

PLURALIZATION IN UPPER CHEHALIS

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1. Introduction
2. Complement plurals
 - 2.1. Collectives
 - 2.2. Distributives
 - 2.3. Kin plurals
 - 2.4. Other complement plurals
3. Predicate plurals
 - 4.1. -a?- predicate plurals
 - 4.2. -a?- complement plurals
5. -ti plurals
6. Plural stems
7. Summary

1. If it is true that a language becomes more irregular as it nears extinction, then the various pluralization processes which occur in Upper Chehalis¹ are a case in point. Plural formation, morpheme selection, and morpheme variant selection are extremely irregular, although some of that irregularity seems to have developed since Boas collected data on the language in the 1920's and 1930's. But by accepting one contrast that Boas observed (which

I was unable to contrast), and by recognizing underlying root and stem forms and applying a few simple and regular rules, I can account for most of the plural formations that both Boas and I recorded, and determine the general outlines of Ch plural formation. Certain choices (between the infix and suffixes, in particular) remain problematic; none of the existing data indicate under what circumstances the infix was selected, rather than one of the suffixes. Dialect and individual usage may also account for some of the irregularity. Boas says, "Plural formations are varied and speakers differ in their usage."² My main informant, Silas Heck, himself sometimes gave alternative forms.

It should be noted at the outset that Ch never uses the usual Salishan pluralizing device of reduplication for this purpose, with one exception: *sq̣itači* 'day' becomes *q̣é·tq̣itači* (with irregular vowel lengthening). The usual function of CVC- reduplication in Ch is to indicate repeated action.³

There are at least half a dozen morphemes in Ch which indicate plurality, in addition to unmarked and irregular forms. Most of these, however, turn out to be in complementary distribution. Two basic syntactic dichotomies must be noted: predicate vs. complement, and continuative vs. completive aspect within the predicate. The suffix *-iit* occurs only on continuative predicates, the suffix *-ti* occurs only with one subclass of completive predicates (often complementized), and the affixes *-q̣^wlš* and *nš-X-tn* (where X is the stem) occur only on complements. The infix *-aʔ-* occurs

with both types of predicates and with complements. The remaining suffix could be treated as two suffixes, but their obvious similarity suggests combining them: *-yamš* is a completive predicate subject, and *-awmš* occurs only with complements. This last suffix is clearly derived from the widespread Salishan lexical suffix meaning roughly 'people', in which function and meaning it can also occur in Ch (as *-ámš*, *-amš*, or *-mš*); its extension to a general indicator of plurality seems a simple step. Apparently suppletive forms occur in both predicates and complements, but their reality in predicates will be questioned below (section 6).

Because the infix *-aʔ-* is both the most complicated and the most interesting, I will take it up after disposing of the somewhat simpler forms first. I will begin with complement plurals, and will treat *-awmš* among them.

2. I was never able to elicit a semantic difference between the two commonest complement plural types, *-q^wíš* and *-awmš*. But Boas did, and I accept his contrast; it seems reasonable, and does explain why both forms exist. He says that *-q^wíš* forms collectives, and *-awmš* forms partitives. For the most part I have these two suffixes in complementary distribution, but a few forms were given with either of the two. Earlier⁴ I indicated that each of these morphemes was quite irregular, and occurred in a large number of variants. I now see ways of simplifying this irregularity, although I cannot eliminate it entirely.

2.1. The collective plural is the more regular. The suffix

itself is invariable (except that it appears as -q^wla^l when followed by -s 'third possessive'):

- (1) cíčs - cíčsq^wíš 'bee'
- (2) k^wúpa - k^wúpaq^wíš 'eel'
- (3) s^laláš - s^lalášq^wíš 'deer'
- (4) q^wasúq^wa? - q^wasúq^wa?q^wíš 'cedar basket'

But the occurrence of -q^wíš is often accompanied by a stem change from the singular form, and these variations do not seem to be predictable. Most frequently they involve glottalization, either the addition of ? after a final vowel, or the glottalization of a final resonant (usually n, sometimes m, and once w); in four instances final glottal stop or final resonant glottalization is lost in the plural. Some of these glottal variants may be due to faulty hearing, but the fact that singular-plural pairs occur both with or without final glottal stop (cf. items 2 and 4), or with or without final glottalized resonants suggests that my hearing is not necessarily the source of these irregularities. I have recorded 13 instances of added ?, 5 of resonant glottalization (alone; see below for its occurrence with an extra vowel), and two instances of deleted ?, e.g.:

- (5) ?ána?àna - ?ána?àna?q^wíš 'magpie'
- (6) lamutú - lamutú?q^wíš 'sheep'
- (7) máci - máci?q^wíš 'spear pole'
- (8) ɣaléwɣalu - ɣaléwɣalu?q^wíš 'butterfly'
- (9) latám - latámq^wíš 'table'

- (10) qaqáyaɣn - qaqáyaɣnq^wíš 'shadow'
 (11) čatísaʔ - čatísaq^wíš 'strawberry'
 (12) pé·saʔ - pé·saq^wíš 'bug'

The other common variation that occurs before -q^wíš is that the plural stem has a vowel that does not appear in the singular form, usually occurring before the last consonant of the stem. The vowel may be either a or i. If this vowel is a, and sometimes if it is i, it is merely the vowel that regularly occurs in the full form of the stem; the irregularity here is that -q^wíš does not seem to call for the full form of the stem. But most of the i-vowels are not the correct vowels for the stems in which they occur in these plurals. This is then probably another plural infix.⁵ Glottalization of a resonant following the -a- or -i- may also occur, as above, and two instances of its loss occur.

- (13) qám̥ayɪ - qám̥ayɪq^wíš 'girl, daughter - his daughters'
 (14) xə́ɪlp - xə́ɪlapq^wíš 'open-weave basket'
 (15) có·pɪq^wiyam - có·pɪq^wiyamq^wíš 'nest'
 (16) sk^wínm - sk^wínamq^wíš 'pheasant, chicken'
 (17) cáɪšn̥ - cáɪšinq^wíš 'shoe'
 (18) sq^wət̥w̥n̥ - sq^wət̥w̥inq^wíš 'fire'
 (19) paqáln - paqálinq^wíš 'eagle'
 (20) sá·litn - sá·litiinq^wíš 'friend, assistant, helper'
 (21) ɪatúyn̥ - ɪatúyinq^wíš 'echo'
 (22) xə́plm̥ - xə́plimq^wíš 'screech-owl'

In three instances, this i-vowel occurs earlier in the form, twice

before the morpheme for 'plant'; I consider these forms irregular:

- (23) čéqini - čéqiniq^{wi}š 'red-horse (fish)'
(24) sq^wó·x^wsni - sq^wó·x^wsiñiq^{wi}š 'buckbrush, snowberry'
(25) súsčpni - súsčpiñiq^{wi}š 'hemlock'

Stem increments consisting of ^h, ⁱ, or ^z also occur, and since I cannot explain them, I must consider them irregular, along with 3 other forms:

- (26) tēqix^w - tēqix^wñiq^{wi}š 'belt'
(27) yálp - yálpñiq^{wi}š 'plant sp.'
(28) snúwqs - snúwqsiñiq^{wi}š 'point of land'
(29) sx^wólmañc - mañciñiq^{wi}š 'young salmon'
(30) sáúk^wax^w - sáúk^wax^wiq^{wi}š 'roof'
(31) pít^wk^wz - pít^wk^wiñiq^{wi}š 'sea-otter'
(32) xántm - xántmiñiq^{wi}š 'cranberry'
(33) k^wúts, šk^wútn - k^wútq^{wi}š 'dress'
(34) q^waló - q^walá^wq^{wi}š 'muskrat'
(35) ta^wásni - ta^wásniwq^{wi}š 'ash (tree)'

Again, 'collective' -q^{wi}š is not itself irregular, but it does often seem to require an irregular form of the stem. Even these stem irregularities can be reduced to two general types, final glotalization change and infixation of plural -i-, accounting for 46 of the 63 irregular stems in the corpus. This -i- does not seem to occur elsewhere in Ch (at least not obviously so), but it may well be old, given its frequent occurrence in Cz with -umx.

2.2. With 'distributive' -awmš, both suffix and stem variants

occur. Most of the stem variants result from the presence (retention) of the vowel before the last consonant of the stem which is usually deleted in singular forms; 33 forms have a, 38 have i (some of which are the improper stem-vowel, and probably again represent plural -i-), and one has u. 19 stems have no full-stem vowel where I would expect it, and 50 other stems are unchanged from singular to plural. Examples of these stem variants will occur below with the discussion of the suffix variants. There are, however, another 19 stems which show additional irregularities:

- (36) c^o·q^wa - c^o·q^wa'amš 'tear'
- (37) čáyčayalaq^wm - čáyčayalaq^wamš 'Indian paint brush'
- (38) sčátq^hm - sčátq^hinamš 'grizzly bear'
- (39) čálš - čálašamš 'branch, limb'
- (40) čiyúx^wi's - čiyúx^wnisamš 'Oregon grape'
- (41) lamái - lamaláwmš 'alder'
- (42) sšaqúšui - sšaqúšáwmš 'door'
- (43) mák^wtñi - mák^wtñiamš 'grave; nightshade'
- (44) nāwci - nāwcinamš 'body'
- (45) pé·psayu? - pé·psuyamš 'bird, animal'
- (46) pánmñi - pánmñitumš 'vine maple'
- (47) qáxa? - qx'áwmš 'dog'
- (48) qápnñi - qápnñiq^wamš 'blueberry bush'
- (49) sápli?simññi - sáplisimññiamš 'club'
- (50) súpsnč - súpsinčamš 'tail'
- (51) šapáy - šapáyáwmš 'comb'

- (52) tix^wci - tix^wcáwmš 'tongue'
 (53) staq^wéiñ - staq^wéinaiamš 'bow'
 (54) wayé·xaxu - wayé·xaxawmš 'bat'

The -awmš suffix itself occurs in ten variants, with a small amount of predictability among them: -awmš, -yawmš, -áwmš, -umš, -úwmš, -amš, -yamš, -mš, -iamš, -inamš. The last two are clearly odd, but one is a loan-word:

- (55) ká·s - ká·siaiamš 'train'
 (56) q^wánx - q^wánxinamš 'drying rack (for skins)'

The -mš variant is completely predictable, occurring only after a final a:

- (57) s̄axáyača - s̄axáyačamš 'finger, claw'
 (58) s̄á·x^wltamuliča - s̄á·x^wltamuličamš 'sheep'
 (59) šičtúnwayača - šičtúnwayáčamš 'thumb'

Whether it is the vowel of the suffix or the vowel of the stem that is lost is moot.

