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Studies in Native American Languages II

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Articles

MORPHOPHONEMICS OF NISGHA PLURAL FORMATION:
A Step towards Proto-Tsimshian Reconstruction

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0. Abstract

To the purely descriptive linguist the Nisgha[1] system of plural formation appears to be of great complexity. On the other hand, a generative phonological analysis of that system, carried as far as the data will allow, recovers an underlying morphological simplicity which has often been buried under a multiplicity of morphophonemic rules and obscured by reformation.

Starting with general comments on Nisgha morphology, the paper first presents the basic methods of plural formation and the rules discoverable from the most regular alternations. The second part presents the irregular and pleonastic stems and shows that only a few rules differentiate these from the most regular stems. These rules can in turn be used to discover relationships between apparently unrelated forms. The third part makes a case for recognizing three different layers or stages of historical evolution of the plural forms.

The depth of reconstruction possible in some cases gives promising hints of the possibilities for further internal and comparative reconstruction of Proto-Interior Tsimshian (underlying Nisgha and Gitksan) and ultimately Proto-Tsimshian, leading eventually to a much surer foundation for the tracing of areal and genetic relationships between the Tsimshianic and other language families.

1. Introduction

The Nisgha language, like the other members of the Tsimshianic family, has a mixed analytic-synthetic morphological structure and a rich derivational system. Words are built up of a relatively small number of roots and a large variety of proclitics, prefixes and suffixes, used singly and in various combinations. In general, morphemes preceding the root tend to have lexical meaning, morphemes following it tend to have grammatical meaning. Some of these processes of word-formation are still very productive, and recent coinages give evidence of great freedom in compounding. Many other words can be analyzed into their component parts when morphophonemic alternations are taken into account, although the identity of some parts may remain obscure. But in general, Nisgha morphology gives at first an impression of openness and immediacy, with only a few low-level phonological rules mediating between the surface representation of a word and a full understanding of its morphological and semantic structure.[2]

Kansas Working Papers in Linguistics, 1983, Volume 8/2, Pages 123-214

Particularly revealing examples of word-formation are:

1. root *ʔkʷóˑtˑ[3]

ʔkʷóˑtkʷ 'to be lost, missing' (-kʷ passive suffix)

ʔkʷóˑʔtin 'to lose sthg that might still be found' (-ʔn causative suffix)

ʔkʷóˑʔtil 'to lose sthg for good' (-ʔl completive suffix)

ʔkʷóˑʔtilskʷ 'to be unconscious' (-(ʔ)skʷ antipassive suffix)

ʔkʷóˑʔtimɬkʷ 'to miss menstrual periods because of pregnancy' (-ʔmɬkʷ suffix indicating predictable duration)

ʔkʷóˑtikskʷ 'to feel lost, disoriented' (-kskʷ suffix of yet undetermined meaning)

ʔkʷitu· 'alone in a boat' (proclitic)(-u· modifying suffix)

ʔkʷitáˑt 'to fish alone in a boat' (-(ʔ)áˑt 'fishnet, to fish with a net')

2. root *ʔtam:

ʔtám 'to carve, depict, write sthg'

ʔniˑʔtámtkʷit 'the Bible, Scripture' (lit. 'which is written down')
ʔniˑ 'down on' (proclitic)
-tkʷ (here) passive suffix
-it intransitive relative suffix

kʷilksʔaltámtkʷ 'picture' (lit. 'exactly self-depicted')
kʷilks 'self' (proclitic)
ʔal < tʔal 'tightly against' (proclitic)

ʔimɬs 'to write, writing' (-ɬs intransitive suffix, derivational)

qanʔimɬs 'pencil' (lit. 'means of writing') (qan- 'means, cause of', derivational prefix)

haʔniˑʔimɬs 'desk, writing pad' (lit. 'for writing on') (ha- 'instrument of', 'used for', derivational prefix)

3. root *ʔcɬˑp:

ʔcɬˑp 'to close one's eyes'

ʔcí·pkʷ 'to tie sthg' (-kʷ (here) transitive suffix)

ʔcí·ʔpiɬkʷ 'to tie up for the night' (-(ʔ)ɬkʷ temporary suffix)

ʔci·ptéʔntkʷ 'to tow a boat' (téʔntkʷ 'to guide, lead sbdy')

sqaʔcí·ʔpaʔ 'necktie' (sqa 'obstructing', proclitic; -ʔaʔ detransitivizing suffix)

haʔtqalʔcí·ʔpaʔam-kʸuwatán 'halter' (lit. 'for tying horses against sthg' (-m attributive suffix; kʸuwatán 'horse')

4. root *kʸat:

kʸát 'man, person, people'; the partially reduplicated plural kʸikʸát is used only in composition

ʔama·kʸát, pl. ʔama·kʸikʸát 'to be friendly' (ʔam- shortened form of ʔá·m 'to be good'; -a· modifying suffix)

ʔankʸát, pl. ʔankʸikʸátkʷ 'parent' (ʔan- 'source, cause', derivational prefix; -kʷ (here) collective suffix)

saytʔkʸo·limskʸátkʷ 'to be united' (lit. 'to be together as one person') (sayt < saqayt 'together', proclitic; kʸó·l 'one (person)'; -ims ··· -kʷ co-occurring elements used to form compounds with a meaning of similarity: 'to ... like a ...')

simkʸikʸátʔ 'chiefs, gentlemen' (sim 'real, best, very')

An underlying singular *simkʸát 'chief, noble person' must be postulated to account for this form as well as the following:

sikʸitimnáʔq, pl. sikʸitimna·náʔq 'chieftainess, lady' < * simkʸátim hanáʔq lit. 'noble woman' (-m attributive suffix; hanáʔq 'woman' cf. náʔq 'dress')

kʸitksán 'Gitksan', lit. 'people of the Skeena River' (kʸit unstressed form of kʸát; ksán 'the Skeena River')

haltá·wkʸit 'medicine-man', lit. 'anoints people' (haltá·xʷ to rub sbdy with ointment')

ʔamʔúkʸit 'clothing', lit. 'good for covering a person (ʔam- 'good'for', derivational prefix, from ʔá·m 'to be good; ʔú 'to cover sthg', used only in compounding)

ʷiltɬkʸitkʷ 'war-party, war', probably from *ʷi·hiltikʸatkʷ 'a great many men' (ʷi· 'great, large', proclitic; hɬlt 'to be many'; -i- linking element of compound)

In sharp contrast to this apparent order and transparency of much of the morphology, plural formation strikes the descriptivist as extremely complex if not downright chaotic, involving as it seems a multiplicity of methods and a large number of exceptional forms.[4] Morphological distinction between singular and plural plays a major syntactic role in Nisgha. Apart from the use of pronominal suffixes and clitics for person and number, plural and singular are indicated by the shape of the verb stem,[5] which agrees with the object noun in a transitive sentence, with the single noun in an intransitive sentence.[6] As only a very small number of nouns have separate stems for singular and plural, the verb stem is often the only element that indicates whether the noun, especially the object noun, should be construed as singular or plural. It is therefore crucial that singular and plural stems be recognizable as such.[7] It is also likely that this distinction is of ancient origin.

Plural stems appear at first sight to be formed in a great variety of ways. A purely synchronic, surface-oriented description of Nisgha must recognize several main classes of regular formation alone (regularity being defined by statistical occurrence: classes which have more than one or two members), depending on modification of the root:[8]

a. pure types:

class I: full reduplication (statistically the most important):

1. root ending in Velar: the formula is

CV́K --> CvXCV́K

example: cóq caxcóq 'to stay, camp, live'

2. root ending in other consonant:

CV́C --> CvCCV́C

example: ʔtám ʔimʔtám 'to write sthg'

class II: partial reduplication:

CV́C --> CvCV́C

example: pá? pipá? 'thigh'

class III: prefixation:
1. with |v: (a small class):

example: yóx̌kʷ |iyóx̌kʷ 'to follow sthg'

2. with qa: (a growing class):

example: wóx̌ qawóx̌ 'to bark'

class IV: vowel-lengthening (a very small class):

example: hanáʔq haˑnáʔq 'woman'

b. mixed types:

class V: partial reduplication with velar infix (a growing class):

CV.. --> CixCV..

example: kʸíťax̌ kʸixkʸíťax̌ 'to ask sbdy sthg'

class VI: partial reduplication with vowel lengthening and stress-shift; roots ending in Velars only (a non-productive class):

CV́K --> CV́ˑCvK

example: wóq wóˑwaq 'to sleep'

While the majority of words affected by these processes exhibit a fair degree of consistency and predictability, a number of stems deviate more or less from these categories, and are therefore irregular. They can be so irregular, in fact, that in some instances it is difficult to decide without a thoroughgoing analysis whether two forms are actually related or whether they should be classified as suppletive stems--a category which includes a number of very common words.[10] In many cases, the stems are obviously related, but it is difficult to decide which category of regular stems they least deviate from. To compound the difficulty, a number of words have competing plural forms belonging to different classes.

To the generatively or comparatively inclined phonologist, on the other hand, this opaqueness and classificatory intractability of much of the data provides an especially interesting challenge. The

clear semantic relationship existing between singular and plural forms is a guide to the discovery of the rules governing the morphophonemic alternations between them, even in cases where there is so much discrepancy that the morphological relatedness might go unsuspected were it not for the semantic connection. Thus a generative analysis can be carried on much deeper, using the data of plural formation, than with other, more immediately obvious morphological processes, such as those in fairly recent compounds, or than with forms that may have a complex history but that we have, at least thus far, no way of relating to others.

It is possible to discover regularities among the irregular stems, and relationships between the various methods, with underlying or historical forms recoverable through rules which in most cases are also needed to account for more superficially obvious alternations. In a number of instances the variety of methods available has given rise to the creation of forms which embody more than one of them: it is as if the original form created by one method did not 'sound plural enough', and was used as the base for another method, the result of which may have been phonologically modified. Rules both phonological and morphological have sometimes been reapplied until the contemporary form can no longer be derived simply and automatically from the singular, but must be learned as a separate form altogether. Thus, many 'irregular' forms should rather be classified as 'pleonastic', when morphological rules of plural formation have applied more than once, while the apparent multiplicity of classes can be understood in terms of an historical sequence where once fairly restricted rules have gradually been extended to less and less precise environments. There are also cases which cannot be explained otherwise than by analogical reformation, where a new plural has been created by analogy with a synchronic singular/plural alternation which is actually the outcome of a more complex set of rules. And finally, the study of plural formation enables us to recognize an original singular/plural relationship in forms whose meanings have now diverged, and to reconstruct singular forms in cases where only the plural is now in use.

Instead of multiple morphological methods with a few low-level phonological rules, the following generative analysis recognizes only two basic methods, prefixation and reduplication, but a number of rules, sometimes applying several times, resulting in the multiplicity of overt classes. I first describe these basic methods in their most regular applications before going on to the irregular and pleonastic stems. The emphasis throughout is on accounting for the differences between singular and plural stems.

2. Methods of Plural Formation

21. General. All Nisgha methods of plural formation, whether regular, irregular, pleonastic or suppletive, result in a distinctive plural

stem different from the singular stem. What is changed in most cases is the root[11] of the word, partially in non-suppletive stems, totally in suppletive stems. Derivational affixes are added to either the plural or the singular form of the root, or both, and while in most cases the same affixes are used for plural and singular forms of the same word, the use of different affixes in such derivatives is not uncommon. Some examples are:

- regular stems:
  1. reduplication:
     a. full reduplication:

qó·t	'heart'	qatqó·t
lu·qó·ʔtinskʷ	'to apply oneself'	lu·qatqó·ʔtinskʷ

     b. partial reduplication:

kʸát	'man, person'	kʸikʸát (used in compounding)
ʔankʸát	'parent'	ʔankʸikʸátkʷ

  2. prefixation:

mó·tkʷ	'to be safe, cured, rescued'	limó·tkʷ
timó·tkʷ	'to save, cure, rescue sbdy'	tilimó·tkʷ

- irregular stems:

kʸé·ɬ	'to lie (on sthg)'	lá·ɬ
haʔi·kʸé·ɬ	'bed'	haʔi·lá·ɬ
kʸiʔńtkʷ	'to get up'	li·ʔńtimqs

- pleonastic stems:

kʸámkʸ	'to be warm, hot'	limlámkʸ
sikʸámkʸ	'to warm, heat sthg'	silimlámkʸ

- **suppletive stems**:

ʔkʸé·xkʷ	'to flee, escape'	hú·t
ʔkʸé·ʔqan	'to chase sthg away'	hú·ʔtin

22. Regular Stems. Regular stems can now be redefined as those in which the root is unchanged and

1. only one method of plural formation is used: either prefixation or reduplication;
2. morphophonemic rules apply to a number of forms of the same type;
3. no root consonants are deleted or extraneous consonants added as a result of these rules.

The two methods of regular plural formation both involve initial extension of the root; reduplication is a form of prefixation, since the root or part of it is prefixed to itself. Although reduplication is statistically by far the most common method, prefixation will be treated first as it involves fewer rules.

221. Prefixation.

2211. Prefix |v: This prefix is used only for plural formation and has no other meaning. The vowel v is predictable according to the VOWEL SPECIFICATION rule:

$$v \dashrightarrow \begin{cases} ə \;/\; \_\; ? \\ a \;/\; \_\; \overline{C} \\ u \;/\; \_\; C^{w} \text{ in the same syllable} \\ i \;/\; \text{otherwise} \end{cases}$$

If the root already begins with |, there is no vowel.

Prefixation with |v- is associated mostly with specific prefixes and suffixes, the meaning of which is not always determinable. Nevertheless it also forms the plural of some bare stems.

- |v- prefix, no other changes:[12]

ʔté·q	||ʔté·q	'to eat too fast, to gorge oneself'
ʔcé·x	|iʔcé·x	'to be satiated'
ʔkʷác	|iʔkʷác	'to defecate'
	|isé·xʷ	'to discuss things'
	|isé·ʔiskʷ	'to hold a discussion'
mó·tkʷ	|imó·tkʷ	'to be safe, cured, rescued'

timó·tkʷ		tilimó·tkʷ	'to save, rescue, cure sbdy'
yóx̌kʷ		liyóx̌kʷ	'to follow sthg esp. a route'
ʔmáskʷ		liʔmáskʷ	'to fart'
ʔáks		ləʔáks	'to drink'
ʔnuʔwim ʔá·q	tawim	ləʔá·q	'to starve to death' (ʔnúʔw/ táxʷ 'to die', -m attributive, ʔá·q 'mouth')
ʔí·s		ləʔí·s	'to urinate'

Several of these forms begin with Velar prefixes:

xʷtákʷ	luxʷtákʷ	'to shoot'
x̌ʔčé·ks	lax̌ʔčé·ks	'to burp' (cf. ʔčé·x 'to be satiated')
x̌skʷí·kʷs	lax̌skʷí·kʷs	'to whistle' (lit. 'to imitate a marmot, kʷí·kʷ)
	lax̌sʔné·qs *13	'instep(s)'
	lax̌líp *	'to roll' (root líp)

- roots prefixed with ʔa-: plural in ʔalv----t:

ʔaskʸí	ʔaliskʸít	'to be unpleasant, ugly, strange, funny'
ʔaláys	ʔalláyst	'to be reluctant, lazy'
ʔalá·n	ʔallá·nt	'to lag behind, to be slow'
ʔamí	ʔalimít	'voice' (from earlier ʔam-hí lit. 'good for talking')
ʔayé·	ʔaliyé·t	'to go fast'

- singular stems suffixed with -kʷ or -s: plural in lv----t:[14]

ʔté·tkʷ	liʔté·t	'to walk fast'
ptáltkʷ	liptált	'to climb (on a tree, ladder, etc.)'

x̌stálɬkʷ	lax̌stálɬ	'to respond, to give a sound in answer' (cf.tál 'to sound'
skʷá·y̓tkʷ	liskʷá·y̓t	'to rest'
?ayawá·tkʷ	?ayaliwá·t	'to cry, scream; (animal) to give its cry' (?aywá or ?ayawá· traditional cry)

2212. Use of the prefix qa- as plural prefix: Although lv- is the only prefix specialized for plural formation, it is no longer productive. Another prefix not originally plural, but of related meaning, is used to form many plurals and seems to be gaining ground.

The prefix qa- is normally used to form (a) distributive plurals ('one each') and (b) abstractions.[15] The words which form their plural with it are all intransitive verbs, and this usage seems to be an extension of the distributive meaning of the prefix, since these verbs refer mostly to actions performed by, or qualities of, several individuals, rather than repeated actions by one individual as is often the case with reduplicative plurals. No morphophonemic changes are associated with this prefix,[16] but this extension of the morphological characteristics of one category to the related plural category is also found elsewhere (see **2221**).

Only a few examples of qa-prefixation need be given:

pí·k̓ʷ	qapí·k̓ʷ	'to tell lies'
t̓í·skʷ	qat̓í·skʷ	'to be forgetful'
q̓ó·x̌	qaq̓ó·x̌	'to yawn'
skʷátkʷ	qaskʷátkʷ	'to joke'
nú·tkʷ	qanú·tkʷ	'to adorn oneself' (with make-up, fancy or ceremonial clothing etc.)
yánq	qayánq	'to giggle'
wóx̌	qawóx̌	'to bark'
?á·t	qa?á·t	'to fish with a net'

This prefix is also used very productively to form the plural of some derivatives, especially those formed with co-occurring prefixes and suffixes, as in

- forms in sil----kʷ/-s 'to ... together with sbdy'

silʔáʔ·tkʷ	silqaʔáʔ·tkʷ	'to go sit (ʔáʔ·) with one person'
silhátikskʷ	silqahátikskʷ	'to go swimming (hátiks) with sbdy'

- forms in his----kʷ/-s 'to ... just for fun, not really'

hispó·tkʷ	hisqapó·tkʷ	'to go for a boat (pó·t) ride'
hisʔáʔ·qs	hisqaʔáʔ·qs	'to laugh' (ʔáʔ·q 'mouth')

222. Reduplication. Reduplication is by far the most common method of Nisgha plural formation. It applies typically to monosyllabic roots of the shape $\#C_1VC_2\#$. The reduplicated syllable is prefixed to the root, which does not change, although there may be some changes in the prefixed syllable.

There are two major types of reduplication:

-full reduplication, the main type, is characteristic of the plural. The general formula is

$$\#C_1VC_2...\# \quad \text{--->} \quad \#C_1vc_2C_1VC_2...\#$$

where c is a consonant identical to or related by rule to the original consonant, and where v is a vowel predictable from the consonantal environment, as in prefixed plurals;

-partial reduplication, which forms the plural of a small number of words, is the normal way of inflecting any stem[17] (not just the root) for imperfective aspect. As with the use of the distributive prefix qa to form some plurals, the use of partial reduplication for plural formation seems to be an extension of the meaning of this morphological device. The formula for partial reduplication is

$$\#C_1...\# \quad \text{--->} \quad \#c(v)C_1...\#$$

where c and v are as defined above. If the original C_1 is a resonant, there is no vowel.

As fewer rules are involved in partial reduplication, it is treated first.

2221. Partial Reduplication. The morphophonemic rules associated with partial reduplication are:

VOWEL INSERTION: A vowel is inserted between the two identical consonants at the beginning of a word. If these identical consonants are both resonants, there is no vowel:

taxˇkʸát	taxˇkʸikʸát	'to be strong'
ɬikʸát	ɬikʸikʸát	'(human) body'
kʸín	kʸikʸín	'to feed sbdy sthg'
ɬínkʸit	ɬiɬínkʸit	'(sg) Tlingit; (pl) slaves'
ʔasáʔy	(ʔa)sisáʔy[19]	'foot, leg'
sú·s	sisú·s	'to be small'

22212. CONSONANT DEGLOTTALIZATION: The deglottalization rule

$$\grave{C} \quad \text{--}\rightarrow \quad C \;/\; \#\_\,(v)\grave{C}$$

applies to all consonants including resonants. The vowel insertion rule remains the same.

