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REDUCTION RATIO: _____

PROTO - JACALTEC - IXIL

by

Raymond L. Elliott

MICROFILM COLLECTION
of
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O = not cognate!

PROTO-JACALTEC-IXIL

Ray Elliott
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Jacalteco is a Mayan language spoken in northwestern Huehuetenango Department in Guatemala. Ixil is a Mayan language spoken in northern Quiché Department in Guatemala. The present paper is a preliminary attempt to reconstruct a hypothetical Proto-Jacalteco-Ixil (PJI) such that, supposing there was a time when Jacalteco and Ixil split from a parent language, PJI would represent that parent. Historical reconstruction within the Mayan family informs us that Ixil split from the Mamoid branch of Mayan at an earlier stage than did Jacalteco, so that strictly speaking there is no historical PJI. The present reconstruction provides a formula representing a relationship between Jacalteco and Ixil which is of interest in conjunction with other formulas representing relationships between other members of the Mayan family.

In the citations of data for this paper, pairs of reflexes are given in the order Jacalteco-Ixil. Reconstructions are marked with a prefixed *. Items from single languages will be identified by J for Jacalteco and I for Ixil.

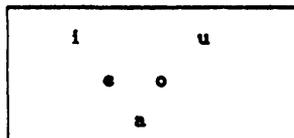
JACALTEC PHONEMES

Present-day Jacalteco phonemes are as follows:

p	t	ʃ	č	č̃	k	q	ʔ
p̃	t̃	ʃ̃	č̃	č̃̃	k̃	q̃	
		s	š	š̃		x	h
m	n				ŋ		
w			y				

l

r



IXIL PHONEMES

Present-day Ixil phonemes are as follows:

p	t	ʃ	č	č̣	k	q	ʔ
p̣	ṭ	ʃ̣	č̣	č̣̣	ḳ	q̣	
		s	š	ṣ̌		x	
b	d				g		
f							
m	n						
v			y				
	l						
	r						

i i-		u u·
e e-		o o·
a a·		

Ixil phonemes /b d g f/ occur principally in words of Spanish origin, although submembers of these phonemes now fluctuate with submembers of similar Ixil phonemes in words of Ixil origin. Presumably a similar thing occurs in Jacaltec, but the present corpus does not contain Spanish loan words.

There is a phonemic contrast between long and short vowels in Ixil; none of the Jacaltec vowels were marked for length.

Jacaltec evidences a phonemic contrast between /x/ and /h/, while Ixil does not. Jacaltec evidences a phonemic contrast between /n/ and /ɲ/, while Ixil does not.

Apart from these considerations, there is a symbol-for-symbol correspondence between the present-day alphabets for the two languages.

PJI LABIAL SERIES

*p PHIPIPI p-/p-

- | | | |
|----------|-----|-------------------------|
| 79. pop | pop | straw mat |
| 100. pax | pax | to fold, to bend double |
| 110. pom | pom | incense |

114.	poho	po-	pus
125.	palaŋ	pala	forehead
180.	paq	pa [?] k	lying face up
203.	pič	poč	to wrap up
206.	poxxx	poxo	dust
272.	pat	pač	house
275.	pa [?] pa [?]	po [?] pa [?]	beam of wood
277.	peya [?]	pe [?]	corral
278.	pepi [?] l	pe [?]	fence/fenced-in plot
283.	pia	pim	thick (solids)
302.	pet	pet	soon/but

Medial -p/-p-

69.	qopo	qopo	unmarried, unmated
-----	------	------	--------------------

Final -p/-p

9.	map	map	<u>coyol</u> (pala fruit)
43.	sip	sip	tick (insect)
79.	pop	pop	straw mat

The data include one correspondence p-/ʔ- (145) and one correspondence p-/y- (156). These pairs may or may not prove to be cognates; at present the data are insufficient to demonstrate systematic correspondences.