The 11 variants with initial y are largely predictable; the y is usually transitional between a stem-final vowel and a suffix-initial vowel, usually i and a, respectively:

- (60) catá·wi - catá·wiyamš 'cedar'
 (61) smániči - smáničiyamš 'mountain'
 (62) masíiči - masíičiyamš 'tiger-lily'
 (63) músmuski - músmuskiyawmš 'cow'
 (64) q^wux^wiči - q^wux^wičiyamš 'swan'
 (65) wítči - wítčiyamš 'waist'

But the y in other forms is unexplained:

- (66) čičwálm - čičwálm^yamš 'widower'
 (67) k^wik^wíwla? - k^wik^wíwla?^yamš 'war-drum'
 (68) k^wúwi? - k^wúwi?^yamš 'maple'
 (69) k^wó?íwi? - k^wó?íwi?^yamš 'small maple'
 (70) táx^wc - táx^wcyamš 'chest, breast'

Note that y occurs only before -awmš (once) or -amš, never before -umš, and never before a stressed vowel.

Of 31 occurrences of -áwmš, 14 are predictable. All CVC roots take this suffix (with two exceptions, ká's - ká'siámš 'train', and mán - manó'mš 'child'):

- (71) cúŋ - cúŋáwmš 'foot, lower leg'
 (72) čéč - čičáwmš 'widow'
 (73) cmús - cmusáwmš 'face' (from mús 'eye')
 (74) šáw - šawáwmš 'bone'
 (75) ɣáš - ɣašáwmš 'house'

None of the other variants are predictable, as far as I can see. The -umš variants are least numerous; there are 9 examples of -umš, only 2 of -úmš, 20 of -awmš, and another 17 of -áwmš. By far the most common variant is -amš, with over 80 examples in the corpus; -amš is the only one of the three main variants that is never stressed. Examples of each of these variants follow.

- (76) cēni - cēniáwmš 'he'
 (77) qáɣa? - qɣ?^yawmš 'dog'
 (78) q^waláñ - q^walánáwmš 'ear'

- (79) tíx^wcí - tíx^wcáwmš 'tongue'
 (80) cúsaq - cúsaqawmš 'nail'
 (81) ǎóšǎš - ǎóšǎšawmš 'tree, wood, stick'
 (82) súlačłwltx^w - súlačłwltx^wawmš 'tipi'
 (83) yúmtǎ - yúmtǎinawmš 'fish-trap'
 (84) čəwǎ - čəwǎúmš 'wife (sg.), women (pl.)'
 (85) mən - manó·mš 'child'
 (86) ʔáls - ʔálisumš 'chief'
 (87) pó·sǎ - pó·saǎumš 'ball'
 (88) pánǎ - pánǎinǎumš 'vine maple'
 (89) yámč - yámáčumš 'Douglas fir'
 (90) cáǎ - cá·laǎamš 'lake'
 (91) číkčik - číkčikamš 'wagon'
 (92) čálščǎ - čálščǎinǎmš 'shirt'
 (93) lúwǎ - lúwǎamš 'hollow tree'
 (94) ǎǎǎin - ǎǎǎinamš 'prairie'

2.3. Thirty forms take the discontinuous complement plural nš-X-tǎ. This is basically a kinship plural formation, although nine of the thirty forms are not specifically kin-terms ('chief' and the two variants for 'enemy' might be considered extensions of kin-terms, and 'doll' is derived from 'offspring'). Three forms are defective in not having the prefix portion of the affix. Four plurals are based on a stem with a final vowel that is deleted in the singular ('older brother', 'aunt', 'uncle', and 'older sister'). Otherwise various stem modifications occur in 'grandfather', 'aunt',

'offspring', 'in-law', 'toenail', 'younger sister', and 'enemy'.

The suffix portion of the affix is invariable (except in 'paddle, oar', where the t is lost), but the prefix portion has three variants; n- occurs before the absolutive s- prefix, ns- occurs before stems beginning with č, n, q, t (the general term for 'brother' appears irregular in this respect, but the s- in this form is likely the absolutive prefix again), otherwise nš-. The distribution of ns- seems rather unnatural, and there is only one instance each of stem-initial n and q; no explanation of this variant is attempted here. n- occurs in:

- (95) sčáw - n-sčáw-tn 'sister-in-law'
 (96) x^wuq^wsk^wúy - n-sx^wuq^wsk^wúy-tn 'brother'
 (97) sšéh[?] - n-sšéh[?]-tn 'husband'
 (98) syáx^wtč - n-syáx^wtč-tn 'brother-in-law'

ns- occurs in:

- (99) čálš - ns-čálš-tn 'hand, lower arm'
 (100) čěwł - ns-čěwł-tn 'wife'
 (101) čít[?] - ns-čít[?]-tn 'older brother'
 (102) čú[?]pa[?] - ns-čú[?]pa[?]-tn 'grandfather'
 (103) né[?]sči - ns-né[?]sči-tn 'younger brother'
 (104) qási[?] - ns-qási[?]-tn 'uncle'
 (105) téx^ws - ns-téx^ws-tn 'enemy'
 (106) tax^wásn - ns-tax^wás-tn 'enemy'

nš- occurs otherwise:

- (107) ?áls - nš-?áls-tn 'chief'

- (108) ?ímc - nš-?ímc-tn 'grandson'
- (109) cúmay's - nš-cúmay's-tn 'eyebrow'
- (110) kēy - nš-kēy-tn 'grandmother'
- (111) k^wáɪ - nš-k^wéɪu?-tn 'aunt'
- (112) k^wumá? - nš-k^wumá?-tn 'father'
- (113) k^wúy - nš-k^wúy-tn 'mother'
- (114) máñ - nš-méñ-tn 'offspring, son, daughter'
- (115) smá·tax^wñ - nš-má·tax^wn-tn 'in-law (father, mother, son)'
- (116) papáysšn - nš-papáys-tn 'toenail'
- (117) pé·sñ - nš-pasé·n-tn 'younger sister'
- (118) sú?čs - nš-sú?čs-tn 'cousin'
- (119) táť - nš-táťa-tn 'uncle'
- (120) x^wó·mt - nš-x^wó·mt-n 'paddle, oar'
- (121) yáý- - nš-yáýa-tn 'older sister'

The three defective forms are:

- (122) má·?añ - má·?añ-tn 'doll'
- (123) s^wanáčiči - s^wanáčičitn 'side'
- (124) sšawáci - sšawáci-tn 'nephew'

Twelve additional kin-terms occur in the language, but no plural was obtained for nine of them (camé·ča 'great-grandparent', (s)áax^wínut 'parent's sibling or sibling's child after the death of the linking relative', nk^wmá·nñ 'half-sibling', snúk^wɪ 'nephew, niece', q^wíl^w 'son- or daughter-in-law's parents', sápn 'daughter-in-law', tax^wál^w 'cousin', swánačiči 'nephew (after sibling's death?)', x^wún 'niece'); x^wáɪ 'older brother' is singular only (and cannot

occur with a third person possessor); čěč 'widow' and čičwálm 'widower' take -awmš plurals.

2.4. Only eleven complement plurals fall outside the patterns discussed above (or the -a?- infix yet to be considered):

- (125) ?itámñ - ta?itámñ 'clothing'
 (126) sľánaŷ - čawaľúmš 'woman' (cf. čěwł, item 84)
 (127) mané?tmalača - nmané?tmalača 'killer'
 (128) snawáŷs - snawáŷisaľn 'treetop; end'
 (129) spáqñ - spáqñ 'flower'
 (130) pé?špš - péšipš 'kitten'
 (131) sqítači - qé.tqítači 'day'
 (132) q^wáył - manó.mš 'child' (cf. mən, item 85)
 (133) tēx^ws - tax^wásniwš 'enemy'
 (134) x^wáq^wiyǵñ - x^wáq^wiyapinłamšñ 'scraper'
 (135) yēptn - tayēptn 'track, footprint'

A number of forms remain unchanged when used as plural complements. Most of these are mass or collective concepts. Examples are s?ipx^wáyñ 'secret', sk^wəlł or sk^walələ 'crack', łáčis 'star', sľěčiyq 'wind', pētq^w 'night', pé.tasti 'wheat', qénš 'mouth', q^walēsti 'smelt', q^wiyñ 'moss', q^wax^w 'thimbleberry', s^wáčp 'firewood', (s)yalúcn 'beach', yēns 'tooth'.

