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CONTENTS
SERIES IX
NOS. 55-64

56. Lilo Stern: An Ethnography of Chiapilla, Chiapas.
58. McQuown, N.A. (ed.): Huehuetenango Vocabularies (Kanjobal of Santa Eulalia and Barillas).
60. Albert L. Wahrhaftig: Witchcraft and Curing in Two Tzeltal Communities.
61. M. Esther Hermitte: Social Mobility in a Chiapas Bicultural Town.
63. Christopher C. Day: Speech Variation and Social Differences in a Tzeltal Town.
64. Catherine Ives: Tojolabal Verb Morpheme List.
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MATERIALS ON MAYAN HISTORICAL LINGUISTICS

by

Terrence S. Kaufman

MICROFILM COLLECTION OF MANUSCRIPTS ON AMERICAN INDIAN CULTURAL ANTHROPOLOGY

No. 55
Series VIII

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CONTENTS

1. Linguistic Materials for a Study of the Internal and External Relations of the Mayan Family of Languages. pp 1-72

2. Mayan and Mixe-Zoque
   2a Potential Cognates between Mixe-Zoque and Mayan. pp 73-87
   2b Mixe-Zoque and Mayan Non-cognate Materials. pp 88-91

3. Mayan Sound Correspondence Charts. pp 92-124

4. Tzeltal-Tzotzil Comparative Grammar; Pt I: Phonology. pp 125-309
Linguistic Materials for A Study of the Internal and External Relations of the Mayan Family of Languages

by

Terrence S. Kaufman

University of California, Berkeley  August 1, 1962
The present writer has been gathering cognate materials in
the Mayan Languages since the early part of 1959, when he worked
for two months at the University of Chicago as a research assist-
ent for Norman A. McQuown doing cognate counts on word lists in
various Tseltal and Tzotzil dialects. His first efforts used
materials in the files of the Macro-Mayan Linguistic Research
Project, the bulk of which were gathered by Manuel J. Andrade and
Norman A. McQuown.

This work of gathering cognates and of developing hypotheses
about the phonology and grammar of Proto-Mayan has continued
since that time, mainly inspired by McQuown's contributions to
comparative Mayan phonology and to genetic subgrouping based on
phonology. The writer's studies received further impetus through
opportunities in 1960 and 1961 to do field work on Tseltal for
six-month and 4-month stretches respectively, the immediate result
to be a descriptive grammar and lexicon of Tseltal to be submitted
to the Department of Linguistics of the University of California,
Berkeley, as a doctoral dissertation.

On the basis of cognate materials thus far gathered the
writer drew up in the summer of 1961 a word list whose primary
purpose was to gather a fair-sized body of comparable lexical
materials in the Mayan languages which would be rich in cognate
material. These word lists, containing about 700 items, were
used by N. A. McQuown and O. B. Berlin for eliciting materials in
Chuj, Jasaltic, and Kanjobal, and by Kaufman for eliciting mate-
rials in Chol, during that same summer. The resulting materials
were especially valuable, since available data on these languages,
especially on Chuj and on Jacaltec, had previously been virtually non-existent.

In February of 1962, on the basis of cognate material so far gathered, the writer began a slip file of Mayan cognates, using as his criterion for inclusion that the cognate item should appear in at least two of the eleven subgroups of the family (see chart). About 1,000 slips were made. On the basis of these cognate slips Kaufman prepared a revision of his 'Mayan Vocabulary Survey' list which included most of the glosses on the 1,000 cognate slips. The resulting list of about 1,400 glosses was prefaced by a set of questions to be answered regarding the phonemic and morphological system of the individual languages. In the Spring these lists were sent out via the regional directors of the Summer Institute of Linguistics (= Wycliffe Bible Translators) to linguist-missionaries who were working on Mayan languages with the request that they complete the lists, time and inclination permitting. It was hoped that the lists might be returned during the summer of 1962 in time for the results to be incorporated in the present report. The time allowed, however, was not great enough for more than a few (Jacaltec, Chuj, Mopan, Aguacatec) of the lists to have been received by this date, although the results so far are quite encouraging.

Accordingly, the data used in the study consists of the 1,000 cognate slips made up in February 1962 (which have not been amplified by the use of more recently available materials, since these latter are as yet not representative of the whole family). This study, then, is based on lexical materials gathered
from a variety of available sources which in themselves are not organized according to a specific overall plan—namely, the collation of a fairly large body of comparable lexical data. Consequently there are gaps in our data which cannot be filled in until the 'Mayan Vocabulary Survey' or some similar instrument is filled out for all the extant Mayan languages.

Bearing in mind that the available data is often fragmentary, the cognate materials have been organized according to the following principles:

a) If a given cognate is found in all of the subgroups (not necessarily in each language), or in all but one of the subgroups, it has been classed as a type A cognate and included in this study.

b) If a given cognate is found scattered throughout the family, i.e., is not limited to a single set of contiguous languages, but is found neither in all the subgroups nor in all but one, it is included in the study and labeled a type B cognate.

c) Further, in type A are included sets of from two to five cognates having the same gloss, but which are in mutually exclusive (or in complementary) distribution with respect to the set of all the subgroups or of all the subgroups but one. Likewise, in class B are included sets of from two to five cognates spread in complementary distribution throughout the family but not meeting the numerical requirements for type A.

d) All other cognates are excluded.
The individual cognates or groups of cognates of types A and B are organized by their glosses into domains of semantically related items. Five hundred thirty-two items are so listed, of which 218 belong to type A and 314 belong to type B. An index to the domains listed precedes the listing of the glosses and the forms they have in the Mayan languages.

For each gloss in the domain listing there will be one or several cognate forms quoted; often a quoted form will be preceded by an asterisk (*), implying a reconstructed form; in other cases an asterisk does not occur, implying insufficient data for making reconstructions. However, forms preceded by an asterisk should not be taken as fully reliable proto-Mayan reconstructions. Two factors make such reliability at present unattainable: first, for a given etymon, certain proto-Mayan contrasts can only be recovered when cognates from crucial languages are known; when they are not known, or non-existent, the starred form is adequate only for the languages quoted after it and may therefore, properly speaking, not be called proto-Mayan; second, the reconstructions are not made in the light of a fully-elaborated theory of proto-Mayan phonology, although they do represent the writer's considered opinion as of this writing. They are, of course, subject to subsequent modification and refinement.

The following chart shows the symbols for correspondences that the writer has so far tentatively identified:
| i   | á   | u   | v   | e   | a   | o   |

Morpheme Patterns (Roots)

- CVC
- CVVC
- CV-C
- CVbC
- CVxC
- CVgVC
- CV-CVC
- CVgVCVC
- CVgVVC
- CVgVVCVC
1. The symbol */k/ implies that it is not possible on the basis of available data to determine whether the proto-Mayan sound was */k/ or */q/.

2. In many cases where */k/ is written, it is not possible to determine whether the original sound was */a/ or */i/.

3. */t/ may also stand for */t/ or */t'/, and */t/ or */t'/.

4. When languages with phonemic vowel length are not involved, a short vowel symbol may stand for a Proto-Mayan long vowel.

Since the present writer's view of the classification of the Mayan languages differs slightly from that previously published by Mcnulson (1956) both in assignment to subgroups and in nomenclature, it will be useful to present the following guide. Since the available data is uneven in extent, only data from the underlined languages is quoted in this study. For these languages the data is fairly extensive; however, when Mam data is not available, Aguacatec data is sometimes cited, always in parentheses. Likewise, when Uiché data is not available, Cakchiquel may be cited, and when Chortí data is lacking, Choltí data may be cited.
<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Language</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Huastecan</td>
<td>Hua</td>
<td>Hua</td>
</tr>
<tr>
<td>(extinct)</td>
<td>Chicomuceltec (=Cotoque, Coxoh)</td>
<td>Yue</td>
</tr>
<tr>
<td>II Yucatecan</td>
<td>Yucatec</td>
<td>Yue</td>
</tr>
<tr>
<td></td>
<td>Mop</td>
<td>Mop</td>
</tr>
<tr>
<td></td>
<td>Lacandón</td>
<td>Lac</td>
</tr>
<tr>
<td>III Cholan</td>
<td>Chontal</td>
<td>Cha</td>
</tr>
<tr>
<td></td>
<td>Chol</td>
<td>Chl</td>
</tr>
<tr>
<td></td>
<td>Chortí (extinct variety, Choltí: Ch)</td>
<td>Chr</td>
</tr>
<tr>
<td>IV Tzeltalan</td>
<td>Tzeltal</td>
<td>Tze</td>
</tr>
<tr>
<td></td>
<td>Tzotsil</td>
<td>Tzo</td>
</tr>
<tr>
<td>V</td>
<td>Tojolabal</td>
<td>Toj</td>
</tr>
<tr>
<td>VI</td>
<td>Chol</td>
<td>Chol</td>
</tr>
<tr>
<td>VII Kanjobalan</td>
<td>Kanjobal (includes Solomes)</td>
<td>Kan</td>
</tr>
<tr>
<td></td>
<td>Jacaltec</td>
<td>Jac</td>
</tr>
<tr>
<td>VIII (extinct)</td>
<td>Motocintlec</td>
<td>Mot</td>
</tr>
<tr>
<td>IX Mamean</td>
<td>Ixil</td>
<td>Ixl</td>
</tr>
<tr>
<td></td>
<td>(Aguaecatec)</td>
<td>Age</td>
</tr>
<tr>
<td></td>
<td>Mam</td>
<td>Mam</td>
</tr>
<tr>
<td>X Quichéan</td>
<td>Quiché</td>
<td>Qui</td>
</tr>
<tr>
<td></td>
<td>(Cachiquel)</td>
<td>Cak</td>
</tr>
<tr>
<td></td>
<td>Tsutujil</td>
<td>Tsu</td>
</tr>
<tr>
<td></td>
<td>Achi (mahabinal)</td>
<td>Achi</td>
</tr>
<tr>
<td>XI Kokhian</td>
<td>Pokomai</td>
<td>Peh</td>
</tr>
<tr>
<td></td>
<td>Pokomachi</td>
<td>Peh</td>
</tr>
<tr>
<td></td>
<td>Kokhí</td>
<td>Kok</td>
</tr>
</tbody>
</table>
Index to Domains and Their Locations

<table>
<thead>
<tr>
<th>Index</th>
<th>Type A</th>
<th>Type B</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal Parts, etc.</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>A. 1-5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>B. 6-8</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Domestic Animals</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>A. 9-11</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>B. 12-13</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Mammals</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>A. 14-23</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>B. 24-33</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Birds</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>A. 34-40</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>B. 41-46</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Bugs</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>A. 47-54</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>B. 55-61</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Water Animals</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>A. 62-65</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>B. 66-69</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Reptiles, etc.</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>A. 70-71</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>B. 72</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plant Parts</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>A. 73-75</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>B. 76-79</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Fruit-bearing Trees</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>A. 80-83</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>B. 84-89</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Other Trees</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>A. 90-92</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>B. 93-98</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Category</td>
<td>Type A</td>
<td>Type B</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>Vines</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>A. 99-101</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>B. 102-107</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Grasses</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>A. 108-109</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>B. 110-116</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Cacti, etc.</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>A. 117-118</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>B. 119-121</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Maize</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>A. 122-125</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>B. 126-127</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Tobacco</td>
<td>---</td>
<td>3</td>
</tr>
<tr>
<td>B. 128-130</td>
<td>---</td>
<td>3</td>
</tr>
<tr>
<td>III Agriculture</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>B. 131-135</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>IV Food</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maize Preparations</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>A. 136</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>B. 137-142</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Other Foods</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>A. 143</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>B. 144</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Tools and Processes</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>A. 145</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>B. 146-147</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Eating and Action with Mouth</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>A. 148-153</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>B. 154-159</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>States of Edibles</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>A. 160</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>B. 161</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>V Fire</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>A. 162-168</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>B. 169-173</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>
VI Containers
   A. 174-175
   B. 176-180

VII Belief
   A. 181-182
   B. 183-185

VIII Sickness
   A. 186-190
   B. 191

IX Body
   Parts
      A. 192-206
      B. 207-229
   Products and Functions
      A. 230-235
      B. 236-240
   Abnormal States
      A. 241-
      B. 242-246

X Sensation
   Sight
      A. 247-248
   Colors
      A. 249-253
   Taste, Smell and Hearing
      A. 254-259
      B. 260

XI Movement in Space
   A. 261-266
   B. 267-273

XII Position
   A. 274
   B. 275-276

XIII Earth
   A. 277-282
   B. 283-285

<table>
<thead>
<tr>
<th>Type A</th>
<th>Type B</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>5</td>
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<td>7</td>
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<td>1</td>
<td>2</td>
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<tr>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>IV</td>
<td>Water</td>
</tr>
<tr>
<td>-----</td>
<td>------------------------</td>
</tr>
<tr>
<td></td>
<td>A. 286-289</td>
</tr>
<tr>
<td></td>
<td>B. 290-294</td>
</tr>
<tr>
<td>V</td>
<td>Sky</td>
</tr>
<tr>
<td></td>
<td>A. 295-301</td>
</tr>
<tr>
<td></td>
<td>B. 302-304</td>
</tr>
<tr>
<td>VI</td>
<td>Clothing</td>
</tr>
<tr>
<td></td>
<td>A. 305-309</td>
</tr>
<tr>
<td></td>
<td>B. 310-314</td>
</tr>
<tr>
<td>VII</td>
<td>Structures, Tools and Supplies</td>
</tr>
<tr>
<td></td>
<td>A. 315-321</td>
</tr>
<tr>
<td></td>
<td>B. 322-336</td>
</tr>
<tr>
<td>VIII</td>
<td>Measurement</td>
</tr>
<tr>
<td></td>
<td>Counting</td>
</tr>
<tr>
<td></td>
<td>A. 337-349</td>
</tr>
<tr>
<td></td>
<td>B. 350-354</td>
</tr>
<tr>
<td></td>
<td>Time</td>
</tr>
<tr>
<td></td>
<td>A. 355-356</td>
</tr>
<tr>
<td></td>
<td>B. 357-364</td>
</tr>
<tr>
<td>IX</td>
<td>Entertainment and Recreation</td>
</tr>
<tr>
<td></td>
<td>A. 365-366</td>
</tr>
<tr>
<td></td>
<td>B. 367-374</td>
</tr>
<tr>
<td>X</td>
<td>Commerce</td>
</tr>
<tr>
<td></td>
<td>A. 375-379</td>
</tr>
<tr>
<td></td>
<td>B. 380-385</td>
</tr>
<tr>
<td>XI</td>
<td>Roles</td>
</tr>
<tr>
<td></td>
<td>Kinship</td>
</tr>
<tr>
<td></td>
<td>A. 386-390</td>
</tr>
<tr>
<td></td>
<td>B. 391-403</td>
</tr>
<tr>
<td></td>
<td>Types of People</td>
</tr>
<tr>
<td></td>
<td>A. 404-408</td>
</tr>
<tr>
<td></td>
<td>Other Roles</td>
</tr>
<tr>
<td></td>
<td>A. 409-411</td>
</tr>
<tr>
<td></td>
<td>B. 412</td>
</tr>
<tr>
<td>XXII Interaction and Social Structure</td>
<td>Type A</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Verbal Interaction</td>
<td></td>
</tr>
<tr>
<td>A. 415-414</td>
<td>2</td>
</tr>
<tr>
<td>B. 415-425</td>
<td></td>
</tr>
<tr>
<td>Concepts and Mentation</td>
<td></td>
</tr>
<tr>
<td>A. 426-428</td>
<td>3</td>
</tr>
<tr>
<td>B. 429-435</td>
<td></td>
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<tr>
<td>Transfer of Goods</td>
<td></td>
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<tr>
<td>B. 436-439</td>
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<tr>
<td>Values</td>
<td></td>
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<tr>
<td>B. 440-445</td>
<td>---</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td></td>
</tr>
<tr>
<td>B. 444-449</td>
<td>---</td>
</tr>
</tbody>
</table>

| XXIII Goal-Directed Action          |        |        |
| A. 450-451                         | 2      |        |
| B. 452-474                         |        | 23     |

| XXIV Development and Change         |        |        |
| A. 475-477                         | 3      |        |
| B. 478-482                         |        | 5      |

| XXV Qualities and Shapes            |        |        |
| A. 483-487                         | 5      |        |
| B. 488-503                         |        | 16     |

| XXVI Particles                      |        |        |
| Pronominal                          |        |        |
| A. 504                              | 1      |        |
| B. 505-510                          |        | 6      |
| Person Markers                      |        |        |
| A. 511-522                          | 8      |        |
| B. 525-532                          |        | 4      |
| Adverbials, etc.                    |        |        |
| A. 523-524                          | 2      |        |
| B. 525-532                          |        | 8      |

<table>
<thead>
<tr>
<th>Total</th>
<th>Type A</th>
<th>Type B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>218</td>
<td>314</td>
</tr>
</tbody>
</table>

|                                   |        |        |
|                                    | 532    |        |
## Domain Listing of Cognate Mayan Morphemes

### I. Animals

#### Animal Parts, etc.

<table>
<thead>
<tr>
<th>Type</th>
<th>Morphemes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type A</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. TAIL</td>
<td>ge-h</td>
<td>whole family</td>
</tr>
<tr>
<td>2. WING</td>
<td>a) ši-š&quot;</td>
<td>Tse-Tso-Yuc-Pch-Kek-Kan-Jac-Mam-Que</td>
</tr>
<tr>
<td>b) weč</td>
<td>Toj-Chl</td>
<td></td>
</tr>
<tr>
<td>3. HORN</td>
<td>a) »ukuš, etc.</td>
<td>Pch-Jac-Kan-Mam-Que-Hua</td>
</tr>
<tr>
<td>b) ŕul.ub</td>
<td>Tse-Yuc-Toj-Chj</td>
<td></td>
</tr>
<tr>
<td>c) ŕuk&quot;ub</td>
<td>Kek-(Chat)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(&lt;Šuku 'side, corner')</td>
<td></td>
</tr>
<tr>
<td>4. EGG</td>
<td>a) »opol</td>
<td>Toj-Chj-(Agc)</td>
</tr>
<tr>
<td>b) »ol</td>
<td>Pch-Kek-Qui</td>
<td></td>
</tr>
<tr>
<td>c) »ox</td>
<td>Kan-Jac-Mam-Que-Yuc (he*)</td>
<td></td>
</tr>
<tr>
<td>d) »tum-ton (stone) + »mut&quot; (bird)</td>
<td>Tse-Tso-Chl (Hua)</td>
<td></td>
</tr>
<tr>
<td>5. FEATHER, QUEZAL BIRD</td>
<td>qu-q</td>
<td>whole family (Hua)</td>
</tr>
</tbody>
</table>

| **Type B** | | |
| 6. COMB, CREST | eš-e | |
| 7. NET | eš-e-š | |
| 8. HONEYCOMB | ešokvon | both from Mixe-Zoque? |
### Domestic Animals

#### Type A

<table>
<thead>
<tr>
<th>9. Dog</th>
<th>a) <em>psuk</em></th>
<th>Yuc, Hua &lt; Zapotecan?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b) <em>psi</em></td>
<td>other Mayan</td>
</tr>
</tbody>
</table>
| 10. Turkey   | a) *vak'ak*     | Peh-Kek-Chj-Kan-
|              |                 | (Ago)-Chl             |
|              | b) *vak*        | Maa- Qui              |
|              | c) *ku*         | Tse-Yuc-Chr           |
|              |                 | (Huat)                |
| 11. Cat      | *mis-mes*       | whole family (<Nahuat) |
|              |                 | (Huat)                |

#### Type B

| 12. Domestic Animal | *naluk*         |
| 13. To Bark         | *vux*           |

### Mammals

#### Type A

| 14. Jaguar         | *bahlam*        | whole family (Huat) |
| 15. Possum         | a) *ux*         | Tse-Yuc-Chl          |
|                    | b) *uhsum*      | Tse-[Tsaq]-Chj-Kan-Jac |
|                    | c) *uhkar*      | Hua-Kek- Qui         |
| 16. Rat, Mouse     | a) *ech*        | Tse-Tsa-Peh-Kek- Qui |
|                    | b) *e'oe*       | Tse-(Chr)            |
|                    | c) *e'ow*       | Tse-Chj-Kan-Jac      |

Note: M-Z = Mixe-Zoque
<p>| | | | | | | |</p>
<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>17. RABBIT</td>
<td>a) <em>ču</em>š</td>
<td>Tse-Tso-Yuc-Chi-Chr</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>b) <em>ši</em>č</td>
<td>Toj-Chi-Kan</td>
<td></td>
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<tr>
<td></td>
<td>c) *šimul</td>
<td>Peh-Kek-(Age)-Qui</td>
<td></td>
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</tr>
<tr>
<td>18. Gopher</td>
<td>a) <em>ba</em>.h</td>
<td>Hua koy &lt; M-ž</td>
<td></td>
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<tr>
<td></td>
<td>b) <em>šo</em>ča</td>
<td>Tse-Tso-Yuc-Hua-Peh-Kek-Jac-Chi-Qu-Chr-Mam</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>19. Armadillo</td>
<td>a) *šib</td>
<td>Chj-Kan</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>b) *šib-ač</td>
<td>Tse-Tso-Jac-Chi</td>
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<tr>
<td></td>
<td>c) *šib-o.y</td>
<td>Yuc-Chj-Kan-Chr</td>
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<tr>
<td></td>
<td></td>
<td>Peh-Kek-Toj-Mam-(Cak)</td>
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<tr>
<td>20. Cougar</td>
<td><em>ko</em>š</td>
<td>(Huat)</td>
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<tr>
<td>21. Squirrel</td>
<td><em>ku</em>š</td>
<td>whole family (Mam)</td>
<td></td>
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<tr>
<td>22. Deer</td>
<td><em>šo</em>čh</td>
<td>whole family (Huat)</td>
<td></td>
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<tr>
<td>23. Weasel</td>
<td>*saqbin</td>
<td>whole family</td>
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<tr>
<td>Type B</td>
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<tr>
<td>24. Spider Monkey</td>
<td>several styles, e.g.</td>
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<tr>
<td></td>
<td>a) *maťe</td>
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<tr>
<td></td>
<td>b) *škoy</td>
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<tr>
<td>25. Howler Monkey</td>
<td>*čheš</td>
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<tr>
<td>26. Teco, Pilote</td>
<td>several styles, e.g.</td>
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<tr>
<td>(Coati)</td>
<td>a) <em>ša</em>š</td>
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<td></td>
<td>b) kohtom</td>
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<tr>
<td></td>
<td>a) <em>ši</em>š</td>
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<tr>
<td>27. Coyote</td>
<td>several styles, e.g.</td>
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<tr>
<td></td>
<td>a) <em>šo</em>č</td>
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<td></td>
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<tr>
<td></td>
<td>b) <em>šo</em>š</td>
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</tbody>
</table>
28. TEPECUESTLE  shalav
29. PORCUPINE  ʃiːf (thorn)  + ʷuʔ/huʔ/* (possum)
30. TAPIR  several etyma, e.g.
   a) ʃjimin
   b) ʃtʃiːl
31. SKUNK  ʃpahʃy
32. FOX  several etyma, e.g.
   a) ʃwaʔʃ
cf. Mixe(an)
   b) ʃwet/*
cf. Zoque(an)
33. WILD PIG  several etyma, e.g.
   a) ʃkitan
   b) ʃvahq

Birds
   Type A
34. BIRD  ʃ rotates
   a) ʃmut/*
Txe-Txe-Toj-Chj-[Yuc]-Chl-Chr
   b) ʃjik'ìn
Yuc-Hua-Peh-Kek-Kan-Jac-Qui
(Nahuatl)
   whole family (Yucatán)
35. CROW  ʃxoʔx
36. BUZZARD  ʃhoss
   a) ʃtʃeék
Txe-Chj-Kan-Chl
   b) ʃtʃeék
Toj-Chj-Jac-Chr
   c) ʃtʃuʔ*
Peh-Kek-Qui-Ham-Hua (Tesumal)
37. SMARAGD  a) ʃav-dék
Kek-Peh-Kan-Jac-
   b) ʃav-dék
Nam-Qui
   Txe-Toj-Chj-Yuc
   (Chilti)
<table>
<thead>
<tr>
<th>No.</th>
<th>Animal</th>
<th>Type E</th>
<th>Type A</th>
<th>Notes</th>
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<tr>
<td>38</td>
<td>HUMMINGBIRD</td>
<td>#unu*n</td>
<td></td>
<td>whole family</td>
</tr>
<tr>
<td>39</td>
<td>SCREECH OWL</td>
<td>#8i-‡</td>
<td></td>
<td>whole family</td>
</tr>
<tr>
<td>40</td>
<td>BAT</td>
<td>#so-‡</td>
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<td>whole family</td>
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<tr>
<td>41</td>
<td>Hooting-OWL</td>
<td></td>
<td></td>
<td>several etymology, e.g.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>a) *etuikkuru</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>b) *vikin</td>
</tr>
<tr>
<td>42</td>
<td>MALAL BIRD</td>
<td>#tax·do*</td>
<td></td>
<td></td>
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<tr>
<td>43</td>
<td>DUCK</td>
<td>#ped</td>
<td></td>
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<td>44</td>
<td>GUACAMAYA</td>
<td>#mao*</td>
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<td>45</td>
<td>HAWK</td>
<td></td>
<td></td>
<td>several etymology, e.g.</td>
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<td></td>
<td></td>
<td>a) <em>lik</em></td>
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<td></td>
<td></td>
<td></td>
<td>b) *li·v</td>
</tr>
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<td></td>
<td></td>
<td>c) <em>hi(h)k</em></td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>d) *kot</td>
</tr>
<tr>
<td>46</td>
<td>PARROT, PARRAKEET</td>
<td>#k-#el</td>
<td></td>
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<td></td>
<td>Bugs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>FLEA</td>
<td>#fáq</td>
<td></td>
<td>whole family</td>
</tr>
<tr>
<td>48</td>
<td>BEES, HONEY</td>
<td>#ka·b</td>
<td></td>
<td>whole family</td>
</tr>
<tr>
<td>49</td>
<td>GHAT, FLY</td>
<td>#us</td>
<td></td>
<td>whole family (Peh-Kek <em>tu§</em>)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(Huat)</td>
</tr>
<tr>
<td>50</td>
<td>GRUB, CATERPILLAR</td>
<td></td>
<td></td>
<td>Tsa-Tse-Hua-Peh-Chl-Man</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Chl-Kek</td>
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<td></td>
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<td></td>
<td></td>
<td>Kan-Jae</td>
</tr>
</tbody>
</table>
51. ANT
   *sanik, etc.
   whole family

52. SPIDER
   a) *sim
   Yuc-Tze-Tzo-Hua-Pch-
   Kek-Chl-Qui-Chr
   b) *sim
   Mam-Chj-Kan-Jac
   (Toj?)

53. LOUSE (=drink)
   *uk
   whole family

54. TICK
   *si-p
   whole family (Yuc?)

Type B

55. BUTTERFLY
    several etyma, e.g.
    a) *pehpen
    b) *nam

56. CRICKET
    *ni-l-ki-l

57. LIGHTNING BUG
    *uk'ay

58. COCKROACH
    several etyma, e.g.
    a) *peval
    b) *pe'k

59. MOSQUITO
    *ke'n

60. WASP
    several etyma, e.g.
    a) *ku'jo
    *cho'non

61. SCORPION
    several etyma, e.g.
    a) *sin'eg
    b) *de'k

Water Animals

Type A

62. TOAD
    a) *wo*
    Yuc-Hua-Kek-Toj-
    Chj-Ham
    b) *peq-poq
    Kan-Jac-Tze-Tzo-Chl-
    Chr-Qui-Pch
63. FROG
   a) *tax-nu'\-
      (Tse-Tso-)Yuc-Hua-
      Kek-Chl-Chr
   b) *paxjat
   c) *q\-

64. FISH
   *k\-

65. ALLIGATOR
   *tayxin

TYPE B

66. LARGE TURTLE several etyma, e.g.
   a) *ahk'\-
   b) *pe-t' (or *pe-f'\-

67. SMALL TURTLE

68. CRAWFISH several etyma, e.g.
   a) *t\-
   b) *lep

69. IGUANA several etyma, e.g.
   a) t\-
      (non Mayan)
   b) hu'x-hi'x

Reptiles, etc.

TYPE A

70. WORM *luqu, etc.

71. SNAKE *han

TYPE B

72. SNAIL several etyma, e.g.
   a) *puy
   b) *ho\-
   c) *k\-

Whole family (Yuc)?
Whole family (Yuc-Kek?)
II Plants

Plant Parts

**Type A**

73. **ROOT**
   a) *ke*
   b) *yab*
   c) *yii*, etc.

   Kek-Kan-Jac-Mam-[Qui]
   Pch-Qui
   Tzo-Hua-Toj-Chj-Chl-Tse
   (Yuc)

74. **PIT, KERNEL**
   a) *ne-q-nah*
   b) *baq*

   Yuc-Peh-Kek-Qui-Chr
   Tze-Tzo-Chl-Jac-Mam
   (Qui)
   (Huat)

75. **THORN**
   a) *kiv*

   whole family

**Type B**

76. **SEED**
   *hiq(*)a...

77. **PITCH**
   several etyma, e.g.
   a) *qol*
   b) *uš*

78. **FLOWER**
   *qik*

79. **LEAF**
   *šaq*

Fruit-Bearing Trees

**Type A**

80. **AVOCADO**
   ***o·q*

   whole family

81. **COYOL PALM**
   ***e·p*

   whole family

82. **CHILE**
   ***ik*

   whole family

83. **COCOA**
   *kakaw*
   *kokow*
   *kakaw*

   whole family < Nahua
22

**Type A**

84. SapoDilla
85. Custard Apple

86. Guava
87. Zapote₁
88. Zapote₂
89. Jocote

**Type B**

90. Tree
91. Pine
92. Ceiba

93. Palm

94. Annatto
95. Willow
96. Cypress
97. Cork, Balsa
98. Oak

**Type A**

99. Yellow Squash
100. (Sweet) Potato

Other Trees

- several etyma, e.g.
  a) šeweš
  b) pak

- pata, etc. < Mixe-Zoque

- šulul
- chaves
- poyon; etc.

- several etyma, e.g.
  a) šawåy
  b) šapak

- šo'olōl
- šeŋqay
- šësis
- ohi'fy
- oxih

- še'ue
- ovi's

whole family
whole family (Huay)
whole family
whole family
whole family
101. BEAN
a) *kinaq
b) *buyl

c) *tut
d) *hupal

Type B

102. TOMATO
several etyma, e.g.
a) *pił
b) *koya  < Mixe-Zoque

103. BLACKBERRY
several etyma, e.g.
a) token
b) makom

ta-ä

104. VINE

105. SMALL SQUASH
several etyma, e.g.
a) *smukun
b) *dohl

106. WHITE SQUASH
several etyma, e.g.
a) *go-ä
b) *mäy

107. GRAPE

Grasses

Type A

108. KETTLE

109. GRASS
a) *waq
b) *kim

Whole family (Mamt)

Tse-Tso-Tso-Kek-Toj-Chi-Chr

[Toj]-Peh-Kan-Qua-Jac

(Kuet)
Type B

110. SOAPROOT  

111. CANE  
several etyma, e.g.
a) *waax  
b) *xalal

112. FERN  
*shihb

113. GREENS  
*vit'ax

114. COTTONSEED  
*stuš

115. COTTON  
*stině, etc.

116. SUNFLOWER  
*au'na

Cacti, etc.

Type A

117. Maguey  
*khiš
whole family

118. YUCCA  
*šiška
whole family

119. Type B

119. BROMELIA  
*šak

120. PRICKLY PEAR  
several etyma, e.g.

121. PINEAPPLE  
several etyma, e.g.

Maize

Type A

122. MAIZE  
a) *t'um  Hus
b) *t'iš - i'um  other Mayas

123. CORNCOB  
*shqal  whole family
124. BAR OF CORN  *qal  whole family (Tae/Tso?)
125. ROASTING NARS  *naxan  whole family (Tuc?)

