A Survey of the Athabaskan Language Mattole

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1 Introduction

Mattole (English pronunciation /'mætoʷl/) belongs to the Athabaskan language family, which is part of the Na-Dené phylum. This phylum spreads over part of the West of the North-American continent, with three separate regions of speakers: West Canada, North California and Arizona and New Mexico. Mattole was spoken in North-West California, near the mouth of the Mattole river [lit.ref. 2]. By the time it was recorded [lit.ref. 1] (1930), there were only one or two speakers left and the Encyclopedia Britannica of 1973 marks it as extinct. Other prominent Athabaskan languages are Chipewyan in Canada and Navaho and the Apache languages in Arizona and New Mexico. Mattole does not differ more from Navaho than the average British country-side dialect from Standard English; if it were not for the two thousand kilometers that separate them, they might well be considered dialects of the same language. All in all, Mattole is somewhat simpler than Navaho. If recent research is correct, the Na-Dené languages are remotely related to Chinese and arrived in America somewhere around 7000 BC.

Although the structure of the Athabaskan languages strikes the European as weird, upon closer look we find that many of its seemingly unusual features also occur, for example, in German or French (though to a lesser extent in English). The phonetics are very different.

2 Phonetic features

There are four vowels, a, e, i and o, each short and long,[1] pronounced as in Italian and a short vowel ɪ (between the *i* in English *will* and the *u* in English *but*). The ɪ is a phonetical variant of the *i*, i.e. there are no opposition pairs ɪ/*i*. No word can start with a vowel, and if it ends in a vowel, the vowel is long. The oo at the end of a word is often pronounced *ow*.

There are 23 consonants, many of which sound composite to the western ear; they are described in the table on the next page. All of these are single phonemes and should be considered single letters. The forms separated by / are variants of the same phoneme, the exact form depending on the circumstances. The gutturals g, ɣ and x turn into gw, ɣw and xw before or after the vowel o and the w is pronounced together with the guttural rather than after it. The nasal n is pronounced and written ng before g, k, x and ' (the glottal stop) and their variants. The ts turns into s in prefixes. The stand-alone w is a variant of the unstressed o at the end of a word, or a glide between vowels, one of which is an o. And the ẋ used in the aspiration of t and k has a more guttural quality than the stand-alone x or the x used in the aspiration of the tc.

[1] In lit. ref. [1] long vowels are indicated by a following raised dot (e.g. a·), but in this text long vowels are shown as double vowels (e.g. aa), for clarity and in conformance with present-day Navaho spelling.

Consonants

reconstructed Athabaskan	Mattole	approximate description
’	’	glottal stop, as in German *Theater*
h	h	as in English, also at the end of a syllable
y	y	as *y* in English *yes*
	w	as *w* in English *wall* (see below)
c	x/xw	as *ch* in German *Bach*
b	b/m	between *b* and *p* in English
d	d	between *d* and *t* in English
t	tx̣	heavily aspirated *t*
t’	t’	glottalized *t*
n	n/ng	as in English
g/ɣ	g/gw/ɣ/ɣw	g between *g* and *k* in English, ɣ as the *g* in Dutch *geen*
k/x	kx̣	heavily aspirated *k*
k’	k’	glottalized *k*
c	c	broad *s*
s/ts/z	ts/s	sharp *s*; ts almost as *s*
t’s	t’s	glottalized ts
ky’	t’sy	the above followed by *y*
gy/dj	dj	between the *J* in English *John* and the *ch* in English *church*
tc	tcx	as *dsch* in Dutch *boodschap*
t’c	t’c/tc	*t’* or *t* followed by *c*
ky	tç	as *dch* in German *Mädchen*
l	l	as in English
ɬ/dl/tl	ɬ	voiceless l, as the *ll* in Welsh *Llangollen*
t’ɬ	t’ɬ	t’ followed by ɬ