- $\grave{C}$ is a resonant:

mˀáˀ·l	mmˀáˀ·l	'canoe'

- $\grave{C}$ is not a resonant:

ɬˀáxˇ	tiɬˀáxˇ	'lake'
haɬˀáxˇkʷ	hatiɬˀáxˇkʷ	'to be bad, to sin'
čimɬˀín	čimtiɬˀín	'valley'
čáˀkʸ	čičáˀkʸ	'plate, dish'

22213. GLIDE REDUCTION TO h: This is a general rule of partial reduplication,[20] although only words beginning with w form their plural in this way. The formula for these words is

$$\#w... \quad \text{--}\rightarrow \quad \#huw...$$

(the vowel is u through the vowel-specification rule before C^w).

wá	huwá	'name'
wákʸ	huwákʸkʷ[21]	'(man's) brother'
wíl	huwíl	'to act, be, do, effect, etc.'
wílp	huwílp	'house'

wó·ɬ	huwó·ɬ	'to trade'
wó?otkʷ	huwó?otkʷ	'to be a guest'
ẃó?	huẃó? [22]	'to call, invite sbdy'

2222. Full reduplication. Full reduplication, the most typical method of plural formation, involves both consonants of the typical root #C_1VC_2#. The vowel of the reduplicated syllable, which is unstressed, depends on the consonantal environment, according to the vowel-specification rule above. This vowel is not then a reduced version or a copy of the root vowel; instead, the original vowel has been deleted by a rule of VOWEL DELETION, and a new, unspecified vowel inserted as in partial reduplication. This is shown by the fact that full reduplication also applies to roots of the shape #sCVC..[23] or #ɬCVC... In such cases, the fricative is treated as C_1, the adjacent consonant as C_2.

22221. Rules affecting C_1. These are similar but not identical to those involved in partial reduplication.

222211. RESONANT DEGLOTTALIZATION: In full reduplication only resonants are deglottalized (except ?).[24] Initial resonants deglottalize when reduplicated, except if the second consonant is also a glottalized resonant, in which case it deglottalizes (by a normal rule, 222221).

ḿáɬin	mitḿáɬin	'to pull apart, loosen sthg soft: dough, soft fruit, etc'
ḿátkʷ	mitḿátkʷ	'(soft object) to fall apart, come loose'
ḿál	milḿál	'to fasten, button sthg'
qanḿála?	qanmilḿála?	'button'
ḿálkʸaqskʷ	milḿálkʸaqskʷ	'to be heavy'
ḿán	minḿán	'to smear a substance'
ḿíɬin	mitḿíɬin	'to scatter sthg'
ḿíɬkʷ	mitḿíɬkʷ	'to be scattered, in powder form'
(but: ɬiḿó·ɬ	ɬiḿilḿó·ɬ	'to wrap sthg'
ɬiḿó·ɬtkʷ	ɬiḿilḿó·ɬtkʷ	'to be wrapped')
ẃá(t)[25]	witẃá	'to reach, find sthg'

ʔwátkʷ	witʔwátkʷ	'to be found'

222212. Glide reduction to h: Where only words beginning with w had this rule in partial reduplication, it only affects words beginning with ya in full reduplication:[26]

yác	hisyác[27]	'to strike, chop, kill sthg'
yáɬkʷ	hiɬyáɬkʷ	'to be slippery, smooth'
yáltkʷ	hilyáltkʷ	'to turn'
lu·yáltkʷ	lu·hilyáltkʷ	'to turn around'
lu·yálʔtin	lu·hilyálʔtin	'to turn sthg around'
tʔkuyáltkʷ	tʔkuhilyáltkʷ	'to do an about-face'
yánkʷ	hinyánkʷ	'to be mouldy'
	hinyántkʷ *	'(body part) to feel a chilling, shivering or tickling sensation'

22222. Rules affecting C_2.

222221. CONSONANT DEGLOTTALIZATION: The rule of consonant deglottalization which affects resonants in C_1 affects all consonants in C_2 position. The rule affecting C_2 is more general, since only C_2 will deglottalize if both C_1 and C_2 are glottalized resonants.

ʔm --> m	táʔm	timtáʔm	'to press sthg'
	táʔmiks	timtáʔmiks	'to squeeze sthg'
	táʔmtkʷ	timtáʔmtkʷ	'to be pressed'
	lu·táʔm	lu·timtáʔm	'to hug, embrace sbdy'
ʔn --> n	qíʔn	qanqíʔn	'(sg form) to chew, to chew sthg; (pl form) to chew sthg in places, to chew on sthg'
ʔl --> l	ʔíʔlt	ʔilʔíʔlt	'to be early, soon'
	ʔcáʔl	ʔilʔcáʔl	'face, (pair of) eyes'
	ɬipáʔl	ɬipilpáʔl	'to rub, massage sbdy'
	hapó·ʔl	hapilpó·ʔl	'to keep sthg or sbdy'

ɬiʔmóʔ	ɬiʔmilʔmóʔ	'to wrap sthg or sbdy'
ɬiʔmóʔtkʷ	ɬiʔmilʔmóʔtkʷ	'to be wrapped'
ʔáʔaq	ʔalʔáʔaq	'to be brave, determined, quick-tempered'
t̓ --> t hɪ́t̓	hathɪ́t̓	'to stick'

222222. VELAR FRICATIVIZATION: The formula is

#CV́K --> #CvXCV́K

or the rule

K --> X / #Cv_CV́K

A. K = $\overline{K}$:

a. CV́$\overline{K}$ --> CaX̌CV́$\overline{K}$

páq	paX̌páq *	'(sg. form) to feel, experience sthg; (pl. form) to feel around for sthg'
	ʔna·taX̌táqɬ *	'to hammer on sthg' (táqɬ 'hammer')
	laX̌láq [28]	'(snow) to fall'
	ʔyaX̌ʔyáq *[29]	'to be hanging'
ʔáqɬkʷ	ʔaX̌ʔáqɬkʷ	'to finally reach the goal'
təʔáqɬkʷ	təʔaX̌ʔáqɬkʷ	'to be able to do sthg'
qá·q	qaX̌qá·q	'to point to sthg'
lu·qá·q	lu·qaX̌qá·q	'to put one's index finger (qá·q) in sthg'
ʔqé·qɬ	ʔqaX̌ʔqé·qɬ	'to drag sthg'
ɬé·q	ɬaX̌ɬé·q	'to be worn (from use)'
cóq	caX̌cóq	'to stay, live, camp'
	naX̌nóq *[30]	'supernatural being'

	woxʷóq *	'bat (animal)' (cf. wóq 'to sleep')
có·q	caxcó·q	'to be embarrassed, ashamed'
ɬó·q	ɬaxɬó·q	'to wake or get up early'
ʔanó·q	ʔanaxnó·q	'to like, approve of sthg or sbdy'
sú·qskʷ	saxsú·qskʷ	'to dive'
	maxmáʔqay *	'rainbow'
lá·ʔal	laxlá·ʔal	'to examine sthg'
lá·ʔaltkʷ	laxlá·ʔaltkʷ	'to be examined'
sé·ʔal	saxsé·ʔal	'to be rough (to the touch)'
hé·ʔal	haxhé·ʔal	'to do one's best esp. to persuade'
ʔtá?	ʔtaxʔtá?	'to clap'
qó?	qaxqó?	'to go somewhere, to go get sthg or sbdy'
sqaqó?	sqaqaxqó?	'to go in front of, obstruct, sthg or sbdy'

b. $s\overline{K}\acute{V}C$ --> $sa\check{x}s\overline{K}\acute{V}C$

sqʃkskʷ	saxsqʃkskʷ	'to be injured'
sʔqúkskʷ	saxsʔqúkskʷ	'to be in short supply'
sʔqé·xkʷ	saxsʔqé·xkʷ	'to be dark, to be night'

B. K = Kʸ:

a. $C\acute{V}K^{y}$ --> CvxCVKʸ

Before the non-Velar fricatives s and ɬ, kʸ loses its glide release through the rule of GLIDE RELEASE DELETION:

$$k^{y} \text{ --> } k \text{ / } \_ \text{ [+cont]}$$

ʔtákʸ	ʔtixʔtákʸ	'to forget sthg'

c̓ák^{y}	c̓ixc̓ák^{y}	'(fire, light) to go out, be out'
lák^{y}	lixlák^{y}	'to occur, move, etc. as a mass'
ták^{ɬ}	tixták^{ɬ}	'to tie, bind sthg'
sáksa?an	sixsáksa?an	'to clean sthg'
sáksk^{w}	sixsáksk^{w}	'to be clean'
háks	haxháks	'to insult sbdy'
?áks	?ax?áks	'water, stream'
?ákst	?ax?ákst	'to be wet'
qé·ksk^{w}	qaxqé·ksk^{w}	'to slide on one's rear'
?ó·ks	?ax?ó·ks	'to be wide'
lu·púks	lu·pixpúks	'to spit in sthg'
púksk^{w}	pixpúksk^{w}	'to spit'
húksa?an	haxhúksa?an	'to place sthg or sbdy with others'
húksk^{w}	haxhúksk^{w}	'to be present somewhere, to be with other people or things'
húk^{y}aǰ	haxhúk^{y}aǰ	'to be right, correct'
?úks	?ax?úks	'to hit the ground'
t̓á$\overset{\cdot}{k}^{y}$il	t̓ixt̓á$\overset{\cdot}{k}^{y}$il	'to fold sthg'
t̓á$\overset{\cdot}{k}^{y}$iltk^{w}	t̓ixt̓á$\overset{\cdot}{k}^{y}$iltk^{w}	'to be folded'
t$\overset{\cdot}{f}\overset{\cdot}{k}^{y}$	tixt$\overset{\cdot}{f}\overset{\cdot}{k}^{y}$	'to feel silly'

b. #ɬKV̂C --> #ɬixɬKV̂C

ɬk$^{y}\overset{\cdot}{f}$·k^{w}	ɬixɬk$^{y}\overset{\cdot}{f}$·k^{w}	'(woman's) sister'
ɬkú·$\overset{\cdot}{l}$	ɬixɬkú·$\overset{\cdot}{l}$	'to be small(inside)'

C. $K = K^w$: The formula is #CV́K^w --> #Cux^{w}CV́K^w

tú7kʷɬinx̌	tuxʷtú7kʷɬinx̌	'to drown, suffocate'
cákʷ	cuxʷcákʷ	'to kill sthg or sbdy'
7ákʷ	7uxʷ7ákʷ	'to twist sthg'
7ák7wil	7uxʷ7ák7wil	'to wring sthg'
č7í·kʷ	čuxʷč7í·kʷ	'to leak'
lúkʷ	luxʷlúkʷ	'to move sthg to another location'

D. $C_2 = X$

a. Naturally, if C_2 is already a Velar fricative, there is no change:

$C_2 = x$:	syáx	sixsyáx	'to be scorched'
	má·xt	mixmá·xt	'(canoe, boat) to be loaded'
	kʸil7allax	kʸil7allixlax	'to be covered with fur'
	wá·x	wixwá·x	'to paddle'
	hí́x	haxhí́x	'to be fat'
	hó·x	haxhó·x	'to use, wear sthg'
	?úx	?ax?úx	'to throw sthg'
$C_2 = x̌$:		č7ax̌č7áx̌ *	'hail'
	ɬé·x̌kʷ	ɬax̌ɬé·x̌kʷ	'to have finished eating'
	mé·x̌	max̌mé·x̌	'(food) to be soured, fermented, spoiled'
		nax̌ná·x̌ *	'duck'
	hóx̌7at	hax̌hóx̌7at	'to smell good'
$C_2 = x^w$:	7úxʷ	7uxʷ7úxʷ	'to be stout'
	kúxʷ	kuxʷkúxʷ	'to shoot sthg'

	ɬuxʷɬáxʷ	'to shake sthg (eg. a blanket)'
lúxʷ	luxʷlúxʷ	'to deny a request'
x̌lúxʷ	x̌luxʷlúxʷ	'to burst'

b. However, a sequence X + ʔ results in a glottalized resonant. This occurs when a root ending in X adds a suffix beginning with or consisting of ʔ. In this case, since full reduplication normally affects the root, c_2 is normally identical to the underlying C_2, as in:

C_2 = y̓ < x + ʔ : c_2 = x:

hó·y̓in	haxhó·y̓in	'to put a garment on sbdy, to make sbdy wear sthg' (hó·x 'to wear sthg')
má·y̓in	mixmá·y̓in	'to load a boat' (má·xt 'to be loaded')
ʔíy̓kʸit	ʔaxʔíy̓kʸit	'to be clumsy'

C_2 = w̓ < x^w + ʔ : c_2 = x^w:

kúw̓iskʷ	kuxʷkúw̓iskʷ	'to fall over' (related to kúxʷ 'to shoot sthg')
lúw̓iskʷ	luxʷlúw̓iskʷ	'to deny requests'(lúxʷ 'to deny a request)
x̌lúw̓in	x̌luxʷlúw̓in	'to burst sthg' (x̌lúxʷ 'to burst')
ʔayá·w̓ilt	ʔayuxʷyá·w̓ilt	'to be competent, capable'

c. In several cases where C_2 = w̓, however, this rule conflicts with that of resonant-glottalization which applies to the surface forms: thus, for instance, Boas 1911 gives the forms

háw̓	huxʷháw̓[31]	'to stop, go home'

but the plural now in use is

hawháw̓ or hawáw̓.

It seems that reformation has taken place where because of the obsolescence or semantic divergence of the root word, there is no longer a perceived connection between the glottalized resonant and the Velar fricative it derives from, as also in

c̓áw̓aqs	c̓u·c̓áw̓aqs	'(pair of) shoes' (root c̓áxʷ 'to be much, to be impressive'
	ʔawʔá·w̓iskʷ *	'to be curly'

In c̓u·c̓áw̓aqs, the reduplicated syllable should have been ç̓ćúw; the glide w has vocalized, by the rule of GLIDE VOCALIZATION, and the result is the long vowel u·.

222223. DEAFFRICATION:

a. Cs --> s:

This rule applies both to the affricates c and c̓ and to the sequence ks (from kʷs when not preceded by u)(by the glide deletion rule above).

qác	qasqác	'to be in liquid form, to be poured, spilled, to pour or spill sthg'
	qasqá·c *	'dogfish'
	q̓asq̓á·c	'tendons'
q̓úc	q̓asq̓úc	'to cut sthg'
q̓úcax̌	q̓asq̓úcax̌	'(person) to be exhausted '
	q̓asq̓úcinx̌ *	'ant'
ʔáciks	ʔasʔáciks	'to be proud'
ʔí·c	ʔasʔí·c	'to fry, iron sthg'
híc	hashíc	'to send sthg or sbdy'
q̓úc̓aʔ	q̓asq̓úc̓aʔ	'to cut'
hác̓	hashác̓	'to bite sthg'
ʔó·c̓in	ʔasʔó·c̓in	'shadow, soul'
pác	pispác	'to lift, carry sthg'
k̓ʏáckʷ	k̓ʏisk̓ʏáckʷ	'(boat, vehicle) to have arrived'

yác	hisyác	'to strike, chop, **beat** sthg'
	sqapispɬ'c	'(eyes) to be half-closed'
ɬú·c̓kʷ	ɬisɬú·c̓kʷ	'to be black' (ɬú·c̓ 'charcoal')
má·kskʷ	mismá·kskʷ	'to be white' (má·kʷs 'snow')

b. ƛ̓ --> ɬ :

The affricate ƛ̓ may be considered as a sequence ɬ̓ɬ just as the affricate c̓ is treated in reduplication as a sequence t̓s.[32] Since this affricate is rare in the language, there are very few examples:

c̓áƛ̓	c̓iɬc̓áƛ̓	'(sg. form) (music) record; (pl. form) to have a rippled surface'
	q̓aɬq̓áƛ̓ *	'to be slightly crooked'
yáƛ̓ikskʷ	hiɬyáƛ̓ikskʷ	'to slip and fall'(root yáɬ 'slime')
	haɬ(h)úƛ̓aqɬkʷ*	'to boil' [33]

22223. Unaffected consonants. Other consonants are unaffected in c_2 position.

$C_2 = \overset{(ʔ)}{p}$: ɬá·p	ɬipɬá·p	'to drive sthg (nail, etc.) in'
c̓áp	c̓ipc̓áp	'organized group of people (clan, village, etc.)'
qalc̓áp	qalc̓ipc̓áp	'village, village site'
c̓ɬpkʷ	c̓ipc̓ɬpkʷ	'to be hard' (c̓ɬp 'bone')
c̓ɬ·p	c̓ipc̓ɬ·p	'to close one's eyes'
c̓ɬ·pkʷ	c̓ipc̓ɬ·pkʷ	'to be tied with a knot'
c̓ɬ·p̓iɬkʷ	c̓ipc̓ɬ·p̓iɬkʷ	'to tie up for the night'
c̓ɬ·p̓in	c̓ipc̓ɬ·p̓in	'to tie sthg with a knot'
q̓áp	q̓apq̓áp	'piece'
	q̓apq̓úyp *	'bunchberry'

táp	tiptáp	'to measure, judge sthg or sbdy'
cáp	cipcáp	'to make sthg'
ʔama·cáp	ʔama·cipcáp	'to fix sthg'
cí·pilks	cipcí·pilks	'to burn down'
kʸápks	kʸipkʸápks[34]	'to be high'
kʸíp	kʸipkʸíp	'(sg. form) to eat sthg;(pl. form) to nibble on sthg'
	qapqapksəʔál *	'to blink' (*ʔál 'eye', used in some derivatives)
qá·p	qapqá·p	'to scratch sthg'
qá·pxan	qapqá·pxan	'to scrape sthg'
qúyʔax	qapqúyʔax	'to be bright, light'
sí·pkʷ	sipsí·pkʷ	'to be sick, to hurt'
sí·ʔin	sipsí·ʔin	'to love sbdy'
sí·ʔintkʷ	sipsí·ʔintkʷ	'to be loved'
ʔansí·ʔinskʷ	ʔansipsí·ʔinskʷ	'friend, lover'
ɬáp	ɬipɬáp	'to be deep'
líkʷ	liplíkʷ	'to sew sthg'
háp	hapháp	'to put a lid on sthg, to jump on sthg or sbdy'
ʔá·pxin	ʔapʔá·pxin	'to be light (in weight)'

$C_2 = (^{ʔ}_{t})$:

ʔkʷó·tkʷ	ʔkʷitʔkʷó·tkʷ	'to be missing, lost'
ʔkʷó·tiskʷ	ʔkʷitʔkʷó·tiskʷ	'to feel lost, disoriented'
ʔkʷó·ʔin	ʔkʷitʔkʷó·ʔin	'to lose sthg (that might still be found)'
ʔkʷó·ʔil	ʔkʷitʔkʷó·ʔil	'to lose sthg (for good)'

ʔáťx̌	ʔaťʔáťx̌	'to patch sthg'
qíťkʷ	qaťqíťkʷ	'to be painful'
qó·t	qaťqó·t	'heart'
qó·t(a)[35]	qaťqó·t(a)	'(group, mass) to be gone'
lu·qó·ta	lu·qaťqó·ta	'to be empty'
lu·qó·ʔinskʷ	lu·qaťqó·ʔinskʷ	'to make efforts, to apply oneself'
líť	litlíť	'wedge'
míʔin	mitmíʔin	'to fill sthg'
míťkʷ	mitmíťkʷ	'to be full, plentiful'
mó·tkʷ	mitmó·tkʷ[36]	'to be safe, rescued, cured'
hé·tkʷ	hathé·tkʷ	'(group) to head somewhere'
ʔá·ʔiksk̓ʷ	ʔaťʔá·ʔiksk̓ʷ	'to come, arrive'
	ʔítʔíť [37]	'feelings of delicacy, refinement, squeamishness'
ʔíťkʷ	ʔaťʔíťkʷ	'to pronounce sthg, to call by name, mention, put the blame blame on sbdy'
ʔíťkʷs	ʔaťʔíťkʷs	'to be called, mentioned, pronounced'
kʷilksʔíťkʷs	kʷilksʔaťʔíťkʷs	'to repent' (lit. 'to blame oneself')
kʷilksʔíťkʷsit	kʷilksʔaťʔíťkʷsit	'convert' (lit. one who repents')

