAEE 4:4).

One yè't. Two ponoi. Three s<sup>r</sup>oopîn. Four hòtponoi. Five yit-cinil. Six tcolipi. Seven nòmtecil. Eight mo'noc. Nine coponhot. Ten t<sup>r</sup>iyey. Eleven yèetcam. Twelve basdâm, batsdòm. Thirteen cópiyom. Fourteen hotcpòm. Fifteen yitcam. Sixteen tcolpom. Seventeen nomtcom. Eighteen muncam. Nineteen coponhotmin. Twenty ponoi t<sup>r</sup>iyey. Thirty c<sup>r</sup>oopin t<sup>r</sup>iyey. One hundred yèt cènto.

Person yokotc. Somebody yoktcòlis. Man nòtco'. Woman mokèla. Old man mòxelo. Old woman motcto. Baby, child witèp. Father poptoi. Mother bâaba (address?).

Head, hair oțô. Forehead pițiu. Ear tûk. Eye caja. Eyebrow dimiț. Nose ținik. Mouth cama. Tongue talxat. Tooth țêî ("t<sup>r</sup>êî"). Beard dâmuț. Cheek tanatni. Chin awac. Neck ukuxt. Throat mikic. Shoulder wogil. Arm, hand, finger b'unțuk. Nail xêcix. Belly tòxtc. Back katai. Breast, chest ucuk. Teat mènîț. Knee k'uyuta. Leg, foot dadaț. Bone tc'îi. Heart ucuk. Blood pâyax. Liver dîp. Gall poox<sup>w</sup>. Kidney tsilamgui. Lungs honbon. Penis t<sup>r</sup>otoi. Testicles honot<sup>r</sup>. Vagina kodoț. Pubic hair t<sup>r</sup>umut. Navel tc'utuc. Anus t<sup>r</sup>òdoco. Feces pițîk. Urine t<sup>r</sup>uyon. Intestines banitz (sic). Saliva helkil. Mucus t<sup>r</sup>onop.

House tci. (No earth-covered houses). Long communal house of tules: tcî gawi. Bow țalap. Arrow t'ûyoc. Red flint pakic. Black flint (obsidian?) tcêeca. Knife, iron nogotco. Boat òwòn. Mortar, portable goiwoc. Pestle pol'woi. Tobacco pòni't. Pipe of cane latau.

Sky t<sup>r</sup>ipin. Sun exp<sup>i</sup>. Moon toinoen exp<sup>i</sup>. Star boowipwai. Day háiili. Night toino. North wind c<sup>r</sup>okiu. South wind kumèahai. Cloud cèel. Rain gòonu. Snow camic. Ice t<sup>r</sup>opol. Cold t'òwîl. Hot kabiț. Fire ocîf. Smoke mòțak. Ashes hitèl. Charcoal câlu. Water ilik. Ground, earth xotoi. World pâân. Plain walal. Mountain lomîf. Rock cilel. Wood hitèc.

Grass, all kinds, cuțun. "Pine" wòokon. "Oak wood" culul. Willow caxatc. Buttonwillow calam. Cottonwood la'pa. Round tule bumuk. Flat-stemmed tule pooton. Jimsonweed mònui, tânai. Jimsonweed rite munuyuwuc, tanyûwis.

Dog pûuc. Grizzly bear? bî'wacû (sic). "Small bear" ului. Coyote kaiî'u. Wolf iwêit<sup>r</sup>. Fox auudja. Puma wehècit. Wildcat tunul. Deer xòdi. Elk mat<sup>r</sup>ûyic. Antelope coyool. Jackrabbit xomix. Cottontail tcîu. Ground squirrel wîr<sup>r</sup>ei. Tree squirrel tumâ'dumutc. Gopher honxòt. Skunk tc'òx. Small skunk, polecat tsits'èu. Raccoon xitdji. Badger t<sup>r</sup>'aniu. Weasel pohòt. Mouse bootconoi. Black mouse ooninit.

Eagle coxil. Condor wi'tc. Buzzard hòxtc. Prairie falcon limik. Hawk sp. p'òdyon. Raven xotoi. Crow gangac. Magpie otcotc. Blackbird tc'ak. Meadowlark ú'lati. Hummingbird hòhotju. Quail sakâka. Woodpecker palâdat. Crane waxat. Pelican xâhal.

Rattlesnake nâtiț. Watersnake yâx. Kingsnake xalalmina. Gopher snake wahik. Lizard sp. kondjèdji. Black tree lizard solotò'i. Very small lizard kațèțè'u. Large reddish lizard wilèli. Frog o'oyitc. Turtle t<sup>r</sup>onkot.

Fish, generic, lopiț. Sucker polxui. Lake trout èpic. Perch t<sup>r</sup>akt<sup>r</sup>u. Chub tûkunun. Black bony fish, small-mouthed tawâ'aț.

Fly mònnoi. Big (bot?)fly k'amcal. Wasp, in ground paàanai (ba'ânay). Honey bee kúmunuuts. Spider mèedjan.

Good incic. Bad axit's. Large hêt<sup>r</sup>i. Small miti. All, "everybody," yètau yokotc. Yes hòu<sup>o</sup>. No ohò'm. Greeting, hello hîu. He, this hîihi ("not ki"). That ka (see 422, Demonstratives).

Eat xât. Drink ukun. Sleep wúui. Run lihim. Walk hiwèt. Jump cilit. Sit, stay huloc. Live òix. Shoot tuxy<sup>u</sup>. Kill tauțaniț. To like huyotc. To dance hati'm. Sing wipil. Work tsòwònits. Play higix. Fall, drop hûduunuț. Hit with fist ãux.

## 320.1. Comparison with Tachi of 1906

This vocabulary definitely agrees with the one tabulated for Tachi, within the limits of error of my hearing and recording. There is some variant apperception between ț and tc, as in several other dialects, but variation extends both ways. In neck, belly, sun the 1903 list has a constricted breath (x) before a final stop or affricate; but a similar insertion was occasionally recorded in other words in 1906. 1903 has o where 1906 had u in gopher, yes, but the reverse holds for sleep, so the difference was probably in apperception.

In the following items Tom's 1903 vocabulary shows forms that have no known parallel in Yokuts; they may

rest on mistranslation or misunderstanding or be actually new. They occur for father, mother (both terms of address?), lungs (confusion with heart?), black flint or obsidian, smoking pipe (reference to cane material), star, south wind (the term for north wind means wind generically), king snake, bad.

For buttonwillow and sucker the two informants gave different stems, but both occur in nearby Valley dialects, and choice may have been optional in Tachi. For hummingbird, two stems were volunteered in 1906, of which one is wider spread, the second not found outside Tachi; the 1903 informant mentioned only the latter. For grizzly, 1906 gave the widespread *noho'o*, but 1903 *bī'wacū*, which has a cognate only in Buena Vista Tulamni of the Foothill moiety, to which the *ū* vowel also points: the sound *ū* is not found in the Valley moiety.

For elk, the 1906 and 1903 lists share a form not known elsewhere: it seems to analyze as *maṭ-sayer* or *maṭ-doer*; and *maṭ* may be cognate with forms given under "large" and "much."

Another unique is 1906 *pòdit*, *pònit*, 1903 *póoni't*, tobacco.

These last two forms seem to substantiate that the two informants were rendering the same dialect. I had hoped that their lists might show consistent differences enabling one of them to be attributed to the Apyachi, occasionally referred to as a sort of Tachi subtribe, or to another of the four subtribes or rancherias with chiefs mentioned for the Tachi by S. F. Cook ("Aboriginal Population of the San Joaquin Valley," UC-AR 16:2, p. 44, 1955). But I found nothing positive in the way of differentiation.

### 330. AN ADDITIONAL WÜKCHAMNI VOCABULARY

August 14, 1909, Sam Garfield of Tule River Reservation came to see me at the University's Museum of Anthropology, which was then in San Francisco. I understood him to say that he spoke the Badwisha Yokuts dialect of upper Kaweah River, especially of South Fork. According to most of my field data the Badwisha, Balwisha, or Palwisha were Monachi Shoshonean, as C. Hart Merriam and Gayton also classify them. However, border tribelets are often largely bilingual, so that familiar acquaintance or searching questioning may be necessary to establish which was their genuine speech, as for instance regarding the Entimbich of Kings River. I therefore wrote down from Garfield a vocabulary of about 160 words, which were not only straight Yokuts but clearly of the Tule-Kaweah Foothill group. Not having readily accessible at the time the list used in my 1906 survey, I took a loose signature of my Yokuts Language of 1907 and on pages 240-245 of the lexical part of this, for a certain proportion of the Yawdanchi words listed there, I entered a check mark whenever Garfield's "Badwisha" forms seemed identical, but wrote in my rendering of his pronunciation wherever I heard it differently. I failed to note, in writing, his birthplace and that of his parents, and in what tribelet they were born.

On subsequent review, there was little other evidence that the Badwisha were Yokuts. I had recommended Garfield as promising to Gayton when in 1925-1930 she undertook her detailed survey of the surviving Yokuts and Western Mono (Monachi), and she used him as a "major informant for Wükchumni and Yawdanchi" (1948, p. v). It thus seemed most likely that he was a member of one of these tribelets, whose speech is very similar. On what misunderstanding my recording of his vocabulary as Badwisha rests, I cannot now say, especially as our meeting was unforeseen and I did not use my customary type of notebook for the record.

Assuming then that Garfield's 1909 vocabulary is either Yawdanchi or Wükchamni, the question is, which? As my final Yawdanchi vocabulary (number 4 in the tabular presentation) was got from Peter Christman after weeks and months of association over three years, I considered it more reliable than the Wükchamni I had

got from Bob Ogden in one day, in 1906. So I first compared the Garfield vocabulary with the former, and noticed the occasional differences. But as soon as I brought the Wükchamni vocabulary (number 5) into the comparison, it was evident that when Garfield's words differed seriously from the Yawdanchi ones in either stem or meaning, Wükchamni also differed from Yawdanchi.

#### Badwisha Stem or Meaning Different from Yawdanchi, Sometimes in Agreement with Wükchamni

girl	guyòdum "if good-looking"
widow(er)	hupana, but not <i>ṭumiun</i> ; Wük hupana only
throat	müküs but not hocod; Wük mük'ac "neck"
urine	tc'udon, Yawd tcuyon
fat	hixana (really "fat one"); Yawd, Wük hèxa is fat, grease
bear	duuxun denotes cinnamon bear only ( <i>sic</i> )
grizzly	ñohoo grizzly or black bear ( <i>sic</i> )
raccoon	kūṭu but not Yawd alternate <i>ṭiṭiṭin</i> ; Wük kütécú
jack rabbit	topod but not Yawd alternate tukuyun; Wük "dopol"
gopher snake	hòṭwuutc, Yawd hucudètc "huc-sayer," Wük xótuñuṭ
foothill oak	yapkin, Yawd yapkin; Wük ṭata, both "tree"
white oak	tc'eda, Yawd tò'wixit, Wük towixit
"conifer sp."	kanad is probably (Douglas) fir according to Garfield
"pine sp."	idñit is yellow pine
"pine nut"	watak is of the desert piñon tree
wood	göyutc, Wük göyotc, Yawd hütac
east,	
upstream	domto, from domit, mountain; Wük domto, Yawd not
bow	tadüp, Yawd dayap (d ~ y, cf. "urine" above); Wük "dóyeti"

Phonologically, there are a number of forms that were recorded identically in Yawdanchi and Wükchamni in 1906, or virtually so, but differently in 1909 from

Garfield. In part at least, these no doubt were imperfect apperceptions. I list them in the order G, Y, W for Garfield, Yawdanchi, Wükchamni.

forehead	<u>G</u> ʈidü	<u>Y</u> ʈüdu	<u>W</u> tideu
nose	<u>G</u> ʈüñükü	<u>Y</u> ʈüñük	<u>W</u> ʈüñuk'
breast	<u>G</u> pöös	<u>Y</u> pöötç	<u>W</u> pöötç
teat	<u>G</u> mènitiç	<u>Y</u> mènitiç	<u>W</u> mènitiç
name	<u>G</u> hoyousos	<u>Y</u> hoyowoc	<u>W</u> hoyowoc
dog	<u>G</u> tsösös	<u>Y</u> tcèjeç	<u>W</u> tc'èjeç
lake trout	<u>G</u> èbic	<u>Y</u> èpic	<u>W</u> èpic

(N1 'e:p'iš)

More positive as to phonology are six words in which Garfield seemed to pronounce an *s* where previously *c* (š) had been recorded in both Yawd and Wük: muk'es woman, sasa eye, dzamos beard, awasi chin, müküs throat, hiamxas tomorrow. Similarly the *dz* in beard, where earlier Yawd and Wük were written *dj-*; and again in *otsots magpie*, *ts'î'* bone. I am unsure how to construe these deviations, because in them Garfield differed from the 1906 Wükchamni.

There are however some clear cases of vowel differentiation, where the two Wükchamni agree in contrasting with Yawdanchi.

<i>i ~ e</i>			
house	<u>G</u> ʈi'i (for ʈi'?)	<u>W</u> ʈi	<u>Y</u> ʈe
many	<u>G</u> wüxi	<u>W</u> wüxi (sic)	<u>Y</u> wüxè
bad	<u>G</u> dòʈi	<u>W</u> doʈei	<u>Y</u> doʈe
short	<u>G</u> at'î		<u>Y</u> at'e

Less convincing is some wobbling between *e* and *a*

woman	<u>G</u> muk'es	<u>W</u> muk'ec	<u>Y</u> muk'ac
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eye	<u>G</u> sasa	<u>W</u> ceca	<u>Y</u> caca
sand	<u>G</u> wägac	<u>W</u> wägac	<u>Y</u> wägac, wages

Slight as these differences are they show that Garfield's dialect was on the Wükchamni rather than Yawdanchi side—Kaweah drainage hills as against Tule River. The comparison of the three sets of data also shows how similar Yawdanchi and Wükchamni were to each other.

To complete the record, I list the English captions of the Garfield forms which I heard as identical with the Yawdanchi ones of 1907.

#### No Difference Heard between Garfield and Yawdanchi

Person, people, child, youth, chief, doctor, father, son.

Head, hair, cheek, ear, mouth, lip, tongue, teeth, neck, shoulder, back, rib, knee, foot, hand, finger, nail, elbow, testicles, glans penis, semen, anal hair, vagina, navel, feces, sweat, tears, saliva, brains, heart, liver, kidney, skin, body, egg, tail.

Wolf, coyote, fox, ground squirrel, gopher, mouse, skunk, panther (puma), wildcat, mountain sheep (v error for w?), elk, deer, bat.

Crow, mountain quail.

Rattlesnake, water snake.

Trout, sucker.

Live oak, black oak, plains (valley) oak, oak sp. ("means green").

Sun, moon, day, night, star, cloud, fog, rain, drizzle, snow, wind, land (world), earth, mountain, plain, salt, rock, stick, water, ice, fire, smoke, ashes, north, south.

Sweathouse, town (people, tribe), arrow.

All, large, long, red, green, white, black.

No, outdoors, yesterday, today (now).

### 340. TRIBAL NAMES IN ELEVEN DIALECTS

Names of Yokuts and some alien tribelets show certain suffixes and other peculiarities of form, and especially in their plural or collective undergo vowel metathesis with stress shift and change, or they add suffixes of their own, or reduplication, or combinations of these mechanisms. Newman has illustrated some of these features in his *Yokuts Language*, 1944, §4:1, §24:12-17, corresponding to my 1907, page 192. As the material includes many seeming irregularities, it has seemed best to extract all of it from the notebooks and present it together. It is then reviewed at the end of the section.

Many of these tribal names and plurals have been previously given in my 1925 *Handbook*, pages 478-486, but in slightly anglicized form, and without indication of what

dialect each variant form was taken from. The present grouping of forms by informants of known origin should make the data more useful for dialect study.

As stress on the antepenult is exceptional in Yokuts but occurs frequently in the plural of tribal names (indeed occasionally in the singular also), it seemed necessary to retain it in the transcription whenever it occurred in the original notes (though I have written it only when actually written; many forms thus appear accentless). This would sometimes have made it conflict with a diacritical sign indicative of length. In such cases I have departed from original orthography by using a following raised period to indicate the length, an acute (prime) over the vowel for stress. That is, è, â (ã) of the field notebook are here rendered é', á'.

#### 1. Yaudanchi, from Peter Christman, notebook 6560, about February 1, 1906

<u>Singular</u>	<u>Plural</u>	<u>Volunteered Etymology or Comment</u>
tatci	tatcé'tcayi	tatcnaya "left-handed"
tcoinok	tcuyé'nayi	
wowad	wowó'wadi	"stood" in rows lousing one another
tcunut	tcunó'tatci	
tulamni	tulálmina	tulamniu "far, way off" (!)
wükcamni	wükátsmina	"glutton, eat lots"
bañkalâtci	bañéklâtci	
koyeti	kuyétwadi	

<u>Singular</u>	<u>Plural</u>	<u>Volunteered Etymology or Comment</u>
padeuyami		(< padew-y-amni?)
boknin(u)wad	bokénwadi	"find" but do not return
yaudimni	yowédmani	same people as next
yaudantci	yawédtcani	<u>no</u> reference to yawud "brush"
tedamni	tiédamni	
	ṭuxó'xayi	
kumatcisi	kumétcwadi	(place rather than tribal name)
malta	malá'tâtca	
xomtinin	xumetwadi	
xocminin		
xocómo	xócima	
gá'wia [gâwya?]	gawé'yayi	gâwi communal house
yó'kod	yuwé'kadi	village opposite gá'wia; both spoke Foothill dialect
wó'lasi		contrast wowad
giá'mina		
nuta (Shosh.)	nutcáwayi	not, "east, upland." ("Noche" of Garcés)
wakcatci (Shosh.)	wakécwadi	wakec, wagac "sand" (6531 wag'as)
badwija (Shosh.)	badówaci	padu "downhill, toward stream"
baduunun (Shosh.)		
pitanica (Shosh.)		
kawaiija (Shosh.)		gâwi "long communal house" (??)