Unlike English and the other European languages, which divide consonants in voiced (*b*, *d*, *g*, *v*, *z*) and voiceless (*p*, *t*, *k*, *f*, *s*), Mattole and the other Athabaskan languages divide them in plain, aspirated and glottalized. A consonant is aspirated by pronouncing an *h* at the same time or slightly after it; an example from English is the *t* in *talk*, which is aspirated versus the *t* in *stalk*, which is not. Aspiration in Mattole is so strong that it is rather a *x* (as in Scottish *loch*) than an *h* that marks it. A consonant is glottalized by pronouncing a glottal stop at the same time or slightly after it; there are no examples in the European languages, though the British substandard pronunciation of *sitting* as *si’n* has some of the flavour. The table be;ow summarizes the three main lines.

Three forms of stops

	plain	aspirated	glottalized
dental	d	tx̣	t’
palatal	dj	tcx	t’c
velar	g	kx̣	k’

The plain consonants d, dj, and g are marked by the absence of aspiration and glottalization; they could as well be written t, tc and k. The aspirated and glottalized consonants can occur only as the first consonant of a root.

The stand-alone glottal stop ’, which is a separate consonant, differs from the ’ in glottalized stops like t’, where it indicates a modification to the original stop, and should probably be written ?, as it is in some Algonkian languages. Here both are represented by ’, conforming to the literature reference [1] and to standard Navaho spelling.

Unlike the majority of the Athabaskan languages, Mattole has no tones. Stress is generally on the last syllable, but may fall on the one but last syllable, especially in third person verb forms and in some nouns.

3 Lexical features

The centerpiece of the Mattole vocabulary is the verb form, which includes indications for subject, object, aspect and adverbial modification, in addition to the stem of the verb. Adjectives are part of the verbal system, with special prefixes to derive adjectives from verbs; example:

`-tcxe'n` = *to be bad*,
which yields
`nitcxe'n` = *bad*.

There are only a hundred or so real nouns, all concerned with kinship relations, body parts, animals and some common objects, like `t'ɬéle'` = *'elk-horn spear used to spear sea lions'*. All other nouns are constructed (and can be constructed on the spot) from verbs. An example is
`biɬ'iɣiltx̣a'dj` = *pencil*;
the word is composed of
`biɬ-'i-ɣi-l-tx̣a'dj`
= *with it - it - thing (noun indicator) - passive - scratch/write*
= *a thing-with-which-it-is-written,*
i.e, a pencil. The form
`biɬ` = *with it*
is again composed of two elements:
`bi-` = *of it* and `-ɬ` = *with*.
Nouns thus constructed are called *thematic*.

Mattole has no gender, not even in the personal pronouns; that is, there is no difference between he, she or it. Pronouns are not distinguished in the three classes singular and plural the way the European languages do. The following table shows the various pronouns, as subjects, objects and possessors, corresponding, for example, to English `I`, `me` and `my`.

Pronouns

Class	Subject	Object	Possessor	English equivalent
speaker	c/ii	ci	ci/'ic	I
listener	n/ng	ni	ni	you
known absent person/thing	–	'i/yi/–	bi	he/she/it
unknown absent person	dji/'dji	'i/y	gwo	somebody
group of the speaker	di	noh	noh	we
some listeners	oh	noh	noh	you (plural)
addressed crowd	oyah	noh	noh	you all
all unknown absent people	ya/yaa	–	–	everybody [else]
self		'adi	'a/'aadi	..self/..selves

The dashes (–) in the above table indicate cases that are signalled by the absence of a particle. The empty entry (self as a subject) of course does not exist.

4 Verbs

A verb form consists of a number of prefixes, a verb stem, and possibly one of two suffixes. The verb itself has often a rather broad meaning, for example
`-'aan` = *to handle a round object*.
Its meaning is then narrowed down by some of the prefixes, which may specify meanings like 'upwards' (`ni-`), to give
`ni-...-'aan` = *to pick up a round object*;
or 'into pieces' (`djiɣa-`) giving
`djiɣa-...-'aan` = *to smash a round object*.
These prefixes correspond closely to the German prefixes `auf-` = *upwards* and `zer-` = *destroying*. Prefix-verb combinations like
`ni-...-'aan`
and
`djiɣa-...-'aan`
which together have a meaning, are called *verb bases*.