C_2 = ˢ :

ʔíťs	ʔisʔíťs	'to push, hit sthg or sbdy'
	ʔna·ʔisʔíťsaʔ	'to knock (repeatedly, eg. on a door)'
ʔkʷás	ʔkʷisʔkʷás	'to break, shatter'

k̓wásaʔan	k̓wisk̓wásaʔan	'to break, shatter sthg'
k̓wást	k̓wisk̓wást	'to be broken'
q̓ísk^{y}	q̓asq̓ísk^{y}	'to be unripe, green'
	q̓asq̓ó·s *	'crane, heron'
pásaq̓an	pispásaq̓an	'to divide sthg'
pásaxkʷ	pispásaxkʷ	'to be divided, separated'
pís	pispís	'to tear sthg'
lu·k^{y}í·s	lu·k^{y}isk^{y}í·s	'to make a mistake'
	kʷiskʷó·s *[38]	'bluejay'
kʷá·s	kʷá·s	'to borrow from sbdy'
qásq	qasqásq	'to taste bitter'
qískʷ	qasqískʷ	'to be narrow' (qís 'hair')
qísxkʷ	qasqísxkʷ[39]	'to shut up'
qús	qasqús	'to jump'
máskʷ	mismáskʷ	'to be reddish brown'
	mismú·s *[40]	'cow'
	lislískʷ	'to be hanging'
n̓i·ʔí·s	n̓i·ʔasʔí·s	'to urinate on sthg'
ʔús	ʔasʔús	'dog'
ʔískʷ	ʔasʔískʷ	'to stink'
	hashúskʷ *	'commotion, trouble'

C_2 = ɬ :

ɬáɬ	ɬiɬɬáɬ	'(substance) to adhere; to apply a substance; group of people'
	čiɬčíɬiks	'ripples in the water'(cf. čáʌ̓/čiɬčáʌ̓ above, 222223 b.)

pə́ɬ	piɬpə́ɬ	'to spread sthg flat (eg. sheet)'
cə́ɬ	ciɬcə́ɬ	'to eat sthg up; to lose in a contest or war, to fail'
kʸə́ɬkʷ	kʸiɬkʸə́ɬkʷ	'to poke, pierce, spear, gaff sthg'
kʸə́ɬkʷs	kʸiɬkʸə́ɬkʷs	'to be pierced, speared, gaffed'
mə́ɬ	miɬmə́ɬ	'to tell, announce sthg; to lay sthg flat, eg. floorboards, lining in a box'
mə́ɬ	miɬmə́ɬ	'to burn'
yə́ɬkʷ	ẖiɬyə́ɬkʷ	'to be slippery, smooth' (yə́ɬ 'slime')

C_2 = m :

ʔtə́m	ʔimʔtə́m	'to carve, depict, write sthg'
tə́mʔqan	timtə́mʔqan	'to pull on, tighten sthg'
tə́mskʷ	timtə́mskʷ	'to lift a weight, shoulder a burden, assume costs'
cə́m	cimcə́m	'to boil, cook sthg'
ʔancə́m	ʔancimcə́m	'cooking-pot'
ɬə́ms	ɬimɬə́mskʷ [41]	'in-law (parent or child)'
ʔə́·m	ʔamʔə́·m	'to be good'
ʔə́mɬ	ʔamʔə́mɬ	'pail, bucket'
ʔə́mx̌kʷ	ʔamʔə́mx̌kʷ	'to hate be unable to bear sthg or sbdy'
yə́msk̓ʷ	yimyə́msk̓ʷ	'to sniff sthg'
yə́m	yimyə́m	'to sniff'
	hamhə́m	'joints'
hə́mʔcax̌	hamhə́mʔcax̌	'to kiss sbdy'

C_2 = n :

	k̓ʷink̓ʷán *	'to be palsied, uncoordinated'
k̓ʸán	k̓ʸink̓ʸán	'to put sthg somewhere'
kʷántkʷ	kʷinkʷántkʷ	'to go near sthg (near enough to touch it)'
t̓ikʷántkʷ [42]	t̓ikʷinkʷántkʷ	'to fall from a height'
qán	qanqán	'tree, log'
qántkʷ	qanqántkʷ	'to be straight, stiff'
swán	sinswán	'to blow on sthg'
sa·swán	sa·sinswán	'to blow sthg off'
ɬánt	ɬinɬánt	'to move sthg (in one place, eg. an animal its tail)'
ɬántkʷ	ɬinɬántkʷ	'to move in one place'
ɬíntx	ɬinɬíntx	'to be angry'
*ʔún [43]	ʔanʔún	'hand, arm'
ʔánkʷs	ʔanʔánkʷs	'to be baked'
səʔánkʷs	səʔanʔánkʷs	'to bake sthg'
yánkʷ	hinyánkʷ	'to be mouldy'
	hinyántkʷ *	'(body part) to feel a chilling, shivering or tickling sensation'
wánt	winwánt	'to plant sthg'
hánx	han(h)ánx	'to be thin (not thick)'
	han(h)ánx *	'temple (s of the head)'

C_2 = l :

t̓ál	t̓il̓t̓ál	'to split sthg in two'
t̓áltkʷ	t̓il̓t̓áltkʷ	'to be split in two'

ʔálx̌an	ʔilʔálx̌an	'to split a tree (with wedges)'
ʔílxt	ʔilʔílxt	'to be oily, greasy' (ʔílx 'oolichan grease')
tál	tiltál	'to sound'
sitál	sitiltál	'to make a sound louder'
tálq	tiltálq	'to speak to sbdy'
lu·táltkʷ	lu·tiltáltkʷ	'to meet sbdy'
	tiltá·l	'to echo'
tílpkʷ	tiltílpkʷ	'to be close by, short'
(ɬtíls)	tiltíls	'to live, be alive'
cílks	cilcílks	'to melt, thaw'
cílksaʔan	cilcílksaʔan	'to melt, thaw sthg'
kʷálkʷ	kʷilkʷálkʷ	'to be dry'
	qalqálx̌kʷ	'(body part) to give the feeling that something is about to happen'
ɬálp	ɬilɬálp	'to shave or plane sthg'
málkʷ	milmálkʷ	'to burn sthg'
ʔamálkʷ	ʔamilmálkʷ	'scab, to be scabby'
mílksax̌	milmílksáx̌	'to be sour, acid' (mílks 'crabapple')
wálx	wilwálx	'to carry sthg on one's back'
si·wíl	si·wilwíl	'to be new'
ʔálkʸax̌	ʔalʔálkʸax̌	'to speak'
ʔúlkskʷ	ʔalʔúlkskʷ	'to drift'

C_2 = y :

hə́ykʷ	hayhə́ykʷ	'odor, spirit; to have an off smell'

C_2 = w :

tə́·w	tu·tə́·w	'ice; to freeze'

23. Almost regular plurals: from full reduplication to partial reduplication with -ix- infix. The canonical root shape for full reduplication is CVC, sometimes preceded by an s or ɬ augment. The reduplicative process is not affected by anything which may follow the CVC sequence. There are however some cases where the regular reduplicative formula has been modified to accommodate special conditions, especially with roots longer than CVC, creating new formulas of singular/plural correspondence in which the reduplicative c_2 is no longer so closely related to C_2, if at all. Most such formulas apply too sporadically to form descriptive classes, except for the extension of the Cix- reduplicative syllable from roots with front velars as C_2 to any kind of stem.

231. Reinterpretation and extension of the Cvc- prefix formula. Reinterpretation of data can occur as a result of phonological confusion. For instance, the regular deduplicative plurals for roots of the shape CVKʷ are of the form Cuxʷ CVKʷ. If the initial consonant is a C, the vowel is normally a instead of u, thus

hə́kʷɬ	haxʷhə́kʷɬ	'gaff, hook; to gaff, hook sthg'
hə́ʔkʷaǰ	haxʷhə́ʔkʷaǰ	'to cause a blockage, completely fill a space'
lu·hə́ʔkʷaǰ	lu·hə́ʔkʷaǰ	'to be too large to fit comfortably into sthg eg. clothes'
hə́ʔkʷaq̓an	haxʷhə́ʔkʷaq̓an	'to cause sthg to create a blockage'
hə́ʔwin	haxʷhə́ʔwin	'to catch sthg in a snare or trap'
húʔkʷil	haxʷhúʔkʷil	'to roll sthg flat, eg sleeves'
qə́·kʷ	qaxʷqə́·kʷ	'sinews, large veins'

The sequence $\overline{C}ax^w\overline{C}\acute{u}$ is very difficult to distinguish from a sequence $\overline{C}a\check{x}\overline{C}\acute{u}$; $\underline{\check{x}}$ can be derived from $\underline{x^w}$ by glide release deletion (cf. $\underline{k^y}$ >$\underline{kk}$ before $\underline{s}$, 222222.B.a). The formula then becomes

$$C\acute{u}K^w \text{ --> } Ca\check{x}C\acute{u}K^w$$

which accounts for the alternate plural in

t$\acute{u}$k^{w}ɬinx̌	ta$\check{x}$t$\acute{u}$k^{w}ɬinx̌	'to drown, suffocate'

besides the regular plural tux^{w}t$\acute{u}$k^{w}ɬinx̌, and for

m$\acute{u}$x^w	'ear'	ma$\check{x}$m$\acute{u}$x^w	'earrings'

Alternately, in ta$\check{x}$t$\acute{u}$k^{w}ɬinx̌ the $\underline{\check{x}}$ of the reduplicative syllable may also be interpreted as corresponding to the final $\underline{\check{x}}$ (the $\underline{i}$ is inserted to break up the cluster k^{w}ɬnx̌). There are several other examples of roots ending in consonant clusters where the c_2 of the reduplicative syllable corresponds to the final consonant of the cluster, rather than to the postvocalic C_2 of regular stems, thus

lɬlk^w	lux^{w}lɬlk^w	'to lace one's shoes'
n$\acute{a}$·ɬx̌k^w	nax̌n$\acute{a}$·ɬx̌k^w	'to breathe' (root n$\acute{a}$·ɬq 'breath')
n$\acute{u}$·ɬx̌k^w	nax̌n$\acute{u}$·ɬx̌k^w[45]	'to be wet, moist'

In the last two examples the reduplicative syllable ends in $\underline{\check{x}}$ because the root ends in a back consonant before addition of the suffix -$\underline{k^w}$.

In the next three examples, the root ends in an-underlying cluster before the insertion of a vowel by a low-level, automatic rule:

ɬ$\acute{u}$·ʔux^w	ɬux^{w}ɬ$\acute{u}$·ʔux^w[46]	'to value, treasure <u>sthg</u>; to cherish <u>sbdy</u>'
q$\acute{o}$·ʔos	qasq$\acute{o}$·ʔos	'to be cooled' (from *q$\acute{o}$·ʔs)
l$\acute{o}$ʔop	lipl$\acute{o}$ʔop	'stone, rock' (from *l$\acute{o}$ʔp)

In the last two cases, the vowel has been inserted by the rule of COPY VOWEL INSERTION operating after $\underline{ʔ}$:

$$\emptyset \text{ --> } \underset{[-long]}{V_i} \; / \; \acute{V}_i ʔ \; \_ \; C$$

The formula in these cases is no longer

$$C_1\acute{V}C_2.. \dashrightarrow C_1vc_2C_1\acute{V}C_2..$$

as before, but $C_1V..C_n \dashrightarrow C_1vc_nC_1\acute{V}..C_n$

Both of these formulas are extensions of the canonical formula

$$\#C_1\acute{V}C_2\# \dashrightarrow \#C_1vc_2C_1\acute{V}C_2\#$$

to roots longer than #C$\acute{V}$C#: one takes as C_2 the first, the other one the last consonant of a cluster.

In the case of Cix- plurals, this sort of extension of the basic reduplicative formula has been carried even further.

232. A new class: Cix- plurals. These plurals are now found with a wide variety of stems, many of which are disyllabic stems with the stress on the second syllable. Disyllabic stems do not fit the canonical specifications for regular reduplicated plurals, which suppose a shape C$\acute{V}$C. They are therefore difficult to pluralize by reduplication, although in some cases an initial sequence CVC is treated as a syllable for the purposes of reduplication, as in

	qalqalé·qs *	'to be barefoot'
wilá·ḵʸils	wilwilá·ḵʸils	'to be knowledgeable, educated'
wilá·kʷ	wilwilá·kʷ	'to do sthg to sbdy, to treat sbdy a certain way (usually badly)'
wilá·x	wilwilá·x	'to know sthg or sbdy'
wilá·ỷiskʷ	wilwilá·ỷiskʷ	'to be related, a relative'
pi'ɬst	pilpi'ɬst	'star' (the plural means 'each and every star')

Disyllabic stems with a front velar as C_2 will most likely have a reduplicative syllable of the shape Cix-, as in

miỷé·n	mixmiỷé·n	'(object) to smoke' (miỷé·n 'smoke')
kʸikʸɬ'	kʸixkʸikʸɬ'	'to look for sthg'

The effect here is the opposite of that just described above, in which the prominent last consonant of a cluster is the one repeated in reduplication. Here, the reduplicated c_2 is derived from the unprominent medial consonant, and has no relation to the final consonant. It is possible then to reinterpret the C i x- syllable as related only to the initial consonant, and to nothing else in the word, launching this syllable on an independent existence as an all-purpose pluralizer. In many cases a C i x- plural has been formed on stems which already have a plural of another type, and the two formations coexist; in a number of other cases an existing plural has been taken as the basis for a C i x- formation, resulting in a pleonastic, that is morphologically complex stem, formed by two methods.

Even though the following list includes forms with consonants of all kinds, the vast majority contains non-back consonants, especially palatals, dentals and laterals. Because different contributing factors may be present in the same word, the following classification cannot be a rigid one, or follow a strict probable chronological order.

A. Forms beginning with front Velars:

kʸʃtaǰ	kʸixkʸʃtaǰ	'to ask sbdy sthg' (besides kʸitkʸʃtaǰ)
kʸʃ·kʷ	kʸixkʸʃ·kʷ	'to buy sthg'
kʸʃ·s	kʸixkʸʃ·s	'to miss sthg (by mistake)'
kʸimxtʃ	kʸixkʸimxtʃtkʷ	'(sg. form) sibling of the opposite sex; (pl. form) brothers and sisters'
kʸǽʔ	kʸixkʸǽʔ	'to see sthg or sbdy'
kʸúkʷs	kʸixkʸúkʷs	'(fish) to jump'
ʔkʸé·qan	kʸixʔké·qan	'to drill a hole in sthg'

B. Forms beginning with y:

yé·n	hixyé·n	'to be foggy, steamy' (yé·n 'cloud')
yǒʔoks	hixyǒʔoks	'to wash sthg' (besides yǒ·ʔoks, see 243213)
yú·ɬimq	hixyú·ɬimq	'to lecture or give authoritative advice to sbdy'

C. Forms containing s :

- shape s(v)CVC where one C = C^y:

stiḵʸéw	sixstiḵʸéw	'(child, animal) to be a playmate or companion (to sbdy)'
sityéwsˇ	sixsityéwsˇ	'to be changed'
sityéwx	sixsityéwx	'to change sthg'
sityéwmisk	sixsityéwmisk	'to change one's clothes'

- s initial, prevocalic:

sámaq	sixsámaq	'to clam up' (cf. sámq 'small clam species))
sáwinsk	sixsáwinsk	'paper' (root sáx 'to flutter')
sá?	sixsá?	'(fiber) to break'
sá?aɬk	sixsá?aɬk	'(fiber) to be weak, to break easily'
swéta	sixswéta	'sweater' (< Eng.)[48]
sú·qsk	sixsú·qsk	'to dive' (besides regular saxsú·qsk)

- shape sCVC with any C:

skwátk	sixskwátk	'to joke'
sqapiɬé·?	sixsqapiɬé·?	'curtain'[49]
sqaníst	sixsqaníst	'mountain'

- words in c or č (= Cs):

cák	cixcák	'to kill sthg or sbdy' (besides cuxwcák)
čó?	čixčó·ča?	'to separate, pull or come apart';(the pl. form is used in the context of skinning animals; it is reformed on čó·ča?, see 243213)

čé·čikst	čixčé·čikst	'to be dirty' (čé·čiks 'dirt', 243221.A)
púc	pixpúc	'(pair of) boots' (< Eng.)
tú·čkʷ	tixtú·čkʷ	'metal, knife' (also meaning 'to be black', with regular plural for that meaning tistú·čkʷ)

- C_1 = non-back Velar; C_2 = s :

kslá·wiskʷ	kʸixkslá·wiskʷ	'shirt' (lit. 'undermost'; root ɬáxʷ 'underside' [50]
kʷiskʷó·skʷ	kʷixkʷiskʷó·skʷ	'to be blue' (kʷiskʷó·s 'bluejay')

- recent color words prefixed with x̌s-, as in

x̌smá·ýtkʷ	sixx̌smá·ýtkʷ	'to be purple' (má·ý 'berry')
x̌sloqaló?opkʷ	sixx̌sloqaló?opkʷ	'to be brown' (ló·q 'to be rotten'; ló?op 'stone, rock')

D. Forms containing laterals:

ta·ɬʃ·skʸ	tixta·ɬʃ·skʸ	'(pair of) socks'
miɬátkʷ	mixmiɬátkʷ	'to be green' (miɬá 'bile'
?iɬé·?	hix?iɬé·?	'to be red' (from ?iɬé·?/?iɬé·ɬa? 'blood, to bleed', see 2522)
ɬʃsa?an	ɬixɬʃsa?an	'to finish sthg'
ɬʃskʷ	ɬixɬʃskʷ	'to be finished'
ɬuxʷɬákʷs	ɬixɬuxʷɬákʷs	'to shake oneself' (ɬuxʷɬáxʷ 'to shake sthg)

pá̓ƛiks	pixpá̓ƛiks	'to be soaked, drenched'
lá̓ltkʷ	lixlá̓ltkʷ	'to be slow' (lá̓lt 'worm')
lá̓ʔ	lixlá̓ʔ	'to have diarrhea'
(*lʃtiks)	lixlʃtiks	'to wash sthg, esp. laundry'
lʃ́lkʷ	lixlʃ́lkʷ	'to lace up sthg' (besides luxʷlʃ́lkʷ)
tq̓alwʃ́limɬkʷ	tq̓alwixwʃ́limɬkʷ	'companion, attendant, disciple, angel'
piʃ́ʃst	pixpiʃ́ʃst	'star' (besides pilpiʃ́ʃst, pi·ʃ́ʃst, 2431)
qaʃ́ʃ	qalixʃ́ʃ	'to drop sthg'
lú̓xʷ	lixlú̓xʷ	'to deny a request' (besides luxʷlú̓kʷ)

E. Forms beginning with other non-Velars:

titʃ́y̓	tixtitʃ́y̓	'to look after sthg or sbdy'
titʃ́ls	tixtitʃ́ls	'to live, be alive' (besides tiltʃ́ls)
titá̓lq	tixtitá̓lq	'to talk with sbdy'
té̓n̓tkʷ	tixté̓n̓tkʷ	'to lead, guide sbdy'
t̓ú̓·maq	t̓ixt̓ú̓maq	'to place an order for sthg'
mú̓kʷ	mixmú̓kʷ	'to be ripe'
m̓ú̓kʷ	m̓ixm̓ú̓kʷ	'to catch fish'
maqó̓·n̓iskʷ	mixmaqó̓·n̓iskʷ	'to figure out or receive an explanation'

G. Forms beginning with non-front Velars:

kʷə́m	kʷixkʷə́m	'to be dusty, ashy' (kʷə́·m 'dust, ashes')
haɬá7s	hixhaɬá7s	'to work'
haɬ(h)ú7aqɬkʷ	hixhaɬ(h)ú7aqɬkʷ	'to boil'
sihimɬɬkʷ	sihixhimɬɬkʷ	'to shine sthg , eg. shoes'
hináčaš	hixhináčaš	'to spank sbdy'
han̓i·txə́·škʷ	hixhan̓i·txə́·škʷ	'table' (lit. 'for eating on'; txə́·škʷ 'to eat' (pl.), see 2421)

(similarly for other forms beginning with the prefix han̓i·)

?amú7ws	hix?amú7ws	'corner' (probably orig. 'listening post'; cf. ?amúkʷs 'to listen', múxʷ 'ear')
?amqə́·kʸit	hix?amqə́·kʸit	'to be beautiful, pretty' (esp. landscape) (prob. lit. 'memorable'; ?amqə́· 'to remember')
?ašy̓ə́·kskʷ	hix?ašy̓ə́·kskʷ	'to be trusting, guileless' (prefix ?aš- 'not')

(similarly for other forms beginning with the prefixes ?am and ?aš)

That hix can then be considered an independent plural marker is shown by

qamwɬl	qamhixwɬl	'to be worn out, useless'
	nintəhixqanɬə́?	'to pin things together' (nintə 'together'; qanɬə́? 'pin')

H. Fronting of reduplicated back Velars: The i of the infix -ix- is compatible with all the other consonants, but not with an initial q or q̓; instead of the vowel adjusting to the position after

back consonant as in the regular vowel specification rule, the Velar is made compatible with the vowel, by the fronting rule

q --> kʸ / _ ix

qaqɬtkʷ	kʸixqaqɬtkʷ	'to be difficult, expensive' (cf. qɬtkʷ 'to be painful')
qaq̓ɬtkʷ	kʸixqaq̓ɬtkʷ	'to howl'
q̓amkʷɬ·tkʷ	kʸixq̓amkʷɬ·tkʷ	'to bless, baptize sbdy'

24. Irregular stems. Irregular stems are formed originally by one of the two processes of prefixation or reduplication, but the relationship between singular and plural is less immediately obvious and necessitates recourse to additional rules. These stems then are morphophonemically more complex than the regular and almost regular stems described thus far. Under this definition, 'irregular' applies to some categories which in a purely superficial classification (as in 1. above) are defined as regular classes because of the number of similar forms they contain.

