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Contributions to Tualatin Ethnography: Subsistence and Ethnobiology

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CONTRIBUTIONS TO TUALATIN ETHNOGRAPHY:

SUBSISTENCE AND ETHNOBIOLOGY

by

Henry B. Zenk

A thesis submitted in partial fulfillment of the
requirements for the degree of

MASTER OF ARTS
in
ANTHROPOLOGY

Portland State University
1976

TO THE OFFICE OF GRADUATE STUDIES AND RESEARCH:

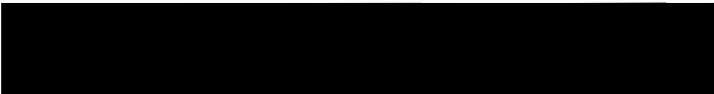
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AN ABSTRACT OF THE THESIS OF Henry B. Zenk for the Master of Arts in Anthropology presented June 11, 1976.

Title: Contributions to Tualatin Ethnography: Subsistence and Ethnobiology.

APPROVED BY MEMBERS OF THE THESIS COMMITTEE:


Wayne Sutvles, Chairman


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There is a considerable amount of unpublished source material on Kalapuyan ethnography. This consists primarily of manuscript field notes from three linguistically trained scholars: Albert S. Gatschet, who collected Kalapuyan linguistic and ethnographic data during a visit to Grand Ronde Reservation in 1877, Leo J. Frachtenberg, who worked with a number of Kalapuyan informants from 1913 to 1915, and Melville Jacobs, who worked with the last surviving speakers of Kalapuyan languages during a number of sessions between 1928 and 1936. Data from these three authorities, plus other available data, reveal many details about aboriginal Kalapuyan life ("aboriginal" here referring to the period from

around first White contact until removal to the reservation). Any attempt to reconstruct ethnographic descriptions of the aboriginal Kalapuyans should fully utilize these available data. I intend this thesis as a beginning effort toward that end.

It seemed to me that the ethnographic notes scattered through the Gatschet manuscripts, representing as they do the knowledge of informants who had reached adulthood under pre-reservation conditions, would prove particularly interesting in terms of ethnographic reconstruction. Thus, I selected the Tualatin Kalapuyans, the subject of Gatschet's main effort, as my own focus. In view of the quantity of data involved, I further restricted my scope to much less than an overall ethnographic description of the aboriginal Tualatin. I have concentrated upon two related aspects of that larger picture--subsistence and ethnobiology. Under the former, I consider aboriginal habitat, general subsistence economy, territorial and seasonal availability of subsistence resources, seasonal cycles involved in harvest of resources, subsistence-related aspects of regional interrelationships such as trade, and specific subsistence-related activities and practices. Under ethnobiology, I consider native knowledge and uses of plant and animal resources.

In Chapter IV, some additional ethnographic information unrelated to these two main areas is also presented concerning the identification and localization of Tualatin winter-village groups.

CHAPTER I

INTRODUCTION

1. THE TUALATIN-- GENERAL IDENTIFICATION

The name "Tualatin" refers to the aboriginal population which occupied the Tualatin River basin (Tualatin Plains and Wapato Lake near Gaston being the areas where winter settlements were concentrated), as well as the drainages of Chehalem Creek and the North Yamhill River, south to the main Yamhill River at Lafayette. The present form of the "tribal" name is one of a number of historically recorded variations upon the Tualatins' own name for themselves, a-tfa'lati,¹ and/or upon somewhat variant forms of the same name recorded from other Kalapuyan dialects (e.g., Santiam an-twa'lati, Mary's River twa'latya; additionally, Jacobs gives itwa'lati as the Clackamas Chinookan name for the Tualatin). No etymology has been discovered for this name.

Before the catastrophic declines suffered by the aboriginal populations of the area during the early historical period (the result, primarily, of epidemic diseases), the Tualatin lived in upwards of 15-20 winter village or hamlet groups (see sec. 12 for detailed consideration of data bearing on identification and localization of these groups). These local groups, though not bound together by any system of "tribal" organization, were socially and culturally very closely interrelated,

¹See appendix for explanation of phonetic symbols.

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Wayne Suttles, for his support and encouragement and his role in securing copies of much of the manuscript material upon which this thesis is based; Yvonne Hajda, for her advice and support, particularly concerning phonological and linguistic matters; the Melville and Elizabeth Jacobs Foundation, whose furnishing of a small grant facilitated my access to the Melville Jacobs Collection; David French, for his valuable contributions to the ethnobiological sections; Robert Benson, who freely shared with me his considerable knowledge of cartography and local history; and Anita Malady, who generously contributed her own time to give essential assistance in the typing and proofreading.

and, apparently, shared a definite sense of collective identity. The linguistic record associates a distinct dialect ("Tualatin") with this collection of local groups. This dialect, together with its fully mutually intelligible sister dialect, Yamhill (spoken in another loose but ethnically identifiable collection of villages, called ya'mil by the Tualatin as well as by the Yamhill themselves), formed one (the northern) of the three distinct languages (northern, central, and southern) of the Kalapuyan language family (or subfamily, according to Swadesh [1965] who lumps Kalapuyan with Takelma in his Takelman family).

Treaty documents (especially, Gibbs and Starling 1851 and Belden ca. 1855), plus what ethnographic data there are which seem to reflect an aboriginal conception of territorial limits (see sec. 7), permit the following general delimitation of the Tualatin in relation to neighboring groups.

To the north of the Tualatin, between Tualatin Plains and the big bend of the Columbia River, were the Athapascan-speaking Clatskanie (called a-la'cxne·i by the Tualatin, according to Gatschet), a people seen as alien alongside the Chinookans and other Kalapuyans with whom the Tualatin had close ties, although there is no mention of hostile relationship between the two groups.

On the west, the territorial relationship which existed between the Tualatin and coast-dwelling Tillamook (whose country was called pa'fan by the Tualatin) is rather unclear (see sec. 7); it is at least certain that the Tualatin took advantage of subsistence resources available in the Coast Range, and travelled to the coast on occasion.

To the south, the Yamhill and Tualatin territories met at the main

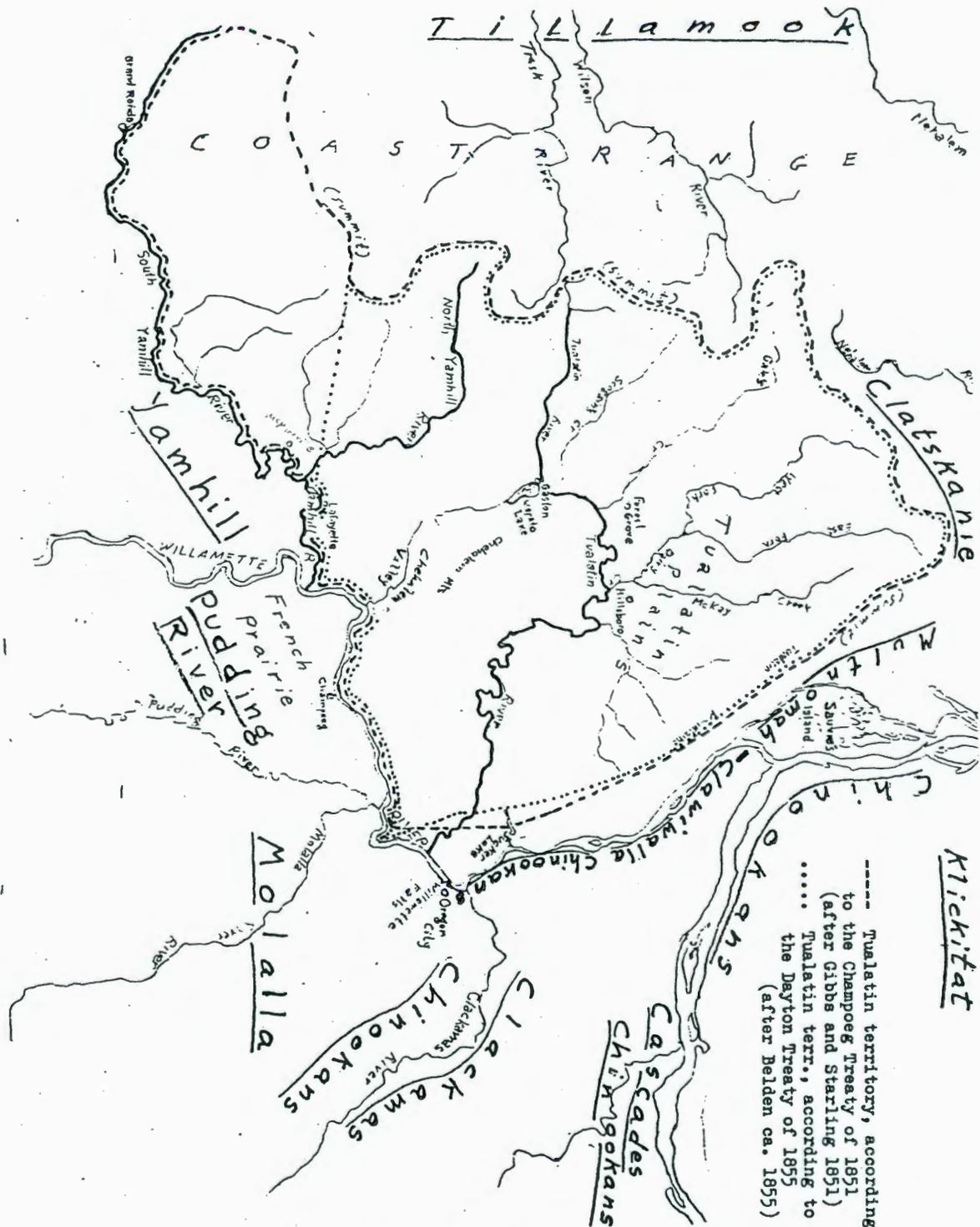


Figure 1
Tualatin territory

Yamhill River; things are uncertain to the west of the forking of the North and South Yamhill Rivers, as the treaties disagree here (see map), and there are no relevant ethnographic data. The Tualatin and Yamhill were culturally as well as linguistically closely related, and seem to have shared a corresponding sense of mutual kinship.

To the south and east, across the Willamette River, in the French Prairie area, were the Pudding River or an-ha'nčiyuk people (Santiam dialect name, given by Jacobs), who spoke a dialect of the distinct central language of Kalapuyan. There was a village somewhere near Champoeg State Park, on the north bank, or possibly on both banks, of Willamette River (see Hussey 1967:17-18). While this village is mentioned in the Tualatin ethnographic material (Gatschet [1877a:269, 282] giving ča'mpuik as the name of a "town" in the French Prairie area where Indians gathered to dig the root pu'ičik), it is not mentioned as having been Tualatin-- I thus speculate that it was ha'nčiyuk, unless, of course, it represents some undocumented entity.

On the east and northeast, going north from somewhere in the vicinity of the mouth of Tualatin River (according to the treaties, from a point a few miles up the Willamette from the mouth of the Tualatin; I found no ethnographic data concerning Tualatin interest or activity in this area), thence past Willamette Falls on the east to the "Sucker Lake" (Lake Oswego) area, and on northwest through the Tualatin Mountains, the Tualatin bordered on the Willamette Falls and lower Willamette-Sauvie's Island upper Chinookans. These Chinookan village groups, plus those located on the Columbia River in the vicinity of Vancouver, were collectively referred to by the Tualatin under the name a-fε'j. In the

aboriginal political balance of the early historical period, these groups were notable as being the main sphere of influence of the powerful chief "Cassino" (giH'snu in Gatschet's Tualatin texts, Gye'snu in Jacobs' corrected version of the latter).

Tualatin economic and political connections with the fEY (and perhaps other Chinookans), manifested for example in marriages between chiefly Tualatin and fEY families, imparted a Chinookan influence to Tualatin society and culture. In fact, there is evidence (e.g. Smith 1901:255-258) that the Tualatin, together with Chinookans and northern Oregon coastal groups, were major participants in a regional network of economic and political interrelationships centered on the lower Columbia River. The most obvious mark of central participation in this network was flat-headedness as an invariable sign of free birth-- the Tualatin, Chinookans, and coastal groups including the Tillamook and Alsea-Yaquina flattened the heads of all free-born infants; flattening was apparently not universally practiced among central-language-speaking Willamette Valley groups, and it faded away entirely farther south. Slave trading was an important economic activity of the major participants in this network. The main Tualatin role in such activity seems to have been to help supply slaves to the Chinookan trading centers such as that at Oregon City. The Tualatin often obtained slaves through trade with neighboring and distant slave-holding groups; also, the Tualatin themselves at least occasionally conducted slave-raiding expeditions into such areas as the southern Willamette Valley and the central Oregon coast. Almost all slaves were captives or descendents of captives, originally taken from distant groups and often traded widely through the area.

Aside from such indications of Chinookan influence, what data there are on the Tualatin show many points of similarity with other Kalapuyans. "Chiefs," unlike their Chinookan counterparts, did not constitute a hereditary caste; chieftainship was inherited only in the sense that wealth was inherited. Slavery however was hereditary, so that slaves constituted the most definite social stratum. Aside from the slave-free distinction, the main social distinction was between wealthy or "good" people and common people; wealth could be achieved by the non-wealthy and lost by the wealthy, so that there was no absolute divide between these two social categories. Residence and marriage conformed to the general Kalapuyan pattern, with patrilocal residence and local exogamy usual, polygyny preferred, and marriage-payment transactions notably unbalanced in favor of the bride's family. Ceremonial and religious activity was centered upon the acquisition and display of guardian-spirit powers.

2. HISTORY AND SOURCES

The Tualatin are one of the better documented Kalapuyan divisions. In general outline, the record on the Tualatin mirrors that on the Kalapuyans in general: a very few scattered early passing mentions from travellers, settlers, etc., comprising an unfortunately quite inadequate contemporary record of pre-reservation life, then, treaty and Indian Affairs documents, and finally, a considerable body of material, primarily linguistic but with some ethnographic information, dating from reservation and post-reservation times. The following sketch is intended to provide background information for the main body of this study

and does not purport to be a well-rounded survey of these categories of sources.

2a. Historical Record

The Tualatins' linguistic and cultural next-of-kin, the Yamhill, receive notably earlier mention in the historical record than do the Tualatin themselves. Alexander Henry, while passing Willamette Falls in 1814 on a brief trip to the Northwest Company's trading establishment somewhere in the Champoeg-Newberg vicinity, met a party of seven "Yamhelas" leading a horse loaded with bags of "raw commass [sic]". Surely, these Yamhills were on a trading expedition to the falls; three days later, while passing the falls again on the return trip, Henry met the same party, this time loaded with dried salmon (Henry in Coues 1897:812, 819). On the first meeting, Henry commented:

They seemed to be an ugly, ill-formed race, and four of them had some defect of the eyes. They were Yamhelas, who dwell in houses on Yellow River, a branch of the Willamette. They are great Rogues, but not very numerous. Those we met were wretchedly clothed in deerskins; their quivers were of deer's heads and necks. Their women had petticoats of fringed leather, like the Chinook women's cedar petticoats, but reaching only halfway down the thighs. They wore small round bonnets of wattap, with a peak three inches high. They were of short stature, and altogether the most miserable, wild, and rascally looking tribe I had seen this side of the Rocky mountains. (Henry in Coues 1897:812)

The earliest reference to the Tualatin themselves that I am aware of (I must note, though, that I have not thoroughly covered the historical record) is in John Work's journal of a Hudson's Bay Company expedition led by him from Fort Vancouver to the Umpqua River and back, in 1834 (Work 1923). On the outbound journey, Work entered the Willamette Valley by way of Tualatin Plains ("Faladin Plain" in his spelling) and

Wapato Lake, noting, while not far north of the latter, that "there are a good many Indians about here, which causes the deer to be so wild" (Work 1923:244). On the return trip, Work has a passing mention of the Tualatin which seems to reinforce the image, suggested by other, primarily ethnographic sources, that the Tualatin were predatory slave raiders. In the vicinity of "River Lauries" (Mary's River), Work visited with some local Indians to trade beaver, commenting that "They [the Indians] . . . inform us that 4 men of Lautaude Indians [?] have been killed & 3 children taken slaves a short time since, as they suppose by a party of Faladin or Yamhill Indians" (Work 1923:264).

This first definitely documented mention of the Tualatin post-dates the "fever and ague" or "intermittent fever" epidemics of 1830-33 (almost certainly malaria, cf. Cook 1955, Boyd 1975), which are known to have virtually swept away the Chinookan populations of the lower Willamette-Vancouver area. Aside from a brief, rather vague mention in Gatschet's Tualatin notes ("ague" and "malaria" both being mentioned, along with smallpox and dietary changes, as causes of the decline of the Tualatin [Gatschet 1877a:235]), I have no documentation of the impact of this series of epidemics upon the Tualatin. However, in view of the proximity of the Tualatin to the lower Willamette-Vancouver area of known maximum impact, plus the ideal habitat which Tualatin country, with its marshlands in close proximity to native population, must have afforded the native species of malaria-carrying mosquitos, it is a fair assumption that the Tualatin were hit very hard. The earliest estimate of Tualatin population that I was able to find is from 1849, "60 souls, 30 warriors", given by Robert Newell (1959:152) (this is the figure cited

by Lane [1849]). Later figures are in line with Newell's-- e.g., the Cham-poeg Treaty of 1851 shows 65 Tualatins; Grand Ronde Agency records, cited by Powell (1891:82), show 28 Tualatins in 1890.

Estimation of lower-Columbia area aboriginal populations for pre-epidemic times seems fraught with difficulties-- e.g., while Mooney (cited in Taylor 1963:164), extrapolating from Lewis and Clark's population data, estimated that there were about 22,000 Chinookan speakers around 1780, Taylor (1963:165), extrapolating from early Hudson's Bay Company figures, offers 5,000 as a more nearly correct figure. In the latter case, I suspect that Mooney is too high and Taylor too low, but I do not wish to attempt to untangle the issues involved in evaluating these two estimates. Mooney's estimate for the Kalapuyans (including all Kalapuyan speaking groups), 3,000 for circa 1780, seems based on an incorrect reading of Lewis and Clark's data. Lewis and Clark do give a figure of 2,000 for the "Cal-lah-po-e-wah nation" (from which Mooney projected a figure of 3,000 for the period just preceding the smallpox epidemic presumed to have swept through the area about 1782), but they also refer to 10,600 "Shoshones" resident along the "Multnomah [Wil-lamette] river". (Thwaites 1905 Vol. 6:118-119). Interpretation of the latter reference is complicated by Lewis and Clark's apparently very vague notion of the geography of the Willamette area; they apparently thought that their "Multnomah" River drained a much vaster area of country than it really does. However, the fact that 3,000 of these "Shoshones" are mentioned as winter residents on the "Multnomah," and spring-summer residents on streams heading east of the Cascades (e.g., the falls of the "Towannehiooks" [Deschutes] River, a fishing place, being men-

tioned), does seem to pin down at least part of this population to the Willamette Valley (I suspect that this particular 3,000 may have been Molallas). Lewis and Clark themselves apparently assumed some degree of linguistic and ethnic identity for all of the peoples to whom they applied the name "Shoshone;" however, in their reference to the Willamette area, at least, they seem to have merely equated "Shoshone" identity with vaguely inland-type culture. The same vague application of this name to inland dwellers crops up elsewhere in the earliest literature on the area-- cf. Stuart (1953:48), where the name is applied to inhabitants of the general interior Willamette Valley; Henry in Coues (1897:794), where it is applied to some unidentified inland-dwelling group, possibly, Clatskanie Athapascans, observed on the south shore of the Columbia River below Oak Point; Ross (1849:117), where it is given as a derogatory generic designation for inland dwellers. Thus, I reason, Lewis and Clark's 10,600 "Shoshones" probably included Kalapuyans, at least central and southern Kalapuyans.

As my own contribution to the picture on local aboriginal populations, I offer a speculation on aboriginal Tualatin population, as follows.

Gatschet's Tualatin informants gave names of at least 17 winter village groups (16, disregarding one said to have been long extinct; see sec. 12a); additionally, some names (sec. 12b) are given which may have been group names but cannot be certainly identified as such. Taking 15-20 as an estimate of the number of Tualatin local groups extant, say, around 1812 (just before the first major direct impact of the Whites, but still close to the experience of informants interviewed by Gatschet

in 1877), and further assuming an average population of 50 per winter village group (which, it seems to me, allows for variations in the sizes of different groups while yet conveying some sense of the sort of relatively dispersed population which I suspect must have characterized Kalapuyans as opposed to Chinookans and other fisher folk), we would have an estimate of 750-1,000 for the Tualatin. Following Mooney's reasoning (1928:13-14), and assuming that the smallpox epidemic of circa 1782 reduced Tualatin population by one-third to one-half, we would then have an estimate of somewhere between 1,000 and 2,000 Tualatins for circa 1780.

In 1851, the surviving Tualatins, along with Molallas and other Kalapuyans, signed a treaty with the United States and were given a small reservation encompassing Wapato Lake (a large part of the proceedings of this treaty, generally known as the Champoeg Treaty, have been published by Mackey [1974:85-125]); however, this treaty was not ratified by the Senate and the reservation defined by it did not stand. Finally, in 1856, after signing the Dayton Treaty (1855; Kappler 1904 Vol. 2:665-669), the Tualatin were removed from their homeland to Grand Ronde Reservation. The linguistic and ethnographic record on the Kalapuyans derives almost entirely from the following reservation and post-reservation periods. I consider the Tualatin portion of this record in some detail.

2b. Main Sources

In 1877, the Swiss-born, European-educated linguist and ethnographer Albert S. Gatschet, then at the beginning of his long employ as an ethnologist with the U.S. Government (Gatschet later joined the Bureau of American Ethnology, upon its founding in 1879), spent two months

on the Grand Ronde Reservation collecting linguistic and ethnographic data from native survivors, especially Tualatin survivors. Gatschet's Tualatin effort is represented primarily by 402 pages of field notes (Gatschet 1877a) and a vocabulary list in Powell's first outline (Gatschet 1877b). Gatschet's main informants were Peter Kenoyer (Tualatin name qi'nai), and Dave ya'čkawa. Internal evidence in the 1877a manuscript indicates that Peter Kenoyer is responsible for almost all of the material up to p. 229, while Dave Yatchkawa is responsible for all or virtually all of the remaining pages plus notes and corrected or alternate linguistic forms scattered through the first section (these later additions are usually, but not always, identified as to source). No informants are identified in the 1877b MS, but it seems likely that this too is from one or the other if not from both of the same informants.¹ Both of Gatschet's informants were, in Tualatin terms, men of substance: Peter (I prefer to use the first name in view of the fact that this informant's son, Louis Kenoyer, is also frequently referred to here) was the son of a prominent chief-- qa'yagač, the leading representative of the Tualatin in the 1851 and 1855 treaty negoti-

¹Jacobs' following statement (in Jacobs, Gatschet, Frachtenberg 1945:155), regarding the informants contributing to the 1877a MS, is in partial error: "Notations in the 1877a manuscript indicate . . . that other Tualatin informants besides Dave Yatchkawa and Peter Kenoyer also worked with Dr. Gatschet; they were Emmy, Enimdi, Kemkid, and possibly others." The name "Emmy" is merely the English name of a woman named a'kemkit, "Kemkid," who apparently lived with Peter's family and did dictate two, or possibly three, of the texts appearing in the first half of the 1877a MS. The name "Enimde" appears in Frachtenberg's hand as a correction alongside Gatschet's unclear handwriting (1877a:85); I read Gatschet as writing "Emmie," noting that Gatschet has the same spelling elsewhere. I conclude that Jacobs has cited two names and one non-name of the same informant.

ations. Dave Yatchkawa was himself a signer of the Dayton Treaty and was reputed to have been a powerful shaman.

Although, as Jacobs points out (in Jacobs, Gatschet, Frachtenberg 1945:155),¹ the phonetic and translational accuracy of the Gatschet material falls considerably below modern standards, it does have the distinct advantage of deriving first hand from informants who participated fully in the aboriginal way of life. I depend fundamentally upon the Gatschet material for much of the ethnographic data upon which this study is based. Furthermore, the Gatschet material may turn out to have more linguistic value than Jacobs' evaluation of it would lead one to expect. This is certain at least as regards vocabulary (cf. sec. 10)--it would be well to have phonetically more accurate forms corresponding to those recorded by Gatschet, but unfortunately, the sole Tualatin informant available to later workers appears to have been considerably less fluent in Tualatin than were Gatschet's informants.

As far as I know, there was no further significant contribution to the record on the Tualatin until 1915, when Leo J. Frachtenberg visited the Yakima Reservation to work with the last known speaker of Tualatin, Peter Kenoyer's son Louis Kenoyer (Tualatin name paḡawa'taš). According to Frachtenberg (National Anthropological Archives card catalogue, catalogue no. 4620), Louis, 47 at the time, had not heard or spoken Tualatin since he was 17 (this is probably when his father died, since Jacobs [ca. 1936a:preface] commented that Louis had rarely heard

¹This reference is cited so frequently I hereafter abbreviate it only as Jacobs (1945).

or used Tualatin since his father's death sometime in the 1880s). Louis was educated at boarding schools and had only a very dim knowledge of many aspects of aboriginal Tualatin culture (e.g., Jacobs [1945:155] observed that Louis seemed completely unfamiliar with Tualatin mythology). Frachtenberg's work with Louis was apparently confined to corrections of Gatschet's previous work-- Frachtenberg took the Gatschet 1877a MS into the field with him, writing phonetic corrections of Gatschet's renderings directly into the original notebooks. Frachtenberg (ca. 1915) later prepared typescripts of Gatschet's texts, incorporating his own phonetic corrections and interpretations, along with grammatical notes; however, he never completed the project (most of the texts are not provided with translations, and spaces left for hand lettering of vowels are left blank). Much later, in 1936, Melville Jacobs took these Frachtenberg typescripts of Gatschet's texts back to Louis (still at Yakima Reservation), and began adding one more stratum of reworkings and phonetic corrections to them; once again, we are left with a half-finished project, this time due to Louis' death later in 1936, before Jacobs had had the chance to finish this along with other projects. The Jacobs-Frachtenberg reworking of the Gatschet texts, plus the remainder, consisting of Jacobs' phonetic reinterpretations of the Frachtenberg typescripts in conjunction with the original Gatschet notebooks, along with his attempts to provide translations from the Gatschet notebooks, were published by Jacobs (1945:155-198).

Besides his above-mentioned contribution to reworking the Gatschet material, Louis is also the source for texts and a grammatical sketch by DeAngulo and Freeland (1929) (however, DeAngulo and Freeland's char-

acterization of Tualatin as a language far progressed towards complete analysis, "simple pure relational" in grammatical type, is dubious-- we may have here another intimation of Louis' limited fluency), and of an extended autobiographical text begun in 1929 by DeAngulo and Freeland and carried on to some length, but not to completion, by Jacobs (ca. 1936a). Louis must also be the source of the Tualatin portion of the Kalapuya Element List prepared by Jacobs (ca. 1936b) for Kroeber, though I found no background information on informants or other details relating to this list.

The death of Louis Kenoyer in 1936 would appear to mark the end of Tualatin culture.

3. SOME SUBSISTENCE-RELATED ASPECTS OF SOCIO-POLITICAL ORGANIZATION

The Kalapuyans apparently recognized group entities larger than the village group: a number of group names ("Tualatin," "Yamhill," "Santiam," "Luckiamute," "Yoncalla," and others) designated clusters of dialectally and culturally identical or closely related villages or hamlets. However, the political significance of these entities is unclear. Due to the paucity of ethnographic observations from the period following first White presence in the area but preceding the "fever and ague" depopulation and later White settlement, it is not always possible to evaluate aboriginal features of socio-political organization in isolation from what must have been the considerable socio-political consequence of the latter events. E.g., there is some information (Frachtenberg 1914a:n.p., Jacobs ca. 1936b:128) that these group entities had "head chiefs;" however, it may well be that such "head chiefs" only

arose in response to Whites' demands to deal with authoritative representatives of "tribes" in treaty negotiations. Gatschet's notes (1877a: 302) strongly suggest that Tualatin "chiefs," aboriginally, were merely the wealthiest members of their village groups; although particularly powerful personalities could have exerted influence beyond their immediate village group, it seems unlikely that there was any institutionalized "tribal" level of chiefly authority.

Question might arise as to whether these group entities existed at all in aboriginal times. Might Kalapuyans not have formed new group identities as their previously dispersed villages and hamlets were thrown together as a result of drastic depopulation and shrinkage of territorial base? However, there are grounds to suppose that these entities must have had some sort of aboriginal reality. In the first place, the native names corresponding to these entities appear consistently as the group names by which Kalapuyan informants themselves identified themselves (the name "Kalapuya," which is apparently of foreign origin, seldom appearing in the textual and ethnographic material). Also, the Gatschet Tualatin MSS, which represent the experience of informants who had reached adulthood under pre-reservation conditions, suggest that the various Tualatin village groups functioned as a unit at least for certain subsistence purposes. I consider Gatschet's data on this point in some detail.

As mentioned previously, Gatschet lists somewhere between 17 and 21 winter-village groups which were associated with the name "Tualatin." Gatschet's notes furthermore suggest that each winter-village group held its own rights of access to certain subsistence resources in cer-

tain locales, but that the lot of these groups shared access to productive locales within a larger common territory. Moreover, this common territory was apparently rather well defined in relation to the territories of surrounding non-Tualatin native groups (at least as regards "title" or right, if not in the sense of being rigidly defended from outsiders; see sec. 7 for specific discussion of Tualatin territorial limits). The evidence for this picture consists of the following:

(1) It is stated (1877a:92) that areas where tarweeds grew were "allotted" to each "band" (winter-village group), plots within these "allotments" being in turn individually owned, but that hunting districts were not "allotted" (i.e., being, I infer, available in common to the various local groups).

(2) One of Gatschet's texts (1877a:151; also in Jacobs 1945:187-188) indicates the general extent of Tualatin territory by reference to some specifically Tualatin hunting areas; this general territory is treated as a whole, especially in reference to the neighboring Yamhill and Clatskanie groups.

(3) A wapato harvest place on the north end of Wapato Lake is indicated to have been used by all of the Tualatin, "the whole tribe," a short text being added at this point which translates: "all of the Tualatin came together (assembled) ̄ there ̄ in the fall of the year. . . ̄ to gather wapato ̄" (1877a:93).

It seems to me that such data invite some speculation on the relationship between habitational-adaptational factors and Tualatin (and general Kalapuyan) social organization.

The Kalapuyan subsistence base seems to have been diverse, re-

quiring access to a variety of riverine and upland and lowland habitats (see sec. 6a). Thus, winter-village groups were perhaps relatively small, with each necessarily having access to a comparatively large territory. Therefore, the loose organization of Kalapuyan local groups into larger dialectal-ethnic units (the specific organizational structure of which is, of course, unknown) could have had an adaptational significance: such a form of organization would have provided a territory large and diverse enough to offer each local group sufficient access to an adequate range of subsistence resources, but at the same time it would have kept population suitably dispersed by preserving the separate existence of small local groups. The treaty territories indicated for the Kalapuyans seem to bear out the possibility that this was an aboriginal pattern: each "tribe" or "band" elsewhere documented to have probably been a dialectal-ethnic entity seems to occupy its own valley or basin formed by one of the larger tributaries of the Willamette River; each such major valley offered a range of riverine, lowland, and upland types of habitat.

CHAPTER II

SUBSISTENCE

4. HABITAT

4a. General: the Willamette Valley at the Time of Early White Contact

To provide background for sec. 4b, in which I specifically consider the Tualatin portion of the valley, I present some general information here on the natural character of the Willamette Valley at the time of the first White contact and settlement.

Such information is extensive, and falls into three main categories: (1) first-hand observations by early travellers and settlers, (2) the records of the first federal land survey of the Willamette Valley, undertaken in the 1850s (available at the U.S. Bureau of Land Management, Oregon State Office, Portland), (3) recent ecologically-oriented research. Of these, category (2), in particular, has yielded a great deal of useful data-- see the reconstructions of the native vegetation of portions of the middle and upper Willamette Valley, circa early 1850s, by Johannessen, et al. (1971) and Habeck (1961). The following general account, though it makes some use of Habeck's contribution, depends primarily upon category (1).

Descriptions of the Willamette Valley given by early White travellers and settlers indicate a diversified landscape, with prairie, oak and fir savanna, patches of oak or evergreen timber, and heavily timbered riverbanks and hills. Comments to the effect that the area was

exceptional in its general pleasantness and plentiful game are not uncommon. Some of the more common plants of the region noted by early observers include: oak (Quercus garryana), fir (mostly Douglas fir, Pseudotsuga menziesii), "pine" (Douglas fir and/or ponderosa pine, Pinus ponderosa), western hemlock (Tsuga heterophylla), western red cedar (Thuja plicata), alder (Alnus oregana), big-leaf maple (Acer macrophyllum), vine maple (Acer circinatum), Oregon ash (Fraxinus latifolia), hazel (Corylus cornuta), wild cherry (Prunus spp.), madrone (Arbutus menziesii), willow (Salix spp.), cascara (Rhamnus purshiana), crabapple (Pyrus diversifolia), dogwood (Cornus nuttallii), elderberry (Sambucus spp.), ninebark (Physocarpus capitatus), yew (Taxus brevifolia), wild rose (Rosa spp.), camas (Camassia spp.), brake fern (Pteridium aquilinum), blackberry (Rubus vitifolius), currants (Ribes spp.), "grasses," etc. (cf. Henry in Coues 1897:815-817; Franchere 1954:166; Douglas 1904-05 Pt. 3:78-82, 1959:142; Habeck 1961:67-77). Among common animal species, early observers noted deer in great abundance (especially, the native subspecies of white-tailed deer, Odocoileus virginianus leucurus, now reduced to a very small population inhabiting the lower Columbia River, but formerly abundant in the low hills and on the valley floors and river bottoms of the Willamette Valley; also, black-tailed deer, O. hemionus columbianus), elk (formerly abundant in the open country of the Willamette Valley as well as in the mountainous areas to which it is now restricted), black or brown bear (Euarctos americanus), grizzly bears, mountain lions, wolves and coyotes (both abundant), grey foxes (Urocyon cinereoargenteus; red foxes, now abundant in the Valley, are apparently introduced), rabbits, squirrels, beavers, swans, ducks and

geese (in great abundance during migration seasons), turkey vultures, grouse, hawks and eagles, etc. (see Henry in Coues 1897:816-817; Douglas 1904-05 Pt. 3:140, 216; Wilkes 1845 Vol. 4:348; Clyman 1960:117-126, 131-147, 152-158; Bailey 1936:e.g. 82-83, 87-88, 90-91). Certain early writers (Henry in Coues 1897:811; Ross 1849:235) comment that salmon were unavailable upstream from Willamette Falls. This was not so; e.g., Wilkes (1845 Vol. 4:344-345) has an eyewitness account of salmon energetically leaping the falls-- indeed, there was a major Indian salmon fishery there. However, the extent of the aboriginal salmon resource above the falls is uncertain; during seasonal low flow conditions there was probably no escapement of salmon over the falls-- the main escapement was probably by the spring chinook run, which was represented in quantity only in the main Willamette River itself and in its larger tributaries heading in the Cascades (see sec. 8b for discussion of these matters).