The Mattole verb structure can be compared reasonably closely to that of the German compound past participle, for example
`aufgehoben` = *picked up*,

which has the structure

`auf-ge-hob-en` = *upwards (prefix) - past tense (prefix) - lift (the stem) - past participle (suffix).*

None of the particles in the verb can be used independently, not even the verb stem. When pronounced, the particles in Mattole influence each other and are glued together, like in French:

`il t'a vu` = *he has seen you*

has the particles

`il-te-a-vü` = *he - you - third person singular - see (past stem)*,

and is pronounced `itavü`. There are some tens of rules for contracting verb forms in Mattole. Some are simple; for example, `nɬ` reduces to `ɬ`. Some are more complex: `cɬtç` reduces to `cx`:

`né'icxoos` = *I pick it up a fabric*

from

`ni-'i-c-ɬ-tçoos` = *upwards - it - I - ɬ-class - handle a fabric.*

The examples below show more of these effects.

4.1 The verb form

The elements of a verb form appear in a fixed order:

- general prefixes,
- an object prefix,
- additional object prefixes,
- moment-aspect prefixes,
- destination-aspect prefixes,
- time-aspect prefixes,
- a subject prefix*,
- a verb classifier*,
- the verb stem*, and
- possibly a suffix.

The elements marked with * are obligatory. If they are the only ones present, a dummy prefix `'i-` precedes them.

4.1.1 General prefixes

These modify and narrow down the meaning of the verb stem. The prefix may describe the way an action is performed, e.g.

`dahdi-` = *in a stealthy way*,

as in

`dahdıɣii'áán` = *I stole it (a round object)*

from

`dahdi-ɣi-ii--'aan` = *stealthily - result aspect - I - zero-class - handle a round object.*

Or the prefix may say something about the place or direction, e.g.

`ni-` = *upwards*,

as in

`ne'intx̣ííx` = *you pick it up (a long object)*

from

`ni-'i-n--tx̣iix` = *upwards - it - you - zero-class - handle a long object.*

There are about fifty general prefixes.

Some particles have no clear meaning. An example is the prefix

`gwo-`

which occurs, for example, in the composite verb

`gwo-ni-...-yee` = *to win*

from

`-yee` = *to eat up.*

This is comparable to a German prefix like `er-`, which does not do anything to explain the relationship between

`zählen` = *to count*

and

`erzählen` = *to tell.*

Such prefixes are translated here as 'some prefix'.

Some prefixes have a different form if the subject is absent (i.e. third person):

ginicyéex = *I talk*
from
gini-c--yeex = *some prefix - I - zero-class - talk*
versus
kx̣éeneex = *he talks*
from
kx̣eeni---yeex = *same prefix for third person - he - zero-class - talk.*

4.1.2 An object prefix

See the table of pronouns. The subject prefixes for the unknown persons (singular and plural) also appear in this position.

4.1.3 Additional object prefixes

A dozen or so prefixes take this position; they generally refer to the object, as if they were suffixes to it, which in fact they may be. Example:
-o- = *towards*,
as in
nóst'sih = *I am acquainted with you*
from
ni-o-c-ɬ-t'sih = *you - towards - I - ɬ-class - know*
(with 'I know towards you' meaning 'I am acquainted with you'). Actually, if such a prefix occurs, the preceding position (the object) has the possessive form of the pronoun rather than the object form:
biɣa'iɣınɬtsííl = *he has thrown it right through it*
from
bi-ɣa-'i-ɣın--ɬ-tsííl = *its - through - it - result aspect - he/she/it - ɬ-class - throw.*

4.1.4 Moment-aspect prefixes

They express whether the action or situation starts (di/dee), stops (ni/nee) or is momentaneous (ni).