Because irregular stems may no longer 'sound like plurals' as a result of morphophonemic change, they are especially prone to pleonastic reformation, in which an already plural stem is used as the basis for a new plural, but there are no rules restricted to this type of formation (cf. 232).

242. Some irregularities of prefixed stems.

2421. Prefix tx̌a·-: Among those stems formed by prefixation, another prefix is involved in the formation of only two related words:

yú·x̌kʷ	tx̌ó·x̌kʷ	'to eat'
yú·q̓an	tx̌ó·q̓an	'to feed sbdy'

The singular forms yú·x̌kʷ and yú·q̓an must be derived from yú·q 'string of oolichans', a major source of food.[51] In yú·x̌kʷ from *yú·q-kʷ we find the rule of preconsonantal Velar fricativization which is not restricted to the reduplicative environment and occurs here after stress:

K --> X / V́ _ C

and in yú·q̓an from *yú·q-ʔn (-ʔn causative suffix) the rules of GLOTTAL ABSORPTION[52]

C + ʔ --> Ć

and of vowel insertion, this time in a different environment:

$$\emptyset \text{ --> } v \text{ / } VC \_ \begin{bmatrix} C \\ +res \end{bmatrix}$$

followed of course by the vowel specification rule.

There are no words beginning with vowels in Nisgha, but a few where morphological alternation shows the operation of a rule of y-INSERTION:

$$\emptyset \text{ --> } y \text{ / } \# \_ \text{ } \text{ə}^{53}$$

thus yú·q is from earlier *ú·q.

The prefix recognizable in tx̌ó·x̌kʷ and tx̌ó·q̓an is tx̌a·- 'all', attested for instance in

tx̌a·n̓íɬtkʷs	'all, every' (n̓i topicalizer)
tx̌a·tax̌kʸát̓kʷ	'almighty' (tax̌kʸát̓ 'to be strong'

The prefix tx̌a·- is added to *ú·q not yú·q, hence tx̌ó·x̌kʷ is from *tx̌a·-ú·q-kʷ and tx̌ó·q̓an from tx̌a·-ú·q-ʔn. The rule

$$a + u \text{ --> } o\cdot$$

occurs in many languages, slthough there are few attested examples in Nisgha.[54]

2422. Prefix lv-:

24221. Before vowel: y/l alternation: Where a root beginning in a vowel adds the prefix lv-, the prefix vowel merges with the stressed vowel; but the unprefixed singular form is subject to the rule of y-insertion, hence the singular/plural alternation y/l. This alternation occurs in the now semantically divergent by still related forms

yúkʷ	'to be (sg.) in motion' (used mostly in composition)	lúkʷ	'to move (pl.) from one place to an other'

which derive from earlier

*úkʷ	*lv-úkʷ

24222. Before Velar: intervocalic Velar deletion:

242221. kʸ deleted between unstressed vowels: The stems

kʸipáykʷ	li·pá·ykʷ	'to fly'

can be related by invoking a rule of VELAR DELETION between unstressed vowels: one would expect the plural to be ᶜlikʸipáykʷ.

There exists a particle likʸi which has the alternate form li· in some unstressed environments, as in

?aḱú	'what'	likʸi ?aḱú	'something'
ntá́	'where'	likʸi ntá́	'somewhere'

but likʸi lip ?aḱú or li·lip ?aḱú 'just about anything'

likʸi lip ntá́ or li·lip ntá́ 'just about anywhere'

Similarly, the negative particle nikʸi is normally replaced by its alternate form ni in normal, informal speech, as in

nikʸi ni ti· kʸá́?at	> ninti· kʸá́?at	'I did not see it/him /her'[55]

The two-syllable sequence likʸi of *likʸipáykʷ is in unstressed position in the underlying form, as in the syntactic examples above. The rule then is

$$k^{\gamma} \dashrightarrow \emptyset \;/\; \breve{V} \_ \breve{V}$$ [56]

The two adjacent i's then combine into a long i·.

This rule also allows us to relate two at first glance very different stems:

kʸiṅ́tkʷ	li·ṅitimqs	'to get up (from bed)'

When the suffixes -kʷ and -imqs are removed, the remaining forms

kʸiṅ́t	li·ṅ́t

have the same relation to each other as

kʸipáykʷ	li·páykʷ

Note that both these pairs have disyllabic 'roots' with unstressed first syllable, unlike the other examples of prefixation encountered thus far.

242222. Velar deletion at morpheme boundary between unstressed and stressed vowel: A number of examples have monosyllabic plural stems beginning with l alternating with singular stems beginning with Velars. A few of these stems begin with a uvular:

qʃlkʷ	lʃlkʷ	'to wind sthg around; (pl. to lace shoes'
qʃnx̌	lʃnx̌	'(tree) to fall'
qʃsx̌kʷ	lʃsx̌kʷ	'to shut up'

most of then with front Velars:

kʸó·	ló·	'(boat, vehicle) to be moored, parked'
kʸé·ɬ	lá·ɬ	'to lie (on sthg)'

(the vowel alternation will be considered later) including the pleonastic stems, reformed by reduplication of a monosyllabic l-stem:

kʸáp	liplápˌ	*lápˌ	'to dip sthg'
kʸápin	liplápinˌ	*lápinˌ	'(aquatic mammal) to come up for air'
kʸápks	liplápks[58]ˌ	*lápksˌ	'to be high'
kʸámkʸ	limlámkʸˌ	*lámkʸˌ	'to be warm, hot'
sikʸámkʸ	silimlámkʸ		'to warm sthg'
kʸʃmkʸ	limlʃmkʸˌ	*lʃmkʸˌ	'to wipe sthg'

It is likely that the plural forms in l originally derive from forms in lvK- through deletion of the Velar. Thus lʃnx̌ ˂ *lvqʃnx̌, ló· ˂ *lvkʸó· , láp ˂ *lvkʸáp, etc. as in li·páykʷ ˂ *likʸipáykʷ above. Here, however, the vowel resulting from the merger of the prefix vowel and the root is short, not long. This can be attributed to the fact that the unstressed, undifferentiated vowel of the prefix has merged with a stressed vowel, not an unstressed one (cf. lúkʷ from lv-úkʷ, 24221).

Another difference concerns the specification of the environment for the Velar deletion rule. The environment for the deletion of q in *lvqʃnx̌ cannot simply be 'intervocalic', as there are examples of both deletion and non-deletion in this environment: for example, q is never deleted in the following proclitics (proclitics are never stressed)

caqa 'going across'

caqam 'going towards the shore'

ɬaqam 'getting into a boat'

but is deleted in these other ones:

formal:		colloquial:[59]	
paqayt	> pa·yt	> payt	'in the middle'
spaqayt	> spa·yt	> spayt	'among a group'
saqayt	> sa·yt	> sayt	'together'
waqayt	> wa·yt	> wayt	'far away'

The second set of proclitics differs from the first in that each of them is built from two morphemes, the second being qayt, which also appears in q̓amqayt 'already'. Thus the environment for the deletion of q is not just /V _ V́, but /V_+ V́, or rather in this case, /V_+ V. Note that this is probably also the proper environment for the deletion of kʸ in the preceding section, since the singular forms are prefixed stems rather than disyllabic roots, although the meaning of the prefixes has been lost and the stems are treated as unanalyzable roots.

Most of the examples here involve front Velars, with two cases of uvulars. We shall see (in 2431) that the rule is general for all unglottalized Velars:

$$\begin{matrix} K \\ [-glott] \end{matrix} \quad \text{--}> \quad \emptyset \; / \; V \_ + V$$

We now turn to the vowel alternation in

kʸé·ɬ ɬá·ɬ 'to lie' (on sthg)

According to the rules just described, the plural of kʸé·ɬ should be *ɬvkʸé·ɬ > ʕɬé·ɬ, not ɬá·ɬ. There may have been a change é· > á·. Alternately, the underlying form of the singular could be *kʸá·ɬ, with *a later rule á· > é·, perhaps caused by the fronted environment.* Note that the other roots in kʸá- belonging to this set of plurals all have short vowels. There are very few instances of a sequence Kʸá· in Nisgha, but quite a few of a sequence Kʸé·.[60] We shall see later that a rule

á· --> é·

also explains other alternations in singular/plural forms. We derive kʸé·ɬ and ɬá·ɬ then from

*kʸá·ɬ *ɬv-kʸá·ɬ

242223. Initial stress assignment: The plural stem

lí́mqs	'to grow (pl.)'

is used as the suppletive plural for the singular stem

ʔmá́s	'to grow (sg.)'

But lí́mqs is not an isolated form. It occurs for instance in the compound

q̓aylí́mqsit	'teen-agers' (lit. 'who are still growing: 'still'; -it relative)

which has the alternate form, also plural,

q̓aymáqsit

The root máqs of this word has other derivatives with a plural meaning, used as suppletives for singular stems:

hí́tkʷ	máqskʷ	'to stand up'
hí́ʔin	máqsaʔan	'to place sthg upright, in a standing position'

On the other hand, this 'root' is itself derived by suffixation from the actual root máq 'to place sthg' which is used exclusively in the singular, with suppletive plurals, as in

máq	ʔá́ɬ	'to place sthg, to put sthg away'
máq̓aʔ	ʔé·ʔ [61]	'to put things away'
máx̌kʷ (< *máqkʷ)	sí́ntkʷ	'to ride, to be a passenger'
máq̓an	sinʔí́n	'to give a ride to sbdy'

It seems clear that the meaning of both máq and máqs was originally a singular one: 'to place sthg', 'to be placed' and that máq has become specialized in the singular, máqs in the plural, hence the need for suppletion in both cases.

A prefixed plural for máqs then could be expected to be ʕlimáqs. In the actual form lí́mqs, the stress is on the prefix instead of on the root as in all previous examples, and the root vowel, instead of being the one

stressed, has been deleted. The deleted vowel is likely to have been unstressed as a result of the stress being assigned to the prefix. This represents an exception to all the examples encountered thus far, and indeed to the great majority of Nisgha words, but we shall see that many other cases show that initial stress assignment must have been the rule at an earlier time in the history of the language. (2432)

Two other verbs also have stress on the prefix. In

skʸát l-ísk'yit 'to be born'

the unstressed i in the root syllable of the plural form shows that the original vowel a must have been deleted and replaced by an unspecified vowel which breaks up the cluster, since i is predictable from the consonantal environment.[62]

The case of

kʸúkʷskʷ l-úkukʷskʷ 'to wake up'

is slightly more complex. The singular kʸúkʷskʷ has an alternant

kúkʷskʷ [63]

which seems to be the basis for the plural form. Eliminating the suffix -skʷ,[64] we are left with

*kúkʷ *l-úkukʷ

The sequence ku in Nisgha appears to be always derived from an underlying or historical kʷi.[65] Certainly there is no explanation for the u of the prefix unless the root begins with kʷ: thus

*kʷík'ʷ *l-úkʷikʷ

and eventually

kúkʷ (> kʸúkʷ) l-úkukʷ

243. 'Irregularities' in reduplication, with resulting long vowel:

2431. Partial reduplication: The regular formula for partial reduplication is

#C... --> #CvC...

All the examples given under regular partial reduplication were of monosyllabic roots, therefore the reduplicated form had one unstressed syllable before the stressed root syllable: CV́C --> CvCV́C. On the

other hand, the preceding section had described irregularities among disyllabic stems forming their plural by prefixation, where a sequence of two unstressed vowels flanking an unglottalized Velar caused deletion of that Velar and lengthening of the vowel: |VKVCV́ --> |V·CV́ (242221). If then partial reduplication applied to a disyllabic stem beginning with a Velar, we would expect deletion of that Velar: KvKVCV́.. --> KV·CV́..

This is the case in a series of words which on the surface appear to form their plural by lengthening of their first, unstressed vowel (class IV in a superficial classification), a very small category which, with two exceptions which will be considered below, is more easily described as following the rules of partial reduplication, with subsequent Velar deletion. The forms

kʸilá·ʔ	kʸilá·ʔ	<	*kʸikʸilá·ʔ	'to watch sthg or sbdy in motion'
kʸiʔnám	kʸi·ʔnám	<	*kʸikʸiʔnám	'to give sthg'

start with kʸ like kʸipáykʷ and the plural has a long vowel like li·páykʷ. The back Velar category is represented by

halá́yt	há·lá́yt	<	*hahalá́yt	'shaman, shaman's dance'
hanáʔq	ha·náʔq	<	*hahanáʔq	'woman'

and there are also examples of labialized Velars:

kʷilá	kʷi·lá	<	*kʷikʷilá	'blanket'
kʷiné·x̌kʷ	kʷi·né·x̌kʷ	<	*kʷikʷiné·x̌kʷ	'to feel cold' (from *kʷiné·q)
kʷiʔná	kʷi·ʔná	<	*kʷikʷiʔná	'to ask for sthg'[66]

The rule, then, is again

$$\underset{[-\text{glott}]}{K} \longrightarrow \emptyset \;/\; \check{V} \_ + \check{V}$$

resulting in the juxtaposition of two unstressed vowels, merging into a long vowel, hence the 'vowel-lengthening' class.

The two exceptions seem to be later formations by analogy with this pattern of short/long vowel alternation. For

kʷiní·skʷ	kʷi·ni·skʷ	'to bend over'

the vowel-lengthening formula has been extended to a word beginning with a glottalized labiovelar on the model of the surface alternation found in kʷiné·x̌kʷ/kʷi·né·x̌kʷ. The other analogical formation is

pi?ʃst	pi·?ist	'star'

It is significant that the other examples of 'vowel-lengthening', which all begin with Velars, have no alternate forms, while pi?ʃst has two other plurals, the almost regular pilpi?ʃst and the Cix-plural pixpi?ʃst: the phonological shape of this word does not fall into an easily recognizable category for plural formation, hence the various tries at a plural in conformity with various patterns.[67]

2432. Full reduplication of roots CVK with initial stress and vowel lengthening: This fairly large class (class VI of the superficial classification) appears at first to combine elements of partial reduplication, vowel-lengthening and stress-shift. This class is restricted to roots of the shape CVK (where K includes X and ?), suggesting that Velar deletion may have occurred . The general formula for this class is

CV́K --> CV́·CvK

but there are also a number of unpredictable forms, as well as pleonastic reformations. A few extra rules, including some governing vowel alternations, are required to generate the forms, and these rules also account for some otherwise very puzzling alternations in some prefixed forms, whether simple or pleonastic. They also allow us to speculate on the possible derivations of some presently non-alternating words. Such forms, then represent an earlier stage of the language than the CVXCV́K forms of regular reduplication.

24321. Roots with back vowels and back Velars:

243211. Roots Caq or Cax̌:

spáq	spá·paq	'to taste a taste'
qapáqskʷ	qapá·paqskʷ	'to struggle'
kʷstáqs	kʷstá·taqs	'to leave, abandon sthg or sbdy'
hiɬáq	hiɬá·ɬaq	'(long object) to break'
hiɬáqt	hiɬáɬaqt	' (id.) to be broken'
hiɬáq̓an	hiɬá·ɬaq̓an	'to break a long object'
kslá̓qs	kslá·ɬaqs[68]	'to kick sthg'

lá́q	lá́·laq	'(fish etc.) to live in water, to swim'
lá́qs	lá́·laqs	'to bathe, immerse oneself in water'[69]
m̀á́qs	m̀á́·m̀aqs	'(pair of) pants'

The surface formula for these forms is

Cá́q --> Cá́·Caq

We recall that the regular reduplication formula for roots of the shape CVK is

CV́K --> CVXCV́K

with Velar fricativization before consonant. It is likely that this rule has applied here too, thus

Cá́q --> *Cax̌Caq

Here, however, the Velar affected has disappeared completely, leaving only a trace of its absence in the lengthening of the vowel. Such a rule is a very general one in Nisgha, for instance

pá́x̌	'to run (sg.)'	*pá́x̌-n	> pá́·n	'run!'[70] (-n 2S)
nó́x̌	'mother'	*nó́x̌-n	> nó́·n	'your mother'
		*nó́x̌-ỳ	> nó́·ỳ	'my mother' (-ỳ 1S)
tó́x̌	'(objects) to lie, to be (put) somewhere'	*?an-lu·-tó́x̌-s	> ?anlu·tó́·s[71]	'drawer'

Note that in these examples the rule affects x̌ after stressed vowel, as in the present plural examples, showing that stress assignment on the first syllable must have occurred before fricativization.