2. From María, Tulamni, at Tejon Rancho, of a Tulamni father and Yawelmani mother. Notebook 6521-23, January 29, 1906.

tulamni	tulálmína
dú'lamniu (sic)	
site of:	dulálmína
ṭaxáyu (place?)	ṭuhoxai
	wú'wowal, <u>west</u> of Tulare Lake <sup>2</sup>

## Shoshonean

gawéija at ṭumó'yo, Caliente

## Chumash

tó'kye at lápiu (las Uvas), sasáu? (upstream, "eye"), takuyo (Tecuya Cr.), taclibun (San Emigdio)

3. Cross Creek Charlie, Wó'wlaci, of a Choynok father. Notebook 6441-44.

(wo'lasi)	wó'wolaci, Farmersville on Kaweah River
wòwal	wowó'wali, Atwood Island, Tulare Lake
tcoínok	tcoyé'naki
telamni	tielami
yokol	
kawí'a	
datci, tatci	
nutuntun	nutú'nutu
wimiltci	
tcunut	tcunó'tatci
koyèti	koyétati
apiátci	á'piatci [sic], spoke tatci (subtribe?)

4. From Bob Bautista, or Kométcati, a Tachi, and Bergen, or Xumòti, at Lemoore, February 5, 1906. Notebook 6445-57.

datci	datcé'tcayi
tcunut	tcunó'tatci
wò'wal	wu'wó'wal
nutúnutu	nutantica
telamni	tièlami

5. Wechihit names, from Tip, of Sanger, January 14, 1906. Notebook 6421-23. I evidently repeated to him the singular form he had given and he supplied the plurals.

wé'tcixitc	witcé'xati
nutúntu	nutántica
tcoínímni	tcoyé'nmani
áiditsa, áigitca	aiyé'datsi
(? kotcéyali)	kotcéyali
mitcâhai	metcáyisa
tcukáimína	
datci	datcé'tcayi
telamni [té'ʔ]	teyé'lamni
ká'wiya	kawé'yayi
wiktcamni	wikátcmína

## Shoshonean

wobonutc	wobé'ntcaci
entimbitc,	
indimbitc	iná'tbitca (Yokuts?)
hólkoma	

6. From Mary, a Choynimni from her father, with a Michahay mother, at Table Mountain, January 11, 1906. Notebook 6363-65.

tcoínimni	tcoyen'mani
mitcá'hai,	
mítca'hai	mitcah <sup>e</sup> ica
tcukáimína	tcokóyemi
ai'kitca (for ayk-)	
	aiyé'katci
	nutunutu (recognized nutántica)

<sup>2</sup>Confirmed by Marinacia (María Ignacia?) a Hometwoli. S. F. Cook has pointed out that the main settlement was west of the lake until 1814, after which the Wowol tried to escape Spanish pressure by moving into the lake, and by 1826 (if not before) to the east side, at Atwell Id, shown as Sukutnu on map, pl. 47, and p. 483 Handbook, 1925. Cook's data are on p. 43 of his "Aboriginal Population of the San Joaquin Valley," UC-AR 16:2, 1955. The informant Marinacia, quoted below, also confirmed position of the Wowal on the west shore of the lake; notebook 6526.

wé'tcixit	
ketcayi	kotcé'yali, ketcé'wali
tóixitca (for toyx-)	toyé'xatci
pitkaṭi	pidé'kaṭi
dumna	dumá'nica
wakítci (for wakyi-?)	waké'yatci

Shoshonean	
entímbitc (Yokuts?)	enátbitca
wobonutc	wobéntcaci
holkoma	holó'kami

7. From Mrs. Mathews, Dumna, at Table Mountain. January 12, 1906. Notebook 6372-76.

pitkaṭi	pitá'kaṭi
dumna	dumá'nica
(wakitci)	waké'yatci
ketcayi	kitcáinawi ( <u>sic</u> , for kitcáy-nawi)
t'oltitci	tolé'tatci
(hoyima)	hoyé'yami
tcuktcansi	tcukadnica
dalintci (for da'l-?)	daélnatci (for da'el-)
heutci (for hew-)	hewatcinawi
tcaucila (for tcaw-)	tcawecali
toxolo (toxil, west)	toxela
xocomo (xocim, north)	xocima
tokó'yo (Chumash?)	tókiya

She derived the name pitkaṭi from pitik "excrement" (N1 bidik') because this tribelet made a "salt" along the river that stank.

The four lists that follow include few plurals but they do contain tribal names and data.

8. From Marinacia (María Ygnacia?), Hometwoli, mother from gawih (Gawi?) ("communal house"), the main settlement on Kern Lake; father a Chumash from daclibun (Tašlibun), San Emigdio creek. Recorded January 30, 1906, at Rancho Tejon, ʔolti, in notebook 6524-28.

This informant did not of herself use tribelet names, but described groups by their settlements.

gawé-aman tcâatc	gawih <sup>h</sup> their people
taclibun tcâatc toxy <sup>i</sup>	San Emigdiano Chumash (toxy <sup>i</sup> is person, people)
dael-aman tcâatc toxy <sup>i</sup>	Tejoneños, Yawelmani <sup>3</sup>
tcapanau tcâatc toxy <sup>i</sup>	Kitanemuk, spoke Haminât
gáwiijim tcaatc toxy <sup>i</sup>	Kawiisu of Tehachapi and Caliente
tatsé'tsai tcaatc	Tachi
lapa'aman tcaatc toxy <sup>i</sup>	Chumash of lapa, lapiuh <sup>h</sup> , rancheria in Cañada de las Uvas.

She did accept ʔuxoxayi; called the Kumachisi Kometiosi; and recognized xometwoli as "Tejoneño (Yawelmani) por nosotros."

<sup>3</sup>daal (for da'al) corresponds to Yawe tinliu "in the hole," as in tséses daal Home for Yawe pûsin tinliu, the site of the 1906 rancheria with a church on Tejon Creek.

9. Bob Ogden, at Iron Bridge, opposite Lemon Cove, Wükchamni from both parents. Plurals were not systematically obtained from him. (6433-36.)

wükcamni; "named after" wiktcamni, spot S side Kaweah R., 1/2 mile below Iron Bridge yòkod; yòkò a sandy place S of Kaweah R., 4 m. "this side of" Exeter gá'wia, ká'wia; this is also the name of a hill on N side of river, opposite yòkò yaudantci koyeti tcoinok telamni wòwol, wó'lasí

Shoshonean  
bádwica, bálwuca  
waksâtci

10. From Jennie Tom at Squaw Valley, above Sanger, January 16, 1906. (6427.) She furnished the vocabulary of Michahay. This she learned from her mother. Her father was Choynimni.

mitcâhai  
wutcamnī  
tcoinimni  
gotcé'yali  
toixitca

Shoshonean  
éndembitc (Yok?)  
wobonutc

11. From Squaw Valley Jack, at Squaw Valley. Chukayimina. (6428-30.) Father Chukayimina, mother Choynimni. The forms given were mostly not distinguished as singular or plural.

tcukáimina, pl. tcokóyemi [sic, for -yemni?] tcoinimni  
tóixitca, extinct, across Kings R., below ticetcu áititca  
gotcé'yali, "same as áititca, another name for" wiktcomni

Shoshonean  
indimbitc (Yokuts?)  
wóbonutc  
palwica, talk wóbonutc  
waksatci  
holkoma  
pócgica

### 341. DISCUSSION OF TRIBAL PLURALS

#### 341.1. Vowel Change or Epenthesis with Stress

The most striking change in the plural or collective form is the appearance of an epenthetic stressed vowel after the second consonant of the stem. Not only does this vowel add a syllable, but it shifts the stress accent of the name from penult to antepenult, which is very rare in Yokuts (Newman, §4:1). The added vowel is most often e: sixteen times after first-syllable o > u, o, a, once after e. Five times the added vowel is a: twice each after e and u, once after ū (< i?) in the first syllable. Once it was heard as o, after a and before i > a. It is evident that the added vowel varies

mostly in contrast with the first one. The following are the specific forms, with the initial number referring to the source in the just-cited lists. Stress accents are added in this section, even when on the penult.<sup>4</sup>

Epenthetic e

1	tcóynok	tcuyé·naki
1	xómt·inin	xumét·wadi
1	yawdí·mni	yowéd·mani
1	wakcátci	wakéc·wadi
1	boknín·wad	bokén·wadi (s. < reduced pl. suffix?)
1	yó·kod (yowkod?)	yuwé·kadi
7	toltitci	tole·tatci (s. suffix retained in pl.)
7	hoyí·ma (hóy-?)	hoyé·yami
10		gotcé·yali
6	(tóyxitca)	toyé·xatci
1	yawdántci	yawéd·tcani (ntc > tcVn?)
7	tcawcía	tcawé·cali
-	yawlá·mni	yawelmáni (sic stress)
1	bañkalátci	bañé·klatci
6	aykítca (áykitca?)	ayé·katci
6	wakítci	waké·yatci
5, 3, 4	telámni (teylámni?)	5 teyé·lamni, 3, 4 ti(y)é·lami (sic -ami)

Epenthetic a

6, 7	dúmna	dumáni·ca
7	tcuktcánsi	tcuká·dni·ca (tc > d? -si lost)
1	wúktcamni	wúkát·smina (tc, ts heard for t?)
7	hewtci	hewátci·nawi
6	entímbítci, íntimbitc	enátbi·ca (?Shosh. mb > b; -tci lost)

Epenthetic o

1	badwica	badó·waci
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Epenthetic é was written é· about half the time; á and ó always short.

In the following forms there is antepenultimate stress on the lengthened plural, but no consonant cluster after the first vowel in the singular, so there is no epenthetic vowel, but the second vowel of the singular is altered in quality and stress, or in stress alone, in the plural.

1, 3, 4	tcúnut	tcunó·tatci (-tci added in pl.)
4, 5	nutúntu, nutúnutu	nutánti·ca
1	núta' (núta'?)	nutcáwayi (tc written for t?)

In the northern dialects there is umlaut also in terms for directional groups and in the word for Chumash (or coast-people), o-o-o becoming o-i-a in the plural. Unfortunately stress was mostly not recorded.

<sup>4</sup>Newman's forms for tribal names, scattered through his grammar, suggest his d for my t in te·lamni, t for tc (and i for ü) in wúktcamni (I tended to hear tc for t much more often in Yawdanchi than in most dialects), and t? for t in Tachi, with the affricate being alveolar and doubled: tʔaʃʃíy (sic); this is apart from a good many glottalizations of y, n, m, and a final glottal stop on the endings -amni?, -n·či?. See also footnote 5 below. Of plurals, he gives diye·lam-i (§5:9), tʔaçe·caý-, čoye[·]jmañ-, čuño·t-a-ʔ-, wikaʃmin-, nutant-i-s- (in §24:12, 14, 17), which corroborate my plurals at least in outline; also (§24:17) the singular nutu·nuto·.

7	toxil west	toxolo	pl. toxela
7	xocim north	xocomo	pl. xocima
		(1, xocó·mo, xócima)	
7	(Costeños? Christians?)	tokó·yo	pl. tókiya
		(Yawe tókya Chumash)	

341.2. Seeming Internal Reduplication

Rather remarkable is the appearance of what looks like reduplication<sup>5</sup> of consonants or syllables in plural forms. Two of these cases seem initial, half a dozen internal or final. In the latter, it is either the second or third consonant that is repeated. It would be possible to construe the two cases of initial reduplication as internal repetition of the first consonant. There are accompanying vowel changes, but too few cases to show a clear pattern, except of antepenultimate stress on é, á, ó like that already analyzed.

First consonant of word repeated (preposed or internally?)

7	wó·wal	wu·wó·wal
3	wó·wal	wowó·wali
2		wú·wawal
1	wówad	wowó·wadi
3	(wo·lasi), 1 wó·lasi	3 wó·wolaci

Second consonant repeated internally

1	tátci (see footnote 5)	tatcé·tcayi
4, 5	dátci	datcé·tcayi
1	tulámni	tulál·mina
2	dulámni·u	dulál·mina
7	hóyima (= hóyima?)	hoyé·yami
1	-(tuxóxi)	1 tuxó·xayi 2 tuxoxay

Third consonant repeated internally

1	gá·wia (= gá·wya)	gawé·yayi
5	ká·wia (= ká·wya)	kawé·yayi
1, 2	tulámni	tulál·mina
3	koyé·ti	koyé·tati

341.3. Suffixes

There are a number of suffixes characterizing either the singular or the plural of tribal names, and some that appear in both.

-amni/-imni (Newman with final glottal stop) are two forms of singular suffix. To this correspond the plurals -mina/-mani. Plains Miwok also has the singular form of the suffix, usually written in the ethnological literature "-umni, -umne," with the same meaning, "people of."

<sup>5</sup>Newman discusses a few of these "reduplicated" stems as due to one of "seven distinct vowel formulas for creating plural stems directly from their underlying themes" (§24:6); see §24:12, 14. Newman's singular form for my "tatci," already cited in note 4 of this section as tʔaʃʃíy, suggests an unaffixed quadriliteral stem tʔačciy, corresponding in pattern to hewtcy, hoyma?, dumna?, tcoynok, wo·wal, which have two vowels in singular and four in plural.

Regular A:	tulamni	tulálmína
	wúktcamni	wúkátsmína
Regular B:	yawdimni	yowédmani
	tcoyimni	tcoyénmani
Irregular:	telamni	teyé·lamni, tiyé·lami <sup>6</sup>
	tcukáymina	tcokóyemi (s. has pl. suffix; pl. -emi < -emni?)
	yawlamni	yawelmani (= Yawd. yawdimni with -i- > -a-.)

It is evident that the singular form of this suffix has a consonant cluster, which the plural resolves by intercalating a vowel, but a new consonant collocation develops between stem and suffix. At the same time there is contrastive balance of a and i: type A, -amni vs. -mina; type B, -imni vs. -mani.

-tci (Newman -č'i'), which also occurs in Miwok as well as Yokuts to denote "people of," appears in both singular and plural in *toltitci*, *toyxitca*, *bañkalatci*, *aykitca*, *wakitci*, *hewtci*, *tatci*, but is only singular in

<sup>6</sup>Newman §5:9, pl. *diye·lam-i*.

*waksatci*, *yawdantci*, *tcuktcansi* (if this < \**tcuktcantci*), possibly in *entimbitc*, seemingly plural in *tcunó·tatci*, as per forms already cited.

There are several suffixes of pluralizing effect.  
-wadi:

*kuyétwadi*, *kumétcwadi*, *xumetwadi* or *xometwoli* (*xomt-inin*), *wakecwadi*, *kotcé·wali* or *kotcé·yali* (*ket-cayi*). Pl. *bokénwadi*, sing. *bokninwad*, may be a sing. derived from the plur. form. Yawd. *nutcáwayi*, sing. *nuta'*, may contain the same suffix: *y* sometimes corresponds to *l* or *d*, as these regularly correspond to each other in most Southern Foothill and Valley dialects.

-nawi:

*kitcáynawi* (*ketcayi*), *hewatcinawi* (*hewtci*)

-ca occurs from the Tachi dialect north:

4,5 *nutántica*, 5, *matcáyisa*, 6 *mitcáhica*, *mitcáh(e)ica*, 6,7 *dumá'nica*, 6 *enátbica*, perhaps 7 *tcukádnica*, possibly 5,6 *wobéncasi*.

Finally I list all the plurals which end in -i, the sing. in a consonant or -a.

Consonant: pl. *bokénwadi*, *tcoyé·naki*, *wobéncaci*

Sing. in a: pl. *tcawécali*, *badówaci*, *ayé·katci*.

"Reduplication": *tcunó·tatci*, *wowó·wadi*, *gawé·yayi*, *hoyé·yami*

## 400. DISCUSSION AND INFERENCES

### 410. SOUND SHIFTS AND COGNATE REPLACEMENTS

If we ignore for the time being the question whether changes come from events within or are due to influences from without, the diversification of Yokuts dialects can be seen as consisting of two classes of facts: changes of forms and changes of meanings. Changes of forms are due to gradual sound changes, which are regular and can therefore theoretically be traced backward to a reconstruction of proto-Yokuts. Changes of meaning no doubt are also gradual and cumulative, but, when they have progressed to a certain point, a tip-over is recognizable as having occurred, and two or more given forms have narrowed or widened, have respectively specialized or generalized, their meanings, until in certain dialects a particular form is associated with a "new" meaning; or, put conversely, a particular category or "slot" of meaning is primarily filled by a "new" stem, one which cannot be connected through sound shifts with the stem which still retains the former meaning in other dialects.

