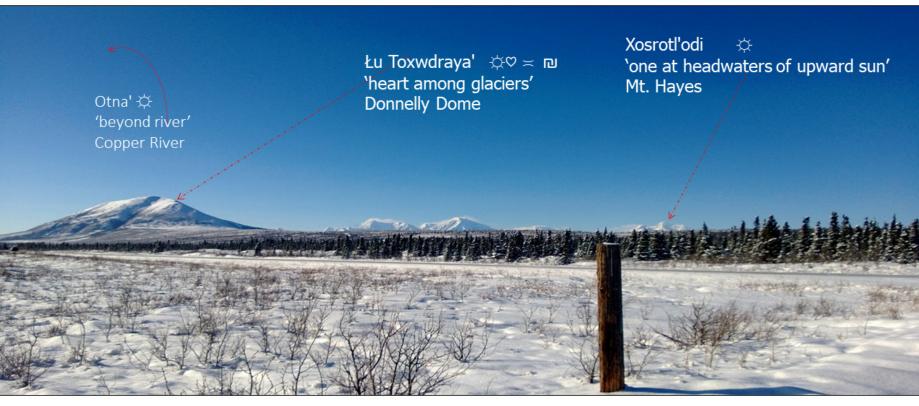


See entry at p. 354 $troth^2 * ch^ra th$ /Hedysarum; difficult/ /V::N-bio veg V-stat/ troth, -trodha' (n.) MN tsoth C tsol T Indian potato, root of Hedysarum alpinum

	No.	2012 Seq.	Name	Location	Literal	LT Sources
	1	717	Troth Yeddha'	Troth Yeddha' ridge at Univ. of Alaska	'Indian potato (<i>Hedysa-</i> <i>rum alpinum</i>) ridge'	PJ, MT
	2	719	Tsoth K'eti	flats on lower Chena River, north side	'among the <i>h.a.</i> '	LA
Dene Generative Geography	3	724	Troth Ghotthit	hayfields area	'lowland from <i>h.a.</i> '	HL
Troth Yeddha'	4	724. 1	Troth Yeddha' No' Dochaget	mouth of Deadman Slough (end of Loftus Rd)	<i>'h.a.</i> ridge stream mouth'	HL
Name content Name structure	5	725	Troth Yeddha' No'	stream off ridge into Deadman Slough	<i>h.a.</i> ridge stream'	PJ
	6	725. 2	Troth Yeddha' No'' Xwyighilenhde	inlet to Deadman Slough (E. Sandvik Rd.)	'where current flows into <i>h.a.</i> ridge stream'	RC
Name distribution \longleftrightarrow Name networks	7	729	Troth Bena', Troth Yeddha' Bena'	site & pond at SE base of TrothYeddha'	<i>'h.a.</i> (ridge) lake'	PJ
Matthew Titus saying <i>Troth Yeddha'</i> in 1981	8	730	Tr'exwghodegi Troth Yeddha Bena'	Smith Lake	'upper <i>h.a.</i> lake'	MT
See https://uaf.edu/anlc/languages/troth.php	9	732	Tr'exwghotthidi Troth Yeddha' Bena' No'	Ballaine Creek	'lowland <i>h.a.</i> lake stream'	MT
Fairbanks Daily News-Miner Troth Yeddha' name	10	731	Tr'exwghotthidi Troth Yeddha' Bena'	Ballaine Lake	'lowland <i>h.a.</i> lake'	MT
official at university Feb 26, 2013	11	733	Tr'exwghotthidi Troth Yeddha Bena' Edileni	drainage into Ballaine Lake E of L.A.R.S.	'flows into lowland <i>h.a.</i> lake'	RC
FAIRBANKS — The U.S. Board on Geographic Names has approved a		718	Ch'eno'	Chena River	'river of something (game)'	all
iniversity-backed proposal to name		1042	Ch'eno' Xwdochaget Ddhela'	Chena Ridge	'mouth of river of something mountain'	MT, HL
the ridge that houses the University of Alaska Fairbanks campus as Troth		738	Tok'a Sedha'	ridge N of Farmers Loop	'timbered valled ridge'	HL,PJ