The data provided by early descriptions of the Willamette Valley suggest the following somewhat more detailed picture: the Willamette River and its main tributaries were lined by dense timber (one account, that of Palmer [1847:99] indicates that the belt of timber lining the Willamette River varied in width from between one-fourth and three miles); the water levels of the rivers were subject to dramatic seasonal fluctuation and often inundated the low-lying areas beyond their banks; marshes and small lakes were abundant; away from the belts of timber lining the main streams, much of the valley was open and diversified in character, with extensive tracts of prairie and oak (or oak-fir) savanna alternating with groves or small forests of oak and/or fir;

the higher hills and surrounding mountains were mostly heavily timbered, with oak savannas and forests predominating in some of the hills and coniferous forests predominating at the higher elevations.

The diversified character of the Willamette Valley landscape (see Habeck [1961] for a detailed delineation of vegetation types and their distributions in the old valley) may have caused a higher faunal population density and species diversity than would have been present were the area to have been allowed to develop its climatic climax (probably closed coniferous forest). This possibility is suggested by the ecological "principle of edges," which indicates that border areas (called ecotones) between distinct vegetation types as a rule support more species of plants and animals, and denser populations, than do either of the areas they separate (Clark 1954:412). I advance this reasoning only as a suggestion. However, whatever may have been the extent and importance of ecotonal areas in the old valley ecology, the significance of the extensive tracts of open country to Kalapuyan subsistence cannot be doubted. E.g., the oak savannas and prairies provided extensive areas of habitat favorable to at least four important Kalapuyan food plants: tarweed (Madia sp.), which grew on dry prairies, camas, which grew on wet prairies, hazel, which grew in dry semi-open or brushy areas, and the oaks themselves, which provided acorns.

It is now well known that these extensive tracts of prairie and savanna noted by early travellers and settlers were the direct result of frequent fires deliberately set by the local Indians. Following are some early travellers' and settlers' comments upon this practice (for some additional such comments, see Johannessen, et al. 1971).

The early settler Jesse Applegate, writing of his boyhood experiences in the 1840s near Dallas, cites one reason why the prairies were burned:

It was a custom of these Indians, late in the autumn, after the wild wheat, Lamoro sappolil [Chinook Jargon; lamoro or lamolo 'wild,' sappolil 'flour, wheat' /], was fairly ripe, to burn off the whole country. The grass would burn away and leave the sappolil standing, with the pods well dried and bursting. Then the squaws, both young and old, would go with their baskets and bats and gather in the grain. The Lamoro sappolil we now know as tar-weed (Applegate 1930:178-179).

The Wilkes expedition, in the Yamhill River area in 1841, gives similar information:

This part of the Willamette Valley is a prolonged level, of miles in extent, circumscribed by the woods, which have the appearance of being attended to and kept free from undergrowth. This is difficult to account for, except through the agency of fire destroying the seeds. The Indians are in the habit of burning the country yearly, in September, for the purpose of drying and procuring the seeds of the Sunflower [probably, tarweed, *Madia* spp., although other species of the sunflower family may have been harvested in like manner /], which they are thus enabled to gather with more ease, and which form a large portion of their food. That this is the case appears more probable from the fact that since the whites have had possession of the country, the undergrowth is coming up rapidly in places (Wilkes 1845 Vol. 4:358).

David Douglas, travelling through an area some distance south of the Yamhill River during the later part of September 1826, cites some additional possible reasons why the prairies were burned.

. . . the custom of burning the soil is highly unfavorable to botanizing. This plan prevails everywhere, though the natives vary in their accounts of the reason for which it is done, some saying that it is in order to compel the deer to feed in the unburnt spots, where they are easily detected and killed; others, that the object is, to enable them to find wild honey [probably, wasp larvae, honey bees not being native; see sec. 10f-1, #(20) /] and grasshoppers, both of which serve for their winter food (Douglas 1904-05 Pt. 3:78-79).

Douglas' observations as he continued south through the valley

during this trip also give an idea of the extensiveness of the areas burned. On September 30, he noted "most parts of the country burned; only on little patches in the valleys and on the flats near the low hills that verdure is to be seen." Next day, "country same as yesterday, rich, but not yet a vestige of green herbage; all burned except in the deep ravines." On October 5, he again noted the country being burnt, "like the whole of the country I have passed through;" on October 6, he writes that his feet are very sore from walking over the burned stumps of low brushwood and strong grasses; on October 8, "we are just living from hand to mouth," "all the hunters observe that the animals are very scarce and those shy in consequence of the country being burned." (Douglas 1959:214-217).

For a reference to large-scale use of fire in western Oregon outside of the Willamette Valley, see the quote from Riddle, sec. 8a, #(3).

In summary, we may conclude that the annual burning of the prairies by Kalapuyans was a major factor both in the ecology of the pre-settlement Willamette Valley and in Kalapuyan subsistence. One way of indicating the significance of the use of fire might be to label it an adaptive complex: on the one hand, it formed an integral part of specific subsistence activities, especially in the gathering of tarweed seeds; additionally, it maintained the existence of large tracts of prairie and oak savanna and probably increased the extent of ecotonal areas in the valley, consequences likely of great significance to the whole pattern of Kalapuyan subsistence. A study of tree growth rings, in the McDonald experimental forest near Corvallis, suggests that this practice has been going on for some time.

Ring growth studies in stumps reveal that this country was frequently burned for at least 296 years or since 1647. Fires have not been so severe nor so frequent since 1848, as suggested by the presence of large number of trees of the 90-year age class (Sprague and Hansen 1946:89-98).

4b. The Natural Character of Tualatin Country During Pre-Settlement and Early Settlement Times

It would be possible to follow Habeck's lead here (Habeck 1961), making intensive use of the federal land survey records (especially the original field notebooks) to draw a detailed map of Tualatin-country natural areas, circa the 1850s. I have not attempted to do this, but I do offer at least a beginning towards such a map. The survey records include sketches of each township surveyed; these sketches show natural features such as stream courses, marshes, and prairies, and they additionally have scattered notes indicating general character of vegetation or soil characterizing different locales. The accompanying map summarizes information available from these sketches; natural areas are not well defined as to type, nor so exactly delimited as in Habeck's study, but at least a rough picture is given of notable natural features and vegetation-types.

I have not fully explored the possibility of floral and faunal variations between the Tualatin and other areas of the Willamette Valley. There does seem to have been a significant north-south gradient within the valley in the ratio of relatively open to relatively forested area. As a traveller went south through the old valley, the prairie areas became more extensive, the ratio of oak to fir timber increased (Palmer 1847:95), with large timber of any kind (at least that adequate for fencing and building, according to Hines [1881:332])

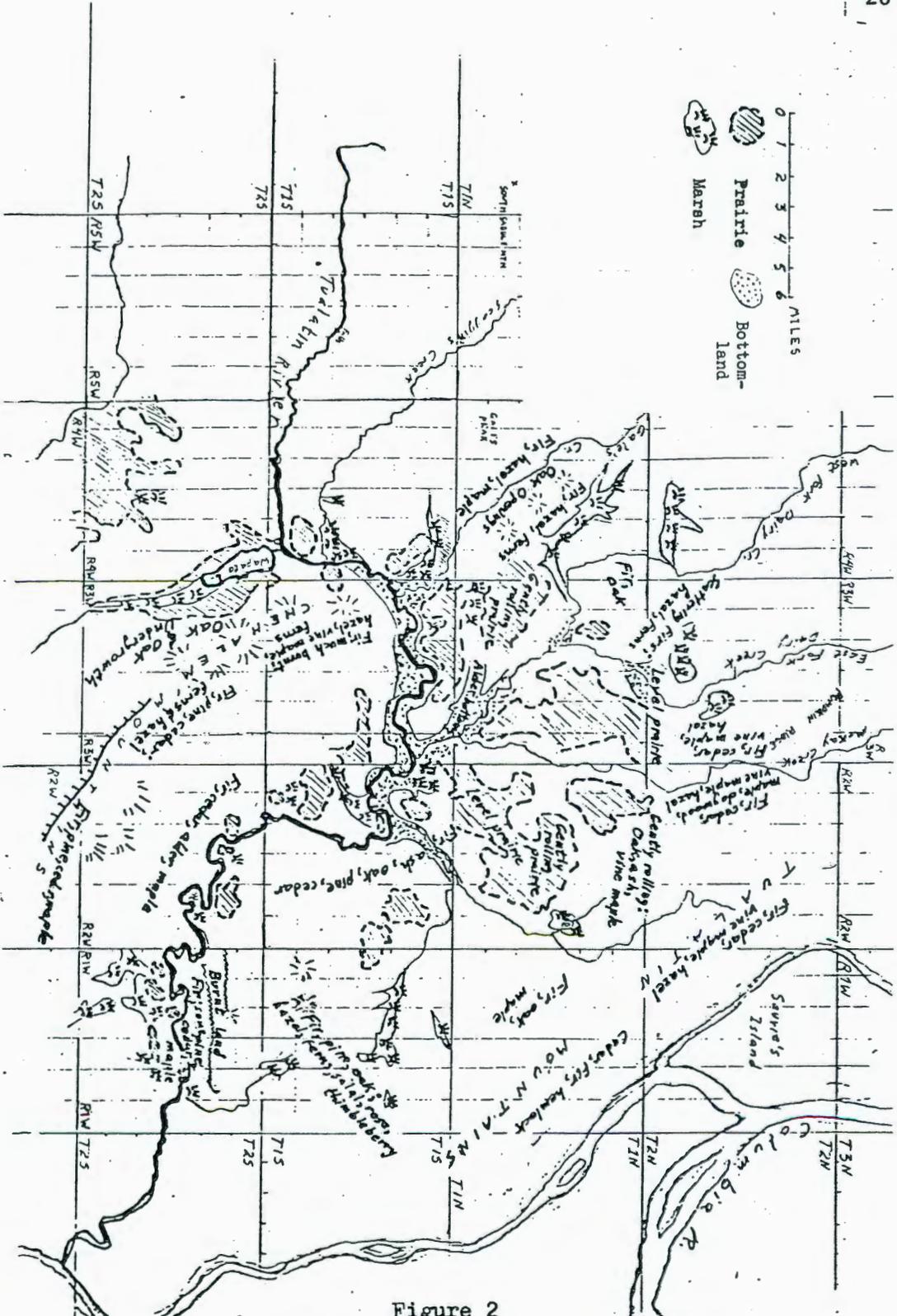


Figure 2
 Tualatin-basin vegetation and natural areas
 (source: United States Survey ca. 1851-56)

ultimately becoming scarce on the floors of the upper valley. By contrast, Tualatin country occupied the northern extreme of this gradient, with less extensive, relatively more discontinuous prairie areas, and relatively more fir timber. I do not venture to speculate on the impact that such habitational variations might have had upon Tualatin as opposed to general Kalapuyan subsistence. There is some evidence (see sec. 5) that the Tualatin and Yamhill depended relatively more upon large-game hunting than did other Kalapuyan groups. If this was so, the question arises (but I make no attempt to answer it here) as to whether, due to habitational factors, large game was relatively more available to the Tualatin and Yamhill than it was to other Kalapuyans.

There is less documentation of large-scale aboriginal use of fire in the Tualatin area than there is for other parts of the Willamette Valley. I found two direct references to use of fire in the Gatschet MSS. One is in connection with the name of one of the Tualatin winter-village groups, ča-pu'ngatpi /see sec. 12a, #(12)_7/. Dave Yatchkawa (Gatschet 1877a:289) explains the etymology of this name, probably questionably, in terms of a group or place name ga'tpi, plus the expression pun nim·ai 'make their fires' (pun 'make, do,' nim-mai 'their-fire'), referring to the setting of fires to "drive out" deer. The other reference is in connection with the harvesting of tarweeds; it is noted (1877a:92) that the areas where tarweeds grew were set afire about August for the seed harvest. I came across one other reference to Tualatin use of fire. Dickson (1946:156), in her M. A. thesis entitled "Food Plants of Western Oregon Indians," states that "the Tualatin prairie near Portland was set afire every year to make it easier

to gather these [tarweed] seeds." Unfortunately (and this is a frequent problem with this source), Dickson gives no documentation for this information; it is possible that it derives from an Indian informant, as her thesis includes information gleaned from five Indian informants (including "Mr. Mose Hudson [John Hudson, Jacobs' old Santiam informant] of the Calapooya tribe," and "Mrs. Hoxie Simmons of the Molalla tribe").

Some direct observations on the natural character of Tualatin country during pre-settlement and earliest settlement times are available. The best of which I am aware are those by Clyman (1960:120-123, 132), Palmer (1847:90-91), and Work (1923:240-246). I consider the latter two in some detail.

John Work, describing his passage over the Tualatin Mountains and onto Tualatin Plains, in 1834, has the following description (commencing with a few comments on the rough, wooded country in the mountains, and continuing with an account of Tualatin Plains):

The soil [of the Tualatin Mountains] is composed of a thick strata of dark vegetable mould perhaps not over 6 or 8 inches deep, over a bed of reddish tile. . . . It is not thickly wooded with timber but overgrown with underwood. The trees principally pine & cedar and of a pretty large size. On reaching the plains some oak of a middling size fringe the edges of the woods. There are also some ash & other trees. The country on getting out of the woods has a beautiful appearance. It is a continuation of plains which commence here and continue on to the Southward, separated by narrow strips of timber, bounded to the east by the strip of woodland which occupy the banks of the Willamet [sic]; and to the westward by the woods which occupy the base of the Killymaux [Tillamook] Mountain [= the Coast Range].

The soil is a rich blackish mould covered (but not with a close thick sward) with grass & other plants, among which are considerable quantities of strawberry plants, now well furnished with fine fruit. Not a stone & scarcely a shrub to interrupt the progress of the plough which might be employed

in many places with little more difficulty than in a stubble field.

The country here though termed Plain from being clear of wood, is not a dead flat but composed of portions of level land with gently rising grounds. Portions of the flat lands are springey. Here the soil inclines to be clayey. The vegetation is not rank, yet it yields a great deal of pasture. This first plain [i.e., prairie] may be about three times the size of the clear ground about Fort Vancouver, and about 170 horses have been feeding upon it for the two last months, and there would still be grass enough for them for the rest of the summer. This Plain is never overflowed; the most Northern fork of the Faldin [Tualatin] is a little distance further on to the Southward. It is not far but through a woody country, to the banks of the Columbia in a N. N. W. direction.

The open country here is of an irregular form, as points of woods jut out into the plains from both sides. . . . The open ground here may be about 3 or 4 miles wide from E. S. E. to W. N. W. (Work 1923:241-242).

Further on in the same trip, Work passed Wapato Lake on his way to Chehalem Valley.

After leaving the river where we slept last night [probably, Scoggin's Creek], the road lay through a point of woods, and two small plains of fine rich soil, but subject to be under water at times during the rainy season. Then over a few hills mostly covered with wood and bushes, and along an extensive plain of rich soil with a kind of swamp or lake [Wapato Lake] running all along the West side of it. Parts of this plain are subject to be partially inundated. Before reaching the southern extremity we struck across to the Eastward over a portion of low hilly country covered with bushes and some trees, principally oak to the head of the fine plain [probably, Chehalem Valley] where we are encamped; which is some miles in length and breadth, composed of a rich soil covered with fine pasture; the lower part of it subject to be overflowed or rather covered with water in the rainy season (Work 1923:245-246).

It is notable that Wapato Lake was a shallow, marshy body of water, subject to dramatic fluctuation in response to the amount of water running in upper Tualatin River (which, when particularly high, could make the lake discharge through its upstream end into Chehalem Creek), and that it contained large quantities of wapato (Sagittaria latifolia) (United States Survey 1852:129-132, 184; Gatschet 1877a:282).

Joel Palmer, writing in 1845, noted that "Quality Plains" [Tualatin or Tuality Plains] was 25 miles in length, "alternately rolling prairies and timber, surrounded by heavy growths of firs, many of which rise to the height of two hundred and fifty feet," also that the "bottoms" along the Tualatin River were heavily timbered (Palmer 1847:90-91). Palmer's account becomes rather more detailed as it takes in the southern portion of Tualatin country: the North Yamhill River, upon emerging from the Coast Range, ran through a valley 12 miles wide approximately, bearing groves of oak and other timber, occasional "bottom prairies," and numerous "spring branches;" the range of hills dividing the North and South Yamhill Rivers was covered with grass, numerous fir-lined springs, groves of oak, alder, and willow, and graded on the west into a country of "fern openings" and timber groves, the latter in turn grading into the heavily timbered Coast Range; the South Yamhill River, upon emerging from the mountains, ran for its first ten miles through dense fir timber of large growth, then into a 15 mile wide valley, well timbered along the river, with grassy prairie (diversified with occasional groves of trees) lying one-fourth mile back on the average from the timber; Palmer incidentally remarked that the "lower bottoms" of the South Yamhill "yield an abundant supply of the Camas" (Palmer 1847:90-91).

5. GENERAL SUBSISTENCE PATTERN; REGIONAL CONTEXT

My overall impression of the available data on Tualatin as well as general Kalapuyan subsistence is that, coincident with the high floristic and faunistic diversity which characterized the aboriginal

Willamette Valley, Kalapuyan subsistence was likewise diversified. The major categories of resources which made up the Kalapuyan subsistence base may be summarized as follows:

(1) Vegetable (especially, camas, wapato, tarweed seeds, hazelnuts, dried berries, acorns).

(2) Fisheries (salmon, steelhead, lamprey eels, non-anadromous species).

(3) Large game (white-tailed and black-tailed deer, elk).

(4) Small and medium-sized game (small and medium-sized mammals of all kinds, waterfowl, other birds).

(5) Insects (grasshoppers, caterpillars, yellowjacket larvae).

The examples listed for each category are only those resources mentioned particularly frequently or mentioned as being particularly important. More detailed consideration of the total range of resources representing these five categories is given in the sections on ethnobiology (secs. 10a-10f). Some indication of general limits within this total range is in order, however.

I found no mention of any insect resources other than those noted above. Apparently, reptiles and amphibians were not utilized in subsistence-- avoidance of lizards and snakes is noted for the Tualatin (Gatschet 1877a:343); avoidance of frogs, lizards, and snakes for the Santiam (Jacobs 1928-36 #84:3). Grizzlies, coyotes, and foxes (Gatschet has "red fox," but grey fox is probably correct [see sec. 10b-1, #(20)7]) were hunted and killed by the Tualatin, but not eaten, it being further noted that the grizzly was not eaten "because he ate people" (Gatschet 1877a:168, 343). The Santiam likewise did not eat

grizzlies, the same reason for avoidance being given (Jacobs 1945:23). It seems fair to speculate that avoidance of coyotes was similarly motivated; coyotes often scavenge for food and, indeed, are not averse to eating human remains when such are available. Might similar considerations then apply to other scavengers?-- e.g. ravens, birds of prey, vultures, wolves; I have found no indication that these animals were eaten by Kalapuyans. Aside from such avoidances, it is clear that Kalapuyans took advantage of a wide range of vegetable and animal resources.

I do not think we can expect to exactly evaluate the relative importance of the major resource categories outlined here. What historical references there are in this connection indicate that category (1), vegetable resources, was the category of single greatest importance in general Kalapuyan subsistence. The earliest such reference that I am aware of is an entry in Alexander Henry's journal, dated December 25, 1813, referring to a communication from William Henry, who was in charge of the Northwest Company establishment in the Willamette Valley (located in the French Prairie area). This states:

The news from that quarter [Willamette Valley] is that beavers are numerous, but the natives, who are also very numerous, will not hunt them; their sole employment is digging roots, such as commass [sic] and waptoe [sic], and stealing beavers from traps when opportunity offers (Henry in Coues 1897: 777).

Alexander Henry later himself made a short trip to the Northwest Company's Willamette Valley establishment, and made some observations on the "natives," "called Calipuyowes." Among other things, Henry noted that "deer are numerous [in the Willamette Valley], but roots of various kinds, which abound, constitute their [the Calipuyowes'] principal food," also that "these people preserve their comass [sic]

much better than any others; they make it up in cakes of about 10 pounds' weight, three inches thick, in which state it keeps fresh and moist" (Henry in Coues 1897:814-815). Later historical references also point to such a primary dependence upon vegetable resources. However, I hesitate to depend much upon such later references, since virtually all date from the final period of Kalapuyan aboriginal life, when the impact of White settlement was drastically affecting the very subsistence base as well as the aboriginal economic system. It is apparent that during this final period, availability of native resources was diminishing-- Whites were busily hunting the game, clearing and plowing the land, turning their hogs loose to feed on camas and wapato, etc.-- and that the surviving Kalapuyans were becoming integrated into the economic system of the dominant society, continuing to subsist on native resources, particularly camas and whatever other vegetable resources could still be found in quantity in some areas, but depending more and more upon provisions purchased with earnings from farm and domestic labor.

On the whole, Kalapuyan informants' statements also suggest that category (1) was of single greatest importance in Kalapuyan subsistence. Within this category, such information further suggests that camas was of major importance, both as a staple and as an article of trade. Additionally, there is some indication that wapato (in addition to camas) was of major importance in Tualatin subsistence. Beyond this, available information permits the following generalizations about the relative importances of the other major resource categories.

Category (5) (insects) was probably of limited importance. Indeed, I find no evidence that the Tualatin used insects at all, though in

view of the sketchiness of the total record I do not think that this is enough to indicate that the Tualatin were distinct from other Kalapuyans in this respect. For other Kalapuyans, caterpillars and yellowjacket larvae are mentioned as delicacies, the former furthermore being noted not to have been available in quantity every season [see sec. 10f, # (3), (20)]. Little information beyond mere mention of use is offered regarding grasshoppers, although it seems likely that large quantities of grasshoppers could have been collected following the annual prairie fires.

A later section (sec. 8b) indicates that the Kalapuyans, the Tualatin in particular, probably did not have direct access to nearly as substantial a fisheries resource as was available to coastal and Columbia River groups. However, trade and fishing expeditions to nearby coastal tributaries likely made this category more important within overall Kalapuyan subsistence than it would otherwise have been.

Small and medium-sized game was abundant in the Willamette Valley and must have been extensively exploited by all Kalapuyans. The picture regarding large game is hazier, a couple of statements of informants as well as some early historical observations suggesting that large game occupied a rather minor part of the total subsistence picture, at least for central Kalapuyans. Central Kalapuyans were surely proficient enough as large game hunters-- question arises only in regard to the relative importance of large game in overall subsistence. On the other hand, there is some evidence, though again sketchy, that large game was of relatively greater importance in Tualatin and Yamhill subsistence.

I summarize some of the data upon which the above generalizations are based. These data primarily reflect the regional distinctiveness of Kalapuyan subsistence, i.e., the variations in resource emphasis particularly distinguishing Kalapuyans from neighboring non-Kalapuyans, rather than commenting directly upon absolute importance of individual resources.

Eustace Howard, one of Jacobs' two Santiam informants, stated that camas was "all over" in the old Santiam country, but that there was little if any camas in any other (presumably, non-Kalapuyan) "country," furthermore that Coyote caused berries, camas, and hazelnuts to be abundantly available to the Santiam but not to the Clackamas (but, as we might expect, also making salmon available in abundance to the latter but not to the Santiam) (Jacobs 1928-36 #83:133, 137). Gatschet's Tualatin informant Dave Yatchkawa similarly contrasted the "Kalapuya" (presumably including the Tualatin; Dave elsewhere uses the name in its generic sense), whom he characterized as living on prairies and eating berries, hazelnuts, camas, and "wild potatoes" (wapato), with the afe'Y (lower Willamette-Vancouver Chinookans), whom he characterized as living on the water, having canoes, eating fish, and "talking differently" (Gatschet 1877a:229). Eustace Howard's wife (and Jacobs' Clackamas informant), Victoria Howard, remarked on the regional exchanges of commodities which took place at Willamette Falls, a center of aboriginal commerce. According to her, the Willamette River Kalapuyans characteristically brought camas and other (unmentioned) things, the Molalla brought smoke-dried meat, and the Tualatin brought "wild potatoes" (wapato) and smoke-dried deer meat (gotten from their hunting area near

Newberg, she comments), to exchange with the Clackamas for smoke-dried fish, smoke-dried eels, and pounded dried salmon (Jacobs ca. 1929-30: n.p.).

These sketchy remarks of Mrs. Howard's seem to me to constitute a particularly important bit of evidence regarding regional variations in subsistence patterns. Various bits and pieces of evidence reinforce this conclusion. It is about as clear as can be under the circumstances that Molalla subsistence was primarily based upon hunting. This is indicated by a number of informants' statements and historical observations which agree in suggesting, as Mrs. Howard stated, that "all the Molalla people did was hunt!"; Eustace (Jacobs 1928-36 #83:14, #84:10) adds the information that mountain huckleberries constituted another notable Molalla trade article. The importance of camas in the subsistence and trading activity of central Kalapuyans seems borne out by the few available early historical observations on Kalapuyan subsistence (especially, Henry's observations cited above and in sec. 2a); Eustace, again (Jacobs 1928-36 #84:10), adds a bit of detail-- he thought that the Santiam might have brought hazelnuts and buckskins, along with camas and other things, to the falls to trade. That wapato must have been a Tualatin staple is suggested by Gatschet's account of the Tualatin yearly round (sec. 6b), which implies that the wapato harvest was an integral part of the annual cycle of Tualatin subsistence activity.

Things seem hazier with regard to the relative importance of large game hunting in Tualatin as opposed to central Kalapuyan subsistence. There is a bit of evidence relating to the Yamhill, which (assuming that Tualatin and Yamhill subsistence patterns were similar, parallel-

ing the other close resemblances between these two groups), might be taken to corroborate Mrs. Howard's implication that the Tualatin were rather notable large-game hunters, perhaps more so than central Kalapuyans. This consists of one of Laughlin's (1943:220-229) findings in his excavation of two late prehistoric-early historic burial and camp-site (?) mounds, south of Main Yamhill River (likely, historic Yamhill country). Laughlin noted that these sites contained large amounts of deer and elk bone fragments as well as bone and antler artifacts, especially as compared to what he had previously found in his central-valley sites. The only statement I could find to corroborate the tenuous conclusion (suggested primarily by a few early historical observations) that the central Kalapuyans were relatively less notable large game hunters, is again from Mrs. Howard, who commented that Eustace's mother (a Santiam) once remarked that the Santiam hunted deer only occasionally, generally sharing a kill among villagers for immediate use rather than preserving the meat.

6. THE TUALATIN SUBSISTENCE CYCLE

6a. Territorial and Seasonal Availability of Resources

My information is too limited to offer a complete picture of the annual Tualatin subsistence cycle or a complete list of specific locales visited for resources. However, by considering the resources listed in sec. 5 in the light of general botanic and zoologic knowledge, it is at least possible to approximately determine when and where certain resources would have been available for harvest. For more detailed information, including binomials, references, discussion of

methods and technology involved in harvest and preservation, see secs. 8a and 10a-10f.

(1) Resources Potentially Available for Harvest All Year Round

<u>Resource</u>	<u>Locale or Characteristic Habitat</u>
Black-tailed deer	Wooded areas at all elevations; mostly occupies small fixed territories year round, though some populations in Coast Range engage in seasonal elevational migrations.
White-tailed deer	Dense woods and brush in lower hills and on valley floors; in herds from about November to April-May.
Elk	Formerly ranged into open country (e.g. lower elevations in Willamette Valley); in herds during fall-winter.
Water-oriented mammals (beaver, land otter, etc.)	Marshes and streams; abundant in Tualatin and Yamhill River systems.
Other small and medium-sized mammals (rabbits, squirrels, various carnivores)	Mainly mixed open, brushy, wooded habitat.
"Game" birds (ruffed and blue grouse, mountain quail, doves and band-tailed pigeons)	Mainly mixed open, etc. habitat (doves and pigeons are summer residents).
Non-anadromous fish (trout and suckers)	Tributaries and main streams in Tualatin and Yamhill River systems.

(2) Resources Seasonally Limited in Availability

<u>Resources</u>	<u>Locale or Characteristic Habitat</u>	<u>Approximate Season When Harvested</u>
Camas	Wet prairies (e.g. low prairies near river courses; Wapato Lake prairie was one such area)	Late March-April (early "fresh" camas) through September-October [see sec. 8a, #1]_7

Spring chinook salmon	Not in Tualatin and Yamhill Rivers; probably not in coastal tributaries; available especially at Willamette Falls (probably not directly harvested by the Tualatin) (see sec. 8b)	April-July
Berries (the ones dried--blackberries, salal, huckleberries, serviceberries)	Various habitats	Summer into fall
Hazelnuts	Dry brushy areas (e.g. in hills, foothills of Coast Range)	July-August
Caterpillars	Ash trees (e.g. in bottomland woods)	Midsummer
Tarweed seeds	Dry prairie	August-September
Grasshoppers	Grassland	August-September
Fall salmon (fall chinook, silver, chum).	Coastal tributaries (e.g. Trask River)	July-December
Wapato	Marshes, shallow lakes (e.g. Wapato Lake)	September-October
Acorns	Oak woods and savannas	About October
Waterfowl	On and near marshes and streams	Some year round, but main population in winter and during fall and spring migrations
Winter steelhead	Coastal tributaries; perhaps also Tualatin and Yamhill Rivers	January-April

Note the variety of riverine, lowland, and upland habitats represented above. Tualatin territory (as drawn from informants' statements, treaty documents, and other historical sources) took in a full range of these habitat types. With the exception of the spring and fall salmon

runs (and possibly steelhead runs), all of the resources listed above must have been directly available within Tualatin territory. One problem in evaluating resource availability is the issue of regional sharing of resources (harvest trips to neighboring territories, access by outsiders to Tualatin territory)-- see sec. 7.

6b. Calendar and Yearly Round

The most specific information available on the seasonal cycle of any Kalapuyan group occurs in Gatschet's (1877b:80) Tualatin vocabulary MS, in the form of a calendar listing names of twelve lunar months (each month starting with the new moon, the year starting in late August or early September), together with brief descriptions of characteristic activities or seasonal conditions for each month. I paraphrase this below. The calendar is prefaced with the comment that the "old people" had only six months because they did not count the summer months. There is however no indication as to which month the "old people" started their calendar with, nor as to how the presumably more recent twelve-month calendar might have synchronized the lunar and solar years.

(1) ačiučut'in. First month; beginning with the first new moon in late August-early September. The Indians are still out (i.e., living in the open in their dry-season camps). ma'mptu (wapato) harvest-time approaches around the end of this month.

(2) ača'lankwaik. ma'mptu harvest commences; the Indians move their camps close to the lake (presumably, Wapato Lake), where they stay for one month.

(3) ala'ngitapi. The Indians prepare their winter houses for the coming winter (and move into them?).

(4) a'ja'mpak (ato'b). -ja'mpak 'chief' (apparently means 'good' here); -tob 'moon, month.' It's getting colder but the weather is not too bad yet.

(5) a'talka (ato'b). Winter dancing is going on. All the Indians are in their winter houses, keeping the fires going all day long.

(6) ači'ulantaĵ. Said to mean 'out of provision.' Hunters are going out into the woods. A lean time. The 1877a MS (1877a:68) has ači'ulandač (Frachtenberg giving a čyu'lantáč), referring to a snowy winter month.

(7) ača'uy^u (ato'b). First spring (about March). Some people leave their houses (to camp out). Women begin digging the first shoots of camas, which at that time are only about a finger high. Cf. ača'uy^u (Frachtenberg ča'wiyu 'March'), a winter month (1887a:68).

(8) ama'nta kitantal. The camas is growing higher and, for the first time in the new season, is pit-oven roasted and pounded into "a sort of bread." The information that camas was not pit-oven roasted until the season was somewhat advanced is borne out by Eustace Howard (Jacobs 1928-36 #83:137); Eustace stated that early "fresh" camas, gotten in March or early April, was boiled at once for eating, not pit-oven roasted.

(9) ata'ntal. Said to mean 'pounded' (referring to the "pounding" of camas?). About May. The camas begins blossoming. The Indians leave their winter houses to camp out. Salmon are coming up the rivers (which rivers?).

(10) ani'salyu (ato'b). The camas is fully ripe now and the women are gathering and drying it for the following winter; "this is

done all summer." "Catch all sorts of fish." Cf. the 1877a MS (1877a:68), where nišna'lxit, which also means 'spring,' is given as the name of a month, about May, which follows the month named la'b, la'bi, the "budding month," about April; apparently, we are being given two rather variant calendars, perhaps representing different informants.

(11) amε'ku, or wayo'yu amε'ku. mε'ku 'summer,' -yo'yu 'dry.'
Midst of summer, the weather is getting dry and hot. Cf. amε'k^w (Frachtenberg mā'gwa), a summer month (1877a:68).

(12) aku'piu. End of summer (August), hot weather. Cf. g·u'b, g·u'bi (Frachtenberg gup), about August (1877a:68).