4.1.5 Destination-aspect prefixes

Only two prefixes can have this position:
si/see = *to death*
and
di = *into the fire.*

4.1.6 Time-aspect prefixes

These express whether the action or situation lasts on (si), is going on all the time or is concerned with the result (ɣi), is instantaneous (ni), occurs in the future (diɣi), or involves a permission (oo).

4.1.7 A subject prefix

See the table of pronouns.

4.1.8 A verb classifier

There are two classes of verbs, the zero-class and the ɬ-class. If both classes exist for a given verbal root, generally the ɬ-class is the causative of the zero-class. An example is the root -tsih = *to become*, which yields:
djíntsih = *you wake up*
from
dji-n--tsih = *awake - you - zero-class - become*,
versus
djíɬsih = *you wake him up*
from
dji--n-ɬ-tsih = *awake - him - you - ɬ-class - become = you cause him to become awake.*

Beyond that, the class has to be learned with each verb, which is not really a problem, since the class shows up on almost very usage of the verb. The classifier for verbs of the zero-class is the absent particle, that for the ɬ-class is `ƛ`. Both classes have a different form of the classifier if the action is not done *by* the subject, but *for* or *to* the subject, the medial and passive forms. The zero-class has `di` and the ɬ-class has `l`, the latter being a contraction of `ƛdi`. An example is the active

`djiɣaasiit'ƛííd` = *I smashed it to pieces*

from

`djiɣa-si-ii--t'ƛiid` = *to pieces - lasting aspect - I - zero-class - smash*,

versus the passive

`djiɣaasisdit'ƛííd` = *I am smashed to pieces*

from

`djiɣa-si-c-di-t'ƛiid` = *to pieces - lasting aspect - I - di-class - smash.*

It is amusing to see that the medial form of

`-yiix` = *to whistle (ɬ-class),*

is

`-yiix` = *to rest (l-class)*,

i.e., to whistle to oneself.

Many verbs occur in one of the classes only. For example, verbs denoting a state rather than an action often occur in the di-class only: `-di-biin` = *to be sharp.*

The Mattole verb class system is parallel to but simpler than the Hebrew binyanim, in which also a root produces many different stems. The Mattole zero-class corresponds roughly to the Hebrew qal, the di-class to the nif'al, the ɬ-class to the hif'il and the l-class to the hitpa'el. Note that the characterizing particle of the Mattole di-class `di-` and the characterizing particle of the Hebrew nif'al `ni-` both mean 'we' in the corresponding language This is a phenomenon found in many otherwise unrelated languages.

4.1.9 The verb stem

There are about 300 verb roots in total. This may seem to be very little, but since each root can be combined with any number of prefixes, of which there are more than fifty, it is easy to make thousands of combinations, enough to satisfy all semantic needs. A good example of such a semantic construction is supplied by the root

`-gol` = *to scrape*,

which when combined with the prefix

`nehe-` = *back into shape*,

yields the verb base

`nehe-...-gol` = *to shave.*

All roots have the form consonant-vowel-consonant or consonant-vowel; in the first form there may be an additional glottal stop before the final consonant:

`-kx̣a'ƛ` = *to sew*;

in the second form the vowel is always long:

`-tcxii` = *to make.*

The initial consonant is special in that it is the only position in the language in which the aspirated and glottalized consonants can occur (`-tx̣ah` = *to smoothe* and `-t'ah` = *to fly*).

The root of a verb has different forms for the different tenses:

`-tcxii` =	*make*	present
`-tcxii'n` =	*made*	past
`-tcxiil` =	*will make*	future
`-tcxɪ'` =	*may make*	optative

This is comparable to English verb paradigms like `to do - did - done`. The Mattole verb root normally has four forms, called the *stems*, designating present, past, future and outside of time. While the English stems are generally made by varying the vowel in it, Mattole stems are often made by varying the final consonant. For the past, the final consonant is often assimilated to an `-n` or a `-d`, for the future to an `-l`, and for the optative to a `-'`, as in the above example. But many other phenomena are found, including vowel changes, as in the optative form above. Four verbs have two additional stems, one for the continuous present and one for the continuous past. The verbs stems are displayed in the following format:

present (continuous present) past (continuous past) future optative = *meaning*

The continuous forms, if applicable, are shown between parenthesizes.