To illustrate by an example, in my own lifetime such a displacement has largely occurred between the stems "stone" and "rock" in English. Stone, German Stein, a century ago was still the form which denoted both the material, the lithic substance, and also most natural or artifactual pieces of this substance: stones of the field, stone mason, Stonewall Jackson, a stony look, to lay stone upon stone, to stone a malefactor. The companion word rock, from the Romance, had a more special meaning: a crag, a jagged protrusion of some size; it implied stone as material, but specified a particular shape, texture, or configuration; the German

equivalent is *Fels*. In spoken popular English, at least in the United States, rock has long gained at the expense of stone, and is now perhaps the more generic term, corresponding to German Stein, French pierre, Spanish piedra, ancient Greek lithos. We speak not only of rocky points or overhanging rocks but also of the rocks of the earth's crust, of rock falls and rock-slides, of drilling rock and of rock crushers and rock-fill dams, of rock-ribbed and solid rock; we grow rock gardens, we throw rocks, and we pour whiskey on the "rocks." A Hottentot or a Yokuts collecting basic vocabulary of spoken American English in the United States for lexicostatistic purposes in 1960 would almost certainly register rock as the more general or common form; only in literary English might stone still retain its primacy of a century and millenium ago.

This is cognate displacement or replacement of stems as matched against slots of meaning held constant—as constant as possible, let us say more accurately. And such displacement, whether wholly internal or due to intrusion ("borrowing") from without the language, is the main basis of the dialect and language differentiation whose age we compute lexicostatistically; and it is certainly a factor in every evaluation of linguistic similarity and dissimilarity, and in all classifications expressing such evaluations.

By contrast, sound shifts, while they deal with alteration, express retention of equivalents; they discover persistences of similarities that may no longer be apparent on the surface, but are validly demonstrable. It is continuity of forms that they are occupied with;

shift of meaning is nearly irrelevant as against continuity in the changing forms. Determined sound shifts help establish true cognates as against noncognates where differentiation has become considerable. But, once we are concerned with cognate replacements, it is the meaning that is continuous, and the changes of form that are irrelevant per se.

Of these two processes of language variation and diversification, it is the stem cognate retentions or replacements that are conspicuously visible in the Yokuts dialects. It was such stem retentions versus replacements that I used quantitatively in 1907 as the main basis in classifying the Yokuts dialects into groups and these groups into primary divisions or moieties. Presence or absence of morphological elements also entered the picture; but these, if not stems, were morphemes that also might be retained or displaced. In the present monograph, the whole chapter numbered 500 deals with the same consideration.

Sound shifts played a much more modest role in the 1907 presentation. Replacement of *l* by *d*, presence of *ŋ* besides *n*, of *ü* and *ö* besides *i* and *e* in the more extreme dialect groups of the Foothill moiety, were the conspicuous features possessing some breadth of distribution.<sup>1</sup> There are of course also many narrower or less obtrusive correspondences: these are being reserved for separate treatment, which they deserve, and which will have its own significance. Yet

<sup>1</sup>That the Foothill forms, especially *ü* and *ö* for *i* and *e*, are secondary is of course unproved. Newman somewhere suggests *ü* and *ö* as original proto-Yokuts, but as lost in all Valley and in all northern Foothill dialects. I suppose this is the correct intra-Yokuts working hypothesis, especially as Southern Foothill has *i* and *e* as well as *ü* and *ö*. In 1907, page 329, I proposed the opposite explanation, namely that *ü* and *ö* were derived in Foothill Yokuts from influencing by Shoshonean and perhaps Chumash, which contain at least one mixed vowel; and I still feel some inclination to prefer this construal. As Sierra Miwok and Maidu also contain a mixed vowel and also adjoin Shoshoneans on their east, I considered them as also influenced. This last part of my former diachronic hypothesis I no longer entertain, because it has become plain that Maidu, Miwok, and Yokuts have split from one another out of proto-California-Penutian so many thousand years ago that it is quite doubtful or unlikely that Shoshoneans, or even Uto-Aztecs of any stripe, then adjoined them on the east. Shoshonean, let alone Monachi-Paviotso, may not even have yet emerged into an identity of its own when proto-Yokuts was separating from proto-Miwok and proto-Maidu. It is of course entirely conceivable that Shoshonean languages with the mixed vowel *i*, coming into contact with Foothill Yokuts, Sierra Miwok, Maidu, (and even Hoka Chumash), influenced all four of these individually but in the same direction of acceptance of an "impure" vowel (or two). These would be separate events, however, and substantiable from evidence in four separate language families, and I prefer no longer to construe them as corroborative of one another.

Against my 1907 theory that the mixed vowels of Yokuts originated from alien influencing is the fact that no modern reflex has been found of the particular matrix conditions which would have induced the Buena Vista and Tule-Kameah groups of Foothill Yokuts sometimes to alter *i* to *ü* (*i*) and *e* to *ö* (*e*) and sometimes to retain *i* and *e*. If therefore we posit proto-Yokuts *i*, *e*, *ü*, *ö*, it means that only eight Yokuts dialects (Tulamni, Hometowoli, Tuhohi, Bokninuwad, Yawdanchi, Wükchamni, Gawa, Yokod) have retained these four phonemes, while at least thirty have merged them into two. I know that problems of this sort are not supposed to be decided on any basis of a poll or majority occurrence. However, the combination of a heavy minority, its geographical segregation, and contiguity to alien occurrence of the phonemes—all these together seem to me still to lean toward the explanation of relatively late and local borrowing.

at present it seems that sound shifts will carry us only a certain distance in Yokuts: perhaps not all the way to a complete reconstruction of proto-Yokuts. The regular and predictable Yokuts correspondences seem to be the reflexes of shifts in perhaps the last one or two thousand years. Beyond that are larger differences that do not readily dissolve into regularities, and thus may yield only to comparative California Penutian or Pacific Penutian.

Here are an example or two:

The vocabularies show "tongue" (No. 50 in 210) to be represented most often by a form of which the Newman Yawelmani *talxaṭ* can be taken as representative or typical (I avoid the term "reconstructed" because of the implication that a proto-language has been achieved). This shows close variants like *tadxaṭ*, *talxiṭ*, *talxas*, possibly *talxač*, for whose variations there are abundant parallels. Yet when we encounter Pal *talapis* there are no other obvious cases of *p* corresponding to *ṭ*. Buena Vista has *ala'das* and *ala'dis*, with *d* perhaps written for *ḍ*; and *-(i)s* is already suggested as a suffix by the Pal form. But both initial *t-* and medial *-x-* have just dropped out; and I can cite no other cases parallel to these two losses. Mich and Choy of the Kings River group of Foothill Yokuts have *madaṭ* or *mataṭ*; which might stand for a former *malaṭ* (if Tule-Kaweah *l* for *d*). But whence the *t > m*? And if *x* is lost after *l* also in Buena Vista and Pal, we do not know whether the stems are really cognate: *malaṭ*, *tala'pis*, and *ala'dis/as* show a generic similarity of vowels and *l*, but we do not really know that they are comparable. In proto-Penutian it is entirely conceivable that the evidence will turn up that will prove them variants of one—or two—proto-Penutian stems. But a sound reconstruction ought to proceed from proto-Yokuts to proto-Penutian; and such proto-Yokuts as we can glimpse has not yielded a suggestion of tie-up of the three aberrant forms. I cannot rid myself of a conviction that they will ultimately prove to be connected.

The most wide-spread Yokuts stem for "sun" is 'op, which really denotes sun or moon, the latter being differentiated when necessary by the addition of some form of "night" or "to be night." This 'op occurs ten times in eight Valley and three Northern (Foothill) forms. Beyond these it occurs as 'upic in four Kings River Foothill dialects, and Tule-Kaweah Foothill opodo is evidently connected by Kings River Foothill forms *obol*, *oboli*, *oboyi* given for "day" or "daylight"; these are certainly derivative. But four of the twenty-one dialects show completely unrelated stems. Yawe, in the main a conforming member of the Valley group, has *da'ak'*, without known Yokuts connection of any meaning, though one can suspect derivation from some as yet unspecifiable verb stem. The two Buena Vista dialects have, one of them, *calaṭ* (turning up in the other with the meaning "moon"), the other a phrase meaning "one (alone) traveler above." Pal, finally, has *hicta*, which again one cannot do anything with. These four noncognate forms are all adjacent to one another in the far south of Yokuts territory. This fact cannot but have some significance; yet one would expect four contiguous tribelets, differing from all others, to agree in their particularistic form, rather than to have devised four wholly separate forms.

These two examples will illustrate the Yokuts situation both as to regular sound shifts in cognates and the displacement of cognate stems from given meanings.

When the sound shifts have been worked out, they will presumably partly supplement and confirm the 1907 classification of dialects, partly modify it; but I expect the modifications will not be drastic.

#### 420. SOME CLASSES OF WORDS

##### 421. THE YOKUTS NUMERAL COUNT: VOWEL SHIFTS AND ETYMOLOGIES

For this discussion I write (technically primary but possibly secondary<sup>2</sup>) Tule-Kaweah, Poso Creek, Buena Vista *ū, ö, d, ñ* as if they were proved original *i, e, l, n*.

One. The basic form is *yet'*. The vowel *e* is constant except for *i* in Buena Vista and Poso Creek.

Two. The basic form is *bonoy*, my *p-* presumably being for *b-* throughout. Occasional *u* occurs for *o*, especially in progress through the southern foothills, but may be an apperceptive variation, except in *Kech bunoy*, which is confirmed by *numt'cin seven* (and perhaps *mun'os eight*). The first *o* is confirmed by Tule Kaweah and Poso Creek *bonoy*. But Buena Vista *puni* (twice so) undoubtedly has dialectically contrastive *u*, as well as *-i* for *oy*.

Three. The basic form seems to be *co'pi'n*. Poso Creek was recorded as *co'pi'*—the surd *n* may have been missed. Buena Vista is truncated, as so often, to *co'p*.

Four. I reconstruct *hotbonoy*, as in Southern Valley and Chaw, meaning something like "again two." This is altered in Northern and Kings River Foothill to *hatbanay*, whose relation to *bonoy* is evidently no longer felt. The original form may have been *hat-bonoy*, assimilated respectively to *hotbonoy* and *hatbanay*. Tule-Kaweah *hatbañi* is reduced like Buena Vista *buni* for *bunoy*. Poso Creek *hetbeñi* is the same with *a-a* altered to *e-e* by forwarding as so often in this exposed dialect. Buena Vista *tabañi*, also recorded as *tá'pani*, evidences further loss of the etymology, *hot ~ hat > ta*.

Five. I reconstruct "one-cinil," which would in effect be "one-hand," though I cannot find any bodypart word like *cinil*. It might mean "spread" or "whole" or something that indicated finger manipulation. At any rate, *yet'* has throughout been assimilated to *yit'*, which remains audibly separate, not *yitcinil* but *yit cinil*, or occasionally metathesized to *yit'icnil*. Tule-Kaweah and Buena Vista dissimilate the last vowel to *u*: *yit'cinul*; and Poso Creek maintains the contrast between one and five by making the latter *yet<sup>c</sup>*; and *cinil > si'li*.

Six. I reconstruct *tc'lip'i*. These vowels are consistently retained except in Tule-Kaweah Yaud *tc'ulipi* and Poso Creek *tc'lipi*. The final *i* is never lost, but there are inconsistencies of length and accent, perhaps due to its presence. I wrote *-ī* in *Yawe, Nutu, Dum, Kech, Choy, Ayt*, and *-ī'* in *Chawchila*. Also I wrote *tc'ó-* in *Chun, Tach, Wech, Choy*, which would be expectable if one or the other *i* were lost.

Seven. The vowels are again *o, i* in *nomt'cin*, but only Southern Valley (and perhaps Poso Creek through *Yawelmani-Koyeti* influence) have *-l*; all other groups end in *-n*. The only *o > u* are in *Kech* (cf. *bunoy* for *bonoy, two*), and in Buena Vista *numts'in*.

Eight. While I wrote *n, 'n, and n'*, these evidently all represent Newman's glottalized *ñ*. The balance is pretty even between reconstructing *muñoc* and *moñoc*. In Southern Valley we have 4 *u, 4 o*; in Northern 2 *u, 2 o*; in Kings River 5 *o*; in Tule-Kaweah 2 *u*; in Buena Vista 2 *u* (with second vowel *a*); and in contrastive Poso Creek *meñuc*.

Nine. This is the only one of the first ten numerals which shows more than one stem (aside from far Northern *Chulamni*); in fact, it has four.

*no'nip*—the fourth numeral with the *o-i* vowel combination—occurs in ten dialects and three groups, Northern, Kings River, and Tule-Kaweah.

*soponhot*, in Southern Valley and in the only Valley-inhabiting Northern dialect recorded, *Chaw*, is evidently *co'pin three* plus the *hot* of *hotbonoy four*. The common meaning comes to "times itself," or "squared." Note the assimilation of *co'pin* to *sopon*, and the unlengthening of the first vowel.

The two other stems are Poso Creek *lik'iyi* (assimilated like *tc'ilipi* for *tcilip'i*) and Buena Vista *wutcat*.

Ten. I wrote this as *ñieu* and *ťieu*. The latter is right. Of seventeen times that I added stress accents, fifteen were on the first vowel. As Yokuts stress is on the penult, the final *u* must be a consonant; and Newman gives the *Yawelmani* form as *ñiye'w*. Three times out of four in Kings River, in *Chkm, Mich*, and *Choy*, I heard the first vowel as *è* or *e*: *ñeu, ñeu, ñe'eu*; and this recurs in *Tul Buena Vista, ñeu*, though Home has usual *ñieu*. Poso Creek *ñieu* (for *ñeyiw*) is an example of the contrastive vowel inversion this dialect is given to.

Eleven to Nineteen. Home of the Buena Vista group has the *hapax legomena* *dōwāp eleven*, and *cúlokāi twelve*, the latter corresponding to Tule-Kaweah *Yawd cuyukai*, alternant with *botcdom*. From there up Home has "ten and three," *ñieu ya cōop*, and so regularly.

Otherwise, there are six lists of almost identical bisyllabic compounds corresponding to English "-teens." Reconstructed, they run: *yetcam 11; botcdom 12; copyom 13; hatcpam (Tach hotcpom) 14; yitcam 15; tc'olpom 16; nomtcom 17; muñcam, muñtcam 18; nonpom (Tach soponhotmin) 19*. These lists are from Tule-Kaweah Yaud, Kings River *Chkm, Chum, Gash*, Northern *Dum*, Southern Valley *Tach*; a fair representation from the dialect groups. There is evidently one "-teen" suffix involved, which varies as follows: *-cam 11, -tcdom 12, -yom 13, -cpam 14; -(t)cam 15, -om 16, 17, -am, -tcam 18, -om 19*. The suffix vowel is *a* after stem *i, e, a, u*, but *o* after stem *o*. The variation in the consonantal beginning of the suffix is evidently due to a variety of situations. Thus the *-cp-* of 14 is perhaps composed of metathesized *-tc-*, *-c-* of the suffix followed by *-p-* from the second element of 4; and similarly in 12, *-tcd-* may resolve into *-tc-* from suffix plus *-d-* representing the *-n-* of *bonoi*. This in turn suggests a compound suffix *-c-/-tc-* plus *-am* for 11 to 15 (and sometimes by analogy for 18),

<sup>2</sup>See note 1 in §410.

but a simple suffix -am for 16, 17, 19, and sometimes 18. The bases from 2 to 9 are truncated to monosyllables,<sup>3</sup> thus:

12 bonoi	bo-(d)
13 còpin	cop-
14 hatpanai	hat-(p)
15 yit'cinil	yit'- (identical with 11 except this has yet.)
16 tcolip'i	tcol-p'-
17 nomt'cin	nom-tc'-
18 muñoc	muñ-c-
19 nonpom	non-p-

From 20, the count is by collocation: two ten, three ten, etc.; 100 was recorded in one Valley dialect as pitc count, in two Foothill dialects as pitca, in a third, Home, as demènitc.

#### 422. DEMONSTRATIVES

Demonstratives are too "grammatical" to be very trustworthy in a lexical listing of absolute forms. I did include them at first, but finally decided to omit them from the vocabularies, as well as the demonstrative adverbs. There is the more reason for this in that in treating Yawdanchi I misunderstood xe and xi, the strong and weak stem forms of "this" according to Newman, as meaning respectively "this near me" and "this near you." I ought to have doubted this difference when I stated (1907, p. 226) that "except in the subjective singular" all inflected forms of xe and xi were "the same": xiñ, xèin, xen, xenit, xicak, xican. Newman's corresponding forms are:

	Wik	Yawe	Gash	Chaw
Strong stem	xe /	ke /	ke /	he /
Subj. sing.	xi	ki	ke?	he'
Obj.	xiq	kin	kin	hi'in
Poss.	xe'?'in	ke'?'in	ke'?'in	he'nin
Loc.	xew	kew	kew	hew
Abl.	xe'nit	ke'nit	---	het
Dual subj.	xisak	kisiċ	kišgi?	hešik
Plur. subj.	xisañ	kisin	kišnuw	hešnuw

Choy agrees with Yawe in stem ke /, and Chuk with Chaw he /.

My lexical and grammatical data in general conform to this schedule, but with some new forms.

Buena Vista, Poso Creek, Tule-Kaweah all share an h- initial for "this" with Wik. Additional are: Buena Vista xuntu, xonto, Poso Creek xo-; Buena Vista xits, xitèn given for "here," "there"; Poso Creek, more regular, xiu, "here."

Kings-River, including Gash, ke agrees with Newman's ke'. For "here," I got both ken and kena.

For Northern, where Newman has he' / both for Chaw in the valley and Chuk in the hills, I consistently (Chuk, Kech, Dum) got two forms hi and ki, confirmed by heu and geu for "here" and "there," in the hills; and in the Valley (Chaw), he and ke (hènin, poss. sg.), locative heu and keu, for "this, that," and "here, there."