This calendar, of course, does not present a complete picture of the Tualatin subsistence cycle. However, it puts some of the more important subsistence pursuits (especially, the wapato and camas harvests, also, to a lesser extent, hunting and perhaps fishing activity) in seasonal context, and it indicates the basic division of the Tualatin year into two portions, that spent in temporary camps, and that spent in multifamily houses at permanent winter village locations. The same sort of dual division of the year is indicated in information on other Kalapuyan groups. Jacobs' (1945:39) and Frachtenberg's (1914a:n.p.) Santiam and Mary's River informants both imply such a division of the year, noting that summertime was spent in open camps (shelter, if any, consisting of grass and fir-bough huts or fir-branch windbreaks), while substantial houses were built for winter residence. Jesse Applegate (1930:189) observed that a certain local group (consisting of a prominent man and his relatives; probably Yamhill), residents of the Dallas-Rickreal Creek neighborhood during the 1840s, had "permanent quarters"

in "winter houses," but moved about during the drier season: "at this place [Rickreal Creek] the Indians built their best houses; and moving from place to place during the dry season, returned to them as winter approached." The same Jesse Applegate was a member of the first White family to settle in the Yoncalla-Drain neighborhood, and also commented that the local Yoncalla "chief," Halo, had a substantial winter house but lived in the open, in a grove of oak trees, during the summer (Applegate 1907:14).

This dual division of the Kalapuyan year obviously paralleled subsistence activity: the part of the year during which temporary camps were occupied coincided with the period of peak harvest activity; on the other hand, harvest activity was at a minimum during the winter season, especially during the coldest part of winter when spirit-power dancing and myth recitation were predominant activities.

In conclusion, I draw upon material from this section and secs. 8a and 10a-10f to summarize some salient aspects of the Tualatin yearly round.

The Tualatin spent six or more months of the year in temporary open camps. Harvest-season mobility must have been an important advantage of residence in such camps, but the extent and frequency of harvest-season movement is largely undocumented (the Gatschet calendar, and other information, does indicate that camps were moved to Wapato Lake for the annual wapato harvest; also, it seems likely that there were summer-fall camping trips into the Coast Range for large game, berries, and salmon). Vegetable resources were harvested throughout the drier half of the year, from about March (when the first shoots of camas be-

gan appearing) at least well into October. One important harvest was the camas harvest, which persisted (presumably at intervals) from March-April through the summer (when camas was preserved in quantity, often in the form of cakes which probably comprised important articles of trade as well as important contributions to winter sustenance) and into September (when the roots were starchiest). Wapato Lake prairie was apparently one area having an abundance of camas (this is intimated in the proceedings of the Champoeg Treaty [] in Mackey 1974:105 [], where it is noted that Wapato Lake and its immediate vicinity had "great quantities" of both wapato and camas). By midsummer, hazelnuts and berries would have been available. Around late summer and into the fall, Tualatins probably embarked on berrypicking and hunting (and, probably, salmon/steelhead-fishing) expeditions into the Coast Range (the bit of evidence for Tualatin fishing expeditions to coastal tributaries indicates that while women harvested wapato at Wapato Lake, men went to Trask River to fish; see sec. 8b). Sometime in the very dry late summer-early fall period, the dry grasslands on which tarweeds grew were set afire and the women harvested tarweed seeds.

Availability of small and large mammals was, for the most part, not seasonally restricted, though populations of many mammals are subject to fluctuations. It is specifically mentioned that trapping (i.e., of small mammals, probably for the fur trade as well as for subsistence) was done all year (Gatschet 1877b:80). Notable (presumably mainly large-game) hunting areas, used in common by the various Tualatin local groups, included the Tualatin Mountains, the Coast Range as far as Clatskanie and Tillamook territories, and the Lafayette area south to

the main Yamhill River (the boundary of Yamhill country) (see sec. 7).

Among other resources: Waterfowl were probably very abundantly available during the spring and fall migrations (cf. Clyman's [1960: 117-123] glowing descriptions of migration-season waterfowl abundance in the Willamette Valley in the 1840s); note that marshlands were formerly more extensive in Tualatin country than at present. Lamprey eels were taken by hand in small creeks and at Willamette Falls where, so Jacobs' Santiam data record, they were picked off the rocks during the spring migration season (apparently, the Chinookans who resided at the Falls and rigidly controlled the salmon fishery there did not mind if outsiders procured lamprey eels). Spring chinook salmon were not directly available within Tualatin territory, but were traded in quantity (especially in dried, pulverized form) from neighboring lower Willamette and middle Columbia Chinookans.

7. REGIONAL INTERRELATIONSHIPS: SHARING OF RESOURCES AND EXCHANGE OF SUBSISTENCE COMMODITIES

A key issue here is that of how aboriginal political territories were defined in the area; more particularly, how such definition related to individual and group rights of access to productive locales. Some of Gibbs' general comments on the Chinookans and general western Washington groups provide a starting point for considering the sketchy record on the Tualatin.

As far as I can gather the views of the Sound tribes, they recognize no individual right to land except actual occupancy. . . . Among the Tsinuk and Lower Tsihalis, the right may have been carried somewhat further, but unsettled lands away from their usual haunts are but little regarded. Tribes are, however, somewhat tenacious of territorial right, and well under-

stand their respective limits; but this seems to be merely as regards their title, and they never, it is believed, exclude from them other friendly tribes. It would appear also that these lands are considered to survive to the last remnant of a tribe, after its existence as such has in fact ceased. . . . As regards the fisheries, they are held in common, and no tribe pretends to claim from another, or from individuals seigniorage for the right of taking. . . . Nor do they have disputes as to their hunting grounds. Land and sea appear to be open to all with whom they are not at war (Gibbs 1877:186-187).

This picture seems to generally hold, with some reservations, for the Tualatin and neighboring native groups. Gibbs' use of the term "tribe" here is ambiguous. I elsewhere (sec. 3) discuss the problem of Kalapuyan group identity, observing that, although the evidence is not conclusive, it does suggest that what I call dialectal-ethnic entities (Tualatin, Yamhill, Santiam, etc.) did have some degree of socio-political identity. The picture suggested for the Tualatin by Gatschet's notes is that of a cluster of socially and politically closely inter-related winter-village groups, each probably holding its own rights of access to certain resources in certain locales, but all sharing access to productive locales within a larger common territory. Gatschet's notes furthermore suggest that the limits of Tualatin territory were definitely drawn, at least as regards their "title" (to use Gibbs' choice of words). One of Gatschet's texts (1877a:151) states (quoting Jacobs' translation [Jacobs 1945:187-188]):

Perhaps if they [the Tualatin] crossed to the Yamhill country a man who hunted (there) might get killed. (Beyond) half the mountain at pa'naxDin [the northernmost Tualatin winter-village group], if they (the people of that village) should cross over (that mountain) to Clatskanie country, perhaps a Ba'naxDin (villager) would be killed. If a Clatskanie should cross over, possibly the Clatskanie would be killed (by a Tualatin).

A note to this text, apparently from Dave (the text being given

by Peter) denies the statement that a Tualatin crossing into Yamhill country might be killed. "They never would have been killed by the Yamhills, they could go themselves over the line, (Yamhill River was line.) The coyote never left orders of this kind [] i.e., Tualatins and Yamhills killing each other for 'crossing the line' []" (1877a:152). However, the note adds that the case was different as regards the Clatskanie, as the latter were of "different type." In another note to the same text, Dave comments further on the relationship between the Tualatin and Clatskanie, indicating that "if they [] the Tualatin [] were called [] by the Clatskanie [] then they have a right to cross the line" (1877a:324). Taking Dave's clarifications here at face value, we have a clear statement that the line between Tualatin territory and that of the culturally closely related Yamhill was definitely drawn, but only as regards "title," while the territorial boundary with the more alien Clatskanie functioned rather differently (note though that the attitude towards the Clatskanie thus shown does not necessarily evidence actual enmity between the two groups, it being stated [] 1877a:280 [] that the Tualatin "never fought them [] the Clatskanies []").

I am unable to interpret exactly what the Gatschet MS says about the western boundary of Tualatin territory. The text cited above also reads (quoting Jacobs' translation again): "The Tualatins hunted halfway in the mountains (between) pa·'ʔfan (the Tillamook country . . . and) the Tualatin mountains [] apparently, the eastern section of the Coast Range rather than the hills west of Portland and Sauvie's Island now known as the Tualatin Mountains []". I am not sure what "halfway" (ku'pfan, Jacobs' correction for Gatschet's ko'p'fon 'one half [] in

quantity_7', 'halfway', 'middle') means in this connection-- literally (or more or less) halfway between the coast and the eastern part of the Coast Range?, or (as Whites draw boundaries, and, indeed, as the 1851 and 1855 treaty documents draw the Tualatin western boundary) to the summit or divide between coastward and inland flowing water? Perhaps, on the other hand, the rugged, wild character of Coast Range country precluded any necessity for exactly defining political territories, even as regards "title." Regardless of the exact relationship here between territory as defined by subsistence activities and as defined politically, there is good reason to suppose that the various neighboring groups of the area shared access to productive locales (hunting, berry-gathering, fishing) within the general Coast Range area. Recall Gibbs' statement that "tribes" ". . . never, it is believed, exclude from 7 their territories_7 other friendly tribes;" this statement seems borne out for the Tualatin by Gatschet's notes, considered below.

An interesting consideration at this point is suggested by Nelson Strong's (1906) account of his boyhood on the lower Columbia. Strong emphasizes the vastness of the wilderness which lay beyond the (aboriginally) well-traveled and settled river courses and prairies, commenting that what I call the "productive locales" within this vastness (e.g., prime hunting country; one such area, favored, says Strong, for its elk and bear hunting, extended southward from Cathlamet Head towards the Nehalem River and westward towards the coast), were well known to the Indians, but that other sections were regarded with "superstitious terror" and avoided. Strong uses the Jargon term "mesatchie illihee," "bad country," to refer to such areas; he locates one such area near

Brookfield, Washington (Strong 1906:26, 36-38). I have no direct indications as to what areas the Tualatin might have regarded as "mesatchie illihee," although, from the description [cf. sec. 10h, #(2)], Devil's Lake near South Saddle Mountain could well have been such an area. Jesse Applegate's reminiscences of early farm life near Dallas in the mid-1840s point to one area of mesatchie illihee, somewhat farther south. Applegate states that no Indian would consent to guide his father into the section of the Coast Range near the family farm. Jesse's father finally took matters into his own hands, taking young Jesse and making the trip to the coast and back himself.

We returned home in less than a week. That we returned unharmed seemed to astonish the natives. They asked many questions as to where we went and what we saw. Some of the Indians assured us, as their reason for not going with us, that there was a very dangerous goblin in the Coast mountains, whose awful name was Chuchonnyhoof (Applegate 1930:187).

The Gatschet notes are sketchy but suggestive regarding sharing of productive locales across political boundaries. That the Tualatin would not have been excluded from territory under Tillamook "title" is suggested by the note that, although the Tualatin did not go to the ocean to fish, they did go there to trade and intermarry with the Tillamook (indeed, one Tualatin man, a village chief, is mentioned as having been half Tillamook) (1877a:93, 168, 344). It is also stated that the Tualatin never went to fish in the Columbia River (1877a:94); however, it is indicated that Tualatins sometimes caught seals there (1877a:344). That outsiders were not excluded from Tualatin country is indicated by the statement that the Klickitat came across the Columbia "because there is no game in their country" and sometimes settled in Tualatin country: "after the fish-time was over, they could get

camas here & hunt" (1877a:324). Hunting expeditions by some southwestern Washington group (likely, Klickitats) into the Willamette Valley are documented well back into the historical period by an entry in Alexander Henry's journal (in Coues 1897:879), dated April 9, 1814: "The Mt. St. Helena [sic] Indians were assembled on the Columbia, on their way to the Willamette to hunt deer this summer, as they usually do."

The Gatschet notes suggest one notable variance from the general pattern described by Gibbs: contrary to Gibbs' statement that fisheries were "held in common," open equally to different "tribes" and individuals, the Willamette Falls Chinookans seem to have controlled foreign (at least, non-Chinookan foreign) access to the salmon fishery there. A text, probably from Peter, states (my own translation):

The fɛʸ [Lower Willamette-Vancouver Chinookans] did not want them [the Tualatins] to use dip nets to get spring chinook salmon [amhu'ya] at Willamette Falls [the MS says "seine net" here, but the same word is elsewhere translated as 'dip net,' e.g. "used at Oregon City;" my impression is that the falls fishery was primarily a dip-net fishery], they [also] did not want them to spear spring chinook salmon, the fɛʸ did not want the Tualatin to go to Willamette Falls (1877a:153).

It seems likely that the last part of this quote is either overstated or incompletely stated-- the importance of Willamette Falls as a regional center of aboriginal commerce seems fairly well documented. There is also information from a Santiam informant (Jacobs 1945:24) stating that "all the people" (?) went to Willamette Falls to get lamprey eels, suggesting that the fɛʸ did not mind if outsiders got their own lamprey eels at the falls. While I was unable to find other references commenting directly upon control of access to the Willamette Falls fishery, informants' statements and historical sources do agree in suggesting that foreign groups got salmon at the falls through

trade. Some references in this regard have previously been cited: cf. the discussion of regional specialization as reflected in the exchanges of subsistence commodities at the falls (sec. 5) and the 1814 mention of Yamhills trading camas for dried salmon at the falls (sec. 2a). Another historical reference is provided by the early mountain man and settler Robert Newell, in his 1849 report to Governor Lane on Indians west of the Cascades.

They ["the Willamettes" or Willamette Falls Chinookans] subsist principally on fish which they take in large numbers in a proper season of the year. Many natives go there to trade fish and get a winter supply of provisions. Many parts of bands depend upon the fishing more or less for fish which they trade principally from the Willamettes (Newell 1959:148).

Reference to Tualatin participation in this trade occurs in another one of Peter's texts (1877a:166; translation slightly modified from Jacobs [1945:189]).

They [the Tualatin] brought it [salmon] from far away at Oregon City Falls, (or) at wa'qanasi·s (a place on the Columbia below Vancouver), 'dried pounded salmon' [ake'toɬ] that had been ground, its name was ake'toɬ.

Mrs. Howard (Jacobs ca. 1929-30:n.p.) mentioned that pulverized smoke-dried fish, called itki'lak (Clackamas) 'mashed fish powder,' was sold to the foreign groups that came to the falls. It seems likely that this was the same dried, pulverized product that Lewis and Clark observed being prepared in large quantities, stored in baskets, and used extensively for trade, at The Dalles in 1804 (Spier and Sapir 1930:178-179; Spier and Sapir were also told of the same product, "dried pulverized salmon," used for trade and winter food, by their Wishram informants).

This discussion brings up the general issue of the contribution

to Tualatin subsistence provided by regional exchanges of subsistence commodities. The data are inadequate here, but the Gatschet MSS and Jacobs' Clackamas notes do permit some general comments upon local aboriginal trade.

Certain subsistence commodities which Tualatin country produced in abundance (e.g. wapato, deer meat, and camas), and slaves, gotten by trade or by raid (there is no definite indication as to which of these avenues was most favored by the Tualatin), were among the Tualatin contributions to the trade at Willamette Falls (Gatschet 1877a:94, Jacobs ca. 1929-30:n.p.). Other commodities noted to have been involved in regional trade were: dentalium shells (strung together and standardized in value according to number of shells per length), bone and shell beads (some strung together and standardized according to length of string), ornamental jewelry (breast pieces, nose and ear ornaments, etc.; also, beads, feathers, red-headed woodpecker scalps, and other articles used in ceremonial regalia), tobacco, animal skins (e.g. otter skins, used in ceremonial and wealthy persons' attire; buckskins, etc), and historical introductions such as trade beads, blankets, Hudson's Bay Company jackets, guns and gunpowder, horses (Gatschet 1877a:111, 129; Jacobs ca. 1929-30:n.p.). According to Mrs. Howard, trading transactions did not consist of buying and selling, but rather of formalized gift-giving, at least to outward appearance. To paraphrase Jacobs' notes: When a group of foreigners arrived at a village on a trading expedition they did not speak of the prices of their products or of exchanging them. They presented their goods to the village headman or host. The latter took some of the goods and shared the remainder with his fellow

villagers, who at once inquired when the visitors were to depart. Shortly before the indicated departure, villagers turned up at the hosts' house, presenting the host with goods which he forthwith gave to the visitors. Upon arriving in their own village, the visitors shared the received goods with fellow villagers.

8. SOME MAJOR SUBSISTENCE RESOURCES

8a. Activities and Technology Related to Harvest and Preparation of Some Major Resources

For additional information (especially, binomials and more complete data on native terms) concerning these resources and others not considered here, see secs. 10a-10f.

(1) Camas (ma'ntip 'raw camas,' ma'miš 'cooked camas'). The Gatschet MSS (1877a:169, 195; 1877b:40, 80) have the following regarding the harvest of camas.

Camas was first harvested as soon as its shoots were about one finger high (sometime in March); however, it was not pit-oven roasted until farther along in the season. (Jacobs' Santiam notes [1928-36 #83:135, 137], from Eustace Howard, state that early "fresh" camas, Di'p, was gotten in March or early April, often in gopher burrows where quantities of bulbs could sometimes be found; it was boiled at once and eaten, not pit-oven roasted.) Camas was considered fully ripe in June, when it was harvested in quantity, pit-oven roasted, dried for winter, and "pounded" into "a sort of bread" (pressed into cakes?). (Jacobs again has similar information from Howard, who indicates that the Santiam harvested the "large camas," mi'/'s, in greatest quantity during June.) The camas harvest went on throughout the summer. There is some

evidence that Kalapuyans harvested camas well into the fall. David Douglas (1959:215), while some distance south of Yamhill River, on October 1, 1826, passed some Indians digging camas (which he identifies with a proper if outdated binomial), the bulbs of which were much larger than he had ever seen except on one other occasion. Incidentally, the seeming reference to fall harvest of camas in Jacobs' (1945:190) reworked version of Gatschet's Tualatin texts is in serious error; the word translated as 'camas,' ma'mpDu, is rather the word for 'wapato' [see # (2) below 7].

Harvesting of vegetable resources was the work of women. To harvest camas, women used a digging stick (me'kwi, Frachtenberg has me.'kwi.) made from a piece of serviceberry wood (a very hard wood), bent in the middle; a crooked deer or elk antler cross-piece (māntk) was affixed to the upper end of the stick and held against the belly during the digging operation.

Gatschet has few details on cooking and preservation of camas. Camas was pit-oven roasted for about two days; it might be fire-dried for preservation. The "pounding" of camas into "a sort of bread," noted above, is likely a reference to the pressed-camas cakes elsewhere referred to as a Kalapuyan staple and trade article (cf. Alexander Henry's observations, quoted pp. 32-33; Eustace indicated that cooked camas was pressed into "camas cakes," Du'qkwaik, about two inches thick and three to six inches in diameter, resembling hotcakes). Jacobs' Santiam information is more complete on such matters. Eustace Howard (Jacobs 1928-36 #81:60, #83:135, 137) indicated that pit ovens were three to four feet wide and one to one-and-a-half feet deep (John Hud-

son [Jacobs ca. 1928:6], on the other hand, indicating that ovens were two to two-and-a-half feet deep). Numbers of these pits (oval-shaped, according to Hudson) might be dug on a particular occasion. Glowing-hot rocks were put into the bottom of the pit. Leaves (mostly maple; sometimes skunk cabbage but not so much due to its relative scarcity; often ash, but least preferably due to its tendency to make the camas dry) were put over the rocks; then the camas was put in, then more leaves, then dirt was put on top to seal the oven. The camas was tested after three days; it was left in the pit for about four or five days total. John Hudson (Jacobs ca. 1928:6, 1945:18-19) described another method, differing from Eustace's in having a fire on top of the oven which was maintained for some time. In this method, the camas was left in the oven for from two days and two nights to three days and three nights. When cooked, camas to be preserved was carefully dried in the sun; if dried too much it would be too dry, if too little it would become mouldy in storage (Jacobs 1928-36 #83:137). It was stored in sacks (probably hide or basketry in aboriginal times).

An excellent description of Kalapuyan camas harvesting and preparation occurs in the mountain man James Clyman's journal. Camped near Luckiamute River on May 28, 1845, Clyman commented:

It is remarkable to see the great Quantity of esculent roots that grows in all parts of this vally Ten or Twelve acres of cammace in one marsh is Quite common and in many instances it will yield 20 Bushel to the acre the Calapooyas live exclusively on roots but whare hogs are introduced they soon destroy the cammerce fields these extensive fields are allways on wet land and in many places no other vegitable is found to intermix with it [Spelling as in the original] (Clyman 1960:153).

From the same camp, a few days later (May 31), Clyman observed:

The day proved to be verry warm in the low vally The Indians

our neighbors were out early digging roots this operation is performed by sinking a strong hard stick in the ground near the roots to be dug then taking pry on the outer extremity of the stick a portion of earth containing from 2 to six roots is taken up the roots being the size of a small onion and much resembling the onion in appearance They are then washed and censed a hole of suitable size is dug in the earth filled with wood and stones after the earth and stones become well heated the fire is taken off and a Layer of green grass laid over the hot stones the roots piled on the grass and a Layer of grass laid over the roots then a thin layer of earth over the whole and a fire outside of all which is kept up some 24 hours when it is allowed to cool down and the roots are ready for use or for drying and putting away for future use when dry they keep for months or years [Spelling as in the original] (Clyman 1960:153).

(2) Wapato (ma'mptu). I have previously noted the serious error in Jacobs' (1945:190) reworked version of Gatschet's Tualatin texts. In the passage beginning with the sentence "I myself know that in autumn the camas were gathered," the word ma'mptu (ma'mpDu in Jacobs' phonetic reinterpretation), 'wapato,' is mistranslated as 'camas.' The passage referred to describes the harvesting of wapato at Wapato Lake, where there was a major wapato harvest place located on the northern end of the lake (Gatschet 1877a:93). With the mistranslation corrected, and with some other comments based on my own reading of the original Gatschet text, Jacobs' rendering of this passage is as follows:

I myself know that in autumn [Jacobs has a question, "(?)," here, perhaps because he questions camas being harvested in the autumn-- the translation however is correct] the [wapato] were gathered. The women dug them, they made [holes] [Jacobs has "a ground oven hole," but I disagree-- Gatschet notes that these holes in which the wapato tubers were put were four to five feet deep, about twice as deep as the Santiam camas ovens described above; his translation furthermore seems to me to imply that the purpose of the holes was to "keep," i.e., preserve and store, the roots; it appears that the text describes a preservation-storage technique rather than a cooking technique], and they put them in it, so that they could preserve them for wintertime to be eaten in wintertime. They got them at the lake, the women got [wapato] underneath the

ground, they picked them up, they got them. When the lake was 'overflooded we named it 'step in the water,' the women stepped in the water.

Beyond this, few details are given on wapato harvesting and preparation. The word translated by Jacobs as 'stepped' ("the women stepped in the water") is elsewhere given by Gatschet as referring to "stamping" in the water to get "potatoes" (wapato tubers) out, an apparent reference to the use of bare feet to dislodge wapato tubers from the soft underwater muck of a pond or marsh (as is described by Lewis and Clark for Chinookans of the Sauvie's Island vicinity [Thwaites 1905 Vol. 4:217-218]). The term aiki (Frachtenberg has a slig) is given elsewhere as "stick to collect potatoes [wapatos] in water" (Gatschet 1877a:28). The following note also occurs (1877a:73): "ma'mptu; 2" long, 1" thick, tail to it bent, hard when boiled, sweet, white inside"

Dickson (1946), who has much interesting information (some of it from Indian informants, including John Hudson), the source of which she unfortunately does not always identify, has the following on Tualatin preparation of wapato (unfortunately, one of her unreferenced items):

The Indians near Gaston, Oregon would build a fire on top of the ground as you build a bonfire today. Then, they would spread the ashes apart, put the Wapato in these ashes and cover them up with more ashes. Over the top of the fire, the natives spread a layer of dirt and cooked the tubers for 15 to 20 minutes. When done, the Wappato [sic] was mealy like a potato (Dickson 1946:38).

(3) Tarweed Seeds (ato'k). In other Kalapuyan dialects (Santiam, Mary's River, Yoncalla), there is some ambiguity regarding the denotations of the terms corresponding to Tualatin -tok on the one hand,

and -ša'wal, 'sunflower seeds,' on the other l̄ see sec. 10a-1, #(22), (23)l̄. In different instances, each term appears both as 'sunflower' and 'tarweed;' -ša'wal furthermore appears in Mary's River (and in Clackamas Chinookan) as both 'sunflower' and 'tarweed.' These facts surely reflect close similarities between these plants, e.g. in type of food provided (seeds), preparation methods (parching and grinding), and (likely) harvest methods (use of fire?).

As previously noted, each Tualatin winter-village group had its own tarweed-producing area within which individuals (at least, we would presume, wealthy individuals) owned their own sub-plots. These areas were set afire about August (Gatschet 1877a:92). Women then went out with rawhide buckets (ako'/u; Jacobs, dubiously, reads aGu·'n) and paddles (abu'b, Frachtenberg has pō'p); the seeds were beaten from the plants into the buckets (1877a:169, 196). It is stated that each "lot" (individually owned plot) might produce 10-20 bushels of seeds (1877a:92). A long conical basket, with a hoop, wetted first, was involved in the harvest (presumably, to receive the seeds from the bucket); the implied function and Gatschet's little sketch of this instrument suggests that it is identical to the type of basket designated 'ca·'Bu? in Jacobs' Santiam notes (1928-36 #76:120). Jacobs provides a sketch of a conical, wide-mouthed basket, as well as the information that this was a large basket carried by women on their backs, used for carrying wood and bark and for harvesting tarweed seeds-- "tarweeds are hit and the seeds fall into a platter or cupped light tight pan, the seed contents of which are then poured into the 'ca·'Bu?."

Tarweed seeds were preserved by parching, which was accomplished

by mixing them with hot coals on a board of ash-timber (amhε'/ip 'par-cher'). After parching, the seeds were ground in a stone mortar (ana') by means of a stone pestle (a'nkwi). The prepared seeds might be further mixed with camas (1877a:92, 169, 196). Jacobs' Santiam texts (1945: 20) state that pulverized tarweed seeds, mashed cooked camas, and hazelnuts might be mixed together.

One early settler's description of Kalapuyan (probably, Yamhill) tarweed-seed harvest has been quoted previously (Applegate's 1930: 178-179, quoted p.23). An early settler of the Cow Creek Valley near Riddle (some distance south of the Willamette Valley, in the Umpqua River drainage), gives a fuller description of tarweed harvest and preparation; this applies to the Cow Creek area rather than to the Willamette Valley, but it obviously parallels the less specific information for the Willamette Valley.

During the summer months the squaws would gather various kinds of seeds of which the tar weed seed was the most prized. The tar weed was a plant about thirty inches high and was very abundant on the bench lands of the valley, and was a great nuisance at maturity. It would be covered with globules of clear tarry substance that would coat the head and legs of stock as if they had been coated with tar. When the seeds were ripe the country was burned off. This left the plant standing with the tar burned off and the seeds left in the pods. Immediately after the fire there would be an army of squaws armed with an implement made of twigs shaped like a tennis racket with their basket swung in front they would beat the seeds from the pods into the basket. This seed gathering would only last a few days and every squaw in the tribe seemed to be doing her level best to make all the noise she could, beating her racket against the top of her basket. All seeds were ground into meal with a mortar and pestle. The mortar was formed by forming a round hollow in the face of flat boulders, over which was placed a basket with a hole in the bottom to fit the depression in the rock, forming a kind of hopper to hold the seeds, then with a stone fashioned about two inches in diameter at lower end and tapering to the other end to a size easily grasped with the hand the operator would sit upon the ground with the mortar between her knees and would pound the seeds, using the pestle

which was usually about ten inches long, and weighing five or six pounds, . . . (Riddle 1920:45-46),

(4) Berries (aka'yan). Some kinds of berries, such as strawberries and blackcaps, were eaten only or mainly fresh. A few kinds of berries were preserved by drying and kept as winter provisions. The more important among the latter were blackberries, salal berries, huckleberries, and serviceberries.

Louis Kenoyer, in one of the few texts from him which has any detailed description of subsistence-related activity, recalled, from his boyhood, how berries were dried at a summer berry-gathering and hunting camp in the Coast Range west of Grand Ronde. Louis and a hunter named Yamhill Joe gathered firbark and firewood. The berries, picked by Louis' mother and other women, were put on the pieces of bark, with the firewood being placed nearby. The firewood was lit and the berries were dried for about half the night, at which point Louis and Joe retired and let the fires go out. The fires were relit in the morning and kept going all day, the berries being watched carefully. The women came back from the berry picking areas in the evening, removed the dried berries, and placed fresh berries on the slabs. Again, the fresh berries were dried for half the night (Jacobs ca.1936:paragraph #23).

(5) Acorns (ako'hon). Acorns apparently were not a major contribution to Kalapuyan subsistence, at least in later times. Eustace Howard (Jacobs 1928-36 #83:139) indicated that acorns were picked up in October, but were little used. The Gatschet notes (1877a:32) indicate that the Tualatin gave up using acorns "over 20 years ago," i.e., at about the time they came to the reservation.

Gatschet (1877a:32) notes two methods of leaching acorns. In

one, "acorn mush" (pulverized acorn flesh?) was kept immersed in water, in a basket, for [six?] months (compare the method described by John Hudson [Jacobs 1945:20], in which acorns are first extracted from their shells and dried, then immersed in water in a "small soft-long basket" for only a day and a night). In the other method, the acorns were baked on (hot) rocks (to crack the shells so that the flesh could be extracted, as described by Hudson?), (then) buried in the ground in (with?) "blue clay" (a'mptank); in the winter, the acorns were dug up and the clay washed off (an early settler [Ramsdell, 1907:12] refers to such a method-- Ramsdell notes that the Indians of the Willamette Valley prepared acorns by first burying them in wet clay "indefinitely," then "steaming" them).

For eating, "acorn mush" (ašma'lšmal 'mush') might be mixed with deer's blood. A note from Dave at this point disagrees somewhat with the latter information, which was apparently given by Peter; Dave indicated that the blood was eaten separately, as a soup, and that acorn mush and deer meat were pounded together and eaten as a sort of hash (1877a:32, 114).

(6) Fisheries Resources. Problems in evaluating the extent of the salmon resource which would have been directly available to Kalapuyans are discussed in sec. 8b. The Gatschet MSS have references to fishing by net (e.g., for salmon with dip nets at Willamette Falls), spear, stationary basketwork traps (for trout), and line (trout). Additionally, it is mentioned that suckers and lamprey eels were caught bare-handed. Use of nets is only alluded to (words being given for 'net' of any kind and 'dip net'), and it is furthermore specifically

indicated that Tualatins did not fish for salmon at the dip-net fishery at Willamette Falls. The other mentioned methods (excepting the bare-handed method) are briefly considered below.

(i) Spearing. The Gatschet notes contain expressions for 'fish-spear,' 'I fish with a spear,' 'I fish with a light and spear.' The latter apparently refers to fishing at night, with the aid of torches (perhaps pitch-brands, indicated by John Hudson [Jacobs 1945:24-25] to have been used in night-time fishing for lamprey eels). Spear fishing at night by torchlight is also indicated by Frachtenberg (1914a: n.p.) for the Mary's River; the Frachtenberg notes further indicate that fish spears were eight to ten feet long, with points made of hardwood or bone. The Gatschet notes give no indication of specific species taken by spear. However, references to the taking of salmon by spear occur in the Santiam and Mary's River material, in myths given by John Hudson and William Hartless (Jacobs 1945:92-95, 224). In the Santiam myth, it is indicated that a harpoon (i.e., a spear with a detachable head and connecting thong) was used.

(ii) Traps. Basketwork traps (wε'se), placed at creek mouths and left overnight, were used to get trout (1877a:73, 153). I found no descriptions of this device.

(iii) Line. One of the Gatschet texts (1877a:153, in Jacobs 1945: 188) briefly mentions the catching of trout by line, using grasshoppers as bait. It is elsewhere (1877a:280) mentioned that "rainworms" were also used as bait. Additionally (1877a:73), the word tu'nj, tu'nji (literally, 'bone') is given as "fish hook" (gorge?). John Hudson (Jacobs 1945:18) indicated that trout were caught with tufts of human

hair (as lures?) on the ends of inner willow-bark lines.

(7) Small and Medium-Sized Game. One of Gatschet's texts (1877a: 167-168, in Jacobs 1945:189-190) specifically notes that the following birds and small and medium-sized mammals were eaten by the Tualatin: beaver, seal (sometimes gotten by the Tualatin in the Columbia River), mountain lion, grey-digger squirrel, rabbit, bobcat, raccoon, swan, wild geese (three different types indicated), "pheasant" (ruffed grouse), grouse (blue grouse), quail, (band-tailed) pigeon, duck (any kind), smallest duck (sp.?). The list is not exhaustive, but notes to the effect that certain animals were hunted do not necessarily mean that they were eaten (e.g., coyotes and grizzlies were killed but not eaten). Dogs were not eaten (Jacobs ca. 1936b:12; Tualatin and Santiam).

Kalapuyan cooking methods recorded in connection with small and medium-sized game include roasting (on spits, in ashes, or over coals or an open fire) and boiling by means of hot stones put in water in water-tight containers.

(8) Large Game. Large mammals which were hunted and eaten by the Tualatin included black bear, elk, black-tailed deer, and white-tailed deer. Grizzlies were killed but not eaten.

The only information in the Gatschet notes on the eating of black bear indicates that this animal was cooked (the notes say "steamed" but the method is not described) on top of hot rocks in a sort of pit oven, after which it was eaten up by those assembled; the rest of the meat might then be taken home to women and children (1877a:167).

There have been some significant changes in the relative abundance and distributional patterns of large game species since the time

of first White contact and initial settlement. The native subspecies of white-tailed deer (Odocoileus virginianus leucurus), formerly probably the most abundantly represented deer in the Willamette Valley (see Bailey 1936:90-91), is now restricted, in our area, to a small remnant population on the lower Columbia River (Ingles 1965:423). The observations of David Douglas, together with those of early settlers, indicate that this subspecies was found, year-round, in the low hills and on the valley floors of the Willamette Valley, especially in dense thickets and brush (e.g. on river bottoms). Additionally, it is noted that white-tails ran in herds for part of the year, from about November to April or May (Bailey 1936:91). Elk population has not suffered as much as has that of the white-tailed deer, but its distributional pattern has been altered-- formerly, elk were open-country as well as forest animals in this area, while now they are found mainly in remote mountainous areas. Being gregarious, elk likely formerly gathered in herds in the Willamette Valley, especially during the fall and winter (cf. Bailey 1936:82-83). The native subspecies of black-tailed deer (Odocoileus hemionus columbianus) has apparently been affected less by the impact of White settlement than have the other major game animals. It is still abundant in and around dense woods in the Willamette Valley; it generally occupies fixed, relatively small territories year-round, though those black-tails resident in the Coast Range engage in seasonal migrations from higher to lower elevations, and vice versa (cf. Bailey 1936:87-88).