It is likely that there was an intermediate stage á́h between the sequences á́x̌ and á́·, since long vowels often result from a combination Vh, and there is a close relation between x̌ and h.[72] The rule of GLIDE FORMATION converts x̌ to h. The long vowel a· can be derived from ah through vocalization of the glide h (cf. u· from uw through vocalization of w, 222222.D.c.). Thus the derivation of lá́·laq :

full reduplication	laq	laqlaq
stress assignment	láq	láqlaq
fricativization	"	láχlaq
glide formation	"	láhlaq
glide vocalization	"	lá·laq

The same steps, excepting fricativization, explain

náχ	ná·naχ	'(pair of) snowshoes'
ʔaχqamtáχkʷ	ʔaχqamtá·taχkʷ 73	'to be unclean in one's personal habits'
ʔnáχ	ʔná·ʔnaχ	'bait'

243212. Roots Coq or Coχ: Examples are

χpóq	χpó·paq	'crease, pleat'
χpóʔan	χpó·paʔan	'to crease, pleat sthg'
lóq	ló·laq	'to be rotten'
wóq	wó·waq	'to sleep'
noχ	nó·naχkʷ 74	'mother'

as well as the pleonastic reformation from original *nóq

naχnoq	naχnó·naq	'supernatural being'

In these forms the second syllable, which is unstressed, has a instead of the root vowel o. The presence of unstressed a before a back Velar is normal according to the vowel specification rule, if the original vowel has been deleted and replaced by an undifferentiated vowel. This deletion and replacement does not appear with roots in a, but should be postulated for them as well, as in the following comparative derivations:

	náχnaχ	nóχnoχ
χ > h > V·	ná·naχ	nó·noχ
V̆-deletion	ná·nχ	nó·nχ
v-insertion[75]	ná·nvχ	nó·nvχ
v-specification	ná·naχ	nó·naχ

able, and C_1 of the root syllable), while this form has no C_1. Continuing the derivation:

V-deletion	"	ɣ́??-ks
fricativization	"	ɣ́x̌?-ks
glide formation	"	ɣ́h?-ks
glide vocalization	"	ɣ́·?-ks
y-prefixation	yɣ́?-ks	yɣ́·?-ks
copy vowel insertion	yɣ́?oks	yɣ́·?oks

(the last two rules are not necessarily ordered at the end, unlike the previous ones).

243214. Sporadic final fricativization: The forms analyzed thus far are all very regular within their own class in that they all obey the same derivational rules. There are some slightly deviant forms. In

ʔtɣ́q	ʔtɣ́·ʔax̌	'to grab sthg'

the plural ends with x̌ instead of normally expected q. It seems that the rule q > x̌ has applied twice, the first time normally to the reduplicated syllable, the second time to the root syllable. The alternation q/x̌ in final position appears sporadically in Nisgha;[76] sometimes final x̌ can be traced to earlier q, other times q appears in what seems to be the same morphological environment. It seems that the rule q > x̌ / _ C has been sporadically extended to the final environment.

243215. Roots containing q̓:

a. Initially: The same sporadic rule q > x̌ is responsible for the final x̌ in the plurals of

q̓ɑ́q	q̓ɑ́·ʔax̌	'to be open; to open sthg'
q̓ɣ́q	q̓ɣ́·ʔox̌	'to pull on sthg (that is attached at one end: hair, roots, etc.)'

which alsodiffer from the normal type in having ʔ instead of the medial q̓ one would normally expect (ʕq̓ɑ́·q̓aq, q̓ɣ́·q̓aq). The explanation must be that the normal set of rules has applied twice, because the application of the first set yields an environment structurally identical to the original environment, and the rules reapply: for instance, the derivation

of q̓á·ʔaxˇ is:

full reduplication	q̓aq	q̓aqq̓aq
stress assignment	q̓áq	q̓áqq̓aq
fricativization	"	q̓áxˇq̓aq
glide formation	"	q̓áhq̓aq
glide vocalization	"	q̓á·q̓aq

This set yields a q̓ in medial position. We saw earlier that there is a rule of glottal absorption which converts sequences C + ʔ into glottalized consonants; conversely, a glottalized consonant can be interpreted as a C + ʔ sequence. If the medial q̓ here is considered as a sequence q + ʔ, q is again in preconsonantal position as at the beginning of the derivation, and the Velar weakening and deletion rules apply once more:

Ć - decomposition	"	q̓á·qʔaq	
fricativization	"	q̓á·χ̓ʔaq	
glide formation	"	q̓á·hʔaq	
glide vocalization	"	q̓á·ʔaq	followed by
final fricativization	"	q̓á·ʔaxˇ	

Vowel deletion and insertion rules are invisible here as the vowel normally inserted is also a. In q̓ó·ʔoxˇ, the unstressed vowel o is not a preserved root vowel, but the copy vowel inserted between ʔ and a following consonant, by a rule that takes precedence over other vowel specification rules.

b. Finally: In the following set of roots ending in q̓, there have also been two rounds of application of the Velar deletion rules, first to q, then to ʔ:

sáq̓	sá·saq̓	'to crack, to be cracked'
náq̓	ná·naq̓	'dress'
ɬóq̓kʷ	ɬó·ɬa q̓kʷ	'to swallow sthg'
móq̓	mó·maq̓	'to suck on sthg (that is inside the mouth)'

	ʔéxʷt	ʔéxʷʔexʷt	lé?p	lé?le?p
fricativization	"	"	"	léx̌le?p
glide formation	"	ʔéhʔexʷt	"	léhle?p
glide vocalization	"	ʔé·ʔexʷt	"	lé·le?p

At this point, vowel deletion and vowel insertion occur; note that if the vowel was not deleted in lé·le?p, l and ? could not merge by glottal absorption.

vowel deletion	"	ʔé·ʔxʷt	"	lé·l?p
glottal absorption	"	""	"	lé·ʔp
vowel insert. & specif.	"	ʔé·ʔuxʷt	"	lé·ʔip
vowel shifts: 1. é > ó / _ ?	"	"	ló?p	"
2. é > á	ʔáxʷt	ʔ	"	"
é· > í	"	ʔí·ʔuxʷt	"	lí·ʔip
copy vowel insertion	"	"	ló?op	"

A new vowel shift restricted to the environment before ? must be postulated to derive ló?p from *lé?p. This rule may explain the fact that there are numerous instances of Co?, but very few of Ce?,[83] in surface forms.

24323. Roots CVh: plural words and plural suffixes. A handful of words with plural meaning and a long vowel in the stem end in the frozen plural suffix -ta.[84] Apart from this suffix, their forms are derivable through by now familiar rules. The normal third person plural suffix is -ti·t. The a/i· alternation in -ta and -ti· , as in plurals of the type CeK, suggests that these suffixes too derive from a root of this type.

A. Plural words: roots *Ceh and *Coh:

a. ... yá ... hí·ta ' ... " said"'

The only forms in -ta with corresponding singulars are those of the quotative verb yá; the plural forms in hí·ta are irregular on the surface. The forms of this verb are always used with an ergative clitic pronoun between the words quoted (which are the object of the verb) and the verb:

... ni yá ' ... "I said"'

... tip hí·ta ' ... "we said"'

... mi sim hí·ta ' ... "you (pl.) said"'[85]

In the third person, the ergative clitic pronoun t̓, normally occurring before the verb, without any change, is, in this verb alone, prefixed to the stem with an intervening vowel:

tiyá		' ... "he/she said"'
	tihɬ·ta	' ... "they said"'

The stem *hɬ· of the plural hɬ·ta is regularly formed by full reduplication on the singular yá: the initial h in the plural corresponds to y in the singular by glide reduction to h (22213) and the á/ɬ· alternation points to an underlying root in *e. It is unlikely however that the underlying root is simply *yé. There is independent evidence that words ending in a vowel in present-day Nisgha originally ended in a sequence Vh, accounting for alternations such as

sá	'day'	tx̌alpx̌sá·ta	'period of four days' (tx̌álpx̌ 'four'; -ta plural)

where the preconsonantal long vowel in the compound points to earlier *sáh. In

kʷilá	'blanket'	kʷilé·m̓iskʷ	'to place the blanket on sbdy's shoulders (part of some ceremonies)' (-m̓iskʷ suffix having to do with clothing)

the alternation á/é· points to an earlier sequence *éh.[86]

The alternation yá/hɬ·(ta) then points to a root *yéh, with a rule of FINAL h DELETION. Thus we reconstruct the third person derivations (excluding the suffix -ta) as:

full redupl. & stress	yéh	yéhyeh
glide reduction to h	"	*héhyeh*
glide vocal. h > v	"	hé·yeh
vowel deletion	"	hé:yh
glide vocal. y > v	"	hé·h
final h deletion	yé	hé·
vowel shifts	yá	hɬ·

prefixation of t	t-yáʔ	t-híʔ·
vowel insert. & specif.	tiyáʔ	tihíʔ·

(the last two rules may have occurred at any point after glide reduction to h).

b. ʔóʔ·ta 'protective covers, diapers'

qóʔ·ta '(group, mass) to be all gone'

The plural stem *ʔóʔ· of ʔóʔ·ta is found in the word

kʷilksʔóʔ·tkʷ 'pocket-knife' (lit. 'self-covered, self-protected': kʷilks 'self', -tkʷ reflexive or passive)

and in the compounds

təʔóʔ·čip 'fortress' (lit. 'taking the tribe along for cover': tə- comitative prefix; čip unstressed form of čáp 'organized groupd of people, tribe')

simʔóʔ·kʸit 'chief' (lit. probably 'protects people': kʸit unstressed form of kʸát 'man, person, people')

The meaning of 'cover is also found in various derivatives of the stem *ʔú, attested in

laxʔú 'top or surface of'

ʔúmɬkʷ 'sphagnum moss', originally 'diapers' (made of this moss)(-mɬkʷ temporary suffix)[87]

ʔamʔúkʸit 'clothing' (lit. 'good for covering a person: ʔam- 'good for', from ʔáʔ·m 'to be good')

The word *?ú́ probably represents an earlier *?oh the plural of which would eventually become ?ó· by reduplication:[88]

full redupl. & stress	?óh	?óh?oh
glide vocalization	"	?ó·?oh
vowel deletion	"	?ó·?h
? > x̌ > h	"	?ó·hh
glide vocalization	"	?ó·h
final h deletion	?ó	?ó·

The stem qó· of qó·ta 'to be all gone' is also found in its alternate qó·t, used in some syntactic contexts instead of qó·ta, and in the word

?amqó· 'to remember sthg'

which does not have a separate plural form. It is probable that qó· is an original plural, formed like ?ó· by reduplication: qó· can be derived from *qóhqoh in the same way as ?ó· from *?óh?oh above.

c. Remarks: It is interesting that the only examples of the suffix -ta occur in words with roots of the shape CV· from *CVh. These are pleonastic plurals: the stem was probably too short to be felt as a proper plural, and the plural suffix remains frozen on these forms.[89]

B. Plural suffixes: -ta, -ti· < *-téh: Although the suffix -ta is no longer productive and exists only as a frozen relic on a few forms, it has not totally lost its morphological function as a plural suffix and appears largely as an allomorph of another, more widespread suffix. The use of these suffixes must be considered.

Normally, under conditions which call for the use of a third person suffix, -t is used in the singular, -ti·t in the plural,[90] for instance in dependent intransitive constructions such as

(1)	ɬa·	k̓ʏáckʷ - t	's/he has arrived'
	by now	arrive 3 (in boat, vehicle)	
(2)	ɬa·	k̓ʏisk̓áckʷ - ti·t	'they have arrived' (in several boats or vehicles)
		arrive (pl) 3P	

(6) hú́kskʷ ʔn̓ə́·y̓ ʔa - ɬ wil mə́·lukʷ - ti·
be present I PREP CONN where dance PL

'I went to a dance'

and (7) hú́kskʷ ʔn̓ə́·y̓ ʔaɬ wil mə́·lukʷ - ti· - t
PL 3

'I saw them dancing, I was there as they danced'

The morphemes -ta and -ti· then are both indefinite plural morphemes with no personal meaning. It is likely that they are allomorphs of each other, although since -ta is no longer productive, it is difficult to know what the conditioning of the alternation might have been. Phonologically the a/i· alternation is characteristic of underlying roots *CeK; a final short vowel must have once been followed by h: the only evidence missing for a derivation of both -ta and -ti· from *-teh is that of stress, but such an alternation could not have occurred in an unstressed suffix, the vowel of which would have been lost: the presence of the vocalic alternation is itself evidence that the suffix must have once been stressed.

In previous cases of a/i· alternation, the long vowel occurred in forms where a Velar had been deleted before a consonant. We note however that -ta is found mostly at the end of words that do not normally take suffixes, while -ti· is found mostly (though not exclusively) in association with the suffix -t, a fact which may explain the divergence:

	-té́h	-té́h-t
glide vocalization	"	-té́·t
final h deletion	-té́	"
vowel shifts	-tá́	-tə́́·t

followed by stress reduction on the suffix. But -ti· is also used finally, and there are other cases of stressed or unstressed final -i·, as in tə́́· 'indeed, too', nə́́· 'no, to say no', and the co-occurring elements wi-...-i· 'to look like a ...'. Whatever the reason for the differentiation, there is no doubt that -ta and -ti· must derive from a single morpheme *-té́h.

25. More irregular plurals.

251. Irregularities of lv- plurals.

2511. yá́xʷ lə́́·li·xʷ 'to hide, to hide sthg'

The plural is formed by reduplication on an earlier plural formed by prefixation. The á/í· alternation points to an original root in *e, and the long vowel of the original plural *lí·xw shows that y must belong to the root and has not been added by rule (as for instance in yúkʷ/lúkʷ). The derivation is:

stage 1: prefixation	yexʷ	lvyexʷ
vowel specification	"	liyexʷ
stress assignment	yéxʷ	líyexʷ
vowel deletion	"	líyxʷ
glide vocalization	"	lí·xʷ
vowel shift é > á	yáxʷ	"
stage 2: full reduplication	"	li·xʷli·xʷ
stress assignment	"	lí·xʷlí·xʷ
glide release deletion	"	lí·xli·xʷ
glide formation	"	lí·hlí·xʷ
glide vocalization	"	lí·li·xʷ

At this point, deletion of the unstressed vowel would normally occur, followed by insertion of the vowel u before xʷ.[94] There are other examples where an unstressed long vowel has been deleted, probably after a vowel shortening rule (eg. ʔiɬéɬaʔ, 2522). It is possible that the second í· remains by analogy with other plurals with two long vowels.

2512. xʷtákʷ lítuxʷ 'to shoot'

The obsolescent form lítuxʷ can be related to the singular xʷtákʷ as a prefixed plural with stress on the prefix.

The change kʷ > xʷ at the end is the sporadic fricativization also found in ʔó·ʔaǰ, qá·ʔaǰ and qó·ʔóǰ above (243214, 243215). The underlying form of xʷtákʷ is *xʷtekʷ. However, it is unlikely that the underlying form of lítuxʷ is *lvxʷtekʷ, which would have resulted in ʕlú·tukʷ , not lítuxʷ. The singular *xʷtekʷ is a prefixed form. The prefix xʷ- occurs in very few words and is no longer productive. Its meaning is undetermined. The plural lítuxʷ is formed on the bare root, without the prefix. The derivations are

2513. x̌pič́áxʷ laxpi·č́ʔ·xʷ 'to be afraid'

The plural is formed by prefixation on an earlier plural. The word is obviously a compound, but although the surface simgular form suggests the two elements x̌pi 'halfway up' and č́áxʷ 'to be much, impressive', the meaning of this combination is nonsensical, and more important, no rules exist that could derive č́ʔ·xʷ from č́áxʷ. On the other hand, if the second member of the compound is ʔáxʷ, from *ʔexʷ, the plural ʔʔ·xʷ is expected according to the rules of full reduplication, with two rounds of Velar weakening:

full redupl. & stress	ʔéxʷ	ʔéxʷʔexʷ
xʷ > x > h > v	"	ʔé·ʔexʷ
vowel deletion	"	ʔé·ʔxʷ
ʔ > x > h > v	"	ʔé·xʷ
vowel shifts	ʔáxʷ	ʔʔ·xʷ

If, as has been suggested above for the pair ʔáxʷt/ʔʔ·ʔuxʷt 'porcupine'/'warriors', common meaning 'armed' (243221.A.b.), ʔáxʷ means some sort of sharp weapon, the meaning of the compound may have to do with cowardice in battle, since the present meaning is 'to be afraid'. The probably etymology is *ʔax̌-pác-ʔáxʷ 'not-bearing-arms', hence 'coward'.

The long i· of the second syllable of the plural laxpʔ·č́ʔ·xʷ is more difficult to explain except by analogy with other plurals with two long vowels, as in

	x̌skʷiné·qs	laxskʷi·né·qs	'to feel cold'
	k̓ʷinʔ·skʷ	k̓ʷi·ni·skʷ	'to bend over'
2514.	x̌skʸá·kʸ 'bald eagle'	laxskʸʔ·kʸ	'(member(s) of) the Eagle clan'
	*kʸé·kʸ 'water-bird?', in	ʔamkʸé·kʸ	'duck species'
		simkʸé·kʸ	" "

The plural form laxskʸʔ·kʸ is a pleonastic formation by prefixation to the original plural form *x̌skʸʔ·kʸ. The prefix x̌s- means 'resembling, imitating': bald eagles live by the water and eat fish even though they are not really water birds. Abstracting this prefix leaves kʸʔ·kʸ, which must be derived from a singular *kʸáḱʸ, from root *kʸekʸ, through normal rules. There is no attested form kʸáḱʸ, but the same rules applying to a root *kʸakʸ would yield the attested form kʸé·kʸ:

	kʸékʸ	kʸékʸkʸekʸ	kʸǻkʸ	kʸǻkʸkʸakʸ
kʸ > x > h > v	"	kʸé·kʸekʸ	"	kʸǻ·kʸakʸ
vowel deletion	"	kʸé·kʸkʸ	"	kʸǻ·kʸkʸ
kʸ > x > h > v	"	kʸé·kʸ	"	kʸǻ·kʸ
vowel shifts	kʸǻkʸ	kʸí·kʸ	"	kʸé·kʸ

The word laxskʸí·kʸ, then, is the plural of an unattested form *x̌skʸékʸ, while the current kʸé·kʸ found in composition is the plural of an equally unattested form *kʸakʸ. As many names of animals commonly seen in groups are morphologically plurals, it is not surprising that the original plural forms of these words should be the only ones that are in use. However, being monosyllabic, they do not 'sound plural', hence the formation of a new, undisputably plural prefixed form to designate a group of people, the members of the Eagle clan.[95]

The singular form x̌skʸǻ·kʸ requires an explanation; one would expect instead either *x̌skʸǻkʸ (a singular form) or *x̌skʸí·kʸ (a plural form). In words formed by full reduplication of this type, a long vowel is indicative of a plural form. The sequence kʸǻ·kʸ does appear in the derivation from root *kʸǻkʸ above, just before the application of the vowel shift *ǻ· > é· . This rules does not affect words beginning with a back Velar. Tne form kʸǻ·kʸ does not begin with a back Velar, but x̌skʸǻ·kʸ does, since the prefix x̌s- begins with x̌. This fact may have been enough to prevent the application of the rule ǻ· > é· .

252. Irregularities in reduplicated plurals.

2521. ʔiɬé·ʔ 'blood, to bleed (sg.)' ʔiɬé·ɬaʔ 'to bleed (pl.)'

A plural in é· normally corresponds to a singular in ǻ from *a but the fact that the stressed sequence ɬé·ʔ in the singular has a long vowel shows that it is not an original root,[96] but has been simply treated as such for plural formation. Thus we derive ʔiɬé·ɬaʔ from ʔiɬé·ʔ by the normal reduplicative rules, plus one of VOWEL SHORTENING:

full redupl. & stress	ʔiɬé·ʔ	ʔiɬé·ʔɬe·ʔ
ʔ > x̌ > h > v	"	ʔiɬé·ɬe·ʔ
vowel shortening	"	ʔiɬé·ɬeʔ
vowel deletion	"	ʔiɬé·ɬʔ

vowel insertion and spcif. " ʔiɬéˑɬaʔ

2522. ʼnákʷ 'to be far, (time) to be long' nʼnɬˑɬukʷ 'to be long (pl.)'

