HANDBOOK OF PHONOLOGICAL DATA
FROM A SAMPLE OF THE WORLD'S LANGUAGES

A Report of the Stanford Phonology Archive

Compiled and edited by

John H. Crothers
James P. Lorentz
Donald A. Sherman
Marilyn M. Vihman

	865 Mazahua	865 Mazahua	865 Mazahua
865	01 p	24 s-ejective	54 e-nasalized
865	02 p-aspirated	25 z	55 epsilon
865	03 b-implosive [b]60	26 s-hacek01	56 schwa02
865	04 t	27 z-hacek [d/z-hacek]61 [r-trill]61 (free)	57 schwa-nasalized02 03
865	05 t-aspirated	28 m [eng]30 62	58 a
865	06 t-ejective	29 n30	59 a-nasalized03
865	07 d-implosive [d]60	30 n-palatal01 30	60 u
865	08 k	32 l	61 u-nasalized
865	09 k-aspirated	33 r01	62 o
865	10 k-labialized	34 glottal stop	63 o-nasalized
865	11 k-aspirated-labialized	35 h	64 o-open
865	12 k-ejective	36 m-voiceless31	65 caret02
865	13 k-ejective-labialized	37 m-preglottalized32	66 yod
865	14 g	38 n-voiceless31	67 w
865	15 g-labialized	39 n-palatal-voiceless31	68 yod-voiceless31
865	16 t/s	40 n-palatal-preglottalized32	69 yod-preglottalized32
865	17 t/s-aspirated		70 w-voiceless31
865	18 t/s-ejective		71 w-preglottalized32
865	19 t/s-hacek01		
865	20 t/s-hacek-aspirated01	51 i	81 high
865	21 t/s-hacek-ejective01	52 i-nasalized	82 low [low-rising]33 (free)
865	22 s	53 e	
865	23 s-aspirated		83 high-falling

865 $a Mazahua $d Oto-Manguean $e SW Mexico (Michoacan) $f 80,000 $g Merritt Ruhlen $g Jim Lorentz (review) $g John Crothers (editor)

865 $a Spotts, Hazel $b 1953 $c Vowel Harmony and Consonant Sequences in Mazahua (Otomi) $d IJAL 19.253-258 $q informants $r 9 years (field trips) $s There is no description of the segments of Mazahua. A list of symbols of the phonemes of the language is given (p.254) and several allophone rules are stated in footnotes.

865 $a Pike, Eunice V. $b 1953 $c Tonemic-intonemic correlation in Mazahua (Otomi) $d IJAL 17.37-41

865 $a **INTONATION** $A Intonation is manifested only on the last syllable of words. Low pitch indicates statements, high pitch ("considerably higher...than the high toneme") indicates a question. Mid pitch (roughly = high toneme) indicates continuation. Surprise is indicated by mid rising to high, disgust or anger by mid falling to low. High falling to low with length and stress is used for calling. (Pike, p.38f)

865 $a **MORPHEME STRUCTURE** $A (C)V $A "Roots are mono-syllabic." (p.254) Syllable initial consonant clusters seem always to be the result of morpheme combination, although this is not stated by Spotts. It would appear that many stems have disyllabic form; the vowel of the second syllable is harmonic, but the analysis of the second syllable as a separate "stem formative" may be

rather arbitrary in many cases. [JHC]

865 $a **MORPHOLOGICAL STRUCTURE OF WORDS** $A "Phonological words consist morphologically of an optional proclitic followed by a simple or compound stem which in turn is sometimes followed by an infix and/or an enclitic." (p.253) Consonant clusters may arise at any of the morpheme boundaries. Vowel loss with consonant clustering occurs between two elements of a compound and between a stem and a suffix. There are a number of consonant assimilations, only some of which are mentioned by Spotts. [JHC]

865 $a **STRESS** $A "Stress, accompanied by a nonphonemic lengthening of the vowel, occurs on the first syllable of the stem." Up to two monosyllabic proclitics may precede the stem. (Pike, p.38)

865 $a **SYLLABLE** $A (C)(C)V(C) $A No syllable canon is given by Spotts. The above formula is deduced from examples. The formula holds true only if aspiration, glottalization, and voicelessness of sonorants are treated as features of unitary consonants, rather than as consonant clusters. Under this analysis the only syllable internal consonant clusters consist of nasal plus obstruent. [JHC]

865 $a **TONE** $A domain of tone: syllable $A Every syllable of a word bears a toneme, except the last, which is neutral from the viewpoint of lexical tone. Its pitch characteristics are determined by the intonation system. If a root becomes word-final (e.g. as second element of a compound) it loses its lexical tone. When an enclitic is added after a non-compound stem the stem-final syllable, lexically neutral, acquires /high/ tone, unless it is of the form glottal + V, in which case it is dropped. When an enclitic is added after a compound stem, the last stem syllable becomes /low/ after a /high/ tone, otherwise /high/. (Pike, p.38ff)

865 $a **VOWEL HARMONY** $A "Vowel harmony is not extensive in Mazahua but that which occurs is determined by the vowel of the root and affects the vowel of the stem formative or objective affix following it." Cf. p.254 for details.

865 01 $A No exact point of articulation is specified for /t/s-hacek/ or /s-hacek/ or their aspirated and glottalized counterparts, nor for /n-palatal/. /r/ is not described.

865 02 $A The nine oral vowels form a simple three by three system. /schwa/ is the highest of the unrounded central (or back?) vowels. Given that there is no phonetic description, /schwa/ might be [i-bar] phonetically, and /caret/ might be [schwa]. [JHC]

865 03 $A There are six nasal vowels. /a-nasalized/ is the lower of the central (unrounded) two. Given the absence of phonetic description, and the fact that the other two "low" nasal vowels are /e-nasalized/ and /o-nasalized/, this vowel may be phonetically [schwa-nasalized], i.e. mid rather than low. [JHC]

865 30 $A [n], [n-palatal], and [eng] contrast with each other only before velar stops. Cf. p.257-8. The source considers [eng] to be an allophone of /m/ since they never contrast. In fact, [eng] before velar stops alternates morphophonemically with both /b-implosive/ and /m/ in full stems. This is apparently the only source of [eng]. (p.258)

865 31 $A The voiceless nasals and glides are considered clusters by Spotts, but they satisfy conditions for interpretation as a unit in the Archive, in that they occur in root initial position, and the putative initial /h/ of the cluster would occur only before (voiceless) sonorants as first element in clusters. [JHC]

865 32 $A The preglottalized nasals and glides are considered clusters by Spotts, but they occur in root initial position, and the putative initial element /glottal stop/ would occur as cluster initial consonant only before sonorants. [JHC]

865 33 $A /low/ may become [low-rising], "a quick glide starting at low and going in the direction of high" in slow speech. (Pike, p.38)

865 60 $A The implosive stops are realized as plain voiced stops after nasals. (p.254)

865 61 $A /z-hacek/ is affricated after nasals, and it varies freely with [r-trill] word-initially. (p.254)

865 62 $A /m/ is realized as [eng] before velar stops. (p.258)