Type B
126. CORN HUSK  *xox-xoq
127. GREEN CORN  *shin-hif

Tobacco

Type B
128. CHEWING TOBACCO  *’whf
129. CIGARETTE  *si-x
130. TOBACCO  *shy

III Agriculture

Type B
131. TO SOW  *sv
132. TO SOW  *sun
133. TO HARVEST  *xas-has
134. CORNFIELD  several etyma, e.g.
   a) *kol
   b) *abiš
   c) *’al
   d) *alVx
   e) *an-Vl

135. WEEDING  *aqim-aqen

IV Food

Maine Preparations

Type A
136. FLOUR, PINOL  *ax  whole family (Tae/Tso?)
Type B

137. LEACHED CORN  *bua-8 (* ashes)
138. TO SHELL CORN  *qut-
139. CORN DRINK  *ma-3 (* to suck)
140. CORN DOUGH  *qoy
141. TO GRIND CORN  *xuče
142. ATOL  several etyma, e.g.
   a) *wul  < Mixe-Zoque(t)
   b) *na-
   c) *xoče

Other Foods

Type A

143. SALT  *na-jam  whole family (Yucá)

Tools and Processes

Type A

144. MORTAR  *zm-ô  whole family

Type B

145. GRIDDLE  several etyma, e.g.
   a) *sawâ
   b) *ssawânt
   c) *şık

146. TO GRIND  *swo
147. TO FRY, TOAST  *xil

Eating and Action with Mouth

Type A

148. TO CHEW, BITE  *k"umô  whole family (Huat)
149. TO SUCK  *sab-šuô  whole family (Zaco-Huat)
150. TO EAT MEAT  *səiw-ləiv  whole family (Huat)
151. **TO DRINK**

152.1 **TO EAT**

152.2 FOOD, TORTILLA

152.3 HUNGER

153. **WHISTLE**

**Type B**

154. **TO EAT FRUIT**

155. **TO LICK**

156. **TO SWALLOW**

157. **TO SWALLOW, NECK**

158. **TO EAT SOFT FOODS**

159. FOOD, TORTILLA several etyma, e.g.

a) *ovo*

b) *lo-loc*

States of Edibles

**Type A**

160. **COOKED, RIPE**

**Type B**

161. **RAW**

162. **FIRE**

**Type A**

163. **ASHES**

164. **FIREWOOD**

165. **FIRE**

a) *tap*

b) *qaf*

c) *sin*

d) *buz*

e) *nahil*

155. **WHISTLE**

**Type B**

154. **TO EAT FRUIT**

155. **TO LICK**

156. **TO SWALLOW**

157. **TO SWALLOW, NECK**

158. **TO EAT SOFT FOODS**

159. FOOD, TORTILLA several etyma, e.g.

a) *ovo*

b) *lo-loc*

States of Edibles

**Type A**

160. **COOKED, RIPE**

**Type B**

161. **RAW**

162. **FIRE**

**Type A**

163. **ASHES**

164. **FIREWOOD**

165. **FIRE**

a) *tap*

b) *qaf*

c) *sin*

d) *buz*

e) *nahil*
166. COAL, EMBERS
   a)  
   b)  
   c)  

167. HOT
   a)  
   b)  

168. LIME
   a)  
   b)  

Type B

169. COLD
   a)  
   b)  
   c)  

170. SOOT
   a)  
   b)  

171. TO EXTINGUISH
    a)  

172. TO BURN, HEAT
    a)  

173. TO BURN, FLICKER
    a)  

VI Containers

Type A

174. WATER GOURD
    a)  whole family

Type A (C)

175. DRINKING GOURD, DIPPER
    a)  whole family (Yuc?)
Type B

176. Slop Trough
   *xuk'ub-huk'ub

177. A Hollowed Out Container
   *xohn

178. Basket
   Several etyma, e.g.
   a) *moč
   b) čakač
   c) *čuč

179. Pot
   Several etyma, e.g.
   a) *peht
   b) pin
   c) pat
   d) *šix
   e) *qi/ob

180. (Net) Bag
   *šim

VII Belief

Type A

181. Holy Thing, God
   *šub
   Whole family (Huaf)

182. Evil Spirit
   *lab
   Whole family (Toj-Chjt)

Type B

183. Hagual, Witch
   *šay (= sleep)

184. (a) Fast
   *šambah

185. Heart, Soul
   Several etyma, e.g.
   a) *pišan
   b) *šuš (= love)
### VIII Sickness

#### Type A

<table>
<thead>
<tr>
<th>No.</th>
<th>Symptom</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>186</td>
<td>VOMIT</td>
<td><em>ñeh-ñap</em></td>
</tr>
<tr>
<td>187</td>
<td>PUS</td>
<td><em>poxov</em></td>
</tr>
<tr>
<td>188</td>
<td>COUGH</td>
<td><em>ox(o)b</em></td>
</tr>
<tr>
<td>189</td>
<td>SICKNESS</td>
<td><em>yab-ja</em></td>
</tr>
<tr>
<td>190</td>
<td>STRANGLE, BREATHE</td>
<td><em>ziq-xaq</em></td>
</tr>
</tbody>
</table>

#### Type B

<table>
<thead>
<tr>
<th>No.</th>
<th>Symptom</th>
</tr>
</thead>
<tbody>
<tr>
<td>191</td>
<td>PAINFUL</td>
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</tbody>
</table>

### IX Body

#### Parts

#### Type A

<table>
<thead>
<tr>
<th>No.</th>
<th>Symptom</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>192</td>
<td>BONE, THIN</td>
<td><em>ba-qa</em></td>
</tr>
<tr>
<td>193</td>
<td>BLOOD</td>
<td><em>ki-k</em></td>
</tr>
<tr>
<td>194</td>
<td>TONGUE</td>
<td><em>va-qa</em></td>
</tr>
<tr>
<td>195</td>
<td>HAND, ARM</td>
<td><em>qäb</em></td>
</tr>
<tr>
<td>196</td>
<td>EAR</td>
<td><em>ñik</em>im-ñik*in</td>
</tr>
<tr>
<td>197</td>
<td>BELLY</td>
<td>a) <em>ku-ko</em></td>
</tr>
<tr>
<td></td>
<td>b) <em>pan</em></td>
<td>Jac-Kan-Tse-Tso-</td>
</tr>
<tr>
<td></td>
<td>c) <em>näk</em></td>
<td>Mam-Chj</td>
</tr>
<tr>
<td>198</td>
<td>NOSE</td>
<td>a) <em>qi</em>v-quat</td>
</tr>
<tr>
<td></td>
<td>b) <em>d'ävam</em> (snot)</td>
<td>Hua-Poh-Kan-Tse-</td>
</tr>
<tr>
<td></td>
<td>c) <em>snt</em> (firewood)</td>
<td>Hua-Poh-Kan-Jac-</td>
</tr>
</tbody>
</table>

* *d'ävam* (nose, snot) + *snt* (firewood) = soot
| 199. SNOT, NOSE | *sahm-*shhm-*nam | whole family |
| 200. MOLAR | a) *ca*am | Yuc-Tse-Toj-Chl-Kan |
| | b) *ka* (= mortar) | Pch-Kek-Chj-Jac-Mam-Quí (Huat) |
| 201. TOOTH | *sah | whole family |
| | | Hua *o*th = Yuc ko |
| | | Yuc (*e/ = 'point') |
| 202. NAIL, CLAW, HOOF | a) *thj*aq | Tse-Yuc-Hua-Chl |
| | b) *thj*aq | Pch-Kek-Quí-Mam |
| | c) *tsh*aq | Kan-Jac |
| | d) *tš | Toj-Chj |
| | | (Chj /šavak/ = horn) |
| 203. KNEE | a) *šek | Pch-Quí-Mam |
| | b) *pensk* | Chj-Kan-Jac |
| | c) *pi*š | Tse-Yuc-Chl-Chr |
| | | (Huat) |
| | | [*pi*š (knee) + *xo*š (head) = knee] |
| 204. FACE, EYE | a) *wät* | Yuc-Pch-Kek-Chl-Chr-Quí-Mam |
| | b) *sat | Tse-Toj-Chj-Kan-Jac (Huat) |
| 205. MOUTH | *f*•• | whole family (Huat) |
| 206. HEAD | a) *xo*š | Tse-Tse-Yuc-Chl-Chr |
| | b) *xo*šom | Pch-Kek-Toj-Chj-Kan-Jac-Mam-Quí (Huat) |
Type B

207. SHOULDER  
several etyma, e.g.
  a) *tekleb
  b) *kehleb

208. CHEEK  
  *koh

209. INTERNAL ORGAN  
  *kuqu...

210. WOMAN'S BREAST  
several etyma, e.g.
  a) *tim
  b) *gur

211. SIDE, EDGE, CORNER  
  *ṣulku

212. JAW  
several etyma, e.g.
  a) kahlam, etc.
  b) kava, etc.

213. BRAINS  
  *ṣiḫa

214. SKIN  
several etyma, e.g.
  a) šumum-šumum
  b) *šùt

215. EYEBROW, EYELASH  
several etyma, (several meanings)
  a) *ṣallab
  b) *meš

216. BUTTOCKS, ANUS  
several etyma, e.g.
  a) *šit
  b) *šallab-šallab

217. LIVER  
  *ṣon
218. NECK
*quq-qal (q"alq"

219. LUNGS
*to1

220. HAIR
several etyma, e.g. (several meanings)
   a) *biv1
   b) *dovµ
   c) *visim
   d) *don

221. BACK
several etyma, e.g.
   a) *put
   b) * خط

222. NAVEL
*mu-š

223. GENITAL ORGANS
several etyma, e.g.
   a) *at (m, f)
   b) tuš (f)
   c) kun (m, f)
   d) luµ-lolis (f)

224. THIGH
*vµ

225. LEG
*vq-an

226. FOOT
*vq
   (*vq-st = stivet B)

227. SIDE
*vµ

228. LEFT HAND
several etyma, e.g.
   a) *k-(šan
   b) *šeh (ex side)

229. TOP, TIP
*w1v
### Products and Functions

#### Type A

| 230. EXCREMENT | *d₂₃⁺t₁₄* | whole family |
| 231. PART | *k₂₃⁺₂₃⁺₄₂* | whole family |
| 232. SNEEZE | *h₂₃⁺₂₃⁻₁₄* | whole family |
| 233. URINE | *g₂₃⁺₂₄* | whole family |
| 234. SALIVA | *s₂₃⁺₂₄⁺₂₅* | whole family |
| 235. TO SLEEP | *w₂₅⁺₂₆* | whole family |

#### Type B

| 236. TO CLOSE THE EYES | *n₂₅⁺* |
| 237. TO REST, TO LIVE | *k₂₅⁺₂₆* |
| 238. TO GET TIRED | *l₂₅⁺₂₆* |
| 239. TO SWEAT, TO BURN | *k₂₆⁻₂₇* |
| 240. TO BEG | *q₂₆⁺₂₇* |

### Abnormal States

#### Type A

| 241. TO DIE | *k₂₅⁺* | whole family |

#### Type B

| 242. DUMB, MUTE | several etyma, e.g. |
| 243. DEAF | several etyma, e.g. |
| 244. HUNCHBACKED | *p₂₈⁺* |
245. STRENGTH  *tip
246. TO KILL  *mil

Sight

Type A

247. TO SEE  *til
248. TO SHINE, FLASH  *len

Colors

Type A

249. RED  *ke'eq, etc.
250. WHITE  *såq
251. GREEN  *jî'ë
252. YELLOW  *jëm
253. BLACK  a) *keq
             b) *ke'eq

Taste, Smell and Hearing

Type A

254. SWEET  *ki'iv
255. SOUR  a) *jî'ë
         b) *çam
256. Bitter  *fu'ath

whole family (Huaf)
257. BITTER *kah

258. 'HOT' (SPICY) *yah

259. TO HEAR, FEEL **abiy-ubiy

**

260. TO SMELL, KISS *uyj

**

XI Movement in Space

Type A

261. TO COME *fal

262. TO ARRIVE (HERE) *hul-ful

263. TO GO OUT

a) **el

b) *loq

264. TO RETURN *sut

265. TO ENTER *ok

266. TO TAKE, TO CARRY *kam

Type B

267. TO WALK *hay-ñev

268. TO ARRIVE (THERE) *qo(s)

269. TO CARRY (a) *(a) **iq

LOAD (b) *(b) **ihques

270. TO CALL, BRING **iq

271. TO PASS several etyma, e.g.

a) *iqah

b) *sol

c) *veh
272. TO FALL, DESCEND several etyma, e.g. a) *kʰʷ-o-kʷu b) *tem

273. TO RUN, FLEE *ahn

XII Position

Type A

274. STANDING UPRIGHT a) *te:kʰ Tse-Toj-Kan- Qui b) *wa:kʰ Tso-Yuc-Chl-Chr-Mam c) *liq Chl-Jac (Huat)

Type B

275. CROUCHING *got

276. DOWN *ahlaq

XIII Earth

Type A

277. EARTH **ulev Peh-Qui *lu:vam Tse-Tso-Yuc-Toj-Chj-Chl-Chr *go: Kek-Kan-Jac-Mam (Huat)

278. DUST, SAND *po:q Yuc-Nua-Peh-Kek-Chj-Jac-Kan-Mam-Quí *hi:v Tse-Tso-Chl-Chr
279. METAL  
(+ money)  
*ta'ên  

("hole" elsewhere)  
(see 280, 281)

280. HOLE  
*ťe'ên  

(see 279, 281)

281. STONE  
*če'âx  
*ton-tun  
*K'êven  

("hole" elsewhere)  
(see 279, 280)

282. MOUNTAIN  

whole family (Huat)

283. MUD  
*lo/u'q/é(ViC2)  

Yuc-Hua-Mam-Toj

284. GLASS, MIRROR  
*meën  

Chj-Chr-Hua

285. FIELD, PLAIN  
*š'âqéq  

286. WATER  
*K'êvé  

whole family

287. TO BATHE  
**at'ê-in  

whole family
<table>
<thead>
<tr>
<th>No.</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>288</td>
<td>DRY</td>
<td>*t'faq-iq</td>
</tr>
<tr>
<td></td>
<td></td>
<td>whole family (Huat)</td>
</tr>
<tr>
<td>289</td>
<td>A DROP,</td>
<td>*tux-fox</td>
</tr>
<tr>
<td></td>
<td>TO DRIP</td>
<td>whole family</td>
</tr>
<tr>
<td>290</td>
<td>RAIN</td>
<td>*gab</td>
</tr>
<tr>
<td>291</td>
<td>TO SWIM</td>
<td>*nuu-nu-noon</td>
</tr>
<tr>
<td>292</td>
<td>TO SOAK</td>
<td>*jox</td>
</tr>
<tr>
<td>293</td>
<td>LAKE</td>
<td>several etyma, e.g.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a) *naxb</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) *soh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) *pan (flat) + *haf (water)</td>
</tr>
<tr>
<td>294</td>
<td>TO DAMPN,</td>
<td>GET WET</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*vak</td>
</tr>
<tr>
<td>295</td>
<td>SUN, DAY, TIME</td>
<td>*qi-y</td>
</tr>
<tr>
<td></td>
<td></td>
<td>whole family</td>
</tr>
<tr>
<td>296</td>
<td>STAR</td>
<td>a) *ve-q</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tse-Yuc-Chl-Chr</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) *ganal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tso-Hua-Toj-Chj</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) *umil, etc.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Peh-Quj-Jac (Namf)</td>
</tr>
<tr>
<td>297</td>
<td>AIR, WIND</td>
<td>*veq</td>
</tr>
<tr>
<td></td>
<td></td>
<td>whole family</td>
</tr>
<tr>
<td>298</td>
<td>CLOUD</td>
<td>a) *teqq</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tse-Yuc-Huak-Chl-Chr</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) *su'-j</td>
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<tr>
<td></td>
<td></td>
<td>Peh-Quj-Kan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) *muyal</td>
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<tr>
<td></td>
<td></td>
<td>Yuc-Jae</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(&lt;Chi-xe-Zoque)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Toj-Chj-Kan-(Jae)</td>
</tr>
<tr>
<td>299</td>
<td>SALT</td>
<td>*batf</td>
</tr>
<tr>
<td></td>
<td></td>
<td>whole family (Huat)</td>
</tr>
</tbody>
</table>
300. SKY

301. MOON, LUNAR MONTH
   a) 300. SKY
   b) 301. MOON, LUNAR MONTH
   c) 302. SHADE, SHADOW
   d) 303. FROST
   e) 304. THUNDER

   Type B
   a) 305. COTTON, CLOTH
   b) 306. SHOE, SANDAL
   c) 307. TO SEW
   d) 308. TROUSERS
   e) 309. NECKLACE

   Type A
   f) 310. SKIRT
   g) 311. CLOTHING
   h) 312. TO WEAVE
   i) 313. SPINDLE

   XVI Clothing
   Type A
   a) 314. CLOTHING
   b) 315. TO WEAVE
   c) 316. SPINDLE

   Type B
   d) 317. CLOTHING
   e) 318. TO WEAVE
   f) 319. SPINDLE

   several etyma, e.g.

   whole family (Huat)
   whole family (Huat)
   whole family (Huat)
   whole family (Huat)
   whole family (Cholt)
   whole family (Huat)
   whole family (Huat)
   whole family (Huat)

   (female master)
### XVII Structures, Tools and Supplies

#### Type A

<table>
<thead>
<tr>
<th>Number</th>
<th>Item</th>
<th>Description</th>
<th>Etymology</th>
</tr>
</thead>
<tbody>
<tr>
<td>314.</td>
<td>Comb (a)</td>
<td>*slh-ab</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td></td>
<td>Scrape (b)</td>
<td>*slh</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td>315.</td>
<td>To Sweep</td>
<td>*mes</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td>316.</td>
<td>Rope, Cord, String</td>
<td>*xâb-hâam</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td>317.</td>
<td>Bench, Seat</td>
<td>*am</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td>318.</td>
<td>Straw Mat</td>
<td>*pohp</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td>319.</td>
<td>Road</td>
<td>*bah</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td>320.</td>
<td>House₁</td>
<td>*ot', *ot', etc.</td>
<td>whole family (Huaf/Tzot)</td>
</tr>
<tr>
<td>321.</td>
<td>House₂</td>
<td>*qah</td>
<td>whole family (Huaf)</td>
</tr>
</tbody>
</table>

#### Type B

<table>
<thead>
<tr>
<th>Number</th>
<th>Item</th>
<th>Description</th>
<th>Etymology</th>
</tr>
</thead>
<tbody>
<tr>
<td>322.</td>
<td>To Pound in Mail</td>
<td>*bax</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td>323.</td>
<td>Whetstone</td>
<td>*xât-huâš</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td>324.</td>
<td>Axe</td>
<td>*lik'ax</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td>325.</td>
<td>Sweat House</td>
<td>several etyma, e.g.</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a) *t'w-q</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) *pus</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) *lik'ah</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td>326.</td>
<td>Shackle, Hut</td>
<td>several etyma, e.g.</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a) *pat</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) *passel</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) *kabel</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td>327.</td>
<td>Ladder</td>
<td>*eb</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td>328.</td>
<td>Forked stick</td>
<td>*oy</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td>329.</td>
<td>Bridge</td>
<td>several etyma, e.g.</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a) *g'v.</td>
<td>whole family (Huaf)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) *pan (flat) + *t'w-v (wood)</td>
<td>whole family (Huaf)</td>
</tr>
</tbody>
</table>
330. BED
   several etyma, e.g.
   a) «atsht
   b) «atsk

331. HAMMOCK
   «sab

332. BLOWGUN
   several etyma, e.g.
   a) puhe
   b) tu{kar
   c) tuh

333. CEMENT (wall)
   «jaq

334. WALL
   several etyma, e.g.
   a) pahk
   b) piqap

335. ADOBE
   «San

336. BOAT
   «S'an

XVIII Measurement

Counting

Type A

337. ONE
   «xun
   whole family

338. TWO
   «ke; kafib
   whole family

339. THREE
   «o6
   whole family

340. FOUR
   «k'age
   whole family

341. FIVE
   «cho
   whole family

342. SIX
   «waq
   whole family

343. SEVEN
   «shuq
   whole family

344. EIGHT
   «swaqśaq
   whole family

345. NINE
   «belq
   whole family

346. TEN
   «laxug
   whole family
<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
<th>Content</th>
</tr>
</thead>
</table>
| 347. | ELEVEN | a) *buluk  
| | | b) *xun-laxuq  
| | | c) *us-luk  |
| 348. | TWELVE | a) *lax-kax-  
| | | b) *kab-laxuq  |
| 349. | HOW MANY | Type B  
| | | a) *lax-kaX-  
| | | b) *kab-laxuq  |
| | | c) *xay  |
| 350. | TWENTY | various etyma, e.g.  
| | | a) *s'ul  
| | | b) *taxb  
| | | c) *winaq (* man)  |
| 351. | FIRST<sub>1</sub> | *nah  |
| 352. | FIRST<sub>2</sub> | *bah  |
| 353. | TO COUNT | *ax  |
| 354. | TO MEASURE | *pis  |
| | | Time  |
| 355. | NIGHT | *aqab  
| | | *aqb-al  |
| 356. | YEAR | *sha'b  
| | | *sha'b-il  |
| | | Type B  |
| 357. | YESTERDAY | *eveny  |
| 358. | DAY AFTER TOMORROW | *kahex  |
| 359. | DAY BEFORE YESTERDAY | *kah(e)xey  |
| 360. | WITHIN THREE DAYS | *ełoex  |
361. THREE DAYS AGO  **o6(e)xey
362. WITHIN FOUR DAYS  *kôgex
363. A YEAR AGO,
364. LATE
365. LAST YEAR  *xun-ha'b-ey (one year ago)
366. EARLY  *sxh-b-sehb

XIX Entertainment and Recreation

Type A

365. INCENSE
(made from sap of a
type of pine)  *pom
366. MASK  *kôgex

Type B

367. DRUM  *kôgex
368. GAME, TOY  **ales
369. MUSIC  *son
370. DANCE  a) **a'got
b) *Max
371. RATTLE  **o'te'
372. TO SING; SONG  a) *qay
b) *bll
373. TO SING (a)
TO DANCE (b)
TO HOP  *pit'
374. FLUTE, FLUTE  several stymes, e.g.
a) *su*~sub (related to sub 'whistle')
b) *amay
c) *šul
XX Commerce

Type A
375. TO BUY
   a) *man
   b) *loq
376. TO SELL (a);
     TO LOSE (b)
   *kay
377. TO PAY
378. WRITING
379. PAPER

Type B
380. TO DO BUSINESS,
     INCREASE
381. TOWN
382. MARKET
383. PROPERTY
384. TO SELL
385. TO LOSE

XXI Roles

Kinship

Type A
386. BROTHER-IN-LAW
     OF MAN
     *b'-l-bay-baS
     whole family
387. SON-IN-LAW
     FATHER-IN-LAW
     *qi'
388. DAUGHTER-IN-LAW **al*ib
389. OLDER MALE RELATIVE, BROTHER OF PARENT **änder
390. SON OF WOMAN **al

Type B
391. SISTER-IN-LAW OF WOMAN *xawan
392. SIBLING-IN-LAW OF OPPOSITE SEX *mu*

393. MOTHER several etyma, e.g.
   a) *Sau*
   b) *min*
   c) *me*-mi*
   d) *man-na*

394. GRANDFATHER, FATHER *mam
395. FATHER *tat
396. COUSIN, NEPHEW **ik’aq
397. YOUNGER SIBLING *t’aq
398. YOUNGER SIBLING *sib’in
399. GRANDCHILD *a*
400. YOUNG BOY *e’*a-xol
401. YOUNG *t’unin (< Mixe-Zoque)
402. OLD WOMAN *t*ihnam-tïnanam
403. OLD MAN *t*ihanam

whole family
whole family
whole family (Huastec)
Types of People

Type A

404. MALE.

MALE RELATIVE

405. WOMAN, FEMALE

a)  *vi*  whole family
b)  *vi*-oq  Hua-Chj-Kan-Jac

Yuc-Pch-Kek-Toj-Chl-Mam-Qui

406. MAN, PERSON

*winaq*  whole family

407. MASCULINE AGENT

(Prefix)  **ax**  whole family (Huat)

408. FEMININE AGENT

(Prefix)  ***i*** (= woman)  whole family (Huat)

Other Roles

Type B

409. LORD, MASTER

**ax**av  whole family

410. NAME

a)  *bih-bi*  Tz-Tro-Hua-Pch-

Toj-Mam-Qui

b)  *k*aba  Yuc-Kek-Chl-Chr-

(Chj-Kanf)

411. BEREFT PERSON

(orphan, widow)

POOR PERSON  *meba*  whole family (Huav)

Type E

412. TWINS

*lot-loh*

XXXII Interaction and Social Structure

Verbal Interaction

Type A

413. TO LAUGH  *de*  whole family
| 414. TO WEEP | **oq | whole family |
| 415. TO ANSWER | *t'aq |
| 416. TO SAY TO SOMEONE | **ut |
| 417. TO SAY (i.v.) | *khi |
| 418. TO SAY SOMETHING | *hul~vul |
| 419. VISITOR, STRANGER | *huli~vul~vul~vul* |

( < hul~vul 'to arrive (here)')

| 420. ALL RIGHT!, OK! | *k'o |
| 421. LET'S GO! | *coq |
| 422. SHOUT | **aw |
| 423. TO SEND, ORDER | *taq |
| 424. TO SEND (a) MESSERGER (b) WORK, SERVICE (c) |
| | a) **ab |
| | b) **ab-at' |
| | c) **ab-t'-el |

| 425. TO EXPLAIN, LINE UP | *sol |

Concepts and Mentation

| 426. TO SEEK |
| a) *say-sa~sa~sh | Tso-Chj-Ken-Jac-Chl-Chr |
| b) *sik | Peh-Qu-Kek |
| c) *leh | Tso-Yuc-Toj |

(Huat Nam)
427. YEAR

428. TO KNOW, THINK

429. TO FIND, OBTAIN

430. MARK, TRACE

431. TO KNOW, RECOGNIZE

432. TO BE ASHAMED

433. TO TAKE, SELECT

434. TO HATE, DISLIKE

435. TO GET USED TO

Transfer of Goods

Type B

436. TO LEND (a)

GIFT (b)

437. GIFT

438. TO (EX)CHANGE several etyma, e.g.

439. TO BORROW several etyma, e.g.

Type B

440. LAZY several etyma, e.g.
441. GOOD   *wuf
442. MISDEED  several etyma, e.g.
   a) *mul
   b) *mabh
443. ROBBERY  *ele4
Miscellaneous

Type B
444. TAX, SERVICE  *patan
445. TO POINT AT
   (with finger) (a) *
   FINGER (b)
   (a) *efdut
   (b) *efdut-ub
446. TO RELEASE, SAVE, HELP  *hek*ol
447. TO WANT, NEED, ASK FOR, LOVE  several etyma, e.g. (several meanings)
   a) *qan
   b) *tax
448. SLAVE  *mun
449. COMPANION, WITH  *vet?

XXIII Goal-Directed Action

Type A
450. TO ROLL UP  *hal  whole family
451. TO BURY, HIDE  *muq  whole family (Muat)

Type B
452. TO MASH, POUND  *tem-ten-net
455. TO HIT, KNOCK  & ox
456. TO BEND, FOLD  & ox
457. TO SCRATCH, GNAW  & ox
458. TO PULL UP, UPROOT  & xoq
459. TO PEEL  & pod
460. TO TWIST  & jot
461. TO OPEN  & exp
462. TO DAMAGE: DEBT  & x as
463. TO CUT  & box
464. TO CUT OFF  & qax
465. TO DIVIDE  & exp
466. TO BREAK TO PIECES  & set
467. TO GRAB (a)  & xap
468. TO PREPARE (b)  & xap
469. TO JOIN, REPAIR, COMPLETE  & xaq
470. TO FILE UP  & bus
471. TO GATHER several styms, e.g.  & mul-mol
472. TO SQUEEZE, MAKE A FIST  & mid-mul-mol
473. TO SHAKE  & qix
474. TO FAN  & wel-wal
475. TO MIX  & xap
| 473. | TO GIVE, PUT, PLACE | several etyma, e.g. |
| | | a) *aq |
| | | b) *ya* |
| 474. | TO PAINT, DYE | *bon |

**XXIV Development and Change**

**Type A**

| 475. | TO ROT | *qat-*qah |
| 476. | TO BE FILLED | *nox |
| 477. | TO GROW | *fil* |

**Type B**

| 478. | TO FINISH, BE ENDED | *lax |
| 479. | CONTENTS | *bahal-ba*al |
| 480. | TO SWELL UP, several etyma, e.g. | a) *sip-*sit |
| | | b) *sm*al |
| 481. | TO FILL | *but* |
| 482. | TO REMAIN, TO REST | *hil* |

**XXV Qualities and Shapes**

**Type A**

| 483. | HEAVY | *a(h)al* |
| 484. | NEW | *nak* |
| 485. | LONG | *naqt* |
| 486. | THICK | *pin* |
| 487. | SOFT, SLOW | *qu*n |

whole family
whole family (Hsfr)
whole family
whole family (Hsfr)
whole family
whole family
whole family
whole family
**Type B**

488. TO MAKE INTO A BALL *ex*tol

489. STRONG several etynas, e.g.
   a) *kiv
   b) *tulan

490. BIG
   a) *niw-nim
   b) *niwan
   c) *niwaq

491. ROUND (spherical) *wol

492. NARROW *lah‡

493. ROUND (circular) *set

494. THICK (liquids) *t'at'

495. MUCH *yab

496. HARD, STRONG *k‡

497. Ripe, OLD *yix

498. DIRTY *siw'li-si'1

499. THIN, SLENDER *x‡y

500. SPHERICAL OBJECT *pis

501. DEEP *t'am

502. CORRECT, STRAIGHT *t'ox

503. SMALL *din, etc.

**XXVI Particles**

**Pronominal**

**Type A**

504. REFLEXIVE PRONOUN
   a) *bah
   b) *vbh

Tse-Tso-Yus-Haa-Kan-Chj-Chl-Chr

Qui-Peh

(Narr)
<table>
<thead>
<tr>
<th>Type B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>505. DEMONSTRATIVE</strong></td>
</tr>
<tr>
<td><strong>506. WHAT</strong></td>
</tr>
<tr>
<td>a)</td>
</tr>
<tr>
<td>b)</td>
</tr>
<tr>
<td><strong>507. DEFINITE ARTICLE</strong></td>
</tr>
<tr>
<td><strong>508. THIS</strong></td>
</tr>
<tr>
<td><strong>509. EMPHATIC PRONOUN</strong></td>
</tr>
<tr>
<td><strong>510. PLURAL SUFFIX</strong></td>
</tr>
</tbody>
</table>

**Person Markers**

<table>
<thead>
<tr>
<th>Type</th>
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<tr>
<th><strong>511. FIRST PERSON</strong></th>
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</thead>
<tbody>
<tr>
<td>SINGULAR,</td>
</tr>
<tr>
<td>SET A A <em>tin-w</em></td>
</tr>
<tr>
<td>whole family</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>512. SECOND PERSON</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>SINGULAR,</td>
</tr>
<tr>
<td>SET A A <em>a</em></td>
</tr>
<tr>
<td>whole family</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>513. THIRD PERSON</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>SINGULAR,</td>
</tr>
<tr>
<td>SET A A <em>y</em></td>
</tr>
<tr>
<td>whole family (Hut)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>514. FIRST PERSON</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>PLURAL, SET A B <em>q</em></td>
</tr>
<tr>
<td>(Jac-Kant)</td>
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</tbody>
</table>

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<thead>
<tr>
<th><strong>515. SECOND PERSON</strong></th>
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<tbody>
<tr>
<td>PLURAL, SET A B <em>e</em></td>
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</table>

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<tr>
<th><strong>516. THIRD PERSON</strong></th>
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<tr>
<td>PLURAL, SET A B <em>k</em></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>517. FIRST PERSON</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>SINGULAR,</td>
</tr>
<tr>
<td>SET B B <em>tin</em></td>
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<tr>
<td>Type</td>
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<td>------</td>
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<tr>
<td>518.</td>
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<tr>
<td>SINGULAR,</td>
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<tr>
<td>SET B</td>
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<td>519.</td>
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<tr>
<td>SINGULAR,</td>
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<tr>
<td>SET B</td>
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<td>520.</td>
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<tr>
<td>PLURAL, SET B</td>
</tr>
<tr>
<td>521.</td>
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<tr>
<td>PLURAL, SET B</td>
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<tr>
<td>522.</td>
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<tr>
<td>PLURAL, SET B</td>
</tr>
<tr>
<td>Adverbials, etc.</td>
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<tr>
<td>Type A</td>
</tr>
<tr>
<td>523.</td>
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<td>524.</td>
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<tr>
<td>Type B</td>
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<td>525.</td>
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<td>528.</td>
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<tr>
<td></td>
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<tr>
<td>a)</td>
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<tr>
<td>b)</td>
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<td>529.</td>
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<td>530.</td>
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<td>531.</td>
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<td>532.</td>
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</table>
Lexical Subgroupings

One hundred eighty-two of the 218 items belonging to type A, are represented by a single cognate found in all the subgroups, or in all but one. The remaining 36 items are represented by multiple cognates (from two to five) in complementary distribution. A line drawn from Yuc and through Chh, Tzo, Toj, Chj, Kan, Jac, Mam, Qui, and Pch to Kek joins languages which are geographically more or less contiguous, any several of which, either as a function of closeness of relationship or as a result of diffusion, may (being adjacent) be expected to share a particular linguistic feature. If we plot the distributions of multiply-cognate semantic units (glosses) along the line from Yucatec to Kekchi, with Huastec hovering somewhere along the line, we find two basic types of distribution. Either (a) the various cognate forms will be distributed along this line, each for a finite distance, thence to be replaced by the next cognate form until the line is filled out with rare overlapping in the cases of adjacent languages (17 examples), or else (b) the cognate forms will not be distributed in this fashion, but will show a great deal of interdigitation (19 examples). In the former case (distribution 'a') the number of cognate items may be from two to five. When two items are involved (10 cases) the shift to the second cognate may occur at the following points (for this and following instances refer to charts):

1. between Jac and Mam (3 cases);
2. between Chj and Kan (4 cases);
3. between Toj and Chj (2 cases, 1 with minor interdigitation);
4. number 14 shows a fair degree of interdigitation with lines at Tzo-Toj and Jac-Mam.

When three items are involved (4 cases) lines are drawn:
1. between Chj-Kan (in addition setting off Qui-Pch from the rest) (.2 cases);
2. between Toj-Chj and Jac-Mam, (1 case);
3. between Tzo-Toj and Jac-Mam, (1 case).

When four cognates are involved (2 cases) lines are drawn:
1. between Tzo-Toj, Chj-Kan, with Qui straddling;
2. between Tzo-Toj, Mam-Qui, Qui-Pch, Chj-Kan and interdigitation between Toj and Chj.

When five cognates are involved lines are drawn between: Chl-Tze, Tzo-Toj, Chj-Kan and Jac-Mam.