The plural form is pleonastic, built by partial reduplication over an earlier *ʼniˑɬukʷ attested in

ʼnákʷs ʼnɬˑɬukʷs 'to reach over, to stretch an arm' (lit. 'to lengthen oneself': -s reflexive)

One would expect the plural of ʼnákʷ to be ʼnɬˑʼnukʷ, which is attested in Boas 1911 and in the alternate plural of ʼnákʷs: ʼnɬˑʼnukʷs .

The ɬ of ʼnɬˑɬukʷs and nʼnɬˑɬukʷ could be attributed to a rule ʼn > ɬ; alternately, ɬ could be part of an original alternation

*ɬákʷ *ɬɬˑɬukʷ

traceable ultimately to a root *ɬekʷ, with a rule ɬ > ʼn before stressed vowel. There are a few instances of alternation between ʼn and ɬ, as between n and l.[97] The proclitic ni· 'down on sthg' is pronounced ɬiˑ or liˑ by some persons in Greenville and Kincolith, as well as in Coast Tsimshian. Many CT plurals are formed by reduplicative methods similar in principle to the Nisgha ones (Dunn 1980). The plural of the Tsimshian word kʸiʼnám 'to give sthg' (identical to the Nisgha word) is formed by full reduplication, with one irregularity: the plural is kʸilkʸiʼnám not kʸinkʸiʼnám (though kʸinkʸiʼnám is given by Boas). The form kʸilkʸiʼnám is derived either from (a) *kʸinkʸiʼnám, with a rule n > l before consonant, or perhaps more likely, in unstressed syllable, or from (b) *kʸilkʸiɬám, with a rule ɬ > ʼn before stressed vowel.

Although the evidence is meager, a rule ɬ > ʼn may be the most likely hypothesis: there are no stressed words starting with l in present-day Nisgha; the phonological element ɬ is common only in final position; intervocalically, it always derives from the juxtaposition of l and ʔ (as in liˑɬip above, 243222.B., and piɬɬst, see note 67). It is probably then that the ɬ of nʼɬˑɬukʷs and nʼnɬˑɬukʷ is original, and that the alternate plural nʼɬˑʼnukʷ is a later reformation on the model of ʼnákʷ.

26. Conjectural plurals: These are forms which must have been plurals originally, although they have lost their relationship to a singular either through phonological change or through semantic differentiation.

261. x̌ʼná 'to understand words, language' nax̌ʼná 'to hear sthg'

The form naxˇ'nˇá used in Nisgha for both singular and plural sounds almost like a regular reduplicative plural (shape CVXCV́.. with deglottalization of the reduplicated resonant). The x̌ of the unstressed syllable could be justified by supposing an underlying h as the C_2 of the root, thus *n'áh, or perhaps *n'éh.

In fact, this form must indeed have originally been a plural, but not a reduplicative one. It must have been the plural of the singular form x̌'nˇá which has a different but related meaning.[98] The Gitksan equivalent of naxˇ'nˇá is la x̌'nˇí which has the lv- plural prefix normally found on words beginning with a Velar prefix, such as x̌'nˇá. Interchange between l and n, with a rule l > n initially, is not surprising in Nisgha (cf. 2522). The change l > n responsible for naxˇ'nˇá instead of *lax̌'nˇá was probably helped along by the resemblance of the resulting form to a regular fully reduplicated plural.

A reconstruction

*x̌'né́h *lax̌'né́h *'to hear sthg properly'

accounts for both the Nisgha and Gitksan forms.

262. qís 'hair, horns' *lís root of

lísk^{w} 'to hang sthg pl.'
lislisk^{w} '(pl.) to be hanging'

The forms lísk^{w} and lislísk^{w} are used exclusively in the plural, serving as suppletive plurals for y'áq and y'ax̌'yáq respectively. These plural forms must have been derived from a singular by lv-prefixation. We saw that plural forms of the shape lVC may correspond either to singulars in KVC (as in línx̌ from qínx̌ '(tree) to fall', 242222) or in yVC, from *VC (as in lúk^{w} from yúk^{w} < *uk^{w} 'to move, 24221).

There is no form *yís, but there is qís 'hair', which fulfills both formal and semantic criteria for a connection with*lís: straight hair especially hangs down. Note that although qís, like English 'hair', refers mostly to a whole head of hair, it can also refer to a single hair. The meaning of its derivative qísk^{w}'to be thin, narrow' obviously supposes a comparison with a single hair, not the whole mass. The original meaning of qís then must be 'to hang down'; the meaning has become specialized in the singular for 'hair', but has been preserved in the plural, necessitating recourse to a suppletive singular, y'áq.

263. hánx 'to be thin' lánx found in
han(h)ánx t'imlánx 'neck'
'(1) pl. of hánx
(2) temples of the head'

The sequence lánx found in ʔimlánx 'neck' could be the original plural of hánx'to be thin'. The word han(h)ánx 'temples', also the plural of hánx, refers to a part of the head that is thinner than the lower part. The neck of course is even thinner. The prefix ʔim- in front of lánx occurs in several other words designating parts of the body, for instance

ʔimqís	'head'	(qís	'hair')
ʔimkʸóʔ	'spine'	(kʸóʔ	'backbone')

This prefix seems to be the reduced form of ʔá·m (ʔá· 'to sit, exist', -m attributive) and to mean 'place of'. If the analysis of lánx is correct, ʔimlánx means literally 'place where they (=the two sides of the body) are thin'.

264. *lítiks found in

lu·lítiksaʔ	'to do the laundry'
lixlítiks	'to wash things in a tub: sheets, garments, etc.'
lu·lítiks	'id.', suppletive plural of lu·má·ks 'to wash sthg (sheet, garment, etc.) in a tub'

The proclitic lu· 'inside' refers to the tub in which things are washed. The suffix -aʔ is a detransitivizer, and lixlítiks is a C - reformation on original lítiks, which must be a prefixed plural. There is an interesting relation between the plural lítiks and the suppletive singular má·ks.

Both má·ks and lítiks end in the suffix -ks or -iks which occurs in some instances with words having to do with water, and probably derives from ʔáks 'water': hátiks'to swim', kʸó·ks 'to float', ptálks 'rising tide', kʷánks 'spring, well', yóʔoks 'to wash sthg (hands, dishes etc.), ciɬciɬiks 'ripples in the water'. The root *lít of lítiks must be the plural of a singular of the shape yVC or KVC. Gitksan has this root in the word lítxʷ, the plural of hítxʷ 'to stand', which corresponds to Nisgha hítkʷ 'id.'. The root *hít is also evidenced in hítin (suffix -ʔn causative) 'to place sthg in a standing position'. Nisgha

In Nisgha the root *hít is specialized in the singular. The plural is supplied by máqs, now a plural stem, which must originally have been a singular (24222). This stem is derived from máq 'to place sthg', now specialized in the singular (ibid.). The form má·ks used as a suppletive for the plural lítiks probably derives from *máq-ks (perhaps from *máq-ʔáks)[99] through preconsonantal Velar weakening. Thus both má·ks and lítiks (from *lv-hít-ʔáks) probably mean 'to place sthg in water', hence 'to wash it'.

kʸə́lp	'testicles'	kʸlʔil	'two (objects)' (common meaning 'pair')[100]
kʸə́t	'man, person'	ʔkʸiyɬtkʷ	'twenty' (lit. 'one man')[101]

Although the conditioning is not clear, since the suffixes are varied, and the alternation also occurs under other circumstances, there is no doubt that yə́c and*lɬc are related, and that*lɬc must be a plural form.

266. yə́l	'to turn, stir sthg'	*lɬl	root of
		laxlɬlp	'to roll'(cf.2211)
		lɬlʔin	'to make sthg roll'

The probability of a singular/plural relation between yə́c and lɬc suggests a similar relation between yə́l and the root lɬl found in words denoting circular motion.

The form laxlɬlp is the prefixed plural of a stem *xlɬlp, itself composed of the prefix x- and the stem *lɬlp also found in lɬlʔin (with causative suffix -ʔn). The ending -p is not productive, and plays no observable graommatical or semantic role, but it must have had a meaning at an earlier time and is found in a small number of words, some of which seem to be related to words without -p (eg lə́ʔop 'stone, rock', lə́x 'rocks in water, reefs').[102]

267.	ʔcɬn	lə́mcax lamʔax	'to enter'
	ʔcim (proclitic)	'in, inside of'	

The singular and plural forms appear at first to be totally suppletive. But the Gitksan equivalents

ʔcɬn	ʔcɬmaxs	'to enter'

with a plural formed by suffixation, show the alternation n/m also found between ʔcɬn 'to enter' and ʔcim 'in'. There must be a rule m > n operating under certain circumstances.[103] We can take then *ʔcɬm as the singular form.

The initial ʔc is found in a number of words with the common meaning of 'inside':

ʔcə́ʔkʸ	'plate, bowl'
ʔcə́ʔl	'face, eyes' (*ʔə́ʔl 'eye')
ʔcə́·ʷ	'the inside of..'

c̓iláyxʷ	'to visit sbdy'
c̓iláˑskʷ	'canyon'
c̓istátx	'netting needle', prob. orig. 'nettle fiber' (used for making nets; státx 'nettles')

We can analyze *c̓im then as the prefix c̓v- and the root *ím.

The Nisgha plural lámcaǰ or lámc̓aǰ ends in the suffix -caǰ or -c̓aǰ; the latter is found in several other words, as in húmc̓aǰ 'to kiss sbdy', qúlc̓aǰ 'to carry sthg on one's shoulders'.[104] Removing this suffix leaves *lám where we recognize the lv- prefix, leaving *ám.

The singular then is *c̓v-*ím, the plural *lv-*ám, where *ím and *ám derive from underlying *em, although the vowel alternation process is not well understood (it is the reverse of that found in yác/líc, 265, and yál/*líl, 266).[105] Note that this is yet another example of an underlying root of the shape VC rather than the usual CVC.

268. ɬimóˑ, ɬimóˑm 'to help sbdy'

The single form ɬimóˑm for both singular and plural is general in Nisgha; ɬimóˑ is obsolescent, although it is normal in Gitksan. The prefix ɬi-, of undetermined meaning, also appears in other forms such as ɬipál/ɬipilpál 'to rub, massage sbdy', ɬimóˑl/ɬimilmóˑl 'to wrap sthg or sbdy', discussed under regular reduplication (222221). The rest of the stem, móˑ or móˑm, may be related either to móˑx 'to act, be, seem like sbdy else' (to help somebody often means to perform the same activity) or to móˑtkʷ 'to be safe, rescued, cured' (often thanks to another person's help), or both.

It is very unlikely that the final m of ɬimóˑm is a suffix, but the presence of two identical consonants flanking a long stressed vowel suggests a resemblance with plurals such as those in

nóǰ	nóˑnaǰ(kʷ)	'mother'
móq̓	móˑmaq̓	'to suck on sthg in one's mouth'

discussed above (243212). Here, however, there is no unstressed final syllable and no Velar at the end. But there is one Velar that does not appear finally but yet must be postulated in reconstructing some forms, namely h. In the present case, the root syllable móˑ of móˑx, móˑtkʷ and ɬimóˑm may be derived from original *móh. Application of the rules of full reduplication as in the examples above gives

full redupl. & stress	ɬimɔ́h	ɬimɔ́hmoh
glide vocalization	ɬimo·	ɬimɔ́·moh
vowel deletion	"	ɬimɔ́·mh
final h deletion	"	ɬimɔ́·m

It is probable then that ɬimɔ́· was originally the singular form, ɬimɔ́·m the plural form, and that as in so many cases, phonological rules have so changed the shape of the plural form that it is no longer recognizable as such, and has taken over the singular role as well.

269.	ɬkú·ɬkʷ	'(one's) child; to bear a child'	ɬkʸɬ	'(one's) children; (animal) to bear young'
	ɬkú·ẘs	'puppies'		
	ɬku	'little' (proc.)	ɬkʸɬ·kʷ	'(woman's) sister'
	ɬkú·l̓	'to be small (inside)'		

The vowel alternation in these words is not found in any other singular/plural correspondence. Another unusual feature of the pair ɬkú·ɬkʷ/ɬkʸɬ is that here a long vowel is associated with the singular, a short one with the plural. As we shall see though, these features are only incidental.

Both ɬkú·ɬkʷ and ɬkʸɬ must be related to the unstressed form ɬku 'little'. The long preconsonantal vowel of ɬkú·ɬkʷ, found also in ɬkú·ws and ɬkú·l̓, corresponding to short final vowels in ɬku and ɬkʸɬ, points to a root ending in h. Similarly ɬkʸɬ·kʷmust be formed on ɬkʸɬ, and h in the underlying form would explain the long vowel of ɬkʸɬ·kʷ. We reconstruct then two forms, *ɬkuh (hence ɬku, ɬkú·ɬkʷ, ɬkú·ẘs and ɬkú·l̓) and *ɬkʸɬh (hence ɬkʸɬ and ɬkʸɬ·kʷ).

There is some internal evidence for a relationship between ɬ and ú in Nisgha, for instance kʷstɬns 'five' can be traced to *kʷstáq-ʔún-s 'leaving aside one's hand';[106] and comparison with other members of the Tsimshianic family shows that there are cases of correspondence between ɬ in Nisgha and ú in the other languages, for instance

N	kʸɬp	G	kúp	'to eat sthg'
	pil̓ɬst		pilʔúst	'star'
	qal̓ɬ		qalʔú	'to drop sthg'
	lɬsims	CT	klúsms	'the Nass River'
	titɬls		tiltúls	'to be alive'[107]

It is probable that at least some ɬ́'s in Nisgha derive from ú́, rather than the opposite. This is especially likely in N kʸɬ́p, G kú́p. As we saw above for kʸú́kʷskʷ/lú́kukʷskʷ (242223), a sequence ku always derives at some point (more or less remote) from a sequence kʷ + front vowel, thus *kʷe. A series *kʷép > kú́p > kɬ́p (= kʸɬ́p) seems reasonable. A similar series must account for ɬkʸɬ́, from *ɬkʷéh: thus *ɬkʷéh > ɬkú́h > ɬkɬ́h > ɬkʸɬ́.

In the proclitic ɬku, which is always unstressed, the change ú́ > ɬ́ which seems restricted to short stressed vowels did not occur. Proclitics are always used in front of another word and therefore cannot occur finally, so that the final h of *ɬkʷeh would always have been preconsonantal here as well as in ɬkú·ɬkʷ, ɬkú·ẃs and ɬkú·ɬ́, and result in a long vowel, which was probably shortened in pre-stress position. Thus we can reconstruct the derivations of ɬku and ɬkʸɬ́:

	ɬkʷeh #C	ɬkʷéh
we > u	ɬkuh #C	ɬkú́h
glide vocalization	ɬku· #C	"
ú́ > ɬ́	"	ɬkɬ́h
final h deletion	"	ɬkɬ́ = ɬkʸɬ́

The word ɬkú·ẃs '(litter of) puppies' should probably be analyzed as *ɬkʷéh-ʔs (-ʔs antipassive suffix, here with nominal meaning), literally 'a bearing of young', with stages *ɬkʷéhʔs > ɬkú́hʔs > ɬkú·ʔs > ɬkú·ʔus > ɬkú·ẃs (the last stage by a rule ʔu > ẃ, a form of glottal absorption). Here as in ɬkʸɬ́, the root *ɬkʷéh refers to a plural, not a singular. The meaning is 'to bear young/children; young/children'. Among these words referring to the bearing of offspring, the only singular is the suffixed form ɬkú·ɬkʷ. The suffix -ɬkʷ has the meaning 'temporarily, from time to time, at intervals'. The original meaning of *ɬkʷéhɬkʷ then is 'to bear children at intervals', that is, one at a time, hence the singular meaning 'to bear one child'. In a household, the contrast was between women, who bore children one at a time, and dogs, the only domestic animal, who bore many young at once, hence the specialization of the words ɬkú·ɬkʷ and ɬkú·ẃs.

The meaning 'small, little' evidenced in the singular ɬku (which has a suppletive plural ɬ́upa) is therefore a derived one. The word ɬkú·ɬ́ 'to be small (inside)' is formed on the intermediate form *ɬkuh rather than the underlying root *ɬkʷeh. The meaning differentiation *ɬkuh 'small' versus *ɬkih 'children' must have occurred after the vowel shift ú́ > ɬ́. (The suffix at the end of ɬkú·ɬ́ is the completive suffix -ʔl).

As for ɬkʸʃ·kʷ '(woman's) sister', it is obviously built on *ɬkʸʃh, the underlying form of ɬkʸʃ. The word probably meant originally 'having (as opposed to 'bearing') children' (one of the meanings of the suffix -kʷ is 'having'). In traditional Nisgha society, the children of sisters are considered to be as closely related as the children of one mother, and a mother's sisters are referred to as mothers as well. A sentence like ɬkʸʃ·kʷ n̓ʃti·t 'they (n̓ʃti·t) have children (in common)' must have been the way to describe the relation between two adult sisters.[108]

3. Historical Interpretation

31. Evolution of the Nisgha language. The categories of plural formation described above must belong to three distinct stages of evolution of the language. These can be called:

- Stage I: Early
- Stage II: Classical
- Stage III: Modern

Stage I: Early: Plural built on the root: Words are formed of roots of the shape (C)VC, including CVh, with vowels e, a or o. A consonantal prefix or suffix or both may be added to the root, but does not affect it phonologically. There are two methods of plural formation: full reduplication and prefixation with |v-, probably with a semantic difference, although prefixation seems to be the preferred method for roots VC. Stress is on the initial (or perhaps the penultimate) syllable.

Towards the end of the period, full reduplication of roots ending with Velars causes these consonants to be in preconsonantal position, leading to their eventual disappearance; instead, long vowels occur, and there are plurals of the shape CV̓·C(v)K, KV̓·K and KV̓·. Long vowels also result from intervocalic Velar weakening, causing prefix lengthening and shapes CV̓·CV̓. Vowel shifts occur, moving short and long vowels in opposite directions, higher or lower. As a result of these changes, many plurals and singulars are no longer transparently related to each other, some have drifted apart semantically, and the stage is set for morphological reformation.

Stage II: Classical: Plural built on the stem: This is the stage represented by the most regular of the categories described above, which accounts for the majority of forms.

As a result of Velar weakening in the previous period, there are numerous stems with long vowels as well as some ending in short vowels. The two methods of full reduplication and prefixation with |v- are still the main ones, but as a result of stress-shift to the second or last syllable, many plurals with only one syllable are no longer felt to be appropriate forms. To this period belong the numerous pleonastic reformations with the shapes |vC|V̓C, |vXCV̓·CvK and CvXCV̓·CvK, as well as the generalization of the use of |v- before stems with Velar prefixes.

As a result of the stress shift, which minimizes or deletes the first vowel, and the loss of semantic identity of consonantal prefixes and suffixes, which become fused with the root, there is some doubt as to which of the consonants of a 'root' beginning or ending in clusters are to be reduplicated, giving rise to several formulas, for instance sKV̊C , svXsKV̊C instead of sKVCKV̊C. The rules of vowel insertion and deletion which regulate the formation of clusters probably contribute to the new morphological formations. Preconsonantal velar weakening still occurs in the reduplicated syllable, now unstressed, causing preconsonantal fricativization.

New forms of pluralization are also used:
- prefixation with tx̌a· 'all';
- partial reduplication, normally characteristic of the imperfective aspect.

Stage III: Modern: Plural built on the whole word: This period again extends the reduplicative formula to more and more non-canonical forms until a new type is evolved. This new extension of the reduplicative method prefixes a reduplicated syllable no longer to roots or even stems, but to the whole word, even including some proclitics. The syllable Cix- normally the reduplication of roots ending in front Velars, is extended to roots containing various non-back consonants, as well as to roots, stems and words starting with such consonants. Eventually the prefix Cix- comes to have independent existence as hix-. Where previous rules made the quality of the prefix vowel dependent on the surrounding consonants, the i associated with x causes a back Velar to reduplicate as a front Velar.