 \Leftrightarrow overtly informative; \mathbb{N} environ. change; \heartsuit anatomical: \asymp pass-marker



Kari 2019a:44 "The Proto-Dene Lex Loci ('word/law of location') is a theory of Dene prehistory that is a composite of geographc information (in Dene place names networks) and Dene lexicographic-etymological information." A bipartite SIGN(+GENERIC) generative geographic formula underlies the Dene place names networks in our study area. Dene geolinguistic data are information-rich. Especially noticeable are various watershed tenure devices (hydronymic districts, patterned duplications, geoduplicates) that reflect Dene vernacular collaborations to facilitate landscape recognition. *Ibid*.:69 "These three well-known *overtly informative* place names names tell us that early Tanana Valley Dene names must have preceded those of Copper River (rather than the reverse) **Xosrotl'odi** (Lower Tanana) Mount Hayes, 'Atna' (Ahtna), Otno' (LT) Copper River, and 1.22 Łuu Tadzeey' (Middle Tanana), Łu Toxwdraya' Donnelly Dome." *ibid.* 71 "The resilience and durability of the Dene names are due in part to (a) unique typological features of Dene grammar (simplex nouns and postpositions and complex verbs with templatic word formation [Kari 2010a]) and (b) the vital orienteering, logistical, and auto-instructional features of Proto-Dene generative geography."

Some lower tanana arrhaisms 🛛 🗸

- **trok** *ch^ra ·-k /bad weather / /dV::Vop V/ cf. trol chinook wind, both appear to be derived roots; a verb theme so far only in LT; important
- archaism
- dur troyh trok troyh troyh

 $ch'+n+\emptyset+trok \forall (op.)$ be bad weather (any season) noch'exwnghitrok it is bum weather +VVT; notr'exwnoghitrok we had bad weather; noch'wxtenotroyh we will have bad weather

- trol ch^ra[·]-ł /Chinook weather/ /dV::N!-env/ possible derived root; only in LT, MT, At, Den, Tc, UT, UK, only in Central-southern Alaska Range; trol (ins.n.) warm spell in winter, Chinook wind or weather trol dent'a there is a warm spell **dokedza** \forall (*n*.) "blue goose," blue-color phase of immature snow goose (*Chen caerulescens*) highly interesting, unique LT root
- MT via Eva Moffit that one ugha' ch'alkets that one is hairless EM9 **lel. lex** łax-ł /baited hooks/ /V::N!-tech ∀/
- a rare Tanana R. term, cf. Ahtna- $M \equiv \mathbf{lox}$;

lel (ins.n.) MN lex T multiple baited fish hooks MK 74; interesting archaism, WTitus, 7-20-93, "used in ice fishing for burbot, they used to use bird claw hooks."

The page-format and organization of the LTDD demonstrates how records for Dene languages can be succinct and accessible for many types of research or language practice and learning. The numerous abbreviations and conventions for verb themes for the LTDD are nearly identical to those for the Ahtna and Koyukon dictionaries. As you learn to recognize abbreviations, you are learning aspects of Lower Tanana and Dene grammar.