3. So far I have been discussing only complement plurals. Complements function in Ch as subjects and objects of predicates, but are all based on predicates themselves. A number of things suggest this, among them the related plurals in predicates and complements based on -mš, and the identical pluralization with infixed

-aʔ-. Predicates may be either continuative or completive (aspect), but complements may only be completive, although completive complements may also be derived from continuative predicates. For example, ʔit q̣ʷəṭi means 'it burned' (completive predicate), and sq̣ʷəṭwn means 'it is burning' (continuative predicate); tit sq̣ʷəṭwn 'the fire' is a complement based on the continuative predicate form. Thus the similarity between completive predicate plural -yamš and complement plural -awmš is reasonable (there is also a complement third plural possessive -yamš), and the non-occurrence of continuative predicate plural -iit on complements is explained. The infix -aʔ- is then the only plural morpheme which can occur with predicates of both aspects and with complements.

I am using predicate plural to refer to third person plural subject and object affixes. These represent a sort of pluralization of action, and this is not unlike the pluralization of, for example, a physical object, which in Ch is basically predicative. Pluralization in the language is optional throughout except to eliminate ambiguity, and many predicates (as well as complements) never occur pluralized (Boas, in a manuscript lexicon,⁶ labels many predicates as "s.,pl.", meaning that they occur without overt plural markers, but in fact many of them do, even in this lexicon; thus it is not clear to what extent stems actually can occur without plural markers). The usual continuative aspect predicate with third plural subject is marked with -iit (Boas consistently gives -iiti), the usual com-

pletive counterpart is -yamš (Boas regularly gives either -yawmš or -awmš). Infix -a?- may occur instead of either of these, and some predicates seem to occur either only with -a?- or with the suffixes -iřt and -yamš. My informant rarely used the -a?- forms, but Boas records a large number of them. There is nothing, however, to indicate if the usage of the infix vs. the suffixes indicated something different syntactically or semantically, and it is now impossible (and would have been even when I worked with Mr. Heck fifteen years ago) to determine what the difference is. It seems to me that they must have been functionally different, but I can only limit myself to describing what does exist in the data.

Both the infix -a?- and the completive plural -yamš operate within a limited ergative system. Plural -a?- always, and plural -yamš optionally, refers to the subject of an intransitive predicate, but to the object of a transitive predicate. A plural subject of a transitive predicate can only be indicated by -iřt or -yamš. Neither Boas nor I have forms in our data to indicate whether or not -iřt functions in this same way. And we have no forms with both a third plural subject and a third plural object, and so I have no idea what happens when they co-occur. In fact, Mr. Heck usually substituted an independent pronoun (tit ceniáwmš) postposed after the predicate for any third plural object (using a singular suffix on the predicate). The use of singular and plural subjects and objects may be diagrammed for the two systems (infix and suffix) as follows:

Suffixes

	Continuative	
	obj.	subj.
sg.	-t-	-n
pl.	-t-	-iĭt

	Completive	
	obj.	subj.
sg.	-n	∅
pl.	-n -n-yamš	-yamš ∅

Infixes

	obj.	subj.
sg.	-t-	-n
pl.	-a [?] -t-	?

	obj.	subj.
sg.	-n	∅
pl.	-a [?] -n	?

The question marks in the two lower right hand boxes indicate the lack of data on plural subjects with plural objects. But in these two cases, a plural subject following a singular object will be identical to the upper pair of boxes for suffixed forms (i.e., -iĭt and -yamš). Intransitive paradigms are simpler, and have as plural subject either -a[?]- or the appropriate aspectual -iĭt or -yamš. Only one example of the two types co-occurring has been found, and that is in one form from Boas: ?á·?maqĭĭti 'they waited'; unfortunately, this is intransitive (or appears to be), and sheds no light on the problem of co-occurrence of plural objects and subjects.

The suffixes -iĭt and -yamš seem to be quite regular, and one

example each of their use as intransitive subjects, transitive subjects, and -yamš as transitive object will suffice to show how they are used.

(136) sʔiɲiit 'they are eating'

(137) ʔit ʔiɲnyamš 'they ate'

(138) sʔəyqtiit 'they are hooking it'

(139) ʔit ʔaxənyamš 'they see him'

(140) ʔacyuxʷn čnyamš 'I know them'

The last example shows third person object -yamš in its usual position *following* the subject clitic, with the third person -n in its usual pre-subject position. The possessive third plural subject is also regularly -yamš, and follows immediately the singular -s of these forms:

(141) tit qxʔawmšsyamš 'their dogs'

4.1. Pluralization by infixation of -aʔ- is the most interesting of the various pluralization processes in Ch.⁷ But it is also the least productive in my own data. Of 219 examples of its use in predicate paradigms, only 13 occur in my data (12 of these are intransitive completive forms, the other is intransitive continuative); the rest are from Boas' manuscripts. I did better with the complement plurals, where -aʔ- is not as common as other pluralization devices nor as common as with its use in predicates; of the 31 examples, 12 are in my data (including one which Boas also has). The -aʔ- plurals appear to be far more irregular than they actually are. A series of ordered rules will account for most -aʔ-

plural forms. There is in addition, however, a set of forms which are irregular as to stress placement, glottalization (or both), or lack of glottalization. After the discussion of these, I will discuss the remaining irregular forms, some of which suggest interesting developments from the original rules.

Each stem may occur in a paradigm of maximally four singular forms and four plural forms. Many paradigms are incomplete, some are attested by only one plural form, and some may be only transitive or only intransitive. Each paradigm will be given as follows:

() English gloss

sg. intr. compl. sg. intr. cont. sg. tr. compl. sg. tr. cont.

pl. intr. compl. pl. intr. cont. pl. tr. compl. pl. tr. cont.

Blanks in the paradigm indicate missing forms; dashes indicate that the stem does not occur transitively or intransitively, as the case may be. Forms illustrating the point being made will be marked with a preceding +, although all the paradigm that I have will be given so that the reader will have ample examples to see how the rules work.

4.1.1. The first rule must specify where the infix is to go in the form. In fact, it is not always an infix, but may also be a suffix (as will be seen most clearly on certain complement plural forms; but in many other cases, it is merely the first of a series of suffixes). One rule will account for its location, whether as an infix or as a suffix: -a?- is inserted immediately following the second consonant of the root of the form to be pluralized.

Rule 1. plural $\rightarrow a^?$ / +CVC__X]root (where + is a morpheme boundary).

(142) 'paint the face'

cáq ^w usm	scáq ^w smitn	cáq ^w usn	scáq ^w usitn
		+ cáq ^w a [?] usn	+ scáq ^w a [?] usitn

(143) 'sleep'

músm	smúsmitn	músmix ^w
+ músa [?] m		

(144) 'speak (intr.), scold (tr.)'

táq ^w i	stáq ^w wn	táq ^w in	stáq ^w itn
		+ táq ^w a [?] in	+ stáq ^w a [?] itn

(145) 'open'

wáq ⁱ	swáq ⁱ awn	wáq ⁱ n	swáq ⁱ atn
		+ wáq ⁱ a [?] n	+ swáq ⁱ a [?] atn

The -m in (143) is an intransitive marker, and is syllabic (phonetically [-en]) finally after a consonant, as is the final -n of transitive forms (as in 145). In Ch, all resonants (m n l y w) are consonants, and may be syllabic or nonsyllabic. Syllabicity is predictable on the surface from the position of the resonant in a consonant cluster, but underlying syllabicity is apparently important in derivations (and historically). Stress is usually on the root, but need not be, and is generally stable within a paradigm.

4.1.2. Usually the glottal stop is not present, however. It is retained only in final position, before a vowel, or before a syllabic resonant. It is necessary to delete a glottal stop rather

than add one, because in Ch syllabic resonants become non-syllabic following a vowel, and a rule to add glottal stop would therefore have to be more complex than one to delete.

Rule 2. $\text{?} \rightarrow \emptyset / +\text{CVCa} _ \text{[-syll]X}]_{\text{root}}$

(146) 'sick'

táčič̣	stáčiač̣n	--	--
+ táčaič̣	+ stáčaič̣n	--	--

(147) 'hear'

tó·ístuk ^w n	tó·lix ^w	stó·ístwn
	tó·la [?] ix ^w	+ stó·lastwn

4.1.3. If stressed vowel of the singular stem is é, it must change in the plural. Usually the change is to í; but if the root in which the (singular) é occurs has three consonants, the second of which is a resonant, the plural vowel is á. I see no natural reason for this distinction, but it is regular (with a few interesting exceptions).⁸ Thus a rule is first needed to change é to á (since this is the limited environment).

Rule 3. $\text{é} \rightarrow \text{á} / +\text{C} _ \left[\begin{array}{l} \text{-syll} \\ \text{+sonor} \end{array} \right] \text{aCX}]_{\text{root}}$

(148) 'hollow, hollow out'

k ^w élx ^w i	sk ^w élx ^w wn	k ^w élx ^w n	sk ^w élx ^w tn
+ k ^w álox ^w i	+ sk ^w álox ^w wn	+ k ^w álox ^w n	+ sk ^w álox ^w tn

(149) 'turn over'

pélč̣i	spélč̣wn	pélč̣n	spélč̣tn
+ pálač̣i	+ spálač̣wn	+ pálač̣n	+ spálač̣tn

The resonant in these forms is usually l, but y occurs a few times,

and the others less frequently. A sequence of /əy/ was often heard by both Boas and me as [i], but paradigms such as the following show that we both heard incorrectly; in this case, the alternative intransitive forms (from Boas, although such constructions are common) $k^w ayəx^w i$ and $sk^w ayəx^w wn$ also reflect the underlying /əy/.