This new pattern of plural formation gives rise to numerous reformations, as all words, including non-native borrowings, can be fitted into the new pattern. The diversity of surface correspondences now available being somewhat confusing, several words have concurrent plurals built on different principles, with the simpler Cix-plural gaining ground.

Prefixation also holds its own, this time with the extension to the plural of the distributive or abstract prefix qa-.

Thus, the present chaotic situation with many classes and a large number of irregular forms is the result of a series of historical circumstances, with the clearly defined morphological formations of one period being gradually eroded by phonological change, with subsequent reinterpretation and new morphological rules, again to be disguised by phonological change. But the same tendencies recur throughout the various periods: prefixation and reduplication are again and again used, and Velar weakening keeps happening, under slightly different forms. In this respect the history of Nisgha plural formation does not differ from the history of any other language.

32. Importance of this study and avenues for further research. Only brief indications can be given here.

321. Internal reconstruction: The study of the most regular alternations has provided the basis for analyzing superfic ially more irregular forms and reconstructing their regular origins, and for discovering probable singular/plural relationships in some cases between forms that at first sight seemed unrelated either morphologically or semantically, or both. This was done through the application of the rules established through the study of incontrovertibly related stems. It will now be possible to apply the rules discovered by these methods to other forms of the language, in order to reconstruct earlier stages in the development of the Nisgha language. For instance, the ák^{y}/ƛ· alternation found in

náks	nƛ·niksk^{w}	'spouse; to be married'
sáʔk^{y}	sƛ·siʔk^{y}k^{w}	'to stretch sthg'

is also found in

ʔák^{y}	'to forget sthg'	ʔƛ·sk^{w}	'to forget things, to be forgetful'

and on the model of the reconstructions

*nék^{y}-s	*nék^{y}nek^{y}-s

we can also reconstruct

*ʔék^{y}	*ʔék^{y}-ʔsk^{w}	(-ʔsk^{w} antipassive)

To mention only some general facts, the knowledge that the oldest reconstructible Nisgha roots all have the shape (C)VC, that long vowels in plurals always derive from a sequence involving a Velar, either pre-consonantally or intervocalically, and that most glottalized consonants (perhaps all) derive from a sequence C + ʔ, can now be applied to a wide range of forms, if not with full confidence, at least with some degree of plausibility. As was shown especially in the section on conjectural plurals (26), the narrowing down of possibilities through knowledge of the likely rules actually opens up new perspectives and suggests otherwise undreamed-of relationships.[109]

Detailed comparison with Gitksan can then establish with precision the areas of divergence between the two languages and perhaps the timing of these divergences (in terms of the stages sketched above), and lead to the reconstruction of Proto-Interior Tsimshianic.

322. Comparison with Tsimshian (Coast and Southern): Even a very superficial look at Coast Tsimshian plural forms (Dunn 1980) shows that a large proportion of them have cognates in the Interior languages and that the basic methods of prefixation and reduplication are the same, as

one would expect from the pervasiveness and early origin of these methods, perhaps dating back to the protolanguage. But as in Gitksan, the same methods often do not apply to the same forms, and the results are sometimes quite different, as in

N	hanáq̓ 'woman'	há·náq̓	*ha-hanáq̓	(partial reduplication affecting the stem)
CT	hanáq̓	hanáˑnaǰ <	*ha-náq̓naq̓	(full reduplication affecting the root)

CT appears to have been historically quite innovative in comparison with the Interior languages, especially in the evolution of consonants, and there are many cases where CT words are opaque while Nisgha and Gitksan cognates are still transparently analyzable, as in

N ć̓áw̓aqs < ć̓áxʷ-ʔq-s, G ć̓áw̓aǰs CT ć̓óˑǰs 'shoes'

so that reconstruction of the consonantal system of the protolanguage is best approached through analysis of the Interior languages.

On the other hand, CT has a substantially different and more complex vocalic system. A single Nisgha vowel often has different and unpredictable reflexes in CT, contrasting in similar environments, showing that besides vocalic evolution in CT there must have been phonological convergence in Nisgha (as in the shift *é > a̲ obscuring the earlier contrast between *é and *a̲). The Interior languages then cannot be taken as representing an earlier stage in the development of the Tsimshianic family, although they give indispensable clues. All the languages, including what can still be gathered of the nearly extinct Southern Tsimshian (Dunn 1976) will have to be taken into account. But the facts gathered about the Early stage reconstructed for Nisgha here ((C)VC root, three-vowel system) are likely to hold true in large part for the ancestor of CT and ST as well.

Detailed comparison of Nisgha and Gitksan with Coast and Southern Tsimshian then should establish a number of reliable correspondences for both vowels and consonants, and lay the basis for reconstructing Proto-Tsimshian (the ancestor of Coast and Southern Tsimshian), for establishing the place of Southern Tsimshian in the Tsimshianic family, and ultimately for the reconstruction of the Proto-Tsimshianic ancestor.

323. Areal and phylogenetic research: Finally, such reconstructions should provide a basis for comparison with other languages of the area and for establishing potential phylogenetic affiliation. In particular, it may be possible to come closer to providing a more definite answer to the question of the Penutian connection, first propounded by Sapir (1921-23:59), which seems never to have been either substantiated or disproved (Silverstein 1977).

APPENDIX I
Phonological sketch of Nisgha

Consonants:

	NON-VELARS				VELARS		
	labials	dentals	sibilants	laterals	front velars	labio-velars	back velars
glott. stops & affricates	p̓	t̓	c̓	ƛ̓	k̓ʸ k̓	k̓ʷ	q̓
plain stops & affricates	p	t	c		kʸ k	kʷ	q
fricatives			s	ɬ	x	xʷ	x̌
	SYLLABICS				GLIDES		
plain resonants	m	n		l	y	w	h
glottalized resonants	m̓	n̓		l̓	y̓	w̓	?

Remarks: - Non-glottalized stops and affricates are voiced before vowels, voiceless before consonants and finally. In addition, intervocalic q is usually a voiced fricative γ.

- Palatal kʸ and plain k (glottalized or not) contrast only before u.

- There is normally a short voiceless copy vowel after ? in final position.

- The following abbreviations are used in the text:

C̓	any consonant
C̓	any glottalized consonant
Cs	C̓, C, C + s
K	any Velar
X	any Velar fricative
Cʸ	any element in the Front Velar column
Cʷ	" " " " Labiovelar "
C̄	" " " " Back Velar "
R	any resonant
R̓	any glottalized resonant

- The glides h and ʔ sometimes function as C̄, sometimes not. The abbreviation C̄ includes them unless the text mentions otherwise.

Vowels: - long:

i· ʉ·		[i·] [ɷ·]
e· o·		[ɛ·] [ɔ·]
a·		[æ·]

- short: stressed:

í ú		[ɪ] [ʊ]
é ó		[ɛ] [ɔ]
á		[æ]

unstressed:

i ə u		[ɪ] [ə] [ʊ]
a		[ɐ]

[ə] varies considerably inside a triangle formed by [ɪ], [ɐ] and [ə]. Younger speakers ten towards the [ɪ] pole more than older speakers, who tend to have a more central vowel.

Note: As there are very few cases of contrast between í and é, ó and ú, and as the quality of unstressed vowels is largely predictable from the consonantal environment (though not always), one could make a case for a vocalic system with only three short stressed vowels é, á and ó and one unstressed vowel ə with predictable allophones, a system which must be postulated for an earlier stage of the language. But the sustem of five short stressed vowels and four unstressed ones adopted here is closer to native speakers' perceptions and allows for simpler distributional statements in the present state of the language.

Remark on consonant-vowel interaction: The unstressed sequence wi, usually in kʷi, is in free variation with u in the speech of many persons, u being the more rapid, colloquial pronunciation, wi the more deliberate pronunciation.

APPENDIX II
Suppletive stems

(Some of the individual stems have other meanings for which they are paired with regular stems. Stems mentioned in the text are marked with T).

páx̌	qúl	'to run'
tá·wiɬ	sákskʷ	'to leave'
ʔá·	wán	'to sit, to exist'

ʔáˑtkʷ	wántkʷ	'to be placed, seated'
ʔáˑt	wánt	'to place, sit sbdy; (pl) to plant things'
T cákʷ	T yác	'to kill, slay sbdy'
ʔúˑskʸ	T sisúˑs	'to be small, little'
kʸát	T ʔíˑʔuxʷt	'man, boy'
kúˑ	tóq	'to take sthg'
ksáxʷ	ksiɬóʔ	'to go out'
ʔʸéˑx̌kʷ	húˑt	'to flee, escape'
ʔʸéˑʔan	húˑʔin	'to cause s. to flee'
skʸí	tóx̌	'(object) to lie, be (somewhere)'
málkʷ	tx̌íɬt *	'to throw sthg in a fire'
T máq	T ʔáɬ	'to put sthg away'
T máx̌kʷ	T sínkʷ	'to ride (in a boat or vehicle)'
T máʔan	T sínʔin	'to give a ride to sbdy'
T luˑmáˑks	T luˑlítiks	'to wash sthg in a tub'
T ʔás	T límqs	'to grow'
ʔásaʔan	límqsaʔan	'to cause sthg to grow'
siʔás	silímqs	'to raise sbdy'
T ʔayʔásit	T ʔaylímqsit, T ʔaymáqsit	'teen-ager'
ʔúʔ	táxʷ	'to die, be dead'
yéˑ	ɬóʔ	'to go, walk'
taxyúkʷ	taxtóq	'to hold, carry sthg'
paxyúkʷ	paxtx̌áwskʷ *	'to go up a slope'
T ʔáq	T lískʷ	'to hang sthg'
T ʔaxʔáq	T lislískʷ	'to be hanging'
wiyítkʷ **	sikʸátkʷ **	'to cry'
ʔítkʷ	pákʷ	'to be back, come from somewhere'
T hítkʷ	T máqskʷ	'to stand'
T hítin	T máqsaʔan	'to stand sthg up'
T ɬku	ʔupa	'little'

* These plural stems may also contain the prefix tx̌aˑ 'all' like tx̌óˑx̌kʷ analyzed in 2421.

** These stems seem to be built on the root kʸát/(k)ʸít 'man, person' although the prefixes are a puzzle.

NOTES

1 The Nisgha (nisqáʔ [nɪsg̊áʔə̥]) language is spoken by the Nisghas, who live in the Nass Valley of British Columbia. It is the 'Nass River dialect' of Boas 1902 and 1911. Nisgha and the closely related Gitksan have been referred to together as Nass-Gitksan by Rigsby and Dunn. Here the term Interior Tsimshian is used instead. Together with Coast Tsimshian and Southern Tsimshian these languages form the Tsimshianic family.

The data presented here represent the speech of New Aiyansh, present home of the Gitlakdamix (kʸitlaxʔáʔ·miks) band. They were collected during the course of my employment with the Nisgha Bilingual/Bicultural Centre of B.C. School District no. 92 (Nisgha) in 1977-80 and again in the summer of 1982, during which times I resided on the reserve at New Aiyansh.

Among the numerous Nisgha speakers who helped me learn their language over the years, I am especially indebted to Mrs. Nita Morven, Mrs. Rose Robinson and Mrs. Verna Williams, who were my first teachers of Nisgha, and whose patience and friendliness never failed; to the Rev. Hubert McMillan, a hereditary chief of the Wolf tribe and priest of St. Peter's Anglican Church, New Aiyansh, as well as to Mr. Harold Wright, a hereditary chief of the Eagle tribe and Cultural Researcher for the Gitlakdamiks band. Mr. Bert McKay, the hereditary chief of the Frog/Raven tribe and Coordinator of the Bilingual/Bicultural Centre, arranged for me to have access to these and other resource persons.

Bruce Rigsby shared with me his notes on the language, obtained mostly from Rev. McMillan, and provided all of the Gitksan data mentioned here. He also read an earlier version of this paper.

The classifications and reconstructions mentioned here are my own, own, and I alone am responsible for any errors.

2 eg. Rigsby 1975 has called the language 'a logician's dream'. This statement, found in a discussion of syntax, applies to a large portion of the morphology as well. Nisgha recalls German in its facility for derivation and compounding.

3 Basic phonological information is given in Appendix I.

4 cf. Boas: 'The multiplicity of the methods used for forming the plural is one of the striking characteristics of the Tsimshian languages' (1911:297-8).

5 The terms 'noun' and 'verb' are used here for convenience, but the distinction between them is rather loose, as both may be used as sentence predicates. Morphologically there is no difference at the root level, but in some cases different plurals are used for monimal and verbal meanings, as in

ʔáks Noun 'water, stream' pl. ʔaxʔáks 'streams'

Verb 'to drink' pl. ləʔáks

6 This means that the syntactic structure is ergative. cf. Rigsby 1975, Tarpent 1982. Examples:

Transitive sentence:

sik̓ʸiɬ kúwiy̓ɬ t̓ɬ̓pin 'I tried to shoot a sealion'

sik̓ʸiɬ kuxʷkúwiy̓ɬ t̓ɬ̓pin 'I tried to shoot several sealions'

sik̓ʸiɬ	(proclitic) 'trying to'
kúxʷ	'to shoot sthg singular'
kuxʷkúxʷ	' " " sthg plural'
-i-	ergative suffix
-y	1S
-ɬ	non-determinate syntactic connective
t̓ɬ̓pin	'sealion'

Intransitive sentence:

t̓ipsú·qskʷɬ t̓ɬ̓pin ʔi· k̓ʸé·x̌kʷt 'The sealion dived down and escaped'

t̓ipsax̌sú·qskʷɬ t̓ɬ̓pin ʔi· hú·tɬ̓·t 'The sealions dived down and escaped'

t̓ip	(proclitic) 'straight down'
sú·qskʷ	'to dive (sg)'
sax̌sú·qskʷ	' " " (pl)'
ʔi·	'and' (subordinator)
k̓ʸé·x̌kʷ	'to escape (sg)'
hú·t	' " " (pl)'
-t	3
-ti·	PL

7 The distinction between plural and singular stem, especially in the reduplative stems, usually refers to the number of actions rather than the number of persons, as in

c̓ɬ̓·pi·ɬkʷ n̓ɬ̓ti·t 'They tied up for the night (in one boat)'

c̓ipc̓ɬ̓·pi·ɬkʷ n̓ɬ̓ti·t 'id. (in more than one boat)'

In spite of the importance of the singular/plural distinctions, there are many invariable stems, although the most common verbs all have two stems. It is also interesting to note that in actual usage singular stems are often used even when the meaning is plural, provided that the plural meaning is clear from other sources, for instance a plural pronominal ending, or the context. This is especially the case if the verb stem is preceded by proclitics, making the word a very long one. However, such usage is frowned upon by purists.

8 This classification is my own and is based on superficial

criteria only. The word root here refers to the stem stripped of productive affixes. In later discussion, some roots according to this definition are further analyzed; forms which cannot be analyzed any further are then referred to as 'underlying roots' and marked with *.

9 v is a vowel predictable from the consonantal environment, as explained below.

10 See list in Appendix II.

11 See note 8.

12 While this list is probably not exhaustive, it includes all the relevant examples I have collected in almost six years of study. This is true of all the lists given here, except those forming their plurals in qa- and hix-, which are too numerous to mention.

13 Forms marked with a following * have singular meaning as well.

14 -(t)kʷ (-s after K) has many meanings, among which are Passive and Reflexive. -t forms Passives of state; thus ptáltkʷ/liptált, root ptál 'to rise' probably means 'to raise oneself', hence 'to climb', and other forms in this section probably have similar origins. It is not clear at this point why words beginning in ?a- , a prefix of undetermined meaning, should also form their plural with final -t.

15 Distributive plural: used mostly when referring to parts of the body, personal belongings and relatives of more than one person, eg.

yó?oksitɬ ɬimqɬst 'she washed her hair' (lit. her head)
yó·?okstɬ·tɬ qaɬimqɬsti·t 'they washed their hair'

(yó?oks pl. yó·?oks 'to wash sthg'; ɬimqɬs 'head' (qɬs 'hair'); -i- ERG; -t 3; -ti· PL + ERG; -ɬ undeterminate syntactic connective).

Abstractions: The concept of abstraction is related to that of plurality: 'all instances of the concept ----'. The prefix qa- in conjunction with the suffix -v- forms abstractions from suitable words:

ʔáḵʷ 'to be long' ɬa qaʔáḵʷiɬ sá 'the length of the day'
ɣáns 'leaf' ɬa qaɣánsiɬ qán 'the foliage of the tree'
kʸikʸé·nix 'upstream' qakʸikʸé·niɬ aɣáns 'upstream from Aiyansh'

(ɬa =ɬv definite particle).

16 Note that this prefix is also of the form Cv- like the plural prefix lv-; but the vowel is always a, according to the vowel specification rule after back consonant.

17 Aspectual reduplication affects the first consonant of the word, including all affixes, unlike plural reduplication which affects the root (at least in its regular form). This allows for a combination of aspect with number, as in,

ɬipsú·qskʷ ɬipsaxsú·qskʷ 'to dive down'

tiɬipsú·qskʷ tiɬipsaxsú·qskʷ 'to be diving down'

18 Note that in the case of words beginning with l is is impossible to say for sure whether partial reduplication or lv- prefixation is involved. Perhaps the fact that most of these words begin with the prefix ?a- led to an extension of the lv- prefix to other words with the same prefix. To add to the confusion, many forms ending in s have alternate pronunciations in st, as in ?anɬs(t), ?alays(t). The form ?allá·n is an alternate plural of ?alá·n, besides ?allá·nt.

19 The form sisáy̓ is more colloquial, ?asisáy̓ is considered more correct.

20 Examples with aspectual reduplication:

yé·	'to go, walk'	hiyé·	'to be going, walking'
wán	'to sit (pl)'	huwán	'to be sitting'
háč	'to bite sthg'	haháč	'to be biting sthg'
?ɬ·c	'to fry sthg'	hi?ɬ·c	'to be frying sthg'

21 -kʷ (here) possessive

22 I have no explanation of why ẃó? and wó?otkʷ which seem to be the active and passive forms of the same verb should differ in the glottalization of the first consonant. (All consultants are consistent on this point).

23 provided that C_2 is a true consonant, not a glide, in which case it is ignored, as in swán/sinswán 'to blow sthg'.

24 It may be significant that all the examples collected begin with labials, m̓ or ẁ. There are no other consonants involved (except for a later example, qaɬɬ/qalixɬɬ 'to drop sthg', where the l̓ is not original but derives from a sequence l + ? (cf. Gitksan qal?ú). It may also be significant that Nisgha and Gitksan m̓ normally corresponds to Coast Tsimshian p̓, as in N m̓áqs,G m̓áxs, CT p̓áxs 'pair of pants'. The sound p̓ is very rare in the Interior languages except in derivation, and may be a borrowing from CT. Interior m̓ may be the reflex of original p̓ preserved in CT.

25 The t does not belong to the root morphologically, but only phonologically as it completes a shape CVC. Most transitive verbs can take the strong or definite transitive suffix -t indicating full agent control, before the ergative and personal suffixes. With a vowel-final root such as ẁá, the resulting phonological structure is the same as if the root had t as C_2. (In this case, ẁá alone cannot take this suffix, but it does when preceded by a proclitic, as in tq̓alẁát 'to meet sbdy').

26 eg. it does not affect yɬm/yimyɬm 'to sniff sthg'. Note that

when h results from glide reduction, the unstressed vowel is i not a, showing that the vowel specification rule applies before glide reduction.

27 For s in this word, see 222223.a.

28 Mass nouns agree with plural verbs.

29 This form appears to be built in the opposite way to plurals formed by partial reduplication, since it has plural form but imperfective meaning.