There is very little specific information in the Gatschet MSS concerning hunting methods and hunting-related technology. Thus, I

depend here more upon Jacobs' (ca. 1936b:51-53, 1945:30-31) Tualatin and Santiam information, and Frachtenberg's (1914a:n.p.) Mary's River information. According to Jacobs' and Frachtenberg's notes, bows were made of yew or oak. John Hudson indicated that bows were made by splitting the selected piece of wood, scraping it with mussel shells and sharp rocks, and finally heating it and rubbing warmed grease into it. Gatschet has an entry in the Powell vocabulary schedule for "sinew on back of bow" (1877b:36); Frachtenberg's notes, as well as Jacobs' (ca. 1936b:51) Santiam-Tualatin culture element list, agree here in indicating that bows were strengthened with sinew backing. The Gatschet notes further suggest that the native bow could pack quite a wallop: "arrows often went pretty near through an elk" (1877a:236). The Santiam section of Jacobs' element list indicates that bows were three to four feet long; the Tualatin section (surely from Louis Kenoyer) indicates six feet (which seems rather tall), and additionally indicates that bows were held vertically rather than horizontally. According to Frachtenberg, arrows were made of "arrowwood" (probably, oceanspray, Holodiscus discolor [see 10a-3, # (64)]); an arrowhead (made of flint, ana'tu, according to Gatschet [1877b:36]), lashed on with pitch-glued sinew, was used for larger game, a hardwood point for smaller game; feathers, three to a shaft, were lashed on with pitch-glued sinew. Poison (rattlesnake; the Jacobs' element list also suggests yellowjacket) was put on tips of arrows only for war, not for hunting.

Some aboriginal hunting methods to which there is reference from the general Kalapuyan area include: (i) use of deer's head disguise or decoy to permit close enough approach to deer for a good shot, (ii)

noose snares, pitfalls, etc., (iii) communal drives. I consider these below in some detail. The stalking of large game by solitary hunters or small groups of hunters, though surely aboriginal, was especially resorted to after the introduction of fire arms.

(i) Disguise. In this method, the hunter wore a deer's head ("with horns complete" according to one source) over his head, and, approaching a group of deer from down wind, imitated a deer's motions or sounds. This method is first mentioned by Henry (in Coues 1897:817) in 1814, in reference to the "natives" in the vicinity of the Northwest Company's trading establishment somewhere in the French Prairie area. The early French-Clatsop settler Louis Labonte (Lyman 1900a:172), recalling his boyhood on French Prairie in the 1830s, also mentions this method, which he says was one of the pastime of the youths at the settlement (guns rather than bows and arrows being used, however). Labonte adds that this method was particularly used during the breeding season of the deer, since during this time bucks were pugnacious and readily attracted. It seems likely that this method would have been well suited to the white-tailed deer, which during breeding season formed herds in the lowlands. This is confirmed by David Douglas, who describes a slightly variant form of this method, noting that it was used by the "native tribes" of the general area to take the white-tail.

The voice of the male [white-tailed deer] calling the female is like the sound produced by blowing in the muzzle of a gun or in a hollow cane. . . . This is well imitated by the native tribes, with a stem of Heracleum lanatum [cow parsnip], cut at a joint, leaving six inches of a tube: with this, aided by a head and horns of a full grown buck, which the hunter carries with him as a decoy, and which he moves backwards and forwards among the long grass, alternately feigning the voice with the tube, the unsuspecting animal is attracted within a

few yards in the hope of finding its partner, when instantly springing up, the hunter plants an arrow in his object. (Douglas quoted in Cahalane 1967:280)

Another mention of this method comes from Riddle (1920:44), in reference to the Cow Creek Valley area of the Umpqua drainage.

(ii) Snares, pitfalls, etc. Most frequently mentioned under this category is the use of a rope noose for snaring deer. David Douglas (1904-05 Pt. 5:85), in reference to the Umpqua River area, observed that such nooses were used especially to take the black-tailed deer. Frachtenberg's Mary's River notes (1914a:n.p.) describe a method for providing such a noose snare with a spring mechanism. The spring action was provided by a bent sapling secured by a rope (John Hudson [Jacobs 1945:31-32] seems to be referring to the same mechanism, though the description is less clear). A rope noose (Hudson says it was made of inner willow bark; farther south, Douglas [1904-05 Pt. 5:85] notes that the fibers of Iris tenax were used) was suspended in some strategic location, the long end of the rope being secured to the top of the bent sapling. When the deer's head entered the noose, the rope holding the sapling pulled free and the deer was securely caught by the neck. Riddle's (1920:45) description of the use of deer snares in the Cow Creek Valley area suggests that such snares might be used in conjunction with communal drives, deer being driven to the strategically placed snares.

Hudson (Jacobs 1945:32) described elk pit-falls, deep pits dug on elk trails, camouflaged by sticks and leaves. The elk were driven (another allusion to communal hunting) towards the pits and clubbed to death when trapped. A similar method (Frachtenberg 1914a:n.p.) con-

sisted of strategically placing a sharpened stake to pierce the body of a jumping animal.

(iii) Communal. This method has already been alluded to above. In the Gatschet notes, there are two rather tenuous possible references to communal hunting. An expression nitu'm·ia·t is given as 'they surround (a field),' e.g. to "head a deer" (1877a:178). Additionally, Dave's etymology of the name ča-pu'ngatpi [see sec. 12a, #(12)_7], in which the name is explained as referring to the setting of fires to burn the country or to "drive deer out," is possibly a reference to the use of fire in communal hunting. The closest thing I could find to a Kalapuyan informants' explicit reference to communal hunting is in one of Frachtenberg's Mary's River myths (in Jacobs 1945:228-229), in which the dead people engage in a communal hunt, encircling an area to drive deer and elk (that is, snails-- dead people's deer and elk) along to where Coyote had been instructed to stand by and kill the game. An early settler (Minto 1900:307) does give us a definite reference to communal hunting, for the Santiam; Joseph Hudson (a prominent Santiam chief, signer of the Champoeg and Dayton Treaties), is indicated to have described for Minto a traditional hunting method in which deer were encircled and driven to a center where they were shot with bows and arrows.

I was able to find some specific information on preservation of large game; this is presented below.

The Gatschet notes mention that elk meat was fire-dried on drying scaffolds (1877a:167). Deer meat was doubtless treated the same way, though there is no note to that effect. Louis Kenoyer, in his remin-

iscences of the same berry-gathering and hunting expedition mentioned previously, described how the hunter named Yamhill Joe dried meat for preservation. A stick scaffold was built, consisting of a framework measuring five to six feet high, three to four feet wide, and six to eight feet long. Cross-sticks were placed across the long horizontal sticks of the framework to form a platform. The women cut the deer meat into small strips, which were placed on the platform. Small fires to dry the meat were built under the scaffold and maintained, without interruption, for two days.

For cooking, meat was generally roasted or stone boiled. David Douglas (1959:219), visiting a "Calapooia lodge" in 1826, observed a woman take a piece of deer rump and pound it with stones, put it into a basket-work kettle in water, throw red-hot stones into the kettle and cover it with a mat until the meat was cooked.

8b. The Salmon Resource-- A Problem Area in the Record on Kalapuyan Subsistence

Disregarding the resource available through trade, it is not clear how large a salmon resource would have been available to Kalapuyans in aboriginal times. There is evidence that Willamette Falls presented an insurmountable obstruction to migratory fish during seasonal low-flow conditions. The spring chinook run, which ascended the falls during high water in the spring, was probably the only significant salmon run which existed in the Willamette River and its tributaries in aboriginal times. Moreover, spring chinook ran only in the larger tributaries heading in the Cascades (notably in the North and South Santiam, McKenzie, and Middle Fork tributaries), but apparently

were nonexistent in the smaller and warmer tributaries such as the Tualatin and Yamhill Rivers. This does not necessarily mean that the Tualatin did not have any direct access to a salmon resource. Mrs. Ruth Roe, an elderly resident of Gaston, recalls local tradition that Tualatin men went up Patton Valley and over to the Trask River to fish while women harvested wapato at Wapato Lake; the packed earth marking the old trail was evident for years at plowing time on the Charlie Williams property in Patton Valley (on the south side of Tualatin River a few miles west of Gaston) (Mrs. Roe 1975, p.c.). The salmon resource available in the Trask River (and in other coastal tributaries) would have consisted of silver, chum, fall chinook, and steelhead runs, spring chinook runs apparently never having been well established in the northern Oregon coastal streams (cf. Gharett and Hodges 1950:3-17). Similar considerations could well apply to other Kalapuyan groups which occupied the western side of the Willamette Valley-- they too could have had direct access to a coastal salmon resource. Unfortunately, though, I have no specific information on this matter besides Mrs. Roe's few suggestive comments.

My information supporting the foregoing general picture of the salmon resource available in the Willamette River system is as follows.

Some early observers state that salmon did not ascend Willamette Falls at all. Alexander Henry (in Coues 1897:811), who passed the falls in January 1814, bluntly stated that "the salmon do not ascend these falls, the rocks being too high and the drop too steep." From other observations made by Henry on the same trip, it is apparent that Henry travelled on the Willamette during a spell of low water. Alexander Ross,

who was also in the area at an early time, having been associated with both the Astor and Northwest Company fur-trading ventures, commented:

To this place [Willamette Falls], and no farther, the salmon ascend, and during the summer months they are caught in great quantities. At this place, therefore, all the Indians throughout the surrounding country assemble, gamble, and gormandize for months together (Ross 1849:235).

Other historical data, however, clearly establish that salmon did ascend Willamette Falls, at least during high water in the spring and early summer. The Wilkes expedition, at the falls in 1841 during the spring salmon run in June, noted salmon ascending the falls in great numbers and the Indians energetically dipnetting for them:

The salmon leap the fall; and it would be inconceivable, if not actually witnessed, how they can force themselves up, and after a leap of from ten to twelve feet retain strength enough to stem the force of the water above. About one in ten of those who jumped, would succeed in getting by. They are seen to dart out of the foam beneath and reach about two-thirds of the height, at a single bound: those that thus passed the apex of the running water, succeed; but all that fell short, were thrown back again into the foam. I never saw so many fish collected together before; and the Indians are constantly employed in taking them. (Wilkes 1845 Vol. 4:344-345).

Peter Skene Ogden, in describing his passage through upper Santiam country on July 14, 1826, provides an eyewitness indication (the only one I have found) that Indians took salmon in one of the Willamette tributaries associated with a Kalapuyan group:

. . . we had not left our encampment more than five minutes when we met two Indian women they appeared pleased to see us and presented us with a fresh salmon and some roots and we in return gave them a piece of deers meat which they appeared highly to prize they informed us the water was remarkably high in the Wallamitte [sic] and this I believe [sic] to be true as it is very seldom known that salmon are taken in the Forks we crossed last night excepting the water be very high otherwise they cannot ascend the Wallamitte [sic] Falls (Ogden 1950:203).

The exceptional height of the rivers for the time of year is further borne out by Ogden's observations at Willamette Falls further on in the same trip: "I found a number of Indians assembled here it being now the season for taking salmon but they at present take but few and this the natives attribute to the high state of the water" (Ogden 1950:204).

A brief examination of the hydrology of the Willamette River may be helpful to an understanding of these early observations. The flow of the lower river at Salem goes through three distinct phases through the year. It is low during the July to October dry season, subject to frequent and extreme fluctuations from November to March or April, and levels off to a steady, moderately high flow from March or April through June (Holmes and Bell 1960:10). During the fall dry season the falls can be as much as twice as high as they are during high water. In view of the apparent difficulty with which salmon ascended the falls even during relatively high-flow periods, it seems likely that no salmon could have done so during low-flow periods.

If Willamette Falls generally presented an insurmountable obstruction to upstream fish migration from about July through October, we can draw a reasonable inference as to what runs of migratory fish occurred in the Willamette and its tributaries in aboriginal times. At the Indian fishery at Celilo Falls the spring chinook run was the first significant migratory fish run following the winter period (November to April), during which there were very few migrating fish available. The next substantial run following the spring chinook was the blueback salmon run, which began as the water level of the Columbia began to drop in June; this run peaked in July. In the late summer and fall, impor-

tant runs of fall chinook and steelhead were present, as well as a minor silver salmon run (Schoning, Merrill, Johnson 1951:8). There has apparently never been a substantial spring chinook run in the northern Oregon coastal rivers. The migratory fish resource in these streams was (and is) composed primarily of runs of silver, chum, fall chinook, and steelhead, the salmon running mainly from late summer to November, the steelhead mainly from November to April (Gharet and Hodges 1950:3-17). Assuming that the timing of the various runs of migratory fish at the mouth of the Willamette would have resembled the timing at Celilo Falls and in the Oregon coastal streams (data on the present-day timing of the various runs of migratory fish in the Columbia River system as a whole support this assumption [cf. Cleaver 1951:36-40, Cobb 1930:411-415]), and assuming that Willamette Falls effectively blocked all fish migration from about July to October, it can readily be seen that the spring chinook run would have had the best access to the Willamette system. This does not rule out the possibility that other migrating fish got into the Willamette system (especially, winter steelhead in early spring or during high water periods in the winter).

At the present time, the principal spawning tributaries of the Willamette River spring chinook run are the McKenzie, Middle Willamette, North and South Santiam, and Clackamas Rivers; there are small runs in the Molalla, Pudding, and Calapooya Rivers (Galbreath 1965:29). There are no spring runs in many of the tributaries associated with Kalapuyan groups: in particular, the Tualatin, Yamhill, Luckiamute, Mary's and Long Tom Rivers. This reflects the fact that the most favorable spring chinook spawning habitat is provided by the relatively larger streams

having their headwaters at high altitudes (cf. Hodges and Gharett 1949: 11, 16; Gibbs 1877:194). I found one definite bit of historical evidence that something like this situation existed in aboriginal times as well. Louis Labonte, an early French-Clatsop settler, cited earlier, recounted a story he says was told by Indians of the Willamette area. He calls the story "the story of the Skookum and the wonderful boy." At one point in it, "wonderful boy" is asleep in a still pool in the Santiam and Coyote comes along and turns him into a rock having the form of a salmon. "And this accounts, say the Indians, for the fact that no salmon that ascend the falls at Oregon City ever turn aside into any of the streams until they reach the Santiam; but there seeing the rock, they take a circle and swim near" (Lyman 1900a:169).

The only Kalapuyan informants' references that I am aware of to the actual taking of salmon occur in the previously cited Santiam and Mary's River myths, which mention the spearing of salmon (tmu'waq, tmu'ak, which Frachtenberg renders as 'fish,' 'salmon,' 'big salmon,' Jacobs as 'chinook salmon').

CHAPTER III

ETHNOBIOLOGY

This is intended to compile and organize ethnobiological information scattered through the Gatschet manuscripts, and to correlate this information with relevant aspects of Frachtenberg's, De Angulo and Freeland's, and Jacobs' later ethnographic and linguistic work on the Tualatin and other Kalapuyan groups. This has a linguistic as well as an ethnographic purpose: in addition to providing a synopsis of available information on Tualatin (and general Kalapuyan) uses of plant and animal resources, it also provides a compilation of virtually all of the data available on one segment of Tualatin vocabulary, together with resemblant forms from other Kalapuyan dialects (I also include forms from other languages, particularly Chinookan, where borrowing seems evident.)

Forms cited from Gatschet, Frachtenberg, De Angulo and Freeland, and Jacobs are transliterated, insofar as possible, into one common orthography; I refrain from reinterpreting authorities' phonetic recordings except to posit one-to-one correspondences between my symbols and theirs (see Appendix). Note that in this respect I deviate somewhat from my practice elsewhere in this thesis: elsewhere, I take the liberty of often writing [w] and [y] for Gatschet's u and i (Gatschet usually, though not always, writing u , i both for the vowels and for consonantal [w], [y] , and of neglecting to differentiate [I], [U]¹ from their

¹

My symbols for [ɹ], [ʊ] ("i" in "bit," "u" in "put").

free variants [i], [u]); in the following (except section 9), however, I take pains to be completely accurate.

Abbreviations preceding forms identify linguistic authorities and their informants, as follows:

(1) Tualatin forms:

(P) ... (e.g., (P) amɛ'f.im) Gatschet (1877a: 1-228), presumed to be from Peter Kenoyer.

(D) ... Gatschet (1877a: 229-400, and forms from pp. 1-228 identified as being from Dave), presumed to be from Dave Yatchkawa.

() ... Gatschet (1877b); informant not identified.

(Emmy) ... Gatschet (1877a), from a'kɛmkit (or Emmy) (only a few forms).

(F ...) Forms written by Frachtenberg into Gatschet's (1877a) field notebooks, with Louis Kenoyer in 1915; placed following the corresponding forms from Gatschet which they are intended to correct.

DeA ... De Angulo and Freeland (1929), given by Louis Kenoyer.

(J ...), J ... Forms written by Jacobs into De Angulo and Freeland's (1929) ms., with Louis Kenoyer in 1936. Forms in parentheses follow the corresponding De Angulo-Freeland forms which they correct; forms not in parentheses do not correspond to De Angulo-Freeland forms, being additions by Jacobs.

J (autob.) ... Jacobs (ca. 1936a), given by Louis Kenoyer.

(2) Forms from other Kalapuyan dialects.

Yam F ... Yamhill forms from Frachtenberg (1913-14c), given by Mrs. Louise Selkeah.

MRF ... Mary's River dialect, Frachtenberg (most 1913-14b, some 1913-14a), presumed to be from William Hartless, though there is sometimes uncertainty as to whether or not a form is from Frachtenberg's other central language informant, Grace Wheeler.

MRF(G) ... Mary's River, Frachtenberg (1913-14a, 1913-14b), given by Grace Wheeler (who, according to Jacobs, was not Mary's River in origin, but spoke the slightly variant Lower Mckenzie River dialect; Frachtenberg however apparently associates no dialectal differences with the two informants).

SJ ... Santiam, Jacobs (1928-36, 1945), given by John Hudson.

SJ(E) ... Santiam, Jacobs (1928-36), given by Eustace Howard.

YoncF ... Yoncalla, Frachtenberg (1914b), given by Mrs. Robert Allen.

YoncJ ... Yoncalla, Jacobs (1928), given by Mrs. Laura Blackerty Albertson.

YoncJ(b) ... Yoncalla, Jacobs (1935) (informant?).

In addition, I include some Kalapuyan forms cited from Hale (1846: 569-629), identified here as Hale These are given without transliteration. Hale does not indicate dialect, but some forms given by him are identifiable (from morphological peculiarities) as Tualatin or Yamhill. If all of Hale's forms are from the same dialect, that dialect is further tentatively identifiable, on the basis of the word for "black bear" [l0b-1, #(21)], as Tualatin.

Chinookan forms cited here are identified as follows: L. [Lower] Chinook (Boas) ... (not transliterated), Clackamas (Jacobs) ..., Wasco-Wishram (French)

9. NATIVE TAXONOMIC CATEGORIES

The following lists of plants and animals named by Kalapuyan informants are organized according to what seemed to me to be convenient taxonomic criteria within each area of subject matter. The question arises as to how the Tualatin themselves might have classified the flora and fauna known to them. Gatschet's texts and notes suggest some native taxonomic categories, though they include no explicit treatment of this topic. References to some generic categories, along with examples indicating approximate ranges of inclusiveness, occur in Dave's myth text

(1877a:240-252, in Jacobs 1945:173-178) (#1, iv, ix below) and in an ethnographic text from Peter (1877a:148-152, in Jacobs 1945:187-188) (#ii below). Furthermore, words more or less corresponding to familiar English generic words ("plant," "tree," "bird," and "snake"), as well as some descriptive designations for subcategories of birds and for other animals, appear in the lexical notes. These are listed below. Note that in (1) below, generic categories are formed by applying some principle of classification to the undifferentiated concept of "thing," "something," "things"; habitat was the most frequently applied such principle in the available examples.

(1) Generic expressions based upon the idea of 'thing,' 'things' (a'ka, a'gfan).

i. 'All the things in the ground' (pu'kilfan a'gfan ča ha'nkəlop; ha'nkəlop 'ground, earth'). I.e., roots.

ii. 'All the things staying (living) on the land, in the country' (pu'fan a'gfan wanta'f.uč ča a'nu; -ta'f.uč 'to stay, live,' a'nu 'the land, country, earth'). Refers to all the animals which were hunted and trapped.

iii. 'A thing with four legs' (a'ka wata'p tɛ'lo'/win; a'ka 'thing' /sing./, -tap 'four,' -lo'/win 'legs'). I.e., a four-legged animal.

iv. 'All the things staying (living) in the water' (pu'kəlfan a'gfan ča ma'mpka wa'ntaf.uč; ma'mpka 'the water'), 'the different kinds of things in the water' (watu'liptin a'gfan ča ma'mpka; watu'liptin 'the different kinds of'). Includes fish, crawfish, mammals such as mink, otter, seal, etc., and such "supernatural" beings as amhu'luk^w and atu'nkai /sec. 10h, #(2), (3)/.

(2) Generic words more or less corresponding to English generic words.

v. 'Plant, bush' (= 'stem, stalk') (to'mpi).

vi. 'Tree' (= 'wood') (awa'tik). to'mpi can also mean 'tree.'

vii. 'Bird' (atwi'j).

'Land birds' (ča a'nu we. nitwi'j).

'All water birds' (pu'f.an ča ma' mpka we. nitwi'j).

'Ocean birds' (ča mi' l.akwi atwi'j [or wi'ntwi'j]; mi' l.ak-
'ocean.')

'All kinds of birds' (pu'f.an watu. lptin atwi'j).

viii. 'Snake' (= 'gartersnake') (atmε' ig^w).

(3) Other.

ix. 'What is eaten' (wakwaiti'kwit), 'the eatable' (akwε'iktifun)
(-kwai-, -kwεi- 'to eat'). "Food," especially vegetable (e.g., roots).

x. 'Something dangerous' (aka'škityak; -ka'šk(i)- 'bad, dangerous'). A dangerous animal.

10. FLORA AND FAUNA NAMED BY KALAPUYAN INFORMANTS

10a. Plants¹

10a-1. Plant Names, Plants More or Less Identified

<u>Presumed identity of plant²</u>	<u>Tualatin and Yamhill terms</u>	<u>Notes, related terms from other languages</u>
<u>Fungi:</u>		
(1) "Mushroom," "toadstool"	() <u>aka' l.ap</u>	SJ <u>qa' lalap</u> 'mushroom'
Head of	() <u>to' mε± ak...</u>	<u>to' mε±</u> 'its head'
Cup-shaped head of	() <u>tεpU' kεna ak...</u>	
(2) "Small mushroom"	() <u>apU' kεna</u>	Said to mean "just arising from ground" (from <u>-puk-</u> 'bud,' 'flower?').

¹

Binomials follow Peck (1961) and Hitchcock et al. (1969).

² Parentheses indicate my own inference as to identity of plant in question, based upon related terms from other dialects or upon other information.

(3) "Larger blue,
poisonous mushroom" () alu'plip

Mosses:

(4) "Moss" () pi'uč, bi'uč MRF am po·'i'čukh 'moss'
SJ(E) Bu'ičUk 'moss'
YamF a tpi·'u.čy

Ferns:

(5) "Fern" (P) amε'f·im MRF am me·'fa?m^h 'fern'
YoncJ GΛmΛ'fi·mI? 'fern'

Grasses and Rushes:

(6) (Cattail,
Typha latifolia L.)¹ (P) agε'pa "Flat tule;" flat leaves,
thick stems, used for mats
(1877a:32, -b:64)²; put in
pads of dressed buckskin
(fluff from pistillate spike
put in?) for compressing the
foreheads of infants (1877a:
225).
(P), () agε'p·a
(F kYa·'p·a)
(D) agə'pa
DeA ka'p·a
(J Gε'B·a)
"Male" part of agε'p·a (P) ua aĵa'nku aĵa'nku 'male;' tU'nkai 'its
agε'p·a agε'p·a penis'
or: (D) aĵa'pa tU'nkai (Apparently, the end part of
the reproductive stalk is
being indicated; "male" and
"female" perhaps refer to
the round flowering stalk vs.
the flat leaf.)

"Female" part of (P) uapU'm·ig agε'p·a -pU'm·ig 'female'
agε'p·a

¹

See footnote 2 on previous page.

²

Since Gatschet (1877a and 1877b) are cited so frequently here, these references are generally abbreviated.

- (7) "Grass" (P), (D) alo'ko, (F lo'qo, lo'ko) Hale v1A'qa¹, v1o'qo 'grass'
 (D) a'loko YoncJ Ga?lo'kwa, lo'qwa 'grass'
 DeA lo'ko Also means "hay."
 (J 1U'kU)
 YamF a lo?ko
- (8) Tule, Scirpus spp. (P), () ha'isai MRF(G) an mi'sai "bullrush"
 SJ(E) sa'i reeds, 5-6' high, used for mats (also name of mats)
 YoncJ G^n'sai mat made of sai (a sort of rush).
 Round tule, used for mats (1877a:32).

(Grasses or rushes, not specifically identified:)

- (9) (P) akci'tan Cf. Wasco-Wishram (French) i-qci'tan 'sedge' (e.g. Carex spp.) (Dr. French thinks that -tan here may be a Chinookan suffix, thus suggesting that the Tualatin word is a Chinookan loan.)
 (F kci'tan)
 3-4', growing on lakes; sharp on sides, cuts fingers (1877a:32) (sedge, Carex spp.?).
- (10) (D) ala'1 "Thread grass" (word also means 'thread,' also a disease object, "worm," removed by shamans) (cf. SJ ala'la 'poison power,' e.g. sent by malevolent shaman).
- (11) (P), () A "weed," 2-3', with tiny flowers; (perhaps) a species of Juncus or Cyperus (1877a:32, -b:64).
amU'stal
 (F mu'stal 'rushes')
- (12) () ha'malp ha'malp anu'g arrow shaft (anu'g) of reed (hollow reed?) (1877b:36).

¹
 A for Hale's a, a for Hale's a (due to limitations of the typewriter).

Herbs:

(13) Camas,
Camassia spp.

Raw camas

(P), (D) ma'ntip

An important Kalapuyan
staple [see sec. 8a, #(1)].

MRF an ti'p 'uncooked camas'
SJ -Di'p, anDi'B 'uncooked
camas' (Eustace, in Jacobs
/1928-36, #83:135/, uses
the word especially for
early camas, gotten in
March-early April, boiled
fresh; see sec. 8a, #(1)).
YoncJ Ga'nDI'p, Di'B 'un-
cooked camas'

Cooked camas

(P) ma'miš

MRF am mi'sy 'cooked camas'
SJ ami's

DeA ma'miš "roots"
am·Is 'camas'
(J Λ'm·Iš, mΛ'm·Iš
'camas')

(Eustace, same reference as
above, uses this word es-
pecially for large camas,
harvested in June and pit-
oven roasted).

J(autob.) am'a'm·iš

YoncJ Ga'hmiš 'cooked camas'

YamF ma'mi·š
am mī·š

(14) "Carrot,"
wild (sp.?)

(P) amhi'uink
(F mhi'pwink)

Word also applied to domestic
carrot. This is probably
some umbellifer (Lomatium
sp.).

(D) amhi'unk
amhi'uink
(F hi'wink)

(15) (Cat-ear or
mariposa lily,
Calochortus spp.)

(Emmy?) (a) ja'j
(F ča·j)

MRF an ca'ca? "cat-ear,"
white blossoms

DeA cac "wild onion"
(J DJA'c)

SJ(E) anca'ca? "pussy-ear"
(root eaten)

J(autob.) aDZa'c
'- roots'

YoncJ ca'ca? "cat-ear camas"

"A kind of camas, eatable"
(1877a:89)

(16) "Clover"
(Trifolium spp.)

() ha'nkuḡik
(means 'leaves')

Cf. (P) ha'nkuik '(large)
leaves'
(F hankwe'k 'leaves')

(17) (Cow parsnip,
Heracleum lanatum
Michx.)

(P) atu'pa

SJ an²u'pa? a tall plant
(5-6'), growing by creeks,
white flowers; stalk
peeled and eaten raw in
April-May, later on made
into flutes (Jacobs 1928-
36 #74:24, #83:139)

Cf. Wasco-Wishram (French)

i-du'ba 'H. lanatum,'
Clackamas (Jacobs) fuba,
itu'ba "wild rhubarb"

Stalk jointed, 1" thick, hollow, eaten when young
but later gets hard; leaves wide and dentated, not
eaten; grows on bottoms and creeks (1877a:170, 197).

The above descriptions definitely point to
H. lanatum.

(18) Nettle,
Urtica spp.

() a'məld ato'ftif

This is surely a made-up name,
but I am as yet unable to
analyze it.

(19) Skunk cabbage,
Lysichitum ameri-
canum Hult. & St.
John

(P) ha'n'op

According to Victoria Howard (Clackamas) (Jacobs ca.
1929-30), the Santiam used (preferred to use?) skunk
cabbage leaves rather than maple leaves in their
camas ovens. Eustace Howard (Jacobs 1928-36 #81:60)
indicated that skunk cabbage leaves were preferred
over other kinds of leaves (maple, ash) for this
purpose, but were not used so much due to their
relative scarcity. John Hudson told Dickson (1946:
15) that skunk cabbage leaves were put immediately
under and over the camas in an oven, maple or ash
leaves being under the skunk cabbage; the camas was
very sweet if prepared this way.

David French (p.c.) comments that various kinds
of leaves, including skunk cabbage, are used by
Warm Springs women in their ovens to give flavor to
camas.

(20) Strawberry,
Fragaria spp.

(P) a²ja'xpəl
a²ja'xpəl
(F a ca'xpul)

MRF an ca'qoplo? 'strawberry'
SJ(E) ca'kUplu?

YamF a ca'xqwul

DeA gives ca'qoplo? as the
Tualatin word; it seems
likely that Louis, who under-
stood central Kalapuyan, was
giving the word from the

latter.

Not dried, eaten fresh
(1877a:169).

- (21) "Sunflower" (P) ma'ntal SJ(E) Dal sunflower stalk;
(Balsamorhiza eaten raw, roots not eaten
spp.?, and/or other (Jacobs 1928-36 #83:139),
spp. of Compositae?) SJ(E) ^nDa'1DIŋka'pya' sun-
flower seed ('the sunflower
its-body')
- Seed of (P) aša'ual MRF sa'wal 'sunflower or
tarweed seeds'
() as·a'ual SJ sa·'wal 'tarweed'
DeA ša'wal 'sun- Cf. Clackamas (Jacobs)
flower' ša'wal, iša'wal 'sunflower
(J sa'U(?)wəl 'tar- or tarweed seeds'
weed')
- J(autob.) aš·a'wal Seed parched, then ground in
'tarweed seeds' a mortar; preserved for win-
ter (1877a:196).
- (22) (Tarweed, (P), (D) ato'k MRF an mətə'qa 'sunflower'
Madia spp.) (F ata'kh, atəq) YoncJ G^nDu'Gw^ 'tarweed'
- Gatschet also writes tau'j, probably taking his in-
formants' pronunciation of English "tarweed(s)" as
a Tualatin word. The plant is 2½-3' high, with yel-
low blossoms; the seeds are iron-greyish and sweet;
they were parched and pounded in mortars (1877a:
169, 345).
- Seed of (P), (D) ato'k
- Whole plant (D) to'mpi ato'k
- (23) Tobacco (the (P) akε'/InU± MRF qa'i·nu·±, an ka'i·nu·±
native sp., Nicoti- (F ke'nu±) 'tobacco'
ana multivalvus SJ ka'inu·± 'tobacco'
Lindl.; also, im- () ke'inI± Cf. Wasco-Wishram (French)
ported tobacco) DeA ke·n± i-ka'inu± 'tobacco'
(J ke'nu±)
YamF ke·n±

Cultivated aboriginally by the Tualatin and other native groups of the area (cf. 1877a:299). Frachtenberg's (1914a) Mary's River notes give the following description of tobacco planting: "Rotten logs burned up and tobacco-seeds put in without spading. Occasionally place stirred up with stick. Each family planted for itself. When leaves ripe they pull them out and dried them."

- (24) Wapato¹,
Sagittaria latifolia
Willd. (also means
'potato')
- (P), (D) ma'mptu YoncJ(b) Ga'mpDu? 'potato'
DeA mɔ'mphtu 'potato'
(J mΛ'mpDu)

"... 2" long, 1" thick, tail to it bent, hard when boiled, sweet, white inside; Sagittaria" (1877a:76) (this describes the tubers, the parts eaten).

In their corrections of Gatschet's texts, Frachtenberg and Jacobs both mistranslate ma'mptu as 'camas.' Much of it grew in Wapato Lake, and it comprised an important Tualatin staple.

- (25) (Yampah or
false caraway,
Perideridea sp.;
probably P. gaird-
neri /H. & A./
Math. subsp. boreal-
is Chuang and Con-
stance)
- (P) apU'hunk White blossoms; forked roots
(3-4), turnip-like, pointed,
on one stem, spreading;
grows in swamps (?); has a
good smell; (root) eaten
(1877a:169).

This identification was based upon suggestions offered by Dr. David French.

- (26) (Yampah or
false caraway,
Perideridea sp.;
probably P. ore-
gana /S. Wats./
Math.)
- (P) apu'ijik
(F po'i.čik)
(P) apu'ijik
(F pu.ičik)
(P) apu'izik
- (D) apu'ijk
pu'ijik
- SJ Antpo'i?čuk a kind of root
having 2 or 3 parts; white
flowers (Jacobs 1928-36
#33:53)
SJ(E) AntBu'ičuk "a kind of
camas," root 1½" long and
"shaped like a sweet po-
tato;" much formerly grew

1

On the basis of the Kalapuyan word for this plant (Tualatin and Yoncalla -ptu), Dr. David French offers the following speculation on the etymology of Chinook Jargon-English "wapato": possibly, -ptu was anciently shared with Chinookans (being Kalapuyan in origin?); in some Chinookan dialect (not Clackamas, where waqat is recorded as the word for Sagittaria) the form *wa-ptu 'the (fem. sing.) Sagittaria' could have occurred; this term could have entered English as "wapato" through the medium of Chinook Jargon. Note that Lewis and Clark recorded "wapto" as the word for Sagittaria.