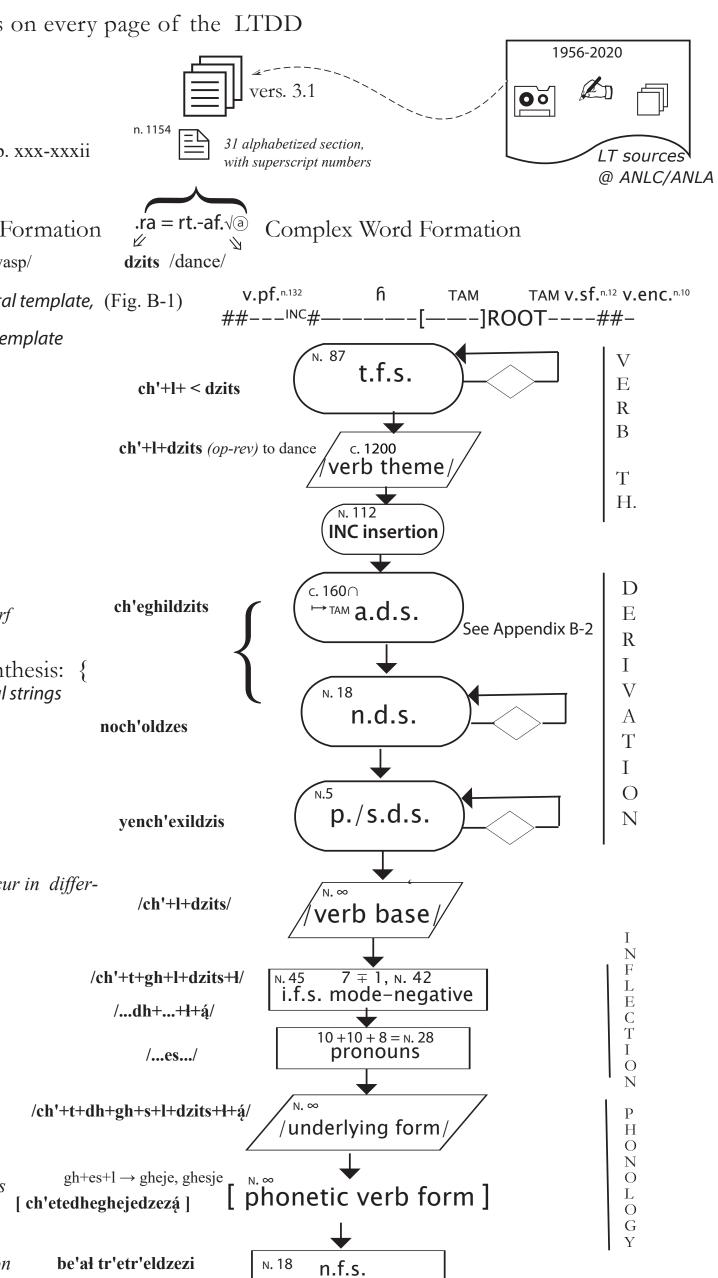
, Figu	re I-2. Sample dictionary page	horizontal tem	
U	142-143, dz-section examples in Fig. I-3:		
1. entry top line		Fig. I-3. Concepts on eve	ery page
2. 3 entries dzit ¹	 dzit¹*dzi·d /oval, squat/ /V::Nanat, Vdim geometry/ /Nav.: jįįd/ -dzida' (n.) oval-shaped, reticulum, sac in moose, caribou stomach; pyloric caecum of fish -jedh dzida' (n.) penis lit. 'oval hook'—literal translation neu dzit " G+l+dzit (dim.) be spherical, round, circular, concave, chubby nadledzit it is balled up, spherical dzi (i.) huddled, squatting posture also in Koy, KAD:167; ch'edzidhił'onh you are squatting 	A. Table of Headwords, pp. xxx-xx as cosmographic outline	n. 1 XXII
dzit²	dzit ² *dzi [·] d, *dzədz /whisper/ /√::Vono/ cf. Den, jech, chech ≡;	<i>entry top line</i> <i>root + tag</i> dzit¹²³ /oval/ /whisper/ /wasp/	tion .ra
	d+l+dzit (<i>op-ono.</i>) whisper dildzit you whisper; sets'e deldzit he is whispering to me	B. LT Verb Complex (horizontal temple	ate, (Fig. 1
dzit ³	dzit ³ , dzut *dzi [·] d /wasp/ /V::NI-bio-insect/	simplex word formation has no template	
	Seems to be onomatopoetic; dialects scientific name ts'enodzida, ts'enodzuda (n.) MNC yellowjacket, bee, bumblebee, wasp (Apinae (Subfamily), Bombini (Tribe), Xylocopinae (Subfamily)) MK 69b	-dzida', -jedh dzida', ts'enodzida'	cł
3. dance entry	dzits *dzi [·] ts' /dance/ /V::Vop-ritual/ ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	verb theme	ch'+
stem sets (aspect)	mom dzis dzes prg dzes verb theme category multT dzis "	INC insertion ch'edzidił'onh	
verb theme + examples	ch'+1+dzits (op-rev.) to dance ch'eldzes he's dancing; ch'ildzes, ts'ildzes you are dancing <i>RMa;</i> ch'esjedzes I'm dancing; ch'wxledzes you guys are dancing; ch'eghesdzedzits, ch'eghejedzes I danced; ch'eteghildzezi'?	>Ø ⁵ durative, 2nd sg. gh-perf	ch'eg
future	are you gonna dance?; ch'eghildzits you danced <i>fut pos neg ls</i> ch'eteghejedzes ch'etedheghejedzezá <i>featured in Fig. I-3</i>	C. DISWF Interrupted synthesis: horizontal template joins vertical strings layer upon layer	× ·
verb paradigm pos neg with 6 subject pronouns	2sch'eteghildzesch'etedheghildzezá3sch'etodledzezá	> no ¹ , gh ¹ + H ¹ <i>iter</i> : <i>3rd sg., prg</i> .	noch'o
	<i>lp</i> ch'etr'etoldzesch'etr'etodledzezá <i>2p</i> ch'etuldzesch'etedhuldzezá <i>3p</i> ch'extoldzesch'extodledzezá	> yen ³ 3rd pl. mult.	yend
examples	S will, will not dance, Urschel:2006:89 ch'eldzezenh netl-'anh I am watching a dancer; ch'eldzes ts'e netl-'anh I'm watching him dance; ch'exeldzes they are dancing; kwdagha noch'oldzes he dances around fire; ch'edheghwjedzezą́ deju' I should not dance; ch'etr'udldzezą́ deju' we should not dance; ch'etedheghejedzezą́ I will	h = 10 haplological: v.pfs. that occur in dig ent layers but just once on surface	ffer- /c
	not dance; teddha odi nedos ch'elik yich'exoldzits they danced that fast dance all night long <i>ST2009;</i> yoyekoyh yodegu ch'eldzes the northern lights are dancing up there	> future $t^1+gh^1+l^1$	/ch'+t+g
	from HE4, Toklat forms ch'enots'edenoldzes yą:' we were really dancing; xwt'och'ets'ildzes sekwn'	> negative dh ¹⁺ +ą́	/dh
	yel we danced inside, with my husband; yench'exildzi:s they mult. were dancing <i>‡ multiple stem</i> set, Toklat has mult. superaspect — <i>*</i> comment on grammar	> es $lst sg$.	/
nouns with 'dance'	 ch'entodzidizi (n.) T marsh hawk, northern harrier (Circus cyaneus) lit. 'dances on the tundra'; At. term is cognate; be'ał tr'etr'eldzezi (n.) dance rattle 	/ch'+	-t+dh+gh+s
I -	ts'edzes (<i>dv.n.</i>) dance, fast native dance, any modern dance style	phonological rules al v.pj. entries	gh+es+l → gl e dheghejed 2