30 Reformation on original *nóq, see 232212.

31 I transcribe this form phonologically. Boas does not indicate glottalized resonants.

32 In most (perhaps all) cases this affricate must be considered as derived either from t̓ + ɬ or from ɬ + ʔ, for instance
ƛé·ʔ < *t̓iɬé·ʔ < t̓aɬ (see note 96)
yáƛiksk^{w} < *yáɬ-ʔiks-k^{w} (yáɬ 'fish-slime' cf. yáɬk^{w} 'to be smooth, slippery') 'to slip and fall'.

33 h often drops after a fricative.

34 regularized plural, besides older ɬiplápks (242222).

35 These forms are frequently used in composition and the singular form (originally a plural, 2324) applies to one group or mass, the plural form to several.

36 regularized plural, besides ɬimó·tk^{w} (2211).

37 It is not clear why this word should have i not a in the resuplicating syllable.

38 This word seems to be of non-Tsimshianic origin. A similar form exists in several other Northwest languages.

39 besides older ɬsx̌k^{w}, sometimes pronounced ɬsk^{w} (242222).

40 Although this word is apparently of Chinook jargon origin, it has the reduplicative shape typical of a number of animal names.

41 See note 21.

42 probably from *t̓ip-k^{w}ántk^{w}, lit.'to move straight down'.

43 The form ʔún is not used by itself, but is found in composition, as in hayóʔoksʔúntk^{w} 'soap', xpəʔúnti· 'ten fathoms' (ha- 'used

for'; yó?oks 'to wash sthg'; -tkʷ reflexive; xpə- 'ten'; -tiˑ PL).

44 The partially reduplicated from tiťís is now used for the singular.

45 The fact that in the surface form the reduplication rule skips over the ɬ to reduplicate the x̌, and also the fact that the vowels are back ones, may give rise to reinterpretation and to a new surface sormula where x̌ is used as an infix associated with some broad phonological characteristics of the entire original syllable (cf. classification on Cix-plurals in next section). In Nisgha examples of this type are too few to be treated as more than exceptions to the general rule, but Coast Tsimshian has a class of Cax̌ -plurals as well as one of Cix-plurals, both with rather loose phonological characteristics (Dunn 1980).

46 perhaps by an extension of the rule CV́Cs > CvsCV́Cs(222223.a) which also skips over the stop to reduplicate the fricative.

47 In ɬúˑʔax̌/ɬuxʷɬúˑʔax̌ 'to slurp', one would expect ʕɬax̌ɬúˑʔax̌ by this rule, but in both ɬuxʷɬúˑʔuxʷ and ɬuxʷɬúˑʔax̌ the reduplicating syllable may reflect an earlier labiovelar in the root.

48 The t, being of English origin, is not voiced in this word.

49 cf. note 96.

50 ɬ > l / C _ V́; kslá̓wiskʷ < *ks-ɬáxʷ-ʔskʷ ('extreme'; ɬáxʷ 'underside'; -ʔskʷ antipassive).

51 Oolichans have special significance among the Nisghas since they are the first food fish to appear in the spring, and come up the Nass River in amazing numbers. In the old days their appearance, in even larger numbers, signalled the end of winter deprivation and sometimes near-starvation, and the beginning of abundance. The Nass River is claimed to have the largest and best oolichan run in the area, and the Nisghas used to control a brisk trade in oolichan products. Stringing oolichans for drying must have been one of the earliest methods of processing them. Thus at a certain time of year, to eat at all was to eat oolichans, and 'all' could eat and be fed, such was the abundance of the run. Note that the suffix -kʷ has many meanings, including a possessive one. Thus if the derivation proposed here is correct, *yú·q-kʷ means literally either 'having oolichans' or 'one's own oolichan string'. For instance, ʔa, yú·x̌kʷin which now means 'here, eat!' could have meant 'here is your oolichan string'.

52 Note that x + ʔ > ẏ, xʷ + ʔ > ẇ (222222.D.b) are also instances of this rule.

53 This rule also inserts y between a word-final vowel and a

suffix beginning with a vowel, eg. kʷilá 'blanket', kʷilá + -vs assertive > kʷiláyis 'it is a blanket'.

54 but it is likely that some instances of ó· derive from au or aw, eg. in Boas 1902, the clan name 'Gispawaduwida', present kʸispó·twita with o· > awa or aw.

55 nikʸi negative particle; ni 1S ergative pronoun; ṯi· emphatic particle; kʸá? 'to see sthg or sbdy'; a echo vowel after ?; -ṯ 3.

56 Note that stops are automaticall voiced between vowels, thus this rule applies to a voiced stop, which is more likely to drop than a voiceless one.

57 lɬsx̌kʷ or lɬskʷ is obsolescent, and qɬsx̌kʷ has a regularized plural qasqɬsx̌kʷ.

58 There is also a regularized plural kʸipkʸápks.

59 Older speakers tend to use the longer vowel, younger ones the shorter vowel.

60 eg.

kʸé·c̓	'downstream' (location)
kʸé·w	'at the shoreline' (location)
kʸikʸé·nix	'upstream' (location)(cf. CT qʸá·n)
ʔamkʸé·kʸ	'duck species'
simkʸé·kʸ	' " " '
k̓ʸé·kʷ	'one (animal)'
k̓ʸé·x̌kʷ	'to flee, escape (sg)'
k̓ʸé·q̓an	'to cause sthg to flee'

cf. discussion of x̌skʸá·kʸ in 232312.

61 ƛ̓é·? is used in composition in sa·ƛ̓é·? 'to get undressed', see note 96.

62 Alternately, if skʸát < *skʸét (see rule *é > á below 243221A) the plural is *lɬskʸet = lɬskʸit, with no vowel deletion in the consonantal environment.

63 kʸúkʷskʷ is used in the upper Nass villages (Aiyansh, Greenville, Canyon City), as in Gitksan, kúkʷskʷ in Kincolith, at the mouth of the Nass. Boas did his field work in Kincolith, which was then the most accessible of the Nisgha villages (from Prince Rupert by boat). My own data reflect the speech of Aiyansh, the furthest upstream, and now the most accessible, by road. I did not notice any significant differences between Aiyansh and the other upriver villages, but the speech of some persons in Kincolith does have some features of its own, reflecting its mixed population (as a recently founded Christian village it originally welcomed converts from various origins) as well as Coast Tsimshian

influence.

64 This is composed of two suffixes, -s and -kʷ. The word is related to kʸúkʷs '(fish) to jump'; the common meaning is probably 'to give a start, to make a sudden and powerful motion'. The suffix -s is an allomorph of the more general suffix -(t)kʷ, used after Velars.

65 See Appendix I. cf. also N (ʔa)kú 'what', Gitksan kú, kʷí.

66 All these words appear to be bimorphemic: eg. hanáq̓ 'woman' is thought to be related to náq̓ 'dress'; this is confirmed by the corresponding CT forms hanáq̓/haná·naxˇ (Dunn 1980; cf. N náq̓/ná·naq̓).

67 The Gitksan cognate pilʔús(t) 'star' shows bimorphemic structure obscured in Nisgha by the glottal absorption rule C + ʔ › Cˀ.

68 from *ks-ɬáqs/ks-ɬá·ɬaqs; ks- 'extreme', ɬáqs 'nails, claws' cf. note 50.

69 The semantic relation between láq and láqs is the same as that between Fr. baigner and se baigner.

70 This is the form used by older people. In the speech of younger people (born circa 1940-50) it has been replaced by the regularized form páxˇan.

71 ʔan- 'place of'; lu· (proclitic) 'in'; tóxˇ 'to be put (pl)'.

72 cf. Gitksan *páxˇ-n › páhan through intermediate *páxˇan. cf. note 70.

73 The xˇ here could be derived from q by fricativization before -kʷ (as in yú·xˇkʷ, 2421).

74 see note 21.

75 This rule is required in other contexts, eg. suffix -mq 'language':

c̓imsán	'Tsimshian'	c̓imsánimq	'the Tsimshian language'
nisqáʔ	'Nisgha'	nisqáʔamq	'the Nisgha language'
q̓amksi·wá·	'white man'	q̓amksi·wá·maq	'the English language'

76 Fricativization of a Velar suffix after consonant is regular in Gitksan, et. *yú·q-kʷ, N yú·xˇkʷ, G yú·qxʷ.

77 from *pɬáksk̓ʷ, *pɬí·ɬiksk̓ʷ, cf. note 50.

78 cf. note 41.

79 eg. c̓ax̌c̓áq 'hail', la x̌lá q '(snow) to fall'.

80 ha- 'used for'; n̓i· 'down on'; tóq 'to take things'.

81 qan- 'means of'; *té? 'to start sthg on its way' (evidenced in t̓énk^{w} 'to guide sbdy', té?e n̓sk^{w} 'to conduct a band, beat time', t̓énimsk^{w} 'to lead prayers').

82 Note that if the rules of Velar weakening applied again here, the eventual result would be ?ɬ·x^{w}t, which actually occurs as a variant of ?ɬ·?ux^{w}t, which is considered more correct. See 2512 for a form *?ɬ·x^{w} postulated as the plural of *?áx^{w}.

83 Other alternations of ó and é· such as q̓óq/q̓ó·?ox̌ 'to pull sthg that's attached at one end', qóq$^{}$ 'cedar rope', vs. q̓é·q$^{}$ 'to drag sthg' show that at least some present-day occurrences of ó before back Velar are traceable to original *e (there are very few occurrences of a sequence éK). The long é· in q̓é·q$^{}$ is preserved (instead of going to ɬ·) because of the following back Velar.

84 This suffix is apparently still used in Gitksan for 3P.

85 The 2S form is also irregular: miyá?an instead of expected mi yá. -?n is normally the causative suffix. These quotative forms are the only ones in which the ergative clitic pronoun is morphologically fused with the verb stem. Perhaps for this reason, some older persons (and the Boas tales, 1902) treat these forms as intransitive and add the independent pronouns normally used in independent intransitive clauses, thus

··· ni yá n̓ɬ·y̓ ... 'I said'
··· tip hɬ·ta n̓ú·m̓ ... 'we said'

Perhaps the irregular form miyá?an is a contraction of*mi yá n̓ɬ·n. These forms may not be so much phonologically irregular as syntactically irregular.

86 protected from the vowel shift é· > ɬ· by the following c̓, which here functions as a C̓ (C̓ < C + ?).

87 cf. also ?ó·m̓is 'pillowcase' (-m̓is cf. -m̓isk^{w}, 24323A). The new word ?ó·tim$^{}$k^{w} 'diapers' has been reformed on ?ó·ta, with the sequence ?ó·t taken as the root to which is affixed the suffix -m$^{}$k^{w} indicating temporary and predicable duration. The meaning is still 'temporary covers', like that of ?úm$^{}$k^{w}.

88 a. There is no contrast between o and u next to a C̓.
b. Both the singular ?ú and the plural ?ó· are found in the words for 'naked':

c̓aǰ?úṫkʷ 'to be naked' (c̓aǰ = ?, -ṫkʷ reflexive or passive)
ɬa·ǰ?ó·ṫ 'to be completely naked' (ɬa·ǰ 'both ways, back and forth, perhaps here 'front and back'; -ṫ passive of state').

The meaning 'naked' seems to clash with that of 'cover, protection' but it is possible that these words originally meant 'covered with paint' that is, covered from the original native point of view, but naked from the missionary's. (cf. note 96, where sa·λé·? 'to undress' probably meant 'to remove body paint').

89 Also in háta, found in the expression c̓ú·skʸim háta 'there is a light breeze' (c̓ú·skʸ 'to be small'; -m attributive; há 'air'). The word há must derive from *háh or *héh; the -ta suffix must have been added after h deletion. Note the impersonal meaning of the suffix here, cf. discussion of -ta/-ti· in next section).

90 at least for animates, For inanimates plurals and mass nouns, including sometimes groups of people, -ṫ alone is used.

91 a. Person/function and number are also separate in the second person, as in

kʸiłó	mi	ci	(sim)	kʷántkʷ	- t	'Don't touch him/her/it!'
don't	2ERG	POT-	PL	of touch	3	
		ENTIAL	2ERG			

The clitic sim is used only as the plural marker for the 2ERG clitic pronoun mi (mv) and can be separated from it and from the verb by other particles such as ci (cv) above. Note that sim is always preverbal, the plural marker -ti· potverbal.

b. The bimorphemic nature of the sequence ti·ṫ has become obscured by reinterpretation as a single plural morpheme, hence constructions such as

...t	cáp	- ti·ṫ	- ɬ	wílp	'... they made a house'
3ERG	make		CONN	house	

where -ti·ṫ has replaced -ti· as the plural morpheme coreferent with the 3ERG clitic, making the 3PL construction an exception to the mutual exclusiveness of clitic and suffix pronouns in the same role in the same environment.

c. Recognizing -ti·ṫ as bimorphemic in origin also solves another morphological problem. In transitive verbs in independent clauses, an ergative or transitive infix consisting of a single vowel is used between the verb stem and the personal ending, in all forms except the third person plural as in (y is inserted between a vowel-final verb stem and this infix, cf. note 53):

cáp - i - ỷ	'I made it'	kʸipá - yi - ỷ	'I waited for h.'
cáp - i - n	'you " " '	kʸipá - yi - n	'you " " " '
cáp - i - ṫ	's/he " " '	kʸipá - yi - ṫ	's/he " " " '
cáp - i - ṁ	'we " " '	kʸipá - yi - ṁ	'we " " " '
cáp - i - sim̓	'you " " '	kʸipá - yi - sim̓	'you " " " '

cáp - ti·t 'they made it' kʸipá - ti·t 'they waited for h.' yielding a third person plural form identical to that used in dependent clauses, where the infix is not used (eg. for third person, sg. ..t cáp-t, ..t kʸipá-t; pl...t cáp-ti·t, ...t kʸipa-ti·t).

This seems to be another overt peculiarity of the third person plural, and there seems to be no reason why there should be no infix with this person only; but if we decompose the superficially monomorphemic plural suffix -ti·t into the plural marker, originally *-téh and the third person suffix -t, there is no reason why these two morphemes cannot be separated by a third, namely the vocalic infix, thus on the model of the dependent clause constructions

sg: ..t cáp - t pl: ..t cáp - *téh - t
3ERG 3 (OBJ) 3ERG PL 3 (OBJ)

we reconstruct for the independent clause:

cáp - v - t cáp - *téh - v - t
ERG 3 PL ERG 3

hence the surface forms: sg. cápit, pl. cáptiːt (the undifferentiated vowel in unstressed position has been specified in cápit but lost in *cáp-téh-v-t > cáp-téht > cápté·t > cáptí·t > cápti·t)

92 See also note 89.

93 As a result, there is sometimes ambiguity as to whether -ti·t refers to a plurality of agents or of objects: in ..t cápti·t '..they made it', there is no ambiguity because the plain stem cáp must refer to a single object (compare ..t cipcápt 's/he made them') but kʸipá 'to wait for sbdy' has no separate plural stem, so that ..t kʸipáti·t may mean 'they waited for h.' as well as 's/he waited for them'. In this case, the interpretation is likely to be that -ti·t refers to a plurality of objects. If a plurality of agents is meant, an independent pronoun is used for the object: ..t kʸipáti·t ʔíɬt
3ERG 3 PL 3S

94 Boas actually gives lí·luxʷ. The form lí·li·xʷ may be influenced by other words with two long vowels, at least one of them i·, as in laxskʷi·né·qs 'to feel cold', kʷi·ní·skʷ 'to bend over'.

95 The plural meaning of this word has been completely forgotten and it is thought to mean 'on the eagle' (lax 'on). This etymology has caused the formation of another clan name, laxkʸipú·, lit. 'on the wolf (kʸipú·). This clan appears on historical evidence to be of fairly recent origin, and the linguistic evidence of the name confirms this. Another clan name, qanáta, of Tlingit origin, is sometimes referred to as laxqanata by analogy.

96 probably from the two suffixes *-éh (later -á) + -(?)a? detransitivizer, thus *-éha? > -éh? > -é·? (é· does not become i· before a C). Examples:

sqapiɬé·? 'curtain' < páɬ 'to spread sthg flat'

(sqa 'in the way, forming an obstacle'
wilptikɬé·? 'jail', lit. < tákɬ 'to tie, bind sthg'
'house (wílp) of binding'
kʸiɬé·? 'embroidery' < kʸáɬ "to pierce, stab sthg'
(originally with porcupine quills)
sa·ʔé·? 'to undress' < *ʔiɬé·? < ʔáɬ 'to apply, smear on a
(sa· 'off'; prob. orig. 'to substance, eg. body paint'
remove one's body paint')
ʔaté·? 'to put patches on' <*ʔát cf. ʔátx̌ 'to patch sthg'
Similarly probably
ʔiɬé·? 'blood, to bleed' <*ʔáɬ = ?
The suffix -á by itself is found in miɬá 'bile', probably from míɬ 'to burn'.

97 eg. for l/n: sil (proclitic) 'together with', sínṭkʷ 'to ride (pl) in a boat or vehicle', sínqs 'to be crowded together'; ʔín 'to enter' ʔilim (proclitic) 'entering' (-m attributive).

98 cf. Fr. entendre 'to hear', Sp. entender 'to understand', both from Latin intendere.

99 The rule of glottal absorption which operates between a root or stem and a bound morpheme, as in *hit + -ʔn > hiʔin, does not apply across word boundaries in compounds. Instead, the initial ʔ of the second word drops. Thus máq-ʔáks > máqaks > máqks > máx̌ks > máhks > ma·ks
lv-hít-ʔáks > lítaks > lítvks > lítiks

100 ʔkʸ- 'one'; yít < kʸít alternate form of kʸát 'man, person'.

101 It may have to do with 'acting on, or for the benefit of, someone else'.

102 In other derivations we saw that glide vocalization applied only to the preconsonantal position, not the final position, where h drops. There may have been contamination from such forms as mó·x and mó·tkʷ (if they are indeed related) and also the plural form ɬimo·m. (Also, this verb being transitive, does not occur without a final suffix, *so that the syllable móh would never be in absolute final position; but* this reasoning applies just as well to other forms which do not have a long vowel, and therefore seems dubious).

103 I do not know of any other examples of this alternation in Nisgha but it is fairly common in other languages, eg. Eng. bosom, German Busen; Sp. una, Ptg. uma; Lat. -um, Gk. -on.

104 probably related to hamhúm 'joints', root *hóm 'to join, be joined?', and qúlx 'skull' respectively.

105 We would expect that left unprefixed, the root *em would

become *yɬm or *yám. The word yɬm/yimyɬm exists, with the meaning 'to sniff, smell sthg'. The sequence ɬm also occurs in nɬmc̓ax̌kʷ 'to snuff sthg in' (-c̓ax̌ suffix as in lám̓cax̌; -kʷ transitive). These words involve taking in something, at least some air. There is little doubt that these words are related to *c̓ɬm and lám̓cax̌. (The prefix n- of nɬmc̓ax̌kʷ could be the marker for unalienable possession, productive in CT but recognizable in Nisgha only in a few kinship terms and perhaps in ná·ɬq 'breath').

106 when counting to ten on the fingers. *kʷstáq 'to leave sthg aside'; *?ún 'hand, arm'; -s reflexive (here). cf. note 99.

107 CT data from Dunn 1979. Comparison with CT must be used with caution, since there appears to have been wholesale rounding in CT, eg. N ɬiɬɬnkʸit 'slaves, CT ɬaɬú·ngʸit , from 'Tlingit', where surely the ú· is not original.

108 Small brothers and sisters are referred to as stik̓ʸé·kʷ 'playmate', a word also applied to animals, rather than by the proper sibling terms used with adults.

109 For one application see Tarpent 1983.

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