*p Initial p-/p-

6.	pa [?] xal	pa [?] la [?] x	corn cob
29.	pa [?] q	pa [?] q	(fruit) pit, (fruit) stone
65.	pa [?] lan	pa [?] lan	cougar
187.	pe [?] l	pe [?] n	to walk/to go
188.	pe [?]	pe [?] y	road
252.	pi [?] t	pi [?] ŋ	song
262.	po [?] ki [?]	po [?] pa [?] l	hat

Medial -p¹/-p²-

37.	lop ¹ al	lo ¹ pe ² l	fruit
107.	ʔup ¹ ulte ² ʔ	xup ² le ² ʔ	blowgun
291.	ka ² pe ²	ka ¹ li	two/second
298.	ʔa ² pa ² l	ʔa ² pa ¹ l	night

Final -p¹/-p²

26.	qap ¹	qap ²	hand
38.	ʔi ² ka ² p	ʔi ¹ ka ² p	scorpion
51.	ka ² p	ka ¹ p	honey/bee
(76.)	ŋup ²	si ¹ p	smoke
85.	ʃup ²	ʃup ¹	to suck
144.	ʃup ²	ʃup ¹	saliva
167.	ʃip ¹	ʃip ²	to write
235.	ʔa ¹ lip ²	ʔa ² lip ¹	daughter-in-law

The data include one each of the following correspondences: -p²/-p¹ (148), p¹-/w- (86), -p²/-n (166), -p²/x (274), -²/-p¹ (112), -k¹/-p² (262), -l/-p² (108).

More data may prove or disprove the possibility of valid correspondence for these pairs.

*w Initial w-/w-

124.	wi ²	wi ¹	head
149.	way	wat	to sleep
172.	wayke	wə ² ku	to dream
208.	wi ²	wi ¹	mountain

Medial -w-/w-

No examples in this corpus with -w-/w- for both languages, but there are examples (one each) of -w-/w (3) and -w/-w (10).

Final -w/-w

102.	cew	ce ² w	cold
------	-----	-------------------	------

115.	šav	ša'v	to vomit
246.	šiv	šo'v	to be afraid
293.	hav	ha'v	twice/second

The data are inconclusive for the following correspondences, for each of which one pair of words is included: -v/-β (63), -v/-ʎ- (263), -h/-w- (292), -m/-w- (39), p-/w- (86), s-/w- (8), -s/-w (111).

*n Initial m-/n-

9.	nap	nnp	<u>coyol</u> (palm fruit)
53.	molaq̃	močoq̃	tadpole
120.	nek	naš	left (hand)
132.	noč	nelek̃	rib
157.	nux	nux	to bury
226.	noy	noy	cloud, fog/dusk
236.	nan	nan	father/ancestor
260.	naš	naš	to fool around/to deceive

Medial -m/-n-

104.	šima	šimay	gourd dipper
225.	čumel	čumil	star
233.	ʔičamil	ʔičumel	her husband

Final -m/-n

7.	ʔišin	ʔiši'na	shelled corn
12.	kum	kum	squash
18.	čim	čim	thatch
34.	kučam	kučam	cut trunk/trunk
41.	šin	šin	spider
65.	ʔalam	ʔalam	cougar
70.	čitan	čičam	pig

92.	ʔaʔam	ʔaʔam	salt
110.	pon	pon	incense
123.	ʔum	ʔum	skin
155.	kam	kam	to die
171.	čum	čum	to understand/to think, to be sad
236.	man	man	father/ancestor
250.	ʔelqom	ʔelqom	thief
267.	čem	čem	to weave
283.	pin	pin	thick (solids)

The data include two sets of words exhibiting the correspondence -m/-x (168, 196), and one each of the following: -m/-n (237), -m/-w (39), -n/-m (59). Additional data may or may not provide a basis for reconstructions.