On the basis of the points at which cognates change we may tentatively set up the following lexical areas (with no implication as to whether or not they are the result of diffusion between adjacent languages):
1. West (Yue-Chl-Tze-Tzo-Toj)
2. Middle (Chj-Kan-Jac)
3. East (Mam-Qui-Pch-Kek)

In addition, there are certain cognates that cross or subdivide these admittedly tentative boundaries:
1. Toj-Chj uniquely share *mnoloj number 6
   *tap number 5;
2. Qui-Pch uniquely share *ulew number 9.
   *yab number 8;
When Hua cognates are known there seems to be no consistent matching with any of these regions except that Hua never agrees exclusively with forms restricted to the Middle region.

Of the remaining 19 items (distribution 'b')—which exhibit interdigitation—six (numbers 2, 62, 74, 202, 274, and 298 of the domain list) show no clear pattern of any kind in their distribution. These distributions may be the end result of competing forms in the proto-language which have settled down (only one of the several competing forms having survived) in the individual languages with no outside interference.

The remaining 13 interdigitated cognate sets exhibit distributions that may enable us to posit areas of innovation; in these cases there are usually two cognates (sometimes three) one of which is restricted to a few generally adjacent languages, and the other is more general throughout the family. That is, when two cognates are involved one seems to be innovating, the other conservative.

When three forms are present, one is usually western Middle (conservative), the other Eastern Middle (conservative) and the other 'innovating.' What is conceived of as innovating on distributional grounds is further supported by the fact that when a Hua cognate is available it only once agrees with the 'innovating' form (in this case, with Yucatec). Three spheres of innovation are tentatively set up to account for these peculiar distributions; with more data, others may be usefully postulated. These spheres of innovation consist of an innovating language and the adjacent languages which could have borrowed from it.
Nevertheless, the possibility must not be ruled out that these distributions could be the result, in some cases, of differential survival of items from a single series of competing forms in the proto-language. The tentative spheres follow:

1. The Yucatán sphere, the center being Yucatec-Lacandón (8 cases) (May innovation may also account for number 5 smoke);

2. The Huehuetenango Sphere, the center being Jacalteco-Kanjobal (2 cases) (May innovation may also account for number 2 buzzard, 3 rabbit, 4 knee);

3. The Chiapas Sphere, the center being Tseltal-Tzotzil (3 cases).

The distributions which have prompted the setting-up of these spheres of innovation are found in the following charts:
<table>
<thead>
<tr>
<th>Chart I</th>
<th>Yue - Chl - Chr</th>
<th>Tse - Tso - Toj</th>
<th>Chj - Kan - Jac</th>
<th>Mam - Qui</th>
<th>Pch - Kek</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. moon</td>
<td>ubwux</td>
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<td></td>
<td></td>
<td>viw--axaw</td>
<td>i-k</td>
<td>poh</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Hua</td>
<td>(&lt;M-Z)</td>
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<tr>
<td>2. bussard</td>
<td>hos</td>
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<td>both</td>
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<td></td>
<td></td>
<td>*usex</td>
<td>-u-e</td>
<td>Hua</td>
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<tr>
<td>3. rabbit</td>
<td>tu-l</td>
<td>-u-e</td>
<td></td>
<td>v-imul</td>
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<td></td>
<td></td>
<td></td>
<td>innovations</td>
<td>Hushuftenange</td>
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<tr>
<td>4. knee</td>
<td>pi--i</td>
<td>-u-e</td>
<td>panek</td>
<td>-ehk</td>
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<tr>
<td>5. smoke</td>
<td>buj</td>
<td>-u-e</td>
<td>tap-</td>
<td>quip-</td>
<td>sib</td>
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<tr>
<td>6. egg</td>
<td>tum--ton-emut</td>
<td>-u-e</td>
<td>golop</td>
<td>xos</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(stone of bird)</td>
<td></td>
<td></td>
<td>both-</td>
<td>mol-</td>
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<td></td>
<td>innovations</td>
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<td>7. earth</td>
<td>lu-m</td>
<td>-u-e</td>
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<td></td>
<td></td>
<td>čoch</td>
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<td></td>
<td></td>
<td>vulev</td>
<td></td>
</tr>
<tr>
<td>8. root</td>
<td>-i-b--eb -Hua</td>
<td>-u-e</td>
<td>če-v</td>
<td></td>
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<tr>
<td>9. grass</td>
<td>vaq</td>
<td>-u-e</td>
<td>čim</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>both-</td>
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<td></td>
<td></td>
<td></td>
<td>innovations</td>
<td></td>
<td></td>
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<tr>
<td>Chart I (continued)</td>
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<td>---------------------</td>
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</tr>
<tr>
<td><strong>Yu</strong> - <strong>Ghl</strong> - <strong>Chr</strong></td>
<td><strong>Tse</strong> - <strong>Tso</strong> - <strong>Toj</strong></td>
<td><strong>Chj</strong> - <strong>Kan</strong> - <strong>Jac</strong></td>
<td><strong>Nam</strong> - <strong>Qui</strong></td>
<td><strong>Pch</strong> - <strong>Kek</strong></td>
<td></td>
</tr>
<tr>
<td>10. <strong>ssaste</strong></td>
<td><strong>keav</strong></td>
<td><strong>jox-dok</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(bird)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>11. <strong>nose</strong></td>
<td><strong>qi</strong></td>
<td><strong>f^nem</strong> (<strong>snot</strong>)</td>
<td></td>
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<tr>
<td>12. <strong>horn</strong></td>
<td><strong>bulub</strong></td>
<td><strong>uka</strong> + <strong>Hua</strong></td>
<td><strong>bulub</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(<strong>side, edge</strong>)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. <strong>black</strong></td>
<td><strong>weq</strong></td>
<td><strong>keq</strong></td>
<td>Eastern innovations</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(11,15)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. <strong>go out</strong></td>
<td><strong>loq</strong></td>
<td></td>
<td>both</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>s</strong>+<strong>ka</strong> + <strong>Hua</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. <strong>molar</strong></td>
<td><strong>sawam</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>kat ka</strong> (<strong>mortar</strong>)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. <strong>lime</strong></td>
<td><strong>t'awq</strong> (<strong>sashes</strong>)</td>
<td><strong>Hua</strong></td>
<td><strong>du-n</strong></td>
<td></td>
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<tr>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>17. <strong>sour</strong></td>
<td><strong>pax</strong></td>
<td></td>
<td><strong>dam</strong></td>
<td></td>
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</tr>
<tr>
<td>18. <strong>possum</strong></td>
<td><strong>vaq</strong></td>
<td></td>
<td><strong>hut</strong></td>
<td><strong>Hua</strong></td>
<td></td>
</tr>
</tbody>
</table>
### Notes

#### I. Concurrent Yucatan and Huchuchtenango Innovations

1. **bean**
   - **proto** $\text{kinaq'}$
   - **Huchuchtenango**
     - a) /tut/
     - b) /\text{hupal}/
   - **Yucatan** /b\text{uu}l/

2. **frog**
   - **proto** /\text{du}k/
   - **Huchuchtenango** /\text{pax}\text{\text{a}v}/
   - **Yucatan** /\text{pax-mu-\text{a}}/

#### II. Huchuchtenango-Yucatan Innovations

- **dog**
  - **proto** $\text{\text{ja}v}$
  - **all Mayan except Yuc-Hua**
  - **< Zapotecan? Hua-Yuc**

#### III. Yucatan Sphere Innovations (Center: Yucatec) -- range includes Kekchi

1. **name**
   - **proto** $\text{\text{bih}}$
   - **Yucatan** /kaba\text{\text{v}}/

2. **hot**
   - **proto** $\text{\text{dik-jas}}$
   - **Yucatan** /t\text{\text{ak}\text{\text{a}}}v/
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>3. <strong>turkey</strong></td>
<td>Proto</td>
<td><em>eαk</em> (aｷ)</td>
<td>Pch-Kek-Chj-Kan-Chl-Mam-Qui</td>
</tr>
<tr>
<td></td>
<td>Yucatan</td>
<td>/kuʃ/</td>
<td>Yuc-Tse-Chr</td>
</tr>
<tr>
<td>4. <strong>to seek</strong></td>
<td>west</td>
<td><em>sa..</em></td>
<td>Tso-Chj-Kan-Jac-Chl-Chr</td>
</tr>
<tr>
<td></td>
<td>east</td>
<td><em>piŋ</em></td>
<td>Pch-Qui-Kek</td>
</tr>
<tr>
<td></td>
<td>Yucatan</td>
<td>/ļah/</td>
<td>Yuc-Tse-Toj</td>
</tr>
<tr>
<td>5. <strong>star</strong></td>
<td>west</td>
<td><em>qanal</em></td>
<td>Tso- Hua -Toj-Chj</td>
</tr>
<tr>
<td></td>
<td>east</td>
<td><em>sǚnil</em></td>
<td>Qui-Jac-Pch</td>
</tr>
<tr>
<td></td>
<td>Yucatan</td>
<td>/ve-/</td>
<td>Yuc-Tse-Chl-Chr</td>
</tr>
<tr>
<td>6. <strong>bally</strong></td>
<td>west (and middle)</td>
<td>* že-lo.*</td>
<td>Jac-Kan-Tse-Tso-Mam-Chj</td>
</tr>
<tr>
<td></td>
<td>east</td>
<td><em>paŋ</em></td>
<td>Hua -Pch-Kek-Qui</td>
</tr>
<tr>
<td></td>
<td>Yucatan</td>
<td>/mz̃/</td>
<td>Yuc-Chl-Chr</td>
</tr>
</tbody>
</table>

### IV. Huchustenatego Sphere Innovations (Center: Jecatec-Kanjobal)

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>spider</strong></td>
<td>proto</td>
<td><em>ṣam</em></td>
<td>Yuc-Tse-Tso- Hua -Pch-Kek-Chl-Qui-Chr</td>
</tr>
<tr>
<td></td>
<td>Huchustenatego</td>
<td>/tiği/</td>
<td>Jac-Kan-Chj-Man</td>
</tr>
<tr>
<td>2. <strong>gopher</strong></td>
<td>proto</td>
<td><em>ba-h</em></td>
<td>Tse-Tso-Yuc-Hua-Pch-Kek-Jac-Chl-Qui-Chr-Man</td>
</tr>
<tr>
<td></td>
<td>Huchustenatego</td>
<td>/ko*na/</td>
<td>Chj-Kan</td>
</tr>
</tbody>
</table>
V. Chiapas Sphere Innovations (Center: Tzeltal-Tzotzil)

<table>
<thead>
<tr>
<th></th>
<th>dust, sand</th>
<th>proto</th>
<th>Chiapas</th>
<th>Yuc- Hua -Pch-Kek-Chj-Jac-Kan-Mam-Hui</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>/spoq</td>
<td></td>
<td>/hi*/</td>
<td>Tse-Tzo-Chl-Chr</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chiapas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>bird</td>
<td>/ajik'in</td>
<td>/mut'*/</td>
<td>Yuc- Hua -Pch-Kek-Kan-Jac-Hui</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chiapas</td>
<td></td>
<td>Tse-Tzo-Toj-Chj-[Yuc]-Chl-Chr</td>
</tr>
<tr>
<td>3.</td>
<td>face, eye</td>
<td>/swit'*/</td>
<td>/sát'/</td>
<td>Yuc-Pch-Kek-Chl-Chr-Hui-Mam</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chiapas</td>
<td></td>
<td>Tse-Tzo-Toj-Chj-Jac</td>
</tr>
</tbody>
</table>

VI. Possible Cases of Sporadic Survival

<table>
<thead>
<tr>
<th>Number</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>292</td>
<td>nail</td>
</tr>
<tr>
<td>293</td>
<td>cloud</td>
</tr>
<tr>
<td>74</td>
<td>pit, kernel</td>
</tr>
<tr>
<td>274</td>
<td>standing, upright</td>
</tr>
<tr>
<td>62</td>
<td>toad</td>
</tr>
<tr>
<td>2</td>
<td>wing</td>
</tr>
</tbody>
</table>
Extra-Mayan Contacts

As might be expected, Mayan languages have from time to time borrowed lexical items from neighboring non-Mayan languages, among these being Spanish, Uto-Aztecan languages (principally Nahuatl dialects) Zapotecan languages (one example), and Mixe-Zoque languages, in a probably increasing order of temporal remoteness.

Excluding loans from Spanish, about 16 loans from non-Mayan languages have been observed which are fairly widespread in the family or show up in unexpected places (given the present distributions of the languages in question). Many of the loans were suspected as being such without knowing their origin (later confirmed) by virtue of their atypical phonemic shapes, or by reason of variations in shape which precluded their being cognate from one Mayan language to another.

For three of the suspected loans, revealed by their atypical shape, the sources have not been identified, but they are probably not from Nahuatl, Mixe-Zoque, or Chiapaneco (no loans from Chiapaneco have so far been noted).

Mixe-Zoque

By far the greatest number of loans are from Mixe-Zoque. Interestingly enough, the Mixe-Zoque loans are often found in languages far from any currently spoken Mixe-Zoque language. Indeed, the loans may have entered via Tzotzil or Chol and diffused throughout the family, but a concentration of Mixe-Zoque loans along the line from Tzotzil to Jacalteco greater than in the rest of the family, plus the presence of Tzepachiteco, a Mixe dialect, on the Pacific Coast near the Guatemalan border may
imply a greater geographical spread of Mixe-Zoque dialects at an earlier period (although Tapachultec may be an outlier from Mixe in the same way that Chicomuceltepec is from Huastec). We have the data neither to confirm nor to deny this.

The detection of Mixe-Zoque loans in Mayan languages is further complicated by the fact that Mayan and Mixe-Zoque (also called Zoque-Mixe, Zoquean, and Mixean) are undoubtedly related to each other at a time level which would include Totonacan (in McQuev's view) and (in my view also) Kiowa (Uto-Aztecan)-Tanoan. That is to say, that given the genetic relationship between Mixe-Zoque and Mayan, some phonologically similar forms in the two families may not be loans, but cognates. Therefore, words which are phonologically similar and are found in all languages of both families are excluded as possible loans.

Such are:

<table>
<thead>
<tr>
<th>Mayan</th>
<th>/'am/</th>
<th>M-Z(Zo) **amu</th>
<th>spider</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>/vet'/</td>
<td>(Zo) vetu</td>
<td>fox</td>
</tr>
<tr>
<td></td>
<td>/va'k/</td>
<td>(Mi) va-S</td>
<td>fox</td>
</tr>
<tr>
<td>Tsa</td>
<td>/'am/</td>
<td>**am</td>
<td>ripe</td>
</tr>
<tr>
<td></td>
<td>/'u/'</td>
<td>**u-su</td>
<td>fly</td>
</tr>
<tr>
<td></td>
<td>/'om/</td>
<td>**o-mY</td>
<td>incense</td>
</tr>
</tbody>
</table>

Other forms, either because of their phonological shape, or because of their partial distribution in Mayan as contrasted with their more complete distribution in Mixe-Zoque, are postulated as loans from Mixe-Zoque into Mayan.
1. *asun, etc. 'cloud' ToJ, Chj, Jac, Kan.
   of CZ /nasɔ'na/ 'fog' < /nas/ 'earth' + /ɔ'na/ 'cloud'
   SP /'o'na/ 'cloud'
   Other Mayan has *t'ɔq, *suq, etc.

2. *áko, etc. 'honeycomb' Tso, Tse, ToJ, Hua (*okov), Mot
   of SP /'okwoq/
   A form which would reconstruct to PM *aqaq is found
   in the languages from Chj to Qui and may be a Mayan
   form or an earlier loan from M-Z than /áko/ or else
   PM *aqaq may be cognate with SP /'okwoq/. At any
   rate /áko/ is certainly a M-Z loan.

3. (*ií-)koya* 'tomato' Chi, Mam, Aq, Cak
   of Zo *koya
   Other Mayan has *pih, etc.

4. pata, etc. 'guava' found in most of the family except Hua.
   of SP pataq. This form is found only in the Popoloca
   dialects of Veracruz.
   A Mayan form *paxkok also occurs.

5. poh 'moon' Peh, Kak
   of Mixe *po*. The Zo form is *poye, hence the Peh-Kak
   are presumably loans from a Mixe dialect,
   unless *po is Macro-Mayan.
   Other Mayan has *poq, *p̥i-ə, etc.

6. tunuk, etc. 'turkey' Tse, Tso, Chj, Jac, Mot
   of M-Z *tunuk.
   Other Mayan has *tun*'(a)
7.  'dipper' whole family
   M-Z *jima; Hua /tima/ implies an extreme age for this loan in Hua.

8.  *unin = 'child, son' Tse, Toj, Chj, Kan, Joc, Chr, Kan, Mam, Tso
   M-Z (Zo) *unu
   (Ml) *unuV
   Perhaps not a direct loan: perhaps onomatopoeia, perhaps Macro-Mayan.

9.  *uma = 'deafmute' Chi, Tse
   M-Z *u-ma
   Other Mayan has *men

10. *ap, *as 'older brother' Qui, Peh, Kek
    M-Z **ap
    Possibly Macro-Mayan—loss of final syllable not easily explainable unless from Mixe which loses final vowels in polysyllables. If a loan, it must be prior to the Peh-Kek shift of *a to *e in certain environments.

11. key = 'rabbit' Hua
    From a Mixe dialect; M-Z *ma
    (at the time of M-Z invasions breaking Huastec off from the rest of Mayan)
    Other Mayan has *ivl, *ifi, *imal
Zapoteco

12.

Mua /pi'co-pi'/, Yuc /pa'ko/ 'dog'.

Of proto Zapotecan *pê'kkù as reconstructed by Swadesh (1947)

Other Mayan has *pê'kkù

Uto Azteco

13.

'owl':

Tse, Toj tuhku
Man tuku
Age tukuru
Qui, Cak tukur
Foh tu(h)kur

These forms allow us to assume a form like /tu.kuru/ as the model of the borrowing, /r/ being replaced by /l/ in Tse and Toj which had no /r/.

Male and Voegelin (1962) cite (number 105)
*tukur(i) as proto UA, but /tu.kuru/ might be conceivable as well. The form may be onomatopoetic but is certainly not proto-Mayan.

(Nahuatl)

14. kakav, etc. 'cacao' whole family

< Nahuatl <assuatu

Not Mayan, or else the Mua form would have /k/, not /p/.
15. mis, mes 'cat'

of Nahuatl Mistli, miston

Perhaps originally from Spanish.

From Unknown Languages:

16. *in(V)tam, etc. 'iguana' Tse, Tso, Kan, Jac

atypical shape

17. ko*(e)san, etc. 'chayote root' Tse, Tso, Toj, Jac

atypical shape

18. maʃaxti/e(*) 'pineapple' Chj, Jac, Kan

atypical shape

This is from Nahua
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vol. 28, No. 1, Supplement].
Mayan and Mixe-Zoque
73

Potential Cognates Between Mixe-Zoque and Maya

**Abbreviations:**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>MZ</td>
<td>Mixe-Zoque</td>
</tr>
<tr>
<td>DM</td>
<td>Proto-Mayan</td>
</tr>
<tr>
<td>Cs</td>
<td>Coxque (or)</td>
</tr>
<tr>
<td>Hi</td>
<td>Mixe (or)</td>
</tr>
<tr>
<td>SP</td>
<td>Sierra Popoluca</td>
</tr>
<tr>
<td>C’C</td>
<td>Capanahú Coaque</td>
</tr>
<tr>
<td>Tz</td>
<td>Tzeltalan</td>
</tr>
<tr>
<td>Tz’e</td>
<td>Tzeltan</td>
</tr>
<tr>
<td>Tz'o</td>
<td>Tzolik</td>
</tr>
<tr>
<td>Yue</td>
<td>Yucatec</td>
</tr>
</tbody>
</table>
MZ-Mayan Correspondences

\[ p \quad t \quad \phi \quad \phi \quad \phi \quad \phi \quad K \quad K \quad K \quad K \quad q \quad ? \quad ? \quad s \quad I \quad K \quad p \quad b \quad s \quad s \quad s \quad h \quad x \quad h \quad h \quad m \quad n \quad g \quad w \quad y \quad n \quad l \quad y \quad l \quad s \quad l \quad w \quad y \]
1. M2/PM/PM

- skin
- sand
- lance
- lip
- lung
- trap

% No-pace *point* 75
2. *ti : ti

what *ti *ti

storing *te[ti *te[ti

to shoot *tuhi tu[hi

to cut fruit *tu[ *tu[ *tu[ *tu[ *tu[ *tu[

dry *ti*[ti *ti*[ti

fire *ti*[ti *ti*[ti

father *ti*[ti *ti*

to burn *ti*[ti *ti*[ti

there *ti*[ti *ti*

definite article *ti*[ti *ti*

to extinguish *ti*[ti *ti*[ti

fox *ti*[ti *ti*[ti

frost *ti*[ti *ti*[ti

to return *ti*[ti *ti*[ti

to burn *ti*[ti *ti*[ti
3. /q/:

bed (VC) *fud* *twesn*
tofind *for* *trin*
stingy *fly* *put*
pig *pip* *kitan*
4. IZ /ɛ/ : [ɛ] /ɛ/

- cream
  * φούνκ
  * φακ

- stair
  * ψάπι
  * τς

- gear
  * φερ
  * τς γει

- to suck
  * φαλτ
  * τς ψάλσαμ

- solna
  * φαν
  * φανουλή

- drip
  * φρακ
  * φράκτικ

- to grab
  * φακ
  * φαμ

- caterpillar
  * τζικ
  * τς θελικάν

- belly
  * τζεκ
  * τς πυγμάκ
  * τς πυγμάκ

- trap
  * τζεκ
  * τς πράπα
  * τς πελάφι

- possum
  * τζ
  * τς φι
  * τς φι

- dog
  * τζ
  * τς θι
  * τς θι

- side
  * τζ
  * τς θι
  * τς θι

- tobacco
  * τζ
  * τς ροζι
  * τς ροζι
rat *ra:lt [K] *ka:t
small *sa:m.k(3) *sa:m
grand *gran.wo:k *gr.ä
awm *au:m *äw.m
learning *län.ning *buren

ten *ten: *tn
snake *sk:n *kr
sky *skr [K] *sköy
wine *we: *rä: *räm:nek.n
fruit, mortar *fr *frä?
mortar, mortar *frä:p
honey *hny: *fr
sweet *swt: *fr
red *red: *fr

dry *dry: *fr

dance *danc: *fr
brain BZ *b:n /s/ *fr
(brain)
to fall, jump VC *fult *fult (see 7a)
Gb, MCI#: 111-1 111

no. — alt. # of: 2 = 129, * 80

to laugh: * bei: * pe

7a. MZ1Ki: MZIKI

jaguar: * Kalu: * Ko: *
to drink: * Kiske * K

bitter: * Kaski * Kal: * K

to die: To * Ka: * K'la

fish: To * Kase: * Kely

parakeet: CZ Kige * Ke

mask: CZ Kung: * 9u: * K

to eat: To * Kung: * Kung: *

to descend, fall: CZ Ku: * Ku: o

down (To) * Ka:

Kwo
9. Explanation

10. The R2 is PA.51

y

Cooling *suh* *suh<=sub

pot *suh* *suhK

warm up Zs *suh* *suhC

gif *suh* *suh* *suh* *suh* *suh*

snot *suh* *suh* *suh* *suh* *suh* *suh* *suh*

To return all snot *suh*
II. M2/16: PM 18

1. M2/16: PM 18

1. cough *cufom* *tumb*

2. round *həʊp* *həʊp*

3. to grind *həʊm* *tə* *tə*

4. to pay *yən* *tox*

5. to finish *yah* *lax*

6. to shave *həʊ?ə* *tə*

7. to tear *tə* *iət* *tə*

8. how much *həʊ* *tə*

9. to triangle *həʊ* *kə*

10. to go far *həʊ* *tə* *xən*

11. to hammer *tə* *uə* *tə* *bəx*
fly * ham-lu * h¿h

demonstrative * ha' * ha?

point *

source *hat'is, etc

know * hell * hilk-hilk

crazy * c' blood * blow

14. he/mu: PM/mu

increase * pomV * pom

spider *t *am * tham

to sell *malh * man

to buy * marn * mun

big * mrah * munkw

pig ni *tam * Kitam

chilaraye * cz manih * mkg. il

give * mi * moy * mat
15. KZnJa: Putnlrr

eur,  *lime   *Rim~le

eye     *wit£p     *wit

to pass  *nes    To mel

tortilla  *lac    Yuc han

to eat    *lac    Yuc han

1st pers sg *na-  *wu-

first  SP nus   *nah

only   SP naps   *taga

16. KZ/many:ly

avocado  CZ ?omí   *?0-y

palm tree  CZ sa?g?h  *sa?y

honeycomb SP ?élkwoj  *?agay
to eat  C2 *wix*  *wix*

* walk  *wax

* fox  C2 *wotu*  *we*tu

* fox  C2 *wars*  *wars*

sugar cane  C2 *warsuk*  *warsuk*

21. MI7yl: Philigl

22. Miscellaneous

water  C2 *-nilp?  *nil-p?

pig  MI  *P'anin  *K'an

tobacco  C2 *?asi  *K'asip

tortilla  C2 *?ane  *?ane

23. Mi7yl: Philigl

to eat  Yik han

to pay  *yoh  *tax
<table>
<thead>
<tr>
<th>English</th>
<th>BIK</th>
<th>Meaning</th>
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<tbody>
<tr>
<td>pore</td>
<td>≠*a</td>
<td>≠*a</td>
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<td>high</td>
<td>≠*P</td>
<td>≠*P</td>
</tr>
<tr>
<td>thermometer</td>
<td>≠*n</td>
<td>≠*n</td>
</tr>
<tr>
<td>ant</td>
<td>≠*a</td>
<td>≠*a</td>
</tr>
<tr>
<td>bird</td>
<td>≠*r</td>
<td>≠*r</td>
</tr>
<tr>
<td>corn</td>
<td>≠*n</td>
<td>≠*n</td>
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<td>sweet potato</td>
<td>≠*n</td>
<td>≠*n</td>
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<td>father/son-in-law</td>
<td>≠*n</td>
<td>≠*n</td>
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<td>earth</td>
<td>≠*n</td>
<td>≠*n</td>
</tr>
<tr>
<td>chief</td>
<td>≠*n</td>
<td>≠*n</td>
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<td>buzzard</td>
<td>≠*n</td>
<td>≠*n</td>
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<td>≠*n</td>
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<td>name</td>
<td>≠*n</td>
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<td>English Word</td>
<td>Arabic</td>
<td>English Word</td>
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<td>--------------</td>
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<td>--------------</td>
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<tr>
<td>sandal</td>
<td>كَرَأَكُ (cdd)</td>
<td>fit</td>
</tr>
<tr>
<td>blood</td>
<td>مَرَنَ (cdd)</td>
<td>fit</td>
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<tr>
<td>ear of corn</td>
<td>مَحَرْ (s.)</td>
<td>fit</td>
</tr>
<tr>
<td>gourd</td>
<td>مَحَرْ (s.)</td>
<td>fit</td>
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<tr>
<td>cotton</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>flesh</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>water guard</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>leg, thigh</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>body hair</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>wind, air</td>
<td>مَهْ (c.)</td>
<td>fit</td>
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<tr>
<td>oar</td>
<td>مَهْ (c.)</td>
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</tr>
<tr>
<td>tongue</td>
<td>مَهْ (c.)</td>
<td>fit</td>
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<tr>
<td>sunday</td>
<td>مَهْ (c.)</td>
<td>fit</td>
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<td>hummingbird</td>
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<td>fit</td>
</tr>
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<td>tail</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
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<td>road</td>
<td>مَهْ (c.)</td>
<td>fit</td>
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<tr>
<td>turkey</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>teeth</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>gopher</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>horn</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>head hair</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>slop, trough</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>waggie</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>thorn</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>leaf</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>alligator</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>to bathe</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
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<td>to write</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>fire</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>to buy</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>to weep</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>to hear</td>
<td>مَه�َ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>to count</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
<tr>
<td>to make adobe wall</td>
<td>مَهْ (c.)</td>
<td>fit</td>
</tr>
</tbody>
</table>

* "pahz" (n)
- to name
- to teach
- to mix
- to sleep
- to soo.
- to steal
- to sew
- to say
- to find
- to sweep
- to roll up
- to rest
- to lose
- to enter
- to fan
- to slip
- to exist
- to vegetate
- to shell corn
- tomato
- custard apple
- year
- cold
- to weave
- to want, ask for

'Nose' Zo *Kinva *Gevny; samh
'mountain' Zo *Koent (pol) *lwif
'straw; grass' Zo *nu?K; mi *mny *Kim, pata
'deer' Zo *nu?ja; mi *laydu *Kvelix
'squash' Zo *pasuN; mi *ti. *Kim, *fahl, *mny
'palm mat' Zo *pata; mi *to?K *pohp
'earthworm' Zo *to?t *Elugum, etc
'paper' Zo *to?to *hug
'd to toast' Zo *Se?t *kiç
Mayan Sound Correspondence Charts

92
Feature: PM * φ (Φ)

Printed MAVAN ISO 9003 Schematic Base Map For
<table>
<thead>
<tr>
<th>KAM</th>
<th>h</th>
<th>JAC</th>
<th>h</th>
<th>CHJ</th>
<th>h</th>
<th>TOJ</th>
<th>h</th>
<th>TZE</th>
<th>h</th>
<th>TZO</th>
<th>h</th>
<th>CHL</th>
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</tbody>
</table>

**Schematic Base Map for Plotting Mayan Isoglosses**

**Feature:** PM* h

**Gloss A:**

**Gloss B:**

**Gloss C:**
Teleti-Teleti Comparative Grammar
Pt. I: Phonology

Terence S. Kaufman

125
A Tzeltal and Tzotzil (Tzeltal) are two languages of the Mayan family which are more closely related to each other than either is to any other language in the family.

The two are most closely related to languages of the Chol group (Chol, Chontal, and Ch'ol) in the one hand and to those of the Tojolabal group (Tojolabal and Chuj) on the other.

Whether it would be more appropriate to consider one or several of these languages (possibly also Yurache and Lacandón) as having begun to diverge from each other at approximately the same time or to assume, as this paper does, that Tzec and Tzotzil have shared a common history apart from these other languages is not a question that can be answered at the present time. If the first should prove correct, it would imply that among the Yurache * that Tzec and Tzotzil have uniquely shared have been the result of diffusion from one of the two to the other. It would require the same assumption to account for the parallel homogeneity of the Chol languages, and also for the similarities between the Chol languages and the Chontal languages (Yurache and Lacandón).

Tojolabal and Chuj likewise uniquely share certain features for which at the present it is not possible to construct likely explanatory hypotheses, primarily due to lack of descriptive materials for Chuj.

"Others would be chance survivals from the proto.
§ 22  The and Teo together constitute a single linguistic area. The speakers of these two languages live in the same geographical area, share a common culture, and seem to consider themselves as a single type of Indian distinct from Choles, Tojaloula, Zogos, Zapotecs, and even Indians they may know about. Any speaker of Teo or Te is indiscriminately called the speaker of any from whom either Teo or Teo is spoken by the same term /bat'kopi/ or /bat'i kopi/ which means 'genuine speech'.
§ 3

Whenever two closely related languages, which show a common history on comparison, there is always the possibility that some form was in both languages; it has passed from one to the other by diffusion. As for any item in question there can be no distinctive paradigm correspondences involved, i.e. if the forms would have identical shape in both languages, even of cognate, it is impossible to distinguish diffused material from inherited material without extra information.

That such diffusion occurs even in a relatively short period of time, can be shown by the example of Spanish 'cows' which can stand for many other cases. Even if we did not know of the Spanish influence on Teo and Tac, which has been in effect since the second quarter of the sixteenth century, we might assume that in Proto-Telcol-Totolit (PTT) there was a morpheme meaning 'cattle'. Such a reconstruction accounts for forms that occur in all dialects of both languages. But we do not know of the Spanish influence. Even if we did not, we would be able to check the form that means 'cattle' in other Mayan languages, and while in most cases the word would have been borrowed from Spanish 'cows', we would find that it does not show the regular correspondences that obtain in words of undisputable Mayan origin.
Two checks are therefore placed on the completeness treated here as PTE. (1) They must either occur in some other Mayan language (excluding Chel and Tixtunab, which are both genetically and geographically adjacent to Tec and Tec), or (2) they must occur in all dialects of Tec and Tec. The first criterion establishes a list over which there can be very little doubt that the members were found in PTE, since they must also have occurred in the proto-language of a more inclusive subgroup which included Tec-Tec (up to and including proto-Mayan). The second criterion will establish a list whose members fall into the following categories: a) very early loans from Spanish, b) pre- and post-conquest loans from one or more varieties of Hette (Nakwati, Nakwali, Pipil), c) pre- and post-conquest loans from Mixe-Zoque languages, d) words possibly diffused from Chel or Tixtunab, whose speakers are in contact with those of Tec-Tec and Tese-Tec, e) words not known to be loans, but not demonstrably Mayan since they have not been observed to occur in other Mayan languages.

Words falling in categories d) and e) under criterion (2) will be treated in this paper for the sake of completeness, since for them it is not possible to say that at some future time cognates in other Mayan languages will not be found.
§ 4 Data used in this paper include: (a) oral, sociolinguistic, and textual materials gathered by myself in March-August 1960 (supported by a NSF grant), and June-September 1961 (supported by the University of Chicago); (b) parallel materials collected by other field workers working for, sponsored by Chicago, Harvard, and Stanford; and (c) textual materials in the Bachajón dialect of Tzotzil, and a vocabulary in the Ochuc of Tzotzil, both published by the Summer Institute of Linguistics.