In Valley, I got only h-forms (usually doubled) in Wech and Nutu: hèhi, hèhe; hètam "here." Tach, Chun showed both h- and k- forms: hi, hihi, ki, and hetam "here," keu "there"; but Yawe, as stated, has both ki and ke < ke' /.

In short, Newman's Wik x- proves to characterize all three southerly Foothill dialect groups; but in Kings River, Northern, and Southern Valley, where Newman differentiates according as they have either h- or k- forms, I recorded Wech and Nutu as having only h-, Yawe and possibly Chnk only k-, and six dialects—Chuk, Kech, Dum, Chaw, Tach, Chun—as having both h- and k- forms for "this." I think we must perhaps assume that there has been contamination from neighbors in these six dialects. This contamination may have been wholly post-Caucasian. Because of the considerable autonomy which most dialects still showed in 1906, I am unsure on the point. My notes show a tendency of h- forms to be assigned a meaning of greater proximity than k- forms, but after my misconstrual of xe/xi in Yawd and ki/ke in Yawe, it is obviously not safe to press this point. The two sets of forms may have come to be in free alternation by 1906.

For "that," ta is probably universal, though there are eight dialects in the tabulations, in which it was not offered to me.

I do not know what to say about the Yawdanchi demonstrative ka which I described (1907, pp. 225, 226) as signifying "that, visible," as contrasted with ta "that" of reference, and for which I cited the oblique cases and dual kañ, kañi, kau, kacki, but of which Newman makes no mention. I did not encounter it in Yawelmani, and said (1907, p. 296) it was not frequent in Yawdanchi. I do not find a ka form in the Yawdanchi texts (1907, pp. 256-277). On the other hand, in word-listing, it was given me a dozen times as meaning "that": ka in Tule-Kaweah Yawd, Wük; gai in the five Kings River dialects (including Gashowa); ga in Southern Valley Wech, Nutu, Tach, Chun; and ka again in Southern Valley Chnk; plus forms like Ayt ganiu, Wech, Nutu gau "there." Most of these ka forms were secured in 1906, when I was hearing Yokuts considerably better than in 1900-1903.

Finally, I list all the ka forms I can find in my Yawdanchi recordings of 1900-1903, preceded by notebook and page number.

587. na kañ acectac I often bit that (visible); tañ (invisible).

587. na kacki acectac I bit them too (visible).

587. kau there (visible).

587. kan tcimineu there at the chimney

590. xiñ nihi tc'uèn this one I will take with me; kañ hi tc'o' no, take that one. (Here kañ must be slurred or misheard for kamu, "no.")

668. wat ka tan who is that going there?

668. wat ka tana wa who is that going way over there?

677. General statement of meaning relation of four demonstratives, ka being "that visible"; but there are no examples.

695. (Did you dance yesterday? Ans.:) k'amū, ka kamji, no, he danced.

4909. hadadnad ka papel that paper keeps on rising

4909. öka bu kañ papel hadadnad look at that paper! it's rising! (bu is obscure).

4909. hin mihi xiñ hadâdin will you raise up this one?

4909. hin mihi kañ hadâdin will you raise up that one?

4911. gau wowod stand there!

4955. hanak tau ka dadakana something is hanging there (the "there" is probably tau; ka is obscure).

<sup>3</sup>See also, for an earlier analysis of the teens in Yaud, Kroeber, 1907, p. 232, and for Yawe, p. 298.

## 430. RELATIONS OF PARTICULAR DIALECTS AND DIALECT GROUPS

## 431. PALEUYAMI

The aberrant southern Foothill dialect Paléuyami (perhaps for Baléwyami, "downstreamers") of Poso Creek is in most ways further differentiated from general Yokuts than Tule-Kaweah is differentiated. Its differentiation is less than that of the two Buena Vista Foothill dialects in retained cognates, as will be discussed below. Paleuyami seems also to have been somewhat influenced directly but secondarily by Southern Valley, especially through nearby Yawelmani, probably.

Sound Correspondences. General Yokuts *i* often > *e* in Paleuyami, *e* > *i*, and *u* > *o*, *o* > *u*. These shifts are most frequent in the stressed penult, sometimes involve the final syllable, but only occasionally the first syllable if there are three. When *i* and *e*, or again *u* and *o*, occur in the same word, there is thus an effect of vowel inversion by metathesis in Paleuyami.

Frequent also is stressed *a* > *e*.

*i* > *e*: ten, forehead (twice), water, rock, ground, squirrel (both syllables), condor, mountain quail, flea (last syllable), louse (last syllables).

*e* > *i*: one, teat (stressed syllable only), bone, liver, fat, house (contrast Buena Vista, Tule-Kaweah), disk beads, plains oak, dog (contrast Foothill), puma (1st, 2nd syllable), cottontail (with Southern Valley vs Kings River, Northern), rattlesnake, here.

*u* > *o*: ear (Kings River also *o*), fire (contrast Buena Vista, Tule-Kaweah, Kings River), manzanita (both syllables vs. Kings River), quail (last syllable only), drink (both syllables).

*o* > *u*: eight (last syllable), hair (ex "brain" ? Buena Vista also *u*), tail (with Kings River), east, smoke, roadrunner.

Double interchange of *i* and *e*: child, eyebrow, tooth, nail, horns (contrast Yawe, Wo'l), cloud, wood, beaver, where.

*a* > *e*: four (twice), nine (ex Buena Vista with inversion?), mother, shaman, eye, mouth, shoulder, tears, bow (contrast Buena Vista), pine nut, mountain oak (contrast Buena Vista), coyote.

This makes 44 forms out of 192 in the vocabulary in which the *i* ~ *e* or *u* ~ *o* shift occurs in Paleuyami, or, counting the 11 double interchanges, we have 55 shifts, or shifts in 28 per cent of words examined.

The *a* > *e* shift occurs 13 times.

Less frequent shifts from general Yokuts to Pal are *u* > *e*: in eight, ankle, salt (stressed syllable) and in shaman, beard, dog (unstressed syllable).

Also *i* > *a* in: mountain, fish, much.

Consonant alterations are much less conspicuous; but for general Yokuts *s* > Pal *x*, see: mother, rock. Metathesis occurs in Southern Valley *citkil*, Kings River *citxil* > Pal *sextel*, Buena Vista *sixè'tal* ground squirrel; in *heleṭi* < *hu'tulu* great owl; and perhaps in *go'liu* < *laku* yesterday.

Cognate displacements.—Of the 192 terms in the Pal vocabulary, 48, or 25 percent, have no apparent cognates in Yokuts. Some of these may prove to be Shoshonean, some may be due to errors in understanding of meaning, and some may yield to further analytic comparison and prove to be much altered cognates. But there can be no doubt that the proportion of cog-

nate stems peculiar to Paleuyami will remain high.

Half a dozen additional terms (shoulder, bow, pipe, name, eagle, fly) are shared by Pal with one or both the Buena Vista dialects (Tul, Home) but not with any other Yokuts dialect except for a couple of isolated, scattered occurrences. More than three times as numerous are the meanings—24, to be exact—in which Pal and Buena Vista both have no cognates in all the remainder of Yokuts, and at the same time are not cognate between themselves. The other 24 of the Pal total of 48 is accounted for (1) by the native term's not having been obtained in Buena Vista, or (2) the Buena Vista forms having general Yokuts cognates.

The reverse situation as regards Buena Vista is that one or both of its two recorded vocabularies comprise cognateless terms under 78 meanings, or in 37 per cent of their total of 208, as compared with 25 per cent in Pal.

It is clear that though Paleuyami and Buena Vista share most of the phonemes and suffixes characteristic of the Foothill moiety of Yokuts—most markedly at its southern end, which they constitute—they have nevertheless at one time or another been exposed to different influences as regards the stems associated with a great many meanings.

## 432. BUENA VISTA GROUP OF DIALECTS

The following 37 stems are rendered both in Tulamni and Hometwoli by a seemingly distinct stem common to both and confined to them:

nine, person, child, old man, chief, shaman, friend, ghost, forehead, neck, back, rib, skin, arrow, moccasin, shirt, disk beads, portable mortar, pestle, day wind (probably), earthquake, world, plain (perhaps), mountain, grass, wildcat, deer, antelope, jack rabbit, turtle, black, bad, down, yesterday, ran, see, cry.

In 7 items their stems are both different from general Yokuts, but also different from each other: sun, earth, salt (the Tul form may be from Spanish), willow, elk, buzzard, large.

In 8 items Home has a unique stem, but the Tul word has cognates in Yokuts: old woman, breast, finger, tail, rock, wood, grizzly bear, sit.

In 3 cases the situation is reversed, Tul being unique, Home having the cognates: calf of leg, wolf, white.

Home has a unique form, Tul no entry recorded, in 13 items: hundred, chin, nail, thigh, fat, anus, moon, cloud, ashes, round tule, cottontail, flea, dance.

The reverse, Tul unique, Home no record, 2 items: water snake, pine nut.

Of 167 recorded Tulamni forms 49 or 29 per cent are without cognate in Yokuts outside the little Buena Vista group of dialects. For Hometwoli, the peculiar forms number 65 out of a total of 194, or 34 per cent. For the group, whether represented by one dialect or the other or both, the singularities of stem aggregate 70 cases out of a total of 205 items in the record, or again 34 per cent. Hometwoli is evidently a little the more extreme of the two in its aberrance.

Altogether, there are 55 items in which one or both the Buena Vista dialects are represented by a stem without known cognate in the remainder of Yokuts. In

37 of these 55, or about two-thirds, Tulamni and Hometwoli both show the aberrant stem. In 7 of the 55, they are both aberrant, but differ also from each other. In 11 cases, one of them goes with general Yokuts, the other is alone in its distinctness: 8 times this is Hometwoli, 3 times Palewyami.

Hometwoli, Tulamni, and Palewyami rarely, are jointly aberrant. Only two cases are clear-cut in the vocabularies: for "bow" and "name." There are a few other items where the three dialects go together, but an occasional dialect elsewhere also shows a cognate. For instance, the three agree in an aberrant stem for "shoulder," but so do Yawelmani, Chunut, and Dumna. Their form for "pipe" is evidently cognate with "tobacco" in Dumna and Chukchansi. For "fly," Yawdanchi has a cognate with the three. For "eagle," Hometwoli and Palewyami share a stem ba'ac, bo'uca (Tulamni, no record), but Dumna and Chukchansi show wi'ucul which would be suspect of cognateness. As regards displacement of their stems the two Buena Vista dialects and Palewyami of Poso Creek have evidently traveled largely separate roads.

#### 433. COMPARISON OF STEMS IN SELECTED NORTHERN, CENTRAL, AND SOUTHERN DIALECTS

##### 433.1. Northern and Far Northern Chawchila and Chulamni

When in 1908 (UC-PAAE 6:2, 375) I first discussed Chulamni on the basis of the handful of words then secured from Jesús Alvarez, I overestimated its resemblance to my Chawchila vocabulary, which was the nearest to it in geographical position of all word lists I had recorded. The Chulamni vocabulary from Trinidad was not secured until the following year, and I undertook systematic comparisons of it only in preparing the 1959 paper on Northern Yokuts (*Anthro. Linguistics*, Vol. 1, No. 8, pp. 1-19). There are indeed some almost identical stems common to Chulamni and Chawchila in spite of the gap of a hundred miles between their locales. This fact biased me to overlook that for a considerable number of simple meanings the forms are very different. I said in 1959 that I was less impressed than formerly by the similarity of the dialects. And now, in assembling the mass of comparative Yokuts data, I am rather overwhelmed by the number of noncognate forms of the same meaning that the two dialects show. It seems time to replace impressions by counts and numerical proportions.

The Chulamni vocabulary contained only about 80 words—a bare one-third to one-fourth of the number aimed at in the dialect survey of 1906. Six of the 80 were obvious late loans from Miwok: the numerals from 6 to 10, and "dog." As I was less concerned with tracing the disruptive effects of missionization on native dialects than with studying the interrelations of the Yokuts dialects before missionization—say around 1770 to 1800—these forms had simply to be omitted from consideration. Several others were first included but then rejected, as: witel, a species of tule or reed, because there was nothing to show which of several Yokuts terms it was to be equated with; the short stems for "this," "here," and "there" because it was difficult

to judge whether isolated forms like hi, xi, and ki were cognate or contrastive, and so forth. These omissions brought the number of Chulamni terms available for comparison down to 67.

##### 433.2. Central Tachi and Southern Yawelmani and Hometwoli

Besides Chawchila, I selected, for comparison with far northern Chulamni, first Tachi, from the northern end of Tulare Lake, more or less central in the total Yokuts range; and two dialects from the far south, namely Yawelmani from Kern River near Bakersfield, as another representative of the Valley moiety, and then Hometwoli of Buena Vista Lake, as the seemingly most divergent representative of the Foothill moiety of Yokuts.<sup>4</sup> Actually, in an air line, Hometwoli was practically the same distance from Chulamni as was Yawelmani. From the Chulamni near Stockton up the San Joaquin to where the Chawchila lived around the mouth of the river named after them, was nearly 100 miles by map; from there to the Tachi at the occasional overflow outlet of Tulare Lake, 50 to 60 miles; from there to the Yawelmani where Kern River begins to divide, 70 or 75; and from the Tachi to the Hometwoli on Kern Lake, some 80 to 85 miles air line. The Yawelmani and Hometwoli were adjacent.

##### 433.3. Cognate Percentages and Geography

In making the comparison, I classified forms as (1) "cognate in appearance," (2) "noncognate," and (3) "dubious" in cases where a common origin seemed possible, but appeared about as unlikely as likely. These doubtfuls I counted once as cognate, the next time as not. They constituted less than 5 per cent of the cases.

The percentages of cognates among stems of the same meaning were as follows among the five dialects:

	<u>Chaw</u>	<u>Tach</u>	<u>Yawe</u>	<u>Home</u>
Chulamni	56	56	57	42
Chawchila		80	78	54
Tachi			88	61
Yawelmani				52

However, 17 of the 67 glosses had no recorded Chawchila forms, and I recalled how corresponding Athabascan vocabularies compared by Hoijer for their cognate retention rates proved to have these rates affected by size of the word list (Kroeber, *Ethnographic Interpretations* 7-11, 1959, p. 242). The same might hold here; so I threw out all forms unrepresented by meaning equivalents in Chawchila. This was on the ground that a strictly uniform sample might give truer results than a

<sup>4</sup>Hometwoli and the two other dialects of the Buena Vista group were actually spoken in the swampy tulares of the flat valley bottom: "Foothill" is here a linguistically classificatory term, based on the fact that other groups of this moiety characteristically dwelt in the foothills of the Sierra Nevada.

larger but variable one. Here are the percentages of shared cognates on this revised basis of only 50 forms,<sup>5</sup> which I regard as probably more reliable than the preceding computation:

Cognate Percentages, n = 50, No Omissions

	<u>Chaw</u>	<u>Tachi</u>	<u>Yawe</u>	<u>Home</u>
Chulamni	49	50	56	48
Chawchila		78	74	56
Tachi			84	60
Yawelmani				54

Several specific conclusions as to dialect relations emerge from this tabulation.

1. The nearly 100 miles between far northern Chulamni and the nearest "northern" dialect for which there is a comparable word list, are determinative: Chulamni is set off among the five dialects as having the largest percentage of noncognates. With both Chawchila and Hometwoli its noncognates outnumber its cognates.

2. Chulamni affiliations are indeed with the Valley Division more than with the Foothill, but by so slender a margin as to be less significant than its apartness due to its far northern position in Yokuts.

3. The three highest percentages are those between Chawchila, Tachi, and Yawelmani. These validate the Valley Division as a significant natural group, but only over part of the San Joaquin Valley.

4. Hometwoli has been previously stated to be the most divergent of known Foothill Yokuts dialects, on the basis of the highest percentage of stems peculiar to it. This result is confirmed by the present count; but nevertheless, Hometwoli stands apart from general Yokuts a little less, seemingly, than Chulamni in its far northern remoteness. Cognate retention is about the same for Chulamni and Hometwoli, nearly 250 miles apart, as for Chulamni and Chawchila, barely 100 miles apart.

5. In "Ethnic Spreads" in *Ethnographic Interpretations*, 7-11, 1959, I suggested that Yawelmani might have pushed relatively recently into its extreme southern position within the Valley Division, wedged in between the Buena Vista (Hometwoli) and Poso Creek Foothill groups. This inference tends to be confirmed by two features in the present calculation. First, Yawelmani has a higher ratio of cognate retention (56) with Chulamni than the intervening Tachi (50) and Chawchila (49) have with Chulamni. Second, Hometwoli and Tachi share 60 per cent of cognates although two or three dialects intervened, but Hometwoli shares only 54 per cent with Yawelmani, which in the early

<sup>5</sup>The fifty meanings, with their recorded Chulamni forms, are: 1 yet<sup>c</sup>; 2 pono; 3 còpin; 4 tsòwots; 5 ònacwil; 6 man polum; 7 woman xaxat; 8 girl kàts; 9 old man wòwitc; 10 old woman watcatc; 11 father nopóp; 12 mother i<sup>o</sup>ta; 13 head òlò; 14 hair dòlus; 15 ear tuk; 16 eye sisa; 17 nose tinik; 18 mouth sama<sup>o</sup>; 19 tongue talàxil; 20 tooth tèli; 21 hand wokil; 22 belly hocil; 23 breast tamac; 24 knee pucun; 25 foot dadát; 26 blood pāyax; 27 liver dip; 28 house ò; 29 sky òipni; 30 sun suyón; 31 star tsayátac; 32 day laki; 33 night toyin; 34 rain ce<sup>o</sup>él; 35 fire hòtol; 36 smoke mutuk; 37 ashes hitel; 38 water ilik; 39 deer talàxil (homonym of 19, tongue; if there is an error, it is in 19, the prevalent form of which is something like talxat; talàxil for deer is corroborated by two other far northern Yokuts occurrences); 40 jackrabbit èpil; 41 ground squirrel sitkil; 42 large ma; 43 good otoi; 44 who hawil; 45 eat xatka; 46 drink ukúnka; 47 run lihímka; 48 dance ya<sup>o</sup>úh; 49 sleep wò<sup>o</sup>iyak; 50 see tse<sup>o</sup>ka.

historic period was adjacent to it. In fact, distant Chawchila with 56 per cent of retentions surpasses Yawelmani in its sharing of cognates with Hometwoli. All this suggests that the Yawelmani position near Bakersfield was recent (although pre-mission), and that its former position and affiliations may have been chiefly north of Tachi.