> post-inflectional noun formation be'al tr'etr'eldzezi

Introducing the Lower Tanana Dene Dictionary, vers. 3.1 compiled and edited by James Kari, ANLC ¹ laska Anthropolocial Association 48th annual meeting, Feb. 26, 2021

DENE INTERRUPTED SYNTHESIS WORD FORMATION

oins vertical strings, layer upon layer



Lower Tanana Dene Dictionary Vers. 3.1, ff manual edits Jan 4. to Feb. 26 Version 3.0 January 4, 2021, Vol 1. Intro c. 25 pp., $\sqrt{\text{Table of Headwords 10 pp.}}$ main entries 448 pp Vol. 2. nine Appendix A-I; Appn I LT word-Initial Index 67 pp English Finderlist 167 pp., c. 310 pp, c. 760 pp as of Feb. 27 total lines Jan. 4 *.lex file = 57,268, total headwords = 1154 h.w.

1) sample footer: 31 sections, \mathbf{e}

Ø ' b ch ch' d dl dr dz g gh/x h j k k' l/ł n sh t t' tl tl' tr tr' ts ts' tth tth' y/s z/s zr/sr 2) Table of Headwords 10 pp

3) Appendix I: LT word-initial Index, 67 pp

4) English Finderlist, 167 pp 😯

The 2021 LTDD, Vers. 3.1 is a mid-sized dictionary compiled in the *Lexware* Dene band label format. Vers. 3.1 consolidates nearly all of the primary data for LT at the Alaska Native Language Archive that span the years 1903 to 2000. LT is a highly conservative Dene language: with stem-initial/stem final distinctions for the *tl, tth, ts, tr, ch* series; full PD positive-negative inflectional paradigms; and verb forms that are transparent at both surface and underlying levels. The 31 alphabetized integrated root-morpheme sections (as well as the Table of Headwords) mirror LT's grammar and verbal concepts as well as LT's long-term eco-cosmographic lexical adaptation to the climate and resources of the Tanana River Basin.