DeA pɔ'yɔk "wild at Champoeg (Jacobs 1928-
parsnips" 36 #84:39).
(J Bu'IDJUK '- root')

Smaller than apU'hunk (Gatschet originally wrote "smaller than apu'iɣik," then corrected "apu'iɣik" to "apU'hunk?"; the resulting reading is thus somewhat ambiguous); blossom white; root 1-2" long, dug, eaten boiled or raw; stalk 2-3', joints on; grows in prairie bottoms (1877a:196).

This term is given as the source of the name Champoeg (for which Gatschet has ča'mpuik; an alternate name was ča či'ma pu'iɣk).

The identification of this plant was based upon suggestions given by Dr. David French.

(27) Yarrow,
Achillea mille-
folium L.

(P) a txuɣ'n.ɣt
(F a tqɣ'n.at)

(Presumably herbs; uncertainly identified or unidentified:)

(28) (P), (D) a'ld "Little camas;" 1' high, white blossom, grows with camas; (root) size of thumb, square around; eaten (1877a:169, 196). (Brodiaea sp.?)

(29) () amɣ'pkam (Likely, yerba buena, Satureja douglasii (Benth.) Brig.) Also called uame'nme'yuk ɣti' 'the Indians' tea;' a wild, creeping vine, used for tea (1877b:63).

(30) (P) amhi'uk, (Likely, wild mint, Mentha arvensis L.) 10-12"
hi'uik high, grows in swampy places, pleasant smelling,
used for tea (1877a:95, -b:64).

() amhi'uyik

(31) (P) a'mpi

(?) cf. SJ(E) BIp a plant,
1' tall, yellow flowers;
stalk peeled and eaten raw;
seeds mashed and mixed with
tobacco to give it a nice
flavor (kills bad taste in
mouth or stomach) (Jacobs
1928-29 #83:139).

(Likely, Lomatium nudicaule (Pursh) Coult. & Rose; see below.)

Green blossom; in about May or June its stalk was peeled and eaten raw; seed not eaten; 2" (presumably, part eaten) (1877a:170, 196).

In the Jacobs Collection, box 141, there is a pressed plant specimen identified as follows: "amBi'(?)B The leaves are eaten in spring (Santiam Kalapuya)." On the basis of a drawing made by myself of this specimen, Dr. David French positively identified it as Lomatium nudicaule (Pursh) Coult. & Rose. If the cited Santiam name is indeed cognate with the Tualatin, this provides a clear identification of the latter.

- (32) (P) a'nkio·f "Very much like a'mpi:" white blossoms, stalk eaten
a'nkiof May or June; roots very wide spreading, used against
bruises (1877a:170, 197).
- (33) (P) a'ntiuš Little vines growing in bunches; "wild onion;" about
August (1877a:170, 196).
- (34) (P) ma'mpal "Weed," 12-15", white flowers, looks like camas
(1877b:63).

Woody vines, shrubs, low trees:

- (35) Blackberry, (P) a'ntkuil MRF an tkwi'lɛlɛkʸ
Rubus ursinus ɬ'ntkuil tkwi'lɛle·kʸ 'blackberry'
Cham. & Schlecht. (F a'ntkwil) SJ antkwi'lilɛ·k 'blackberry'
var. macropetalus
(Dougl.) Brown J(autob.) a?a'ntkwil One of the kinds of berries
that were dried (1877a:169).
YamF an'tkwi·l According to Eustace Howard
(Jacobs 1928-36 #83:n.p.),
blackberries were the best
berries and were used both
dried and raw; they were the
only ones boiled much.
- Bush of (P) ant... to'mpi
- Berry of (P) ant... aka'yan
- (36) (Blackcap, (P) ɬde'puf "rasp- MRF te'pufa? "raspberry"
Rubus leucodermis berry" SJ(E) Dɛ'BUfI "raspberry"
Dougl.)¹ (F ti'pa·f) (late June-early July; eaten

1

Thimbleberry (R. parviflorus) might seem a possibility here (in view of the translation as "raspberry"), but the Santiam-Mary's River terms for thimbleberry are given as -tma?, tma'h, respectively.

(P), (D) atε'pUf mainly fresh; Jacobs 1928-
 "raspberry" 36 #83:n.p.)
 YoncJ Dε'BufI "raspberry"

Bush 5' high; berries not dried so often, eaten
 mainly fresh (1877a:169, 345).

(37) (Cascara,
Rhamnus purshiana
 D. C.)

(P) apu'hu
 (F pu'hu)

SJ amBu'ha-(Dinda'ki'1)
 'Chitum-(its-bark),' used
 as a purgative (Jacobs
 1945:37)
 Cf. Wasco-Wishram (French)
i-buhugux 'R. purshiana'
 Clackamas (Jacobs) ibuxqux
 'Chitum leaves'

Tree, about 20', black berries, white leaves
 (1877a:18).

(38) Cherry, wild,
Prunus sp.

(P) h'nuI
 (F a'nui')

Cf. YamF ha'noq 'wild cherry';
 the different words may refer
 to different species of Prunus.

(39) Crabapple,
Pyrus fusca Raf.

(P) aka'lk
 (F qa.liq)

SJ anqa'ye'la'q, anG...
 'crabapple'

DeA ka'1Iq
 (J Ga'1ek)

YamF qa.lqh

"Sour" (1877a:32). Dickson (1946:129) says that the
 "Calapooya Indians" (source not given, but probably
 John Hudson, whom she elsewhere identifies as a
 "member of the Calapooya tribe") "... picked the
 crabapple green and saved the fruit until it turned
 red. Then, they ate the fruit as you eat an apple
 today but only a few could be eaten because they
 were very sour and hurt the mouth. Some of the crab-
 apples were put away in oil for winter use."

(40) (Elderberry,
 blue; Sambucus
cerula Raf.)

(P) ana'f

SJ(E) na'fU? 'blue elder-
 berry' (not eaten raw,
 boiled fresh, not dried and
 kept; Jacobs 1928-36 #83:143.)

"Blue grape," edible, tart
 (1877a:32).

(41) Gooseberry,
Ribes spp.

(P) a'mptik
(F a'mptiq)

YamF a·m ptIk
amptk^h

(42) Hazel, Corylus
cornuta Marsh var.
californica (A.DC.)
Sharp

Hazel nuts

(P) ma'mpkui

MRF pkwi·? 'hazel'

SJ ampGwi'? 'hazel nuts'

DeA amphkwI'I 'hazel'
(J a'mpGwI)

YoncJ G^'mpkwI' 'hazel nuts'

YamF ma'mpk^h

Hazel bush

(P) ma'mpik, ...bik
(F ma'mbi·k)

SJ amBa'q 'hazel sticks'

YoncJ G^'mBa'q 'hazel sticks'

Nuts dried and eaten as wintertime food; sprouts used in basketry (1877a:61, 169).

According to Eustace Howard (Jacobs 1928-36, #83:133), the Santiam went for hazelnuts in July to early August. The nuts were picked green, taken to temporary camps, and spread on the ground to lie in the sun for three or four days; they were then beaten with a club to make the husks come off, then put into sacks and taken to the villages, where they were stored in sacks or in pits.

(43) Huckleberry,
Vaccinium sp.
(red or blue?)

(P) h^mo·/u
hε'mo
(F ha'mu·)

SJ(E) ^ma'u a small huckleberry found near Salem; the only huckleberry picked by the Santiam (the larger kind of huckleberry being purchased from the Molala); dried for winter (Jacobs 1928-36 #83:141).

Berries of

(D) hε'mo/u aka yan

Bush of

(P) to'mpi hε'mo

One of the kinds of berries that were dried (1877a:169, 345).

(44) Kinnikinnik,
Arctostaphylos
uva-ursi (L.)
Spreng (and other
spp. of Arcto-

(P) aspε'čiu
(F spe'čiu·)
(D) ałpε'čiu

Cf. Clackamas (Jacobs) ba'čiw,
iłba'čiu 'kinnikinnik, mt.
laurel' (fresh leaves
scalded in boiling water,
dried, mashed, and mixed

staphylos?)

with tobacco leaves.
Cf. Wasco-Wishram (French)
iɬ-ba'čiu 'Arctostaphylos
spp.'

This word seems likely to be a Chinookan borrowing into Tualatin. Jacobs gives SJ lɛ'rup 'kinnikinnik.'

Grows on high ground, has rhizomes and red berries; mixed with tobacco (1877a:299).

(45) Rose, wild,
Rosa spp.

(P) aʒa'ʒal

MRF an ca'calʸ 'wild rose'
SJ anča'čal 'wild rose'

Larger rose hip

(P) ɛ'išin
təkuɑ'lak

'Coyote's eye' (ɛ'išin
'coyote')
Cf. SJ anča'čal asni -
Duŋkwi'lɛ.k 'rose coyote's-
eye' (= rose hip)

(46) Salal, Gaul-
theria shallon
Pursh

(P) amhu't.iu
(F hu'tyu)

SJ(E) mU'Dui 'salal berries'
YoncJ GʌmI'Di.wI 'salal
berries'

Berries of

(D) amhu't.iu
aka'yan

Berries dried (1877a:169, 345)

(47) Serviceberry,
Amelanchier alni-
folia Nutt. var.
semi-integrifolia
(Hook) C.L. Hitch.

(P) amɛ'fap
(F amɛ'f.ap)

MRF am ma.fom 'serviceberries'
(G?) am me'fam? 'service-
berries'

(Hook) C.L. Hitch.

(D) amɛ'f.ap

DeA mɛ'fUm
(J mɛ'f.ʌm)

Berries dried (1877a:345);
wood used to make digging
sticks (mɛ'kui, F me'kwi.)
for harvesting roots (1877a:
169, 195).

YamF ame'fap

(48) Willow
(Salix sp.)

(P) alɛ'dik
(F le'dik)

Wood used to make plates for
fire drills (1877b:38).

() alɛ'idik

DeA leetIk
(J le'Dik)

(49) Willow
(Salix sp.)

(P) ha'mpəno.ɬ
(F pno.ɬ)

Willow sticks eaten by beavers
(1877a:70).

(50) (Vine maple, Acer circinatum Pursh) () ha'l'oɬ MRF al la'u 'vine maple'
(G?) al la'u 'vine maple'
YamF ha'loɬ YoncJ Ga'nlaʉ 'vine maple'
a loɬ 'vine maple'

Seed of () təkus'1.ɛɬ Has two wings (1877b:63).
ha'l'oɬ

(Presumably a shrub or small tree, unidentified:)

(51) (P) ha'mpUl (?) SJ(E) amUl "coffee berries" (?)
"Willow in swamp, little white berries" (1877a:18).

Broad-leaf trees:

(52) (Ash, Fraxinus latifolia Benth.) (P) ha'nkoš "About size of ash-wood, looking like it" (?); tree on rocky hills, white leaves (1877a:280). (The foregoing leave me uncertain about the identification here.)
(F ha n ko's 'ash tree')
(D) ha'nkouš Santiam used leaves in camas ovens (Jacobs 1928-36 #81:60; 1945:18-19).
YamF han ɜo.s 'ash'

(Bark of) (P) amhU'ɟim Ash bark, dried in summer (June) and used in house construction; also used to plug cracks in house walls during cold weather (1877a:13, 192).
(F am hu'ɟim) Cedar bark, # (56), is noted to have had identical use; might this somehow account for the differing Yam-hill translation?
YamF amhu.'ɟi.m 'cedar'

(53) Cottonwood, Populus trichocarpa T. & G. (P) ha'nkuaɬ MRF an qwa.L¹ 'cottonwood'
(F kwaɬ) (G) an qwa.ɬ 'cottonwood'
YoncJ Ga'ŋGwe'ɬ 'cottonwood'
YoncF ka'n kwi'yaɬ 'cottonwood'

¹

L = Frachtenberg's symbol for "surd lateral" (?).

(54) Maple (big-
leaf maple, Acer
macrophyllum Pursh)

(D), () ma'nčmit
() ma'nšmit

MRF an čmđ? 'maple'
SJ ančmi'?'t 'maple'
ancmi'?'D 'maple'
YoncJ G^'nčmI?'k 'maple'
G^'nčmI?' 'maple'

Jacobs' (1928-36 #81:60; 1945:18-19) Santiam information indicates that maple leaves were used in camas ovens.

(55) Oak, Quercus
garryana Dougl.

(P) amε'f
(F mđf)

MRF am me'fa? 'oak'
SJ -mε'fa 'oak'
YoncJ Gama'fa 'oak'

() ame·f

DeA mε·f

YamF a mi·f

Oak sapling or
undergrowth

(P) ačI'čil
(F čI'čil)

MRF an čI'čal bow made from
oak
SJ ančI'čil 'bow,' 'oak'
-čI'čel 'bow,' 'oak'

Acorns

(P) a'ko'hon
(F ko'han)

Loan word from English?
Cf. MRF an o'lyIkY, SJ
an'u'lik, YoncJ Gama'o'lik,
'acorns.'

DeA ko'han
(J ku'han)

Leached and eaten in
pre-reservation times /see
sec. 8a, #(5)/

YamF a ko·on

Conifers:

(56) Cedar (bark?)
Thuja plicata D.
Don.

(P) ama'1·i
ama'1·
(F a ma'1)

MRF al la·h 'cedar'
(The Mary's River word suggests that Frachtenberg may be wrong in identifying the Tualatin stem as -mal; it may rather be -al·(i)--i.e., am-a'1·.)

Cedar bark, used in house construction and to plug cracks in house walls during cold weather (1877a: 13, 192).

(57) "Fir" (presumably Douglas fir,
Pseudotsuga)

(P) ha'ntuał
(F ha'ntwał)

Hale hv'ntawatxl "tree,"
"pine"

<u>menziesii</u> (Mirb.) Franco)	DeA <u>ha'ntwaḷ</u> "red fir"	MRF(G?) <u>twa'ʔḷ</u> "yellow fir" SJ <u>antwa'ʔḷ</u> "fir"
	YamF <u>han twaḷ</u> "fir"	
Fir sapling	(P) <u>abd'fbak</u> (F <u>pu'fpak</u>)	
"Leaves" of fir (fir boughs?)	(P) <u>abu'f</u>	MRF(G?) <u>am pu'fa^h</u> fir sapling MRF <u>am pu'f</u> bow made from fir
(58) "Pine" (pre- sumably ponderosa pine, <u>Pinus ponde- rosa</u> Dougl.)	DeA <u>a'mpkulq</u> (J <u>^'mpGalk</u>)	MRF <u>am pkalk^h</u> "red pine" (G?) <u>pka'lk^h</u> "red pine" YoncF <u>ka'm pka·lYa'k</u> "red pine"

P. ponderosa is native to the Tualatin area, especially to the drier eastern portion of Tualatin Plains (the present-day Beaverton-Aloha area).

(59) Yew, <u>Taxus brevifolia</u> Nutt.	(P) <u>ami'nmiḷ</u> (F <u>mi'nmiḷ</u>)	SJ <u>ami'lmiḷ</u> 'yew' (wood)
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Red berries (1877a:19). Frachtenberg notes, for the Mary's River, that bows were made of "hewe" wood (Frachtenberg 1914a:n.p.)

10a-2. Unidentified or Questionably Identified Plants

- (60) (D) apU'n·ai A "bullrush" (?), abundant on Wapato Lake; white blossoms; stem washed, then skin put in mouth and juice swallowed for intoxication (too much will kill men or cattle; can cause unconsciousness and issue of blood from mouth) (1877a:345).
- (61) DeA te'UwIs "hardhack"
(J De'ʔwəs "arrow wood;"
a small bush
used for
arrows)
- SJ ta'usak 'arrow'
SJ(E) ta'usaʔ 'arrow'
mU'tausa hard arrowwood, for
arrowheads
- Gatschet (1877a:14) gives atε'/uš, atε'wuš (F ti'waš)
'(play) arrow (for boys).'

- (62) J tɪ'lelma The absence of cognates from other dialects causes
 "red huckle- me to be uncertain about this form from Louis, in
 berry" view of the fact that Gatschet (1877b:70) gives
tu'ləlu 'red,' 'purple.'

10a-3. Yamhill Terms for Which No Corresponding
 Tualatin Terms Were Found

- (63) Alder, YamF ham pup MRF am pu'p 'alder'
Alnus spp. YoncF ka'm po'p 'alder'
- (64) "Arrow wood" YamF a q̄la·kwa MRF an q̄la'kwa "hard arrow
 (probably ocean wood," "hardhack tassel
 spray, Holodiscus wood;" arrows made from it
discolor (Pursh) (Frachtenberg 1914a).
 Maxim.) SJ(E) k̄la'gwa (miswritten for
k̄la'qwa?) a hard wood used
 for arrows.
- (65) Cherry, wild YamF ha'noq MRF ano'q 'wild cherry'
 (Prunus sp.) (G?) an no'qu 'wild cherry'
 YoncJ Ga'nu'q 'wild cherry'
Ga'nuk 'wild cherry'
- (66) Salmonberry, YamF lo'pqεq MRF lo'pqe·q 'salmonberry'
Rubus spectabilis
 Pursh
 Dickson (1946:83, 84) notes that the young shoots,
 as well as the young shoots of thimbleberry (R.
parviflorus; she specifically cites John Hudson on
 the latter point), were peeled and eaten raw by the
 "Calapooya."
- (67) "White fir" YamF hā'mi· MRF am·a¹ "white fir"
 (Abies grandis (G?) am mai·^h 'white fir'
 Lindl.?) SJ a'ma'i 'white fir'
 YoncJ Ga'mai 'white fir'
- (68) "Yellow fir" YamF ča'lkwal
 (?)

10a-4, Introduced Plants

- (69) Apple tree (P) a'lipom to'mpi lipo'm 'apple' (Chinook Jargon)
- (70) Beans (P) uapa'j ali'pua -pa'j 'long;' li'pua 'peas' (Jargon)
- (71) Carrot (P) amhi'uink Same word as for "wild carrot," #(14).
- (72) Clover () ha'нкуεik 'leaves;' see #(16).
- (73) (Indian) corn, or grain of any kind () a'pε'čiu Apparently, same word as for Kinnikinnik, #(43) (resemblance of Indian corn to Kinnikinnik berries?).
- (74) Hay (P) alo'ko 'grass;' see #(7)
- (75) Oats, grain () ala/ue'n Jargon
ala'ue'n
- (76) Parsnip (P) ua'm'o amhi'uink 'white carrot'
- (77) Pear tree (P) ap' do'mpi p' Jargon
- (78) Potatoes (P) ma'mptu Same word as for wapato; see #(25).
- (79) Wheat (P) ša'plil Jargon

10b. Mammals¹

10b-1. More or Less Identified

<u>Presumed identity of mammal</u>	<u>Tualatin and Yamhill terms</u>	<u>Notes, related terms from other languages</u>
<u>Order Insectivora:</u>		
(1) Mole, <u>Scapanus</u> spp.	(P) <u>atpU'ncaɬ</u> (F <u>tponcaɬ</u>) DeA <u>tpɔ'ncaɬ</u> 'mole' <u>ma'ncaɬ</u> (erroneously given as 'gopher') (J <u>ma'ncaɬ</u> 'mole') YamF <u>tpu'ncaɬ</u>	MRF <u>an cYIcYa'ɬ</u> 'mole' (G) <u>an caɬ</u> 'mole' DeA also gives, confusingly, <u>pɔ'ncaɬ</u> 'rabbit.' Hunted (1877a:152).
(2) "Bat"	(P) <u>atkuɪ'k</u> (F <u>a tkwikʰ</u>) (D) <u>atkuɪ'k^u</u> YamF <u>tkwi'k^u</u>	
<u>0. Lagomorpha:</u>		
(3) "Rabbit" (any rabbit)	(P), (D) <u>ata'l.a</u> (F <u>ta'l.a</u>)	YoncJ <u>ganta'li?</u> 'rabbit' Eaten (1877a:168).
(4) "Grey rabbit" (?)	() <u>ndo'f</u>	
<u>0. Rodentia:</u>		
(5) Common grey ground squirrel ("grey digger"),	(P) <u>amhU'aɬ</u> (F <u>a mu'waɬ</u>)	MRF <u>am mo'aɬ</u> prairie grey squirrel (ground digger) SJ <u>amu'waɬ</u> grey squirrel,

1

Binomials and order of presentation generally follow Ingles (1965).

Otospermophilus
beecheyi (Richardson)

J mu'waʔ "grey
squirrel"

grey digger
YoncJ GʌmU'waʔ big grey
digger squirrel

YamF mo'ʔaʔ

"Grey long-tailed squirrel, on trees" (confused with Sciurus griseus?) (1877a:12). "Common prairie ground squirrel;" "grey squirrel," the smaller kind (1877a:152, -b:47). Hunted and eaten (1877a:152, 168).

Jacobs' Santiam informants both mention the roasting of this animal. John Hudson noted that it was roasted in hot ashes or coals (Jacobs 1945:27-28); Eustace Howard (Jacobs 1928-36 #84:5) remembered seeing a man roast a grey digger against a fire.

(6) Chipmunk,
Eutamias town-
sendii (Bachman)

(P) ʔčkuI'ʂnək
(F čkwi'ʂikʰ)
(P) ačkuI'ʂnʲk
(F tkwi'sʲnik)

MRF kwi's·ak 'chipmunk'
(G) an kwi'ʂɛʔkʰ 'chipmunk'
YoncJ Gwɛ'ʂaʔ 'chipmunk'

Hunted (1877a:152).

() ačxuI'ʂnʲk¹

DeA kwI'skwIs
(J GwI'sGwis)

YamF čkwi'ʂliʔkʰ

(7) "Larger grey
squirrel" (western
grey squirrel,
Sciurus griseus
Ord)

(P) aʒo'nak
(F co'noq)
() aʒo'nak

MRF an co'noq^u "silver-tail
squirrel"
SJ ču'nuk "silver squirrel"
YoncJ GʌmIʂo'noʔk "silver-
tail squirrel"

Hunted (1877a:152).

(8) Small brown (or
red) tree squirrel
(Douglas squirrel,
Tamiasciurus doug-
lasi /Bachman/)

(P) apU'ʔa
(F a puʔ)
(P), () apo'ʔa

MRF(G) am po'yaq "pine
squirrel"
SJ amBu'ʔyaq "pine squirrel"
YoncJ GʌmBu'yIk "pine squirrel"

DeA ʔpɔ'ʔa "squirrel"
(J ʔpU'ʔa "rabbit"
(erroneous))

Hunted (1877a:152). "Brown
squirrel, small; on trees"
(1877a:12); "brown, dark wood
squirrel, small" (1877a:152);
"small red squirrel" (1877b:47).

1

Interpretation of Gatschet's x is sometimes uncertain, since he often seems to confuse [x] and [q]. The latter varies non-phonemically with [k] in central Kalapuyan, at least.

YamF po'la "pine
squirrel"

(9) Flying squirrel, () ala'p'hi
Glaucomys sabrinus
(Shaw)

(10) Gopher,
Thomomys spp.

(P) o'ufpi
(F o'fp)

MRF a fpi? 'gopher'
SJ afBi' 'gopher'
YoncF kan fpi? 'gopher'

(P), () o'/ufp
(F o'ufp)

Hunted (1877a:152).

YamF o'fp

(11) Beaver,
Castor canadensis
Kuhl

(P) age'ipi, k...
(F k'e'pi., ke'pi.)

Hale aka'ipi 'beaver'

DeA ks'ypI
(J Ge'Ip'n)

MRF ka'i.pyo? 'beaver'
(G) an ka'i.pya? 'beaver'
YoncJ GAMAGa'ipya? 'beaver'

YamF ke.'pi.

Hunted, boiled for eating
(1877a:152, 167). Pelts used
in trade (1877a:111-14).

(12) "Mouse,"
small

(P) htpu's.ak
(F tpu's.aq)

() atpu's.ak

DeA pU'saq
(J tpU's.ak)

YamF tpu'saq

(13) "Field rat"
(?)

(P), () a'mkei

Hunted (1877a:152).

(14) "Rat" (any
kind), or "wood rat"
(probably Neotoma
sp.)

(P) a'mčuk
a'mpčuk
(F am pčukh)

MRF an čo'q 'rat'
(G) an c'yo'kh 'rat'
SJ anču'q 'mice, rats'
YoncJ GAMA'čok 'rat'
GAMA'čho'q 'wood rat'

DeA a'mčUk 'rat'

YamF am c'ok 'rat'
mo'coq 'wood rat'

Hunted (1877a:152).

(15) Porcupine,
Erethizon dorsatum
(Linnaeus)

(P) ay'inš
(F yinj)
(P) ayi'nš
(F ayi'nči)
(P) ayi'nši
(F ayinč)

He sometimes "throws out"
his bristles (1877a:88);
hunted (1877a:152); quills
used to decorate clothing
(1877a:162, 165).

O. Cetacea:

(16) "Whale"

(P), (D) aka'niš
() akanI'š
YamF qa'niš

(?) cf. Halkomelem (Suttles)
q^wənəs 'whale' (suggesting
that the Tualatin word is
a Coast Salish loan).

Eaten (presumably gotten by trade) (1877a:168).
Central and Yoncalla Kalapuyan have mu'luk^{wa}
'whale,' 'whale-being' (a monstrous whale-like being
inhabiting lakes and rivers). Cf. Tualatin amhu'luk^w
[sec. 10h, #(2)].

O. Carnivora:

(17) Coyote, Canis
latrans Say

(P) ε'/išin
ε'šin
() e'š^hin
ε'š^hin
DeA e'šIn
(J e'Išən)
YamF e'š^hi.n

MRF a snā 'coyote'
SJ ašni' 'coyote'
YoncJ šni

Killed, but not eaten; "the
old Ind^s killed the coyote
whenever they could though
they held him to be the smart-
est man" (1877a:344, 375).

Noted by early travel-
lers to be numerous in the
Willamette Valley (cf. Clyman
1960:136, Allen 1850:88-89.)

(18) Wolf, Canis
lupus Linnaeus

(P), () a'mlint
YamF a'm lint^h

Hale a'melint 'wolf'

SJ amu'linD 'wolf'
YoncJ GAmA'linInt 'wolf'

DeA gives a'mpmU1 (J a'mp^wU1)
'wolf' (?)

Hunted (1877a:152). Noted by early travellers to be
numerous in the Willamette Valley (cf. Wyeth 1899:179,
Allen 1850:84, 88-89).

- (19) Domestic dog (P) () mH'nt#1 Hale ma nta1 'dog'
(F ma'ntal)
DeA ma'ntal MRF an tal? 'dog'
(J ma'ntal) (G) an tal? 'dog'
SJ ant#1? 'dog'
YoncJ t#1a? 'dog'
YamF mandal
Not eaten (Jacobs ca. 1936b:12;
Tualatin and Santiam).
- (20) Grey fox, () uaplo'tim Said to mean 'grey bushy
Urocyon cinereoar- uato'ftful tail' (-plo'tim 'grey, roan;'
genteus (Schreber)¹ -t-ful 'its-tail?'). A non-
made-up form is given for
other dialects; cf. YamF
ška'nan '(grey) fox,' # (46).
- (21) Black bear, (P) () alU'təfan Hale alo'tufan "bear"
Euarctos americanus (F lu'tifan) (It is interesting that
Pallas Hale records this form,
known elsewhere only from
Tualatin--the Yamhill word
given for black bear [# (45)]
corresponds to Central and
Yoncalla forms.)
DeA lU'tAfan²
(J lU'tUfan)
Hunted; pit-oven roasted whole (1877a:152, 167).
- Brown or "cinna- (P) uapo'kɛm alU... -po'kɛm 'brownish-red'
mon" color phase (F po'kɛyim ...)
- Black color phase () uamo'yim alU... -mo'yim 'black'
- (22) Grizzly bear, (P) (D), () aš#yım MRF s'a'y.im 'grizzly bear'
Ursus arctos horri- (F š#yım) (G) an sa'yım 'grizzly bear'
bilis Ord SJ aša'yım 'grizzly bear'

¹ The fact that there seems to be no word in any of the dialects denoting the red fox, Vulpes fulva, may bear out the conclusion of mammalogists (cf. Ingles 1965:347) that red foxes were introduced into western Oregon from the eastern U.S. (although the race found in alpine areas of the Cascades is thought to be native). (Frachtenberg gives MRF kwIni.ʹf /see # (24) /, 'fox,' 'coon,' 'cat,' 'otter'--a term apparently being very loosely used; Jacobs gives YoncJ GAMAʹyE.ʹBI 'fox,' a term which I am unable to elucidate further.)

² A = DeAngulo-Freeland's a (as in French "patte").

DeA ešē'yəms
(J še'yəm)

YamF a šē·m

YoncJ šā·yu·'mo? 'grizzly
bear'

Cf. L. Chinook (Boas) -cā'yim
'grizzly bear'

Wasco-Wishram (French)
i-sayəm 'bear' (not the
usual name, according to
Dr. French).

Hunted, but not eaten; "They did not eat the grizzly bear, because he ate people" (1877a:152, 168). John Hudson described how the Santiam hunted grizzlies: One man thrust the end of a long pole into the grizzly's chest, holding the animal at bay while others shot at it (Jacobs 1945:21-23).

(23) Raccoon,
Procyon lotor
(Linnaeus)

(P) a'mpkuin
a'nkuin

DeA a'ŋkwen
(J a'ŋkwn)

YamF an kwi·n

MRF an kwin 'raccoon'
SJ aŋkwi'n 'raccoon'
YoncJ kwi·nI 'raccoon'

Hunted and eaten (1877a:152,
168). Haired skins used in
interlaced blankets, for caps,
etc. (1877a:162, 164-65, 337).

(24) (Fisher,
Martes pennanti
/Erxleben/)

() amo·s "black
cat"

YamF mōs 'fisher'

(25) Weasel (Muste-
la erminea Linnaeus
and/or M. frenata
Lichtenstein)

(P) atIlpIli'di
(F t^hi'lpilid)

() atIlpIli'di

(26) "Larger mink"
(probably Mustela
vison Schreber)¹

() akUI'n·Uf

SJ aŋGwi'ni·f 'mink'

Frachtenberg translates MRF kwIni·f, variously, as
'coon,' 'fox,' 'cat,' 'otter,' and additionally
gives kwi'nfin 'weasel.' However, according to

¹"Larger mink" could also refer to one of the species of the genus Martes (marten, fisher); however, if the word given by Gatschet's informants as 'mink' /#(42)/ is really muskrat, as seems likely, the kUI'n·Uf is likely Mustela vison, in conformity with Jacobs' Santiam translation.

Jacobs, John Hudson insisted that SJ aŋGwi'ni·f means 'mink' (i.e., presumably Mustela vison). Frachtenberg's informant had forgotten some names of animals, and must have been using this term loosely.

- (27) "Polecat" (Spotted skunk, Spilogale putorius (Linnaeus)) (P) ɬtpi'ji (F a tpi'ci) (P) atpI'č (F tpič) YoncJ GAMACE'pca? "small skunk" DeA has, rather questionably, spI'cI (J sBIč'n) 'weasel' (questionably translated). YamF tpi·č "polecat" Trapped (1877a:152). "Polecat" (1877a: 63, 152, 207); "skunk, little speckled" (1877a:12).
- (28) "Skunk" (striped skunk, Mephitis mephitis (Schreber)) (P) ma'ntx^up, ...txup¹ (F ma'ntqup) (P), (D) ma'ntkup¹ MRF an tku·p "skunk" Trapped; caps made from its fur (1877a:152, 162). DeA ma'ntkUp (J ma'ntGUp) YamF man tqop
- (29) "Otter" (river otter, Lutra canadensis (Schreber)) (P) ala'učInšan (F la'činsa·n) (P) alU'činsa, alo'... () alo'pčInsan MRF a ya'təncya?l^h "otter" YoncF si'nsa·la^h "otter" Trapped by the Tualatin; pelts used in trade and for ceremonial regalia (e.g., shamans' decorated belts, worn over the shoulders) (1877a:152, 111-14, 358-60). YamF an no·či'nzal 'land otter' (an no· 'land')

¹Gatschet's x, k (the latter written "k" as opposed to "k") apparently both indicate bäck-velar articulation here (see footnote on p.96 of this section). Gatschet notes (1877a:389), "k in ma'ntkup & many other words a little differing from the common k, but not like Klamath k;" however, I find this "k" recorded only a very few times.

- (30) "Sea otter,"
"seal"
- (P) ma'ntip¹
(D) ma'ntip
ama'ntip
() ma'ntIb
YamF ma'nt^{hi}.p
'sea otter'
- "Sea otter" (1877a:114, b:46); "as big as grizzly" (1877b:46; suggesting sea lion rather than otter); "seal" (1877a:244). It seems possible, in view of the inland orientation of the Tualatin, that the vague translation of this term reflects correspondingly vague denotation. Pelts were wealth articles (1877a:114).
- (31) "Cat"
(generic?)
- (P) aua'šiš
(F a wa'šiš)
YamF wa'šiš
- I found no indication of a more specific application for this term. In fact, it appears to be a loan from Yakonan (cf. Alsea /Frachtenberg/ wa'šis 'cat; '-s nom. suffix).
- (32) Mountain lion, Felis concolor Linnaeus
- (P) ha'muš
(P), (D), () ha'mhuš
DeA a'mhUš
(J a'mhUš)
YamF ha'm huš
a'm huš
- MRF an hu'c 'mountain lion'
SJ anhu'c 'mountain lion'
YoncJ Ga'hmU's 'mountain lion'
Hunted, boiled for eating (1877a:152, 168, 245). Dressed hides with hair left on (što'lək 'dressed hide /with hair left on/') used as blankets; intact hide from head for cap (1877a:161-162).
- (33) "Short-tailed wildcat" (bobcat), Lynx rufus (Schreber)
- (P), (D) ane'g^u
(F ni'ku)
YamF a ni.k^u
an ni.k^u "wildcat"
- MRF an ye'kwa "wildcat"
YoncJ nI'Gwa? "wildcat"
- "Large, stripped wild-cat, short tail;" hunted and eaten (1877a:152, 168). Skins used in interlaced blankets, for wealthy people; poor people's children might clothe themselves by merely tying the skins around themselves (1877a:164-65).