6. More generically, it is clear that geographical position is a strong influence on cognates shared. Tachi is in the geographical middle of the five dialects. It not only shares the maximum percentage (with Yawelmani), but it also has the highest mean of sharings, 68. Yawelmani is, however, so close to Tachi as to suggest that the separation of the two was relatively recent, when the Yawelmani moved southward as just said. Chawchila has largely kept the same cognates, 78 and 74 per cent shared with Tachi and Yawelmani, whereas the figure between these two is 84, and all other interrelations are 60 per cent or below.

This leaves Chulamni in the far north, and Hometwoli, as far south as Yawelmani but of the contrastive Foothill moiety, as the most divergent of our five dialects. Chulamni is slightly the more aberrant of the two, as regards cognates, with a mean percentage of 51 as against 54.5 for Hometwoli. This would mean that greater absolute distance (normally also more likely to involve increased alien contacts) has in the long run been a larger influence in Yokuts interdialect variation away from original sharing of cognates of the same meaning, than appurtenance to different grand divisions or moieties has been. The Foothill and Valley divisions were set up in 1907 mainly on the basis of phonetic and morphological features, which are numerous enough to keep the classificatory distinctions valid; but lexically, the Foothill-Valley dichotomy is now shown not to hold consistently, since Chulamni is structurally of Valley affiliation, like three of the other dialects here considered, yet shares fewer cognates with two of them than does Foothill Hometwoli: 49 against 60 with Tachi.<sup>6</sup> The high Tachi-Hometwoli percentage seems explicable by the fact that both these groups, and only they of the five, have long been coresidents of the same environment, the "tulares" surrounding lakes. Part of the 60 per cent cognates may be old retentions due to contacts within the environment.

#### 433.4. A Glottochronological Adumbration and Comparison

The selection of items in the present comparison of the five dialects was made on the basis of no gaps in the data compared; but it happens to come out with a character not very different from half of a basic 100-word list for glottochronological use. I should guess that so far as there is a difference in the kind of words, my fifty would be likely to have the higher retention rate and slower change. At any rate, for what they may be worth tentatively, here in table 1, below, are the time periods since separation corresponding inversely to the shared cognate percentages as tabulated above. The retention rate given in the first column of figures is that actually found for the 50 meanings. At an assumed 81 per cent retention rate per millennium as between mother and daughter language, which yields 66 per cent retention as between

<sup>6</sup>The one exception is slight: Chul-Yawe 56 per cent Home-Yawe 54 per cent, and is explained by an otherwise indicated recent migration south of Yawe.

TABLE 1

Glottochronological Adumbration, from a 50-word List, of Times Elapsed Since Separation of Five Yokuts Dialects

Pairs of Dialects	Percentages of Cognates Actually Retained	Time Lapses in Years if Retained = 81/66 per cent per 1000 years
Tachi-Yawelmani	84	420
Tachi-Chawchila	78	600
Yawelmani-Chawchila	74*	725*
-----	66	1000
Tachi-Hometwoli	60	1230
Chawchila-Hometwoli	56	1395
Yawelmani-Chulamni	56	1395
Yawelmani-Hometwoli	* 54	1485
Tachi-Chulamni	50	1575
Chawchila-Chulamni	49	1630
Chawchila-Hometwoli	48	1680

\*1000 years if rate = 86/74 per cent.

sister languages, the years elapsed since the separation of each pair of dialects are computable as given in the second column of figures. But an assumption, as per Swadesh's later estimate, of the mother-daughter retention being 86 per cent and that between sister idioms  $.86 \times .86 = 74$  per cent, the times elapsed since separation would be greater, as shown in the last column.

I do not submit these as positive glottochronological computations. My list is only half as long as the shorter of the two accepted glottochronological lists, and it is of different composition, based on the common denominator of what happened to be preserved in the incomplete record of Chulamni, Chawchila, and three other dialects, whereas the glottochronological list is selected in advance as presumably the most culture-free that can be compiled.

Moreover, I do not believe that the times here found (by application of glottochronological formula) as having elapsed since separation of the dialects, are actually true times. They seem too long, considering that the Yokuts idioms are more in the nature of dialects than of languages. For instance, they extend back into a computational antiquity greater than do the Athabascan idioms, many of which are universally reckoned as separate languages, and which have spread over an enormous area, many times greater than Yokuts territory.

The overly long Yokuts separation times here computed appear to have the following explanation. The numerous Yokuts tribelets being crowded into a compact, unitary area in which they kept in much direct or indirect reciprocal contact with one another, thereby tended to keep each other relatively constant phonologically (as well as morphologically), with a minimum of attrition or erosion of forms; whereas the alternative process, of replacement of stems by radically new, noncognate ones coming to fill the same meaning slots, was much less slowed up, or in fact was perhaps stimulated by the intimate contacts between largely intelligible dialects.

I am not maintaining that this is what happened, but that it looks as if it might have happened. The forms in a comparative Athabascan vocabulary like Hoijer's (1956, *IJAL* 22:219-232) seem more battered out of shape from their original forms by wear and tear than Yokuts forms. On the contrary, when it comes to re-

placement of stems by totally different ones—semantic shifts and tip-overs as against phonetic attrition—the figures show that this has been greater in Yokuts than in Athabascan. The lowest retention rates in Hoijer's 1956 Athabascan study are Mattole-Kutchin 58 per cent, Hupa-Kutchin 60 per cent, Hupa-Lipan 60 per cent—all widely separated pairs and constituting only 3 out of 105 interrelations. The five Yokuts tribelets here dealt with have only 10 interrelations, but 6 of these are of percentages below the Athabascan minimum of 58 per cent; namely 56, 56, 54, 50, 49, 48 per cent.

#### 433.5. Discussion

Where the Yokuts type of change obtains, with free and abundant borrowing, substitution, and interchange of discrete stems between population groups which are in close association and prevalent intermarriage with one another, it would seem that the glottochronological rule of counting cognates versus noncognates, would automatically register high change, low retention rates, and old separations, even if phonology and grammatical structure evinced only moderate alterations. With the contrastive Athabascan type of wide geographic scatter, considerable phonetic attrition, but strong retention of cognates, the times elapsed since separation would tend to be short. As we do not have historical documents to show us directly how long the durations actually were, we are driven—by reasoning only, I admit—to assume that, with Yokuts-type distributions and relations of societies, our calculations would tend to eventuate in time lapses longer than actuality, and that with Athabascan-type distributional situations the computed durations would tend to emerge shorter than they had been in actuality. This difference would account for the anomaly of the "dialects" of Yokuts "tribelets" showing earlier computed separation times from one another than the "languages" of Athabascan "tribes." In the absence of direct documentation, we can only estimate how much distortion of cognate-retention-rate and of times elapsed may reasonably be allowed in each direction. Perhaps a reduction of the "computed" Yokuts 16-17 centuries<sup>7</sup> by three, and an increase of the

<sup>7</sup>Retention of 81/66 per cent per millenium; if the 86/74 per cent rate is adopted, the correction would be much heavier.

Athabascan 12-13 by two (Hymes, *IJAL* 23:291-297, 1957, suggest three on other considerations), would be reasonable. This correction would bring the just "computed" Yokuts point of separation down to 13-14 centuries ago, the Athabascan up to 14-15—or approximately the same duration, but with the slight difference at least pointing in the expectable temporal direction.

What would do most to take us out of the area of outright guessing at corrections in situations of this sort would be comparison of documented and dated changes and retentions in say Germanic, Romance, Slavic, or Arabic under conditions respectively of (1) multiple dialectal differentiation among provincially stable populations and of (2) moving or separated populations some of whose fractions wholly lost contact with others; preferably, in both cases, in situations where influence of written, court, or prestige language was at a minimum.

Of course this whole consideration is merely an approximation to glottochronological tests, because the lists used differ in length and content. I am in fact not trying to prove anything specifically glottochronologically datable, about either Yokuts or Athabascan, but merely using somewhat comparable data from the two stocks as evidence in problems of method.

In the next chapter (500) I shall return to Yokuts and Athabascan in a context that aims at a better understanding of what underlies the attempts to compute absolute time spans, namely the retention behavior of stems of different semantic class. This is a general problem. There my data will point the other way, to similarities between Yokuts and Athabascan of cognate retentions according to meaning class, but without even half-attempts at computing time spans and dates.

#### 440. REVISED CLASSIFICATION OF YOKUTS

In 1907 I published a classification of Yokuts dialects (UC-PAAE 2:309-346) which in many respects is still valid, though in 1925 (*Handbook*, pp. 481, 484), I cut one of the groups of 1907 into two subgroups, and in 1959 I added at least one new group, a "Far Northern" one. As will be seen, I now introduce further refinements. I cannot promise that even this revision will be final, because the full sound correspondences in Yokuts have not yet been systematically worked out. The 1907 classification was based on grammatical forms and frequency of cognate retentions or displacements, plus recognition of a few of the grosser or more obvious sound shifts.

In the main this linguistic classification corresponded with a geographic alignment, that of primary habitat either on the floor of the Great or Central Valley or in the foothills. I therefore used "Valley" and "Foothill" as the names for the primary linguistic divisions or moieties. For the linguistic situation this dichotomous nomenclature was not strictly exact, for two reasons.

First, in the far south the speakers of a group of three dialects, whose main affiliations were obviously with those of the foothills to their north, actually centered their residence in the floor of the Great Valley, along the minor lakes and sloughs south of Tulare Lake, while also owning and utilizing the foothills to the south, though these are no longer part of the Sierra Nevada.

Second, as one proceeded from south to north, the phonetic and morphological differences between the dialects spoken in the foothills and on the Valley floor grew less and less, until when the San Joaquin River was reached, the dialects spoken where it flows through the hills showed more "Valley type" than "Foothill type" traits. Here then, among the Chukchansi and their neighbors, Valley-type speech had penetrated into the actual foothills—much as in the Yokuts far south an accentuated Foothill type of speech had come to occupy the end of the Valley floor. North of the Chukchansi, there are no more Yokuts hill tribes: the Yokuts here are all actually in the plain of the Valley, the foothills being in possession of Miwok.

On account of these two minor discrepancies—of the Tulamni and their cousins speaking Foothill type while living in the Valley in the far south, and the Chukchansi with their allies speaking Valley type while actually resident in the foothills in the far north—it might have been better if I had not employed the physiographic terms for the primary linguistic divisions. Yet it was natural to do so, and I do not to this day know any other designations I might have used without being arbitrary.

With these qualifications, I now proffer the 1960 classification, subject to presumably minor alterations from sound correspondences when these shall be available.

TABLE 2

## Classification of Yokuts Tribelet Dialects

Group	Based on Vocabularies	Based on Allegations
Foothill Type Division or Moiety (in order south to north)		
Buena Vista (Lakes and sloughs in Valley floor south of Tulare Lake and in foothills to south)	Tulamni 1*, Hometwoli 2	Tuxoxi
Poso Creek	Palewyami	Kumachisi
Tule-Kaweah	Yawdanchi 4, Wükchamni 5	Bokninwad, Gawya, Yokod (Badwisha synon. or Shosh.)
Kings River	Chukaymina 6, Michahay 7, Ayticha 8, Choynimni 9	Entimbich, Toyhicha, Kocheyalı (synon.?)
(Intermediate to Foothill and Valley types in hills)	(Gashowu 10)	
Valley Type Division or Moiety (in order north to south)		
Far northern Valley Group A on lowest San Joaquin	Chulamni, 1959 "A" (= Cholovomne, Yachikumne)	Not determined, but much of the Northern Valley floor was Miwok, such as the Tawalimni or Tuolumne
Northern Valley Group B on San Joaquin in Valley below Fresno River	Chawchila 14	Hewchi, Noptinchi
Northern Valley Group C on up-stream plains along San Joaquin	(no vocabularies recorded)	Pitkachi, Wakichi, Hoyma
Northern Valley Group D actually living in San Joaquin foothills	Chukchansi 11, Kechayi 12, Dumna 13	Dalinchi, Toltichi (?)
(Intermediate to southern Valley type D and Kings River Foothill group; living in hills)	(Gashowu 10)	
Southern Valley Group A on Kings River and Tulare Lake	Wechihit 15, Nutúnutu 16, Chunut 18	Wowol (originally on west side of Lake, later southeast), Apyachi
Southern Valley Group B on lower Kaweah to Kern rivers	Wo'lasi 19, Choynok 20, Yawelmani 21	Wimilchi, Telamni, Koyeti

\*Numbers following dialect names are as in tabulated listing in 210.

#### 441. LINGUISTIC CRITERIA DIFFERENTIATING MOIETIES AND GROUPS

I recapitulate here, from my *Yokuts Language* (1907), page 346, the more conspicuous features distinguishing the Foothill and Valley types of speech, and the principal groups within them.

The grosser phonological differences are three, and they separate the three more southerly Foothill groups from both the Valley moiety and the Kings River Foothill group.

The two mixed vowels ü, ö, (ĩ, ě) occur only in Buena Vista, Poso Creek, Tule-Kaweah Foothill, vocabularies 1-5 in 210. Theoretically, these vowels are probably part of the proto-Yokuts phonemic system, merged

with i, e in all other dialects. (As to possible borrowing from Shoshonean, see 1907, p. 346, and above, 421, footnote 1.)

The palatal nasal ŋ (ñ in my 1906 recording) has the same distribution.

In Tule-Kaweah Foothill (vocabularies 4, 5), 1 is consistently replaced by d.

The following verb suffixes characterize the same three southern Foothill groups, plus the Kings River group of Foothill type: -o (stem), imperative; -ji, -ac, preterites; -al/ad, continuative (except on Kings River).

On the contrary, all dialects of the Valley type (11-21) express the imperative by -k'a, a preterite by -an; and they, plus Kings River Foothill (i.e., dialects 11-21, 6-9, 10), show a continuative -xo.

The possessive pronouns evince a similar line-up. For "his," all Valley-type dialects plus Gashowu (dialects 10-21 of 210) have amin; the Kings River Foothill group (6-9) has imin; the Tule-Kaweah group (4-5) has

an; the form in the Buena Vista and Poso Creek groups (1-3) has not been ascertained. For "my" all Valley plus Kings River and Tule-Kaweah Foothill (4-21) have min; Buena Vista (1-2) shows mik, and Poso Creek (3) gen.

## 500. PROBLEMS OF COGNATE REPLACEMENT

This chapter is not primarily directed toward elucidation of Yokuts or its dialects, but uses Yokuts comparative data to help throw light on a general linguistic problem. This problem concerns the different resistance presented through time by various classes of words, and words of various groups of meaning, to replacement by new words of different origin; in short, by noncognate forms. Or, to put the problem positively, in what classes of meanings is it most likely that a stem will continue to be used with the same meaning while preserving a recognizable identity? Slow, gradual erosion of phonetic form is disregarded as irrelevant in this connection, which concerns only the continuity of a given stem with a given meaning. The problem involves a heavy semantic component which is held constant in each instance. The question is then asked, in what ranges of meaning are new stem forms less likely or more likely to replace existing ones?

I see such an inquiry as possessing an intrinsic semantic interest of its own. It has also a specific bearing on the basis of all glottochronological study, whether this be directed to the determination of absolute time elapsed since separation of languages, or to the relative duration which is implied in phylogenetic classification. The inquiry indeed bears on the validity of lists of basic or most nearly "culture-free" vocabulary such as are desired in glottochronological computations. Of course, a generic problem of this kind can not be answered by examining conditions in Yokuts or in any one other language. But it is conceivable that Yokuts might more or less agree in its diachronic habits with many other languages and that usual trends or expectancies might be discoverable in these many.

The Yokuts vocabularies in this volume provide a favorable opportunity for such a study. There are twenty-one, and most of them are samples containing from 200 to 300 terms. They were collected to cover the same inventory—in fact this inventory was a good deal like a modern "basic list" for glottochronological purposes. They were collected by one person, and their phonetic or semantic deficiencies are therefore at least consistent. All the twenty-one dialects have a great deal in common, but most of them are also perceptibly different, not only in their sounds but also in possessing some noncognates for the same meanings.

When I elicited these vocabularies from Yokuts speakers more than fifty years ago, nobody of course had any idea of computing centuries since separation of languages. I did, however, recognize that a general problem was involved, and made some references to it in the third part of my *Yokuts Language* of 1907 (see pages 322-324). Decades passed, and no one, except Voegelin, seemed interested in the data or in my remarks on them; and I did not pursue the matter. However, I did not relinquish the problem, and with the

wide spread of interest in glottochronology, the fuller data may attract more attention. At any rate, they are my contribution to the comparative problem, which in turn is one facet of the much greater set of problems—rather unfashionable recently—that are concerned with the relations of linguistic forms and meanings.