Each of the four stems (six if one counts the continuous stems) can exist in a heavy and a light form. The heavy form ends in a voiced consonant, the light form ends in the corresponding voiceless one; given the heavy form, one can derive the light form. Remarkably, the ng is used as the light form of the n.[2] The choice between heavy and light forms depends on the surrounding prefix and suffix. Many verbs just have a single form for each of the stems, which then may be heavy or light. An example is:

-gong' -goo'n -gool -gong' = *to put out the fire (ɬ-class)*

in which the first and fourth stems are light and the second and third are heavy.

There is no verb in which all 12 (6×2) stem forms are different; the maximum found is nine, for example:

-'aax (-'aa) (-'ai) -'ang -'aan (-'a') -'aaɬ -'aal -'a' = *to handle a round object (zero-class)*

in which the light forms are shown on top.

There are about 65 verbs that have only one form for all stems:

-yeex -yeex -yeex -yeex = *to talk (zero-class)*

Such verbs could be called 'regular', although the forms of the other verbs also display considerable regularity. Normally there are 4 to 5 forms, as in:

-naah -naad -naal -naah = *to lick (ɬ-class)*

and

-tx̣iix -tx̣ang -tx̣aan -tx̣iil -tx̣ɪh = *to handle a long object (zero-class)*

Some verbs have different meanings depending on the class they are conjugated in. An example is:

-tx̣ɪx (-tx̣ee) -tx̣ɪng -tx̣een (-tx̣e') -tx̣eel -tx̣e' = *to move a living being (ɬ-class)* / = *a living being moves (zero-class)*

Examples of use are:

- né'iɬtx̣ɪx = *you pick him up*, from

  ni-'i--n-ɬ-tx̣ɪx = *upwards - him - present - you - ɬ-class - move a person (present stem)*, with loss of second-person -n- before the ɬ-classifier.

- nisiɬtx̣één = *you have picked him up*, from

  ni--si-n-ɬ-tx̣een = *upwards - him - lasting aspect - you - ɬ-class - move a person (past heavy stem)*, again with loss of second-person -n- before the ɬ-classifier.

- nidɪɣɪctx̣éél = *I am going to pick him up*, from

  ni--dɪɣɪ-c-ɬ-tx̣eel = *upwards - him - future - I - ɬ-class - move a person (future stem)*, with loss of ɬ-classifier after first-person -c-.

- niyóɬtx̣e' = *let him pick him up*, from

  ni-yi-oo--ɬ-tx̣e' = *upwards - him - permission - he - ɬ-class - move a person (optative stem)*, with contraction of third-person subject -yi and the permission prefix -oo- to -yó-.

- neesiitx̣één = *I am lying down*, from

  nee-si-ii--tx̣één = *terminative mode - lasting aspect - I - zero-class - move (past heavy stem).*

An example of a verb of the l-class is

-da' -'éés -daal -da' = *to jump, run (l-class)*

which uses suppletion for the past stem. This verb yields for example

dílda' = *you run away*

from

di-n-l-da' = *inceptive (starting) mode - you - l-class - run (present stem)*,

with loss of second-person -n- before the l-classifier.

An example of a di-class verb is

-diɬ -dee'l -dil -diɬ = *to fly, plural subject (di-class)*

which yields for example naasdidéé'l = *they flew around* from

naa-s-di-dee'l = *continuous movement - lasting aspect - di-class - fly (past stem).*

[2] This might suggest that the ng rather represents a nasalization of the preceding vowel than a real consonant; this would also explain why forms like -gong' can seemingly end in two consonants, ng and '.

4.1.10 A possible suffix

Suffixes can be used to define the 'setting' of the verb form: emphasis can be lent by adding the suffix `-ha'` and negative emphasis by `-ihih`. A verb form is marked as indirect speech (quoting) by adding `-laah`/`-laan`.

4.2 Other points

Negation is expressed by putting `doo` = *not/no* in front of the verb.