(150) 'greasy, oily, get greasy, get oily'

$k^w ix^w i$	$sk^w ix^w wn$	$k^w ix^w n$	$sk^w ix^w tn$
+ $k^w ayax^w i$	+ $sk^w ayax^w wn$	+ $k^w ayax^w n$	+ $sk^w ayax^w tn$

A regular form containing m (in a defective paradigm) is the following:

(151) 'round, spherical'

$yəmx^w i$	--	--
+ $yamax^w i$	--	--

4.1.4. The next rule changes all other \acute{e} root vowels to \acute{i} .

Rule 4. $\acute{e} \rightarrow \acute{i}$ in the root

(152) 'break'

$\acute{c}\acute{e}i\acute{q}i$	$s\acute{c}\acute{e}i\acute{q}wn$	$\acute{c}\acute{e}i\acute{q}n$	$s\acute{c}\acute{e}i\acute{q}tn$
+ $\acute{c}\acute{i}i\acute{a}q\acute{i}$	+ $s\acute{c}\acute{i}i\acute{a}qwn$	+ $\acute{c}\acute{i}i\acute{a}qn$	+ $s\acute{c}\acute{i}i\acute{a}qtn$

(153) 'get stuck, get tight'

$k^w \acute{e}k^w i$	$sk^w \acute{e}k^w wn$	$k^w ak^w \acute{e}n$	$sk^w \acute{e}k^w tn$
+ $k^w \acute{i}k^w a\acute{i}$	+ $sk^w \acute{i}k^w awn$	$k^w ak^w a\acute{?}\acute{e}n$	+ $sk^w \acute{i}k^w atn$

The transitive completive forms of (153) are regular; all $\acute{C}\acute{e}C$ - roots shift stress to the third person object suffix, and all cases of \acute{e} losing stress result in a. Rules to account for these changes are not relevant here; the first pertains to the formation of singular

transitive forms, and the second is a general phonological rule of Ch. The plural transitive completive form is then regularly derived from the singular.

4.1.5. The next rule, resonant glottalization, applies to all roots except those described in Rule 3. But it neither applies to nor results from Rule 3, so it does not seem to matter where it is ordered in relation to Rule 3. It applies to any CVC- root in which the second consonant is a resonant, regardless of the vowel, or to any CVCV- root where the second consonant is a resonant and the first vowel is *not* é, and glottalizes that resonant.

Rule 5. $\begin{bmatrix} -\text{syll} \\ +\text{sonor} \end{bmatrix} \rightarrow \begin{bmatrix} -\text{syll} \\ +\text{sonor} \\ +\text{glot} \end{bmatrix} / +\text{CV_X}]_{\text{root}}$ where Rule 3 has

not applied.

(154) 'spill'

k ^w éłt	sk ^w éłwn	k ^w alón	sk ^w éłtn
+ k ^w ílat	+ sk ^w ílawn	+ k ^w alón	+ sk ^w ílatn

The plural transitive completive form in (154) is again regular, but needs additional rules to explain it (see Rule 6 below).

(155) 'wrinkle, shrink'

íúmł	síúmwn	íúmn	síúmitn
+ íúmat	+ síúmawn		

(156) 'stop'⁹

tx ^w áén	stx ^w áéln	tx ^w áélx ^w	stx ^w áéłstwn
+ tx ^w áína?	+ stx ^w áíla?n	+ tx ^w áínax ^w	+ stx ^w áílastwn

(157) 'enter, take in'

máɪ	smáyawn	máɪx ^w	smáyawn
+ máɪaɪ	+ smáyá?awn		

(158) 'ask, ask about'

sáwlik ^w n	sáwlk ^w nn	sáwlax ^w	sáwlayn
		+ sáwalax ^w	+ sáwalayn

(159) 'get lost'

wánačɪ	swánačawn	--	--
+ wána?áčɪ	+ swána?áčawn	--	--

4.1.6. Most examples given so far have stress on the root.

When stress occurs later in the form, certain reductions may occur.

These can be accounted for in a two-part rule.

Rule 6a. $a \rightarrow \emptyset / +CaC _ ?\acute{V}$

Rule 6b. $\begin{bmatrix} -\text{syll} \\ +\text{sonor} \\ \pm\text{glot} \end{bmatrix} ? \rightarrow \begin{bmatrix} -\text{syll} \\ +\text{sonor} \\ +\text{glot} \end{bmatrix}$ if the sequence results from 6a.

Thus the plural vowel may be deleted if stress follows it (6a), and a resulting cluster of resonant (plain or glottalized) plus glottal stop collapses into a glottalized resonant (6b). The rule is obligatory if the second consonant of the root is a resonant; otherwise it is optional. Rule 6 applies most commonly to transitive completive forms. In Boas' transcriptions of these forms, he frequently writes a mid central vowel for the expected low central vowel for either or both of the pre-tonic vowels of the $CaCa?V$ sequence. I interpret these as optional low-level reductions of a to ə or as misrecordings, and will cite examples from

Boas with whichever vowels he has written. Rule 6b accounts for the plural transitive completive form of example (154); additional examples with resonants as the second consonant of a root follow (160, 161), then instances of the apparently optional application of 6a (162, 163).

(160) 'camp'

qalém ¹⁰	sqélmítn	---	---
+ qəlém	sqílamítn	---	---

(161) 'get hot, warm'

x ^w alá·ʔm	sx ^w alá·mítn	---	---
+ x ^w alá·ʔm	+ sx ^w alá·mítn		

(162) 'take to, take along'

--	--	ʔasúx ^w	sʔasúln
--	--	+ ʔasʔux ^w	+ sʔasʔúln

(163) 'wash, clean'

čəx ^w ɪ	čəx ^w ən	sčəx ^w tn
číx ^w at	+ čəx ^w ʔən	sčíx ^w atn

The following illustrate the variation which may occur between a and ə, with or without the application of 6a.

(164) 'set, stand'

cəqɪ	caqén	scəqtn
cíqat	+ cəqəʔén	scíqatn

(165) 'fill'

léc(ɪ)	lacén	sléc ³ tn
	+ ləcəʔén	slíc ³ atn

(166) 'swallow'

maq ³ w ³ em	sməq ³ w ³ mitn	maq ³ w ³ en	sməq ³ w ³ tn
		+ maq ³ w ³ əʔen	smiq ³ w ³ atn

(167) 'pierce'

pəxɪ	spəxwn	paχən	spəχtn
		+ pəχaʔən	spixatn

(168) 'mark, write'

--	--	q ³ w ³ aɪən	sq ³ w ³ ɛɪtn
--	--	+ q ³ w ³ ɛɪʔən	sq ³ w ³ ɛɪatn

4.1.7. At this point it may be useful to show the step-by-step derivation of forms illustrating rules 3, 4, 5, 6a, and 6b. One example with each of these as the final rule in the derivation will be given; examples are taken from the paradigms cited above.

- | | | |
|-------|---|--|
| (149) | spəɪə ³ cwn | 'it is turning over' |
| | spəɪa ³ ʔcwn | Rule 1 |
| | spəɪa ³ cwn | Rule 2 |
| | spəɪa ³ cwn | Rule 3 'they are turning over' |
| (152) | sčəɪɪtn | 'he is breaking it' |
| | sčəɪa ³ ʔqtn | Rule 1 |
| | sčəɪa ³ qtn | Rule 2 |
| | sčɪɪa ³ qtn | Rule 4 'he is breaking them' |
| (156) | *tx ³ w ³ ən ³ x ³ w | 'he stopped it' (by analogy; cf. footnote 9) |
| | tx ³ w ³ əna ³ ʔx ³ w | Rule 1 |
| | tx ³ w ³ ənax ³ w | Rule 2 |

	tx ^w áí ^í inax ^w	Rule 4
	tx ^w áí ^í inax ^w	Rule 5 'he stopped them'
(163)	čax ^w én	'he washed it'
	čax ^w aʔén	Rule 1
	čax ^w ʔén	Rule 6a 'he washed them'
(161)	x ^w alá ^á ʔm	'it got hot'
	x ^w alaʔá ^á ʔm	Rule 1
	x ^w alá ^á ʔá ^á ʔm	Rule 5
	x ^w al ^á ʔá ^á ʔm	Rule 6a
	x ^w alá ^á ʔm	Rule 6b 'they got hot'

4.1.8. These six rules account for most of the plural forms recorded by Boas and me; they apply to plural formation only. Of 219 paradigms, many defective, 101 are completely regular. But these 219 paradigms actually represent 458 plural forms, and of these 219 (approximately two-thirds) are regular. This means that many of the forms within (partially) irregular paradigms are actually regular, reducing considerably the amount of apparent irregularity.¹¹ Another 81 irregular forms are so only because of extra glottalization, missing glottalization, or unexpected stress placement. Others represent minor, perhaps trivial irregularities, a few seem to be irregular due to reanalyses, and some are based on possible but unattested singular forms. I consider only about 36 of the 458 plural forms as completely irregular.

Eleven paradigms are regular except for extra, unexplained glottalization, usually of a resonant in a suffix. Only one form

in each paradigm is irregular, and six of the eleven times it is the intransitive continuative form that is irregular (also note below that continuative forms show stress irregularities twice as often as completive forms). All eleven paradigms are given.