PJI ALVECLAR SERIES

The present corpus contains only two cognate pairs (135 and 302) evidencing the correspondence t/t (one each initial and final) and two cognate pairs (261 and 73) for t̃/t̃ (also one each initial and final), which renders suspect the reconstruction of *t > t/t or of *t̃ > t̃/t̃. It is possible that further data will provide evidence for these reconstructions; however the following data for correspondences ʃ/ʃ and t/ʃ allow for another possibility:

ʃ/ʃ Initial ʃ-/ʃ-

10.	ʃoxoy	ʃoxnoʔy	caterpillar
78.	ʃok̃	ʃok̃	to cut
103.	ʃu	ʃu.	gourd (water-carrying)
104.	ʃim̃	ʃim̃y	gourd dipper
144.	ʃup̃	ʃup̃	saliva
167.	ʃip̃	ʃip̃	to write

Medial ʃ-/ʃ-

58.	ʔah ¹ foq	ʔafo ²	male turkey
275.	paʔap ¹	poʔon	beam of wood

Final -t/-ʔ

208.	wiʔ	wiʔ	mountain
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t/ʔ Initial t-/ʔ-

22.	tah	ʔa.	pine
25.	te ²	ʔe ²	tree
75.	taʔ	ʔa ² ax	ashes
97.	tah	ʔa ¹	cooked
119.	ti ²	ʔi ²	mouth
216.	tax	ʔax	dry
239.	ta ²	ʔa ²	to answer
286.	tat	ʔaʔ	thick (liquid)

Medial -t/-ʔ-

20.	ʔitah	ʔiʔax	herb
271.	ʔatut	ʔoʔoʔ	house

Final -t/-ʔ

8.	sat	waʔ	face
252.	pit	piʔ	song
271.	ʔatut	ʔoʔoʔ	house
286.	tat	ʔaʔ	thick (liquid)

With the exception of sets 275, 271 and 252, we can set up the statement

*ʔ > $\left[\begin{array}{l} t/ʔ \text{ in env. } _ \text{ [low vowel]} \\ ʔ/ʔ \text{ elsewhere} \end{array} \right]$

The exceptions might be explained by postulating either that they resulted from changes at an historical period after PJI > J/I, or that they could be the result of borrowing from a language or languages which had influence upon J or I at some time

after the split. A further possibility is that further data may demonstrate convincing reasons for separate reconstructions to explain t/t' and t/t' . On the basis of the present corpus, however, the solution proposed above seems to be justified at least as a hypothesis pending further investigation.

This hypothesis would seem to fit the data for the cognate sets exhibiting the t'/t' correspondence t'/t' , with the exceptions 74, 92 and 274, which presumably are subject to the same explanation as for t/t' above. The present corpus contains no correspondences t/t' , which is not surprising given the statistical infrequency of J t' . Sets exhibiting the t'/t' correspondence are :

Initial t'/t' -

15.	$\text{t}'\text{inte}^?$	$\text{t}'\text{in}$	yuca
57.	$\text{t}'\text{ikin}$	$\text{t}'\text{ikin}$	partridge/bird
59.	$\text{t}'\text{unun}$	$\text{t}'\text{u}^?\text{m}$	hummingbird
74.	$\text{t}'\text{a}^?$	$\text{t}'\text{e}^?$	to burn (intr)/to burn (tr)
85.	$\text{t}'\text{up}^?$	$\text{t}'\text{up}$	to suck
123.	$\text{t}'\text{um}$	$\text{t}'\text{um}$	skin
222.	$\text{t}'\text{il}$	$\text{t}'\text{il}$	dirt
268.	$\text{t}'\text{is}$	$\text{t}'\text{is}$	to sew

Medial t'/t' -

92.	$\text{t}'\text{a}^?\text{am}$	$\text{t}'\text{a}^?\text{am}$	salt
145.	$\text{t}'\text{ip}^?\text{a}$	$\text{t}'\text{ip}^?$	to be born
274.	$\text{t}'\text{ip}^?\text{a}$	$\text{t}'\text{ax}$	wall

Final t'/t'

156.	$\text{t}'\text{ip}^?$	$\text{t}'\text{ax}$	to kill
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The data include the following correspondences (some of which may be resolved by corrections in the data): t'/t' (282), t'/t' (198), t'/t' (77), t'/t' (122), t'/t' (166, 303), t'/t' (241), t'/t' (233), t'/t' (207), t'/t' (172), t'/t' (241, 281), t'/t' (282), t'/t' (177), t'/t' (169), t'/t' (50, 62), t'/t' (30), t'/t' (241),

t-/s- (230), -t-/t- (138), -k/-t (198), t-/č- (199), -t-/č- (138).