A verb form cannot start with the stem, the classifier or even the subject prefix; if no other prefix is required, the verb form starts with the dummy prefix `'i-`.[3]

Although there is a permission prefix (`-oo-`), there is no imperative prefix. Commands are given by using a second person statement. A combined example is `'íntsi'` = *pound it!* from

`-'i-n--tsi'` = *inanimate object - dummy prefix - you - zero-class - present stem*,

from the verb

`-tsi'` `-tsid` `-tsil` `-tsi'` = *to pound (zero-class)*

That it is the present stem that is used rather than the optative stem is shown by `níntsaa` = *sit down!* from

`ni-n--tsaa` = *instantaneous aspect - you - zero-class - present stem*,

from the verb

`-tsaa` `-daa` / `-dai` `-tsaal` `-tsa'` = *to sit down (zero-class)*,

again with suppletion in the past stem.

5 Nouns

Like the verb stem, the noun stem is preceded by prefixes and possibly followed by suffixes, although to a lesser extent. There is no difference between definite and indefinite, i.e., there is nothing corresponding to the English `the` and `a`.

5.1 The noun form

The elements of a noun form appear in a fixed order:

- a prefix,
- the noun stem,
- possibly some suffixes.

5.1.1 A prefix

The prefix to the noun describes its possessor:

`citcxóó` = *my grandmother*

from

`ci-tcxoo` = *my - grandmother*.

See the table of pronouns above. The prefix `ci-` = *my* has a different form when used for addressing a person:

`'icxóó` = *grandmother!*

from

`'ic-tcxoo` = *oh-my - grandmother*.

5.1.2 The noun stem

Most nouns are composite, the single noun forms being reserved for kinship terms, body parts, etc, as explained above. Many single nouns are 'inalienable', that is, they cannot occur without an owner prefix: there is no stand-alone word for grandmother and `-tcxoo` can only be translated as 'somebody's grandmother'.

[3] This suggests that the subject prefix, the classifier, and the verb stem together form a unit in the language.

5.1.3 Possible suffixes

Many of these noun suffixes (about 14 of them) play the same role as the prepositions in the Germanic and Romance languages; unlike the latter they attach mainly to personal pronouns:

`cibi'` = *in me*, `ninaa` = *for you*, `biɬ` = *with it / therefore*

from

`ci-bi'` = *my - in*, `ni-naa` = *you - for*, `bi-ɬ` = *its - with*

etc.

This suffixing of prepositions is actually not unusual in Dutch or German: Dutch *de tuin in* or German *den Garten hinein* = *into the garden*, literally 'the garden into'.

For nouns other than pronouns, the suffix is usually attached to the third-person possessive pronoun:

`kx̣a' bayéh` = *under the roots*

from

`kx̣a' bi-ayeh` = *root ␣ his-some_suffix.*

Other noun suffixes modify the size of the object: the diminutive suffix `-idjeh` is comparable to the suffix `-chen` in German or the suffix `-je`/`-tje` in Dutch. Unlike these languages, Mattole also has an augmentative suffix, `-tçoh`/`-tçow-`, describing larger than usual size; this suffix is comparable to the Italian suffix `-one` (`Pepe` → `Peppone`).

5.2 Other points

The difference between singular and plural is not expressed in the noun, though for the subject it may be indicated by using `ya-` in the verb. Also, action by a group is sometimes perceived as conceptually different from action by a single person, and is therefore designated by a different verb:

`-yaax` = *to go (one person, alone)*,

versus

`-diɬ` = *to go (several persons, in a group).*

Possession is expressed using the third-person possessive pronouns, as with the suffixes above:

`'isíítcxıng bi'djínde'` = *coyote his-carcass = the carcass of the coyote*

from

`'isii-tcxıng bi-'-djinde'` = *coyote - person classifier? ␣ his - connector? - carcass.*

6 Syntax

The adjective, which we have seen is actually a verb form, follows the noun; a few real adjectives like

`hai` = *this*, `sáhding` = *other*

precede the noun.