(169) 'diminish'

k ^w ayám	sk ^w ayámwn	k ^w éymn	sk ^w éymtn
		+ k ^w áyamñ	sk ^w áyamtn

(170) 'full, get full'

lâx ^w í	slâx ^w áwn	--	--
+ lâx ^w aʔí		--	--

(171) 'buy'

lâqimí	slâqmaln	laqén	slâqtn
	+ slîqamaln	laqəʔén	slîqatn

(172) 'go out, take out'

lâqí	slâqwn	lâqix ^w	slâqístwn
lîqatí	+ slîqawñ		

(173) 'swell up'

púsí	spúswñ ¹²	púsn	spúsitn
púsaí	+ spusawñ		spúsaʔitn

(174) 'transform'

sítimí ¹³	sítmalñ		
+ sítamí	sítamaln		

(175) 'blind'

táysximí	--	--
+ táyaʔsximí	--	--

(176) 'hit, touch'

tépi	stépwɪ	tapén	stéptn
típaɪ	+ stípawɪ	təpaʔén	stípatn

(177) 'close'

téqi	stéqwn	taqén	stéqtn
tíqaɪ	+ stíqawɪ	taqaʔén	stíqatn

(178) 'put away, put on'

--	--	télpn	stélpn
--	--	+ tálapn	stálep̄tn

(179) 'come, arrive, bring'

tú ¹⁴	stúwn	túx ^w	stútwn
túhaɪ	+ stúhawɪ	túhax ^w	stúhatwn

4.1.9. Fifty forms in 39 paradigms show stress irregularities; 34 of these are continuative forms. I can detect no patterns or explanations for these irregularities. Stress is often on the infix itself in these forms.

(180) 'take the place of, exchange places'

ʔayápn sʔayápitn

+ ʔayáʔap̄lwəsti 'they changed about, by turns'

(181) 'arrive'

k ^w ax ^w ɪ	sk ^w x ^w awn	k ^w ax ^w mn	sk ^w ax ^w misn
k ^w ax ^w aɪ	+ sk ^w x ^w ʔawén		

(182) 'save, come to life'

k ^w ax ^w k ^w ax ^w m ¹⁵	sk ^w ax ^w k ^w x ^w mitn	k ^w ax ^w k ^w x ^w x ^w
k ^w ax ^w ak ^w ax ^w m	+ sk ^w ax ^w ak ^w x ^w mitn	

(183) 'give away, potlatch'

-- -- k^wəiʃn sk^wəiʃitn
-- -- † k^wiʃaʃən sk^wiʃaʃitn

(184) 'give away'

-- -- k^wəiʃmix^w sk^wəiʃmstwn
-- -- † k^wiʃaʃmix^w

(185) 'catch, capture'

-- -- k^wənáx^{w16} sk^wənayn
-- -- k^wənáx^w † sk^wənáyn

(186) 'hole, drill'

ləpx^wm̄t̄ sləpx^wmaln ləpx^wn sləpx^wtn
lípax^wm̄t̄ slípax^wmaln † lipáx^wn † slipáx^wtn

(187) 'punch, hit in the face'

ʃaq^wús ʃaq^wúsn ʃaq^wúsitn
† ʃáqəʔúsən † ʃáqəʔusitén

(188) 'attack'

ʃəčtx^w sʃəčtax^wn ʃəčtx^wn sʃəčtx^witn
ʃičatx^w † ʃičátx^wn † sʃičátx^witn

(189) 'tie'

ʃəm̄t̄ ʃam̄ən ʃəm̄tn
ʃam̄ən † sʃim̄at̄ən

(190) 'break in two, pull in two'

ʃəq^wʃ sʃəq^wʃwn ʃaq^wən sʃəq^wʃtn
ʃəq^waʔən † sʃiʃq^wat̄ən

(191) 'jump'

íik ^w q	síik ^w aqn	íik ^w qmn	síik ^w qmísn
		íik ^w aqmn	+ síik ^w aqmísn

(192) 'come off, take off'

íiwí	sííwn	ííwx ^w	sííwstwn
ííwáí	sííwáwn	+ ííwáx ^w	+ sííwástwn

(193) 'stick together'

íáqí	síáqwn	íáqén	síáqítn
ííqáí	+ sííqáwn	íáqé?én	+ sííqáítn

(194) 'sting'

íáx ^w í		íáx ^w én	síáx ^w tn
		íáx ^w ?én	+ síáx ^w áttn

(195) 'saw, cut'

--	--	íííí	sííííítn
--	--	íííí?n	+ sííííí?ítn

(196) 'spill'

péq ^w í	spéq ^w wn	paq ^w én	spéq ^w tn
		paq ^w ?én	+ spíq ^w atén

(197) 'stick on'

péti	spétwn	patén	spéttn
pítaí	+ spítáwn	pata?én	spítatn

(198) 'smoke, steam'

páx ^w ém	spéx ^w mitn	péx ^w mix ^w	spéx ^w mstwn
páx ^w a?ém	+ spix ^w ámítn		

(199)	'know, learn'				
--	--		pútn		spúitn
--	--		pútaʔn		+ sputáʔitn
(200)	'spray, squirt'				
píci	spícwn		pícn		spíctn
			pícaʔn		+ spicáʔitn
(201)	'lighten'				
qélxɪ	sqélxwn	--	--	--	--
qálaɪ	+ sqaláxwn	--	--	--	--
(202)	'bend, fold' ¹⁷				
qémk ^w ɪ			qémk ^w n		sqémk ^w tn
qámak ^w ɪ	+ sqamák ^w n	+ qamák ^w n			+ sqamák ^w tn
(203)	'swim'				
sačém	séčmitn	--	--	--	--
sačaʔém	+ sičámít	--	--	--	--
(204)	'replace'				
--	--		séyxtux ^w t		séyxtx ^w tn
--	--		+ sayáxtux ^w t		+ sayáxtx ^w tn
(205)	'transformed'				
tx ^w sít		--	--	--	--
+ tx ^w sitáʔ		--	--	--	--
(206)	'starve'				
táčsx ^w q ^w	stáčsx ^w aq ^w wn	táčx ^w aq ^w n			
+ tačasx ^w q ^w	+ stačasx ^w aq ^w wn				

(207)	'tame, kind'			
	talíi	--	--	
	+ tálii	--	--	
(208)	'pass'			
	--	--	táx ^w	stányn
	--	--	táx ^w	+ stánáyn
(209)	'hit on the head'			
	--	--	táslisn	stáslisitn
	--	--	+ tasálisn	+ stasálisitn
(210)	'send'			
	--	--	túnn	stúnitn
	--	--	túna ⁿ	+ stúna ⁿ itn
(211)	'move' ¹⁸			
	--	--	táqawicš	stáqawičtn
	--	--	+ táqa ⁿ awicš	+ stáqa ⁿ awičtn
(212)	'tie up'			
	táqı̄	stáqwn	táqén	stáqtn
	+ tíqáı̄	stíqawn	táqə ⁿ án	stíqatn
(213)	'soak'			
	tíqı̄	stíqwn	tíqn	stíqitn
			tíqa ⁿ	+ stíqa ⁿ itn
(214)	'spread out, open out'			
	wíqı̄	swíqwn	wíqn	swíqitn
			wíqa ⁿ	+ swíqa ⁿ itn

- (215) 'break'
- | | | | |
|---------|-----------|-----------|-----------|
| xə́lɪ | sxə́lɪwn | xələn | sxə́lɪtn |
| + xɪláɪ | sxɪ́lɪawn | xə́lɪaʔən | sxɪ́lɪatn |
- (216) 'disappear'
- | | | | |
|----|----|-----------|---------------|
| -- | -- | xʷáyacš | sxʷáyačtn |
| -- | -- | xʷáyaʔacš | + sxʷáyaʔačtn |
- (217) 'chafe, rub'
- | | | | |
|---------|-------------|--------|----------|
| xʷəlqɪ | sxʷəlqwn | xʷəlqn | sxʷəlqtn |
| xʷálaqɪ | + sxʷaláqwn | | |
- (218) 'crack, split (sg.), blast (pl.)'
- | | | | |
|---------|-------------|--------|--|
| xʷəlqɪ | sxʷəlqwn | xʷəlqn | |
| xʷálaqɪ | + sxʷaláqwn | | |

Note that several of these show more than one primary stress, one of which is in the predicted place; these are clearly incorrect recordings since only one primary stress is allowed per word. But there is no way to tell which primary stress is actually correct.

4.1.10. Five paradigms, involving seven forms, show both stress and glottalization irregularities (combining the two preceding groups).

- (219) 'take, hold, get'
- | | | | |
|-----------|-------------|---------|--------------|
| kʷanáɪ | skʷanáɪalɪn | kʷanáɪn | skʷanáɪtn |
| + kʷanáʔɪ | | kʷanáɪn | + skʷanáʔátn |
- (220) 'boil, bubble'
- | | | | |
|---------|-------------|----|----|
| lapəm | slépmitn | -- | -- |
| lɛpəʔəm | + slípámitn | -- | -- |

(221) 'get away, run away'

ɬax ^w əm	sɬəx ^w mitn	ɬəx ^w mn	sɬəx ^w misn
ɬax ^w ʔəm	† sɬix ^w ʔmitn		

(222) 'burn'

ɬəxɬ	sɬəxwn	ɬəxən	sɬəxtn
† ɬixáɬ	† sɬixáwn	ɬəxʔən	sɬixatn

(223) 'sink, put under water'

nəčɬ	snəčwn	načən	snəčtn
níčai ¹⁹	† sničáwn		

4.1.11. Thirteen forms in nine paradigms lack glottalization where my rules would predict it or (in item 228) it should have been retained from the singular form.