§ 4.1 Data is of two kinds: (a) extensive, and (b) limited. Limited materials include 200-word and 250-word lists collected in 1961 by various field workers for the Chicago project.

Extensive data is available for the following dialects:

<table>
<thead>
<tr>
<th>Tzeltal</th>
<th>Tzotzil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachajón (Ba)</td>
<td>Zinacantán (Zi)</td>
</tr>
<tr>
<td>Tenagapa (Te)</td>
<td>Chanula (Chm)</td>
</tr>
<tr>
<td>Ochuc (Ox)</td>
<td>San Bertolo (SB)</td>
</tr>
<tr>
<td>Agua caveyango (Ag)</td>
<td>Huistán (Chu)</td>
</tr>
<tr>
<td>Dinola (Pi)</td>
<td></td>
</tr>
</tbody>
</table>
§ 4.2 Limited data is available for the following dialects of Teltel:  

- Petalcango (Pe)  
- Yajalón (Ya)  
- Chicon (Ch)  
- Situla (St)  
- Sila (Sb)  
- Ocosingo (Oc)  
- Teuango (Tg)  
- Guaquitepec (Gu)  
- Cancio (Ca)  
- San Martín (Abasolo) (SM)  
- San Carlos (Altamirano) (SC)  
- Teopisca (Tel)
§ 4.3. Tseltal

Extension

Bachajón
a) textual materials in 516 publications
b) 200- and 250-word lists taped by Roberta Montoya and Gerald Williams; transcribed by me.

Tecuapex
grammatical, lexical and textual materials gathered by Brent Berlin and myself.

Xchincue
a) grammatical and textual materials gathered by me.

Xchincue
b) 250-word list gathered by me.
c) vocabulary (ca 1700 entries) by Marianna Stocum published by SIL.

Agua catemango
grammatical, lexical, and textual materials gathered by me.

Pinola
grammatical and lexical materials gathered by me.
Limited

Petalango
Yagajon
Chilón
Sitalk
Sibark
Ocoquintpec

Ocosingo
200- and 250-word lists taped by Roberta Montagu and Gerald Williams; transcribed by me.

Toquipice
200-word list gathered by me.

(About 100 years ago the original Toi-speaking inhabitants of the town of Toquipice moved to San Diego, formerly belonging to the municipio of Toquipice but now a separate municipio.)
San Carlos / "200-word lists taped by Andrés Medina H; transcribed by me.
Cananea

San Martín / "200-word lists taped by Jorge Vázquez and Andrés Medina H; transcribed by me.
Teznojo

§ 4.4 Textile

Extensive

Zinacantan

a) dictionary by Lore Colby (dittoed)
b) dictionary by Weathers and Weathers (microfilm)

Chamula

grammatical, lexical, and textual materials gathered by me.
San Bartolo

grammatical, lexical, and textual materials gathered by Harvey Sarles and myself. I have elicited all 518 material which I have used, but the work on the analysis of the phonemic system was done by Sarles, and I have adopted and support his analysis.

Huston

lexical materials gathered by me.

Some speakers of the Huston dialect who have moved into the municipio of Trujillo in the last 40 years.
Since extensive lexical data is available for only a few of all the dialects in both Teco and Teco, a modification of criterion (2) (appearance of a given item in all dialects in order to be considered for the proto) will have to be introduced so that all is redefined to mean occurring in (Teo:) Ba, Teo, OX, Hy, Pi, (Teo:) ZI, Cua, SB.

§ 5

Teo and Teco are indeed separate languages, and the distinguishing features are found at all levels: phonological, morphological, syntactic, and lexical. Each of the two languages has more than one sub-dialect, even including the dialects of several towns, but these have not all been clearly defined by the methods of dialect geography at this writing, and therefore observations about the sub-areaal affiliations of a given dialect have not been made here.

In this paper the term dialect refers to the speech of an Indian town or municipio. The municipio is an administrative unit of state government in Mexico, approximately equivalent to the county or township in state organization in the U.S. Most of the municipios in the Teo-Teco region correspond to the largest organizational unit within which Indian society functions, which I am calling a town. The speech of each town is somewhat different from the speech of other towns. A very few municipios
§ 6. This paper will treat the historical phonology of Teetel and Testel, and will include a comparative dictionary of roots, stems, and affixes. Lexical differences between Teetel and Testel will be treated in this paper, but treatment of morphophonemics, morphology, and syntax is deferred to a separate paper or papers to follow.

§ 7. There are occasions where all dialects of Teetel contrast with all dialects of Testel in the phonemic shape of a morpheme, or in the representation of a lexical meaning. In this context it will be convenient to talk of proto-Teetel and proto-Testel. The above situation should be assumed whenever the terms pile and pilo are used in subsequent paragraphs.
8.1 The main phonological isogloss that separates Testel and Testel is that there is a large number of morphemes in which Testel has corresponds to Testel al, along with one-to-one correspondences like /l/ and /l/ of. The correspondence Testel has labeled Testel with no further specification as to its phonetic nature in PE. Most morphemes and stems in Testel containing the correspondent PE /l/ have /l/ when not suffixed, and /l/ when certain (but not all) affixes are added. Testel stems containing invariant /l/ corresponding to Testel have invariant /l/ simply because they do not occur with affixes conditioning the /l/ alternation. So Testel the replacement of /l/ by /l/ is also a morphological process whereby transitive and positional verb roots are made into nominal classifiers in Testel. #-/l- is inserted between the last vowel and the last consonant, but the change of #-/l- to #-/l- is not reflected in Testel since #-/l- always becomes /l/ in Testel. The change of #-/l- is a PE feature since in SB (Pte) the former presence of #-/l- is reflected by the occurrence of low tone on the vowel preceding the #-/l- (more about tones in SB later).

The Testel alternation between /l/ and /l/ corresponds in some degree to the analogous alternation of #-/l- and #-/l-.
in Chol, Chontal and Lacandon, but not precisely.

Another feature that tends to distinguish Teco from Tix is that in forms of the type *CVHC and *CVHVC, *-h- is completely lost in all varieties of Teco. In SIB the loss of *-h- is compensated for by the development of a two-way final contrast whereby *vH follows formerly followed by *-h- in a low tone. In all other dialects of Teco the loss of *-h- is complete and uncompensated.

But loss of *-h-, while universal in Teco, is not unknown in Tixtal.

In Teco *-h- is completely lost in forms of the type *CVHC and *CVHVC, with no compensation. This is exactly like all forms of Tix, except SB.

In Sitala *-h- in forms of the type *CVHVC is lost but with lengthening of the preceding vowel. It is not lost in forms of the type *CVHC, so that a given stem may have allomorphs /CVHC, CVHVC, CVHC/, occurring when a CV suffix is added.

It is probably no accident that both these dialects are just on the Tixtal side of the linguistic border between Teco and Tix.

In other dialects of Teco *-h- is lost before certain consonants only. It is never lost before /p t f k/ in any dialect of Teco except as stated above for Teco and SB.
Initial *x- and *h- have been merged in all dialects of Tse and Tso with the following exceptions:

In Barkunón and Petalecigó they are kept distinct as /x/ and /h/ respectively.

According to ms. data on the Capanangastla dialect of Tse, extinct since 1620, *x- and *h- were distinct at the time of the conquest, but seem to have merged as /h/ in the period 1600-1700. Although Cop was wiped out by an epidemic ca. 1620, the neighboring towns of Suchitepéquez and Totonicapán may have spoken the same variety.

In Chimalá *x- becomes /h/, while initial *h- becomes /H/, /h/, /w/, or /j/. When the following vowel is *i, *h- becomes /j/. When the following vowel is *a or *e, *h- becomes /H/ followed by *i/. When the following vowel is *i, *o, *u, *h- becomes /H/ followed by /w/ or /j/. The conditions of the variation are partly syntactic (i.e., phonetic) and partly idiolectal or non-conditioned.

In Zinacantán initial *x- becomes /h/, as in Chimalá, and initial *h- becomes /h/ if the following vowel is *a, *i, *e, or *o, and /H/ if the following vowel is *i, *o, or *u.

In Huastec initial *x- becomes /H/ and initial *h- becomes /H/.
The phoneme *b* has had several developments.

In all Teo the phoneme /b/ has the allophone *-\[?m\]* when after vowels and before consonants or juncture. Elsewhere it is /\[b\]/ or /\[b\]2/. This is interesting,

...as at least two other Mayan languages, Yucatec and Chinantec, have similar or identical distributions of allophones of /b/. Since neither is or could have been in the last 1000 years in contact with Teotih, it is an interesting question whether these allophones of /b/ were proper to Teo or whether they have developed in Teo independently.

In Teotih, there are two primary developmental patterns for /b/.

In a compact set of dialects, all geographically contiguous, a group which separates the rest of Teotih into two parts, /b/ has only one primary allophone, /\[b\]/. After vowels /\[b\]/ may be preceded by phonetic /\[p\]/, but the presence of /\[p\]/ does not contrast with its absence.

In all other dialects of Teotih — and this is a geographically discontinuous group comprising two geographical areas — /b/ has become /\[b\]/ after vowels and /\[b\]/ elsewhere. In these dialects /b/ is not glottalised; it is either a stop [b] or a spirant /\[b\]/. In addition of the vowel preceding /b/ is not the first vowel, and if /b/ is followed by at least one vowel it becomes /\[b\]/.
In Tenango and Guaqueitepec postvocalic preconsonantal (or prejunctural) /b/ is occasionally perceived as being phonetically [bː]. This would support an argument that the phones [bː]/[b] are grouped together as a phoneme /b/ rather than assuming that /b/ is split into /b/ /bː/ and /b/ /bː/ are primarily in contrast. Like Tenejapa, where [bː] also occasionally shows up as an allophone of /b/, Guaqueitepec and Tenango border in Teotitlán, etc. which lie to the west.

8.2 Although the morphological features of Teotitlán and Teotitlán will be treated in a separate paper, one important feature which distinguishes the two languages will be mentioned here. While Teotitlán has a single suffixed set of personal affixes to mark the subject of an intransitive verb or a stative verb, Teotitlán has two sets: a prefixed set marking subject of an intransitive verb which has no analogue in Teo, and a suffixed set marking subject of a stative verb which is cognate to the single set of Teotitlán. A further complication is introduced by the fact that the single suffixed set of Teo is also used to mark object of a transitive verb, while in Teo, either set may be used. (I am certain of this last statement only with respect to Chamula, and even here, a difference in meaning may be involved in the use of different sets).
In certain other Mayan languages than Tooltic the subject markers for intransitive verbs are prefixed, but these languages are not adjacent either to Teotitlán or Tooltic. (In Chol-Chontal, Cherté-Quinte-Mucameñán the subject markers for intransitive verbs are prefixed in the present tense, but with the affixes used as subjects of transitive verbs or possessors of nouns. In the past tense they are suffixed and cognate with the Tic suffixes.)

The situation in Tic for intransitive verbs may be the remnant of an earlier pattern, say of prefixed present tense and suffixed past tense, which Tooltic, Tzololbal, and Chol-Chontal-Cheté-Quinte-Mucameñán have all reorganized, the last five languages in common, and the first two perhaps in common or perhaps independently. In the present tense the last five will have replaced the prefixed in set by the prefixed tu or noun set, and the first two will simply have changed the order of the affixes from prefixed to suffixed. Tooltic will have innovated by not having a suffixed past tense for itu’s.
However, the situation is further complicated by the fact that the Tzo preserves for 1st person *i-, 2d person *a-, 3d person *null reflect proto-Mayan *in, *at*, *null, but that in all other person paradigms Chontal, Chol, Tzeltal, Tzotzil, and Tojolabal have innovated by using the old 1st person plural morphemes for the first person singular, and re-creating an affix to mark 1st person plural. The changes can be sketched briefly in the following table.

Chuj preserves the hypothetical pattern more or less unchanged except that the person markers for 1st person (apparently) are suffixed for all tenses.
<table>
<thead>
<tr>
<th></th>
<th>Proto (-Mayan ?)</th>
<th>Izotzil</th>
<th>Tzeltal</th>
<th>Tzotzbal</th>
<th>Chuj</th>
<th>Chol</th>
<th>Chontal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>subj tv</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 1s           | *i
om-             | *x
om-   | *x
om-  | *e
om-   | *e
om- | *e
om- | *e
om-   |
| 2s           | *a
om-             | *a
om-   | *a
om-  | *a
om-   | *a
om- | *a
om- | *a
om-   |
| 3s           | *nom-             | *om-   | *om-   | *om-   | *om- | *om- | *om-   |
| 1p           | *om-x
om-         | *x
om-   | *om-   | *om-   | *om- | *om- | *om-   |
| 2p           | *em-             | *em-   | *em-   | *em-   | *em- | *em- | *em-   |
| 3p           | *nom-x
om-         | *x
om-   | *om-   | *om-   | *om- | *om- | *om-   |

**poss n**

| 1s           | *i
om-             | *x
om-   | *x
om-  | *e
om-   | *e
om- | *e
om- | *e
om-   |
| 2s           | *a
om-             | *a
om-   | *a
om-  | *a
om-   | *a
om- | *a
om- | *a
om-   |
| 3s           | *nom-             | *om-   | *om-   | *om-   | *om- | *om- | *om-   |
| 1p           | *om-x
om-         | *x
om-   | *om-   | *om-   | *om- | *om- | *om-   |
| 2p           | *em-             | *em-   | *em-   | *em-   | *em- | *em- | *em-   |
| 3p           | *nom-x
om-         | *x
om-   | *om-   | *om-   | *om- | *om- | *om-   |

| **subj iv**  |                  |         |        |          |      |      |         |
| 1s           | *i
om-             | *i
om-   | *i
om-  | *i
om-   | *i
om- | *i
om- | *i
om-   |
| 2s           | *a
om-             | *a
om-   | *a
om-  | *a
om-   | *a
om- | *a
om- | *a
om-   |
| 3s           | *nom-             | *nom-  | *nom-  | *nom-   | *nom- | *nom- | *nom-   |
| 1p           | *om-x
om-         | *om-x
om- | *om-x
om- | *om-x
om- | *om-x
om- | *om-x
om- | *om-x
om- |
| 2p           | *em-             | *em-   | *em-   | *em-   | *em- | *em- | *em-   |
| 3p           | *nom-x
om-         | *nom-x
om- | *nom-x
om- | *nom-x
om- | *nom-x
om- | *nom-x
om- | *nom-x
om- |

| **subj sv**  |                  |         |        |          |      |      |         |
| 1s           | *i
om-             | *om-   | *om-   | *om-   | *om- | *om- | *om-   |
| 2s           | *a
om-             | *at   | *at   | *at   | *at   | *at   | *at   |
| 3s           | *a
om-             | *a
om-   | *a
om-  | *a
om-   | *a
om- | *a
om- | *a
om-   |
| 1p           | *om-x
om-         | *om-x
om- | *om-x
om- | *om-x
om- | *om-x
om- | *om-x
om- | *om-x
om- |
| 2p           | *em-             | *em-   | *em-   | *em-   | *em- | *em- | *em-   |
| 3p           | *om-x
om-         | *om-x
om- | *om-x
om- | *om-x
om- | *om-x
om- | *om-x
om- | *om-x
om- |
8.3 Lexical differences from dialect to dialect are the most frequent types of difference in the Tze-Tio region.

There is a large number of cognates which unfailingly distinguishes Tze from Tio. A few of these will be given in later sections of this paper.
§ 9

The following subjects will be treated in this paper in the order here stated:

1. Phono-synchronic elements to be surveyed (§ 10).
3. Morphemic elements, such as phonetic sequences (§ 11.1).
5. Phonological developments common to all Taelti (§ 11.3).
6. Phonological developments common to all Taetul (§ 11.4).
7. Table of non-identical verbal correspondences (§ 11.5).
11. Lexical differences between Taelti and Taetul (§ 30).
13. Place Names (§ 33).
§10.1 General phonemic system of Tze-Tao dialects (phonemes occurring in nature words)

\[
\begin{array}{cccccccc}
| p & t & s & k & \hat{p} & \hat{t} & \hat{s} & \hat{k} | & i & u \\
| b & g & s & x & h & H & m & n | & a & \checkmark \checkmark \checkmark \\
| w & y | & | & | & | & | & | & |
\end{array}
\]

1. In some dialects *b* is reanalyzed as /b/ and /*b*/.
2. *w* > /g/ before /o, u/ in Pinlela.
3. */H/ is always from */h*; varies from voiced [/h] to [/y];
   */H/ is written when it contrasts with */h*[h]. */h/ is
   written when the contrasting phoneme is */x*[x].
4. Lexical pitch, i.e. tone, is phonemic in SB.
1. /pt ð e K, ð t ð' e K, b, ʔ, s ɾ x h, m n l, r, wy; i e a o u/ — Baeloijón, Petalingo.

2. /pt ð e K, ð t ð' e K, b(ðb), ʔ, s ɾ h, m n l, r, wy; i e a o u/ — Huastán (B); Sitalá, Yucalén (L).

3. /pt ð e K, ð t ð' e K, b(ðb), ʔ, s ɾ h, m n l, r, wy; i e a o u/ — Teopisca, Aguacatenango, Guaquiterpec, Terning, Teopisca, Sibacá, Ocosingo, Chicón (B); Tenajapa, Cincav, Altransaro, Tlanacantán (B).

4. /pt ð e K, ð t ð' e K, b, ʔ, s ɾ h, m n l, r, wy; i e a o u, ñ ñ/ — San Bartolo

5. /pt ð e K, ð t ð' e K, b ɾ, ʔ, s ɾ h, m n l, r, wy; i e a o u/ — Pinola

6. /pt ð e K, ð t ð' e K, ɾ ɾ, ʔ, s ɾ h, m n l, r, wy; i e a o u/ — Chamula

7. /pt ð e K, ð t ð' e K, ɾ, s ɾ h, m n l, r, wy; i e a o u/ — Oxtlan, Abasolo
§II.1. Phonemes of PT2:

\[ \begin{array}{cccccc}
\hat{p} & \hat{t} & \hat{f} & \hat{s} & \hat{k} & \hat{p} \\
\hat{t} & \hat{c} & \hat{s} & \hat{k} & \hat{e} & \hat{t} \\
\hat{B} & \hat{c} & \hat{x} & \hat{h} & \hat{a} & \hat{c} \\
\hat{m} & \hat{n} & \hat{h} & \hat{y} & \hat{e} & \hat{l} \\
\end{array} \]

Roots in PT2 are of the following shapes:

1. V (C exx)
2. CV (S exx)
3. CVC
4. CVhC₂ (C₂ may not be /h, ?/)
5. CVCVC
6. CVhC₂VC
7. C₁VC₂C₃ (rare)
8. C₁VC₂C₃VC (rare)
The U and CV patterns are set up only for the 2 particles *t, *e, and the five particles *ta, *te, *to, *set, *te, which show no evidence that they end morphophonemically in [ll]
All other roots of the shape CV(C) and morphophonemically in [ll].

Not all possible CUC, CVC, CVVC, CVVCVC roots occur, but this does not seem to be the result of restrictions on the distribution of phonemes in roots, with the following exceptions: there does seem to be a general lack of roots of the type CVC'; (where C' is the glottalized counterpart of non-glottalized C), but for the type CVC'; the root *tisik is 'cut off' and the citation. Sibilants (s, s, s) and sibilants (s, s, s) are mutually exclusive in roots.

Roots of the shape CV(C)VC are quite rare, and most stems of this shape are complex morphophonemically. Most roots in this and this are monosyllabic.

Roots of the shape CVCVCVC are extremely rare, and seem not to have cognates in other Mayan languages, or if they do, they are seen by comparison to be CVCVC root + VC suffix, (e.g., P: (=hābil 'year' *ha?B+il) being however not thus analyzable on the basis of Te-Te-Te alone.
Certain roots of the type CVCVC occurring in derived situations with VC suffixes where V₂ is lost. Such is *V₁V₂V₃ occurring at *V₁V₃V₂V₄ and *V₁V₃V₄ is in *V₂V₃.

Distributions of *V in contrast with *V₂.

Roots of the types
*VC₃C *VC₄C
*VC₃C *VC₄C
*VC₃C *VC₄C
*VC₃C *VC₄C
*VC₃C *VC₄C
*VC₃C *VC₄C
*VC₃C *VC₄C
*VC₃C *VC₄C

may be reconstructed. (V₄ = /i e u/)

Roots of the types
C₃CV₄C
C₃CV₄(CVC)
C₃CV₄(CVC)
C₃CV₄(CVC)
C₃CV₄(CVC)

- may not be reconstructed, but derived stems having some of these patterns may be.
PTZ affixes have the following phonemic shape:

*VC
*CUC
*VCUC
*CUCVC

Stems of the shape CUCVC may result from roots of the shape CUC plus affixes of the shape CUC, or from roots of the shape CUCVC plus certain (but not all) affixes of the shape VC, the second vowel of the root being lost:

exx pošt + -hay → poštay
nidan + -ax → nidanax

Since there is a possibility of several affixes occurring at the same time with a given root, stems may contain (possibly) as many as six syllables.

In SB, where true or phonemically roots of the type CUCVC develop differently from morphemically complex stems of the type CUCCVC. Although this might be the result of analogy, there might equally well have been a phonological difference in PTZ between the two types of CUCCVC sequences. The distributions of tones of SB may be explained morphophonemically, but not phonemically.
Therefore in stems which are morphophonically complex, the symbol /i/ is written at the morpheme boundary, with no further speculation about its phonetic nature. In SIB,

\[ ^*\text{Cuccuc} > \text{Cuccuc} : \text{BanKi} > \text{BanKe} \]
\[ ^*\text{Cucc.Vc} > \text{Cuccuc} : \text{TabTel} > \text{TabTel} \]
\[ ^*\text{Cuc.Cuc} > \text{Cuccuc} : \text{Nahli} > \text{Nahli} \]

\((V)C,C,(V)\) sequences do not occur without an intervening juncture in any of the dialects, with the exception of /bby/ which can occur in Tukal probably because in the environment \(V-[\#]_{(}\), /bby/ is \(V[m]\), and prevocally it is \(V[b]\), so that a sequence /\text{Vbbv}/ is not phonetically a case of gemination, being pronounced \(\text{V}[m\text{bb}]\). But all other \(C,C\), sequences that might arise morphophonemically are simplified to \(C\), as well as /\text{bbby} > \text{bb}/ in Tukal.
11.2 In order to make statement of phonemic changes simpler, phonemes have been divided up into several subclasses.

\[
\begin{align*}
\mathcal{V} &= \text{any vowel } /i\ e\ a\ o\ u\ \partial/ \\
\mathcal{C} &= \text{any consonant} \\
\mathcal{C}_1 &= /p\ t\ a\ k/ \\
\mathcal{C}_1' &= /p'\ t'\ a'\ k'/ \\
\mathcal{C}_2 &= /\mathbf{l}/ \\
\mathcal{C}_3 &= /s\ z/ \\
\mathcal{C}_4 &= /\mathbf{h}/ \\
\mathcal{C}_5 &= /m\ n\ \ell/ \\
\mathcal{C}_6 &= /\mathbf{y}/ \\
\mathcal{C}_7 &= /\mathbf{h}/ \\
\end{align*}
\]
11.3 General developments in Tzeltal

*CVhx > CVx

*r, > a.

Tzeltal has no /əs/ alternation.

11.9 General developments in Tzotzil

*CVhC > CV C (st.3)

CV C (oth.)

* > a

* > o

Tzotzil has extrusive /əs/ alternation, therefore,

PTC has extrusive /əs/ alternation.

After vowels and before consonants /b/ has the allophone [?b].
<table>
<thead>
<tr>
<th>PTz</th>
<th>Ba</th>
<th>Te</th>
<th>Os</th>
<th>Ag</th>
<th>Pt</th>
<th>SB</th>
<th>Clm</th>
<th>Zr</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVHX</td>
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<tr>
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</tr>
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<td>CVCCVC</td>
<td>CVCCVC</td>
<td>CVCCVC</td>
<td>CVCCVC</td>
<td>CVCCVC</td>
<td>CVCCVC</td>
</tr>
</tbody>
</table>

"= same as proton"

All other regular correspondences are identities.
12. A certain small group of words is interesting for the
diversity of development of the medial element (*h, y, ky, lyu),
even in a single form. Note that in all cases except one
(*yukyel) the second root is a high root, and in all
cases but two it is *i.

1. *elahil 'smoke'  
2. *mayil 'white squash'  
3. *tabyin 'alligator'  
4. *tohyl 'frost' p tze  
   *tahiw 'frost' p tzo  
5. *nahil 'first' p tze  
6. *yukyel 'smallpox' p tze  
7. *wayil 'bed' p wayiel 'bed'  
8. *yahwuk 'thunder'
The Teo form can be interpreted as /sib'ok/ (sib'ok) xin '\nac
and the Teo form as /sil?eʃok/ (< sib'ok); cf. k'ilel (sib'el, halal) < + halal, calael < k'ael. PTe is *sib'ok

4. In 15th-18th the xunat occurs meaning 'slave'. It is now obsolete. In 17th Yucatec xunach (motul) occurred, with the same meaning. In 19th Quiche a root xun (Brasseur) occurred, likewise meaning 'slave, slavery'. In 20th C Lacanac and Canebal/munil/ occurs meaning 'work'. If not we were not for early documentation of the and Yucatecan, this Mayan etymology might not have been recognized.
CV, lVC roots and stems have two developments in dialects with neutral r-h to lost, CV, lVC or lVC.

The second development is traceable in certain lexical dialects for which I have data and perhaps in all of them. It also occurs in some Central dialects.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Bihil</td>
<td>'home'</td>
<td>pTze</td>
<td>Dict 075</td>
</tr>
<tr>
<td>2.</td>
<td>Belien</td>
<td>'walk'</td>
<td>pTze</td>
<td>Dict 071</td>
</tr>
<tr>
<td>3.</td>
<td>Sahab</td>
<td>'pit'</td>
<td></td>
<td></td>
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<tr>
<td>4.</td>
<td>Kahal</td>
<td>'day'</td>
<td>pTze</td>
<td>Dict 059</td>
</tr>
<tr>
<td>5.</td>
<td>Bahal</td>
<td>'contents'</td>
<td>pTze</td>
<td></td>
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<tr>
<td>6.</td>
<td>Pohay</td>
<td>'skunk'</td>
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<td>Dict 057</td>
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<tr>
<td>7.</td>
<td>Pohox</td>
<td>'palm heart'</td>
<td></td>
<td>Dict 040</td>
</tr>
<tr>
<td>8.</td>
<td>Mohol</td>
<td>'old man'</td>
<td></td>
<td>Dict 034</td>
</tr>
<tr>
<td>9.</td>
<td>Fuhun</td>
<td>'be used'</td>
<td></td>
<td>Dict 081</td>
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<tr>
<td>10.</td>
<td>Duhul</td>
<td>'holy'</td>
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<td>Dict 209</td>
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<tr>
<td>11.</td>
<td>Duhun</td>
<td>'heed'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>K2uhul</td>
<td>'herb doctor'</td>
<td>pTze?</td>
<td></td>
</tr>
</tbody>
</table>
12.0  In some stems of the shape CV(C)CUC, final 
final and final -fluorine. Both must be reconstructed, since 
no direct crosses (1 or 1-final) are possible correctly.

1. *zaikel  'wedding'  Dict 018
2. *dikel  'wedding'  Dict 018
3. *hacikob  'lend'  Dict 234
4. *sahickob  'several'  Dict 570
5. *hacikob  'secrecy'  Dict 937

12.0  In stems of the shape CV?BVC, a given direct 
may replace some cases of +B by final but not necessarily 
all.

1. *cak'ob:ex  'day after tomorrow'  Dict 147
2. *hak'obil  'year'  Dict 233
3. *hakob  'lend'  Dict 234
4. *cak:bol  'fruit'  Dict 372
5. *tub:bol  'meat'  Dict 686
12. E Certain particles having ʃ to after labials ʃ b, ʃ m haveTag instead of ʃ o in most dialects of Taitel, as well as having various final causatives in the various dialects.

1. *boy~boẑ ubon ['where']    Dict 070
2. *mowm2? (negative)    Dict 921
3. *moço'y ['who']    Dict 903

12. F In stems of the shape CUBCUC most dialects of Taitel replace ʃ b by ʃ b:

1. *'abitel ['work']    Dict 002
2. *'a(c)bikxey ['day before yesterday']    Dict 147
3. *'lia(c)'binal ['brush (mount)']    Dict 231
4. *'ibnéel ['oEBr']    Dict 619
5. *'ibbēcic ['day']    Dict 619 (see § 13.3)
12.6 In some cases, the sole difference between a Tfe and a Tso form is that the Tfe form has a final -Ve element which the Tso form does not have. This is generally a derivational suffix (denoting a particular noun) but within Tfe itself there is no known for cutting the -Ve element.

<table>
<thead>
<tr>
<th>Tfe</th>
<th>Tso</th>
<th>Meaning</th>
<th>Dict</th>
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<tbody>
<tr>
<td>Zaw</td>
<td>Zaw</td>
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<td>'name'</td>
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<td>'luka'</td>
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<td>'cloud'</td>
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<td>tukel</td>
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<td>'myself'</td>
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**Other Interesting Words**

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<td>7a'hearı: conversation</td>
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<td>*poinsok</td>
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<td>*zinVmam</td>
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<td>Kindle</td>
<td>quany/quan quan</td>
<td>Dict 119</td>
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The value of continuous documentation can be illustrated by
the following four examples. Both Tso and Tso have had documents
written in them ever since the Conquest and several early grammars
and dictionaries have been found. Although there has been very little
change in these languages since the Conquest, it is clear that changes in
vocalic place which obscure the relationship between cognate forms.

1. The word *tohu, fuel* is /m?iy/ in Tso in all dialects of Tso, and *testet* a minimal form derived from it is /m?iyw/ in Ag and P?l, but /m?iyx/ elsewhere. A ms dating from
ca. 11000 representing the Conquest period (as I estimate it) records the
cognates in *abi* (abieh) and *sabieh* from Tso and Kalpahol indicates that *abi* must have occurred in the P?l form.

2. Contemporary Tso-To has no cognates /K?en/ in Tso of
'host' and *K?en/ in Tso of 'male'. /K?en/ (herein constructed
would be the P?l morpheme *l?en*. Documents from the 16th-17th ce give equally meaning 'rest' and 'male',
and do not record *K?en* at all. We conclude that /K?en/ is an innovation based on *K?en* which has taken place since
the Conquest. /K?en/ also occurs in Tso, Tso, and Chol.

3. *K?en* in Tso-To documents show a Tso form *x конструкци
and a Tso form *Xen* meaning 'boy'. These forms are obsolete in
contemporary Tso-To. Chol and Chontal have a word /?b* meaning
'child' and /?b* is a Mayan morpheme meaning 'male',
which occurs in P?l *?b* (male) *?EB.E*.

106

OVER
The value of continuous documentation can be illustrated by
the following four examples. Both Tse and Tso have had documents
written in them ever since the Conquest, and several early grammars
and dictionaries have been found. Although there has been very little
change in these languages since the Conquest, certain changes have
taken place which obscure the relationship between cognate forms.

1. The word *Ghonk* (Tse) is */Tzéyi*/ (Tso) in all dialects
of Tse/Tso and Tsetel; a nominal form derived from it is */Tzéyiye/2
in Ag and Pi, but */Tzéyiye/* elsewhere. A ms dating from
1650 representing the Copan growing dialect (Tsetel) records the
cognate forms as *abi*, *abiqueh*, and evidence from Tzeltal and Tzotzil
indicates that *abi* must have occurred in the PTE form.

2. Contemporary Tse-Tso have two morphemes */Kelen*/ meaning
*rooster* and */Kéren*/ meaning *male*. */Keréni*/ (reconstructed
would be the only PTE morpheme with */r*/. Documents from
the 16th-17th C failed to give */Kelen*/ meaning *rooster*, and */Keréni*/
and did not record */Kelen*/ at all. We conclude that */Keren/1
is an innovation based on */Kelen*/ which has taken place since
the Conquest. */Keren/ also occurs in Tzeltal, Chuj, and Chel.

3. 16th-17th documents show a Tse form *Xichoe* and
a Tso form *Ximchoe* meaning *boy*. These forms are obsolete in
contemporary Tse-Tso. Chul and Chontal have a word */Sikel*/ meaning
*child* and */Sib*/ is a major morpheme meaning *male*,
which occurs in PTE */Sikel/ *sib*.  

4.
§ 15  Bachajén (1)

1. *h* everywhere becomes *lal* (general Teltal).

2. *h* in final position is represented by zero in my sources and may be presumed to be absent.
   
   *nah 'house' > *na
   *deh 'meat' > *do

3a. *h* is lost before *s, ṣ, x* (general Teltal)
   
   *wol 'a blister' > *woṣ
   *fahx 'be finished' > *laṣ interchangeably

4. a *h* becomes *lal* after juncture and consonants and after vowel other than the first or last of a word.
   
   *Bellen 'walk' > *bellen
   *Kalbinyiy 'tell' > *kalunyiy
   *Tihkuliy 'night' > *tihkulun

b. *h* becomes *lal* after the first or last vowel in a word, and after *ceh* 'two' > *ceh*
   
   *ya'taxib 'his tool' > *ya'taxib
   *xsecqubtik 'our lives' > *sehKu'btik

All other Teltal phonemes remain unchanged, except as noted in the following lists.