¹A = Gatschet's a (due to limitations of the typewriter).

(34) "Seal"
(probably harbor
seal, Phoca vitu-
lina Linnaeus)

(P), (D) aua'lxɛi
(F wa'lqai)¹

MRF an u'lxayu "seal"
Cf. L, Chinook (Boas)
- 'lxaiu "seal"

() aua'lxɛi

YamF wa'lxayu.

Seals were sometimes taken by the Tualatin in the Columbia River (1877a:344); they were boiled for eating (1877a:168).

David Douglas (1904-05 Pt. 3:251), writing in 1825, noted that Phoca vitulina was abundant in the Columbia.

0. Artiodactyla:

(35) Elk, Cervus
canadensis
(Erxleben)

(P) a'ntxi, ...tki
(F a'ntqi)²

Hale a'ntuqu 'elk'

MRF an tqa? 'elk'

SJ antqa'? 'elk'

YoncJ GantGa? 'elk'

(D) a'ntk

() a'ntx

Hunted, meat boiled or roasted fresh, or dried for winter (1877a:152, 167). Articles of clothing, blankets made from dressed hides (1877a:161).

DeA hantk

(J antkt

YamF antq

(36) Black-tailed
deer, Odocoileus
hemionus columbia-
nus (Richardson)

(P) atu'nkəta
(F tu'nkta)

Name possibly analyzable in terms of kta 'ear' (referring to the conspicuousness of the ears?).

() atU'nk'ta

Hunted and eaten (1877a:152, 168).

Opposite sex (?)

(P) a'mpI
(F a'mpi)

SJ ampI? 'black-tailed deer'

tu'nkta and a'mpi apparently distinguish male and female; however, one text (1877a:152) translates the former as 'female' and the latter as 'male,' while

¹I question Frachtenberg's correction of Gatschet's x to [q] here, in view of the related terms cited from other dialects and from Chinookan.

²In this case Frachtenberg's correction of x to [q] seems correct.

another (1877a:168) translates the former as 'male,' the latter just as 'black-tailed deer.' A simple error must be involved, but I have found no independent information by which to set things right.

(37) White-tailed deer, Odocoileus virginianus leucurus (Douglas) (also, probably, 'deer,' generic)

(P), (D) ata'1·im Hale ata'lim "deer"

() ata'1·əm

DeA ta'1·Im "deer"

(J Da'1·Im)

YamF a ta'li·m
"deer"

This, the native subspecies of O. virginianus, while now of very limited distribution in our area, was formerly widely distributed and abundant in western Oregon.

Hunted and used as food (1877a:152, 168). Hides tanned (au'čei 'buckskin;' ašto'lək 'tanned hide / with hair left on/'), used for clothing and blankets; intact skin from head (ears left on) for caps (1877a:161).

White-tailed buck deer

(P), () aua'yi
(F wa'yi·)

Frachtenberg also gives YamF a wa'yi· 'antlers,' corresponding to Tualatin (Gatschet) tua'i (tu-wa'i ?) 'antlers.'

() auā'i
aua'i

YamF wa'yi·h
"buck deer"

Plural: (P) awa'yašt

Or: () a'ja'nku
ada'1·əm

~ja'nku 'male'

White-tailed female deer

() acpU'm·aik

YamF cpu'mai·q "doe"

Or: (P) apU'm·ig
ada'1·am

-pu'm·ig 'female'

Fawn

(P), (D) aplo'/uf
(F plo·f)

MRF an p'a'lafo 'fawn'
SJ anpa'lafI 'fawn'

() aplU'f

(38) Antelope,
Antilocapra
americana (Ord)

() uayamšič'jεi
ata'1.im

'the variegated deer'
(-yamšič'jεi 'variegated,
speckled')

This made-up form must reflect the fact that antelopes were peripheral to Tualatin experience.

(39) Bison, Bison
bison (Linnaeus)

() uamHnmε'yuk
amu'šmuš

'The Indians' cow' (-mH'nmε(i)-
'Indian; -mu'šmuš 'cow, 'Jar-
gon). (Another animal which
must have been peripheral to
Tualatin experience.

(40) 'Mountain
sheep" (mountain
goat, Oreamnos
americanus
/Blainville/)

(P) amhU'm'o/u
(F hu'm'o'o)

(P), () amhU'm'o

Woven ("braided," "twisted") wool used in clothing and blankets, specific mention being made of its use in the dress of wealthy women (1877a:164-65).

The dressed wooly skins of this animal (which along with dogs constituted the only native source of woolly fiber), as well as blankets woven from its wool, were reported by Lewis and Clark on the lower Columbia River (Bailey 1936:61). There is some uncertainty as to whether mountain goats ranged south of the Columbia River (into the Oregon Cascades) in Lewis and Clark's time (cf. Bailey 1936:61-62); they certainly did inhabit the Washington Cascades, e.g. around Mt. St. Helens. Since in any case goats would not have ranged into Tualatin territory, the Tualatin must have gotten wool by trade. There is no indication as to whether the Tualatin wove wool themselves.

10b-2. Identification Uncertain

(41) (P), (D)
aku'1.a
(F ku'1.a)

(?) SJ(E) Gula'ta a mythological person who made Santiam Gap (originally a low tunnel).

(?) MRF(G) go'lata? "weasel"
Cf. (?) Clackamas (Jacobs)
gu'lyu "woodrat"
Wasco (Curtin) kula "possum"

(Possibly mountain beaver, Aplodontia rufa [Rafinesque],)

Hunted; "kind of otter, thick fur," "in water," "black & reddish fur" (1877a:152) (the latter description is a note from Dave to one of Peter's texts, and is written over the following, which is apparently based on the original translation from Peter: "kind of gopher," "opposum?"). "A kind of otter, size of skunk, thick fur" (1877a:282); "water animal," high-priced braided blankets made from it (atu's'ai, made from strips of fur sewn together) (1877a:162, 164). In the Powell form, this animal is further identified (according to the printed listings on the form) as "ground-hog" and "opposum" (1877b:46, 47; Gatschet questions, "?," the reference to opossum).

The only possibility which seems to me to account for the contradictoriness of the above is the so-called "mountain beaver," Aplodontia rufa, which, although not now of any economic importance as a fur-bearer, is known to have been used as such aboriginally in the area (cf. Bailey 1936:227). There is a difficulty in this identification in that the Aplodontia, though a good swimmer (e.g., Bailey, 1936:226, cites a case of swimming mountain beavers being mistaken for muskrats) and frequently a resident of stream banks, is a seemingly unlikely candidate for being considered a water animal. However, it is a burrowing animal (hence the vague allusions to "gopher," "ground-hog?"), and it may well have been formerly better represented near low-elevation bodies of water such as Wapato Lake (one side of which, called ča-ku'l.a, was named for this animal). Furthermore, it is a little-observed, little-known animal, of peculiar habits, completely unique to northwestern North America; Gatschet (also Frachtenberg, Jacobs, and Curtin, if it is the case that the Santiam-Mary's River and/or Chinookan terms are indeed related) likely had no knowledge of it.

The only other candidate that I can think of, considering size, fur-bearing value, and the fact that most other valuable fur-bearers seem to be spoken for already [see #(24)-(30)], is the muskrat, Ondatra zibethica. However, the central language terms for the latter, SJ(E) mU'GUp, MRF am mu'sy'ku?p, seem entirely unrelated to the Tualatin word in question. Also, it seems to me that although Ondatra would surely be identified as a water animal, it would be unlikely to be referred to by vague allusions to "gopher," "ground-hog," "opposum,"

(42) (P), (D)
atmI'ntku
 (F tmi'ntku)

Cf. Wasco-Wishram (French)
iməntku, imintku 'muskrat'
 Chinook Jargon əmI'ntəpu
 'muskrat'

(Possibly muskrat, Ondatra zibethica /Linnaeus/.)
 Given by Gatschet as 'mink' /but see # (26) /.
 I speculate that Gatschet's informants were really referring to the muskrat (which, like mustela vison, is a small, valuable fur-bearing animal). This possibility is given some weight by the absence of any other word for 'muskrat' (the word a'mpčuk, given in the 1877b ms. for 'muskrat,' is merely the word for 'rat'). Might the phonetic resemblance between -mi'ntku and English "mink" be responsible for the apparent confusion in translation?

(43) (D) auI'kiakš A "kind of otter;" one of the kinds of things
 "living in the water" (1877a:244).

(44) (P) auI'nhī "Wild dog, fabulous;" hunted (1877a:152).

10b-3. Yamhill Terms for Which No Corresponding Tualatin
 Terms Were Found

(45) Black bear, YamF aⁿ e.^ut
Euarctos americanus a neu'th

MRF no·i'ta 'black bear'
 (G) an no·i'ta? 'black bear'
 SJ a?nu'itε 'black bear'
 YoncJ Ga?nε·wIta? 'black
 bear'

A quite distinct Tualatin term /#(21)/ is given for this animal.

(46) "Fox" (grey YamF ška'nān
 fox, Urocyon cinere-
oargenteus)

MRF ske'nān "fox," "coon"
 SJ asGε'nān 'grey fox'

(47) "Rabbit" YamF ham pun

MRF am pun? "rabbit"
 SJ amBu'n "rabbit"

A quite distinct Tualatin term /#(3)/ is given for "rabbit."

(48) Sea lion YamF am mu'sa'yim MRF am mu'sa'yim 'sea lion'
 YoncF muša'yum 'sea lion'

10b-4. Introduced Mammals

- (49) Cat (domestic) () pu's Jargon
 () aua'siš See # (31)
- (50) Cow, steer (P) amu'smuš Jargon
- Bull (P) uaču'kayak -čuk- 'testicles,' -yak
 am... (suffix) 'having'
- Gelded bull (P) uaua'diʒok Said to mean 'out of stones'
 am... (possibly: wa- adjectival,
 -wa? 'not,' -d(i)-ʒok 'its-
 testicles').
- Cow (P) apU'm·ɛig am... -pu'm... 'female'
- Calf (P) uati'jx [...q] -ti'jx 'small'
 am...
- (51) Horse (P) aki'utan Jargon
- Stallion (P) uaʒu'kayak ak... (see above)
 (F cu'qayaq)
- Gelding (P) uaua'diʒok^ə ak...
 (F wa'čəq)
- Mare () abu'm·ig ak...
- Pony (P) uati'jək ak...
 (F ti'caq)
- Colt (P) atəka'yi ak...
 (F a tqa'i.)
- (52) (House) mouse; Mus () ča ha'm·i ča h... 'in the house,'
 ue./itpU's·ak -tp... Same word as for
 (or atp...) native mouse.
- (53) Mule () uapo'jətU'nkta 'Long-eared horse' (-poj-
 aki'utan 'long,' tun-kta 'its ears')

- (54) Rat; Rattus spp. () ča ha'm.i
ue.ni'mčuk -čuk same as native rat.
- (55) Sheep () ali'm.oto
"le mouto'n" Jargon

10c. Birds¹

10c-1. More or Less Identified

<u>Presumed identity of bird</u>	<u>Tualatin and Yamhill terms</u>	<u>Notes, related terms from other languages</u>
<u>Shore and Water Birds (About Six Orders):</u>		
(1) (Probably, grebe; perhaps pied-billed grebe, <u>Podilymbus podiceps</u> /Linnaeus/)	(P) <u>akal.o/u</u> <u>aka'l.o</u> (F <u>qa'l.o.o</u>)	In water, smaller than duck, "diving all the time" (1877a:40); "lives in creek, on fishes" (1877a:77).
(2) "Swan" (<u>Olor</u> sp.)	(P) () <u>ako'k</u> (F <u>kok</u>)	SJ(E) <u>GU'GU</u> bird like swan, but different (?) DeA <u>qo'hul</u> , given as 'swan,' should be translated as 'crane' [see #(10)].
(3) "Goose" (likely a race of Canada goose, <u>Branta canadensis</u> /Linnaeus/)	(P) <u>atko'dək</u> <u>atko'dIk</u> <u>atxo'dək</u> [atq...] (F <u>tqo'taq</u>) DeA <u>tqo'taq</u> 'goose' (J <u>tqo'Dak</u>) (Frachtenberg notes Yamhill term same as for MR; see opposite)	MRF <u>tqo'taq</u> 'goose' SJ(E) <u>ko'Dak</u> 'goose' YoncJ <u>ku'dak</u> 'goose' Biggest wild goose, black (1877a:38); eaten (1877a:168).
(4) "Goose" (another race of Canada goose?)	(P) <u>awI'wək</u> <u>auI'uək</u> (F <u>wi'wik</u> ^h)	Middle-sized black goose, white spots (1877a:38); smallest goose, end of wings black, eaten (1877a:168).

¹A number of manuals were consulted for this section, especially Robbins, Bertel, Bruun (1966) and Gabrielson and Jewett (1970).

- (5) "Goose"
(sp.?)
- (P) atkε'i/uakš
(F a tkwi·wak^h)
(P) atkε'yuačš
(F tke·'wakš)
- Size of awi'wək, white and black, mostly white (1877a:38); black-winged, eaten (1877a:168).
- (6) "Duck"
(generic)
- (P) a'mpiuk
(F am pyu'k^h)
- Hale ɔ'mpiu'k 'duck'
MRF na'knak 'duck'
YoncJ GΛ'mpnak 'duck'
- DeA a'mpyUk
or: naqnaq
(J Λ'mpyUk)
- Eaten (1877a:168).
- YamF a·'m pyoq
- (7) A type of duck
(sp.?)
- (P) uauε'ljištone'miɬ
(a'mpiuk ?)
- uauε'l... 'their heads are gold-shining' (-uε'ljištošt- 'gold-shining,' -nε-miɬ 'their heads').
- (8) "Smallest duck" (sp.?)
- (P) atmU'jxapo·
- "Big bellied," "chucky," eaten (1877a:168).
- (9) Great blue heron, Ardea herodias (Linnaeus)
- (P) atxua'ištXuaiš
[atq...tq...]
- MRF qwa'sqwas "crane"
(G) an kwa·'skwas "blue crane" (i.e., 'great blue heron')
- DeA qwa'sqwas "crane"
(J kwa'skwas)
- SJ anq'wa'sq'was "crane"
Boas gives L. Chinook iqoā'sqoas "crane," but -qjo'askjoi or ē'qulqul "heron."
Cf. Clackamas (Jacobs) iq'wa'sq'was "crane."
Wasco-Wishram (French) i-qwašqwaš, i-gwašqwaš "crane"
- YamF tqwa'sqwas
"swan" (?)
- "Crane" here (at least in most of the above occurrences) must reflect loose popular usage--the great blue heron is often popularly so referred to.
- (10) "Crane"
(Sandhill crane, Grus canadensis /Linnaeus/)
- (P) ɬtko·1
(F tqōl)
- MRF an qo'l·oq "white crane" (i.e., 'sandhill crane')
- () a'tko·'1
- SJ(E) tGu·'la white bird resembling goose; with long neck; has good eyes; two always go together.
- DeA qɔ'hU1 "swan" (?)
(J tGɔ·1)

Cf. (?) L. Chinook (Boas)
ē'qulqul "heron"

Grey in color, formerly many here, lays only two eggs (1877a:40); about 3' (1877a:51).

(11) "Snipe"
(common snipe,
Capella gallinago
/Linnaeus/?)

(P) ma'nčIk
ma'nčək
ma'nčiək
(F ma'nc'eq)

According to Dave, this is identically the same name as that for the red-shafted flicker [ʔ(23)ʔ]. The wing feathers are reddish and were used (in ceremonial regalia) (1877a:115).

(12) "Sea gull"

(P) ča mI'1.akui
(a')tIf
(F mi'lakwi. tif)

'Sea buzzard' (mi'1.ak-
'ocean, '-tif 'turkey vulture')

Pl.: (P) ča m...
ui'ntif

(13) (Belted king-
fisher, Megaceryle
alcyon /Linnaeus/)

(P) a'ja'1.al
(F ča'1.al)

MRF c'ya'1al 'kingfisher'

(Frachtenberg notes
that the Yamhill
term is identical to
the MR term opposite)

"Little blue bird in creek,
jumping into the water"
(1877a:40).

(Shore or water birds, specific identification uncertain:)

(14) (P) ačua'šnik
(F čwa'šniq)

MRF an čwa'ʔs 'snipe'
SJ(E) čwa'ʔs bird somewhat
resembling crane(?), but
smaller.

Lives on the water, in swamps, little, long-legged
(1877a:40).

(15) (P)
amI'1.akiuk
(F mi'laqyuk)

-mi'1.ak- 'ocean.' Ocean bird, "like goose" (1877a:
41).

(16) (P) amU'nkUto
(F mu'nku±
"jacksnipe")

Swims on lakes, size of rooster, grey, looks like
snipe (1877a:40).

"Game Birds" (O. Galliformes, O. Columbiformes):

(17) Grouse (Sooty () a'mdf MRF a mu'f 'grouse'
 or blue grouse, SJ amu'f 'grouse'
Dendragapus DeA a'mUf YoncJ GΛ'mUf 'grouse'
obscurus /Say/) YamF aunf (miswritten?)

Grouse, grey; eaten (1877a:52, 168).

My selection of the blue grouse over the ruffed as the likeliest candidate here partly depends on the identification of the latter given below. Also in favor of this identification: the indicated grey color, and a passage in Jacobs' Santiam texts (1945:34), in which it is indicated that if it snowed hard in the late winter, at the time when the grouse (amu'f) "sang," it was attributed to grouse's power-song and not considered important-- "late winter" would seem more or less to correspond with the onset of the blue grouse's distinctive mating call (late February or March, according to Gabrielson and Jewett 1970:210).

Frachtenberg's Mary's River informant, William Hartless, indicated (Jacobs 1945:349) that it was a sign of bad omen when grouse came to a house.

(18) "Pheasant," (P) a'ntmat MRF me'nmayuk an t^hmat
 "prairie chicken" (F a'n tmat^h 'Indians' chicken' (me.n...
 (probably ruffed a'nt^hma?t) 'Indians' /poss./)
 grouse, Bonasa SJ antma'?'t "pheasant"
umbellus /Linnaeus/; DeA ?a'ntmat "Indian YoncJ GΛ'm·a?t 'chicken,'
 also, domestic pheasant" "pheasant"
 chicken). GΛ'ma?t 'chicken,' "pheasant"
 YamF an tmat^h

Aboriginal (ua me'nme'yuk a'ntmat 'the Indians' chicken, "pheasant"). Hunted and eaten (1877a:152, 168).

An older manual of the birds of the U.S. (Pearson 1936, Pt. 2:17) gives the following as some of the common names of the ruffed grouse: "part-ridge," "pheasant," "drumming pheasant," "mountain pheasant." It is further indicated that the name "pheasant" was in use for this bird particularly in the middle and southern states. I infer that Kalapuyan informants picked up the name "pheasant" from early settlers, many of whom came from the relevant sections of the country. Dr. Richard Forbes (1976, p.c.) also pointed out that the ruffed grouse is more chicken-like in appearance than is the blue. Historical data on distributional patterns of Oregon birds suggest only three or four chicken-like or "pheasant"-like birds which likely would have been

native to the Willamette Valley area: blue grouse, ruffed grouse, mountain quail [F(19)], and possibly valley quail (cf. Gabrielson and Jewett 1970:207-227) -- thus, my reasoning here is based partly on a process of elimination.

William Hartless (in Jacobs 1945:349) indicated that it was a sign of bad omen when the a'ntmat came to a house.

(19) Quail (probably mountain quail, Oreortyx picta palmeri¹ /Oberholser/)¹

(P) a/uilε'ak
(F wi'la'yaq)
(P) auI'ləyak
(F wi'la'yaq)

MRF a wa'ye'k^h 'quail'
(?) MRF c'ahai·k 'quail'
(other species?)
(?) SJ ča'haik 'quail'

() awi'ləyak

Good to eat (1877a:38).

YamF wa'ye·k^h

(20) Pigeon, wild (band-tailed pigeon, Columba fasciata Say)

(P) amongε'ya
(F ami'ngi·ya)
(P) amI'ngεya
(F mi'ngi·ya)

Hunted and eaten (1877a:152, 168).

YamF am (h)i·'nqaya

(21) Dove (mourning dove, Zenaida macroura /Linnaeus/)

(P) awUnko'
(F wi'nko·)
(D?) a'winko

MRF wi·'nko 'dove'
(G) a wi·'ngo· 'dove'
YoncF wi·'ngo· 'dove' (also said to mean 'pigeon')

DeA wI'ŋko 'dove'
(J wi'ŋku "pigeon")

Grey (1877a:40).

O. Apodiformes:

(22) "Hummingbird"

() adI'gana

MRF tI'k'Inə 'hummingbird'

DeA ta'kana
(J DI'Gana)

(G) an ti'k'ine· 'hummingbird'

YamF di·'gnah

SJ(E) ΛnDI'GINI 'hummingbird'
YoncJ DE·'GAN·I 'hummingbird'
(b) GanDE·'Ga'nI 'hummingbird'

¹The valley quail, Lophortyx californica vallicola (Ridgeway) is possibly also indigenous to the Willamette Valley, though its widespread introduction into the valley since about 1870 has obscured the original distributional pattern.

O. Piciformes:

(23) "Woodpecker"
(red-shafted
flicker, Colaptes
auratus cafer
/Gmelin/)

(P) ma'nčiak
(F ma'ncʲeq)

(D) ma'nčik

DeA mU'nčak "wood-
pecker"

(J mU'nDZak "small
woodpecker")

YamF mančeʲk (correc-
tion of man cʲeʲq)
"yellowhammer"

MRF an če.ʲqʰ "yellow-
hammer"

SJ anči.ʲq "yellowhammer"

YoncJ čI.k "yellowhammer"

One of the larger woodpeckers
(1877a:40); feathers black on
top, red underneath, used in
ceremonial regalia (1877a:
358-360). (The description
of the feathers clinches
this identification.)

(24) "Woodpecker,"
larger, red-headed
(pileated wood-
pecker, Dryocopus
pileatus /Linnaeus/)

(P) ha'lok
(F haʲloq
haʲl.oq)

(D) haʲ/aluk

DeA ha.ʲlUk
"raven" (?)

(J ha.ʲ(?)lUk "large
woodpecker")

YamF haʲloq "big
red woodpecker"

MRF a loʲq "red-headed wood-
pecker"

(G) al loʲq "red-headed
woodpecker"

SJ aʲluʲq "large black wood-
pecker"

aʲluʲqu "large black wood-
pecker"

aʲluʲqG "large black wood-
pecker"

YoncJ Gaʲʲloʲq "big red-
headed woodpecker"

Gaʲʲloʲk "big red-headed
woodpecker"

Scalps used in ceremonial re-
galia (1877a:360).

(25) "Woodpecker,
red-headed" (red
race of yellow-
bellied sapsucker,
Sphyrapicus varius
ruber /Gmelin/?)

(P) ma'ntIš
(F ma'ntiš)

MRF an tšʲʲiš "woodpecker or
sapsucker"

(G) an tšʲʲš "woodpecker or
sapsucker"

SJ antiʲʲš 'sapsucker'

antiʲʲš 'sapsucker'

anDiʲʲš 'sapsucker'

YoncJ Ga'ntIš 'sapsucker'

tIʲʲš 'sapsucker'

O. Falconiformes, O. Strigiformes:

(26) Turkey buzzard
(turkey vulture,
Cathartes aura)

(P) atIʲf.I
(F tiʲf.i.)

(P) aʲtIf

MRF tifoʲ 'buzzard'

SJ antiʲfuʲ 'buzzard'

YoncJ Gʌmε.ʲfuʲ 'buzzard'

- /Linnaeus/) (F ati'f) Cf. (?) Wishram (French)
a-ntixwa 'buzzard'
YamF tIf, tif Eats dead animals (1877a:40).
- (27) "Hawk" (P) apolio SJ ampu'l'yu "small chicken
(generic), or "big- abo'lio hawk"
gest hawk" (Buteo apo'l'io SJ(E) pu'l'yu "hawk, common
sp.) (sp.?) (F a po'l'yoh) ordinary, large, sort of
bluish"
DeA tpo'l'yI "hawk"
(J tpo'l'yU "chicken
hawk")
- (28) (Another sp. (P) a'mpsank MRF psaⁿq "red hawk, chicken
of Buteo?) (F a'mpsank) hawk" (red-tailed hawk?)
MRF(G) am psanq^h "chicken
hawk"
SJ amrsa'qk "large chicken
hawk"
Cf. Wasco-Wishram (French)
a-psa'q 'red-tailed hawk'
"Vulture," 1½' (1877a:40).
- (29) "Grey eagle" (P) ača'nxa/ua'n/uan -uan/uan 'wings'
(golden eagle, Aquila chrysaetos "Grey eagle," smaller than
/Linnaeus/?) ači'n·un (1877a:40)
- (30) (Bald eagle, (P) ači'n·un, ači... MRF an či·nu 'bald eagle'
Haliaetus leuco- (F či'n·on) či'no 'bald eagle'
cephalus /Linnaeus/) (G) či·nu 'bald eagle'
YoncJ či·nu 'bald eagle'
Cf. Wasco-Wishram (French)
i-, a-či'nun "eagle" (un-
specified)
Eagle, "the biggest bird in
Oregon," "boss of birds"
(1877a:40); feathers used in
ceremonial regalia (1877a:
359).
- (Immature bald (P) alo'polop "An eagle," size of
eagle?) (F lo'plop) ača'nxa/ua'n/uan, speckled
(1877a:40, 63).
(P) alo'pol·op
(F lo'plop, lo'pli·yu
'grey spotted')

(31) (Osprey,
Pandion halaetus
/Linnaeus/?)

(D) č'u'j

Large fishing bird, white head (1877a:282). Another possibility might be the great blue heron, but another word is given for the latter; see #(9).

(32) (Sparrow hawk,
Falco sparverius
Linnaeus)

(P) ali'čilič
(F li'čali'č)

SJ(E) ^?li'č'u?li'č "little snake-mouse field hawk"

DeA li'ca?li'c "hawk"
(J li'č'ali'č "little hawk")

Small hawk, grey and red, "stand long in air" (1877a:40). (The indicated color, size, and hovering habit point to the sparrow hawk.)

(33) (Screech owl,
Otus asio /Linnaeus/)

DeA tpob "owl"
(J tBo'Bo "small owl")

MRF an tpo'po? 'screech owl'
SJ antBu'bu? 'screech owl'
Bupu'p a tiny owl "the size of a matchbox;" "when he hoots early in the morning the people used to say its going to be a fine day" (contrast this statement with the information below) (Jacobs, Santiam slip files).
YoncJ tBo'Bo 'screech owl'

YamF tpo'p^h 'screech owl'

The Mary's River and Santiam texts indicate that the call of this owl was a sign of bad omen (Jacobs 1945:78-79, 349); John Hudson distinguished two distinct calls, one of which did not mean anything, the other of which was a sign of bad omen.

(34) "Owl" (great horned owl, Bubo virginianus /Gmelin/)

(P) atukolu
(F tu'kilo)

MRF tu'k^uru. ¹ "horned night owl"
(G) tu'kulyhu. "horned night owl"
SJ anDu'Gulhu. "large owl"

(D) a'tUklU

DeA tUklUhU "owl"
(J DU'Gulu. "big owl")

The Mary's River and Santiam texts indicate that the call of this owl was a sign of bad omen (Jacobs 1945:78, 349).

YamF a du'gulhu^h

¹Frachtenberg records r (trilled, according to him) only in a very few forms.

(35) "Small owl,
high voiced"
(sp.?)

(P) amU'tu/uš
(F hu'tuš)

MRF an ho'ʔtowos "mountain
owl"

0. Passeriformes:

(36) (Steller's
jay, Cyanocitta
stelleri /Gmelin/)

() aska'yak
YamF a ška'yaq
"bluejay"

MRF sqa'yaq bluejay with
"chub" (as opposed to the
white-bellied bluejay,
tqwa¹s (hence, the infer-
ence that the Tualatin-Mary's
River word refers to the
Steller's jay).

A blue bird, "same size as
bluejay" [see #(37)] (1877b:
51).

(37) "Bluejay"
(scrub jay,
Aphelocoma coeru-
lescens /Bosc/)

() a'ntxuaiš
[antq...]
DeA a'ntqwaIs "jay"
(J ʌ'ntkwais "bluejay")
YamF an tkwai·sʏ
"jaybird"

MRF tqwa¹s "bluejay, white
belly"
(G) tqwa'i·s
YoncF kan tkwai'ʔs "bluejay"

(38) Raven (common
raven, Corvus corax
Linnaeus)

(P) ε'fll
(F ε'fli·)
Or: (P) kuđ·k uđ·k

MRF fð're·he 'raven'
(G) a(n) fa'lahe 'raven'
YoncF fđli· 'raven'
YoncJ čafε'li "blackbird"

YamF i'fli·

Black, bigger than crow, lives
on dead animals (1877a:40).

(39) Crow (common
crow, Corvus
brachyrhynchos
Brehm)

(P), () a'mIl
(F aʔ mol)
(P), (D), () a'məl

MRF moʔla 'crow'
(G) am moʔla^h 'crow'
YoncJ GUmUʔlaʔlaʔ 'crow'
(b) Gamalaʔla 'crow'

DeA a·ʔhmul
(J haʔmUl)

YamF a·ʔmuʔl
a· molʔ

- (40) "Wren," F. Troglodytes (sp.?) (P) aʃi'fčIfa (F čifčī·fa)
- (41) (Western meadowlark, Stur-nella neglecta Audobon) (P) atmo'ku¹ (F tmo'kwī) MRF tmU'tkwi·¹ 'meadowlark' YoncJ GAmI'tGwi·¹ 'meadowlark'
DeA tmU'tkwε¹ "lark" (J tmU'tkwΛ¹ 'meadowlark') Lark, living on prairies; speckled, green on breast (1877a:40).
YamF tmU'čkwī·¹ 'meadowlark'
- (42) Blackbird, F. icteridae (sp.?) (P) ača'kačak (F ča'kčaq) MRF(G) an cYa?k^h 'blackbird'
() aʃa'kaʃak
DeA čakčak (J DJΛ'DJΛk DJa'DJΛk)
- (43) "Snowbird" (Oregon junco, Junco hyemalis oregonus /Townsend/) (P), () atH'ktHga (F a tHktika) MRF an ta'kalYam, "blackcap, ...lam snowbird" YoncJ tΛ'kəlala "snowbird"
YamF ta·'kdaga^h "snowbird"
3-4", grey with black head (1877a:12). "Snowbird" is an older common name, still in local use, for the Oregon junco.

10c-2. Yamhill Names for Which No Corresponding Tualatin Terms Were Found

- (44) Golden eagle /see #(29)/ YamF twH'č
- (45) Nighthawk (common nighthawk, Chordeiles minor /Forster/) YamF am hi·'yuštampqu
- (46) "Small woodpecker" (sp.?) YamF cYH'xcYdx

(47) Robin, <u>Turdus migratorius</u> (Linnaeus)	YamF <u>a'm pci</u>	MRF <u>am pči.h</u> 'robin' SJ <u>pčiči.</u> 'robin' YoncJ <u>G^mpšI</u> 'robin' YoncF <u>pčiči.h</u> 'robin'
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10c-3. Introduced Birds

(48) Duck, tame	(P) <u>uašutu'pin</u> <u>a'mpiuk</u> (F <u>s'yu'tupin</u>)	<u>a'mpiuk</u> same word as for wild duck /#(6)/ - <u>sutu'pin</u> apparently a contraction of <u>su'i</u> 'good,' <u>t-hu'pin</u> 'its-heart' (expression used in reference to persons, also to mean "tame," "domesticated").
(49) Chicken	(P) <u>a'ntmat</u>	Same word as for ruffed grouse ("pheasant") --#(18).
Rooster	(P) <u>ua'ja'nku</u> <u>a'ntmat</u>	- <u>ja'nku</u> 'male'
(50) Pigeon	(P) <u>amIngε'a</u>	Same word as for wild pigeon --#(20).

10d. Fish and Other Aquatic Fauna¹

10d-1. More or Less Identified

<u>Presumed identity of organism</u>	<u>Tualatin and Yamhill terms</u>	<u>Notes, related terms from other languages</u>
<u>Molluscs and Crustaceans:</u>		
(1) "Clam"	(P) <u>ča'mi'l.akue.</u> <u>'či.f</u> (F <u>ča mi'l.akwi. a</u> <u>či'f</u>)	MRF <u>mo'la.qyu.k an čiči'fa?</u> "crab" 'ocean crawfish' (<u>mi'l.ak-</u> [MR <u>mo'la.q-</u>] 'ocean; ' <u>či.f</u> 'crawfish')

¹Binomials follow Schrenkeisen (1963).

- (2) Crawfish (P) () ač̣i·f, aɣ... MRF č̣i·fa? 'crawfish'
 (F č̣i·f) SJ anci·faq 'crawfish'
- (D) ač̣i·f Eaten (1877a:168). A Mary's River myth, in Jacobs (1945: 223), mentions that they were boiled).
- YamF a ɣi·f

- (3) Mussels (P) atu·kwiɬ MRF kwi·L¹ 'fresh water
 (fresh water) (F to·kwiɬ) mussels'
 SJ a Gwi·ɬ 'fresh water
 mussels'
 YamF tu·kwiɬ YoncJ Ga·yɛ·kwi·ɬ 'fresh
 water mussels'
- Eaten (1877a:168).

Salmons and Trouts (Family Salmonidae):

- (4) (Chinook (P), () amhu·ya MRF tmo·ak "salmon"
 salmon, Oncorhynchus tschawytscha (F hu·yah^h) (G?) an tmu·ak "salmon"
/Walbaum/; probably SJ antmu·waq 'chinook salmon'
- specifically spring Caught in June, the fattest salmon (1877b:58); the
 chinook) biggest salmon, 3' (1877a:205); big salmon, caught
 in July (1877a:153); dried for winter, boiled for
 eating (1877a:166).

Runs of spring chinook existed aboriginally in the larger Willamette tributaries heading in the Cascades (notably in the North and South Santiam, McKenzie, and Middle Fork tributaries), but were apparently nonexistent or insignificant in the smaller and warmer tributaries such as the Tualatin and Yamhill Rivers (see sec. 8b).