(224) 'come, come for, come after'

čis	sčisn	čismn	sčismisn
	† sčisan		

(225) 'warm'

k ^w á·mɬ		k ^w á·mn	sk ^w á·matn
		† k ^w á·maʔn	† sk ^w á·maʔatn

(226) 'forget'

--	--	məlqnix ^w	sməlqniyn
--	--	† máláqnix ^w	† smáláqniyn

(227) 'put on, hook on'

--	--	qáyqñ	sqáyqtn
--	--	† qáyaqñ	† sqáyaqtn

(228) '(have) gray hair'				
q ^w ax ^w ɿs	--	--		
+ q ^w ax ^w aʔɿs	--	--		
(229) 'wilt'				
q ^w ayɿ	sq ^w ayawn	--	--	
+ q ^w ayaɿ	--	--		
(230) 'cook, ripen'				
q ^w əlɿ	sq ^w əlwn	q ^w alén	sq ^w əltn	
+ q ^w ílaɿ	sq ^w ílawn	q ^w əlén	+ sq ^w ílatn	
(231) 'begin, start'				
túlp(ɿ)	stúlapn	túlp ^w	stúlpstwn	
+ túlap				
(232) 'hang, hang up'				
x ^w íli	sx ^w íln	x ^w íln	sx ^w ílitn	
+ x ^w ílaɿ		x ^w ílaʔn	sx ^w ílaʔitn	

4.1.12. Another 28 forms in 18 paradigms appear irregular, but most of these irregularities are probably superficial, and explainable as perception difficulties on Boas' and my part. Most involve phonological sequences that could easily be interpreted as what was recorded or as what is predictable from my rules. There are several types of these. Two paradigms are surely correct phonologically as recorded, but seem to suggest different underlying forms than those that appear in the singular: both appear to have underlying (or, more accurately, pre-Ch) l rather than ɿ. Unfortunately no cognates are known to me for these forms in other

Salishan languages to confirm or reject this *1.

(233) 'tear'

céiq ^w i	scéiq ^w wn	céiq ^w n	scéiq ^w tn
+ cáiaq ^w i	+ scáiaq ^w wn	+ cáiaq ^w n	+ scáiaq ^w tn

(234) 'angry, get mad'

qéixi	sqéixwn	qéixmn	sqéixmnsn
+ qaiáxi ²⁰	+ sqaiáxwn ²⁰		

Five forms seem to have dropped the vowel of -a[?]-, then merged the glottal stop with a preceding obstruent.

(235) 'straight, true, straighten'

k ^w épi	sk ^w épwn	k ^w apén	sk ^w éptn
k ^w ipaí	sk ^w ipawñ ²¹	+ k ^w apén	sk ^w ipatn

(236) 'get home'

iačax ^w	siačax ^w n	--	--
+ iačax ^w	+ siačax ^w n	--	--

(237) 'comb hair'

šapáym	sšapáymitn	šapáyñ	sšapáyitn
			+ sšapáyitn

(238) 'make fun of'

--	--	x ^w ačén	sx ^w éčtn
--	--	+ x ^w ačén	sx ^w íčatn

Four forms show the incorrect first vowel. Those with e following y may have been misheard.

(239) 'get warm, heat'

x ^w étoq ^w i	sx ^w étoq ^w wn	x ^w étoq ^w n	sx ^w étoq ^w tn
x ^w itáq ^w i ²⁰	+ sx ^w atáq ^w wn ²⁰	x ^w itáq ^w n	sx ^w itáq ^w tn

(240) 'move slightly'

yəq ²¹ ɪ	syəq ²¹ wɪn	yaq ²¹ ən	syəq ²¹ tn
+ yəq ²¹ aɪ	+ syəq ²¹ awn ²⁰		

(241) 'make a choice'

--	--	yaχən	syəχtn
--	--	yəχ ²¹ ən	+ syəχ ²¹ atn ²⁰

Three forms have i in the singular which does not appear in the plural; it is probably epenthetic in the singular, and the forms are then probably regular except for stress placement.

(242) 'overload'

qəyɪɪ	sqəyɪwɪn	--	--
+ qi ²¹ ɪaɪ ²⁰	+ sqi ²¹ awn ²⁰		

(243) 'get angry, make angry'

sáqɪq	sáqɪyaqn	tx ^w saqáqx ^w
sáqa ²¹ iq	+ saqáyaqn ²⁰	

All six forms in three paradigms show long vowels in the plural, but short vowels in the singular. If the plurals are derived from forms with long vowels, they are largely correct; but length before resonants is difficult to detect in Ch--all vowels are lengthened somewhat in this position.

(244) 'get sick'

ʔáysm	sʔáysmitn	--	--
+ ʔá ²¹ ·yasm	+ sʔá ²¹ ·yasmitn	--	--

(245) 'listen'

	k ^w éčč ²²	sk ^w éččtn
+ k ^w é·čáč	+ sk ^w é·čáčtn	

(246) 'use'

--	--	tálaɣn	stálaɣitn
--	--	+ tá·láʔaɣn	+ sta·láʔaɣitn ²⁰

Four forms seem to have something missing, perhaps as oversights.

(247) 'be in, get in'

čáči	sčáčwn	čáčən	sčáčtn
čícaɪ	+ sčícwn	čáčəʔən	sčícətn

The expected intransitive continuative would be *sčícawn.

(248) 'leave, take away'

nəkʷá·ʔ	snəkʷá·nn	nəkʷáʔxʷ	snəkʷáʔstwn
nəkʷá·ʔ	+ snəkʷá·ń		

The expected intransitive continuative would be either *snəkʷá·nn or *snəkʷá·ń (assuming the application of Rule 6a).

(249) 'crooked'

qáyuɪ	sqáyuwń	--	--
qáyaʔuɪ	+ sqáyawń	--	--

The expected intransitive continuative form would be either *sqáyawwń or *sqáyaʔuwń, the choice depending on how syllabicity of the w is treated. The underlying root here is probably *qáyw-.

(250) 'come up, emerge'

sálačɪ	sálačawn	sálčxʷ
sálaʔačɪ	+ sálačawn ²³	

The expected intransitive continuative form would be *sálaʔačawn; some sort of application of Rule 6 may be operating here, although

stress is in the wrong place for Rule 6 to apply.

4.1.13. Eighteen plural forms are irregular from the attested singulars, but could be derived from hypothetical, and possible, singular forms. These are given below, with an extra line added giving the hypothetical source of the plural forms. Five of the paradigms involve additional irregularities (items 251, 257, 258, 260, 263), and will be repeated at the appropriate place further on.

(251) 'wait, wait for'

ʔá·mǫ́	sʔá·maǫ́n	ʔá·maǫ́n	sʔá·maǫ́itn
ʔá·mǫ́	+ sʔá·maǫ́n	+ ʔá·maǫ́n	+ sʔá·maǫ́itn
	*sʔá·mǫ́n	*ʔá·mǫ́n	*sʔá·mǫ́itn

(252) 'revenge, take revenge on'

ʔáyinuk ^w n	sʔáynk ^w nn	ʔáynx ^w	sʔáynyn
	+ sʔáyaʔank ^w nn	+ ʔáyaʔanx ^w	
	*sʔáyan ^w nn	*ʔáyanx ^w	

(253) 'get out'

čáwǫ́	sčáwáwn	čáwx ^w	sčáwstwn
čáwǫ́	+ sčáwáwn		
	*sčáwwn		

(254) 'set up'

čúq ^w ǫ́	sčúq ^w wn	čúq ^w n	sčúq ^w itn
		čúq ^w əʔn	+ sčúq ^w aʔatn
			*sčúq ^w atn

(255) 'hear, hear about'			
k ^w álanm	sk ^w álnmitn	--	--
+ k ^w á·lanm	+ sk ^w á·lanmitn	--	--
*k ^w á·lm	*sk ^w á·lnmitn		
(256) 'set a net'			
lím [?] taya [?]	slím [?] tayann [?]	--	--
+ lím [?] taya [?]	+ slím [?] tayann [?]	--	--
*lím [?] taya [?]	*slím [?] tayann [?]		
(257) 'drip, leak'			
pícq	spícaqn	--	--
pi [?] ícq	+ spica [?] áqn	--	--
	*spicáqn		
(258) 'wake, wake up'			
páɫ	spálawn	páln	spálatn
pálaɫ	+ spálawn	pála [?] én	spála [?] étn
	*spáɫwn		
(259) 'grow, raise'			
šəwɫ	sšawáln	šawáɫx ^w	sšawáɫtw
šíwaɫ	+ sšawáln		
	*sšəwɫn		
(260) 'dream, dream of'			
túk ^w íš	stúk ^w lílitn	túk ^w lix ^w	stúk ^w li [?] tw
+ túk ^w ə [?] alš	stúk ^w lílitn		
*túk ^w alš			

(261) 'loose, loosen, untie, open'

wáɪɪ	swaɪáwn, swáɪwn	wáɪn + wáɪaʔén *wáɪén (?)	swáɪatn swaɪáʔatn ²⁰
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(262) 'scrape'

ɣʷáqʷɪ	sɣʷáqʷwn	ɣʷáqʷn	sɣʷáqʷatn
ɣʷáqʷaɪ	+ sɣʷáqʷəʔawn *sɣʷáqʷawn	ɣʷáqʷaʔn	sɣʷáqʷəʔatn

(263) 'hire'

yalémm	syalémitn	yalémm + yalémm	syalémisn syalémmisn
		*yalémm	

Three forms insert plural -aʔ- after the third stem consonant, rather than the second.