3b. Elsewhere *h* remains as *h*
   
   *nahbil 'lala' > *nahbil
   *lahmax 'a calmed one' > *lahmax
   *pohp 'palm meat' > *pohp
   *Kohk' 'rice' > *Kanak
   *hol 'water' > *laṣ
### Bachayin (2)

**A**

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<tr>
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<tr>
<td>4</td>
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<td><em>wajib</em></td>
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**B**

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<td>* habībin</td>
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<td>ma</td>
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<td>3</td>
<td><em>gay,Sub</em></td>
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</tr>
<tr>
<td>4</td>
<td><em>pahKay/om</em></td>
<td>?</td>
</tr>
<tr>
<td>5</td>
<td>*yan(?)ele'</td>
<td>&gt; šancé</td>
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<tr>
<td>6</td>
<td><em>kahuk/ik</em></td>
<td>&gt; kahuk</td>
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<tr>
<td>7</td>
<td><em>siBak/ik</em></td>
<td>?</td>
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<td>8</td>
<td><em>nah/k/t</em></td>
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<td>26</td>
<td>ʔmoʔumay</td>
<td>ko</td>
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<td>27</td>
<td>ʔwohəumah</td>
<td>woʃ, wos</td>
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<td>ʔsaŋet</td>
<td>saŋet</td>
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<td>ʔbaʔet</td>
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<td>(s)keʔam, (s)keʔan</td>
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<td>ʔəh kalraʔub</td>
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<td>ʔəmlək, etc</td>
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<td>ʔbaʔumil(ə)</td>
<td>ʔbaʔumil(ə)</td>
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<td>ʔmeʔbaʔ, etc</td>
<td>meʔbaʔ, etc</td>
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<td>ʔbələʔan</td>
<td>ʔbələʔan</td>
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§ 16. Petalcingo (1)

The developments of the PTZ phonemes in Petalcingo are the same as for Bachajón, except that *h remains before *s and *x as well as before all other consonants.

a) *wubah *b bihui > wubah *nuhui *tsuim > nuhui

A
1. *čahil > čahil
2. *mayil > (8) mayil
4. *tolyib' not used

B
1. *bobil > (8) bihil
2. *behen > behen
4. *kval not used
6. *pahay > pahay
10. *dulul > dulul-

D
2. *qabil > qawil

E
1. *bq(x) > ban
2. *maw > ma, ma
3. *mawal > mačah
F
1 *habbel > ʔaḥṭel

G
3 *bihil > (s) biḥil
4 *naḥbil  not used
5 *takal > tokal

H
1 *Kayox  > Kayox
2 *laxayeb > ləxayeb
5 *ṣan(ʔ) :əl > ʔanît
8 *nahtīt > naht
9 *sēk(ʔ)ik > sēkisk
10 *s ihtīt > siht
12 *pečī > peš
16 *ṭehčak > ṭeḥčak
17 *ṭumnutunim > tumnutunim
18 *ṣabil > (g)ḥābil
19 *pišxol > (g) pišxol
20 *zaikbe > ʔaikbe
21 *waṭel > (s) waṭel
23 *Kānkal > Kānkal
27 *woḥšumud > woḥš
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<td>basket</td>
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<td>*кеchan</td>
<td>ʔ(ʔ)кеchan</td>
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<td>*думанет</td>
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<td>ʔдеманетаб</td>
<td>ʔдекинетаб (comment: ?)</td>
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<td>*петрак</td>
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<td>ʔмуфат</td>
<td>ʔ(ʔ)муфат</td>
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<tr>
<td>41</td>
<td>ʔдуманетан</td>
<td>ʔдуканетан</td>
</tr>
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</table>
§17 Chilón (1)

1. *h everywhere becomes [k] (general feature)

2. *h is lost between non-identical vowels, and optimally lost between identical vowels; it is also inserted before *k, and optionally before *s, *g,

3. *h elsewhere and *t everywhere fall together as /n/ e.g. *nuh₁ > n₁uₙ, *tu₂ > tu₂

a) initial

*ho? 'water' > ha? *hi? 'sand' > hi? *hun 'paper' > hun *xun 'sea' > xun *xol 'hemp' > xol

b) final

*reh 'rain' > x₁₁ 输入 *nun 'noon' > nun *beh 'read' > beh *fox 'new' > pah *fox 'war' > pah *yix 'sand' > yih

c) medial

*soxolb 'many; light' > soho₂b

d) before C

*whl 'fly' > wkl *toh₂b 'no; 20' > talib *kauk 'fire' > kauk *kukul 'skin' > kukul *pekupen 'butterfly' > pekupen *pehlon 'dawn' > p₁₁₁₁₁

*laxdagebi '12' > lahdagebi
Chilon (2)

4. Initially and after consonants *B becomes /b/
   *beh 'road' > beh
   *galbey 'he tells him' > yallbey
   *tohâb 'inc. 20' > talâb

5. After vowels /b| becomes /b|
   *čeb 'two' > bëb
   *šànub'il 'saw' > šànub'il
   *šalikùb 'lover' > šelikùb

All other PTh phonemes remain unchanged, except as noted in the following lists.

A

1. *čalil > čalil
2. *magil > megil
3. *tohâb > not used

B

1. *Bchil > (s)bhil ~ (s)bil
2. *behen > ben
3. *Kalal > Kahâl (~ Kal ?)
4. *pohoy > pâhay (~ pay ?)
10. *čukul > čukul-
D
2 *ha?bil > ha?wil

E
1 *bo(?x) > ban
2 *mo(?) > ma
3 m?d?cy > ma?lah

F
1 *la?tel > ra?tel
3 *ha(?b)nal > ha?mal

G
3 *b?hil > (s)b?hil > (s)b?bil
4 *nah?bil not used
5 *toKal > toKal
<table>
<thead>
<tr>
<th>#</th>
<th>Arabic</th>
<th>Hebrew</th>
<th>English</th>
</tr>
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<tr>
<td>1</td>
<td>ƙayox</td>
<td>ƙayoh</td>
<td>Kayox</td>
</tr>
<tr>
<td>2</td>
<td>ƙarƙayeb</td>
<td>ƙarƙayeb</td>
<td>Kayeb</td>
</tr>
<tr>
<td>3</td>
<td>ƙan(?)i?i?e</td>
<td>ƙani?e</td>
<td>Yani</td>
</tr>
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</table>
1. *h everywhere becomes /h/ (except in final)

2. *h is lost finally and between vowels
   a) *neh 'tail' > (s)he
      *nah 'house' > na
   b) *nahil 'smoke' > tail

3. *h initially and *x everywhere merge as /h/ (phonetically [h] varying with extremely heavy glottal friction)
   a) *hôpon '2' > hôpon
      *hun 'paper' > hun
      *hol 'hand' > hol
      *hun 'one' > hun
   b) *fxh 'red' > fah
      *yix 'hard' > yich
   c) *lax̡aye b '12' > lähče b, lak̡aye b
   d) *sax̡oe b 'my old cat' > səhə b
   e) *səx̡oe b 'my old cat' > səhə b

Q. *h is apparently lost before *s, *x, but this may be a case of mishearing. (As in all pastal *h is lost before /x/)
   *nah ̣ 'as sum' > nul
   *woh ̣ 'a blister' > wul

5. In all other environments *h is not lost, but has two developments.
   a) If the syllable which is closed by *h is followed by at least one more syllable, *h > /h/ (phonetically vowel length freely alternating with extremely light glottal friction)
   b) If the syllable which is closed by *h + C is the last syllable of a word, *h > /h/
Sitael (2)

(a)

* nahlīl `long; attrice' > nahlīl : *naḥt `long` > naḥt

* nahlīkūl `skin' > nahlīkūl

* xēuhtik `our helix` > kēuhtik : *kēuht `my helix` > kēuht

* seh kul `liver' > setkūlāb

* xnehikēl `my shoulder' > hinēhikēl

* seh kārānab `rainbow' > seh kārānab

* pehpen `butterfly' > pehpen

* kāhīkal `day, sun' > kāhīkal : *kāhīk `sun' > kāhīk

* tīhīkal `black catbird' > tīhīkal : *tīhīk `black' > tīhīk

* tāhīkal `night' > tāhīkal

* zāhēm `net' > zāhēm : *zāhē `4 getivel' > zāhē

* sēhītem `swollen' > sēhītem

* zāhīkol `up' > zāhīkol

* tīhel `burning' > tīhel

* yihīn `his wife' > yihīn

* zāhīlon `down' > zāhīlon

* xbaḥīk `to' > xbaḥīk

* xtakb `to' > xtakb

* wīhl `4 fly' > wīhl
Sitala (S)

Initially, after consonants, and interconsonally after the second or later vowel of a word, *b > /b/

* baht ‘go’ > baht
*bich ‘read’ > be
*yalbey ‘he tells him’ > yalbey
*yahkilal ‘night’ > yahkilal

After the final or last vowel of a word, and after any vowel before a consonant, *b > /bl/.

* boxob ‘ray of light’ > boxob
* xselkubtik ‘our liver’ > iselkubtik
* 7ib ‘army’ > ili7ib

All other PE phonemes remain unchanged, except as noted in the following lists.

A

1. *shil > šail
2. *mayil > mayil
3. *tohyib > toyi7ib
Situla (4)

1. *b'hill > (s)b'il
2. *behen > ben
4. *kalhal > kal
6. *phoy > pay, paphy
10. *dulul > dul-

D
2. *ha?bil > ha?bil, ha?wil
3. *hah?bi' en > (y)abin(ell), (y)aben(ell) (-?b- ?)
5. *ti?bol > ti?bal

E
1. *b2(?X) > ban
2. *m2(?) > ma
3. *m2?c(?) > ma?n

F
1. *talbetel > ?a?tel

G
3. *b'hill > (s)b'il
4. *nabil > not used
5. *tokal > tolikal (as though from *tokKal !)
The remaining N Tēe dialects:
Yajalón
Guayukpec
Tznango
Siluca
Ocesingo
Hihinalo

Do not show any new types of developments with respect to the kinds that were turned up in the presentations for the various dialects already treated. In addition, in the 200-word vocabularies in which such a presentation would have to be based, there are several ambiguities and gaps in the data, and it is best to defer treatment of these dialects until more extensive and reliable data is available.

N Tēe = Northern Tētel (the previously named and treated dialects)
S Tēe = Southern Tētel (Pisola, Ayucatónango, Repison)
C Tēe = Central Tētel (Tepuyapa, Cacana, Oxcucan-Chanal-Abasola)

These divisions are based on isoglosses which have not been discussed in this paper.
§ 20 Oxchuc-Chanal-Abasolo (1)

1. + everywhere becomes /l/ (general Bental)
2. *h is lost before *b', *s', *s', *x (general Bental), *m, *n, *n, *w, *y,
   between vowels, and finally.
   a) *hab'il 'lack' > hab'il
   b) *palux 'be made' > pas
   c) *lahx 'be finished' > lah
   d) *tsun 'yellow squash' > esun
   e) *ts'olx 'small green squash' > ts'ol
   f) *toky 'be lifted up' > toy
3. After *h, *p', *t', *k', *k' are replaced by /b' t' k' k'/ respectively
4. + everywhere becomes /b/
   a) *poliux 'straw mats' > poliux
   b) *duht 'kelly' > (3) deht
   c) *hahc 'to begin' > hahk
5. *h mother and *x in all environments merge as /h/
   a) *honon 'wasp' > honon
   b) *hič 'thus' > hič
   c) *hul 'to arrive' > hul
   d) *xel 'to change' > (3) hel
   e) *xal 'to wear' > (3) hal
   f) *xol 'head' > (3) hol
   g) *xul 'apera' > (3) hol
Oxeluc - Chanal - Abasolo (2)

b) *paxal 'same' > pahal
*pixil 'intelligens' > *sibil

c) *txoli 'fire' > kahle
*pahle 'pineapple' > pahle
* laxayeb '12' > laklayeb

d) *ox 'cogar' > ox
* polox 'palu heart' > pooh

All other P72 phonemes remain unchanged, except as noted in the following lists.

6. The sequence l7t1 becomes l71 in the following words. The
sequence l7p1 likewise becomes l71 ( l7p > 8' > b')
* talital 'work' > *talital > talitel
* ye7tal 'beneath' > yet'al
* yo7ton 'heart' > *yo7tun > yet'an
* ikatpal 'garbage' > *ikapal > ikabal
### Oxeluc- Chanal- Abasolo (3)

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<td>*čuhyel</td>
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<td>*waʃiɓ</td>
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#### B

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<td>3 *l'ay,xub</td>
<td>d'ail 'small'</td>
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<td>4 *pahlayom</td>
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<td>tuhikub (by rule 3)</td>
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<td>16 *tl'ek</td>
<td>l'ylek, A basolo, lyelik, ayleh, ek</td>
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(H) Ochlocr- Chavall- Abasolo (4)

17 *tumun-tumun > tumun
18 *?abyi : nh[fye > (y)alay : za?yeh
19 *pi'xol > (p)pi'xol
20 *al'bejy > (y)al'bejy , Cyajabejy
21 *walel > (s)walel , 3walel , 3xwalel
22 *namay > namay
23 *kahiscal > kahiscal
29 *woxey > wokey
25 *nh+nuny > wo
26 *nun+wox > ko
27 *wox+wox > woxy
28 *samet > samet
29 *balet > balet
30 *kebam > (s)kebem , (s)kebemen
31 *cumante > czunantse , czumantse
32 *sehka(m)kub > sehakaran(kub
33 *pehtik > pehteka , pehtikaka
34 *tinop > not used
35 *tinvtam > not used
36 *tehuk > wnik
37 *to'tam > (y)ot'an
38 *mukutsek > (s)mukut
39 *bahlumil (al) > ba(r)amilal
40 *nec'ba > neba
41 *eulul-en > eululan
§ 21 Tenajapa (1)

This covers the speech of Pedro Jiménez Huécatl, not that of Alonso Méndez Fon.

1. *h* everywhere becomes (al) (general Tzeltal) and BETWEEN NOUNS (see § 21b)

2. *h* is lost before *b, t, s, x* (general Tzeltal), *m, nh, c, w, y*

   *nahil 'lark>' nabil
   *nahil 'first>' nail
   *nahil 'smile>'钙il
   *nahil 'kiss>' *kahil
   *nahil 'block>' *kahil

   *lahi 'be finished>' *lah
   *lahi 'yellow squash>' *yah
   *lahi 'small green squash>' *yol
   *lahi 'a blister>' *tuy

3. Elsewhere *h* and *x* merge as *kh.
   a) finally

   *wax 'tortilla>' wah
   *ox 'red>' *kah
   *piix 'intelligent>' *piik
   *eh 'raw>' *eh // cell
   *nah 'house>' nahl // nall
   *uhl 'moon>' *uhl // null

   b) before C

   *kohik 'dead person>' kohik
   *kohik 'fix>' kohik
   *lahik 'yeb>' *lahik

   c) initially

   *xol 'head>' hol
   *xul 'puncheon>' *ehul
   *hol 'arrive>' *ul
   *hil 'thus>' *hile
   *tixol 'near>' tihil
   *paxol 'same>' pahal
   *toshol 'price>' (5) tohol

...
The text on the page reads:

Trepana (2)

1. Final *y in polysyllabic polymorphic forms is lost

* pos. *tay 'to cure' > *ð/pos.tα

* *iʔay 'to injure' > *s̥lα

but * *amay 'flute' > *lamay

* *xay 'guard' > *iθaβ, i.e. k̥all

All other PT2 phonemes remain unchanged, except as noted in the following lists.
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 *chul</td>
<td>(s)bil</td>
</tr>
<tr>
<td>2 *mayil</td>
<td>mayil</td>
</tr>
<tr>
<td>3 *rayin</td>
<td>rain</td>
</tr>
<tr>
<td>4 *tokyun</td>
<td>toyin</td>
</tr>
<tr>
<td>5 *nail</td>
<td>nail</td>
</tr>
<tr>
<td>6 *enunel</td>
<td>enuel</td>
</tr>
<tr>
<td>7 *wai'b</td>
<td>(s1 wai'b, s1 wae'b)</td>
</tr>
<tr>
<td>8 *yauk</td>
<td>yauk, yauk, yauk</td>
</tr>
<tr>
<td>9</td>
<td>#3, #7 vs #2, #4</td>
</tr>
<tr>
<td>10</td>
<td>probably not used</td>
</tr>
<tr>
<td>11</td>
<td>probably not used</td>
</tr>
</tbody>
</table>

* *V, hV, becomes /V, /
C
1 * za'ken > za'ken
2 * sahbin > sab'in
3 * habben > hab'en
4 * mahken > munkenal
5 * teh'nin > teh'in

D
1 * e?abex > e?alwah
2 * ha?bil > ha'wil
3 * ha?ben > hab'en
4 * lo?bol > lob'al
5 * ti?bo? > ti'bal

E
1 * bo? (X) > ban, bay
2 * ma? (?) > ma
3 * ma?d (y) > mada

F
1 * tahbel > tah?tel
2 * e?al?bexy > e?alheh / e?alholl
3 * ha?bal > ha'mal
4 * ti?bel > ti?bel
5 * ti?bol > not used
### Genejapa (8)

<p>| | | |</p>
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<thead>
<tr>
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<tr>
<td>1</td>
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</tr>
<tr>
<td>2</td>
<td>*bālamilāt</td>
<td>'ālamilāt</td>
</tr>
<tr>
<td>3</td>
<td>*biḥil</td>
<td>*biḥil</td>
</tr>
<tr>
<td>4</td>
<td>*nabīl</td>
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<td>5</td>
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</tr>
<tr>
<td>6</td>
<td>*tuskel</td>
<td>*tuskel</td>
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### Subsection H

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<table>
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<tbody>
<tr>
<td>1</td>
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</tr>
<tr>
<td>2</td>
<td>*laḵayeb</td>
</tr>
<tr>
<td>3</td>
<td>*gūyī ḫu</td>
</tr>
<tr>
<td>4</td>
<td>*pāliḵayī ṣom</td>
</tr>
<tr>
<td>5</td>
<td>*sān(2)ī ḫē</td>
</tr>
<tr>
<td>6</td>
<td>*ṣāhunūkī ḫ</td>
</tr>
<tr>
<td>7</td>
<td>*ṣībakī ḫ</td>
</tr>
<tr>
<td>8</td>
<td>*nahtī ḫ</td>
</tr>
<tr>
<td>9</td>
<td>*sēhīkī ḫu</td>
</tr>
<tr>
<td>10</td>
<td>*sihtī ḫ</td>
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<td>11</td>
<td>*pōsīkī ḫu</td>
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<td>12</td>
<td>*pēsī ḫ</td>
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<td>14</td>
<td>*dūnāk</td>
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<tr>
<td>15</td>
<td>*šukīkī ḫu</td>
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<td>*žuḥēk ḫ</td>
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<td>Arabic Word</td>
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<tr>
<td>-----</td>
<td>-------------</td>
</tr>
<tr>
<td>17</td>
<td>*tunim</td>
</tr>
<tr>
<td>18</td>
<td>*(y)aliba</td>
</tr>
<tr>
<td>19</td>
<td>*(y)aliba</td>
</tr>
<tr>
<td>20</td>
<td>*(y)aliba</td>
</tr>
<tr>
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<tr>
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<tr>
<td>39</td>
<td>*(y)aliba</td>
</tr>
<tr>
<td>40</td>
<td>*(y)aliba</td>
</tr>
</tbody>
</table>

Note: The table above lists words without their corresponding Turkish translations and some entries marked as not used.
§22 Canuca (1)

The developments of the PII phonemes in Canuca are the same as for Taccana (§6), except that V,V, sequences arising through the loss of intervocalic *-h- are not reduced, and that rule #1 (on loss of final *y in polymorphemic polysyllabic forms) possibly does not operate.

A.
1. *čahil > čail
2. *mayil > mail
3. *tohyiw > toiw

B.
1. *bīhil > (5)Bill
2. *behen > been
3. *kahal > Kaal
4. *pohoy > pay
10. *čahul > čul-

C.
5. *tēhen > Tēhen, Tēhen

E.
1. *bā(X) > bān
2. *ma(? > ma
3. *ma(? > ma
§ 23  

1. *h* everywhere becomes /h/ (general Tzeltal)

2. *h* and *x* are lost in final position
   - *co* 'sugar' >  /co/ (see §5a)
   - *po* 'sour' >  /po/  
   - *da* 'lazy' >  /da/  
   - *ca* 'bitter' >  /ca/  
   - *co* 'moose' >  /co/ 
   - *no* 'tissue' >  /no/ 

3. *h* is lost before *b*, *g*, *x* (general Tzeltal), *m* (*n*, *w*?)
   - *bahal* 'cogin' >  /bual/  
   - *wah* 'believer' >  /wah/  
   - *bax* 'already' >  /bax/  
   - *bax* 'already' >  /bax/  
   - *tok* 'one person' >  /tok/  
   - *tok* 'rise' >  /toy/ 

4. *h* is lost between vowels. See §§ 23.4 and 23.8

5. Elsewhere *h* and *x* both become /h/
   a) *x* between vowels
      - *kaxal* 'mounted' >  /khal/  
      - *tixil* 'near' >  /tikhil/  
      - *stokol* 'its value' >  /stohol/  
   b) *h*, *x* initially
      - *ho* 'water' >  /ho/  
      - *haxil* 'year' >  /haxwil/  
      - *xal* 'ewe' >  /hal/  
      - *xoxol* 'continual' >  /kohol/
Agraefttinge (2)

c) *h, *k before C

* lənkəye 'to eat' > lənke'ya
* poquip 'prepare' > poquip
* koq 'connect' > koq
* koq 'from' > koq

Initially, after consonants (excluding *h) *b becomes /b/.  
* baht 'is' > baht
* zaḥūn 'seven' > zaḥūn
* ṣob 'sixty' > ṣob
* ṣab 'six' > ṣab

When final, and when medial following the first vowel of a polysyllabic
form, *b becomes /b/. When medial following the second vowel
of a polysyllabic form it becomes /b/.

* yaḥtaxib 'his tool' > yaḥtaxib
* yaḥtaxib 'his tool' > yaḥtaxib
* ṣab 'second' > ṣab

* ṣabtaxibal 'tool' > ṣabtaxibal
* ṣabtaxibal 'tool' > ṣabtaxibal
* ṣabtaxibal 'tool' > ṣabtaxibal

* ṣabtaxibal 'tool' > ṣabtaxibal
* ṣabtaxibal 'tool' > ṣabtaxibal

* ṣabtaxibal 'tool' > ṣabtaxibal

* ṣabtaxibal 'tool' > ṣabtaxibal

* ṣabtaxibal 'tool' > ṣabtaxibal

* ṣabtaxibal 'tool' > ṣabtaxibal

All other phonemes remain unchanged, except as noted in the
following lists.

6. Final /l/ in polysyllabic polymorphic forms is lost

* pošṭay 'a cow' > pošṭay
* pošṭay 'a cow' > pošṭay
* pošṭay 'a cow' > pošṭay

* mahliyy 'a waiter' > mahliyy
* mahliyy 'a waiter' > mahliyy
Special Lists

1. *dahil > dagil
2. *magil > majil
3. *ahym > layim
4. *rejeb > rajelb
5. *nahil > nal
6. *tehgel > taygel
7. *rajil > (s)myil
8. *zamuk > chawak

13. 1. *bihil > (s)bil
    2. *behen > ben
    3. *shahb > not used
    4. *kanal > not used
    5. *buhal > al/sbal
    6. *pshoy > pay
    7. *poloh > po & pohll
    8. *mohol > mol
    9. *tulun > tun
    10. *bulul > @ul-
    11. *tulun > (s)yun
    12. *xulul > hil

*VhV₁ because /V₁/
<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>*ta'eqin &gt; ta'eqin</td>
<td>*ka'b'il &gt; ka'wil</td>
<td>*bo(x) &gt; ba'?</td>
<td>*?al'tel &gt; ?a'ptel</td>
</tr>
<tr>
<td>2</td>
<td>*sahilin &gt; saben</td>
<td>*ha?inen &gt; ha'wen</td>
<td>*ma?</td>
<td>*?a(c)b'key &gt; ?a'?hey</td>
</tr>
<tr>
<td>3</td>
<td>*ha?iben &gt; ha'wen</td>
<td>*?al'bal &gt; ?a'?bal</td>
<td>*ma'?</td>
<td>*ha?bal &gt; ha'mal</td>
</tr>
<tr>
<td>4</td>
<td>*nuh'een</td>
<td>*nuh'een</td>
<td>*mu?ay</td>
<td>*ti?bal</td>
</tr>
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<td>5</td>
<td>*te'qeen</td>
<td>*te'qeen</td>
<td>*ma'ka</td>
<td>*?i?del</td>
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<tr>
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</tr>
<tr>
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</table>
Aghanim nejago (5)

G
1. *rawil  >  ?
2. *halumelal  >  balumelal, balumelal
3. *bihil  >  (s)bil
4. *mahbil  not used
5. *tokal  >  tokal
6. *tukel  >  (s)tukel

H
1. *kayox  >  kayo II/kayox
2. *taxayeb  >  laheb
3. *fay,yub  >  %ma% sqayil 'it's no go'
4. *pahkayox  >  pahkayem
5. *&anc(,ie/ie  >  &anief
6. *yalumek/ie  >  &awulk
7. *sibak/ie  >  sibak
8. *naht/e  >  naht
9. *seuch/eub  >  sehku2b
10. *siht/e  >  siht
11. *poikhok/ie  >  ?
12. *pech/e  >  pech
13. *ahat/e  >  hat
14. *dupak  >  dupak
15. *suhkab  >  suhku2b
<table>
<thead>
<tr>
<th>No.</th>
<th>Word</th>
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<tbody>
<tr>
<td>16</td>
<td>ʔɪhɛʔɛk</td>
<td>(g)ɛhɛʔɛk</td>
</tr>
<tr>
<td>17</td>
<td>tumun-tunum</td>
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<td>ʔabɪy : ʔabiyex</td>
<td>(g)aʔi : ʔaʔbiye</td>
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<td>mušukɛt, etc</td>
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<td>meʔbaʔ, etc</td>
<td>meʔbaʔ</td>
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</tbody>
</table>
208

41 *čuhul-čan čulčan 107
§ 29 Pinola (1)

1. *h everywhere becomes /l/ (general loc.)

   *fire* *kaheki > kahel
   *pineapple* *pahke > pake
   *tohi* *twohi > tawh
   (* wah? *)
   *lahx* *tohnwah* > lah
   *lahmx* *tohlandm* > lamah
   *tulx* *tohpersom* > tul
   *tohy* *tohriis* > toy

If *h is lost, the Z identical roots: (ill) ind.

3. *h is optimally lost between identical roots. See § 29, 8.

4. Elsewhere *x and *h merge as /h/
   a) finally  *nah* *huse* > nah
   *soh* *muse* > soh
   *cox* *cawer* > cah
   *eax* *laey* > eah
   *pox* *sor* > pah
   b) initially  *ho?* *water* > ha?
   *hul* *howei* > hul
   *xul* *prok* > (s) hul

5. before e  *lachegeb* *liz* > labchagekob
   *pohp* *palumek* > pohp

6.}
§ 29 Pinola (1)

1. *h* everywhere becomes /l/; (general rule)

2. *h* is lost before /c/ (/*.p/, *.t/, *.t, *.f, *.w, *.r, *.l, *.m, *.n/)
   - *l* *s,* *w,* *y
   - *f* *k,* *k* *h* *k* *t* h *k* *t*
   - *p* *c* *l* *d* *c* *p* *d* *c* *p*
   - *t* *h* t *l* *n* *h* *t* *l* *n*
   - *t* *h* t *l* *n* *h* *t* *l* *n*
   - *t* *h* t *l* *n* *h* *t* *l* *n*
   - *t* *h* t *l* *n* *h* *t* *l* *n*
   - *t* *h* t *l* *n* *h* *t* *l* *n*

*ha* is lost, the 2 identical vowels are cancelled as a single vowel.

3. *h* is optionally lost between identical vowels. See § 29.8.

4. Elsewhere *h* and *k* merge as /k/.
   - finally
     - *h* *n* *h* *n* *h*
     - *h* *m* *m* *h* *m*
     - *h* *f* *l* *f* *h* *l*
     - *h* *c* *l* *c* *h* *l*
     - *h* *s* *s* *h* *s*
     - *h* *w* *w* *h* *w*
   - initially
     - *h* *w* *w* *h* *w*
     - *h* "water" *h* *w*
     - *h* "lauren" *h* *l*
     - *h* "pork" *p* *h* *l*
     - *h* "laxayeb" *l* *h* *l*
     - *h* "polyp" *p* *h* *l*}

9 d)
Pindia (2)

4. 

5. After conjunction and consonants other than *h, and intervocally after ravel other than the 1st or last ravel in a word, *b becomes /bl.

   *baht 'to go' > baht
   *bol 'stupid' > bol
   *Kalbey 'I tell him' > Kalbey
   *mončbal 'right' > mončbal

6. After the first or last ravel in a word, followed or not by *th (which is lost), and after any ravel before a consonant, *b becomes /bl.

7. Before *o or *u, *w > /g/
   *kalwuk 'thunder' > kalwuk
   *wolol 'spherical' > wolol

8. In certain words *th is replaced by /?/ after vowels (and *th).
   *takín 'weeding' > takín
   *kahál 'sunday' > kahál
   *talín 'money' > talín
   *bahdíal 'world' > bahdíal
   *tnukül 'its size' > tnukül
Pinnola (3)

All other P-T2 phenomes remain unchanged, except as noted in the following lists.
### Pinola (4)

#### A

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<table>
<thead>
<tr>
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<tr>
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<td>*čahil</td>
</tr>
<tr>
<td>2</td>
<td>*mayil</td>
</tr>
<tr>
<td>3</td>
<td>*ʔaḥyin</td>
</tr>
<tr>
<td>4</td>
<td>*t̪oḥišb</td>
</tr>
<tr>
<td>5</td>
<td>*nahil</td>
</tr>
<tr>
<td>6</td>
<td>*ęḥyel</td>
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<tr>
<td>7</td>
<td>*wayib</td>
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<tr>
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#### B

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<td>3</td>
<td>*yakab</td>
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<tr>
<td>4</td>
<td>*kahal</td>
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<tr>
<td>5</td>
<td>*bahal</td>
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<tr>
<td>6</td>
<td>*poḥoy</td>
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<tr>
<td>7</td>
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<tr>
<td>9</td>
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</tr>
<tr>
<td>10</td>
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</tr>
<tr>
<td>11</td>
<td>*čuḥun</td>
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<tr>
<td>12</td>
<td>*čʔuḥal</td>
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</tbody>
</table>

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Apparently in the verbal forms *2, *7, *11, the form with /h/ does not occur.
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<tr>
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<td>*ba₂(x) &gt; ba?</td>
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<td>*ma? &gt; ma</td>
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<td>3</td>
<td>*ma? &gt; ma?</td>
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<tbody>
<tr>
<td>1</td>
<td>*zat tel &gt; zat tel</td>
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</tr>
<tr>
<td>2</td>
<td>*za₇(h) &gt; ?</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>*ka? &gt; ?</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>*ku₇ &gt; ?</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>*ku₇ &gt; ?</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>*fawil</td>
<td>?</td>
</tr>
<tr>
<td>2</td>
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<td>bahlumilal</td>
</tr>
<tr>
<td>3</td>
<td>*behil</td>
<td>*ribil, *ribil</td>
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<td>4</td>
<td>*mahbil</td>
<td>probably not used</td>
</tr>
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<td>5</td>
<td>*takal</td>
<td>*takal</td>
</tr>
<tr>
<td>6</td>
<td>*nakal</td>
<td>(s)takal</td>
</tr>
</tbody>
</table>

| 1  | *kayox            | *kayok    |
| 2  | *lakhayeb         | *lakhayeb |
| 3  | *rayyub           | not used  |
| 4  | *palikayeb/m      | ?          |
| 5  | *sah (?)/i/ë      | *samit    |
| 6  | *zalumuk/ië       | *zaguk    |
| 7  | *saluk/ië         | ?          |
| 8  | *nabht/t          | *nabht    |
| 9  | *sehik/išub       | *sehikab  |
| 10 | *sik/t            | *sit'     |
| 11 | *pok/iok/ië       | *pokok    |
| 12 | *pesëë           | *pesë     |
| 13 | *kat/t            | ?          |
| 14 | *kuraik          | ?          |
| 15 | *sunkirikab       | ?          |
| 16 | *zhèak            | *zhèak    |
| 17 | tumin-tuam  | tumin  |
| 18 | *abi;:abiye  | (y)abi;:abiyeh  |
| 19 | *pišxol  | (y)pišxol  |
| 20 | *zakbey  | (y)za\textsuperscript{2}bey  |
| 21 | *wofel  | not used  |
| 22 | *samuy  | ?  |
| 23 | *kañkal  | ka\textsuperscript{2}al  |
| 24 | *wołkey  | wołkey  |
| 25 | *moh\textsuperscript{2}moy  | moh\textsuperscript{2}moy  |
| 26 | *koh\textsuperscript{1}key  | koh\textsuperscript{1}key  |
| 27 | *moh\textsuperscript{1}meh\textsuperscript{1}  | not used  |
| 28 | *samet  | samet  |
| 29 | *bañet  | bañet  |
| 30 | *kešam  | (3)kešam  |
| 31 | *sumante\textsuperscript{2}  | sumante\textsuperscript{2}  |
| 32 | *sehkañ(ka)ñah\textsuperscript{2}  | sehkañah\textsuperscript{2}  |
| 33 | *peltoo  | not used  |
| 34 | *?ino\textsuperscript{2}  | not used  |
| 35 | *?in\textsuperscript{2}tam  | ?in\textsuperscript{2}tan  |
| 36 | *?ehuk  | ?uk  |
| 37 | *?oñton  | (y)o\textsuperscript{2}tan  |
| 38 | *mũšik\textsuperscript{2}, etc  | ?  |
| 39 | *balumil\textsuperscript{1}lal  | balumil\textsuperscript{1}lal  |
| 40 | *me\textsuperscript{1}ñ\textsuperscript{1}ñ, etc  | ?  |
| 41 | *še-ul\textsuperscript{2}tan  | šul\textsuperscript{2}an  |
§ 25 To'opisca (in San Diego) (1)  

1. *b'
   a) *b' initially and after consonants other than */b/.
   b) *b' after vowels and */b'/.
   c) *?b' after vowels > */b'/.

exx. a)  
  bayal 'mucho'  Tse *bayal = bayal
  bak 'hueso'  *Bak
  be 'camino'  *Beh
  ba'ayat '¿dónde estás?'  *Tse /baʔ/
  bat 'se fue'  *Baht
  ya sboh 'lo cortó'  *sboh
  habketal 'mi cuerpo'  *xhabketal
  šubal 'cacho'  *Tse /šubal = *šubal + al
  g'umbal 'siembra'  *g'umbal

exx. b)  
  xhika'b 'mi mano'  *xihikab
  sekuka'b 'su panza'  *sekikab
  x'abulum 'pelvis'  *x'abulum
  ?i'b 'armadillo'  *?ib
  si2bak 'tizne'  *sikhbak
  ya2benal 'su hoja'  *yaʔbenal
  hta2b '20'  *xtohb
  sa2ben 'comadreja'  *sahben
  sa2b 'temprano'  *sahb
  na2bil 'laguna'  *nahbil

OVER
exx c) ha?bil 'año' *ha?Bil
ca?beh 'pasado mañana' *ca?Bex
ti?bal 'hierve' *ti?bol
2. a) *x becomes /h/ in all environments
   b) *h initially becomes /h/
   c) *h elsewhere becomes /æ/

exx.

a) ya hinaah 'lo peyo' * xinax
   čah ' Kumarín' * čax
   noh 'lleno' * nox
   cañalum 'tierra colorada' * caaxal lum
   shol 'su cabreú' * sxol
   hay 'delgado' * xoy
   peh 'los granos' * pix=x pex
   čahan 'mecate' * čoxon
   pih 'vivo' * pix
   yih 'mácizo' * yix

b) ho?ez'b 'cinco' * ho?ez-
   hi? 'arena' * hi?
   ha? 'água' * ho?
   hun 'papel' * hun
   ho?one 'yo' * ho?on + e
   ha?bil 'año' * ha?bil
   hač 'se levanta' * hahč
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<td>&quot;su mujer&quot;</td>
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<td>&quot;cedro&quot;</td>
<td>cehite2</td>
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<tr>
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<td>&quot;largo&quot;</td>
<td>naht</td>
<td>&quot;el infierno&quot;</td>
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<tr>
<td>ye</td>
<td>&quot;sus dientes&quot;</td>
<td>ye</td>
<td>&quot;el infierno&quot;</td>
</tr>
<tr>
<td>sitem</td>
<td>&quot;se lucha&quot;</td>
<td>sitem</td>
<td>&quot;el infierno&quot;</td>
</tr>
</tbody>
</table>
Special Forms

Egil   'kumo'     *Enkil
Zagin   'logoro'   *Zalgin
Magil   'simbazo'  *Magil
Zakil   'sajo'     *Zakil
Zook   'simwala'  *Zukel
Nail   'primer'   *Nail

abiil   'tu unnaa'  +Bilik (Te)
been   'camino'   +Belen (Te)

As in all Teletal, PTE NO becomes unconditionally palatal in Teo.