*s Initial s-/s-

28.	sačli	sačli	squash seed
43.	sip	sip	tick (insect)
46.	sanik	sanič	ant
80.	si [?]	si [?]	firewood
98.	sam	semič	griddle
163.	sax	sac	white
195.	sik [?]	sik [?]	to pick up
259.	sačci	sa-č	to play

Medial -s/-s-

23.	č ³ isis	č ³ isis	cypress
55.	?usnix	?qu [?] s	buzzard
281.	?ispal	č ³ ispal	broom

Final -s/-s

14.	?is	?is	potato
23.	č ³ isis	č ³ isis	cypress
48.	?us	?us	mosquito
268.	?is	?is	to sew

Included in the data, and subject to further study, are the following correspondences: s-/č- (170), s-/š- (217), s-w- (8), s-y- (253), -l/-s (261), g-/s- (76), -š/-s- (138), t-/s- (230).

*n Initial n-/n-

Medial 15. ?inte[?]
-n/-n-

46.	sanik	sanič	ant
111.	kuniam	akun	witchdoctor

39.	nam	nawi [?]	butterfly
287.	nobmax	no-max	full
289.	nahat	na-č	distant

228.	čencew	čunce'w	frost
232.	ʔanap	ʔanap	son of female sibling/sister
237.	ʔišnam	nan	lady
238.	wanax	nax	man
287.	nohmax	no·nax	full

Final -n/-n

47.	šen	ša'n	gnat/mosquito
57.	ʔikin	ʔikin	partridge/bird
118.	čikin	šikin	ear
136.	qon	kon	brain
160.	qan	qan	yellow
295.	hun	xun	one/(combining form of)one

Included in the data, and subject to further study, are the following correspondences: -n/-ŋ (49), -n/-č (211), -n/-l (134), -n/-m (59), -ŋ/-n (95), -ŋ/-n- (40), -h/-n (214), h/-n- (244), -l/-n (187), -m/-n (237), -n/-n (135, 177), -p/-n (166), -x/-n (174).

*1 Initial 1-/1-

36.	lo	loʔ	to eat/to eat fruit
73.	lit	lit	spark/lightening
204.	lak	lak	to stick (something) together
247.	loq	loq	to buy
292.	lahəŋ	lawal	ten

Medial -1-/1-

65.	palam	ʔalam	cougar
125.	paləŋ	pala	forehead
235.	ʔalip	ʔalip	daughter-in-law
250.	ʔelqom	ʔelqom	thief

265.	kolqap̃	ʔiskolqap̃	ring
300.	hekal	qalen	tomorrow

Final -1/-1

5.	pal	xal	ear of dry corn
27.	qol	qol	turpentine
28.	sačil	sačil	squash seed
89.	ʔal	ʔaʔl	liquid
127.	kuł	kuʔl	belly/belly (seat of emotions)
131.	šil	šlʔl	hair
158.	ʔil	ʔil	to see
182.	čal	čal	at the side of
184.	hul	ʔul	to come
186.	ʔel	ʔel	to go out
190.	ʔal	ʔal	heavy
197.	kal	kal	to tie
205.	hol	xul	hole
222.	ʃil	ʃil	dirt
231.	kaɦol	kaol	son of male
298.	ʔaƙpal	ʔaƙpal	night

Included in the data, and subject to further study, are the following correspondences: -1/-ʃ (266), -1/-č- (53), 1-/š- (175), -1/-k̃ (143), -1/-n (187), -1/-p̃- (108), -1/-s (261), -č̃/-1- (132), -š̃̃/-1 (154), -h/-1 (137), -n/-1 (134), -ŋ/-1 (292), -r/-1 (229).