Briefly, the procedure is to assemble in one list all the meanings that are obviously represented in Yokuts by cognate forms of a single stem; then those which show two different stems; then those showing three; and so on. Each successive list thus will consist of those meanings whose Yokuts equivalents are increasingly variable as regards stem. Classes of meaning which in Yokuts are represented by widespread and long-enduring stems would therefore be set apart from those classes in which different Yokuts forms tend to crowd one another out. What the forms actually are in Yokuts is available in the big tabular vocabularies: here I cite only their English meanings, in the order in which they appear in the vocabularies. The first numeral value given after the meaning is always the number of Yokuts forms of that meaning available in the vocabulary—twenty-one at maximum, often less. If the meaning shows only one stem—that is, if it is of the first class—there is nothing more. If, however, the item is represented by two or more different stems, the total occurrence is followed by the frequency of these stems, separated by hyphens. Thus in the two-stem group, breast (chest) is followed by 21, and this by 20-1; but heart is: 21 12-9. For breast, the Yokuts dialects use one stem almost unanimously, but there is one liberum veto; for heart, there are two stems of nearly equal distribution. Sometimes there are lacunae in the vocabularies; thus: rib 10 8-2. The three-stem group is represented by bow 21 16-3-2 with one stem strongly preponderant, and again by rock 21 12-8-1 with two stems nearly equal in frequency and a third rare.

In general, cognates can readily be distinguished from noncognates in Yokuts by inspection. But sometimes it would be difficult to decide, without reconstructing original forms through sound-shift comparisons—and these have not yet been made. I have put such items into a doubtful group called "Two Stems or One," "Three Stems or Two," etc. I have also underlined those of the less frequent stems that may prove to be cognate to the immediately preceding more frequent one. Thus, blackbird 16 12-3-1 means that the second form, occurring 3 times, may be cognate with the first and most frequent one. Raccoon 17 12-1-4 means that the stem represented by "1" may be cognate with the stem of the "12" forms. Tongue 21 17-2-2 means that both the rarer stems may be cognate to the common one; worm 15 6-5-4, that the last form may be cognate to the second, but not to the first. I have used <sup>m</sup> to denote onomatopoeia.

Here follow the lists.

510. NUMBER OF YOKUTS STEMS CORRESPONDING  
TO BASIC MEANINGS

## 510.1. Single Stem

One 21	Sugar pine 10
Two 21	Yellow pine 6
Three 21	Digger pine 6
Four 21	Buckeye 17
Five 21	Manzanita 17
Six 20	
Seven 21	Puma 20
Eight 21	Brush rabbit 9
[Nine has 4	Skunk 21
stems, q.v.]	Polecat 15
Ten 21	Beaver 14
Ear 21	Condor 17
Eye 21	Maggie 18 <sup>m</sup>
Eyebrow 21	Bluejay 18 <sup>m</sup>
Nose 21	Pigeon 9 <sup>m</sup>
Bone 21	Yellowhammer 13 <sup>m</sup>
Tooth 20	Roadrunner 11 <sup>m</sup>
Mouth 19	( <sup>m</sup> onomatopoeic)
Teat 17	
Tears 17	King snake 11
Lips 11	Gopher snake 7
Beard 11	
Navel 11	Fish (generic) 21
Sinew 10	Salmon 7
Feces 8	Trout 8
Urine 8	
Pubic hair 5	Spider 13
	Head louse 18
Sweathouse 17	
Balsa, boat 18	Far 18
Road 7	
	Who 19
North 20	What 14
South 19	Where 18
	Greeting 11
Night 21	
Hail 12	Yes 21
Fire 21	
Water 21	Drink 21
	Stand 17
Leaf 16	Laugh 18

## 510.2. Two Stems or One

(1, 2, or 1a, 1b)<sup>a</sup>

Liver 21 16-5	Datura 8 5-3
	Fox 17 16-1
Large plains oak 10	Mountain quail 12 11-1
7-3	
Live oak 10 8-2	Give 18 14-4

<sup>a</sup>[These designations (1, 2, 3 or 1a, 1b, 2 or 1a, 1b, 1c), and others of the same type in the following sections, were not explained in the manuscript as left by Professor Kroeber, but their function clearly is to indicate the alternative kinds of cognatic relationship presumed to exist among the stems for a given meaning. Separate numbers (such as "1, 2, 3") indicate that there are three stems for a given meaning, and that none is taken as cognate, known, probable, or possible, with any of the others. There are taken to be as many etymologically independent stems as there are numbers cited. Where the same number is repeated with different postposed letters

## 510.3. Two Stems

\*(B > A/3)<sup>b</sup>

Eleven 8 7-1	Moon 19 18-1
Twelve 7 5-2	Star 21 20-1
Hundred 4 3-1	*Whirlwind 10 6-4
	Smoke 21 18-3
*Mother 17 12-5	Salt 16 15-1
Chief 18 16-2	
	Pine nut 6 5-1
*Head 20 11-9	Buttonwillow 10 8-2
Forehead 20 18-2	
Chin 20 17-3	Dog 21 19-2
Finger 6 5-1	Antelope 18 16-2
Nail 18 17-1	Cottontail 20 19-1
Breast 21 20-1	*Weasel 16 9-7
*Heart 21 12-9	Otter 13 12-1
*Blood 21 11-10	
Rib 10 8-2	Bald eagle 14 13-1
Fat 16 15-1	Prairie falcon 15 14-1
*Testicles 8 4-4	Ground owl 13 9-4
*Vagina 9 5-4	Raven 19 16'-2' <sup>c</sup>
*Horns 18 11-7	*Meadowlark 15 9-6
Tail 18 17-1	Hummingbird 16 13-3
	Quail 18 13'-4'
*Shade, ramada 16 10-6	Woodpecker 14 13-1
Arrowhead 20 19-1	Crane 17 16-1
Mortar, portable 10	Wild goose 19 18-1
8-2	Mud hen 14 12-2
Name 17 14-3	Lake trout 16 15-1

(such as "1a, 1b, 2," or "1a, 1b, 1c") this is to indicate some degree of likelihood that the stem-shapes sharing the same number are etymologically connected. Again, there are as many certainly independent stems as there are numbers cited (so that "1a, 1b, 2" indicates a case of "Three or Two Stems" in which the first pair (1a, 1b) may be related, and "1a, 1b, 1c" indicates a case in which there is some possibility that all three are related; and correspondingly so for the listing in the other sections. D. H. H.]

<sup>b</sup>[The formulae of the type B > A/3, here and at the head of other sections ("Three Stems," "Four Stems," etc.) were not discussed in the manuscript as left by Professor Kroeber. Their function seems clearly to be to indicate that for particular semantic items, of those represented by more than one stem, the less frequent of the stems is (are) frequent enough for the degree of internal (historical) diversity to be significant, or at least interesting. In other words, "A" stands for the first, numerically predominant stem for the meaning in question, "B" for the second most frequent stem, "C" (where pertinent) for the third most frequent stem, etc. In the case of "Two Stems" vs. "Two Stems or One," a semantic item is starred if the frequency of B is greater than one-third that of A, and is not starred if the frequency of B is only equal to, or less than, one third that of A; and correspondingly for other cases. D. H. H.]

<sup>c</sup>[Primes throughout this list (as here, "Raven 19 16'-2') indicate that where a particular stem is not the exclusive form in a dialect the dialect is not counted as part of the total for that stem and the stem's occurrence in that dialect is indicated only by the prime. The occurrence of a prime (however many) counts once toward the total number of dialects for a given meaning. Thus, in the class of "Two Stems," for the meaning Raven stems of the type *xotoi* are found exclusively in 16 dialects, and stems with an element of the type *gok-* in two. In addition, stems of *boty* types are found together in one dialect, Yawelmani. Hence the numerical summary for Raven is 19 16'-2'. D. H. H.]

Flea 16 15-1  
 Yellowjacket 11 10-1  
 \*Alive 16 11-5  
 Dead 19 16-3 kill

Up 18 17-1  
 Kill 18 15-3 dead  
 \*Sit 18 9-9  
 Walk 20 19-1

510.4. Three or Two Stems  
 (1, 2, 3 or 1a, 1b, 2 or 1a, 1b, 1c)

Tongue 21 17-2-2  
 \*Shoulder 20 10-8-2  
 Anus 10 6-3-1

Raccoon 17 12-1-4  
 Blackbird 16 12-3-1

Rain 19 7-6-6

Grasshopper 14 12-1-1  
 Worm 15 6-5-4

Wolf 16 14-1-1

510.5. Three Stems  
 \*(B + C > A/3)

Young man, youth 9 7-1-1  
 \*Widow 14 6'-4'-3  
 Father 17 14-2-1  
 \*Shaman 20 14-4-2  
 Friend, partner 17 13-2-2

\*White oak 7 5-1-1  
 Wildcat 21 18-2-1  
 Deer 21 18-2-1  
 \*Ground squirrel 21 12-6-3  
 Gopher 17 13-3-1  
 Badger 18 16-1-1  
 \*Mouse 14 9-3-2

Hair 21 14'-5'-1  
 \*Throat 9 5-3-1  
 Ankle 15 13-1-1  
 Penis 8 6-1-1

Eagle 20 16-2-2  
 Hawk sp. 17 13-3-1

Bow 21 16-3-2  
 Tobacco 21 18-2-1

\*Rattlesnake 21 14-6-1

East 20 18-1-1

\*Good 21 15-3'-2'  
 \*Bad 21 15-4-2  
 \*Much 18 10-6-2  
 \*All 17 8-7-2

\*Day 19 11-6-2  
 Charcoal 21 18-2-1  
 \*Sand 16 8-7-1  
 \*Mountain 21 10'-8'-2  
 \*Rock 21 12-8-1  
 (Fire)wood 21 18-2-1  
 \*Brush 11 5-5-1

Down 18 15-2-1

\*Eat 21 10-6-5  
 \*Talk 18 10-6-2  
 \*Cry 18 13-3-2

510.6. Four or Three Stems  
 (Underlined perhaps cognate to preceding)  
 \*(B + C + D > A/2)

\*Girl 14 7-3-3'-0'

\*Bird (generic) 17 7-1-6-3

\*Arm 18 6-6-5-1

\*Large owl 16 8-1-6-1

\*Hand 19 8-7-3-1

\*Crow 19 14-2-2-1

\*Belly 21 13-4-3-1

\*Fly 19 9-4-5-1

\*Skin 18 8-7-2-1

\*Butterfly 12 5-5-1-1

\*Saliva 20 8-5-6-1

\*Sweat 16 10-4-1-1

\*Black 20 11-3-4-2

Ashes 20 15-3-1-1

\*Small 21 7-6-6-2

\*Black bear 15 8-2-3-2

\*Today 17 6'-6'-1-3

\*Wood rat 13 7-3-2-1

\*No 21 11-7-2-1

510.7. Four Stems

\*(B + C + D > A/2)

\*Nine 21 10-8-2-1

\*Wind 20 10-8-1-1

\*Person 21 11-5-3-2

\*Thunder 17 10-4-2-1

\*Man 21 11-5-4-1

Lightning 12 9-1-1-1

Old woman 20 17-1-1-1

\*Earthquake 13 7-3-2-1

Child 21 14'-2'-2-2

\*Ice 17 9-6-1-1

Earth 21 16-2-2-1

\*Cheek 16 6-5-3-2

\*Tree (generic) 13

\*Knee 20 12-4-3-1

7-3-2-1

\*Foot (leg) 21 12-6-2-1

\*Willow 16 7-5-2-2

House 21 17-2-1-1

Grizzly bear 20 17-1-1-1

Arrow 21 17-2-1-1

Coyote 21 14-5-1-1

Awl 16 11-2-2-1

Disk beads 16 12-2-1-1

Sucker 18 15-1-1-1

\*Mortar, bedrock 14

7-5-1-1

\*Run 21 11-7-1-2

Pestle 19 13-3-2-1

\*Sing 19 9-5-4-1

\*Meat 12 5-3-3-1

\*Sleep 21 11-8-1-1

\*Lie 15 9-4-1-1

510.8. More than Four Stems

Five or Four Stems. Woman, Brain, Jack rabbit, Red, Tomorrow, Yesterday.

Five Stems. Old man, Neck, Thigh, Moccasin, Skirt, Pipe, West, Sun, Cloud, Snow, World, Tree squirrel, Turkey buzzard, Water snake, Frog, Turtle, See.

Six or Five Stems. White.

Six Stems. Plain, Elk.

Seven or Six Stems. Large.

Seven Stems. Back, Calf (lower leg), Sky, Grass.

Eight Stems. Ghost.

510.9. Summary

On addition, there are 256 slots of meaning, to which there correspond from one to eight apparent stems each, a total of about 700 stems, if we count in all possible apparent stems. That is, "two or one" is reckoned as two stems, "three or two" as three stems, and so on. In addition, since all "stems" rest merely on inspectional appraisal, a good many of the estimated number of stems will be "in error," that is, will differ from what it would have been found to be if regular reconstructions had been made on established recurrent sound correspondences. However, the dialects are similar enough that most appraisals made of forms as being cognate or distinct are likely to be sound. That is, the total number of actually, historically, distinct stems will probably turn out ultimately to be not far from the 700 estimated: more probably, I would guess, somewhat less than that number rather than above it, though the degree of accuracy or error would presumably average about the same proportionally for each class or group of meanings.

The distribution is as follows:

<u>Stems per meaning</u>	<u>Frequency</u>		
1	67	67	74*
2 or 1		7	
2	55	62†	64
3 or 2		9	
3	37	46	56
4 or 3		19	
4	30	49	36
5 or 4		6	
5	17	23	18
6 or 5		1	
6	2	3	3
7 or 6		1	
7	4	5	4
8	1	1	1
	213	43	256
		256	256

\*67 + 7, etc.

†55 + 7, etc.

520. DISTRIBUTION BY GROUPS OF MEANING

By groups of meaning, including functional classes of words, the distribution is:

Meaning groups	Stems								Total
	1	2	3	4	5	6	7	8	
Count	9	3	-	1	-	-	-	-	13
Persons	-	2	5	5	2	-	-	1	15
Body	16	15	7	9	3	-	2	-	52
Artifacts	3	4	2	7	3	-	-	-	19
Directions	2	-	1	-	1	-	-	-	4
Nature	4	5	7	7	4	1	1	-	29
Plants	6	5	2	2	-	-	1	-	16
Mammals	5	6	8	4	2	1	-	-	26
Birds	6	12	3	3	1	-	-	-	25
Reptiles, fish	5	1	1	1	3	-	-	-	11
Invertebrates	2	2	2	2	-	-	-	-	8
Adjectives	-	2	4	2	1	1	1	-	11
Interrogatives	4	-	-	-	-	-	-	-	4
Adverbs	2	1	1	2	2	-	-	-	8
Verbs	3	4	3	4	1	-	-	-	15
Total .....									256
(Total animals	18	21	14	10	6	1	-	-	70)

It is evident that the number of apparent stems per meaning is quite variable according to word class. This is even clearer when the word classes are ranked in order of their average number of stems.

	<u>Number of words</u>	<u>Word classes</u>	<u>Average number of stems</u>
1	4	Interrogatives	1.0
2	13	Count	1.5
3	{ 16 4 52 70 15	Plants	2.3
		Directions	2.5
		Body	2.5
		Animals	2.5
		Verbs	2.7
4	{ 19 29 8	Artifacts	3.2
		Nature	3.3
		Adverbs	3.4
5	{ 15 11	Persons	3.8
		Adjectives	3.8

The largest break between averages is that between numerals (count) and plants, where the interval is .8. Between interrogatives and numerals, and between verbs and artifacts, we find an interval of .5, and an interval almost as large (.4) between adverbs, on the one hand, and persons and adjectives, on the other. If these larger intervals are taken as indications, the classes fall into five groups (the first two of which may be joined for consideration, being followed by the largest break).

Next come three classes of nouns, for plants, body parts, and animals, rather close together with ratios of 2.3, 2.5, 2.5, together with a few directional words, and verbs. I should have expected body parts to have a lower ratio than the two other classes of nouns. If we break up animals into zoological classes, there is a slight divergence. Birds show a stem per gloss ratio of 2.2, invertebrates of 2.5, reptiles and fish of 2.6, and mammals of 2.8 (the latter highest of the group in question). The somewhat lower ratio for birds is perhaps due to many being named onomatopoeically after their calls, which of course are constant per species.

A fourth group has a ratio range from 3.2 to 3.4. This comprises chiefly nouns denoting artifacts and natural objects or phenomena, plus adverbs, some of which relate to position in nature or space.

The fifth group, ratio 3.8, consists of nouns denoting persons, and of qualitative meanings that in English are expressed by what we call adjectives.

#### 521. DISCUSSION

The foregoing is a contribution from Yokuts vocabularies to a problem of general linguistics—how far meaning-classes of words tend to vary in their tenacity of adherence through time to a given recognizable stem. It is clear that in Yokuts the classes vary considerably in their tenacity or conservatism. But this only poses the problem. Progress in its solution will be made in proportion as similar counts are made available from other language families.

Buck's famous 1949 Dictionary of Selected Synonyms in the Principal Indo-European Languages contains a wealth of readily accessible comparable material; but it should be extracted by Indo-European specialists. The Indo-European languages differ much more profoundly among themselves than do the Yokuts dialects; it is obviously much longer ago since they began to diverge from one another. This should bring a relatively higher number of cognate stem displacements; but the relative behavior of word and meaning classes or subclasses is what is most at stake.