(264) 'go and see'

--	--	ɭswánn	sɭswánitn
--	--	+ ɭswaʔánn	+ sɭswaʔánitn

(265) 'dream dream of' (= 260)

túkʷíš	stúkʷíɭitn	túkʷlixʷ	stúkʷliʔtwn
túkʷəʔaɪš	+ stúkʷíɭitn		

Four forms reduplicate the root vowel (with optional reduction to əʔ), with stress on the second of these vowels.

(266) 'hug, embrace'

--	--	camən	scəmtn
--	--	caməʔən	+ scəʔəmtn

(267)	'drip, leak' (= 257)			
	pícq	spícaqn	--	--
	+ piʔícq	spicaʔáqn	--	--
(268)	'tattoo'			
	--	--	sə́céʔn	sé́ctn
	--	--	sə́cəʔéʔn	+ səʔé́ctn
(269)	'dislike'			
	--	--	tó·kʷmn	stó·kʷmisn
	--	--	+ təʔó·kʷmn	

Four forms do not show the expected vowel in the plural. In 'stiffen' I would expect i, and in 'invert' and 'glitter, shine' I would expect a.

(270)	'stiffen'			
	césuɪ	scésuwn	--	--
	+ cásaʔuɪ	+ scásaʔuwn	--	--
(271)	'invert'			
	čə́miq	čə́myaqn		sčə́myaqitn
	+ čə́maʔiq	čə́mayaan		sčə́mayaanitn

Boas also gives čə́maʔiq for the intransitive completive plural, but this would require an underlying *čə́miq to explain the glottalization of the resonant.

(272)	'glitter, shine'		
	wəlčm	swəlčmitn	wəlčmixʷ
		+ swílačmitn	

This irregularity could result from a reinterpretation of the form

as containing a suffix (perhaps -ača 'hand'), and it would not then be subject to Rule 3. Two paradigms (four forms) seem to involve just such reinterpretation. I do not know what the č of 'drag' might be likened to. But in 'ready, prepare', the m does seem to have been taken as part of the suffixes; particularly in the completive forms, -mī (properly -mī) and -mn are possible suffixes in analogous positions.

(273) 'drag'

šálčī	sšálčwn	šálčn	sšálčtn
		+ šílačn	+ sšílačtn

(274) 'ready, prepare'

xálmī	sxálmwén	xálmn	sxálmtn
		+ xílamn	+ sxíla [?] mtn

Another kind of reinterpretation seems to have occurred in five forms in which the rules apply regularly beginning from the stressed vowel, ignoring all that occurs before in the stem.

(275) 'be cross-eyed'

k ^w əlqáls	--	--
+ k ^w əlqálas	--	--

(276) 'sharp-pointed'

ʔəčayqs	--	--
+ ʔəčayaqs ²⁴	--	--

(277) 'meet'

qtínm	qtínx ^w	sqtínyn
	+ qtínax ^w	+ sqtínayn

(278) 'put on clothing'

təlpámɕ	--	--
+ təlpámáɕ	--	--

Two forms with the lexical suffix -élwa(s) 'middle, together' have special plural forms. No other plural forms occur in the data with this suffix.

(279) 'cut in two'

--	--	q̣ ^w iʔélwax ^w
--	--	+ q̣ ^w iʔáɫalwax ^w

(280) 'break in two (sg.), break in many pieces (pl.)'

--	--	χaʔélwax ^w
--	--	+ χaʔáɫalwax ^w

4.1.14. Finally I list without comment 14 irregular forms which I find totally unexplainable.

(281) 'wait, wait for' (= 251)

ʔá·má	sʔá·maq̣n	ʔá·maq̣n	sʔá·maq̣itn
+ ʔá·má	sʔá·maq̣n	ʔá·maq̣n	sʔá·maq̣itn

(282) 'nice-looking, pretty'

ʔəyáɫwɪn	--	--
+ ʔəyáliwɪn, ʔəyáliwɪn	--	--

(283) 'lazy'

cúχ ^w mɪ	scúχ ^w mɪwɪn	--	--
+ có·ʔχ ^w maɪ	--	--	--

(284) 'name'

k ^w acɪ	k ^w acɪln	sk ^w acɪlitn
	+ k ^w acəʔɪln	+ sk ^w acəʔɪlitn

(285)	'cheat, trick'				
--	--	mó·luk ^w n	smó·luk ^w itn		
--	--	+ mó·lak ^w a [?] n			
(286)	'wake, wake up' (= 258)				
páɫɪ	sɔ́páɫawn	páɫn	sɔ́páɫatn		
páɫaɪ	sɔ́páɫawn	+ páɫa [?] ɛ́n	+ sɔ́páɫa [?] ɛ́tn		
(287)	'shout, holler'				
q̣ ^w é [?] ciq	sq̣ ^w é [?] ciyaqn	--	--		
+ q̣ ^w áyciq	+ sq̣ ^w áyciyaqn	--	--		
(288)	'big toe or foot'				
táwšn	--	--	--		
+ táwša [?] ɛ́n	--	--	--		
(289)	'burst up stone'				
x̣ ^w éɫx̣ ^w ɛɫq̣ ^w ɪ	--	--	--		
+ x̣ ^w éɫax̣ ^w aluq̣ ^w ɪ	--	--	--		
(290)	'gather, come together'				
x̣ ^w uq̣ ^w áɫus	--	--	--		
+ x̣ ^w uq̣ ^w áɫus	--	--	--		
(291)	'hire' (= 263)				
yalé [?] m	syalé [?] nitn	yalé [?] m	syalé [?] misn		
		yalé [?] m	+ syalé [?] misn		

4.2. In addition to these many predicative forms with plural infixation, 31 forms with -a[?]- occur only as complements in the data. Only five of these are irregular; the others can be produced by the rules given above (with a couple of stress and glottalization

problems). This list includes some possessive forms and some diminutives. Note that diminutive glottal insertion has no effect on the plural formation, but ordering the plural rules before the diminutive rules will not help because then the diminutive vowel changes would not work properly. Forms are given in the order singular - plural - English gloss.

- (292) ?acʔəxtkʷlš - ?acʔixatkʷlš 'shaman, medicine-man'
- (293) cá·pš - cá·paš 'creek, brook' (dimin.)
- (294) cúliiss - cúlaʔiss 'his leg, his foot' (from cúł)
- (295) čáqp - číqap 'punting pole'
- (296) čáliiss - čálaʔiss 'his hand, his arm' (from čálš)
- (297) skʷəłš - skʷíłš 'the act of giving a potlatch'
- (298) sʰəqł - sʰiqáł²⁰ 'wing, feather'
- (299) sʰéʔqł - sʰéʔqal 'wing' (dimin.)
- (300) mákʷt - mákʷat 'dead person, corpse'
- (301) snšmánatn - snšmánatn 'relation' (from a plural of mén 'child')
- (302) smániči - smánaʔiči 'mountain'
- (303) smá·niči - smá·naʔiči 'mountain' (dimin.)
- (304) pástn - pásatn 'White man'
- (305) ?acpəxʷ - ?acpíxʷaʔ 'liar'
- (306) spús - spusaʔ 'a swelling'
- (307) qʷíłp - qʷíłap²⁰ 'root'
- (308) šəwł, šáwł - šáwał 'trail, road, door' (regular from šáwł,
but šəwł should yield *šáwał)
- (309) stawéʔn - stawéʔn 'cane'

- (310) tēmš - tēmaš 'little world' (dimin.)
 (311) tēx^ws - tix^waʔs 'enemy' (with extra glottal stop)
 (312) tēʔx^ws - tēʔx^waʔs 'enemy' (dimin.) (with extra glottal stop)
 (313) stúk^wlš - stúk^waʔlš 'dream'
 (314) ʔactēqɪ - ʔactiqaɪ 'prisoner'
 (315) sx^wáys - sx^wáyas 'hat' (without glottalization of y)
 (316) xáʔš - xáʔšaʔ 'house' (dimin.)
 (317) nk^wyēp - nk^wyípaʔ 'travelling companion, follower' (from yēp-)

The irregular forms are:

- (318) sʔáq^wtasyamš 'the paddling of their canoe' (from ʔáq^wtɪ
 'paddle a canoe'; *sʔáq^wat(ɪ)syamš is to be expected)
 (319) có·pɪq^wiyɪm - có·pɪq^wiyam 'nest'
 (320) čálš - čáʔalaš 'hand, lower arm'
 (321) spatá·ln - spatá·láʔn 'rock, stone' (dimin.)
 (322) tēmš - tímaš 'earth, ground, world'

5. The final plural type in Ch pertains to a small class of predicates, all of which translate into English as adjectives. Their only formal distinction from other predicates is this special plural form, but this plural can be used whether they are predicates or complements in a sentence. Some of them include the -aʔ- infix, most lengthen/lower the stressed vowel, and all add -ti. Only 16 forms occur in the corpus, and there are several irregularities, which I will not try to explain. First I give those which include -aʔ-, then those without it.