The usual Mattole sentence patterns are subject-verb-object and subject-object-verb; if there is no explicit subject, object-verb is usual. Small adjuncts like

`nínaa` = *for you*

often precede or follow the verb.

Subject relative clauses – relative clauses in which the subject refers back – are generally expressed by an adjective-like verb form with the noun indicator `-gwo-`:

`gwonist'é' naagwowılíɣ` = *people that will come to be*

from

`gwonist'e'` = *people*

(in itself a verb form, meaning 'those that are so') and

`naa-gwo-ɣi--liɣ` = *all-the-time - noun indicator - progressive aspect - zero-class - become*
= *those that will come to be.*

Object relative clauses – relative clauses in which the object refers back – are constructed with a special form of the object pronoun, `'aa-`:

`hai 'aadil'íín` = *this is what we do*

from

`hai` = *this*

and

`'aa-di-ɬ-'iin` = *which - we - ɬ-class - do.*

Subordinate clauses as such do not exist; the idea is expressed by having two main clauses connected by a conjunction comparable to the English `and`. Examples are:

`biɬ` = *then*
from
`bi-ɬ` = *its - with*;
and
`biɣaa` = *therefore*
from
`bi-ɣaa` = *its - because of*.
A sentence like 'We did not see him because he had already left' would be rendered as 'He had already left; therefore (= `bi-ɣaa`) we did not see him', a construction closely parallel to the Latin `cogito, ergo sum`.

Indirect speech is handled by the quotative suffixes `-laah`/`-laan` which follow the verb in the quoted part.

7 Numerals

Numerals

1	`láiha'`	7	`ɬa'sgwód`
2	`nakẓéh`	8	`djiht'syéd`
3	`daak'éh`	9	....
4	`dint'syéh`	10	`nisiyáán`
5	`djikẓóóla'`	11	`nisiyáán bik'eláiha'`
6	`gwostẓáán`	12	`nisiyáán bik'enakẓéh`

A form like 11 is constructed as follows:
`nisiyáán bi-k'e-laiha'` = *ten ␣ of it - after - one*,
i.e., ten and thereafter one.

8 A short comparison of Navaho and Mattole

Navaho seems to have more of everything: more verbs stem forms (N. 5 against M. 4), more differences between light and heavy forms (N. 3 to 4 against M. 2), more assimilation rules, etc., but this may just reflect our limited knowledge of Mattole. Navaho has two tones, a high tone indicated by an acute accent (`shí` = *I*, cf. M. `ci`) and a low tone indicated by a grave accent (`nì` = *you*, cf. M. `ni`), with each and every syllable carrying a tone; Mattole has no tones.

Simple verbs forms are often almost equal:
N. `dìbáh` = *he starts off on a raid*,
versus
M. `dibaah` = *he goes to war*,
or
N. `yì'ààɬ` = *he chews it*
versus
M. `yi'aɬ` = *he chews it*;
and even longer forms are often quite similar:
N. `nìníshtèèh` = *I put you down*
versus
M. `neenictẓɪx` = *I put you down*
from
`nee-ni--c-ɬ-tẓɪx` = *down - you - present - I - ɬ-class - move a person*,
or, with an additional prefix in Mattole:
N. `'ádìshdéél` = *I clean myself*,
versus
M. `gwona'adicdeh` = *I wash myself*
from
`gwona-'adi--c-l-deh` = *some prefix - self - present - I - reflexive - wash*.
The numerals, however, correspond only for 1, 2, 3, 4 and 10; the others differ completely.

The pronounced division of consonants in those usable in prefixes, as the initial consonant in the stem and as the final consonant of it, is typical of Mattole, although the principle is present in Navaho too, to a much lesser extent.

9 References

1. Fang-Kuei Li, *Mattole – An Athabaskan Language*, Publications in Anthropology, Linguistics Series, University of Chicago Press, Chicago, Ill., 1930, 152 pp.

2. David Yeadon, *California's North Face*, National Geographic, **184**(1), pp. 48-79, July 1993.