- (5) (Steelhead, (P) () akua·n·əx Cf. L. Chinook (Boas)
Salmo gairdnerii (F kwa·n·ux 'steel- -goanē·x· 'steelhead'
 Richardson) head')
- Small spring salmon, 2½'
 (1877a:23, 168); small salmon, early in spring (1877b: 58).

It is possible that steelhead were established aboriginally in Tualatin area streams.

¹L = voiceless l.

(6) Trout (native
or cutthroat, *Salmo*
clarkii Richardson)

(P) aba't·ouf
aba't·o/uf
aba't·of
(F pa't·o·f)

J Ba'Du·f

YamF pa'tōf

MRF am pa·'tafi^h 'trout'
SJ amBa·'Dafi 'trout'
YoncJ Ba·'DamfI 'trout'

Caught by line (with, e.g.,
grasshoppers as bait), or
trapped in stationary basket-
work traps placed at creek
mouths (1877a:73, 153).

(Salmonidae, specific identification uncertain:)

(7) (P) ()
aka'l·am

YamF qa·lam
"chinook
salmon"

MRF an qa'lam "silverside" or
qa'l·am "dog" salmon
Cf. L. Chinook (Boas) -qElEma
"fall salmon"
Clackamas (Jacobs) i·gə'lma
"dog salmon"

"Dog-fish," the longest fish (1877b:58); "dog-
salmon," crooked nose, larger than amhu'ya (?)
(1877a:168).

The chum salmon (*Oncorhynchus keta*) is commonly
called "dog salmon," in reference to the distorted,
crooked jaws acquired by males during spawning sea-
son; however, males of other species also acquire
this characteristic and are consequently also some-
times called "dog salmon." Since the indicated
large size makes it unlikely that this could be the
chum, I speculate that this word refers to spawning
fall chinook, or perhaps specifically to spawning
chinook males.

(8) (D) a'lam·ik
ala'mik
(F la'miq)

Cf. Hale ala'mevk "salmon"

Big salmon, 3' (1877a:243,
244).

(9) (P), ()
aua'kauan
(F wa'qawan)

DeA ka'wan "fish"
(J ka'wən)

MRF an qa'uan "chinook sal-
mon"

Cf. L. Chinook (Boas) -'qawEn
"silverside salmon"

Clackamas (Jacobs) qawan "dog
salmon"

Wasco-Wishram (French) i-, a-
-qawan (Wasco: "white" or
"dog" salmon; Wishram:
"degenerated chinook")

Red-skinned salmon, caught in December (?) (1877a: 168); fall salmon (1877a:23, 1877b:58).

The De Angulo-Jacobs translation as 'fish' (generic) seems doubtful; Louis apparently knew very few names of fish.

The indication that this salmon was caught late in the season points more to chum or silver salmon (Oncorhynchus keta, O. kisutch) than to fall chinook. The Clackamas and Wasco-Wishram translations and notes further suggest [cf. (7) above] that this word refers specifically to spawning fall salmon (or spawning males) of one or more than one species.

It is conceivable (though I have found no direct evidence for or against) that some fall-running salmon may have migrated above Willamette Falls during high-flow periods in the late fall and winter, thus perhaps being established aboriginally in Tualatin-area streams. Fall-running salmon moreover would have been available in coastal tributaries (e.g., Trask River).

Suckers and Carps (F. Catostomidae, F. Cyprinidae):¹

(10) "Sucker,"
"chub"

(a) (P) aka' "smallest
sucker"

(b) () a'kəla·'kt MRF(G) q̄la·qta "chub"
"sucker" SJ(E) k̄la'kDa "sucker"

(c) (P) awa'šxual "sucker"
(F wa'šxwal
wa'šxol)

J wa'šxwəl "chub"

The separate denotations of these three terms are obscure: awa'šxual apparently means any sucker

¹Larger native species presently found in the Yamhill River include the large-scaled sucker, Catostomus macrocheilus Girard, chiselmouth carp, Acrocheilus alutaceus Agassiz and Pickering, Columbia River chub, Mylocheilus lateralis Agassiz and Pickering, and the northern squawfish, Ptychocheilus oregonensis (Richardson) (source: Willamette River Project, Carlton Division, ca. 1972).

(1877a:168); akəla·'kt denotes a sucker about 12" long (1877b:58); in a text on fishing (1877a:153), aka' and aua'šxual are both translated as "sucker," with a marginal note that "he had two names."

It is stated that aka'/aua'šxual were caught bare-handed and thrown on shore (1877a:153).

(Probably a sucker or carp:)

(11) (D) ačič'hak
() ačič'hak

MRF an ča'yekʷ "chub"

"Gudgeon" (1877b:58); "little salmon" (?) (1877a:244).

Other Aquatic Fauna, Used or Presumably Used for Food:

(12) "Eel" (Pacific lamprey, Entosphenus tridentatus /Gairdner/)

(P) a'nto/u
(F) anto·
ha'nto

MRF(G?) taun "eel"
MRF an tau· "eel"
SJ anta'u "eel"
YoncJ GA'ntau "eel"

YamF an to·

Caught, roasted fresh on spits or dired for the winter (1877a:73, 166-67).

The pacific lamprey is anadromous, ascending the Willamette River to spawn in the spring and early summer. Many eels were available at Willamette Falls during the annual migration, where they were found attached by their mouths to the rocks on their way upstream.

According to John Hudson (Jacobs 1945:24-25), eels were caught by hand, "at that time when it was getting near to summertime," in creeks (at night by the light of pitch brands, or by day) and at Willamette Falls (it being noted that "all the people" got their eels there); they were roasted fresh on spits, or split lengthwise and smoked over small fires for preservation.

(13) Sturgeon
(Acipenser spp.)

(P) () a'mtuk
(F) tu·ku

Hale v'mtok 'sturgeon'
SJ(E) Antu'k 'sturgeon'

Boiled or roasted fresh on spits, dried for the winter (1877a:166).

I have found no indication as to whether the Tualatin caught sturgeons themselves, or whether sturgeons were established upstream from Willamette Falls in aboriginal times.

- (14) Smelt (Thaleichthys pacificus /Richardson/) () Htxi'n'an Probably unavailable to the Tualatin except through trade.

10d-2. Identification Uncertain

- (15) () aplu'nta "Flounder" (1877b:58)
 YamF plu'nta^h
 "mudcat"
- (16) () atualtkaga'l "Bony fish," 2 in.; smallest-sized salmon (?) (1877a:58).
atua'liti kaka'l
- (17) () aya'mkag Salmon, little (?) (1877b:58).

10d-3. Yamhill Terms for Which No Corresponding Tualatin Terms Are Given

- (18) "Fish" (generic) YamF a kwa'yəf
- (19) Silverside salmon YamF kəa'li·f

10e. Reptiles and Amphibians¹

10e-1. More or Less Identified

<u>Presumed identity of organism</u>	<u>Tualatin and Yamhill terms</u>	<u>Notes, related terms from other languages</u>
<u>Amphibians:</u>		
(1) "Frog" (smaller)	(P) () <u>atkua'kua</u> (F <u>tqwa·kwa·'</u>) YamF <u>tkwa·' ()kwa^h</u> " ()" illegible	MRF <u>tkwa'kwa</u> "small frog" (G?) <u>tqwaqwa</u> "small frog" SJ <u>antq'wa'q'wa?</u> "frog" <u>antq'wa'q'wa</u> "frog"
(2) "Bullfrog" (<u>Rana</u> sp.?)	(P) () <u>aʔo'klək</u> (F <u>slo'klik</u>) YamF <u>a ʔo'qʔoq</u>	One of the native species of <u>Rana</u> ?
<u>Reptiles:</u>		
(3) "Turtle"	(P) <u>a'ta'gəʔ</u> (F <u>ta'kiʔ</u>) () <u>ata'g^aʔ</u>	Hale <u>ata'kʊtxl</u> "tortoise" MRF <u>ta'qa'ʔl</u> "turtle" SJ(E) <u>Da'Gal?</u> "mudturtle" YoncJ <u>GumIDA·'Gu?</u> "mudturtle"
(4) "Lizard"	(P) (D) () <u>ačaklfi'f·ak</u>	MRF <u>ča'kala a me·'fa?</u> "larger lizard" SJ(E) <u>cʌkʌlʌme·'fu?</u> "lizard" YoncJ <u>cʌkʌlʌme·'fʌ</u> "small grey lizard"
In dead trees, runs fast (1877a:205).		
(5) Snake (generic); or garter snake (<u>Thamnophis</u> spp.)	(P) (D) <u>atmε'ig^u</u> (F <u>t^hme·'gwi</u>) (P) <u>atmε'igui</u> <u>atmε'igu</u>	Hale <u>ʊtʊme'ikwa</u> "snake" "Any kind of snake is <u>atmε'ig^u</u> (generic) but in fact a little black <u>[one]</u> with white

¹Binomials and order of presentation generally follow Stebbins (1954).

Gatschet (1877a:343) notes that the Tualatin did not eat snakes or lizards. Eustace Howard (Jacobs 1928-36, #84:3) noted that frogs, lizards, and snakes were "not used" by the Santiam.

YamF a tme·'k^u
'gartersnake'

strips, not poisonous--garter
snake" (1877a:209).

(6) ("Two-headed"
snake--rubber boa,
Charina bottae
/Blainville/)

I include a note on this interesting creature, although the Tualatin and Yamhill data do not mention it. This is apparently the "blind-two-headed-snake" mentioned in Jacobs' and Frachtenberg's Santiam and Mary's River texts. Jacobs gives SJ a?la'ufu? 'blind-two-headed-snake,' which John Hudson indicates was blind, with two heads at its opposite ends. Frachtenberg's informant William Hartless noted that the "snake which has two heads" was dark brown to yellow. Both informants noted that seeing the blind-two-headed-snake was a sign of very bad omen. Hudson added that individuals would "try their heart" by placing the blind-two-headed-snake on an arm: if the snake wrapped around one's arm it was a good sign; if it just dropped off, it was a sign of impending death. The indicated color, constricting habit, and "two-headedness" point to the rubber boa, whose blunt, rounded tail is suggestive of a second head (cf. description of the rubber boa in Stebbins/1954:352-353/: "tail short and blunt, usually almost as blunt as head, giving rise to common name 'two-headed snake'," /also/ "the blunt tail may be moved in a fashion suggesting head movements while the head is protected by coils of the body," "striking movements of the tail are said to occur").

(7) "Copperhead
snake" (probably
garter snake, Thamnophis
sp.; possibly
ringneck snake,
Diadophis amabilis
Baird and Girard)

() ala'kuayak

YamF a la·'kwa'i·h
"lizard"

"Copperhead snake" (1877b:60).

"Copperhead" here could refer to the reddish coloration on the mouths of certain garter snakes or, possibly, to the neck and mouth of the ringneck snake. In one of Frachtenberg's (1913-14a Vol. 1: 54-55) Mary's River myths, the snake named an ča'u·cgala?q, given as 'gartersnake' by Frachtenberg (but as 'copperhead snake' in Jacobs' /1945: 221/ reworked version of Frachtenberg's text) burns his mouth carrying fire, thus explaining, according to Frachtenberg's marginal note, why the mouth of gartersnake has a red strip.

- (8) (Probably racer, Coluber constrictor Linnaeus) (P) atkuI'/utank
[atku'I... ?]¹
(F tku'yutak) Grey snake, "runs fast," bites, not poisonous, 2-3' (1877a:209).
- (9) (Gopher or bull snake, Pituophis catenifer Blainville) (P) ma'nčum
MRF(G) an čom? 'bullsnake' ("blows," -pu'f-, at people)
YoncJ Ga'nčū·mU? 'bullsnake'

"Puff adder," on Willamette; black, white spots (1877a:209).

The coloration of the gopher snake is light brown to whitish, with a row of large brown, black, or reddish splotches running the length of the body (the informant sees lighter spots on a darker background). The name "puff adder" suggests the loud hissing and spreading of the head noted for this species (cf. Stebbins 1954:392-394).

- (10) Rattlesnake (western rattlesnake, Crotalus viridus Rafinesque) (P) ačU'm·i
(F čū'm·e·) YamF a čū·mi·h
YoncJ swu·mIk 'rattlesnake'
The Yoncalla and Tualatin-Yamhill words resemble each other more than either resembles the Santiam-Mary's River word for rattlesnake (SJ antke·'). (Interestingly, the latter resembles the Yoncalla word for 'snake' or 'gartersnake,' given by Jacobs as Ga'ŋke·', by Frachtenberg as kan k^hya^h).

Rattlesnakes are native at least to parts of the Willamette Valley, and are found now in some limited areas of the central and southern valley. I have found no indication as to whether or not rattlesnakes were native to Tualatin territory. Jim Riggs (1975, p.c.) informs me that he has heard of rattlesnakes being found, relatively recently, as close to Tualatin country as the hills near Amity, just south of McMinnville. It seems possible that rattlers occurred in areas of favorable habitat (e.g., open south-facing slopes) within Tualatin territory.

¹Gatschet always marks stress on diphthongs following the final component vowel. Frachtenberg's correction suggests ...u'I... here, but ...wI'... is an equally possible reading.

The fact that rattlesnake is cited as a spirit-power (1877a:63) suggests that rattlesnakes were within the sphere of Tualatin experience.

There are mentions of poisoning persons with "poison of snake" and of putting poison on arrow tips (type of poison not indicated) (1877a:345-346). No details are given here, but Frachtenberg's (1914a) Mary's River notes do record the use of rattlesnake poison, applied to tips of war arrows. Jacobs (1928-36, #87:60) was told by Eustace Howard that the Santiam never ate rattlesnakes, but that "some tribe to the south" did eat parts of rattlesnakes for power reasons, additionally mixing the mashed bony rattles with tobacco for the same reason.

An early settler (Applegate 1930:214-215) notes an interesting case of "snake charming" for the Yoncalla; as a boy, he observed a Yoncalla "doctor" chant to a rattlesnake until it became completely docile, whereupon it was handled with impunity.

10e-2. Identification Uncertain

- (11) (D) apU'nkəlak "Lizard," "turtle" (?) ("lizard" is corrected to
apU'niklak^u "turtle" here, with ačaklfi'f.ak being offered as
 the true word for 'lizard') (1877a:388); "red mole?
 () abU'nxlak ... (in water, 4 legs with 5 fingers each; once
 made fingers to /for?/ mankind, whence its name)"
 (1877b:60). (The latter suggests that the name is
 analyzable in terms of -pun- 'to make, do,' and
-la'k^u 'hand'.) This interesting note possibly
 points to a salamander or newt (mole salamander?);
 note the rather human-like five-digit rear mani
 characteristic of these animals (although the front
 mani have only four digits; note, however, that the
 mani of lizards and turtles seem distinctly un-
 human).

10e-3. Yamhill Terms for Which No Corresponding Tualatin Terms Are Given

- (12) "Waterdog" YamF a tka'lwə'ci
 (rough-skinned
 newt, Taricha granu-
losa Skilton?)

10f. Insects, Parasites, and Other Arthropoda¹

10f-1. More or Less Identified

<u>Presumed identity of organism</u>	<u>Tualatin and Yamhill terms</u>	<u>Notes, related terms from other languages</u>
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Class Chilopoda:

- | | | |
|---------------|---|--|
| (1) Centipede | (P) <u>atmo'is</u>
(F <u>imois</u>) | |
| | (D) <u>atmo'nš</u> | |

Class Arachnida (also see "Parasites"):

- | | | |
|------------|--|--|
| (2) Spider | (P) <u>ačI'nšəxal</u> [...qal]
(F <u>čI'nšəqa·l</u>) | |
| | (D?) <u>aŷInšəka'l</u> | |
| | YamF a <u>ŷi'nŷga?l</u>
<u>ŷi'nšqa?±</u> | |

Class Insecta (also see "Parasites"):

- | | | |
|-------------------|---------------------------------------|--|
| (3) "Caterpillar" | (P) <u>aŷI't</u>
(F <u>šə'yt</u>) | MRF an <u>cYa'yIt^h</u> "small caterpillar" |
| | YamF a <u>ŷe·t</u> | SJ <u>anča'yε·t</u> a type of caterpillar, eaten, about 1½" long, striped, not very hairy, eating the leaves of ash trees; not found in quantity every year, but when they come they make the ash trees look bare (Jacobs 1928-36, #47:28, 1945:27). |
| | | YoncJ <u>Ganša'yID</u> caterpillar that eats only ash leaves. |

Jacobs provides details on the gathering and preparation of these caterpillars, from John Hudson and

¹Since I am completely unacquainted with the intricacies of entomological classification, I do not attempt to use binomials.

his Yoncalla informant: when the caterpillars were fat, holes were dug near ash trees, into which the caterpillars fell (?); for eating, the caterpillars were boiled or put into baskets and pit-oven roasted like camas; after cooking, the "fur" rubbed off, leaving just hard white meat, which was very good (Jacobs 1928-36, #45:n.p., 1945:27). I found no information to indicate whether or not the Tualatin made similar use of this caterpillar.

The early settler Minto (1900:306) mentions seeing a Santiam gathering "tent caterpillars" from ash trees for eating.

- (4) Maggot
- | | |
|------------------------|--|
| (P) <u>apli'jak</u> | MRF <u>am pli'c?yākY</u> 'maggot' |
| (F <u>pli'cak</u>) | (G?) <u>am pli'cyəkY</u> 'maggot' |
| YamF <u>am pli.caq</u> | Used as fishing bait (1877a:73). Same word for "worm." |

(Grasshoppers and Crickets:)

- (5) Grasshopper
- | | |
|------------------------------------|-------------------------------------|
| (P) <u>atku' tunk</u> | MRF <u>an tqo.yak</u> 'grasshopper' |
| [<u>atku'i...</u>]? ¹ | (G?) <u>tku.yak</u> 'grasshopper' |
| (F <u>tkwi'tonk</u>) | SJ <u>antGu'?'yak</u> 'grasshopper' |
| (D) <u>atku' tunk</u> | YoncJ <u>ku' y^?k</u> 'grasshopper' |
| YamF <u>a tko'huk</u> | |

Gatschet nowhere mentions the eating of grasshoppers, though this practice is mentioned for other Kalapuyans. Cf. Jacobs (1928-36, #45:n.p. for the Yoncalla; 1945:26 for the Santiam), Kruse (1954:1, Yoncalla), Douglas (1904-05, Pt. 3:78-79, general Willamette Valley). One of the reasons for burning the prairies was to procure grasshoppers (Jacobs 1945:26, Douglas 1904-05, Pt. 3:78-79).

- (6) Grasshopper,
largest type
- | |
|------------------------|
| (P) <u>atxε'sxεs</u> |
| [<u>atq...sq...</u>] |
| (F <u>tqe'sqas</u>) |
| (D?) <u>atke'škeš</u> |
- (7) Cricket
- | |
|----------------------|
| (P) <u>aptu.ptu</u> |
| (F <u>ptu'ptu'</u>) |

¹See footnote on page 128.

(Flies:)

(8) "Fly"

(P) () atka'n
(F tkan)Hale atikaa'ne "fly"
MRF an tqa'naq "fly, house-
fly"
(G?) tka'naq "fly, house-
fly"
YoncJ GUmItko·'nU?k "gnat"
G mItko·'no?q "mosquito"

Small fly

(P) uati'njⁱk atka'n

Large fly

(P) uato'f atka'n

"Meat fly"

(P) amhU'kt atka'n
(F amhu·k ...)amhu'k 'meat'(D) amhU'k tu'tkantu- 3rd person singular
possessive

(9) Gnat

(P) atkui'n·ik
(F tkwi·'nik)

(10) Mosquito

(P) atmu'yukčuk
(F tmu·'cYukcYuk)Hale tɔmɔ'tçɔktçɔk 'mosquito'

(O. Lepidoptera:)

(11) "Day
butterfly"(P), (D) aua'nxa/ua'nxa
[...qa...qa]
(F wa'nqawanqa)YamF a wa'nkawank
"butterfly"(12) "Day
butterfly, largest"(P) ata'lala
(F ta'lala)

(13) "Moth"

(P) atmU'fmap(14) "Moth,"
another kind(P) ato'kala
(F to·'kala)(D?) to'/ukala

- (15) "Sphinx" (moth) (P) atkui'nkamɿ (F tqwi'ŋqamɿ) "Night butterfly," big head at one end (1877a:33).
- (0. Hymenoptera:)
- (16) Ant (P) atmI'tImuš (F t^hmi'tmo'us) MRF an tmo.iš 'ant'
SJ ant'mI's 'ant'
YoncJ G^hntmi.wI'č 'ant'
YamF a ti'tmo.us
- Large ant (P) uapa'l atm...
Pl.: (P) uanto'f atm...
- Smallest ant (P) uatI'njIt atm...
- Flying ant (P) uatI'p atm... (F wa'ti.p ...)
Pl.: (P) u^hntI'b atm... (F wa'ntip ...)
- Red "pissant" (P) uatu'lilU atm... -tu'lilu 'red'
- Black ant (P) uamo'yim atm... -mo'yim 'black'
- (17) Bumblebee (P) atu'n.ank (F t^ho'nananq) MRF an sfo'nata? 'bumblebee'
() atU'n.ank
- (18) Hornet (P) atka'lxaš (F tqalqas) MRF an tqa'laqsa? 'hornet'
[...lqaš]
SJ antGa'laGasa? 'hornet'
(D) atka'lkaš
- (19) Wasp (P), (D) asU'kasUka, ..uka (F sYu'kasYuka)
- (20) Yellowjacket (P) a'nti#ɿ MRF tyeɿ 'yellowjacket'
YamF an tya.ɿ SJ antyε'ɿ 'yellowjacket'
YoncF ka'n tyeɿ 'yellow-jacket'
YoncJ tIyε'ɿ "bee"
Cf. Clackamas (Jacobs) a'ntyəɿ 'yellowjacket, bee' (the

-an prefix suggests that
this is a Kalapuyan loan).

Jacobs notes, for the Santiam, that yellowjacket larvae were eaten: in midsummer, when a nest was found, a fire might be built on top of it to kill or drive out the yellowjackets; the toasted white larvae were then taken out and eaten (Jacobs 1928-36, #56:30).

Lyman (1900b:325) also mentions the eating of yellowjacket larvae by Kalapuyans, stating that the "combs," with their "honey" and larvae, were considered good eating; the nests were dug out of the ground after the yellowjackets were first "well smoked." I suspect that David Douglas' (1904-05, Pt. 3:78-79) observation that Willamette Valley natives burned off the prairies every year in order to, among other things, procure "wild honey," is a reference to the above-noted method of procuring yellowjacket larvae, since honey bees are not native.

Parasites:

- | | | |
|------------------------|---|---|
| (21) Bedbug | (P) <u>amhI'mt</u>
(F <u>hi'mt</u>) | |
| (22) Flea | (P) <u>a'ntuak</u>
(F <u>twakh</u>) | MRF <u>an twa:q</u> 'flea'
YoncJ <u>G^'ntwa.k</u> 'flea' |
| | YamF <u>an twa.k</u> | |
| (23) Greyback
louse | (P) <u>atu'təli</u>
(F <u>tu'tli.</u>) | |
| (24) Head louse | (P), () <u>ma'ntiu</u>
(F <u>mo'ntyu'</u>) | MRF <u>an tyh^h</u> 'head louse'
(G) <u>toi.</u> 'louse' |
| | YamF <u>ma'ndi.ya</u>
<u>di.ya</u> 'louse' | SJ -Du'i 'head louse'
YoncJ <u>G^'nDi.wi</u> 'head louse' |
| (25) "Leech" | () <u>aɣε'/u±</u> | |
| (26) Mosquito | See #(10) | |

- (27) Nits, on head (P) ma'mpəla'nč SJ -p̄lɛ'ʔnc 'nits'
(F ma'mplɪnč)
- (28) Tick, on sheep (P) ala'mUnč
(F la'munč)

10f-2. Identification Uncertain

- (29) (P) amhi'uyik "Stink bug," red and green (1877a:34). The name is probably a reference to odor; cf. amhi'uyik /sec. 10a-1, #(29)], name of an aromatic herb,
(F hi'ʔuyik^h)
- (30) (P) anto'/utUntiu "Ateuchus" (?) (1877a:34). The name seems to mean "eel's lice" (anto/u 'lamprey eel,' tuntiu 'its-lice').
(F a'nto·tintya)
- (31) (P) atpU'tuak Little, red, size of nits, in beds, dogs, old houses, etc. (1877a:34),
(F tpu'twaq)
- (32) (P) awu'yakmɛi "Fire-bug" (1877a:34).
(F wu'yakmi·)

10f-3. Yamhill Terms for Which No Corresponding Tualatin Term Are Given

- (33) Horse fly YamF a·wos
a'ʔs

10f-4. Introduced Insects

- (34) Honey bee (P) abo'štin nintia'± MRF ba'stan tan ty^h± 'honey
(F ... ni'n ty^h±) bee'
- 'The Americans' yellowjacket'
(bo'štin 'American' /Jargon/;
nintya± 'their-yellowjacket').

10g. Miscellaneous or Unidentifiable Fauna

- (1) "Worm" (P) apli^yak Same word for 'maggot'
- (2) "Rain worm" (D) ačkue^ffank Used as fishing bait (1877a:280).
- (3) (P), (D) ala^l1 SJ ala^lla 'poison power' (e.g., sent by malevolent shamans).

A kind of disease object ("worm") that settles in the body, causing disease; removed by shamans (1877a:65-67, 290).

- (4) (D) tH^gšiš
ata^kšiš An animal making a noise, smaller than a mouse, with horns, "horned frog?" (1877a:289) (horned toads apparently not being native to the area, the best possibility I have heard suggested as to the possible identity of this creature is that it is one of the larger, more spectacularly antennaed species of beetles).

(Yamhill Term, No Corresponding Tualatin Term:)

- (5) Snail YamF an tpe^{ut}
an tpeut MRF an tpoⁱt 'snail, slug'
(G?) tpoⁱ?t^h 'snail, slug'
MRF an če^yyaq an tpoⁱ?t^h
snail with shell on

10h. Supernatural Beings¹

- (1) (P) a^yU^sčəsa Wolf-like, without fur or flesh ("nothing but skin

¹I include these because I suspect that such beings were just as much a part of the Tualatin "real world" as bears, elk, oak trees, etc. Tualatin informants nowhere indicate any special category of being applying more uniquely to such beings than to other beings which we could consider fully "natural" (cf. sec. 9, where amhu^lluk^w and atuⁿkai, below, are listed, along with crawfishes, salmon, otters, etc., as being among the "things living in the water"). Most of the beings mentioned below were indeed associated with "power" (yu^lmei), but they were not necessarily associated with any superior degree of power as compared to that

(D) a3U'scəsa

and bones"), has a long tail, makes whistling noises, pounces like a mountain lion, pursues and devours people (1877a:129, 201, 354). "Not fabulous, in existence. Dave saw /it/ below čadiH'mčgi /the Gaston petroglyphs/--near Gaston" (1877a:354).

This being is mentioned specifically in connection with wolves and Yoncalla Indians. Dave said it was "the oldest wolf" (wa-yu'hiu a'mlint pku-pU'n-3a a3u'scəsa, 'the-old /ancient?/ wolf did-make-self /changed into/ the 3u'scəsa') (1877a:354). Yoncalla Indians transformed themselves into the 3u'scəsa, as well as into grizzlies and wolves, and came north to devour Tualatins (1877a:201-202). Dave adds that the 3u'scəsa was finally killed by the Clackamas (1877a:354).

(2) (P) amhu'lək^u
(F am hu'lik)MRF am mo'luqwa 'whale,'
'cattle' (!), "fabled bad
animal living in water"(D) amhU'luk^uSJ(E) amu'luG^{wa} (supernatural)
"whale" living in(Emmy) amhU'l'k
amhU'lk
amhU'luk

Willamette River (see below)

(F am hu'luk)YoncF mu'lyukwa^h 'whale'

Jacobs and Frachtenberg both suggest that the Central-Yoncalla word is related to Chinookan mu.lak, mo.lak 'elk' (the given Tualatin form however seems less to resemble the Chinookan word). The Tualatin have a different word for 'whale' /see sec. 10b-1, #(16)/, but the "fabled bad animal"-supernatural "whale" is surely identical to the Tualatins' hu'luk^w.

This being was believed to inhabit an inhospitable little mountain lake west of Forest Grove (probably the former Devil's Lake, about four miles north of South Saddle Mountain). A story recorded in three versions by Gatschet (Jacobs' renderings, reworked with Louis, appear in Jacobs /1945:156-160/ recounts how it long ago seized and thereafter kept two children (it is elsewhere noted that the footprints of the hu'luk^w where it seized the children can still be seen near Gaston); the children became transformed into something "different" or "strange," spotted, with one body, two heads and necks, and four arms. The hu'luk^w itself is rather amorphously described: it was "very large," spotted, four-legged,

conferred by other beings (such as, e.g., thunder, eagle, grizzly, which conferred some of the strongest powers).

had a large spotted horn or horns, its legs were "tied-around" (?) "like those of a porcupine" (its legs resembled those of a porcupine?), it was accompanied by spotted dogs (1877a:72, 85-86, 89-91). The combined Tualatin, Mary's River, and Santiam references to this being suggest the following characteristics: (i) It characteristically makes water rise--in the Gatschet stories, the water rises when the hu'luk^w takes the children away; in a Santiam story given by Eustace Howard (Jacobs 1928-36, #76:43-141), the amu'lug^{wa}, who lives in the Willamette River in this version, makes water rise on different occasions towards a boy on the bank, finally drawing him down and keeping him; also, in Dave's creation myth (1877a:244), the hu'luk^w is identified as a "sea monster raising water". (ii) It transforms things that come under its power--cf. the children in Gatschet's story; the Gatschet notes (1877a:91) also state that the lake where the hu'luk^w lived drew things down (e.g., elk, deer, grizzlies), and that "when a grizzly bear is old, he goes there /to that lake/ & turns into something in that lake;" in the Howard story, the boy who was kept with the mu'lug^{wa} became somehow changed, though the story begins to fade out at this point with Howard being unable to recall the rest very well. (iii) It confers power, apparently being associated with wealth--although there is no reference to a hu'luk^w power in the Gatschet MSS, according to Jacobs (1945:156), "/Louis/ Kenoyer said that the /hu'luk^w/ . . . gave people a sort of briefly possessed wealth spirit power;" Frachtenberg's informant William Hartless (Jacobs 1945:345) indicated that the mo'luqwa was one of the "things in the water" which were sought for power; additionally, Eustace Howard indicated, though he was not remembering things very well at this point, that the boy in his story later on became wealthy.

(3) (P) atU'nk^h/i
(F fo'lqai)

(P), (D)
atU'nkai
(F a fu'lqai)

A "fabulous" "sea bear" (Frachtenberg has "spotted dog living in water"), one of the beings conferring power (1877a:63); "a spirit or bad genius, living in dark deep water; looks almost like a seal, or sea otter," "in river, lakes, deep water" (1877a:88). In the passage quoted above, to the effect that when a grizzly becomes old he goes to the hu'luk^w's lake and "turns into something" there, there is a rather ambiguous addition which seems to indicate that such a grizzly might be transformed into an atu'nkai (1877a:91).

- (4) (P) acxa'/u
(F cxa'u)

SJ asa'uq^wsauc^w 'hollerers'
(hollering beings heard at
night in the mountains;
they devour people)

By the description, this being seems similar to the 3u'scəsa: ". . . in the Cascade m/tns/---follows tracks of Indians, eats them up, /illegible--not?/ afraid of water & fire; no hair on, or flesh, nothing but skin & bones," "size like big dog or calf" (1877a:87-88). Gatschet has a text (1877a:143-146, in Jacobs 1945:182-183) describing how a cxa'u was killed by a young man at Panther's Den (one of the power-quest places at Grand Ronde), after it had previously killed three other youths there.

- (5) (P) aski'yup
(F a sqe.yu'p)

(Emmy) ski'yup
(F sqi.'yup)

A female being, travels through the air, wears a short cedar bark dress (1877a:85, 87, 106); confers power (1877a:106-107); she always dances when appearing to people (i.e., to those who receive her power?), on her head (legs up), back, sides, walks on her back, etc. (1877a:362). According to a text dictated by Emmy (1877a:87), few "knew" ski'yup (had her as their power); her appearance could be fatal: "whoever she would get to in the country, just blood would come out of his mouth, (When) a woman went for water, she would drop dead, if (because) ski'yup appeared to her" (Jacobs' translation; Jacobs /1945:179/).

Gatschet has some notes on winter-dance performances connected with this being. E.g.: "i'ha wa'ihī, wai, hē wa'ihī, wa'hi, waho . . . sung while rattling the aču'xčəxa /hollow rattle/. As the aški'yup is a being which can walk on his /her/ back, head, feet or sides, they express by singing how he /she/ walks, travels, and accompany this by the gesture of head shaking: a'hi, nua'hi, wa'hi, etc." (1877a:401).

CHAPTER IV

OTHER CONTRIBUTIONS: TUALATIN WINTER-VILLAGE GROUPS

11. HOUSES AND SETTLEMENT PATTERN

The Tualatin spent the colder months of winter at permanent winter-village locations, in multi-family winter houses. Little detailed data are available concerning Tualatin houses and settlement pattern. Gatschet gives the following different words for houses or dwellings: ha'm·ei 'house' or 'dwelling' of any kind (-m·ei/-mai 'fire,' 'dwelling;' -ma· in Santiam-Mary's River); apyo/uše·'ld 'winter house' (-pyo/uš- 'winter,' -e·l(d) 'house,' perhaps specifically permanent or winter house; -d suffix?; cf. Mary's River pya'usI-la 'winter-village,' Yoncalla -la 'house'); aca'f or aca'f ha'm·ei "plank house of Tualat̄in̄ before coming to reserve;" amε'kwinfun (from mε'k^w 'summer,' referring to temporary summer shelter); ata'tal '(temporary) hut' (referring to temporary grass, brush, rush, etc. dwellings). A translation of apyo/uše·'ld at one point as "mud house," and the giving of ha'nkθlop ('earth') apyo/uše·'ld (i.e., 'earth' or 'dirt winter house') as a type of dwelling (1877b:33, n.p.) suggest that the Tualatin had the earth-banked, bark-roofed type of winter house noted for central Kalapuyans (alluded to for the Santiam in Jacobs [1945:39]; some details on one variety are given in Frachtenberg's [1914a:n.p.] Mary's River notes, published in Mackey [1974:42]). Plank houses, of course, were notably characteristic of neighboring Chinookans.