The LTDD has several new features that will increase the book's usability for a broad range of users, from members of the Lower Tanana community, to language learners, to scientists in various fields, or to Deneologists. A new *root-type* notation, still a work in progress, has been useful. The root-type band identifies groups of roots by a) semantic category (anatomy, biology, color, temp(perature), tech(nology). Others are b) minor word categories; others are c) specific verb theme categories. The root-types allow entries to be compared within LT or among other Dene languages. LT has 217 N! "nouns without verbs" that are mainly succinct simplex entries. The common anatomical N!s (head, foot, hand) are always cognate between Alaska Dene and Navajo. OTH, some of the LT N! are rare, and are marked as true archaisms \forall .

Various LTDD features can advance cross-disciplinary scientific inquiry of Beringian, Dene-Yeniseian and comparative Dene prehistory: the tightly structured root-affix inventory; the proper recognition of the PD interdentals and coronals; the identification of c. 50 derived roots with rare types of verb-root and noun-root formation, and LT's distinctive Subarctic boreal lexicon.

Working with a revisable LT verb complex file, we identify 132 v.pf. and 22 v.sf. that appear in four zones in 32 prefix slots before the Root/Stem and 4 suffix slots after the root/stem. All 154 *v.pf.* and *v.sf.* are distinguished by superscripts. The LTDD seems to be the first Dene dictionary that has an inventory of every prefix and suffix on record. The tracking of haplology (f) is clarifing both morpheme ordering and layered derivations. In sum, the LTDD is the most versatile and accessible computerized Dene dictionary.

With Tim Montler's skillful computer support, the LTDD is being released in a two-volume print edition and as a digital edition. The digital edition has four hyperlinked files, making it possible to navigate between a) the Table of Headwords, b) the first pages of the 31 main sections, c) the English Finderlist and d) Appendix I, the Word-initial index.

H-5 Łuk'a, salmon anatomy

This LT salmon diagram is a good illustration of team work across Dene languages. Most of the terms are typical terms—head, mouth, bone, skin, liver, brain, spine. Also there are fish-specific term such as **-guthga'** 'scales,' **k'un'** 'roe'. The fin terms are comprehensive and logical: -chala' xw'ogha t'wga' (adipose fin) 'fin near fishtail'. Two rare fish antomy terms recorded by Jetté, and confirmed by Vernel titus, with **-drwghwł** 'pectoral girdle' and 'bone socket at base of fish fins', allow us to reconstruct a rare Proto-Dene compound noun *jraghał. So far this is only found in Koy. and LT.