All other PTE consonants and vowels remain unchanged in Teo.
§ 26 Chanuila (1)

1. *h everywhere becomes /0/ (general Triball)

2. *h is lost finally, between vowels, and before consonants.
   a) *nɔh 'thread' > nɔ
   *nah 'haze' > na
   *dɔh 'mush' > ɔ0
   b) sec § 24, A, B
   c) *polɔp 'palm nut' > pop
   *poliŋ 'f. e.' > ɔkiŋ
   *naŋt 'long' > nat
   *čukm 'yellow squash' > čum

In some cases after *ɔ and *0, *h is replaced by /h/.
*hɔh 'fly' = Huna wʊwʊ
*ɔhol(i) 'check' = ɔwu(l)

5. *p and *b merge as /b/.

6. Final *y in polysyllabic polysyllabic forms is lost
   *pɔstɔy 'a cure' > pɔста
   *čiḥlɔy 'to hate' > (y) ɪlə

4. *x everywhere becomes /h/.

3. Initial *h has complex developments:
   before *i, *h becomes /ɣ/.
   *hiʔ 'sand' > /iʔ
   *ti⁸h 'green cow' > /iɣ
   before *e, *h becomes /i/.
   *heč 'thus' > †eχweč = heč
(3) cont'd

before *a, *h becomes /h/\n
*ha?b’il ‘year’ \rightarrow Hab’il \~\!hab’il
*ha?b’inal ‘brain’ \rightarrow Hab’inal \~\!hab’inal
*ha?as ‘eapot’ \rightarrow Ha’as \~\!ha’as

before *o and *a, *h becomes /h/\~\!/\~\!/h/

*ha’non ‘imp’ \rightarrow Honon \~\!wono\!n\~\!honon
*ho’otik ‘we’ \rightarrow Ho’otik \~\!wo’otik \~\!ho’otik
*ho’ot ‘lun’ \rightarrow Ho’ot \~\!wo’ot \~\!ho’ot
*ho’h ‘fly’ \rightarrow How \~\!wown \~\!how
*ho’h ‘crazy’ \rightarrow Hun \~\!wu’n \~\!hun
*ho’ul ‘arrive’ \rightarrow Huw\!wul \~\!hul

All other PT2 phonemes remain unchanged, except as noted in the following lists.
C
1. *zākin  > zākin
2. *zābīn  > zābīn
3. *ha(r)īn    > ?
4. *muqīn     > ?
5. *tēlēn     > The only

D
1. *zābrex > zāreh
2. *ha’ābīl > Hābil
3. *ha(r)īn   > (y)ān(al)
4. *lo’abīl > lo’abīl
5. *ti’abīl > ti’abīl

E
1. *bo(x) > bi, buy
2. *mu(r) > mu
3. *mu’dēy) > Buēn (influence of Buγy) ?

F
1. *zābtel > zābtel
2. *zāb’iγey > zābhe
3. *ha(r)īn   > Haγn(al)
4. *šibnelt > šibnelt
5. *šibγok > obsolete
### Chamula (5)

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<td>15</td>
<td><em>šuh/k/ikub</em></td>
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<tr>
<td>16</td>
<td><em>sibčak</em></td>
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</table>
(1) Chamula (6)

17 *tumantum kan > Be only
18 *tahiyex tahiyex > (y)al : tabyeh
19 *p1sàol > (s)pisol
20 *tarkbey > (y)arkbe
21 *wala > Be only
22 *tama > Tama
23 *kahikal > Kahlal
24 *wolek > Wolke
25 *mohan > muy
26 *kahv > Be only
27 *woleh > woleh
28 *sawet > Sawet
29 *beke > Beke
30 *ke > Be only
31 *sumante > Sumante
32 *sehkahxu > Be only
33 *petolk > petolk
34 *rinup > Rinute (e rinup + te?)
35 *rinvtam > Rinatab
36 *zehk > Zehk
37 *zonton > (y) Zonton
38 *munze, etc > Emunze
39 *bahamul (al) > Banamul, Banamil
40 *me?ba > me?an ~ me?an-
41 *enul-xan > Be only
§ 27 Zinacantan (1)

The developments of the PHA phonemes in Zinacantan are the same as for Chamula (q.v.) with the following exceptions:

1. Initial *αι has diverse developments:
   a) before *ί, ι, *θ, *h becomes ιγι
   *κί? 'sand' > γι?
   *κεκ? 'thus' > γεκ
   b) before *ά, *θ becomes /h1
   *καθίλ > ἱβίλ
   c) before *ω, *ο, *υ, *θ becomes /w1
   *κο? 'water' > ωο?
   *κονον 'wasp' > ωωνον
   *κων 'paper' > ωών

2. /u/ is never added after words ending in *θι, *οθ
   *κοθ 'fly' > ωο
   *κ'οθ 'cheek' > (8)εο

3. /p/ and /b/ remain as separate phonemes.
   *πιν 'pot' > πιν
   *πικ 'intelligent' > πικ
   *βαθ 'to go' > βάθ


§ 29 Huirán (1)

The developments of the PTC phonemes in Huirán (Irepom, etc.) are the same as for Chanula with the following exceptions:

1) Initial *h becomes invariant /H/
   *hi? 'sand' > Hi?
   *he' 'thus' > He'
   *he' 'this, that, it' > Ha?
   *ha? 'water' > Ho?
   * honon 'waist' > Honon
   * hun 'paper' > Hun

2) /w/ is never added after words ending in *oh, *oh
   *ho' 'fly' > Ho
   *lo' 'cheek' > (3)to

3) /pl/ and /bl/ remain as separate phonemes
   *pin 'pot' > pin
   *pix 'intelligent' > pib
   *balt 'to go' > b'at

Final *b becomes /pl/ in
   *xub' 'to blow' > hup

Time considerations prevent the presentation of the Special Lists for Huirán.
§ 29 San Bartolo (1)

1. *k* everywhere becomes /0/ (general Tzeltal)
2. *x* everywhere becomes /h/

*¢ox* 'enjoin' > 66h
*xul* 'piece' > (s)hul
*toxol* 'price' > (s)töhol

3. Initially *h* merges with *x* as /h/.

*h?* 'water' > hö?
*hun* 'paper' > hun
*ö* *xol* 'head' > (s)höl

There are at least 2 exceptions to this rule:

*hl* 'garnet' > yål
*hul* 'as vine' > yål

4. Between vowels and finally /hl/ is lost without compensation.

a) *nah* 'house' > na
   *nah* 'thread' > öö

b) see § 29, A, B

5. Elsewhere, ie. before consonants, /hl/ is lost and the preceding vowel has an inherently low tone.

a) *čuhm* 'yellow-squash' > čüm
   *lahx* 'to be finished' > làh
   *ščx* 'deer' > ščh
   *pohp* 'palm mat' > pöö

b) *kahkál* 'sunday' > kàkél
   *tahkal* 'cough' > tökel
   *mahliy* 'to wait for' > (s)mähl.
§ 27 Zinacantan (1)

The developments of the P'Te phonemes in Zinacantan are the same as for Chamula (q.v.) with the following exceptions:

1) Initial *h has diverse developments:
   a) before *i, *e, *h becomes *y:
      *hi? 'seas' > yi?
      *he' 'thou' > ye'
   b) before *a, *h becomes /h/:
      *ha'bil > habi'l
   c) before *o, *tu, *h becomes /w/:
      *ho? 'water' > wo?
      *honen 'wasp' > wonen
      *hun 'paper' > wun

2) /w/ is never added after words ending in *sh, *oh
   *ho' 'fly' > wo
   *so' 'cheek' > (8)so

3) /p/ and /b/ remain as separate phonemes:
   *pin 'pot' > pin
   *biix 'intelligent' > piik
   *bi'alt 'to go' > b'iat
228

From the special lists only the following will be listed as being of special interest:

D1  *Kaysh > Kewuh
D34  *Zinop > Zinop
D37  *Zo?ton > Hylo?on
§ 28. Huistán (1)

The developments of the PIE phonemes in Huistán (Iranianists) are the same as for Chaucer, with the following exceptions:

1) Initial 
   *hi? 'sand' → Hi?
   *heč 'thus' → Heč
   *ha₂ 'this, that, it' → Ha₂
   *ho? 'water' → Ho?
   *houn 'wasp' → Houn
   *hun 'paper' → Hun

2) /w/ is never added after words ending in *oh, *oh
   *hoh 'fly' → Ho
   *éoh 'cheek' → (S)ëo

3) /p₁/ and /b₁/ remain as separate phonemes
   *pin 'pot' → Pin
   *pih 'intelligent' → Pih
   *baht 'to go' → Bat

   Final *b₁ becomes /p₁/ in
   *xub₁ 'to blow' → hup

Time considerations prevent the presentation of the Special Lists for Huistán.
§ 29. San Barino (1)

1. *y everywhere becomes /ol/ (general Trozeil)

2. *x everywhere becomes /hl/
   * oyx 'orange' > səho
   * xul 'piece' > (s)hul
   * toxol 'price' > (s)tdhol

3. Initially *h merges with *x as /hl/
   * hox 'water' > həlo
   * hun 'paper' > hən
   of * xul 'head' > (s)hul

   There are at least 2 exceptions to this rule:
   * hul 'burn' > yəl
   * hun 'to drink' > yən

4. Between vowels and finally /hl/ is lost with compensation.
   a) *nah 'house' > nə
   * noh 'tunnel' > nə
   b) see § 29. A,B

5. Elsewhere, i.e. before consonants, /hl/ is lost and the preceding vowel has an inherently low tone.
   a) *ōuhm 'yellow squash' > ōum
   * lauhx 'to be finished' > ləh
   * xīhx 'dear' > xəh
   * pōhp 'palm mat' > pəp
   b) * kahitel 'sun, day' > kətətel
   * tehbal 'cough' > təbel
   * mahlīy 'to wait for' > (s)maβel
In a monosyllable:

5a. When no /h/ preceded the consonant, the vowel has an inherently high tone.
   * pat 'buck' ≠ (s)pat
   * heč 'thus' ≠ heč

5b. When one of the vowels of a polysyllabic root was followed by
   /H/ plus consonant, the first syllable has high tone, and
   the second has low tone (and high and low tone occur
   on alternate syllables, as infinitum).
   * xikit 'ear' ≠ ({$\xi$}xikit
   * winic 'man' ≠ winik

6. Two suffixes, ẻte's and ęba's, have inherently high tone (two or three other
   suffixes of this type may occur); all other suffixes are inherently
   tone-free; no affix is in the shape *-VhC in PT2.

7. A vowel preceding a CC sequence; when there is no morpheme juncture
   between the two consonants VCCV or VCVC.

Summary:

+ /CVCl becomes /CVC/
+ /CVHCl becomes /CVC/
+ /CVCVc / becomes /CVCVC/
+ /CVHVCc / becomes /CVCVC/

8. Final *y in polymorphemic polysyllabic forms is lost.
   * po$tay 'cure' ≠ ({$\xi$}pø$tə
   * mahliy 'wait' ≠ ({$\xi$}malə

All other PT2 phonemes remain unchanged, except as noted in
the following lists.
San Bartolo (3)

A
1. *échil > call
2. *mayil > maíl, 'watermelon'
3. *tahyin > Zain (tense ?)
4. *tohyii > toil
5. *nahil > The only
6. *čuhel > The only; cf. Kugel
7. *wag½ > (s)wyg½
8. *čahwik > čawuk (tense ?)

B
1. *b'hil > The only; cf. (3) b'h
2. *behen > The only; cf. béin
3. *šahlab > šloob
4. *kahal > The only
5. *b'hal > ?
6. *pohy > póy
7. *pohox > ?
8. *mohol > ?
9. *tuñ > tuñ
10. *čuhul > čul- (tense ?)
11. *čuhun > (3) čuñ
12. *xuñ > ?
San Bartolo (4)

C
*za'kin > zákin
*sabben > sabén
*ha?b yen ?
*muk yen ?
*reb'en Be only

D
1 *ra?bex > záleh
2 *ha?bil > hábil
3 *ha(?)b yen thyântal (tones not recorded)
4 *la?b Bol > 16?b Bol
5 *ti?b Bol not used

E
1 *bo(x) > Bu
2 *mu(?) > mu
3 *miyâ(y) > mu ëh (tone unexplained)

F
1 *za'b tel > zad'tel
2 *ça(?)b'key > čabhe
3 *ha(?)b'nal > há?nal
4 *šibnel ?
5 *šibbál ?
**San Bartolo (5)**

<table>
<thead>
<tr>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 *Zawil</td>
<td>1 *Kayox</td>
</tr>
<tr>
<td>2 *Bahlumil</td>
<td>2 *lax'ayeb'</td>
</tr>
<tr>
<td>3 *bih</td>
<td>3 *fay.yub'</td>
</tr>
<tr>
<td>4 *nahb</td>
<td>4 *pah'kayyom</td>
</tr>
<tr>
<td>5 *to1k</td>
<td>5 *sh'ani'</td>
</tr>
<tr>
<td>6 *tuk</td>
<td>6 *zawuk'</td>
</tr>
<tr>
<td></td>
<td>7 *sub'ak'</td>
</tr>
<tr>
<td></td>
<td>8 *nah'te</td>
</tr>
<tr>
<td></td>
<td>9 *suh'kikub</td>
</tr>
<tr>
<td></td>
<td>10 *siht/t</td>
</tr>
<tr>
<td></td>
<td>11 *pok/rok/ik</td>
</tr>
<tr>
<td></td>
<td>12 *pre'il'</td>
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<tr>
<td></td>
<td>13 *xat'/i'</td>
</tr>
<tr>
<td></td>
<td>14 *čupač</td>
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<tr>
<td></td>
<td>15 *suh'kikub</td>
</tr>
<tr>
<td></td>
<td>16 *?če'vak</td>
</tr>
</tbody>
</table>

*not used*
(H) San Bartolo (6)

17. *tumum = tumum  [fee only]
18. *'abiy = 'abiyex  > (g)ā'ī : ʔā'îyēx
19. *piškol  (3)piškol  (times?)
20. *'alēbey  > (g)ā'ībe
21. *walel  [fee only]
22. *'anay  ?
23. *'akahal  > ʔakahal
24. *wolkey  > wālēk
25. *moh wūngay  nūgay
26. *'ikoh-wūkog  [fee only]
27. *wōhē wūhūś  wūhūś
28. *samet  > sēmet
29. *'bāket  > bēket
30. *'kešam  [fee only]
31. *'umante?  = ʔumānte?
32. *sehka(cra)l̥w  [fee only]
33. *pehtok  > ʔēt̥ēk
34. *zinap  not used
35. *'zintam  > ʔintām
36. *'ezik  > ʔēzik̥
37. *'eo?ntōn  > (g)ō'ōn  , non-possessed ʔō'ōn  > (*ʔō'ōn)
38. *mēšik, etc  > (g)īmēšik ̥
39. *bašumil (al)  > ʔašūmīl
40. *me? ḫa?  > ʔēmōn ~ mēʔon  
41. *'uhaul-ônica  [fee only]
§ 30. The following lexical differences unambiguously distinguish Tze and Tco.

<table>
<thead>
<tr>
<th>Tze</th>
<th>Tco</th>
</tr>
</thead>
<tbody>
<tr>
<td>tubl</td>
<td>wawwaw</td>
</tr>
<tr>
<td>Kay yub</td>
<td>wach</td>
</tr>
<tr>
<td>lit</td>
<td>kab</td>
</tr>
<tr>
<td>caš</td>
<td>wet</td>
</tr>
<tr>
<td>waš</td>
<td>wet</td>
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<tr>
<td>ēahul-šan</td>
<td>wewakel</td>
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<tr>
<td>xey</td>
<td>twil</td>
</tr>
<tr>
<td>tumun</td>
<td>ts-wok</td>
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<tr>
<td>šleh</td>
<td>tsar</td>
</tr>
<tr>
<td>kaš, nel</td>
<td>tce</td>
</tr>
<tr>
<td>behen</td>
<td>ēamaw</td>
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<tr>
<td>masnalal</td>
<td>malal</td>
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<tr>
<td>wayl</td>
<td>tem</td>
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<tr>
<td>ūalš</td>
<td>* day yub</td>
</tr>
<tr>
<td>paxel</td>
<td>ʔahkoʔim</td>
</tr>
<tr>
<td>namey</td>
<td>wainey</td>
</tr>
<tr>
<td>iš</td>
<td>ʔa</td>
</tr>
<tr>
<td>ūlahm</td>
<td>ūaxnil</td>
</tr>
<tr>
<td>tulan</td>
<td>ūata-ʔač-</td>
</tr>
<tr>
<td>ūah</td>
<td>ʔe-koš</td>
</tr>
<tr>
<td>ūex</td>
<td>ūe-kol</td>
</tr>
<tr>
<td>pašč</td>
<td>pašok</td>
</tr>
</tbody>
</table>

nc: persons  
drum, guitar  
buttocks  
urine  
fox  
sky, heaven  
companion  
cotton  
seek  
pass  
walk  
husband  
bed  
girl  
tomorrow  
long ago  
already  
wife  
strong  
buck, gall  
ace  
pineapple
§ 31 Contents of PTz Vocabulary (Dict)

a) words found in all (or most) dialects of Tzeltal and Tzotzil for which data is available (numerous).
b) words found only in Tzeltal or only in Tzotzil but also found in some other Mayan language(s), so as to make their inclusion in PTz relatively certain (marked Te or Ts, sometimes queried).

Alphabetical Order

\[ \text{a b c d e f g h i k l m n o p q r s t u v w x y z} \]

/i/ before C is disregarded in alphabetization, except that in otherwise identical forms, forms with /i/ are listed second.

/l/ and /l/ are listed together, except that in otherwise identical forms, forms with /l/ are listed second.

When forms are cited under *h* as beginning with *h* or *x*, the data is insufficient to establish which of those proto-phonemes was present. There is no implication that the morpheme had more than one phonemic shape in PTz.

Every reference to § 12 in the dictionary should also refer to the corresponding sections for the individual dialects 8515 - 29.
Symbols used in the Dictionary

T \text{transitive verb root}

P \text{intransitive verb root}

tv \text{transitive verb stem}

iv \text{intransitive verb stem}

n, n2, n3a, n3b \text{numeral stems}

p \text{particle}

pr \text{pronom}

aj, aj2, aj3 \text{adjective}

rp \text{reflexive pronoun}

onom \text{onomatopoeic}

\( | \) is placed between roots or stems and derivational affixes.

\( -1 \) is placed between stems and inflexional affixes, between inflexional affixes, and between members of compounds.

\text{vowel/vowel} \text{ means that some dialects have one of the phoenaes, others have the other.}

( ) \text{ means that the phoena is not certainly present in DF.}
001 - * ?o p complete particle (see § 11.1)
002 - * ?abat (Tee) n servant
* ?abt.ex iu to work (see § 12.F.1)
* ?abt.el vn working, work
* ?abt.ex.ab'al (Tee) n3 tool
* ?abt.ax.ab'al (Tee)
003 - * - ?a bullying * ?abiy tv to hear, perceive (see § 12.H.18)
* ?abiy.an iu to converse
* ?abiy.ex n story, conversation
004 - * ?ahl'il - bahl (Tee) aj + rp (one) is unfortunate
* ?ahl'il - bahl (Tee) n
005 - * ?aq'am n salt
006 - * ?ak aj new
007 - * ?ahle (Tee) iu to get, yet
* ?ahle.l (Tee) vn mud, clay
* ?ahle.el (Tee)
008 - * ?ak (Tee) n grass, hay, thatching
* ?ak-te2 n staff
009 - * ?akan-il n3 leg
010 - * ?ahkan n groaning, moaning
* ?ahkan.ax iu to groan, moan
011 - * ?uhk n turtle
012 - * - ?ak tv to place
* - ?ak-b'ey tv to give to (someone) (see § 12.H.20)
* x. ?ak-awel el (my) tv+n witch, sorcerer
013 - * ?ak n vine
014 - * ?aik-il n3 tongue
015 - * ?akah.ax.ab'al n night
* ?akah.ax.ab'e (Tee) n last night
016 - * x- ?akah uk nc just a moment
017 - * ?akal n charcoal, ember
* תַּחַן (ב) (תַּחַן, צִּֽהַּן) board, plank
* תַּחַן (ב) (תַּחַן) n weaving the cornfield (see §8(2).2.1)
* תָּחֵן, תַּחֵן tv to weed
* תֶּל n above, up
* תַּחֲנַת n dance, dancing
* תַּחַנָה n heavy
* תַּחַנָה (תַּחַנָה) n3 (kinship) woman's child
* תַּחַנָה n child
* תַּחָנָה iv to give birth
* תַּחָנָה (תַּחָנָה) n3 (kinship) woman's parallel nephew or niece
* תַּחֲנַת n domestic animal
* תַּחְנַת n below, down
* תַּחֲנָה (תַּחֲנָה) n3 (kinship) daughter-in-law
* תַּחַנָה n spider
* תַּחֲנַת n patio, courtyard
* תַּחָנָה n auto, bike (see §8.4.20)
* תַּחֲנַת n load, fog
* תַּחֲנַת n to run
* תַּחִינָל n running
* תַּחִינָל n woman
* תַּחִינָל n tumor
* תַּחִינָל n raincoat
* תַּחִינֶל n3 penis, genitalia
* יַחְינֶל n3 +n flame
* תַּחִינֶל tv to count (see §8.12.1)
* תַּחִינֶל n counting
* תַּחִינֶל -0ָה n+tv to be sad
* תַּחִינֶל n to bathe
* תַּחִינֶל n bathing, bath
241

338 - *?aw  n  shout
    *?aw.a:n  (55)  iv  to shout
    *?aw.a:n  (152)  iv  to shout
    *?aw.tay  tv  to shout
    *?aw.et  av  shouting, yelling
339 - *?-?aw  tv  to saw, plant
    *?aw.?:i-l  n3  sawing, planting
    *?aw.?:i-l  n3  sawing, planting
    *?aw.VC-te?  n  planting stick
340 - *?-?aw  tv  to saw, plant
    *?aw.?:i-l  n3  sawing, planting
    *?aw.?:i-l  n3  sawing, planting
    (see §(g)-6.1)
341 - *?-?ax  (70)  n  reed
342 - *?-?ax.?:un  av  hauling with pain
343 - *?-?ax.?:ii  n  roasting ear
344 - *?-?ax.o?  n  a sacred or respected object
    *?ax.o?:ab  n+n  wild honey
    *?ax.o?:om  n+n  rattlesnake
    *?ax.o?:te?  n+n  mankaio (tree)
    *?ax.o?:i-l  n3  a war, boss
345 - *?-?ali?in  n  alligator  (see §(d)-2.3)
346 - *?-?a:y  p  there is/are
    *?a:y.a:n  (78)  iv  to be born, to live
    *?a:y.a:n  (122)  iv  to be born
    *?-?a:y.?:i-l  tv  to cause to be born
347 - *?-?o?-i-l  n3  thigh
048  - *ba'en  n  spider monkey 049  - *baq'il  aj(s?)  real, genuine  
    *baq'il  (Tzo, Sile)  n  right hand  
    *baq'. i.x  is  Tze  - to get worse (sickly)  
    Tze  - to get fixed  
050  - *b'aq'al  n  1st 20-day period of native calendar  
051  - *bah  n  gopher  
052  - *-bah  n(pr)  reflexive pronoun  
    *ta-bah  p+in  on top of...  
    *bal-neh  n+n  attic  
    *bah-lum-il(al)  n+n  world  (see §1(2), 0.2)  
053  - * (S-)Bak  [ + kin term ] in  (his) e.ter...  
    * bah-vay-el  (Tee)  
    * bah-b'iy(-al)  (Tee)  n  first  
059  - * 5-bahal  (Tee)  
    * s-b'el  (s-b'helel/)  (Tee)  
    * s-b'el  (s-b'helel/)  (Tee)  n(p)  
055  - * bak(-vl)  n 2  al bone b) thin  
    * (S-)bak-vi  xet-il  n2+n3  skull  
    * (S-)bak-vi  xel-il  n1+n3  tooth  
    *bak-neh  n+n  fer-de-lance  
056  - *b'akul  iv  to shrink up  
057  - *bak  (Tee)  n  seed, pit, Kernel  (see §3(12), 1.1)  
    *b'ek  (Tee)  
058  - *bak-et (-al)  (Tee)  n 2  body  (see §3(12), 1.29)  
    * b'ek  et  (-al)  (Tee)  
059  - *b'ak  n  four hundred  
060  - *bakin  p  when (relative and interrogative)  
061  - *-bal  tv(p)  to twist, roll up  
    * bal-al  aj3(p)  twisted, rolled up  
    *-bal-ean  tv  to knock down  
    * bal-eux  iv  to fall 1. 2.3
243

062 - *bol-īl (-tak) n3 (kinship) man's brother-in-law
063 - *bohčom n jaguar
064 - *bəlun- n um nine
  *Balun.ēb
065 - *barkil-āl (-tak) n3 (kinship) man's older brother
066 - *bæk (s*Bah [Tze]) 1v to go
067 - *bot n hailstone
068 - *bot n cork tree
069 - *bAs tv to hammer, nail (see s(t)E.1)
070 - *bōly) p where (relative and interrogative)
071 - *bēh n road, path
  *bēh-10? n+n array
  (s-)bēh dēc-ēl) n+n2 vein, artery, blood vessel
  *bēh, bēh.tik n roads
  *bēh-ēn (Tze) 1v to travel
  *bēh-ēn (Tze) 1v to travel
072 - *bēše tv to tie, roll up rope
073 - *bet-īl n3 debt
074 - *s-bīq.bun au wriggling
075 - *bīk(i)t-il n3 name (see s(t)G.3)
076 - *bīkīl n guts, intestines
077 - *bīk tv to swallow
  *s-bīk.et au gulping
078 - *bīkít aj small
  *bīkīt.ax 1v to get smaller
079 - *bīl.il aj3(sP) slippery, slick
  *-bīl.d'un tv to slide
  *bīl.d'ux 1v to slip, slide
080 - *bohč n guard, dipper
081 - *bohēl aj stupid
  *bohēl.ib (s*bohľ.ob) 1v to get foiled up
082 - *-b'ôn  tv  to paint, dye
083 - *-bohtil  n  type of bean
085 - *-b'îd'  tv  to suck
086 - *-b'uł (Tse)  n(poss)  foam
087 - * b'îlu'-  num  eleven
    + b'îluč.ič (Tse)  
    + b'îluč.eš (Tse)
088 - * b'uš.ul  aj3(=P)  piled up
        *-b'uš.kîn  tv  to pile up
        * b'uš.kîx  iv  to get piled up
089 - *-b'ut.kîx  iv  to knock down
        * b'ut.kîx  iv  to collapse
090 - *-b'ut'  tv(<P)  to fill up
        * b'ut.ul  aj3(<P)  filled up
091 - * ʧɔ: ʧɔd’il (Tzo) aj2 strong
092 - * ʧah (Tzo) tv to choose
093 - * ʧak tv to hold, take
* ʧak’il n3 be held
* ʧak’il-ʤɔy tvn fishnet
* ʧak-ʤɔy (ag) tvn Fisherman
094 - * ʧam: ʧam-il (Tzo) aj2 fine, pretty (Te, Chm; Oz ʧam-gel)
095 - * ʧax: ʧax-al aj2 red
* ʧax-al-il n3 redness
* ʧax-ub’ tv to get red
096 - * tay- in
* ʧay-uk’il (Tzo) n girl (sec. 5(2) H.3)
* ʧay-il (Tzo) aj small
097 - * tɔʔ n excrement
* (s)ʧɔʔ ʔok-il n3 calf of leg
* ʧaʔ-an tv to defecate
* ʧaʔ-ʃe.uk tv diarrhea
* - ʧaʔ-tay tv to defecate
098 - * tʃeh: tʃeh-il (Tzo) aj2 raw, green (of fruit) tʃeh-il (Tzo)
099 - * tʃek n scorpion
* tʃek’il n3 skirt
100 - * tʃok’il (Tzo)
* tʃelawel n geluel n cramp
101 - * femen n tapir
102 - * tʃer’en tv to laugh
103 - * tʃih- B n laughter
104 - * - tʃi tv to advise, bless
105 - * tʃi:il n3 type of avocado
106 - * tʃi:in tv to break wind
* - tʃi:in tv to break wind
107 - *-céob tū to join, gather
    *-céob-tay tū to join, gather
108 - *-céf n wool, fur
    *(s-)*-céf-Ve xol-él n+n3 head hair
109 - *-céf n public hair
    *-céf-te? n+n3 moss
110 - *-céf tū to be ended
111 - *-céf n water-guard
112 - *-céfKum n type of caterpillar
113 - *-céfKum (T2e) 2 n paunch, belly  (see §4.1.10)
    *-céfKut (T2o) 1
114 - *-céf (C,N72e)
    *-céf (ST2e) 2 tū to light a fire  (see §6.25.3)
115 - * $'ak tv to mend, repair
* $'ak-bak (lag)tv+n bonnet
* $'ak-sl aj3(sT) complete, later, behind
* $'ak-$iy iu to be complete, enough
* -$'ak-li'yn tv to follow
* $'ak-n boundary marker

116 - * $amul n seat, bench

117 - * $'ax tv to soak, dampen
* $'ax.el un swamp
* s-$'ax.lan tv spraying (?)