In discussing Hoiyer's 1956 "Chronology of the Athapaskan Languages" in my recent Ethnographic Interpretations 7-11 (UC-PAAE 47:3, 1959), I touched on this problem (pp. 255-256, point 6). Just preceding (pp. 251-254), I made a comparative pretrial run with a ten-gloss checklist (dog, bone, ear, eye, nose, sun, water, stone, fire, three) in Athabascan, Mayan, Uto-Aztecan, and Romance. Of these ten, "dog" was cer-

tainly the meaning that had the greatest number of different cognates associated with it in all four of these linguistic families; but "three" stuck consistently to one stem throughout each of the four. The nature and body meanings were intermediate between the animal and the numeral: as between the two, the number of different (seemingly noncognate) stems was somewhat greater for the nature group, but perhaps not significantly so.

Among the four body-part glosses, "ear" showed only one stem in each of the four speech families; "nose" was at the opposite extreme in the body class, with two or more cognates in three of the four families. In Yokuts all four of these body parts were each denoted by a single stem. Variability was not only somewhat greater but more evenly distributed in the nature class; none of the four meanings was represented by only one sure stem in all of the four other families. "Water" had three stems in Uto-Aztecan, a single one in the other families as in Yokuts. "Fire" had two stems in Uzo-Aztecan, a single one in the two other families, as in Yokuts; "stone," three stems in Uto-Aztecan, Maya, and Yokuts, a single one in the others; "sun," five separate stems in Yokuts, two in Athabascan, but one only or probably one in the rest. For the five families compared, the apparent order of stability is highest for "water," next for "fire," then "sun" and "stone"; yet the ranking is close. "Water" has a perfect score for complete stem retention until Uto-Aztecan comes along with three different stems; and "sun" makes a good showing for stability until Yokuts spoils it with five noncognate terms. Such sporadic variability for particular terms in different languages is probably characteristic of world distributions.

It is obvious that there is no slot of meaning which will be protected against displacement of stem by a noncognate, either forever or in all languages. Change is always taking place in living spoken language, and there is no sound nor any morpheme-meaning combination that is impermeable to change. But this does not mean that all parts of a language are changing at an equal rate. Some sounds, combinations, stems, and meanings will be more exposed, others more protected and stable. And while the spots of exposure no doubt sometimes alter with time even within the same language, it would still be expectable that there would be long-term trends of superior stability for certain areas within a language, or that would even be shared by many or most languages. This would be a matter of relative strength of trends, of greater and less stability, as expressible in percentages or proportions. Linguists have not dealt much with such relative proportions, being customarily preoccupied with the sharp forms that language manifests. But the problem is not illogical or useless or difficult when a large enough body of material is made available. And the data just given here are a contribution toward the problem, in the expectation that it will yield results as soon as enough comparable data have been accumulated. The problem has slumbered a long time: the sudden vogue of glottochronology has given it a quickening.

## 530. COMPARISON OF YOKUTS WITH ATHABASCAN

One fairly close comparison can be undertaken now. Harry Hoijer has worked out the sound correspondences for the principal Athabascan or Athapaskan<sup>1</sup> languages, which form the major division of the Na-Dene stock. He has also computed the time of separation of 24 Athabascan languages—Northern, Apachean or Southern, and Pacific Coast, spoken in these separate areas, each of considerable size. For the counts underlying these retention rates and centuries elapsed, he used Swadesh's later or reduced list of 100 terms, somewhat modified as necessitated by environment or by gaps in the available Athabascan data. The separation dates of the Athabascan languages are of course relevant only to Athabascan internal history and classification. But a vocabulary list of 100 basic terms in 24 cognate languages contains evidence also as to the number of stems corresponding to these 100 meanings; and that means we are about to have in hand a mass of evidence parallel to that just discussed for Yokuts. And as Hoijer had already worked out the principal sound shifts of Athabascan, he is in position to decide on cognateness or noncognateness of each pair of forms with unusual assurance.

At the request of H. A. Gleason, Jr., of Hartford, Hoijer furnished him an abstracted form of his list—a de-Athabascanized form as it were—in which, for any slot of meaning, the letter A was entered for all cognate variants of one stem, B for all variants of another stem not cognate with the first, C for a third, and so on. Meanings ran across lines, languages down columns, and the cognates in 2400 forms (only slightly diminished by an occasional gap in the data) were conveniently arrayed in three typescript pages. As a sample, I cite the upper right-hand corner of the table.

<sup>1</sup>Both forms have usage. Athabasca is the standard geographical and political name of a large river, lake, and former administrative territory in Canada. Athapaskan is used chiefly by linguists and ethnologists still adhering at this point to Powell's terminology for North American language families, as based on strict priority of coinage and spelling.

	Kutchin	Ahtena	Tanaina	Ingalik	Koyukon
Ashes	C	C	C	B	A
Bark	A	I	H	B	G
Big	A	A	A	A	A

In this specimen, covering only 5 of the 24 languages, the meaning "ashes" is represented by 3 stems, "bark" by 5, but "big" by only 1. In fact there is only 1 stem for "big" in all 24 Athabascan languages (all A), but for "ashes" the letters run up to H and there are 8 stems, for "bark" from A to N and the separate stems number 14.

Hoijer was good enough to furnish me also with this table, which renders possible a comparison—in fact two comparisons—with Yokuts stem distributions. I will now undertake these two comparisons.

531. FREQUENCY OF COGNATE VARIATION  
ACCORDING TO MEANING CLASSMeaning Class

This is shown in table 3. The second line of column heads, beginning with "24" and ending with "12-7" cites the frequency of the most frequent stem in 5 groups of increasing variability. The lowest line of the table gives the average number of noncognate stems per meaning in each of the same 5 groups of increasing variability. The column farthest on the right expresses the average number of different stems for all words in a meaning class. For instance, the first entry in this column, 5.7, is the mean of 4.58 and 6.88 which are the lowest-row values for the two columns which are represented by one meaning in the group "Persons." (This method of reckoning is slightly inelegant because not wholly precise, but any other method of computation would have been very much more complicated, and with the small numbers dealt with, reliability as to the "truth" of any value obtained would be only approximate anyway.)

TABLE 3

## Athabascan

Meaning classes	1 Stem	2 Stems	3-6 Stems	3-8 Stems	4-11 Stems	Total	Stems per meaning
	24	23(-19)	22-18	17-13	12-7		
Persons				1	1	2	5.7
Body, incl. animals <sup>1</sup>	7	7	7	3	1	25	2.7
Animals	2		1		1	4	3.16
Plants, incl. parts		1	1	1	1	4	4.3
Inanimate nature	1	4	4	4	4	17	4.1
Artifacts		2				2	2.0
Numerals	3	1				4	1.25
Pronouns	2		1			3	1.9
Demonstratives			1	1		2	4.16
Adjectives	1	1	4	4	5	15	4.7
Verbs	8	3	1	5	5	22	3.4
54 nouns, 46 others	24	19	20	19	18	100	
Number of stems per slot of meaning	1.	2.	3.75	4.58	6.88		

If the roughly obtained Athabascan figures for mean number of stems per item in each of the classes are ranked as was done for the Yokuts figures, the result is as follows:

4	Numerals	1.25
3	Pronouns	1.90
2	Artifacts	2.00
25	Body, incl. animals'	2.70
4	Animals	3.16
22	Verbs	3.40
17	Inanimate nature	4.10
2	Demonstratives	4.16
4	Plants, incl. parts	4.30
15	Adjectives	4.70
2	Persons	5.70

The two rank orderings (Athabascan and Yokuts) show certain immediate points of likeness. Numerals are very low in both, persons and adjectives very high. Body terms, animals, and verbs fall together at and a little below the middle of the series. And nature terms have a noticeably higher average than these three. As against these equivalences, there appears the reversal of position of plants and artifacts as between the two orderings. The remaining classes do not easily compare, there being no Athabascan counterpart in this material for the directions in Yokuts, and the others (interrogatives and adverbs in Yokuts; pronouns and demonstratives in Athabascan) having at best a tangential connection; these are the smallest Yokuts classes, and comprised in the group of smallest classes in Athabascan.

Most of the meaning classes evaluated in this tabulation on the Athabascan side, indeed, contain too few examples to be very significant. There are only 4 animals and 4 plants in Hoijer's list; I have included 5 body parts of animals (tails, horns, etc.) with body parts, but two plant parts (bark, leaf) with "grass" and "tree." Only numerals up to four are included by Hoijer, but they have, like the larger series in Yokuts,

the lowest ratio of cognates/meanings, 1.25; whereas the two for persons have the highest, 5.7. Nevertheless, four categories are sufficiently represented to be worth discussing.

Of these four, body-part terms have the lowest cognate/meaning ratio, 2.7. Fourteen of the 25 meanings here are expressed by only one or two stems, 7 are in the middle range, and only 4 are so scattered in their cognateship as to have the top frequency stems in the classes which run from 17 down to 7 occurrences in 24 cases.

Seventeen natural inanimate phenomena have a much more even frequency distribution, but stand lowest in the first column of "unanimous" stems. The mean value is 4.1.

Fifteen of Hoijer's 100 terms are (in English) adjectives. Most of these are taken from Swadesh (plus a few additions to keep the total list up to 100), and they suggest that adjectives may be poor material for a lexicostatistic list. The mean is 4.7, and the frequencies increase as we get into the right-hand, scattering-stem columns. It is perhaps significant that the only 2 adjectives in the two first columns (with good cognate stability) are "big" and "many."

The 22 verbs show an interesting bimodal distribution, high in the first two columns, high also in the two last, low in the middle group. This means that nearly half of them would be excellent for glottochronological purposes, nearly half very unsatisfactory, especially if the time ranges investigated were long. The mean, 3.4, is not quite as low as for plants, body parts, and animals, but lower than for nature and artifacts. All in all, verbs appear to have somewhat more stability in Athabascan than in Yokuts, compared with nouns, ranking above 40 per cent of nouns in Athabascan (21 of 52) and above 25 per cent of nouns in Yokuts (48 of 186).

We can summarize the behavior of Athabascan and Yokuts stem/meaning ratio in the principal meaning classes thus:

TABLE 4

Meaning classes	Athabascan		Yokuts	
	No.	Stems per meaning	No.	Stems per meaning
Persons	(2)	5.7	(15)	3.8
Body parts	(25)	2.7	(51)	2.5
Animals	(4)	3.2	(70)	2.5
Plants	(4)	4.3	(16)	2.3
Nature	(17)	4.1	(29)	3.3
Artifacts	(2)	2.0	(19)	3.2
Count	(4)	1.25	(13)	1.5
Pronouns	(3)	1.9		
Interrogatives			(4)	1.0
Demonstratives	(2)	4.2		
Adjectives	(15)	4.7	(9)	4.0
Verbs	(22)	3.4	(15)	2.7

The Athabascan values generally run higher. This may be fully accounted for by geographical distribution, which is very great for the Athabascan languages, quite compact for the Yokuts. As noted,

in both families numerals and body-part terms show high cognateness—low stem displacement—but words for persons and adjectives a high stem displacement.

532. COMPARISON OF ATHABASCAN AND  
YOKUTS COGNATE DISPLACEMENTS  
IN 71 SPECIFIC MEANINGS

Of Hoijer's 100 items in his basic vocabulary, 71 occurred also in my Yokuts tabulated vocabularies with sufficient frequency to make adequate comparison of stem behavior feasible.

To institute the comparison I have assigned the

71 stems in each language to five groups, listed in columns in order from complete invariability to maximal variability of stem per constant meaning. Some of these columns are identically defined for the two speech families; others, approximately so.

The total of entries per column is not quite equal in the two languages but it will be seen that it does not differ too widely. The full data are in table 5.

TABLE 5

Comparison of Athabascan and Yokuts Cognate Displacements

	Stems Av. No. of most frequent stem	24 Athabascan Languages					21 Yokuts Dialects				
		1	2	3-6	3-8	4-11	1	2	3	4	>4
		1	2	3.7	4.6	6.9					
		24	23-19	22-18	17-13	12-7					
Person				*							
Woman					*					*	
Blood			*								
Bone	*					*					
Ear	*					*					
Eye	*					*					
Fat			*				*				
Foot		*							*		
Hair	*							*			
Hand		*							*		
Head		*					*				
Heart			*				*				
Horn	*						*				
Knee			*						*		
Liver			*				*				
Meat				*					*		
Mouth		*					*				
Name	*						*				
Neck			*							*	
Nose		*					*				
Stomach (belly)			*						*		
Tail		*					*				
Tongue					*			*			
Teeth	*						*				
Bird					*				*		
Dog			*				*				
Fish	*						*				
Louse	*						*				
Grass		*								*	
Tree				*					*		
Ashes					*				*		
Cloud				*						*	
Day	*							*			
Earth			*						*		
Fire		*					*				
Moon					*		*				
Mountain					*			*			
Night					*		*				
Rain				*				*			

TABLE 5 (Continued)

	24 Athabascan Languages					21 Yokuts Dialects					
	Stems	1	2	3-6	3-8	4-11	1	2	3	4	>4
	Av.	1	2	3.7	4.6	6.9					
	No. of most frequent stem	24	23-19	22-18	17-13	12-7					
Sand					*				*		
Smoke			*					*			
Snow				*							*
Star				*				*			
Stone				*					*		
Sun						*					*
Water			*				*				
Wind			*							*	
Road			*				*				
Four			*				*				
One		*					*				
Three		*					*				
Two		*					*				
Big (large)		*									*
Black				*						*	
Good				*					*		
Long (far)				*			*				
Many (much)			*						*		
Red						*					*
Small						*				*	
White					*						*
Die (dead)					*			*			
Drink		*					*				
Eat					*				*		
Kill					*			*			
Laugh		*					*				
Lie		*								*	
Say (speak)		*							*		
Sing						*				*	
Sit		*						*			
Sleep						*				*	
Stand					*		*				
Total		19	14	15	11	12	20	15	11	16	9
						(71)					(71)

Thus 19 Athabascan and 20 Yokuts stems of the 71 fall into the first column, which records cases of one stem only for the meaning. For two stems per meaning, the respective occurrences are 14 and 15. These two situations account for nearly half the comparable vocabulary. The 3 other classes agree less closely in distribution, but they also differ slightly in their class definition, owing to the way the material was assembled. All in all, it is theoretically rather remarkable that the frequency of one-stem, two-stem, and multiple-stem items should come out so nearly the same in two families that are as distinct intrinsically and in history and geography as Athabascan and Yokuts. It is clear that the strengths of persistence and of displacement tendencies are definitely similar between the two families in this sample.

So much for the over-all distribution in the sample. We can, however, carry the comparison on to individual items of meaning, 71 times. In these, there are 22 cases in which Athabascan and Yokuts forms fall into the corresponding column, be it first or any other. There are 30 cases in which the Athabascan and Yokuts positions are one column apart—first column as against second, or fourth as against third or fifth, etc. These two distributions, aggregating 52 out of 71, account for 73 per cent of the total. The three other possible comparative positions, 2, 3, or 4 columns apart, occur only 13, 4, and 2 times. Note the rapidly descending frequencies as compared with the irregularly and only slightly decreasing total size of the five classes.

A fairly precise measure is possible of the strength of the degree of commonness of persistence or displace-

ment in our 71 separate items. Whenever an Athabascan and Yokuts item of the same meaning fall into the same column, the difference is nil, and we can count 0. If this had happened all 71 times, the result—perfect concord—would still be zero. But if the distribution in Athabascan and Yokuts were wholly disconnected, and random, there would be about 14 occurrences in each class—0, 1, 2, 3, 4 positions apart—for the two families and the mean would be around 2; namely:  $(0 + 1 + 2 + 3 + 4 = 10 \text{ divided by } 5 = 2)$ . Table 6 computes the actual distribution found: it is 1.07, a little more than halfway between complete identity (or "correlation") and no correlation. If such a similarity of behavior through time were demonstrated within a genetic family of languages, say as between the Northern, Apachean, and Pacific divisions of Athabascan, we would say it was "natural," that is, expectable, because of their common origin. When it occurs between two seemingly wholly unconnected families, it is evidence of statistically demonstrable drifts shared by them.

TABLE 6

Athabascan and Yokuts Positions Apart in Table	Times	Product	Mean (76/71)
Same (= 0)	22	0	1.07
1 Position apart	30	30	
2 Positions apart	13	26	
3 Positions apart	4	12	
4 Positions apart	2	8	
	71	76	

### 533. COMPARISON WITH MON-KHMER AND "INDO-EUROPEAN" PERSISTENCES

In 1955 Swadesh published "Towards Greater Accuracy in Lexicostatistic Dating" (IJAL 21:121-137), in which he presented (in table 1, p. 132) "item persistence by semantic groups," that is, percentage retention ratios for the 215 (or 200) items of which his basic list had until then consisted. For instance, under "(a) Personal Pronouns," he begins with "I 100%, thou 92%, . . . they 50%." I have not found the passage where he says in which languages "I" persists 100 per cent, etc. (nor how he averages or selects from Chinese, Coptic, and Indo-European),<sup>2</sup> but his reference appears to be to the languages dealt with by Lees in his "Basis of Glottochronology" (Language 23:113-127). He discusses these data along with others, and emerges with a revised retention rate of 86 per cent (74 per cent contemporary) in place of the original rate of 81

<sup>2</sup>Nor do I grasp what his table 2 (pp. 133-137, referred to on p. 127) means or proves. Especially baffling is its "persistence" column—the "Pct" are taken from table 1, but the "decade" values are not adequately explained and remain to be worked out by the reader, as do the values of the + and - symbols in the remainder of the table. Also, the 92 asterisked items are evidently the main basis of his revised 100-item basic list. This paper of Swadesh has many insights and is genuinely important, but the procedures by which conclusions are reached are full of ellipses, which in turn derive largely from the fact that the full data on which preceding papers by him and Lees are based have never been published. There is no public way of checking back on how the original conclusions were reached which are here modified. (Cf. Hymes 1960, p. 10.)

per cent (66 per cent contemporary); besides laying the foundation for a new basic list of 100 terms.