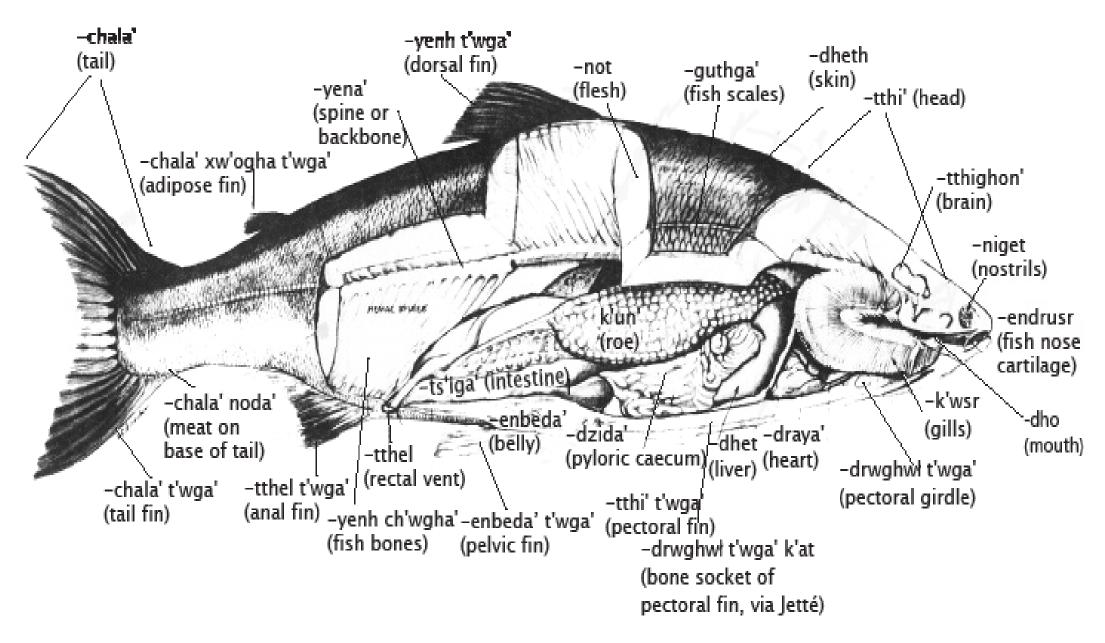


Figure 2-1. Semidiagrammatic drawing of an adult female salmon, with portions cut away, showing the location and identity of various internal features. (From I. S. Smith and G.R. Bell 1975.) Terms by Virgil and Vernel Titus and Andy Jimmy.

				v.pf. 13 v.sf. ¹ , 2							С			Ι	JOW	er J	Tan ames	an Kar	a V i, Fe	/er eb. 2	b C 5, 202	om] 21	plex														
Disjunct Zone (n8)						Pronominal Zone (n5) 3						Qualifier Zone (n8) 2								[™] Operator‡ Zone (n8) 1						Stem Ø	Suffix Zone (n2) -2 -3			(n2)							
*~~	\cap	-1				ĥ	G	\cap	#	*~~	\cap	ĥ	\cap	\cap	Gĥ	\cap	ĥ	*~~	ĥ	G^{h}	G^{h}	~~~	ĥ ^{gh}	[\cap		\cap		ĥ]	\cap		_		
3rd pl ²	PP object	schwa PP	deriv-them-PP ^{LEFT.}	deriv-them- ^{RIGHT.}	iterative	distributive	verbal	INCcorporate	disjunct boundary	obj+Y	direct object	InDeFintie	1st plural	3rd pl	areal	x-y qualifiers	conative	semelepen.	inceptive	qualifier	qualifier	dh-epenth	gh-dh qualifiers	a-insert-i-epen	dh-perf\neg ^{+subJ}	transitional-semelf	mode	perfective	subject	dh\th.per/neg- ^{øsuвJ}	classifier-neg	Root	vsf ¹	vsf ² negative	venc1	##	venc²
X ²	b y ⁴ s n ¹ dena nwx xw de ⁴ łe ² ch' ede	-e ³	$\begin{array}{c} de^{2,3} \\ do^{4} \\ tr'o \\ tr'e^{1} \\ no^{2,3} \\ \hline no^{2,3} \\ \hline no^{2,3} \\ \hline no^{2,3} \\ \hline no^{2,3} \\ ti^{1} \\ ti^{2} \\ n.68 \\ to^{3} \\ yi^{1} \\ ti^{1} \\ ni^{1} \\ sre \\ ie^{1} \\ k'e \\ -a^{1} \end{array}$		no ¹	n ⁵ yen ³	do1	to ^{1,2} beth tthi bił lo ¹ ko ² kena yeni hwn ¹ <i>n112</i>	{"1}	x ² b ch'	Ø ⁶ b y ⁴ s n ¹ dena ywx nił xw xo ¹	ch'	tr'	X ²	XW	x ¹ y ² y ³	u ¹	{i ³ }	t ¹	d ²	n ⁴ dh ¹ dh ¹	{dh1}	Ø ^{5,6} gh ³ dh ²	${i^3}$ ${a^1}$	dh1	i ² i ³	Ø ³ e ¹ n ³ gh ¹ ghw ¹	n ²	Ø ² es n ¹ ,i ¹ wx	dh ¹ /th ¹	$egin{array}{c} & \emptyset^1 & \ D/de^1 & \ le & \ l^1 & \ \{d^1\} & \ \end{array}$	CV(V)C CV(V) (R°)(') {y ¹ }		á Į	(y)i (n)enh na ¹ i'	##	xw ts'en ti denh hiy' uxų́