- (323) ʔúx^wɪ - ʔó·x^waɪti, ʔúʔx^waɪti 'strange, different'
 (324) ʔáqɪ - ʔá·qaɪti 'long'

- (325) čs^húq^w - čs^hó[?]q^wiaiti 'gray' (čs- is a color prefix)
- (326) snáw^h - sná^waiti 'old man, old person'
- (327) pí^h - pí^haiti 'thin'
- (328) pé^h - pé^haiti 'less thin'
- (329) táw^h, táw^h - tá^waiti, táw^haiti 'big'
- (330) tó^m, tó^m - tó^maiti 'short'
- (331) túš^h - túš^haiti, tóš^haiti 'tall, long'
- (332) ?éy - ?éy^ti 'good'
- (333) sx^w?éyis - sx^w?éyitis 'best' (-s is part of the superlative formation)
- (334) čapús - čapó[?]sti 'strong'
- (335) ké[·]c - ké[·]ci[?] 'little' (-i instead of -ti; this may not be plural)
- (336) mayén - mayéⁿti 'new'
- (337) tasná[·]wa[?] - tasná[·]waiti 'parent' (cf. 'old man' above)
- (338) q^walís - q^walé[?]sti 'red hot'

6. In his manuscript lexicon, Boas sometimes labels stems as being singular only or plural only (and others as singular or plural, suggesting that they do not change in the plural, although some do). The implication seems to be that some plurals are suppletive. A number of such paired forms occur, e.g., tawílš sg., lák^w pl. 'sit'; yé^p sg., téyč^h pl. 'walk'; pé^h- sg. obj., ?épx^w- pl. obj. 'drop'; cék^w sg., q^wá[·]š^h pl. 'lie down'. But it is unlikely that these are actually suppletive. Rather they should be considered as pertaining to singular subjects or objects or to

plural subjects or objects, and either could be pluralized to refer to the distribution of (groups of) singular or plural subjects or objects. Such forms are difficult to elicit, and the data do not show that this is actually a correct description of these forms in Ch. But it is the case in at least some of the other Salishan languages, and probably here too. Thus *tawílš* might mean 'a single person sits', and its plural would mean 'single persons sit in random places'; *lák^wí* might mean 'a group of people sits in a particular area', and its plural would mean 'groups of people sit in random places'.

7. I have treated here what may appear to some as being two (or more) types of pluralization, one pluralizing "nouns", the other pluralizing subjects and objects of "verbs". But as I have indicated elsewhere,²⁵ there are syntactic reasons for not distinguishing between nouns and verbs in Ch. I have suggested here that plural formations offer further evidence for this position, since both the infix *-aʔ-* and suffixes ending in *-mš* apply to what would be both categories. To unite these obviously related plurals in predicates and complements, I would simply say that what I have treated here as complement plurals are in reality complements with plural subjects. Thus a complement such as *qáxaʔ* should properly be glossed as 'it is a dog', and is actually rather like an English gerund; its plural *qɣʔáwmš* would be 'they are dogs'. All complements must be third person forms, and all are in the completive aspect. However, they may be derived from continuative aspect

predicates, and then may include object suffixes; these forms are even more like English gerunds. For example, *tit sʔaxén* is 'the seeing of it' (but is usually translated as '(he) saw it'). These forms usually (always?) have possessive affixes attached, and it is possessive affixes that I cannot fit into my theory of plural subjects of complements. In a way, they too seem to be complement subjects, but that will not work if complements are always third person forms and if *-awmš*, *-q^wlš*, etc. are to be plural subjects. And they cannot be objects, since predicates with objects included may be used as complements. The possessive affixes are unlike other pronominal affixes in the singular (*n-* 'my', *ʔa-* 'your, sg.', *-s* 'his'), but are partly identical to completive predicate subjects (*-čĭ* 'our', *-yamš* 'their'; 'your, pl.' is uncertain, but is sometimes *-nalp*, whereas the completive subject form is *čalp*). For the time being, I will continue to call these affixes "possessive", but without any implication that that which is possessed is a 'noun'. The pluralization system in Ch can then be summarized as follows:

continuative predicates	<i>-iĭt</i>			
completive predicates		}	}	<i>-aʔ-</i>
(completive) complements	$\left\{ \begin{array}{l} -q^{w}lš \\ nš-X-tn \end{array} \right\}$			

FOOTNOTES

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2. Franz Boas, A Chehalis text. IJAL 2:103-110 (1934). I have normalized Boas' transcriptions from this source and from his manuscripts (see footnote 6) to accord with my own. In particular, I have added glottal stops in initial position before vowels and between vowels, where Boas consistently omitted them. I have written his sequences of glottal stop and resonant (in either order) as glottalized resonants in accordance with my own current phonemic treatment of these sequences; my own phonemic sequences of glottal stop-resonant have phonetic (epenthetic) ə between them. I have not assigned stress to forms where Boas did not mark it because of a fair amount of irregularity in its location in forms, and for the same reason I have not attempted to delete stresses when he wrote more than one on a word. I have, however, assumed his unstressed forms to be regular in regard to my rules. Other changes are the

usual updating of symbols and phonemicizations of his phonetic transcriptions.

3. Fuller details are given in M. Dale Kinkade, Phonology and morphology of Upper Chehalis: II. IJAL 29:345-356 (1963). Cf. especially p. 350. My present transcriptions vary from these earlier articles in substituting the vowels i, e, u for e, ə̃, o. Although I now write more vowel symbols, my earlier phonemic analysis is essentially correct; the present transcriptions are for easier phonetic interpretation. I also now write some epenthetic ə̃'s for the same reason. I now realize that glottalized resonants are phonemically distinct and important, contrary to what I wrote in 1963-64.

4. M. Dale Kinkade, Phonology and morphology of Upper Chehalis: IV. IJAL 30:251-260 (1964). Cf. especially pp. 253-255.

5. Evidence for this can be seen in Cz, where one plural type is regularly discontinuous -i-umx, except that the -i- does not replace a full-stem vowel when one is present. Cz forms comparable to the Ch forms cited in this paper are -iit (Ch -iit), -i-umx (Ch -yamš and -awmš), nx-X-tn (Ch nš-X-tn); -ti? (Ch -ti) occurs only four times in my Cz data, and -a? (Ch -a?-) only twice. I have nothing in Cz comparable to Ch -q^wlš.

6. Franz Boas, Chehalis lexicon. Manuscript 30 (S2c.3) (ca. 1935) in the American Philosophical Society Library. Forms cited here are from this source and from Boas 1934 (cf. footnote 2). When citing -a?- plurals from this source, nearly all plurals are from Boas, and nearly all singulars are from my notes. Where there

is irregularity or variant forms I specify the source if it varies from regular patterns.

7. Straits Salish also uses an infix to mark many plurals, but it is different in form (Clallam -əy-, Songish -əl-) and is inserted in a different place (after the initial consonant of the root).

8. I feel it is the result of historical developments, but I am unable to trace them at the present time. These stem types probably derive from *CRVC- stems (where the R [resonant] may have been syllabic) via *CəRVC- (with epenthetic ə) to *CéRVC- (with stress retraction) to CəRC- (with vowel deletion)--all these represent common Salishan rules. Another possibility is that they derive from roots with a syllabic resonant as the stressed nucleus: *CṘC-. Thus these may form a class quite distinct from forms to which Rule 4 applies, and help to explain why Rule 5 does not apply to the output of Rule 3. I can offer no explanation why one type of form developed á in the plural and another í, both reflecting singular é. The answer may have something to do with the nature of é in Proto-Salishan.

9. This is the paradigm as given by Boas. Two separate roots may be confused here, resulting in the l/n variants. My data show the singular intransitive forms as tx^wʔén and stx^wʔénn; I do not have a singular transitive completive form, but have singular transitive continuative as stx^wʔénstwn. I have a comparable ʔél- root only as reflexive ʔélcš 'stop' and ʔélcš 'quiet, still'. tx^w- is

a prefix meaning 'get, become, make'.

10. Stress shift to the intransitive suffix here is accounted for by the same rule that shifts stress to third person (-n) or first person (-c) singular object suffixes of transitive completive forms (see 4.1.4. above).

11. Of course, some of the missing forms may also be irregular.

12. My data show spusúwn, but the plural is derived from Boas' form.

13. The suffix here is -m̥t̥ 'implied transitive'. Boas and I consistently show glottalization of the variants of this suffix differently. I always heard -m̥t̥ with m̥, Boas nearly always with m. He usually shows glottalization associated with the continuative form, usually on the following subject suffix, as here (-mal-h̥), but sometimes on the m or l; I never heard this. Since both these continuative forms are from Boas, they are consistent and regular. Note the different occurrence of glottalization on this suffix in 'buy' (171).

14. I have this form as t̥úl̥t̥. The h only occurs in the plural, never even finally, as in imperative t̥ó· 'come!' (from Boas). A different (and regular) transitive completive set from this root also has h: t̥úmm - t̥úhamm 'come for, come to'. The historical status of this h is unclear. Note that my recording of the plural intransitive completive is regular (except for non-glottalized l) from my singular form: t̥úl̥t̥ - t̥úlat̥.

15. I always heard this form without the second vowel:

k^wáx^wk^wx^wm. But the plural derives from Boas' variant.

16. Boas' form. I recorded only k^wénax^w.

17. Boas also gives singular intransitive continuative sqamék^wn, singular transitive completive qamék^wn, and singular transitive continuative sqamék^wtn, but the plurals are not derived from these.

18. These are reflexive forms. The simple transitive forms are regular: táqawn - táqa[?]awn, staqáwitn - staqa[?]áwitn.

19. I recorded níča[?]ʔ, with an irregular glottal stop.

20. With stress misplaced.

21. With final n glottalized.

22. These may be intransitive; or the final -č in the completive forms should be -cš, in which case they are reflexive. Otherwise the object marker -n is missing.

23. With glottalization of w extra.

24. But without glottalization of y.

25. M. Dale Kinkade, The copula and negatives in Inland Olympic Salish. IJAL 42 (1976).