There are no data as to the comparative importance of the two basic winter-house types mentioned above; it does seem plausible to suppose that where both were represented, only wealthy families could have had plank houses. A note (1877a:13) that ash bark (spread in June to dry for use during the following year) and cedar bark were used in house construction, could conceivably refer either to the bark and earth central-type house, or, possibly (or additionally), to the bark-covered, plank-roofed houses noted for lower Willamette-Vancouver vicinity Chinookans (ash and cedar bark are also noted to have been used to plug airholes in houses during cold weather). An early apparent reference to plank houses in use among northern Kalapuyans occurs in Rees' (1880:22) recounting of information passed on to him by a member of the 1812 Donald McKenzie expedition. According to Rees, Champoeg village (located somewhere in the vicinity of the state park of the same name [see Hussey 1967:17-187]) had "cedar houses" (that is, cedar-plank houses?).

The Gatschet notes (1877a:13, 192, 236; 1877b:33) include references to the following aspects of Tualatin houses and settlement pattern. Winter houses were 40 to 50 feet long, with two to four or five families in one house; each individual family was partitioned off; there were two or three three-foot-high doors per house; there was a central fire pit and smokehole; planks, with excavated leg-room, were provided for sitting; there were storage scaffolds; tule mats were used as mattresses; beds were raised, being about three feet high (there is also one interesting note to the effect that "bedsteads" were made of planks, "painted with fancy ornaments," inside of which nets were stretched as mattresses). Houses might be joined together in long house rows (e.g., 100 feet long).

Also, a Tualatin village might have a large "council house" (a'kanaiku tU'm'ai 'the council its-house') where, for example, war councils involving the village men were held.

12. WINTER-VILLAGE GROUPS

The following were all presumably winter-settlement sites. In one of Gatschet's texts (1877a:148-150; in Jacobs 145:186-187), a number of them /#(1), (3), (4), (5), (6), (8), (9), (10), (12), (13), (14), (16), (17) below/ are specifically mentioned as sites where winter houses were located (the text reading, e.g., "the hε'lim /people/ went back home when it was wintertime to their winter houses, their place was there at hε'lim," etc.). I cite any mentions of chiefs or individuals said to be from a particular village group, to provide additional evidence that a group name rather than merely a place name is at issue (the information about Tualatin local groups in Hodge /1907, 1910/, compiled by Livingston Farrand from the same data of Gatschet's cited here, contains some confusion on this point, Farrand identifying at least two, and perhaps more, place names as group names).

I abbreviate the more frequently cited references, as follows:

1877a: ...	Gatschet (1877a: ...)
(F ...)	Frachtenberg's field corrections of forms from Gatschet (1877a), written directly into the original Gatschet notebooks.
Fracht	Frachtenberg (ca. 1915:55-56) ← Frachtenberg's unpublished typescript of Gatschet's text on winter-village groups.
Jacobs	Jacobs (1945:186-187) ← Jacobs' revised version of Gatschet's winter-village text (Jacobs did not have the benefit of Louis Kenoyer's help on this text, so that cited forms represent, not re-elicitations, but

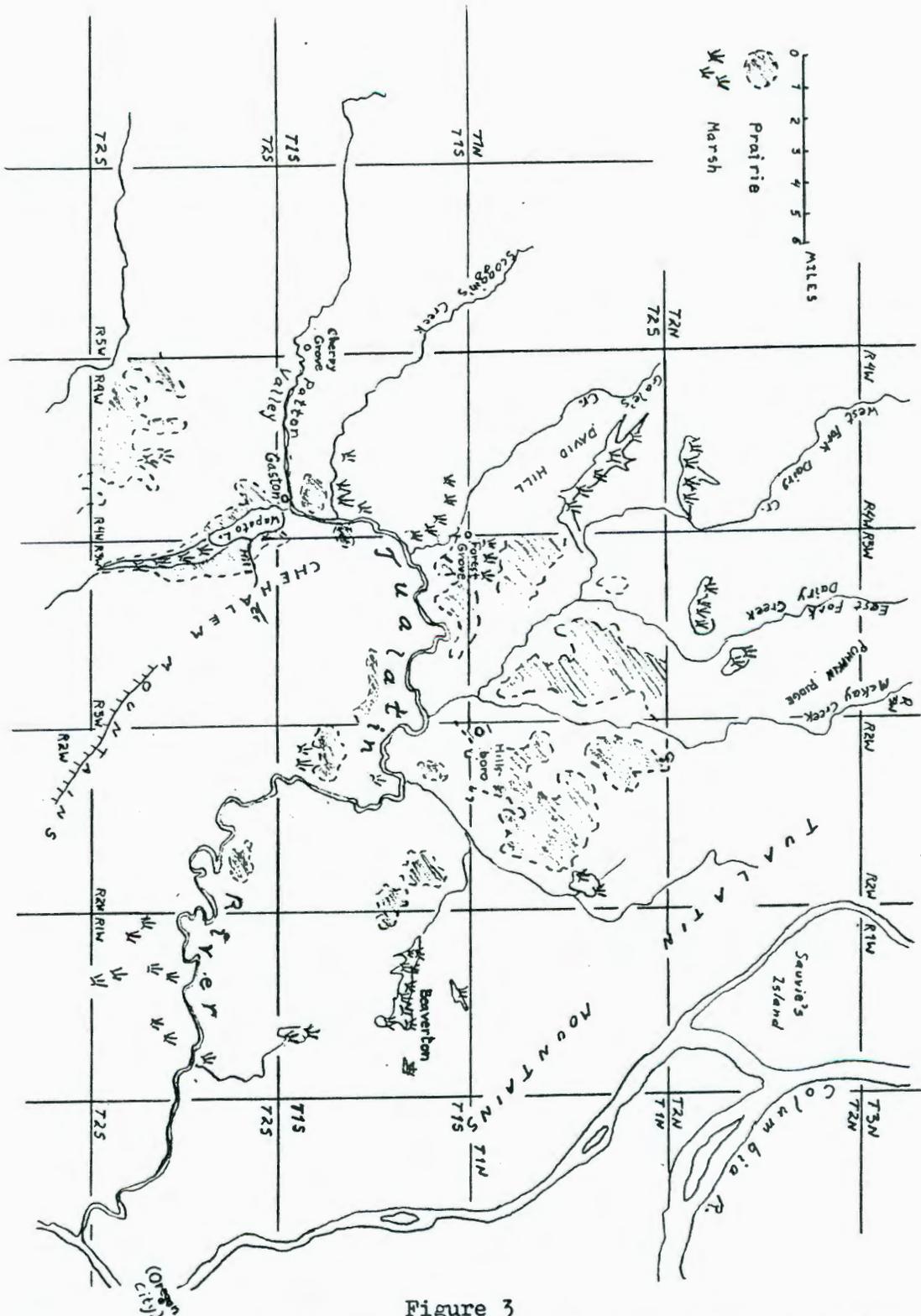


Figure 3
 Geographical features referred to in localizing Tualatin winter villages
 (for some features not shown, see figure 1)

merely Jacobs' own phonetic reinterpretation of Frachtenberg's typescript in conjunction with Gatschet's original).

Hodge I Hodge (1907:108, plus alphabetically organized references to each named village)-- Farrand's compilation of Gatschet's data.

12a. More or Less Definitely Identified

(1) ča-čim·ahi'yuk. -hi'yuk an aromatic herb growing in marshy places [see sec. 10a-1, # (30)]; či'm·a- obscure; appears in other place names.

ča čim·ahi'yuk (F čume·'yuk),¹ čim·ahi'uk, či'm·a hi'uik (F čema'hawig)¹ (1877a:30, 95). Chachimahiuk (Hodge I).

Probably located somewhere south of Beaverton, near Tualatin River. There is an element of confusion in the location, Gatschet originally giving it as "near Oregon City, on this side of Willamette River," but subsequently crossing out "Oregon City" and writing "Wappato [sic] lake" (1877a:95). However, the location is elsewhere given as "between Oregon City and Chehalem" (i.e., west or southwest of Oregon City, "Chehalem" presumably referring to the vicinity of Chehalem Valley and Mountain) (1877a:30). Furthermore, it is stated (1877a:95) that the chief of this village was "probably same as [of] ča kε'ipi [#(5)]." In view of the latter statement, it seems likely that the two mentioned villages were located relatively close to each other. If I am correct in locating ča-kε'ipi at or near Beaverton, the case is thus strengthened for locating ča-čim·ahi'yuk in the general area suggested here.

"Blind Dave" was from this group (1877a:30).

¹It seems likely that Louis did not recognize this name.

(2) čá-cmɛ'wa. 'At the place (of) low, wet ground' (-mɛ'wa 'low or marshy ground, frequently overflowed').

čɛ ʃəmɛ'ua (F čami'wa), ačácmɛ'ua¹ (F čame'wa) (1877a:94, 150). Chachemewa, Chachimewa (Hodge I; there is no support in the original Gatschet MS for Farrand's implication that two groups bore this name). čá čme'wa (Fracht). čáčmɛ'wa (Jacobs).

At Forest Grove, right north (6-7 miles) from čá-la'1 village /ʃ(7)ʃ. ku'iyape'i, a tu'ktalak ('great warrior') was from there (he was not a chief though) (1877a:94).

(3) čá-čó'kwił. Said to be named for a kind of shell.

čá čó'kuił (F čá'kuł), čá čó'kuał, ačáčo'kuił (1877a:92, 97, 150). Chachokwith (Hodge I). čá čá'kuł (Fracht). čáču'kwił (Jacobs).

The information on this one is rather confusing. The notes on čmɛ'wa village state that the latter was the "same place as čá čó'kuił," and it is further stated that čá-čó'kwił was the "name of /a/ place," the place "now called Forest Grove" (the same location given for čá-čmɛ'wa (1877a:92, 94). However, the winter-village text (I infer that both the text and the notes on pages 92-97 were given by Peter) gives both names as names of settlements, and a marginal note on čá-čó'kwił states that "they had a chief or subchief." Some evidence that the two names belonged to separate proximate locations is provided by the information that čá-ma'f·umyak ('place haying ferns'), a mountain about two and a half miles north of Forest Grove, was between čá-čmɛ'wa and čá-čó'kwił (1877a:97). It seems fair to speculate that if there indeed were two separate settlements

¹For a-, read 'the ... /people/.'

here, they were likely near each other and perhaps closely interrelated.

(4) ča-hε'ʔlim. hε'ʔlim 'out, away, outside.'

čā hε'lim (F čahe'ʔlim), ahε'lim (1877a:92, 148). Chehalem village (Lyman 1900b:323). Chahelim (Hodge I). ča hā'ʔlim (Fracht). cahε'ʔlim (Jacobs).

Located five to six miles south of Wapato Lake, in the vicinity of Chehalem Mountain and Valley (1877a:92). (See Figure 1, page 3, for a map giving coverage of the area.)

qa'yaqač, Peter's father's brother, was once chief there (1877a:92). The name of another former chief was wa'winxpa (1877a:148) (cf. Lyman [1900b:323]-- "a chief [at Chehalem village] was Wow-na-pa").

(5) ča-kε'ipi. -kε'ipi 'beaver.'

ča kε'ipi (F ke·pi·), ačags'ipi (F ke·ʔpi·) (1877a:95, 150, 291). Chakeipi (Hodge I). ča ke·ʔpi· (Fracht). čaGe'ipi (Jacobs).

About six to ten miles west of Oregon City, (at?) "Beavertown" (i.e., at a place called by the Whites "Beavertown"?) (1877a:95). This description points to the locale of Beaverton (which occupies the former site of an extensive marsh).

xε'/uba, a notable hunter, was chief (1877a:95, 150). Dave's father was from there (1877a:95). Dave himself, in explanation of the name, noted that "the people were stout, heavy set people, hunters," also that there were "many beavers there" (1877a:291).

(6) ča-ku'tpalyu: -li'yu 'prairie' (I am unable to analyze the rest).

ča ku'tpaliu, ačagU'tpaliu (F ku'tpa'lyu) (1877a:95, 150, 291). Koot-pahl (Lyman 1900b:323; said to be an Indian village near the old Alvin T. Smith place at Forest Grove). Chakutpaliu (Hodge I). ča ku'tpa'lyu (Fracht). čaGu'Dpalyu (Jacobs).

The location given by Lyman does not agree with that given by the Gatschet notes. In the latter, the location is given as being east of ča-pa'naxtin /#(10)T/, at Hillsboro (1877a:95). In one of Gatschet's texts, the name is also applied to Hillsboro (the early settlers' town) (1877a:123). There was a prairie there which was five to six miles long (1877a:95).

"Tim" and ši'1.ukwa were from this village (1877a:29).

(7) ča-la'1. -la'1 'thread grass' (also means 'thread,' also a disease object extracted by shamans).

ča la'1, ča la'1 (1877a:92, 304). Chalal (Hodge I).

Located in the vicinity of a prairie, the latter beyond (north of) Wapato Lake, at its outlet (1877a:92). Reference to the federal land survey records from the 1850's shows that at that time there were two notable patches of prairie just north of Wapato Lake (see Figure 3). One, of about a square mile in extent, was only about a half mile from the lake and just across the upper Tualatin River from its outlet. The other, about half as large, was about a mile and a half from the lake, at the outlet of Scoggin's Creek. Some further information is given on the location of ča-la'1, in the mention of three names of early settlers said to have settled "at" ča-la'1: "McCloud," Jake Doren, and "Davison." Reference to Donation Claims data and the knowledge of Robert Benson (the former being made possible by the latter) puts "McCloud" (Donald McLeod,

settled claim January 1850) on a good share of the larger of the two noted prairies (the claim occupying most of section 35, T1S R4W). Immediately north of McLeod's claim was the claim of Joseph Davis (settled October 1850; I suspect this to be the "Davison" referred to), which occupied most of section 26 of the same township, taking up most of the rest of the prairie land in question. Jake Doren's claim is not recorded in the Donation records, probably because, as noted by Gatschet's informant, he left after a relatively short time. There is, however, evidence that Doren did once live somewhere in the area (Benson 1975, p.c.); the fact that "Doren's Creek" has been recorded as an earlier name of Scoggin's Creek (Gibbs and Starling 1851) suggests that he lived somewhere near lower Scoggin's Creek.

The chief at ča-la'1 was named šla'/win (1877a:92).

(8) ča-la'ʔwai.

ča la'/uai (F la'ʔwai), ačala'/uai (F la'ʔwai) (1877a:93, 149). Chalawi (Hodge I). ča la'ʔwai (Fracht). DJala'ʔwai (Jacobs).

Probably located somewhere near the northeast shore of Wapato Lake. "S. E. of ča la'1, end of Wapp. [Wapato] lake" (1877a:93); "north of [Wapato] lake" (1877a:149).

"Tribe" said by Peter to be extinct in his time (1877a:93).

(9) ča-ma'mpit. mam-pit 'creek'

ča ma'mpit, ačama'mpit (1877a:93, 149). Chamampit (Hodge I). ča ma'mpit^h (Fracht). čama'mBit (Jacobs).

Right south of ča-ča'n'im (the latter [F(22)] in turn a half mile east of ča-la'1), east of Wapato Lake, on a creek running into the lake

(1877a:93). The most notable creek running into the east side of Wapato Lake bed is Hill Creek, and I accordingly treat it as the likeliest location for this village. The notes give the name Wapato Creek, which is currently the name of a smaller creek entering the west side of Wapato Lake bed. The coincidence of names is probably insignificant.

yε'1.ukti lived there; the father of kana'tamax (a woman) was chief (1877a:93).

(10) ča-pa'naxtin.

ča pa'naxtin, apa'na.xtin (1877a:95, 150). Chapanaghtin (Hodge I). a pa'naxtin (Fracht). čapa'naxDin (Jacobs).

North of Hillsboro (1877a:95). This was probably the northernmost Tualatin village, as it is noted that north from "half the mountain at pa'naxtin" lay Clatskanie country (1877a:151-152). Probably located somewhere in the vicinity of the large prairie area which occupied most of the eastern half of township T1N R3W (see Figure 3). This inference is based on Dave's information (1877a:291) which gives ča-pa'1 ha'liu (probably, 'place at the big prairie' [pal 'big,' ha-liu 'prairie'7]) as a name of the country of the a-pa'naxtin; the largest prairie in the general area was that noted above.

Robert Benson (1959:67) makes the plausible suggestion that the "pumpkin" in Pumpkin Ridge, a mountain directly north of the former large prairie noted above, may be a corruption of "pa'naxtin" (pə'nəktIn, pə'ŋkIn, pə'mpkIn ?).

The name of the chief at pa'naxtin was pa'xawataš (1877a:95) (Louis Kenoyer also bore this name, which Jacobs writes Baxawa'tas).

(11) ča-pɛ'kli. -pɛ'kli '(steep) hill.'

ca pɔ'kəlɛ (F pɔ'kli), čapɛ'kəl(i) (1877a:92, 289). (?) pa-ach-ti (Lyman 1900b:323; name of an open spot up Gale's Creek). Chapokele (Hodge I).

Three to four miles west of Wapato Lake (1877a:92). This vague information seemingly points to Patton Valley. Lyman's information, if indeed he is giving the same name, points farther north.

Peter indicated that the chief at ča-pɛ'kli was named la'wicxɛn. Dave, on the other hand, asserted that although the latter was a hunter he was not a chief (1877a:289).

(12) ča-pu'ngatpi. According to Dave's (1877a:289) suggestion, ga'tpi is a place or group name, pun- (stands for?) pu'n ni'm'ai '(they) make their-fire' (pu'n 'make, do,' ni'm'ai 'their-fire'), referring to the deliberate setting of land fires to burn away brush or drive deer (the full name is then pu'n ni'm'ai ga'tpi?). This etymology seems uncertain.

ča pu'ngatpi (F pu'nikatpi), ačapU'ngatpi, apU'ngatphi (1877a:92, 149, 270, 303). Chapungathpi (Hodge I). ča pu'nkatpi. (Fracht). DJapu'nGatpi (Jacobs).

The location is unfortunately confusingly given. Peter says "on Wapato Lake, Forest Grove" (1877a:92); however, he also says (1877a:95) that the place called čandyä'mči (the Gaston petroglyphs, a well-known artifact located in Patton Valley about three and a half miles west of Gaston; see below) was two and a half miles east of ča-pu'ngatpi, which information would put this village well up into Patton Valley, near Cherry Grove. However, a slip by the informant or by Gatschet, "east" where "west" was meant (I have elsewhere verified such a slip involving the same informant), would put

this village near Wapato Lake, probably somewhere near Gaston, Confirmation for the latter possibility is provided in a note on the attempted assassination of Dave (cf. text in Jacobs 1945:169-170). The location of this action is noted to have been in the vicinity of č̣a-la·'1 /ḥ(7) and č̣a-ta'gšiš wε/i-yḥ'lbīu (1877a:312). The latter translates as 'the wood at ta'gšiš' (-yḥ'lbīu 'timber, woods, brush'), č̣a-ta'gšiš being the name of a village /ḥ(14), said to have been located half a mile north of č̣a-pu'ngatpi. This information apparently locates č̣a-ta'gšiš near č̣a-la·'1, and consequently also locates č̣a-pu'ngatpi somewhere near (south of?) č̣a-la·'1, i.e., probably somewhere near the north end of Wapato Lake (note that the information on the approximate location of č̣a-la·'1 seems particularly reliable). A further possible clue here is provided in Mallery's "Pictographs of the North American Indians" (Mallery 1886:25-26):

Mr. Albert S. Gatschet reports the discovery of rock etchings near Gaston, Oregon, in 1878, which are said to be near the ancient settlement of the Tualati (or Atfalati) Indians, according to the statement of these people. These etchings are about 100 feet above the valley bottom, and occur on six rocks of soft sandstone, projecting from the grassy hillside of Patten's /Patton/ Valley, opposite Darling Smith's farm /according to Donation Claim records, the claim of Darlas and Mary Jane Smith was located in sec. 33, T1S R4W--this definitely identifies these "etchings" as the Gaston petroglyphs/, and are surrounded with timber on two sides. The distance from Gaston is about 4 miles; from the old Tualati settlement probably not more than 2½ miles in an airline.

The above passage surely describes the place called by the Tualatin č̣andyḥ'mčī, 'where the stone is marked' (-d- 'stone,' -yḥ'mčī 'marked, spotted'). According to the 1877a MS, this consists of "pictures" carved on stone, located six miles from Gaston and half a mile from the Tualatin River, made "some 80 years ago" /i.e., about 1800/ by Tillamooks who had come to attack the Tualatin (1877a:95). The discrepancies between the

latter information and that given by Mallery (cf. the complete relevant passage from the latter) seem insignificant. If the noted "old Tualati settlement" was čá-pu'ngatpi (which, recall, is given as being two and a half miles from čandyh'mči), this village was probably located a mile or two west of Gaston, in lower Patton Valley.

Peter's father, ka'm·oč (Jacobs has ka'm·ač), became chief of čá-pu'ngatpi after the previous chief, to'kwai, died (1877a:92, 270, 303). Elsewhere, it is stated that ka'm·oc's elder brother, čaki'lxida, was chief of čá-pu'ngatpi (1877a:150) (no indication whether the brothers were chiefs at the same or different times).

(13) čá-ta'gił. -ta'gił 'fir bark' (or heavy bark of any kind?).

čá ta'gił (F ta'qił), ačata'gił (1877a:93, 149). Chatagithl (Hodge I). čá ta'kił (Fracht). čáDa'Gił (Jacobs).

Located about a mile right southwest from Wapato Lake (1877a:93). kali'č^adax (elsewhere, kwali'čad^ax) was chief (1877a:93, 149).

(14) čá-ta'kšiš. -ta'kšiš a tiny animal, unidentified see sec.
10g, #(4)7.

čá t^h'gšiš (F te'qšiš), ačata'kšiš (1877a:92, 149). Chatagshish (Hodge I). čá ta'qšiš (Fracht). Da'qšiš, DJata'qšiš (Jacobs).

Located about a half mile north of čá-pu'ngatpi (1877a:92). Chief: mā'nšta (elsewhere, ma'nI'šta); another name of the same man was kayu'n·iš (elsewhere, kayu'mniš) (1877a:92, 289) (Gatschet notes here that Tualatins often changed names).

(15) č̣a-ta'mnɛi. Dave says this means a dry, sandy place, but I am unable to analyze the name.

č̣a ta'mnɛi (F ta'mni.) (1877a:92). Tahm-yahn (Lyman 1900b:323; Indian name of David Hill, northwest of Forest Grove). Chatamnei (Hodge I).

Noted to be the name of a place, formerly inhabited, "tribe" extinct by later historical times. Located about 10 miles north from Wapato Lake (1877a:92) (the above information from Lyman suggests David Hill as the location). Much a·ld (an edible root [sec. 10a-1, #^X(28)7]) grew there (1877a:92).

(16) č̣a-ti'lkwei.

č̣a ti'lkwei, ač̣ati'lkwei, č̣ati'lkue·/i (1877a:70, 93, 149). Chatilkuei (Hodge I). č̣a ti'lkwi· (Fracht). ač̣aDi'lkwei, č̣aDi'lk^wi (Jacobs).

West of Chehalem (Valley?) and about five miles west of Wapato Lake (1877a:93); below (downstream from?) the north fork of Yamhill River, the district below McMinnville (1877a:70) (vicinity of Lafayette?). This is the only definite mention of a Tualatin village in the Yamhill River drainage. (See Figure 1, page 3, for a map giving coverage of the area.)

Dave thought that this was not a village, merely an uninhabited place (1877a:290). However, Peter noted that the chief of this village was the father of a woman living at Grand Ronde around 1877 (1877a:93).

(17) č̣a-waye·'d.

č̣a uaye·'d, ač̣a/uaye·'d (F wa'yid) (1877a:149). Chawayed (Hodge I). č̣a wa'yid (Fracht). ač̣awa'yid, č̣awa'yɛD (Jacobs).

Located two to three miles west of ča-pu'ngatpi (1877a:149). It is noted that Peter believed that "they had a chief," also that there was a big graveyard there, still visited by the people at Grand Ronde circa 1877 (1877a:149).

12b. Village or Place Names: Information Insufficient to Identify Clearly

(18) ča ča'mbit ma'nčal. Said to mean 'river in the hollow;' however, the etymology is not entirely clear to me (elsewhere, -bit is 'creek,' ma'n-čal 'river').

ča ča'mbit ma'nčal (1877a:291). Chachambitmanchal (Hodge I).

A prairie and river, inhabited, located about three and a half miles north of Forest Grove (1877a:291) (West Dairy Creek or main Dairy Creek?).

(19) ča-go'ndweftɛi. Said to mean 'where the road (or trail) comes out' (go·n 'road, trail').

ča go'ndueftɛi (F ka'ndwefti·), č 'ako'/un tuɛftɛi (1877a:92, 290). Chaginduefti (Hodge I).

Between ča-pa'naxtin and Sauvie's Island (1877a:90). I.e., where the trail over the Tualatin Mountains to Sauvie's Island comes out onto Tualatin Plains?

(20) ča-pa'1 ha'liu. Probably means 'place at the big prairie' (-pal 'big;' ha'-liyu 'prairie').

čapa'1 ha'liu (1877a:291).

The country of the apa'naxtin [see # (10)], north of ča ča'mbit ma'nčal (1877a:291).

(21) ča-takwi'n.

čatakui'n (1877a:291). Chatakuin (Hodge I).

A prairie and river, four miles from Hillsboro and seven miles from Forest Grove, north (1877a:291) (McKay Creek?).

12c. Place Names, Erroneously Identified as Village Names in Hodge (1907)

(22) ča-ča'n.im.

ča ča'n.im (1877a:93). Chachanim (Hodge I).

A half mile due east from ča-la.'l [# (7)]. "A piece of land, no chief" (1877a:93).

(23) ča-či.f. -či.f 'crawfish.'

ča čI.f, ča čif uε'/ihi'pał (F čif wi hi'pał) (1877a:70, 93). Chachif (Hodge I).

On the northern end of Wapato Lake; an important site for the digging of Sagittaria (wapato) roots, used in common by all of the Tualatins ("the whole tribe") (1877a:70, 93).

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APPENDIX

PHONOLOGY AND TRANSLITERATION

Phonology

Linguistic forms appearing in this thesis are transliterated, without phonemic interpretation, just as they are given by the cited authorities, with the exception that, for the sake of simplification, I often take the liberty of writing u, i in place of their free variants U, I (see footnotes 1 and 3 on page 167), and w, y in place of Gatschet's consonantal u, i; I take no such liberties, however, with the lists of plant and animal terms given in sec. 10--all of the names in question are strictly transliterated.

All of my phonetic symbols for the Tualatin-Yamhill language are given in the following charts; I am much indebted here to Yvonne Hajda for her advice on numerous points. Parentheses enclose probable allophones of the same phoneme; not all probable phonemic equivalences are shown, since a complete phonemic analysis of Tualatin has not been undertaken at this point.

Consonants

	Obstruents		Fricatives	Resonants	Glides
	Plain	Glottalized			
Labial	(<u>p</u> , <u>b</u> , <u>B</u> ¹)	<u>p̣</u>	<u>f</u>	<u>m</u>	(<u>w</u> , <u>u</u> ²)
Alveo- dental	(<u>t</u> , <u>d</u> , <u>D</u> ¹)	<u>ṭ</u>	(<u>s</u> , <u>ʃ</u>)	<u>n</u>	(<u>y</u> , <u>i</u> ²)
	(<u>c</u> , <u>ɟ</u> , <u>DZ</u> , ¹ <u>ç</u> , <u>ʝ</u> , <u>DJ</u> ¹)	(<u>c̣</u> , <u>ɟ̣</u>)	<u>z</u>	<u>l</u>	
Velar	(<u>k</u> , <u>g</u> , <u>G</u> , ¹ <u>q</u> , <u>ḡ</u> ¹)	(<u>ḳ</u> , <u>q̣</u>)	(<u>x</u> , <u>x̣</u>)	—	
Labio- velar	(<u>k^u</u> , <u>k^w</u> , <u>g^u</u> , <u>g^w</u> , <u>q^w</u> , <u>ḡ^w</u> ¹)	<u>ḳ^w</u>			
Glottal		<u>ʔ</u>	<u>h</u>		

Other symbols used with consonants:

- ch aspiration.
C̣ length (lengthening of consonants, though frequent in Tualatin, is apparently not phonemically distinctive).
C^y palatalization; noted only by Frachtenberg, not phonemically distinctive.
C'C elision of vowel or epenthetic vowel; only used by Gatschet.

¹Jacobs' "intermediate" consonants (varying from inaspirate voicelessness to very brief sonancy; cf. Jacobs /1945:13-15, 151-153/); appear only in forms cited from Jacobs.

²Gatschet usually, though not always, writes u, i for both consonantal [w], [y] and the vowels [u], [i].

			<u>Vowels</u>			
Front		Center		Back		
Unrounded	Rounded					
Short	Long	Short	Long	Short	Long	
(<u>i</u> , <u>I</u> ¹)	(<u>i·</u> , <u>I·</u> ¹)					
<u>e</u>	<u>e·</u>			(<u>u</u> , <u>U</u> , ³ <u>o</u> , <u>ø</u> ⁴)	(<u>u·</u> , <u>U·</u> , ³ <u>o·</u>)	
(<u>ɛ</u> , <u>ɥ</u> ⁵)	(<u>ɛ·</u> , <u>ɥ·</u> ⁵)	<u>ə</u>				
		(<u>a</u> , <u>A</u> ⁶ , <u>ʌ</u>)	(<u>a·</u> , <u>ʌ·</u>)	<u>ɔ</u>		

Other symbols used with vowels:

V/V syllable boundary, or hiatus between vowels which would otherwise form a diphthong--used only in forms cited from Gatschet (transliterates his dash, "-").

Diphthongs

(The actual phonemic units are certainly far fewer than those shown.)

(<u>iu</u> , <u>Iu</u>)	<u>i·u</u>	<u>iu·</u>
<u>iɥ</u>		
<u>eI</u>		
<u>eU</u>	<u>e·u</u>	
(<u>ɛi</u> , <u>ɛy</u>)		
(<u>ɛu</u> , <u>ɛu</u>)		
(<u>ai</u> , <u>aI</u>)		<u>ai·</u>
(<u>au</u> , <u>aU</u>)		<u>au·</u>
(<u>ui</u> , <u>uI</u> , <u>oi</u>)	<u>u·i</u>	<u>oi·</u>
<u>ou</u>	<u>(o·u, o·u)</u>	
<u>ɔy</u>		

¹More conventionally written ɪ ("i" in "bit").

²Occurs only in a few forms from Gatschet.

³More conventionally written ʊ ("u" in "put").

⁴Occurs only in a few forms from Frachtenberg.

⁵More conventionally, æ (approximately the sound of "a" in "mat").

⁶See footnote 3 on page 169.

Transliteration

The following tables show only the variances between symbols used here and symbols used by cited linguistic authorities.

- means authority apparently does not record the sound symbolized,
 () means authority's special symbol, retained here in forms cited from that authority.

Consonants

(Symbol used here)	Gatschet	Frachtenberg	De Angulo and Freeland	Jacobs
[p̥]	-	<u>p!</u>		
[t̥]	-	<u>t!</u>		
[ʒ]	<u>ds</u>	<u>dz</u>	-	(<u>DZ</u>)
[c]	<u>ts</u>	<u>ts</u>	<u>ts</u>	<u>ts</u> , (<u>DZ</u>)
[č]	-	<u>ts!</u>	<u>čs</u>	<u>čs</u>
[j̥]	<u>dsh</u>	<u>dj</u>	<u>dj</u>	(<u>DJ</u>)
[č̥]	<u>tch</u>	<u>tc</u>	<u>tc</u>	<u>tc</u> , (<u>DJ</u>)
[č̥]	-	<u>tc!</u>	<u>čc</u>	<u>čc</u>
[š]	<u>sh</u>	<u>c</u>	<u>c</u>	<u>c</u>
[ɬ]	<u>th¹</u> , <u>th</u> , <u>lth</u> , <u>thl</u>			
[L] ¹	-		-	-
[k̥]	-	<u>k!</u>		
[q̥]	-	<u>q!</u>		
[ʔ]	-	<u>ε</u>	<u>ʔ</u>	<u>ʔ</u>

¹"Surd lateral" (?); appears only in a few forms from Frachtenberg; varies with ɬ.

(Symbol used here)	Gatschet	Frachtenberg	De Angulo and Freeland	Jacobs
c ^h	-	c ^e	c ^e	c ^e
c ^o	Doubles consonants	\bar{c} , or doubles	Doubles	
c ^y	-	c ^o	-	-
<u>Vowels</u>				
[ə]	ieC	\bar{E}		
[ɪ]	\bar{i}	\hat{i}	-	-
[ɛ]	e	(\bar{a}) ¹		
[e]	? ²			
[e ^o]	\bar{e} ²	\bar{e}		
[A] ³	script \bar{a} ³	-	script \bar{a} ³	-
[ʌ]	-	-	-	ɤ
[u]	\bar{u}	\hat{u} , (\bar{u})	\bar{u}	\bar{u} (as opposed to \bar{u})
v ^o	\bar{v}	\bar{v}		

¹Frachtenberg's \bar{a} apparently represents quality varying from [ɛ] to [æ] (Yvonne Hajda 1976, p.c.).

²In his description of Klamath phonology, Gatschet gives \bar{e} as "longer sound of e" (his [ɛ]), e.g., German "Speer," "Wehr." I assume that the same statement holds for Tualatin, where the same symbols appear. It would seem, then, that Gatschet shows vowel quality and vowel length co-varying for [ɛ] - [e^o], although a few pages previously he had specifically stated that vowel quality and length are not interdependent in Klamath as they are in English.

³De Angulo gives this as, e.g., the "a" in French "patte." I do not know whether Gatschet meant the same sound. However, both authorities use this symbol to designate a sound which varies freely with [a], occurring much less frequently than the latter.