118 - * $e'he.pun tv & Knock down
* $e'he.pux iu to pull down
* $e'heb n side

119 - * $'et tv to fell trees
* $'et.sh n falling trees

120 - * $e'ht (12a) left hand

121 - * $'ex n chinchilla

122 - * $'ihb n writing
* -$'ihb.$uy tv to write
* $'ihb.$ix iu to write

123 - * $'ik tv to endure

124 - * $'in-te$ n yucca

125 - * $'is tv to sew
* $'is,omax iu to sew

126 - * $'i? n dog
* $'i? ?eh n+n eye-tooth, fang

127 - * $'i?$il (12a?)aj dirty, overgrown
* -$'i?$lay tv to damage
* $'i?$ax iu to be damaged

128 - * $ahl n small green squash

129 - * -$'ot tv to twist.
130 - * s- 'o?et au 'craaking
   * s- 'o? (larax) au 'craaking
131 - * q'u'il lum ajtn dust
132 - * -q'ut (Tso) f tv 'to suck
   + -q'u? (Tes) $
   + q'uile', 'm-m-?ab ntn chupamteh (animal)
133 - * d'ul (q'ul?) n blelo (a plant)
134 - * -d'un tv To sew, plant
   + d'un b'ax tv 'to plant
   + d'unub'il n3 seed (for planting)
   + d'un (*d'uln?) n 18th 20-day period of native
135 - * d'uman n hummingbird
136 - * d'usub n grape
137 - * d'utux-te? n type of tree
138 - *zeb* n. honey, bee
139 - *zeb. u* K. honey
*zeb. u k. il ho ajon in thunderstorm
140 - *zeb. k* onom sound of a trap snapping shut
141 - *zem* tr. to die
*zem. el vn sickness
*X. zem. el n(aj) sick person
*zem. ye b-ai n 3 death, Hades
142 - *zem- num four
*zem. ib' (The)
*zem. el' (The)
*zem. key p 4 days ago
*zem. ex p in 4 days
143 - *zem (The) tv to learn
144 - *zem n. snake
*zem. el n. small animal, source of infection
145 - *zeb tr. (P) to prepare
*zeb. al aj3 (P) ready
*zeb. an tv to prepare
*zeb. ax iv to be prepared
146 - *zey* n. fish
147 - *ze- n qa? num two
*ze. ib (Te)
*ze. el (Te)
*zeb. ib key p day before yesterday
*zeb. el ex p day after tomorrow
148 - *ze?e p (expletive)
149 - *ze? n. mortar
150 - *zebom-il n 3 molar
151 - *zebcohew n type of mushroom
152 - *zemelk n bean
*zemelk. vel-tik n 3b bean-patch
153 - *"I2\-\.d n3 (knight)  
154 - *-8.-h/-in tv to strain  
        *-8.-h/-in. ab' n strainer for leached corn  
155 - *5.-i\-o\.t n tomato  
156 - *-8.-ih n agave (fiber)  
157 - *-8.-ih tv he said  
158 - *-8.-i\-k/-/tAY tv to tackle  
159 - *-8.-i\-ki\-il n3 ear  
        *-8.-i\-ki\-il n type of oak  
        *-8.-i\-ki\-pin n pot with ears  
160 - *-8.-ik tv to burn  
        *-8.-ik\-il n3 sweat  
161 - *-8.-ik n cricket  
162 - *8.-ih (8.-ih?) n pimple, boil  
163 - *-8.-i\-na\-\-il n3 brains, marrow  
164 - *-8.-i\-k/-te? n cherry tree (*-8.-i\-k/-o\-te?)  
165 - *-8.-it\-m n pig  
166 - *-8.-ihx n deer  
        *-8.-ihx\-\-ta\-\-ni n3 boa  
167 - *-8.-i\-?; 8.-i\-x \-il aj2 sweet  
168 - *-8.-oh\-il n3 cheek  
169 - *-8.-ol tv to line up, explain  
170 - *-8.-on tv to sell  
        +8.-on\-\-bax tv to sell  
171 - *-8.-ap\-ol aj3 (T) bad, lazy  
172 - *-8.-ap\-ol aj3 (P) seated  
173 - *-8.-ox n cougar, mountain lion  
174 - *-8.-o? tv to peel, skin  
175 - *-8.-ux n squirrel  
176 - *-8.-ux tv to tie  
177 - *-8.-ux (1ro) tv to wash
178 - * δωμαν-πε η n tree trunk (see §3.3.1)
179 - * κυρι n stinging caterpillar
180 - * δωχ-ιλ (T2e) n3 urine
181 - * δωχυελ (T2e) 7 vn small pox (see §2.4.6 and §12.5.4)
* δωχυελ (T2e) 7
182 - * δωχ-ιλ n3 woman's breast
* δωχ, un iv to suckle (as a baby does)
* -δωχ, unites tv to nurse, give the breast
183 - * δανακ, δανωκ (T2e) 7 n dizziness, vertigo
* δανακ (T2e) 7
189 - * čak in to be silent, to fast
  * čab.al aj7 silent, not present
  * čahal in fast
185 - * čah : čah-al (Bela) aj7 bitter
  : čah-il (Teo)
  * čah-tee in a shrub
186 - * čahil in smoke (see §I.A.1)
187 - * čak in flea
188 - * čam tv to receive, carry
189 - * čak : čax-il aj7 lazy
  * čax-il-al in laziness
  * čaxiln aj2+n lazybones ('lazy vulva')
190 - * čax-nil in bird, peck
191 - * čen in hole, rock, cave
  * čen.tičil(n) in cliff
192 - * čεt.laxan au whispering (?)
193 - * čičel(n) in blood
194 - * čih in to grow
  * čilites tv to grow
195 - * čičil in chiligast (insect)
196 - * čil tv to toast, brown
  * čil.im in pinoló (parched corn)
197 - * čin (čičn?) aj small
198 - * čiš in thorn
  * čiš in for cylindrical objects
  * čiš-7uk in porcupine
  * čiš-toht in+x type of bird
199 - * čiwit (Tesc) n market (see §I.I.5)
  * čiwit (Teo)
200 - * čoh in raft, mouse
201 - * čahik in want
202 - * ānu n frag
203 - * ānu-ālu aj small
209 - * ānu- holy, sacred, in:
   * ānu-ālu aj (plur) holy, sacred (see S12.8.10)
   * ānu-ālu el-al n3 soul, spirit
   * x. ānu-ālu-me-re-tik n holy mother, epithet of the moon
   * x. ānu-ālu-tō-tik n holy father, epithet of the sun
   * ānu-ālu-nāš n holy house, i.e. church
   * ānu-te? n cedar
   * -ānu-un tv to heed, obey (see S12.8.11)
   * ānu-ālu-ēn (Tē) n sky, heaven (see S12.9.11)
205 - * ānu-ālu aj 3 (x? x?) smooth
206 - * ānu-im n yellow squash, pumpkin
   * ānu-im. Vi-tik n3b squash patch
207 - * ānu-im-ma-te? n chayote (plant)
208 - * ānu-ak-te? n soap-root (see S12.10.14)
209 - * ānu-aš w n nerve, tendon
210 - * ānu-b n index finger
211 - * ānu-il n3 belly, stomach
212 - * -ānu tv to chop
213 - *e p(prosthetic)
214 - *7aex(Te) n axe
215 - *7ex (T2e) v to pass
216 - *7eë n bromelia
217 - *7ei-il n3 month
218 - *7el-an v to carry (corn, trash)
   * 7el, aw, éex is to carry
219 - *7eluk p also, either, neither, too (see §112.4)
220 - *7elk (Te) n stor
221 - *7elou-il n3 face, cheek
222 - *7elik n robbery
   * x.7elik n(og) thief, robber
   * -7elik.an to to steal
   * -7elik.ax is to steal
223 - *7es-il n3 lie, secret
224 - *7es.6(wax is to increase
225 - *7ehal-il n3 sign, mark
<table>
<thead>
<tr>
<th>Line</th>
<th>Word</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>226</td>
<td>-hael (Tev)</td>
<td>to bite, chew</td>
</tr>
<tr>
<td>227</td>
<td>-hash</td>
<td>green fly, grub</td>
</tr>
<tr>
<td>228</td>
<td>-hall</td>
<td>lasting, enduring</td>
</tr>
<tr>
<td>229</td>
<td>-holow</td>
<td>tepesquintle (mammal)</td>
</tr>
<tr>
<td>230</td>
<td>-honor</td>
<td>I, me</td>
</tr>
<tr>
<td>231</td>
<td>-honzot</td>
<td>you, them</td>
</tr>
<tr>
<td>232</td>
<td>-haoapal</td>
<td>it</td>
</tr>
<tr>
<td>233</td>
<td>-haoapal</td>
<td>we, us</td>
</tr>
<tr>
<td>234</td>
<td>-haoapal</td>
<td>you, your, yours</td>
</tr>
<tr>
<td>235</td>
<td>-haoapal</td>
<td>it</td>
</tr>
<tr>
<td>236</td>
<td>-haoapal</td>
<td>you, us</td>
</tr>
<tr>
<td>237</td>
<td>-haoapal</td>
<td>they, their, theirs</td>
</tr>
<tr>
<td>238</td>
<td>-haoapal</td>
<td>you, your, yours</td>
</tr>
<tr>
<td>239</td>
<td>-haoapal</td>
<td>it</td>
</tr>
<tr>
<td>240</td>
<td>-haoapal</td>
<td>you, us</td>
</tr>
</tbody>
</table>

- *(y)-a?i, el | n2+3h a?i, el | n2+3h *saliva |
- *(y)-a?i, el | n2+3h *human milk |
- *(y)-a?i, el | n2+3h *water dog (animal) |
- *(y)-a?i, el | n2+3h *water carrier |
- *(y)-a?i, el | n2+3h *water carrier |
- *(y)-a?i, el | n2+3h *water carrier |
- *(y)-a?i, el | n2+3h *water carrier |
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241 - * hilo? [num] [aj?]
* hilo?, un (T2e)
* hilo?, el (T2e)

242 - * hilo?g [n] achioté (plant)

243 - * how; how-ic aj? crazy
* how, cy [v] to go crazy

244 - * huli?ny [v] to blow
* huli?ntay [v] to blow

245 - * luq [num] seven
* luq, un? (T2e)
* luq, el (T2e)

246 - * luq [v] to arrive (here)

247 - * hun [n] paper

248 - * lu? [v] to be done, to be finished

249 - * hul?u-lal [v] to say

250 - * hulo? (T2e) [num] visitor
* hulo?/ul (T2e)

251 - * hulo?ol (T2e) [n] 6th 20-day period of native
* hulo?ol (T2e)

252 - * h- or * xalal (T2e) [n] need

253 - * h- or * xalal (T2e) [v] to make a fence

254 - * h- or * xalal (T2e) [n] washtub, spool

255 - * h- or * xalal (T2e) [v] to hiccups

256 - * h- or * xalal (T2e) [n] whetstone

257 - * h- or * xalal (T2e) [v] sneezing
258 - * i p(matric) (see 5.11.1)
259 - * y-ib- 9at (Tev) n (pass) m, n'tet
260 - * il'sin-at (-ab) n3 (kinship) younger brother
        woman's younger sister
261 - * ?ik n chile
262 - * ?ikan-ik (-nt) (Tev) n3 MoBr
263 - * ?ikor-ik n3 (kinship) ScSo, cross cousin
264 - * ?ik (Tev) n owl
265 - * -?ik tv to take, accept, bring
266 - * ?i'akin-ik n3 slave, servant, beast (see 5.12.11.9)
267 - * ?ikas-ik n3 load, burden
268 - * -?ik, lay tv to leave, abandon
269 - * -?ik n wind, air
270 - * ?ik tv to call, carry
271 - * ?ik: ?ik-al aj2 black
* ?ik-al-il n3 blackness
* x, ?ik-al-il n(aj) El Negrito (a black dwarf)
272 - * -?il tv to see
* ?ilawil exp (rok)!
* x, ?ilol (Tev) n(aj) cure
* -?ilay tv to hate, dislike
* ?ilin iv to get angry
* -?il, lay tv to anger
* -?il, bak, in tv to bother
273 - * ?iunam-ik (Tev) n3 wife
274 - * ?inop-?inup (Tev) n cebu (tree)
275 - * ?inVTam n iguana
276 - * ?ip: ?ip-al (Tev) aj2 much, many
* ?ip: ?ip-al (Tev) aj2 how much, many
* ?what? + y-ep.al pron to what extent
277 - * ?ip aj sick
* ?ip, ax iv to get sick
278 - * 7{i}s-za:K n+n potato
279 - * 7{i}s-im-aL n3 beard
280 - * 7{i}s.in(Tse) tv to shell corn
    * 7{i}s.im n corn
281 - * 7{i}s.el-a.l (-ta:k) n3 (kinship) man's younger sister
282 - * 7{i}s.to?il-il (Tse) j n3 toy
    * 7{i}s.to?il-il (Tse) j n3 toy
    * -?i?tan (56)
    * -?i?tan (22)
    * tv to fiddle/fool around with
283 - * 7{t-il} (Tse) n3 buttocks, ass
284 - * 7{t}ax n3 greens
285 - * 7{?il} n3 (kinship) woman's grandson
294 - *KohOF (aj3cp) n short
295 - *Konik exp let's go!
296 - *Kohol n toasted tortilla
297 - *Koda (do) expl that's good! , oic!
298 - *Kof n male turkey
299 - *Koa (in Hg Koa lis) n turtle
300 - *Kohk n deaf person
301 - *Kol tv to escape, get loose
   *x Kol el (neg) escapee
   *- Kol tay tv to help, save
   *x Kol tay, man etc (neg) helper, savior
302 - *Kom tv to remain
303 - Kom: Komol (aj2) (Kohol?) short
304 - *Konik expl let's go!
305 - *Ko808 n toasted tortilla
306 - *Koh hit n animals

286 - *Kohm n coco
   *Kohm (aj3 cp) tv to move / to plant
287 - *Kolom (aj2) n jaw
288 - *Karan (aj2) n watching over
289. *- Kap tv to measure
290 - *Kawah-il (aj2) n s jaw
291 - *Kaxal aj3cp above, mounted
   *Kax, axokaj 3cp above, mounted (pl.)
   *-Kax, Kafon tv to raise
   *Kax, Táax in to rise
   *Kohx uc floors, levels
   *ta (s) Kax (*-Kohx?) p+ n on account of...
292 - *Keblax (aj2) tv to kiche
293 - *Keex el aj3cp hanging
   *Keex, axtik aj3cp hanging (pl.)
294 - *Keliwu n shade, shadow
295 - *Kelem n rooster
   *Kelem <Kelem n boy
   (see §13.2)
296 - *Keex el aj3cp kneeling
297 - *Ko (ero) expl that's good! , oic!
298 - *Kof n male turkey
299 - *Koa (in Hg Koa lis) n turtle
300 - *Kohk n deaf person
301 - *Kol tv to escape, get loose
   *x Kol el (neg) escapee
   *- Kol tay tv to help, save
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305 - *Ko808 n toasted tortilla
306 - *Koh hit n animals
<table>
<thead>
<tr>
<th>Page</th>
<th>Entry</th>
<th>Part of Speech</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>307</td>
<td>Koliton</td>
<td>n</td>
<td>coati</td>
</tr>
<tr>
<td>308</td>
<td>Koliesan</td>
<td>n</td>
<td>chayote root</td>
</tr>
<tr>
<td>309</td>
<td>Kub</td>
<td>n</td>
<td>hup</td>
</tr>
<tr>
<td>310</td>
<td>Kuk</td>
<td>tv(3?)</td>
<td>to carry</td>
</tr>
<tr>
<td></td>
<td>Kuk &lt;tv&gt;</td>
<td>tv</td>
<td>to stand, endure</td>
</tr>
<tr>
<td></td>
<td>Kuk =-či-šim</td>
<td>twn</td>
<td>carrying corn</td>
</tr>
<tr>
<td>311</td>
<td>Kuk Kay</td>
<td>n</td>
<td>lightning bug</td>
</tr>
<tr>
<td>312</td>
<td>Kuket =a(mer)</td>
<td>n</td>
<td>body</td>
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<tr>
<td>313</td>
<td>Kukub (Re)</td>
<td>n</td>
<td>pole</td>
</tr>
<tr>
<td>314</td>
<td>Kus</td>
<td>tv</td>
<td>to wipe dry</td>
</tr>
<tr>
<td>315</td>
<td>Kus</td>
<td>tv</td>
<td>to rest</td>
</tr>
<tr>
<td></td>
<td>Kusul</td>
<td>ajP</td>
<td>alive</td>
</tr>
<tr>
<td></td>
<td>Kus xaktiv</td>
<td>ajP</td>
<td>alive (pl.)</td>
</tr>
<tr>
<td></td>
<td>Kus lex</td>
<td>n</td>
<td>life</td>
</tr>
</tbody>
</table>
316 - *Kab-il (Tsu) n3 urine
317 - *Kab-il n3 hand, arm
* Kobo-te? n3m tree branch
318 - *Kosh n bridge
319 - *Kahik n fire
  *Kahik: *Kahik-al aj2 arrogant, Onery
  *Kahik iv to burn
  *Kahikal n sun, day (see § 1(2), H. 23)
320 - *Kal-tik (Tsu) n3b cornfield
321 - *Kalal p until, when
322 - *Kon: *Kon-al aj2 yellow
  *Kon-qul aj3n type of mushroom
  *Konal (Tsu) n star
323 - *Kon tv to want, need, ask for
324 - *Kon-s tv to break
325 - *Kak (Tse) iv to pass
326 - *Kat-al aj3(p) behind
  *Kat: plunj tv to turn, cross
  *Kat: plax iv to turn, cross
327 - *Katin iv to heat
  *Katimol un burning
  *Katin-balk tv on hell
328 - *Kax tv to harvest
  *Kax: bén n stubble
329 - *Kay: ox n song
  *Kay: ox: in iv to sing
330 - *Kahy (Tse) iv to get used to
331 - *Ko? iv to rot
  *Ko?: *Kal-al aj2 rotten
  *Ko? ep n trash, garbage
332 - *Kalaw (Tse) n trash

(see § 6(2) H. 1)
333 - * Keč tv to lift, raise
334 - * Keč tv to look at, watch
335 - * Keč tv to separate
  * Kečẹl n clear (of sky)
336 - * Keč (Te) tv to change
337 - * Keće aw tv to be ashamed, embarrassed
  * Keće lal m shame, embarrassment
337a. * Keće (Te) n left hand
339 - * Kẹveʃ n custard apple
340 - * Kẹ Kẹ èt aw cracking
  * Kẹ Kẹ, laxon aw cracking
341 - * Kẹb n pitcher, jug
342 - * Kẹn n festival, party
343 - * Kẹntunw Kẹnton (Te) n rainbow
344 - * Kẹsi n space
345 - * Kẹsẹn øj heat, warm
  * Kẹsẹjẹ tv to heat
  * Kẹsẹn øw øw to heat up
346 - * Kẹj tv to spread out
347 - * Kẹj tv to cut
348 - * Kẹj tv to walk into a ball
349 - * Kẹp n word, language, noise, fight
  * Kẹp, on tv to speak
  * Kẹp, øx øw to speak
350 - * Kẹp n last child in family, smallest pig in litter
351 - * Kẹp (Te) iv to arrive (there)
352 - * Köx n mask
353 - * Köx tv to rap, kluck
354 - * Köx (Te) n snail
355 – * Kukum n feather
356 – * Kukum.ek n(eg) rich person
  * Kukum.ex.ai n riches
357 – * Kukum.b n grasshopper
358 – * Kun: Kun:Kun:ul (TPe) aj(2) soft
  Kun:ul (Tpo)
359 – * -Ku: tv to chew
  * Ku:ba:x iv to chew
360 – * Ku: aj painful
  * -Ku:ul:tv to have pity on
361 – * -Ku: tv to shell corn
362 – * Kuk:ul n3 shirt
  * Kuk:ul pak-al n3+n3 clothing
  -Ku?-pak
363 - *lab n sorcerer, familiar animal
   *-lab'an tv to mock
364 - *lapal aj3(?,p?) piled up
365 - *loho\'op n armpit
366 - *lad (sat) n chicken issue
367 - *lah n battle
368 - *lamal aj3(p) calm, quiet
369 - *lap tv to put on (clothes)
370 - *lax p it is said, they say
371 - *lahx iv to be finished, die
   *lahx, ye\'al n3 end, termination
372 - *lax\'ay- num twelve
      *lax\'ay:eb (See §062.11.2)
373 - *laxon- num ten
      *laxon:eb
374 - *lap p come (here)!
375 - *le\'el aj3(p) thin and flat (like leaves, paper)
376 - *le\'eh (fro) tv to seek, look for
377 - *lehab n carrying net
378 - *lek: lek-il aj2 good
      *lek:ub iv to improve
379 - *-lek tv to lick
380 - *le\'em,lan au glittering
381 - *le\'ow n body, thigh, fat
382 - *le\',le p there
383 - *li\'ihlin tv to shake
384 - *li\'ik n hawk
385 - *-lik tv to lift
      *lik iv to arise, get up
      *-lik:es tv to begin
386 - *li\'it, ku:na\'ak tv walking on tiptoe
387 - *li?... i.p here
388 - *loik iv to go out, come out
* loik.es tv to put/take out
* loik.ta? tv to copy
* loik.ombah n representation
* loik.veb-ak n3 place of going forth
389 - * s-lom.lex npos) field
390 - * loh n turn
391 - *lot-il n3 lie, falsehood
392 - * -lo? tv to eat fruit
* lo? bax iv to eat fruit
* lo? bol n fruit
393 - * lo?il n joking conversation
* lo?il.a?x iv to joke
* -lo?il.ahiliation tv to deceive
* x. lo?il.Vy.wan.lex n(e)al deceiver
394 - * lunb iv to get tired
395 - * -lu? tv to inject
396 - * luk n brush-cutting tool
397 - * lukum n earthworm
398 - * lum n earth
399 - * -lu?il.tv to dip up water
400 - * lu?-il n3 vulva
401 - *mäsib' (m) n3 eyebrow
402 - *mäs n pozol(k)
403 - *mäs(y) pr who (relative and interrogative) (See §1.0.3)
404 - *-mak tv to close, stop up
  *mak-te? tv+n fence
405 - *mok n 4th 20-day period of native calendar
406 - *-makli'y (Re) tv to listen to
407 - *malkom n blackberry
  *makli'y tv to provide for, serve food to
408 - *-mak (Re) tv to eat soft foods
409 - *-mal tv to pour out
  *mahl tv & get out
  *mahl-way tv to wait for
410 - *mam-il (tak) n3 (kinship) a) grandfather
  b) man's grandson
411 - *-man tv to buy
  matter that...
412 - *manflk p a) were it not that... b) it does not
413 - *man-kul n quetzal (bird)
414 - *map(Re) n coyol palm (See §1.2.5)
  *nap(Re) ~
415 - *mas n spider-monkey
416 - *moht-n-il n3 gift
417 - *moy n tobacco
418 - *-max tv to hit, beat
419 - *-mak-an (Re) tv to borrow
420 - *may-il n white squash (See §1.2.2.2)
421 - *moq p negative
  *moq(y) su there is/are not...
  *moq(?) bo (*vst, tv, iv) p+p negative
  *ma?-sat(Re) n blind person
  *ma?-sit(Re) ~
422 - *me, p 16 (see §11.1 )
423 - *mel:el aj3(p) true
    *mel:la? on ti to fix, make
    *mel:la? ax iv to be fixed, made
424 - *mes tv to sweep
    *mes (*mehs ?) n brown
425 - *mey tv to embrace
426 - *me7-il n3 mother
    *me7:el n a) old woman b) raccoon
    *me7:mut n+n hen
    *me7-xun-il (120) f (-ab) n3a a) MoSi b) Fabru
    *xun-me7-il (170) f
    *me7:in iv to grow (?)
    *me7:ti< n lady
427 - *s-me7:mun ov blushing
428 - *me7:ba? (120) f n orphan, widow, widower (see §12.1.40)
    *me7:on (120) f
429 - *-mec tv to steal
430 - *-mil tv to kill
    *x:mi-l:awam ex a)og) murderer
431 - *mis n cat
432 - *moc n basket
    *-moc7:muq7 tv to make a fist
    *mec tu to squeeze (see §12.1.25)
433 - *mohamoe tv to go up
434 - *mohol aj old
    (see §12.1.8.8)
435 - *moko8 n type of snake
436 - *mon tv to care for fretting children
437 - *mo2 n guacamayo (bird)
438 - *mus tv to close the eyes
399 - *mul.k tv to bury, hide
   *mul.k tv to be buried
   *mul.k vt grave (yard) (see §12.0.1.5)
399 - *mul.aj big
   *(Tee) mul.k: mul.k-ul
   *(Tee) mul.k: mul.k-ta
400 - *mul-il n3 sin, crime, mischief
   *mul-lmn tv is sin
   *(x, mul, row. il weag) sinner, evil-doer
401 - *mul.at (Tee) n slave [now obsolete]
403 - *mul.an tv to enjoy
445 - *mua8 n 17th 20-day period of native calendar
494 - *musuk-il (Tee) n3 navel (see §12.0.3.8)
   *musik-il, mask-il (Tee)
447 - *mut n bird
448 - *mutut n amate-tree
449 - *muy n sapodilla
450 - *mul-il (-tak) n3 (kinship) sibling-in-law of opposite sex
451 - *nahb(īl) n land
452 - *nahb,aḫḫe' n staff
453 - *nah n house
   *nah, nāhti, k n collection of houses
   *nah, ilēn a(n) n cave
454 - *nach n thread
   *nāh, nāhuy tv to spin
455 - *nāh,kal aḫjar tv seated, sitting down
   *nāh, kētx n seat
456 - *nāh, ka(h) p nothing but
457 - *nāh tv to hide
458 - *nān-il (Tēr) n 3 (kinship) mother, older woman
459 - *nījar tv to stick together with glue
460 - *nas p a short time ago
461 - *nas p only, just
   nās-nāsi (Tēr)
   nās-nāsī (Tēr)
462 - *nāt:nah-il aḫjar long (see §10.4.8)
   *nāt-il, aḫjar n 3 length
463 - *nāt tv to know
   *nāt, liy tv to stare at
464 - *nēh-il n 3 tail
465 - *nēhētīl-al (Tēr) n 3 shoulder (see §10.4.5.9)
   *nēhēt-al (Tēr)
466 - *nēl tv to press (e.g. with an iron)
467 - *nēn (helin?) n glass
468 - *nēp (Tēr) n crawfish
469 - *net tv to wash
470 - *ni{n}ē n(pers) the fin of (plant)
   *nī condensed n flower
   *nēsh-kēsh kil n sparrow
471 - *nideen-il (-aB) n3 man's child
   *nideen-xun-il (Tea) n3 (Kinship) man's parallel nephew
   *nideen-il (Tea) n3 (Kinship)

472 - *-nik tv to swing
   *nihke tv to shatter, tremble
   *nihknes tv to shatter
   *nihke tv on earthquake

473 - *nik'ubax tv to nod with sleep

474 - *-nit tv to pull

475 - *niiwak (Tea) aj wig (plural)

476 - *nilx-il aj3(p) bent over

477 - *nil?-il n3 nose

478 - *ni?-il (-tak) n3 (Kinship) son-in-law
   *ni?-al-il (-tak) n3 father-in-law

479 - *nop.aj3(p) near

480 - *-nop tv to think

481 - *nohx tv to be filled

482 - *nuf tv to chase, hunt

483 - *nukicul (-V3) n2 skin
   *nukicul-pan n+n type of cypress

484 - *nuk-il n3 neck

485 - *-nuk tv to suck, smoke (tobacco)

486 - *-nup tv(-p) to join

487 - *-nup tv(-p) to perform marriage ceremony

488 - *-nup tv to light a fire

489 - *nul?ic (Tea) n carrying net

490 - *nux-ul aj3(p) lying face down
491 - *?ohb:i.él < *?oxb:i.él n ough
- ?ohb:i.él < *?oxb:i.él, and other Mongol

492 - * 70ẹ tv to enter
- 70ẹ.és tv to put in
- 70ẹ.ém éak n+n chugger
* y-0ẹ. yeb' n3 sink (in ground)

493 - * 70i-ik n3 foot
* y-0ik.et n (poss) trivet

494 - * ?olikof n lizard

495 - * 70ik tv to weep
* - 70ik. etay tv to weep about/for
* 70ik. es n trumpet, cornet
* x, 70ik. es. yamn. ex- ląmy tagitv+ n flute player
* - 70ik. es. ym - 1kôle tv+n to whistle through hands
* 70ik. il n coyote
* 70ik. il-tek n+n type of cypress

496 - *?olal-te2 (*?ohal ?) n 5th 20-day period of native

497 - * ?ohlil (Tee, Sbl) n num half
* ?o?olol (21, chm) n

498 - * ?on n avocado
* ?on-te2 n+n madron (tree)

499 - * ?o8- num three
* ?o8. i8' (Tee) n
* ?o8. eb (Tee) n

* 708. key p 3 days ago
* 708. ex p in 3 days

500 - * 70οm (Tee) n clay pot

501 - * 70ay n forked stick

502 - * 70xta·kin tv to recognize

503 - * 70i·ton-il n3 heart

(see §12.4.37)
504 - *pax: n type of tailate
505 - *-pax tv to grow, grasp
506 - *pāhā (Ixt) n pineapple
507 - *pah-y n sickle
508 - *-pāl tv to stick together
509 - *-pāl:an tv a) to mend (Ixt), b) to make tortillas (Teo)
510 - *pālk n cloth
511 - *pāl:ik n small
512 - *pāl:kayem n seed-pod (see §12.H.4)
513 - *pāl:k:in-me n a mythological female demon
514 - *-pas tv to do, make
515 - *-pās:ob-il n factory
516 - *-pat tv n 3 back
517 - *patan n tax
518 - *pax: pax-al aj 2 sour
519 - *-pax:ul aj 1 in type of tree
520 - *-pay (Teo) tv to boil, soak
521 - *-pān: (Teo) tv
522 - *pay:en-pay:n:il (Teo) n leached corn
523 - *pax tv to check, test out
524 - *pāhq n jealousy
525 - *pē-hāk n trap
526 - *pē-hāk:ed n duric (see §12.H.12)
527 - *pē-hik-il n turnip Line
526 - *pelisček n. dwarf
527 - *pelipen n. butterfly

528 - *-pet tv to embrace
529 - *pelitok n. prickly pear (see §12.III.3)
530 - *petet n. spindle

531 - *pental (*pential?) n. rockcrush
532 - *peteč n. nest
533 - *pič tv to touch, palpate
534 - *pič n. eight thousand
535 - *pin: pin-il n. thick
536 - *pis n. stones, fruits
537 - *pis-xal-al n. hat (see §12.III.4) tree
538 - *pis-xal-al n. hat
539 - *polok tv to peel
540 - *polok (Pee) n. palm heart (see §12.II.7) tree
541 - *polok tv to wash the hands
542 - *polokaj (preixed) used up, worn out
543 - *polokat n. type of pot
544 - *polokok n. -polok y. toad (see §12.II.11)

545 - *polok n. a plant similar to soaproot
546 - *pom n. a) incense made from pine resin
     b) 15th 20-day period of nature calendar

547 - *polok n. palm mat
548 - *pop n. medicine, liquor
     *k. poš:il n(ogn) curer
     *k. poš:il n(ogn) curer
     *k. poš:il n(ogn) curer