However, in 1960, after all my foregoing sections on retention rates had been written, David D. Thomas comes along with "Basic Vocabulary in Some Mon-Khmer Languages" (AL 2, no. 3, pp. 7-11), and makes interesting comparisons on retentions by semantic groups, as between 8 Mon-Khmer languages investigated by him and the "mainly Indo-European" languages analyzed by Swadesh in 1955. Thomas does not use the simple Swadesh retention rates but substitutes a weighted formula—on which more below—that seems to yield results similar to the retention rate, though they cannot be identical.

Thomas' findings are: "(1) that the individual items vary greatly and unpredictably in their persistence; and (2) that the semantic groups are surprisingly unvarying in their average persistence"; this as between Indo-European and Mon-Khmer. The second finding is wholly in line with what I have found so far; but my preceding section shows an appreciable degree of positive statistical correlation of retention behavior, even for particular stems and items, between two unrelated American phyla. I suspect some smaller degree of correlation would appear between these phyla and Indo-European and Mon-Khmer also, if searched for by the same technique.

Thomas says (p. 7) that his "method of deriving relative persistence was by simultaneous comparison of all eight Mon-Khmer languages; the persistence of an item was calculated as

$$\frac{1}{2} \left( \frac{(n - 1) + (p - r)}{p - 1} \right)$$

Where  $n$  is the highest number of occurrences of a single root,  $r$  is the number of roots occurring, and  $p$  is the number of words in the comparison (that is, the maximum possible  $n$ , also the maximum possible  $r$ ). This gives weight to higher cognate percentages, so that a 7-1 item rates higher than a 4-4 item; but it also gives weight to the range of roots, so that a 4-4 item rates higher than a 4-3-1."

I compute his persistence values for the examples he cites as:

8-0	100 per cent
7-1	86 per cent
4-4	64 per cent
4-3-1	57 per cent

These are all values that appear repeatedly in his listings. With only eight languages dealt with, and the resulting few combinations, the possible per cent values obtainable are limited, and I have noted only the following percentages as cited by him: 100, 86, 79, 67 (once only—misprint?), 64, 57, 50, 43 (42, 41), 36, 29 (28), 25, 21, 14—evidently mostly the result of dividing successive integral numbers from 14 to 2 in the numerator by the constant denominator  $2(p - 1) = 14$ .

Thomas weights first for number of roots, as he calls them, or separate noncognate stems, as I called them, in each meaning slot, and secondly for frequency of occurrence of these roots. On the first point I presented the Yokuts data in full in the section 510 above on number of stems per basic meaning. The second point, as to the frequency of competing roots, I gave some attention to by setting off by asterisks, under "Two-Stem Meanings," forms in which stem B was > A/3; and under "Three Stems," forms in which B + C

were  $> A/3$ ; and under "Four or Three" and "Four Stems" those in which  $B + C + D$  were  $> A/2$ . I did not however process these classes and subclasses further, beyond grouping them into meaning classes, and then computing the average frequency of stems per meaning in the meaning classes (table 7).

I think my simple averaging of number of stems per meaning in semantic groups covers the principal factor operative in making certain semantic classes respectively more and less useful for classification and age computation. It separates the cases 8-0, 7-1, 4-3-1 in Thomas' exemplification; it does not distinguish between 7-1 and 4-4, which is no doubt a significant distinction, but of secondary importance. Thomas' formula, which does weight for this distribution, should be tried out, but on material whose data have been published in full—the Mon-Khmer data are on file only in the Universities of North Dakota and Saigon. His method would be much more difficult to apply when the number of languages is large. For instance, it is not clear whether the method would work in situations like Hoi-ger's two first Athabascan meanings. For "ashes" these "root" frequencies are 9-7-2-1-1-1-1-1-1, for "bark" 7-4-2-1-1-1-1-1-1-1, plus one vacancy!

Neither the Swadesh persistences in semantic classes nor the Thomas weighted persistences can be directly compared with the Athabascan and Yokuts figures, because the two latter consist of roots/meanings, in which perfect persistence is 1.0 and values go from there up as there is less persistence; whereas in Swadesh and Thomas perfect persistence is expressed by 100 per cent and cognate stem variability or diminished persistence runs down from that. Nor could we simply compute reciprocals for one series and then compare with the other, because similar things are being measured by different methods. All that remains comparable is

rank order. This however shows that in general, to date, both verbs and adjectives have relatively low persistence, and, among nouns, persons. High persistences characterize body parts (including body "substances") and inanimate natural phenomena; I believe animals and plants and their parts or substances also show high persistence, if particular conspicuous or important genera are included.

Swadesh, always aiming at a universal basic list, excludes these particular genera because the range of most animals and plants is environmentally limited—just as he omitted "ice" with 100 per cent retention because it does not occur in the tropics. So his animals are restricted to 7 terms in his old list of 215 (a few specific but environment-proof items like louse and dog, the rest generic class-words like worm, fish, snake, bird); and they are further reduced in the 100-term list. This brief list is too small and general an inventory to be very significant of anything. Similarly with his plant list of 10 items (Paper 5), which consists mostly of generalized parts (leaf, flower, fruit, seed, bark, root) or of generalized vegetation classes like tree and grass. My Yokuts lists do not exclude these generalized classes, but mostly consist of particular species or genera like yellow pine, live oak, tule, deer, fox, prairie falcon, rattlesnake. Both my animal and plant groups show rather high persistence, because the Yokuts' environmental range is narrow enough for most species to be known to most dialects. But these are the very terms that Swadesh cuts out, and which they who base on his lists also lose—they because they aim at comparability, and he at universality.

These reservations must be borne in mind in interpreting the persistence rates by semantic groups in wide comparisons, as they are presented, subject to the limitations mentioned, in table 7.

TABLE 7

Retention by Meaning Classes in Four Stocks  
(Raised figures denote n)

	Yokuts <sup>a</sup> stems per item	Athabascan <sup>a</sup> stems per item	Indo-European <sup>b</sup> persistence (retention) ratio	Mon-Khmer <sup>b</sup> weighted persistence
Interrogatives	1.0 <sup>4</sup>		.75 <sup>5</sup>	
Count	1.5 <sup>13</sup>	1.25 <sup>4</sup>	.97 <sup>12</sup>	86 <sup>10</sup>
Plants	2.3 <sup>16</sup>		.74 <sup>10</sup>	77 <sup>10</sup>
Body parts and products	2.5 <sup>51</sup>	2.7 <sup>25</sup>	.72 <sup>26</sup>	79 <sup>26</sup>
Animals	2.5 <sup>70</sup>	4	.67 <sup>7</sup>	86 <sup>7</sup>
Verbs	2.7 <sup>15</sup>	3.4 <sup>22</sup>	.59 <sup>52</sup>	59 <sup>52</sup>
Artifacts	3.2 <sup>19</sup>		(.73 <sup>3</sup> )	(72 <sup>3</sup> )
Natural phenomena	3.3 <sup>29</sup>	4.1 <sup>17</sup>	.77 <sup>20</sup>	71 <sup>20</sup>
Adverbs	3.4 <sup>8</sup>		.64 <sup>4</sup>	
Persons	3.8 <sup>15</sup>	2	.60 <sup>4</sup>	52 <sup>4</sup>
Adjectives	4.0 <sup>9</sup>	4.7 <sup>15</sup>	.60 <sup>23</sup>	62 <sup>23</sup>

<sup>a</sup>Retention shown by low figures.

<sup>b</sup>Retention shown by high figures.

The relationships among the various classes in each of the four language groups can be further brought out by showing the rank order of classes internal to Indo-European and Mon-Khmer, respectively, and by aligning these orders with the orders internal to Yokuts and Athabaskan, previously shown. Both ends are accomplished in the list given below. As before, the figure

preceding the name of a class indicates the number of items within it in that language group. The figure following the name of a class is the basis of the ranking, the mean number of stems per item (Yokuts, Athabaskan), or persistence ratio (Indo-European), or weighted persistence (Mon-Khmer). Class names have been modified for reasons of space.

Yokuts		Athabaskan		Indo-European		Mon-Khmer	
4 Interrogatives	1.0	4 Numerals	1.25	12 Count	.97	10 Count	86
13 Count	1.5	3 Pronouns	1.9	20 Nature	.77	7 Animals	86
16 Plants	2.3	2 Artifacts	2.0	5 Interrogatives	.75	26 Body	79
4 Directions	2.5	25 Body	2.7	10 Plants	.74	10 Plants	77
52 Body	2.5	4 Animals	3.16	3 Artifacts	.73	3 Artifacts	72
70 Animals	2.5	22 Verbs	3.4	26 Body	.72	20 Nature	71
15 Verbs	2.7	17 Nature	4.1	7 Animals	.67	23 Adjectives	62
19 Artifacts	3.2	2 Demonstratives	4.16	4 Adverbs	.64	52 Verbs	59
29 Nature	3.3	4 Plants	4.3	23 Adjectives	.60	4 Persons	52
8 Adverbs	3.4	15 Adjectives	4.7	4 Persons	.60		
15 Persons	3.8	2 Persons	5.7	52 Verbs	.59		
9 Adjectives	4.0						

It is clear from the four computations together that, probably the world over, adjectives and verbs are in general more given to cognate displacement than nouns. Among nouns, again, body parts, animals, and plants have the best persistence of stems. Animals and plants vary with environment, so in moving to a new environment, a language either loses them or is under pressure to change meanings, that is, to displace stems. Body parts however are not conditioned by environment, and on the whole retain the best persistence of noun groups. Artifacts and inanimate natural phenomena come next to the first three classes; and words for persons come last, among nouns, with highest displacement, close to that for adjectives and verbs. Kinship terms constitute a little semi-autonomous world of their own, about whose purely diachronic linguistic behavior we really know little, because anthropologists working on social structure have been really interested only in extensions, mergers, and differentiations of meaning. In the matter of persistence versus replacement of forms, kinship terms may well prove to behave like words for persons, when enough comparative data are in.

On the basis not only of Yokuts but also of considerable other vocabulary collecting, I would rate pronouns, interrogatives, demonstrative and a few other adverbs ("far"), and numerals, as mostly pretty high in persistence. Swadesh differs, and has heavily cut down lexiostatistic reliance on them. However, he is not so much defining a general hypothesis of stem persistence in relation to meaning class, as getting a feasible near-universal sample that will give near-reliable results on comparison for classificatory genetic and especially time use. His judgments show wide experience with vocabulary, but they also evince distortions of his wisdom and knowledge in the pursuit of his special aim.

For instance, in East Asia, Chinese numeral systems have repeatedly been adopted in other languages in block (although concurrent native numbers frequently are retained alongside). Many deep primitives, on the other hand, especially those with underdeveloped technology

and economy, have got into habits of practically not counting, as in Australia and Amazonia, or do so by counting up to four or five and then multiplying and adding, thus expressing an arithmetical operation, as it were, as also occurred repeatedly in native California. So Swadesh now deletes numerals from his universal list, except for "one, two, three, four," although the run of the evidence coming in confirms the old assumption that where the numerals up to ten are genuine words and not merely operational descriptive phrases, they are close to being prime in persistent retentiveness of stems.

I have little faith that a watertight or nearly watertight basic vocabulary is possible: there will always be exceptions to the trend. When we encounter regions where people substitute arithmetical operation for the count words, or give preference to prestige-laden foreign numerals, we must of course in those instances lay aside "numerals from our age-dating vocabularies, replacing them in our comparisons by other classes of meaning. But this does not mean that numerals have been eliminated from the generic problem of cognate persistence in relation to meaning. In perhaps from 60 to 80 per cent of languages the world over, the words from "one" to "ten" still have high priority in enduring retention.

Swadesh's division (1955, table 1) of basic verbs into six subclasses (f, g, q, r, v, w), some of them of mixed "parts of speech," is an endeavor in the general semantic classificatory field that does not much advance his special lexiostatistic purpose and at the same time is too haphazard to advance the general problem notably. I do agree wholly with Swadesh's comments in 4.4 (p. 125) on the low persistence of verbs expressing manipulations. It seems to me that relatively persistent verb stems fall primarily into two categories, and that, outside of these, verb persistence is generally low. The two retentive classes are, first, generic verbs, denoting acts performed with the whole body, such as come, sit, give, fly, stand, live, die, sleep, know; and, second, verbs denoting or implying activity of specific

body parts, such as wash, drink, eat, hear, see, bite, laugh, cry, sing, speak. The second class resemble body parts in tendency toward universality, through expressing the physiological functioning of

body parts. I would predict that verbs of these two categories will prove in general to have higher persistence than other verbs, as they do in Swadesh's table 1.

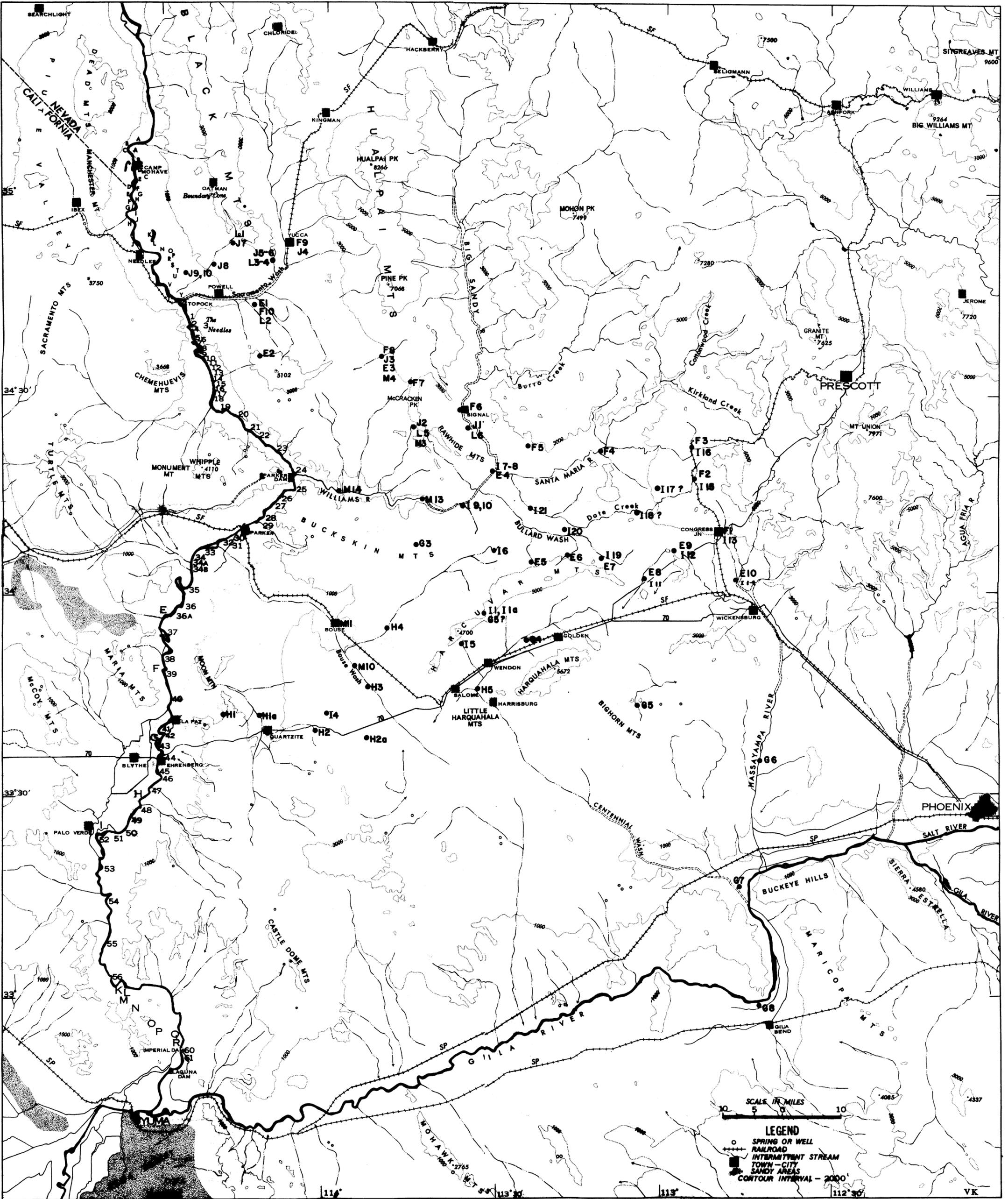
## WORKS REFERRED TO

### Abbreviations

AL	Anthropological Linguistics
IJAL	International Journal of American Linguistics
UC-PAAE	University of California Publications in American Archaeology and Ethnology
UC-AR	University of California Publications: Anthropological Records

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MAP 2—THE COLORADO RIVER BELOW MOHAVE VALLEY AND THE DESERT TO THE EAST

Places named in migration narrative situated on the Colorado River below Mohave Valley and in the desert east of the river. Localities along the river on the east side are numbered; on the west, lettered. Capital letters in conjunction with numbers (H1, M10, etc.) indicate points on journeys in the desert described in the narrative and discussed in Part 8. Within Mohave Valley, only letter designations are repeated from map 1, for orientation.