TOTALS: 35 positions: 32 prefix slots in four zones +ROOT + 3 suffix slots; TAM STEM TAM = tense-aspect-mode prefix/suffix options; \pm term in Whorf 1932 affixes in underlying forms as in LTDD entries, with or w.o. superscripts; SUPERSCIPT POLICY: n⁵⁴³²¹ ROOT n²; surface allomorphs excluded from LT verb complex

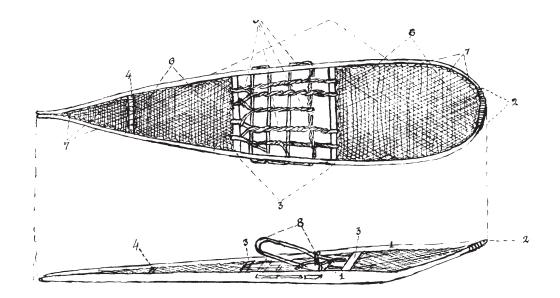
SYMBOLS: \cap mutally exclusive slot; \leftarrow conditional left movement, G gender function; {d¹} epenthetic affix; dh¹/th¹ pf. with 2 forms BOUNDARIES: ## word; # disjunct; + default affix bundary; [...] conjugation zone; PHON. RULES: __] precedes STEM; __|] precedes CLF+STEM; __S|] precedes SBJ-CLF-STEM

h = 12 haplological v.pfs. occur at different derivational layers but can appear only once at surface; G^h super-haplological affix; HAPLOLOGICAL INDEX = e.g., sum of d^2 in all strings & verb themes

Jules Jetté's technical snowshoe drawing (c. 1914) with LT snowshoe terms

The specificity for parts of the snowhoe, underscores that this was the greatest technical invention by the early Dene. Also **bold italics indicate anatomical** terms in the snowshoe lexicon. When and where was the first Proto-Dene snowshoe conference?

JOPA negative No. 502.19. used with permission of JOPA



'oyh, -'oya' der.rt. snowshoes lit. 'customary compact object' < 'oyh, 'o', yh'

- 0.1 /2, 12, snow-shoes-
- 1. **ovh dechenh** snowshoe frame < 'ovh , chen
- 2. ovh tthi' front '*head*' of snowshoe < 'ovh, tthi
- 2b. oyh twk, ch'entotwga' front edge *'forehead*'of snowshoe frame < to² 2c. oyh twk, ch'entotwga' tl'uł front edge babiche lashing
- 3. **ovh tth'o'** snowshoe crossbrace < 'ovh , tth'o'
- 4. -chala' tth'o' snowshoe tail crossbrace < tth'o' 4b. **oyh chala'** *'tail'* of snowshoe < 'oyh , cha
- 4c,7c. ch'etthedle debedza' snowshoe tail crosspiece 'anus broad one' < tthetl,
- 5. **kalenh** broad snowshoe *'foot'* lacing, center webbing < ka¹, len³ 5b. **-kałk'a** snowshoe frame foot area < ka¹
- 6. **oyh ghwt, ch'enghwt** fine snowshoe lacing < ghwt¹, 'oyh
- 7. **sreyh tl'uł** fine rawhide string on inner of snowshoe frame < zreyh 7b. **sreyh** small-bore lacing holes on snowshoe frame < zreyh
- 8. **ch'oł** snowshoe footstrap 'opposite instument' < ch'o
- 8b. **ch'oł dhaget** center foot footstrap 'throat' area on snowshoe < ch'o, dhak²

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The LT verb complex chart identifies 132 verb prefixes and 22 verb suffixes; the LTDD seems to be the first Dene dictionary that has an inventory of every prefix and suffix on record.