549 - *pox tv to remove, withdraw
550 - *poxom n. pus

551 - *požam (Pee) n. jocote (tree)
     *požan (Pee)
<table>
<thead>
<tr>
<th>No.</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>552</td>
<td>*puē</td>
<td>to fold over</td>
</tr>
<tr>
<td>553</td>
<td>*puēk</td>
<td>to distribute</td>
</tr>
<tr>
<td>554</td>
<td>*puēcēk</td>
<td>dust</td>
</tr>
<tr>
<td>555</td>
<td>*puēkux</td>
<td>evil, demon</td>
</tr>
<tr>
<td>556</td>
<td>*puēm</td>
<td>(*puēm ?) to swell</td>
</tr>
<tr>
<td>557</td>
<td>*puēs</td>
<td>sweat, sweat</td>
</tr>
</tbody>
</table>
561 - *pahle (Tae) n words (see §121.2)
    *pelis (Tae)
562 - *piklom-te2 n blowgun, bow and arrow
563 - *pim n pot
564 - *pis tv to measure
    *pis (*pins?) n measure
    *pis.0l-il n3 measure
565 - *pix: pix-il n2 intelligent
    *pix.u6 iv to become learned
566 - *pixpejex n2 round objects
567 - *pohl iv to increase
    *pohlies tr to cause to increase
    *pohl.max iv to do business, engage in commerce
568 - *pulpat (Tae) n hunchback
569 - *sahb' x early
570 - *sahbin - salbin n winter, fern
571 - *sak:sak-il aj2 white
  *sak-xol n mammal
572 - *...sak... n 2d 70-day period of native calendar
573 - *sak (Tae?) aj icy
574 - *-sak (Tae) tv to crush clothing
575 - *samenet n griddle. (see §12.1.8)
576 - *sat-il (Tae?) n3 eye
  *sat-te? sat-te? ntn fruit
  *sat-in n sit.in iv to put forth fruit
577 - *-sa? (Tae) tv to seek
578 - *seq' n unillustrated
579 - *seh'kub-il seh'kub-il n3 liver (see §12.1.9)
580 - *sep.el aj3(p) circular
  *sep.el n circular things
581 - *set.el aj3(p) disc-shaped
582 - *si'labk (*si'labk?) n root, black powder (see §13.1.7)
583 - *silk:silk-il aj2 cold
  *silk:ub iv to get cold
584 - *silk'alal n3 cigarette
585 - *silhm n nasal mucus
  *silhm.ity tv to blow the nose
586 - *sip n back (bag)
587 - *siht-um siht-il iv to swell up (see §12.1.10)
  *siht:ub siht:ub' iv to swell up
588 - *si? n firewood
  *x.siiwil n(cag) firewood-fetcher
589 - *soot' n bat
590 - *solk(ik) iv to get fooled up
591 - *soh'key tv to clear land
592 - *soh tv to pass
593 - *sot n rattle
594 - *sot'tot' n lungs
595 - *sun n sunflower
596 - *sunul n type of wasp
597 - *supul n moth
598 - *suht tv to return (go back, come back)
     *-suht.ies tv to bring/take back
     *suh :u1b -zik n:n whirlwind
599 - *-sux tv to hurry
600 - *suy n flint, obsidian
<table>
<thead>
<tr>
<th>Page</th>
<th>Line</th>
<th>Word</th>
<th>Translation</th>
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<tbody>
<tr>
<td>278</td>
<td>601</td>
<td>*ṣaʿaẓ. al</td>
<td>aj 3</td>
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<td></td>
<td>602</td>
<td>*ṣalāb</td>
<td>n</td>
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<td></td>
<td>603</td>
<td>*ṣak-taṣ</td>
<td>n+tn</td>
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<td>604</td>
<td>*ṣan</td>
<td>n</td>
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<td>605</td>
<td>*ṣan (the)</td>
<td>n</td>
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<td>606</td>
<td>*ṣan-d-il</td>
<td>n</td>
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<td>607</td>
<td>*ṣan(di) n±niṣaṭiḥ</td>
<td>n</td>
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<td>608</td>
<td>*ṣaṣhd</td>
<td>n</td>
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<td>609</td>
<td>*ṣeh</td>
<td>n</td>
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<td>*ṣeh.en</td>
<td>n</td>
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<td></td>
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<td>*ṣeh-tyaṭ tv</td>
<td>to vomit</td>
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<td>610</td>
<td>*ṣēkol-ṣēcelal (Re)</td>
<td>n</td>
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<td>611</td>
<td>*ṣēl (Re) tv</td>
<td>to notch</td>
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<td>612</td>
<td>*ṣehen</td>
<td>n</td>
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<td>613</td>
<td>*ṣēlt tv</td>
<td>to split</td>
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<td>*ṣēlt tv</td>
<td>to split</td>
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<td>614</td>
<td>*ṣib-biʿel al (Re)</td>
<td>(-tak)</td>
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<td>*ṣib-biʿel al (Re)</td>
<td>(-tak)</td>
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<td>*ṣib-bol</td>
<td>n</td>
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<td>615</td>
<td>*ṣīk</td>
<td>n</td>
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<td>*ṣīk</td>
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<td>617</td>
<td>*ṣīn</td>
<td>n</td>
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<td>618</td>
<td>*ṣiḥ-taṭiḥ</td>
<td>n</td>
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<td></td>
<td>619</td>
<td>*ṣi? tv(Re), tv(Re)</td>
<td>to be afraid</td>
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<td></td>
<td>620</td>
<td>*ṣoḥ n</td>
<td>screechowl</td>
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<td>621</td>
<td>*ṣaṭal</td>
<td>aj 3</td>
</tr>
<tr>
<td></td>
<td>622</td>
<td>*ṣaṭol</td>
<td>n</td>
</tr>
<tr>
<td></td>
<td>623</td>
<td>*ṣaṭv</td>
<td>n</td>
</tr>
<tr>
<td></td>
<td>624</td>
<td>*ṣaṭ ⟨Re⟩</td>
<td>n</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*ṣaṭiḥ ⟨Re⟩</td>
<td>n</td>
</tr>
</tbody>
</table>

(see §12:8.3)
(see §12:8.3)
(see §12:8.3)
(see §12:8.3)
<table>
<thead>
<tr>
<th></th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>G25</td>
<td>*šulikub (Peh) S n elbow (see gloss)</td>
</tr>
<tr>
<td>G26</td>
<td>*šul</td>
</tr>
<tr>
<td>G27</td>
<td>*šulim</td>
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<tr>
<td>G28</td>
<td>*šulub</td>
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<td>G29</td>
<td>*šuš</td>
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<tr>
<td>G30</td>
<td>*šušub</td>
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<td></td>
<td>*šušub,ax</td>
</tr>
<tr>
<td>G31</td>
<td>*šut</td>
</tr>
</tbody>
</table>
632 - *ta p in, at, to
633 - *talb-wiunik n twenty
634 - *tah tv to find, meet
635 - *-talk (Tal) - tv to send, order
   *-tikun (Te) - tv to send, order
636 - *takun aj dry
637 - *talk, ox iv to dry up
638 - *talk in
   *-talk, aw iv to advise
   *-talk, my tv to advise
639 - *s-talk tv (defective) it is possible
640 - *takon aj cooked, done, ripe
   *talk, ax (Te) - iv to cook, boil
   *ta? ax (Te) - iv to cook, boil
641 - *talkin n metal
642 - *tal iv to come
643 - *tan tv to pick up
644 - *tan n ashes, lime
645 - *tah-lil n3 chest (see #503, and 8.11.32)
646 - *tal-lil n3 father
647 - *tal-kun il (Te) - il (-ab) n3 (Kenship) p FaBr
   *kun-tal-lil (Te) - il (-ab) n3 (Kenship) p FaBr
   *talik &talIIil n gentleman
648 - *tal-tal aj 2 thick (e liquids)
649 - *ta? x n pine
650 - *taxin iv to play
   *taximpl un playing, game
651 - *tal-al aj3(-p) lying down
   *x-teb (Te) - numere a little bit
   *kuteb (Te) - numere a little bit
652 - *teb-k-lum nc+n (count) a town
653 - *te p (definite and relative conjunction)
653 - *-tech tv(p) to step on
  * tech.aj3(p) standing
  *-tech.an tv is erect
  * tech.ax tv to be erected
  * tech.jb-1 n3 ladder
  * tech.tun av stamping
654 - *ten (7o) n bed
655 - *ten tv to throw, press, mash
  * s-ten lex n(pss) field
656 - *tep-il (1e) n3 sandal
657 - *tey....e/35 p there
658 - *te^ n tree
  * te?..tik(il) n woods, forest
659 - *tic(?)/bah-il n3 firehead
660 - *-tik tv to put in
661 - *thl tv to burn
  * thl.les tv to cause to burn
  * thl.les.ex-1kohic tv n fire-lighten
662 - *-thl.pun tv untie
663 - *thl n nanjillo (plant)
664 - *-tix tv(ER) to play an instrument, touch
  * tix..il aj(ER) near
  *-tix..t=a/an tv to bring near
  * tix..t=a/ax io to approach
665 - *ti?..il n3 lip, mouth
  * (s-)ti? nah n+n: door
666 - *ti? tv/iv to eat meat, bite
  * ti?.ben n bite
  * ti?.bol n meat
667 - *to p still, yet (see 11.1)
668 - * toh(y) i (city) n Frost  (see § 12.8.4)
  * ta(h)u(n) (Ree) n cloud  (see § 12.8.8)
669 - * tok(ak) n cloud
670 - * tok(k)u(n) (Ree) n willow
671 - * ton n stone; egg
  * ton. in tu To lay eggs
  * ton. tu(k)il(n) n rocky place
672 - * tok (Ree) n rock
673 - * tok: tox ol aj2 straight, correct
  * tox. o(l) e±i tu To fix, correct
674 - * tox tu tv To pay
  * tox. o(l) i n3 price, payment, value
675 - * tox o(l) i tu tv To lift
  * tox ol aj3(e) high
  * toy-bah n pride, arrogance
676 - * tuh(b) (Ree) n saliva
  * * tuh. u tu tv To spit
677 - * tuh tu tv To cut grass
678 - * tuh hec n a bird
679 - * tuh (see) pr what, relative and interrogative
680 - * tuh: tuh-il n rotten, smelly
  * tuh ub (tuh ub) in tu To stink
681 - * tuh u no nw To be used/useful  (see § 12.8.9)
682 - * tuh(k)el pr oneself
683 - * tuh (k)ig tu tv To take apart, scatter
684 - * tuh ke n shotgun
  * tuh ke. ay tu tv To shoot
  * * tuh ke. awil (Ree) n king, hunter
685 - * tuh tu tv To cut, harvest fruit
686 - * tuh (Ree) n5 persons
687 - * tulan (Tzo) oak; (Tze) hard, strong
    of the Kan-tulan oak wood
688 - * tulan (fem. of tulan) turkey
689 - * tunmin tunmin (Tze) n cotton
690 - * turp turp To put out/go out (of fire)
691 - * tur-min (Tze) n cotton
    * tur-tumin (Tze) cottonseed
692 - * tur-wis (Tzo) n onion
    * tur-žak (Tze) s
693 - *t'an:i:l aj3(e) n  naked
694 - *t'el-leč n  basilisk lizard
695 - *t'le:m onim sound of twanging cord
696 - *t'is.i:wuy tv  to twirl
697 - *t'ohm:im tv  to burst*
   *t'ohm:es tv  to blow up, explode
698 - *t'os (1st) tv  to chop wood
699 - *t'ul n  rabbit
700 - *t'us:ul aj3 wet, damp
701 - *t'ut: t'ut'-il aj2 stingy / stingy,
    *t'ut: tv  to choose
702 - *t'ux tv  to choose
703 - *t'ux (1st) 1nč drops
    *t'ox.čōb (1st) n  dripping water
704 - *ʔu'b  n  partridge
705 - *ʔu'f : ʔu't.č (aj 2, verb, many)
   *ʔuť.č  tv  to improve
   *ʔuť.č (mĄq.č)  tv  to improve
   *ʔuť.č-al  n3  grace
706 - *ʔuť.lh 'yiy  tv  to smell, kiss
707 - *ʔuť.č  n  a) possum
   b) 8th 20-day period of native calendar
108 - *ʔuť.č  n  house
   *ʔuť.č tv/iv  to drink
   *ʔuť.čol-č  n3  a drink
   *ʔuť.čax  tv  to drink
709 - *ʔuť.h  n  a) moon, month (lunar)
   b) necklace
710 - *ʔuť.kum (ʔe)  n  a spring tree
   *ʔuť.kum (ʔi)  n
711 - *ʔuť.kum  n  river
   *ʔuť.kum.čč-tik  n36  riverside
712 - *ʔuť.č  n  ashes (ash, gravel)
713 - *ʔuť.man (ʔuț-man ?)  n  a type of bird
714 - *ʔuťmač  n  stoneware
715 - *ʔuťman  aj  strong, weak
716 - *ʔuťs  n  fly
717 - *ʔuťt  tv  to say it, someone, sold
718 - *ʔuťọx  n  Kindajan
719 - *k-ʔuťun  mine, for me
   *aw-ʔuťun  thine, for thee
   *g-ʔuťun  his, hers, its, for...
   *ʔ-ʔuťun, in  tv  to have
720 - *wok*a n. guitar, drum
721 - *wak* k. num six
    *wak*b (Tso) /
    *wak*c (Tie) /
722 - *wal* k. tv To push over
    *wal*exc iv to fall over
723 - *ta wallak-pat p+inn behind (?)
724 - *wahle? n sugar cane
    *wahle? UI-tik n3b cane-brake
725 - *wamol (womol ?) n grass, herb
726 - *wan p maybe, perhaps
727 - *walek*a k n wallak s3k- num eight
    *wašak*c b (Tie) /
    *wašak*el (Tie) /
728 - *wax (Tie) n fox
729 - *wax; yot n (sympathetic stem) tortilla
730 - *wax*el n a caterpillar which damages corn
731 - *way al aj3 lying down
    *way b-al n3 bed
    *way yel xel (Tie) n familiar animal
    *way el n dream
    *way el iv to dream
    *way el x k iv to dream
732 - *wak al (Tie) aj3 standing
733 - *wek (Rel) n pinecone
734 - *wel (Tie) iv to fan
735 - *wel-il n3 trousers
736 - *wel (Tie) n fox
737 - *wel* n type of bean
738 - *wel< tv/iv treat
  *wel,el-il n food
739 - *wir n mountain
  *wir,te(cil) n mountainous region
740 - *-wik tv to open two eyes
  *wik,el aj3(cT, p) open(c) eyes)
741 - *wik tv to fly
  *wik,les tv to cause to fly
  *-wik,um.tay (see) tv to jump up and down
742 - *wink n man, person
  *wink,el n (The) body; (The) owner
  *(num)+ wink1 part of 11th-19th 20-day
  periods of native calendar
743 - *wik-il (-tak) n3 (kinship) older sister
  b/FuSi
744 - *wir,n.ax iv to be hungry
  *wir,n.al vn hunger
745 - *worh tv to roast
746 - *wolcol n favor, difficulty
  *wolcol aj difficult, hard
  *wolcol,ix iv to have labor pains
  *a,wolcol,uk exp please
  *wolcol,awal exp thank you
747 - *-wol tv to break up
748 - *wol,ol aj3 spherical
  *wol,allix,ol aj3 spherical(2pl)
749 - *wol,sey p yesterday (see §6.2, #2)
750 - *s-wol,un v av barking
751 - *s-wol,un av babbling
752 - * xul n vapor, steam
753 - * xel.ub-il n comb
754 - * xak tv (see trans. * (Teo) basic
755 - * xal tv to wear
* xo1.2b or xa1.ab n loom
756 - * xam tv to open
* s-xam ob'il n opener
757 - * xapuy tv to take
758 - * xat ~ xat tv/tov to rip
(see 502.1, H. 13)
759 - * xanuy tv to measure by spans
* kawa no spans
* kawal aj3 facing up
760 - * kawan-il (-tak1) n3 (kinship) woman's sister-in-law
761 - * xay n a grid for storing (flat) tortillas
762 - * xay-nim n have many (relative and negative
* xay, i6 (Teo)
* xay-i6 (Re)
763 - * xay: xay-al aj2 thin
* xay:ub tv to get thin
764 - * xelah n side
765 - * xel tv to (ex)change
* xel.aw tv to pass
766 - * xel(h)mel n gulley, ditch
767 - * xel n cow
768 - * xel:il aj3 narrow, thin
769 - * xih-te2 n type of park
770 - * xil tv to suffocate, choke, strangle, drown
* xil:... 2ah bal whelping, cough
771 - * xim tv to throw (with sling)
* xihm:le-ib ~ xihmule-il n3 sling
772 - *xuln* tv the fall
773 - * - xip tv(cq) to drop, throw down
   *xirp, ci aj3(cq) hanging
774 - *xobel* tv grass
775 - * - xog tv to uproot, dig up
776 - *xol.ol(na) aj3 empty
777 - *xoliot(?) n a bird
778 - * - xol tv to dig
   *xol. ol aj3(cq) hanging
   *xol. ol aj3(cq) hanging
779 - *x(?)ol.yen 7oxw n 7th 70-day period of native
780 - *xol-il n3 head
   *xol-11ah n3 noo
   * (s-) xol bib(i)-il n3+13 surname
781 - *xon-te* (n) n hollow tree(trunk)
782 - *-xot tv to scratch
783 - *xox tv blackbird
784 - *xoxoč n corncrake
785 - *-xoy tv(cq) to tourist
   *(s-)xoy lex(-all) in outskirts
786 - *-xub tv to blow
787 - * - xuc tv to grind
   *xuc.un tv to grind
   *xuc.un lex n grinding
788 - *xulkab' m
    *(Pi) xukute tv feeding/washing trough
789 - *xul tv to prickle, sting
790 - *xunox- n1 one
   *xunox-n.xun.xe- n1 every one, each
   *xun-ol.b p next year, in a year
   *xun-al.ey p last year, 1st year ago
791 - *xun to get fat
792 - *xun to wiggle
*8-xun-xun as trembling, as a tree in the wind
793 - *yah-il n3 y (kinship) grandmother
794 - *yah: yah-il (Te) aj 2 (spicy) 'hot'
     *yah-il (Te) aj 2 (spicy) 'hot'
     *yah:ub iv to get 'hot'
795 - *yak tv to share
     *yak:ol n share
796 - *yak:ub iv to get drunk
     *x.yak:ub:el n(adj) drunkard
797 - *yak(a)l p to be in the act of ...ing
     *yahl iv (Tea) to fall down; (Teo) to go down
     *yahl:es tv to lower; to drop
798 - *yan aj other, different
     *yan:ix iv to change
799 - *yax: yax-il aj 2 green, blue
     *yax:rin n 16th 70-day period of nature
800 - *yx: yix-il aj 2 hard, tough, stiff
801 - *yx: yem (Te) tv to gather; call a soul
802 - *yubi.nl aj 3 narrow
803 - *yu:sub n knot in wood
804 - *yut n inside, interior
805 - *yu: n type of mushroom
§ 32  PT2 Affixes

Symbols Used

H. Class Symbols

Roots

P  positional verb
I  intransitive verb
T  transitive verb
N  noun
A  adjective

Stems

tv  transitive verb
iu  intransitive verb
av  affect verb (intransitive)
n  noun

vn  verbal noun
n(aj)  agent noun
num  numeral
nc  noun classifier
aj  adjective
p  particle
13. Morphophonemic and other symbols

A/B  The has the left-hand form, the has the right-hand one

~  allomorphs (either phonologically or morphologically conditioned)

X  a segment that is not cognate in all two dialects

V, V, V, V  any vowel

C, C  the first C of a root

?  a paradigmatically paired derivational set.
§ 32.1 Derivational Affixes

Most (or all) derivational affixes consist of the replacement of *O by *e in main and adjective roots.

Transitive and Intransitive Verbs

First position affixes

<table>
<thead>
<tr>
<th>Affix</th>
<th>Type</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>A01 *-pinnun</td>
<td>tv&lt;P</td>
<td>(non-productive?)</td>
</tr>
<tr>
<td>A02 *-pinnun</td>
<td>ive&lt;P</td>
<td>&quot;</td>
</tr>
<tr>
<td>A03 *-iinnun</td>
<td>tv&lt;P</td>
<td>&quot;</td>
</tr>
<tr>
<td>A04 *-pinnun</td>
<td>ive&lt;P</td>
<td>&quot;</td>
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<tr>
<td>A05 *-iinnun</td>
<td>tv&lt;P</td>
<td>&quot;</td>
</tr>
<tr>
<td>A06 *-iinnun</td>
<td>ive&lt;P</td>
<td>&quot;</td>
</tr>
<tr>
<td>A07 *-iinnun</td>
<td>tv&lt;P</td>
<td>&quot;</td>
</tr>
<tr>
<td>A08 *-iinnun</td>
<td>ive&lt;P</td>
<td>&quot;</td>
</tr>
<tr>
<td>A09 *-ea2an</td>
<td>tv&lt;P</td>
<td>&quot;</td>
</tr>
<tr>
<td>A10 *-ea2ax</td>
<td>ive&lt;P</td>
<td>&quot;</td>
</tr>
<tr>
<td>A11 *-h- -an</td>
<td>tv&lt;P</td>
<td>(productive)</td>
</tr>
<tr>
<td>A12 *-h- -ax</td>
<td>ive&lt;P</td>
<td>&quot;</td>
</tr>
<tr>
<td>A13 *-h-</td>
<td>ive&lt;T</td>
<td>(productive) (mediopassive)</td>
</tr>
<tr>
<td>A14 *-Vg</td>
<td>tv&lt;various root types</td>
<td>(non-productive)</td>
</tr>
<tr>
<td>A15 *-Vx</td>
<td>iv&lt;various root types</td>
<td>(non-productive)</td>
</tr>
</tbody>
</table>

(is fixed *h- occurs with certain roots)
A16 *-in  tv < i, n (productive)
A17 *-ix  iv < i, n (productive)
A18 *-lv  tv: various root types (non-productive)
A19 *-lvN  tv: various root types (non-productive)
A20 *-an  tv < T (productive)
A21 *-ax  iv < N (non-productive)
A22 *-ax-x  iv < A (non-productive)
A23 *-ex=aw  iv: certain roots (non-productive)
A24 *-el=aw  iv: certain roots (non-productive)
A25 *-Bax  iv < T (non-productive?) (absolutive)
A26 *-ou=aw  iv < T (non-productive?) (absolutive)
A27 *-zw=aw  iv < N, possible others (productive?) (absolutive)
A28 *-ub-w  iv < N, A (productive) (factive)
A29 *-ya(?)-put  tv < iv (non-stylistic) (non-productive?)
A30 *-Vy  tv < various root types (productive in Tes, non-productive in Te)
A31 *-Vyn>n  iv < n, T, P (productive?) (absolutive)

(with infixes sh- when recurring with P roots)

A32 *-aw  iv: various root types (productive in Tes with P roots, non-productive in Te)

Second position affixes

A33 *-tay  tv < i, n, T, tv (productive?)
A34 *-es-tes  tv < i, w, tv (productive) (causative)
Third position affixes

A35 *-ilaX > maX > laX tv, iv < tv, iv (productive) (repeated)
(X = CTe, /yl; NTs, STe, Tso /nl)

A36 *-tiklaX tv < tv (productive) (plural object)

Fourth position affixes

A37 *-awanawan iv < tv (productive) (habitual action; absolute)
A38 *-beynbeyn tv < tv (productive) (indirect/benefactive)

Fifth position affixes

A39 *-ek vn < tv, iv, av (productive)
A40 *-uled perfect passive participle (aj) < tv (productive)
A41 *-oblat passive iv < tv (productive)
A42 *-em perfect active participle (aj) < iv (productive)
<table>
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<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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<tbody>
<tr>
<td>01 - (p) (vin) (p)un</td>
<td>33 - (ti) (k) (le) (X)</td>
<td>34 - (et) (kes)</td>
<td>35 - (De) (y) (a) (b)</td>
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<td>02 - (p) (vin) (p)un</td>
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<td>03 - (p) (vin) (p)un</td>
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<td>04 - (k) (rin) (\tilde{\kappa})</td>
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<td>05 - (k) (rin) (\tilde{\kappa})</td>
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<td>08 - (k) (rin) (\tilde{\kappa})</td>
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<td>09 - (e) (\alpha) (\lambda)</td>
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</table>

298 (op. incut)
302

32.2 Inflectional Affixes

Sets occurring in more than one inflectional paradigm:

1. person markers

Set A: subj tr, possessor n (first allomorph occurs with /2/ initial stems replacing /2/ by the prefix; second allomorph occurs prefixed with stems beginning with all other consonants (not 2)

101 * knx- 1st person singular
102 * awna- 2d " "
103 * yns- 3d " "
104 * knx- ...-tk 1st " plural
105 * awna- ...-ik 2d " "
106 * yns- ...-ik 3d " "

Set B: subj sv (also subj tr; subj tv)

107 * -on 1st person singular
108 * -ot 2d " "
109 * - null 3d " "
110 * -otrk 1st " plural
111 * -eS/sS 2d " "
112 * -ik 3d " "

2. others

112 * -uk (subjunctive) occurs in all verbal paradigms
Noun inflexion.

non-possessed

13  *X- marks the unpossessed form of a class of nouns [*3a]
    including some animals, same plants, and men's
    personal names.

14  *X- marks a class of nouns [*3b] including some
    animals, some plants, and women's personal names.

15  *-ULZ (mainly -el-al) marks the unpossessed form of a class of nouns [*3a]
    including most names of body parts, articles of clothing, tools, and
    all kin terms.

16  *-IlK marks the unpossessed form of a class of nouns [*3b]
    referring to place where a thing abounds.

17  *-elK marks the plural of unpossessed nouns.

possessed

* Set A marks possessor of noun.

18  *-ULZ (mostly -el). marks the possessed form of a small class of nouns [*2b]
    including mostly names of body parts.

19  *-O-nab (conditions depend on phonemic change) marks plural of possessed nouns including some
    kin terms and some other role categories.

20  *-ataK, -ataK marks plural of possessed nouns including
    kin terms not occurring with *-el and most
    other nouns.
Upper verb inflexion

Vgl (mostly -ub) indicates that the 3d person possessor (*ywn*) is inanimate.

Adjective inflexion.

*Vph (-ub, -il, -all) conditions *g > *x morphophonemically.

Marks the attributive function of a subclass of adjectives.

Transitive verb inflexion

*Set A

Vex marks subject of tv

*Vex marks perfective

Vuk marks subjunctive

*Oh marks imperative singular

*Vuk marks (along with *-oh-) imperative plural.

Stative verb inflexion

*Uk marks subjunctive

*A marks imperative singular

*Uik marks (along with -an-) imperative plural

*Set B marks subject of sv

Lower verb inflexion

*Vgl (see -il, -all) occurs suffixed to a noun when the preceding word is *who?* or *what?* meaning "which?"
### Nouns

<table>
<thead>
<tr>
<th>Stem</th>
<th>-ve₁</th>
<th>-etik</th>
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</thead>
<tbody>
<tr>
<td>13</td>
<td></td>
<td></td>
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<tr>
<td>19</td>
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</tbody>
</table>

| Possessed

<table>
<thead>
<tr>
<th>Stem</th>
<th>-ve₂</th>
<th>19-obwab</th>
<th>04-tik</th>
<th>05-ik₁</th>
<th>06-ik₂</th>
<th>21-ve₃</th>
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</thead>
<tbody>
<tr>
<td>01</td>
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</table>

### Transitive Verbs

<table>
<thead>
<tr>
<th>Stem</th>
<th>25-enox</th>
<th>12-uk</th>
<th>09-tik</th>
<th>05-ik₁</th>
<th>06-ik₂</th>
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</thead>
<tbody>
<tr>
<td>01</td>
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</table>

### Stative Verbs

<table>
<thead>
<tr>
<th>Stem</th>
<th>12-uk</th>
<th>07-on</th>
<th>08-st</th>
<th>09-null</th>
<th>10-etik</th>
<th>11-el/0δ</th>
<th>06-uk₂</th>
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</table>
While many of these place names probably did not occur in P.Té, two of them show the correspondence Teal: Teo/Te which requires the formula $\ast$ which we have set up for P.Té. The names are surely pre-conquest, and formerly were probably widely known, but at the present time each name is in general used only in a limited number of towns surrounding the place to which the name applies.

This is probably due to the fact that the sphere of interaction of the inhabitants of a given town does not extend much beyond the adjacent towns. If a person from a given town knows of the existence of a distant Indian town he will quite likely know its name in Spanish form rather than in indigenous form.

In general then, these names should be considered as the pre-conquest forms of names of towns or places as used by the people who lived in those places. Place names are known from Te, Ox, Ag, Pi, SB, Teo, Ha, Zc, and Capanagua, etc. (Teo) as preserved in a ms. of ca. 1500 A.D.

* Certain names, such as that for San Cristóbal, are more widely known than others.
### 307

#### A. Places in the Peten Region

<table>
<thead>
<tr>
<th>No.</th>
<th>Place</th>
<th>Town</th>
</tr>
</thead>
<tbody>
<tr>
<td>P01</td>
<td>Balun Konon</td>
<td>Comitan</td>
</tr>
<tr>
<td>P02</td>
<td>?uchik</td>
<td>Copanagusta</td>
</tr>
<tr>
<td>P03</td>
<td>?uninikibal</td>
<td>Socotenango</td>
</tr>
<tr>
<td>P04</td>
<td>molol tu'an</td>
<td>Sayatan</td>
</tr>
<tr>
<td>P05</td>
<td>mukul Pakil</td>
<td>Pinola</td>
</tr>
<tr>
<td>P06</td>
<td>?ehtite?</td>
<td>Ajunctenango</td>
</tr>
<tr>
<td>P07</td>
<td>to bon tanal</td>
<td>Anuentango</td>
</tr>
<tr>
<td>P08</td>
<td>(X)imo?xal</td>
<td>Tepiicon</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Teo, hime?xal, Teo Eno?xal)</td>
</tr>
<tr>
<td>P09</td>
<td>?os tochik</td>
<td>Oxchuc</td>
</tr>
<tr>
<td>P10</td>
<td>kobeltot(X)</td>
<td>Tegenapa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Ox, cum habelto, Zi habelto, Cop xobeltan)</td>
</tr>
<tr>
<td>P11</td>
<td>Kan Kuhik</td>
<td>Cancun</td>
</tr>
<tr>
<td>P12</td>
<td>tenan</td>
<td>Tenango</td>
</tr>
<tr>
<td>P13</td>
<td>taiku nanuk</td>
<td>Guariquepec</td>
</tr>
<tr>
<td>P14</td>
<td>?sibak h3?</td>
<td>Sivana</td>
</tr>
<tr>
<td>P15</td>
<td>hakanaxam</td>
<td>Bichajal</td>
</tr>
<tr>
<td>P16</td>
<td>?e First.</td>
<td>Chalan</td>
</tr>
<tr>
<td>P17</td>
<td>yaxalcum</td>
<td>Yajallon</td>
</tr>
</tbody>
</table>
B. Places in the Totolapu Region.

P18. **Yaxché
San Bartolo

P19. **Natixolom
Totolapu

P20. **Unal.wit
Balamitz

P21. **K'ax.nah
Hustán

P22. **Sox.ileb
Zinacantán

P23. **Ni?b'ak
Itzupá

P24. **Cham.ho?
Chamula

P25. **Sonal.ho?
S. Pedro Chamalá (sometimes transliterated as Sonal.ho?)

P26. **Milkistontik
S. Miguel Hidalgo

P27. **Sujal.ho?
Sujial (sometimes transliterated as Sujal.ho?)

P28. **Boohoil
Bachil

P29. **China.kobel
Simojovel

C. Places outside the Tec-Tea Region.

P30. **Kobel
San Cristóbal

P31. **Sakton
Chiapa (Cpx. Zactan, Chm. soxton, soxton)
<table>
<thead>
<tr>
<th>K01</th>
<th>*ba'ak'il</th>
<th>*EBr</th>
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</thead>
<tbody>
<tr>
<td>K02</td>
<td>*zibnel</td>
<td>*ESl, FaSi</td>
</tr>
<tr>
<td>K03</td>
<td>*uli</td>
<td>ESl, FaSi</td>
</tr>
<tr>
<td>K04</td>
<td>*z'il-hiirm</td>
<td>*yBr, o Ysb</td>
</tr>
<tr>
<td>K05</td>
<td>*z'il-lel</td>
<td>*Ysi</td>
</tr>
<tr>
<td>K06</td>
<td>*bol</td>
<td>*SiHu (*wBr)</td>
</tr>
<tr>
<td>K08</td>
<td>*xaway</td>
<td>o *Br, *wHu, *HuSi</td>
</tr>
<tr>
<td>K09</td>
<td>*ni'am</td>
<td>*Ch</td>
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<tr>
<td>K10</td>
<td>*tol</td>
<td>o *Ch</td>
</tr>
<tr>
<td>K11</td>
<td>*tot</td>
<td>Fa</td>
</tr>
<tr>
<td>K12</td>
<td>*me?</td>
<td>Mo</td>
</tr>
<tr>
<td>K13</td>
<td>*tot.xun</td>
<td>FaBr, MoSiHu</td>
</tr>
<tr>
<td>K14</td>
<td>*me? . xun</td>
<td>MoSi, FaBrCu</td>
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<tr>
<td>K15</td>
<td>*z'el (Fee)</td>
<td>MoBr</td>
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<tr>
<td>K16</td>
<td>*'el</td>
<td>MoBrWi</td>
</tr>
<tr>
<td>K17</td>
<td>*z'el.xun</td>
<td>FaSCh, MoBrCh, xSCh, oBrCh</td>
</tr>
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<td>K18</td>
<td>*ni'em.xun</td>
<td>*BrCh</td>
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<tr>
<td>K18</td>
<td>*z'il.xun</td>
<td>o SCh</td>
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<tr>
<td>K20</td>
<td>*ni?</td>
<td>DaHu</td>
</tr>
<tr>
<td>K22</td>
<td>*mi'gal</td>
<td>*WiFa, *HuFa</td>
</tr>
<tr>
<td>K21</td>
<td>*z'alib</td>
<td>SolWi</td>
</tr>
<tr>
<td>K23</td>
<td>*mom</td>
<td>o ChCh, FaEn, NaFa</td>
</tr>
<tr>
<td>K24</td>
<td>*z'al</td>
<td>o ChCh</td>
</tr>
</tbody>
</table>

FaBrCh, MoSCh (whichver is appropriate)
§ 34  kin Terms

It has been possible to reconstruct the following kinship terms
with probable ranges, meaning. These forms are also listed in
the comparative dictionary. All these terms are widespread in Mayan
with the exception of K01 ≠ Banket, K09 ≠ Kdun, K12 ≠ me?, K25 ryah.

| K01 | *Banakel | xEBr       | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K02 | *y had | xEBr       | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K03 | *uay | ESI, Fa Si   | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K04 | *zipul | xYBr, o YsB | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K05 | *tisled | xYSi       | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K06 | *bol | oSiHu (xWiBr) | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K07 | *muk | oBrWi, oSiHu (xHuBr), xWiSi | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K08 | *xawaan | oBrWi, oHuSi | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K09 | *kišon | xCh         | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K10 | *t6ol | oCh         | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K11 | *tōt | Fa          | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K12 | *me? | Mo          | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K13 | *tōtxun | FaBr, MoSiHu | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K14 | *me?xun | MoSi, FaBrWi | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K15 | *zišan (tig) | MoBr. | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K16 | *ziš | MoBrWi     | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K17 | *tšok | FaSiCh, MoBrCh, xSiCh | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K18 | *nišonxun | xBrCh | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K19 | *t6olxun | oSiCh | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K20 | *ni | DaHu | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K21 | *nišal | xWiFa, oHuFa | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K22 | *zišal | SoWi | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K23 | *mož | FaCh, FaFa, MoFa | Fa-BrCh, MoSiCh (whichever is appropriate) |
| K24 | *t6e | oChCh | Fa-BrCh, MoSiCh (whichever is appropriate) |

quer
K2S  kyal  Fomo, Momo.

No terms could be reconstructed for kwilho, oHuhu, Hu, Wi.

Thanks are due to Brent Berlin, with whom I discussed the structure of the system and ranges of meaning of the terms.