TABLE OF HEAD WORDS as cosmographic outline

The best place for first-time users of the LTDD to gauge the scope of this dictionary is to read through the Table of Headwords: pp. xii-xx. The LTDD has 115 alphabetized headwords or separate entries. These are four bands: .rt root, .ra root-affix, .af affix and .lw loan words. The assembled headwords plus tag definitions are an outline of the cosmographic depth and breadth of the LT language. The material and natural world, the conscious and the subconscious, the lexical and the grammatical are consolidated as an alphabetical outline of Lower Tanana cosmography.

dz dzak1 /light-weight/ dzak² /pitch/ dzay /Ω-marten type/ dze1:edzegi1 /scary/ dzeghet /tickle/ dzeyhdzek /nails/ dzex, dziy /ear, hearing/ dzen¹ /muskrat/ dzen² /Ω-common loon/ dzets /punch/ dzev:bedzevh /caribou/ dziges /checkers/ dzil¹ /ice chisel/ dził² /Ω/ dzit¹, dzi /oval, squat/ dzit² /whisper/ dzit³, dzut /wasp/ dzits /dance/ dzon /murky/ dzuk /to favor child/ dzwn1, dzen3 /dice up/ ga¹ /Ω-agate/ ga¹ /customary noun/ ga' /exactly/ gaga /creature gasr /gasoline/ gat¹ /to stab/ gat² /aufeis/ gath /king salmon/ gats /wide-eyed/ gatth /tap root, to wring/ gayi /winning/ geł /fresh meat/ gel' /sore eyes/ gelis /birch scales/ gena' /friend/ get /upon place/ gesek /Anglo/ gesr¹ /flexible moves/ gesr² /forked, cane/ gi¹:edzegi /scary/ gi² /four-sfx./

Giben, Hot Given /Fort Gibbon/ giga' /place of/ ginhi /preacher/ go¹ /arm/ go' /Ω/ goheyh /coffee/ gok1 /sg. runs/ gox /wheeze/ gol¹ /small game snare/ gol² /running speed/ gotth /tear forcefully/ goy, go² /child, small/ gu, gw /areal/ gu', gux¹ /insect, creature/ guth /wild rhubarb/ guho /button/ gux² /snore/ guk /baby/ gutth /fish scales/ gwx /snowshoe hare/ gwl /boy's penis/ gwn¹ /dry/ gwn² /nails, claws/ gwn' /spring warmth/ gwt /joint, clogged/ gwtr /gulp, inanimate sinks/ gwts¹ /short, near/ gwts² /peck/ gwyh1 /grey/ gwyh² /hardwood/ gwsr /filth, impurity/ gh/x gh¹ /progessive mode/ gh² /gh-QUALF, tension/ x1, ke /x-QUALF/ x² /3rd pl. subj./ x³ /reversative/ gha¹ /sibling-in-law gha² /older brother/ gha³ /carry on back/ gha⁴ /kill sg./ gha⁵ /grease/

xa²:xaxa /with instrument/ ghan /thaw/ ghath /itch/ ghatl /dark/ ghats /elongated, enclosed falls/ ghay' /surprise/ ghasr /egg, round/ ghe /by/ gheł /move elongated or animate; club/ xeł /then/ ghet /stiff/ xeth /pus/ gheth¹ /flee/ gheth2:t'egheth /cottonwood/ ghetth /shoulder/ ghey¹ /gunwale/ ghey2:tl'eghey /eel/ ghey3:tl'eghey /left/ ghesr /scar, rough/ gho¹, gho' /hair, fur/ gho² /expanse, according to/ xo¹, xo' /reflexive, hurry/ xo² /up/ xo³:0x0 /to, for/ xobets /four bits/ ghoł /roll up/ ghon¹ /make, kill plural/ ghon², ghwn /hump/ ghon' /half/ ghot /shake/ ghots1 /tree trunk/ ghots² /gnaw/ ghotth /gnaw, crunch/ ghosr /pl. holler, pl. talk/ xos /horse/ ghosji /whiskey/ ghu /teeth/ xu:ixu /in vain/ ghunh /stitch tightly/ ghuts /swollen/ ghw¹ /optative mode/ xw /areal-event/ xwx /Canada goose/ ghwł1:neghwł /in one's presence/

gha⁶ /areal sfx./

xa¹ /starting/