PJI PALATALIZED SERIES

The corpus includes sets exhibiting correspondences both of č̃/č and of t/č̃. There is a temptation to set up, on the analogy of ʃ/ʃ and t/ʃ, the statement

*č > $\left[\begin{array}{l} t/\check{c} \text{ en env. } _\# \\ \check{c}/\check{c} \text{ elsewhere} \end{array} \right]$

because of the paucity of examples of both t-/č- and of -t-/č-. However, this would force us to consider t-/č- in 249 and -t-/č- in 70 as later developments or borrowings and to include -č/-č in 16, 113 and 203 in this same speculation. Another possibility would be to set up a statement

*č > $\left[\begin{array}{l} -t/-\check{c} \text{ in env. [low vowel]} \\ \check{c}/\check{c} \text{ elsewhere} \end{array} \right]$

with 253 and 113 as exceptions to this statement. A third possibility is that further data might establish the necessity for setting up separate proto phonemes *ty for č/č and t/č, such as, for example, *č > č/č and *ty > t/č; The undesirability of setting up two palatalized phonemes where one might prove to be sufficient argues against the latter course, but if we do not we are left with more exceptions which must be explained on other grounds. Following are the data from the present corpus for č/č and t/č:

*č Initial č-/č-

71. če	če	horse/dear
82. čí ¹	čí ¹	dog
90. či	či	to eat meat
91. čipe ¹	čipe ¹	meat
102. čew	čew ¹	cold
240. čex	čax	to send
264. čaq	čik	skirt
267. čea	čea	to weave

Medial -č-/č-

28. sačil	sačil	squash seed
34. kučam	kučam	cut trunk/trunk

50.	cu <u>č</u> u	qan <u>č</u> u <u>č</u> u	wasp
259.	sax <u>č</u> i	sa <u>č</u>	to play
<u>Final</u> - <u>č</u> / <u>č</u> -			
16.	<u>č</u> i <u>č</u>	<u>č</u> i <u>č</u>	chile
113.	qax <u>č</u>	hax <u>č</u>	itoh
203.	pi <u>č</u>	po <u>č</u>	to wrap up

Included in the data, and subject to correction or to further study, are the following correspondences: -č/č- (233), -č/č- (96), č/č- (148), -č/č- (276), č/č- (215), č/k- (143), č/q- (134), -č/x- (189), č/č- (198), č/č- (23), č/č- (31), -k/č- (230), -k/č (146), -1/č- (53), -s/č- (220), š/č- (242), y/č- (94, 122, 196), c-/c- (70, 142).

*ty Initial t/č-

249. toh čo to pay

Medial -t/č-

70. čitam čičam pig

Final -t/č-

253. sot yoč rattle

272. pat pač hut

279. čat čač bed

289. nahat na-č distant

The glottalized counterparts are not numerous in the present data:

*č Initial č/č-

10. čiv čewč snona

18. čim čim thatch

211. čen čč metal

229. čer ččl rainbow

The present corpus contains no examples of $\overset{3}{c}/\overset{3}{c}$ - or of $\overset{2}{c}/\overset{3}{c}$.

Included in the data, and subject to correction or to further study, are the following correspondences: $\overset{3}{c}/\overset{3}{c}$ - (50, 62), $\overset{3}{c}/\overset{3}{c}$ - (23), $\overset{3}{c}/\overset{3}{c}$ - (228), $\overset{7}{c}/\overset{3}{c}$ - (214, 281), $\overset{3}{c}/\overset{3}{c}$ - (148), $\overset{3}{c}/\overset{3}{c}$ - (96), $\overset{3}{c}/\overset{3}{c}$ - (146), $\overset{2}{k}/\overset{3}{c}$ - (61), $\overset{3}{c}/\overset{3}{c}$ - (245, 279), $\overset{3}{c}/\overset{3}{c}$ - (211), $\overset{2}{q}/\overset{3}{c}$ - (284), $\overset{2}{t}/\overset{3}{c}$ - (199).

* $\overset{2}{t}y$ Initial $\overset{2}{t}/\overset{3}{c}$ -

199. $\overset{2}{t}u\overset{2}{j}$ $\overset{3}{c}u\overset{2}{j}$ to hang

* $\overset{3}{s}$ The only correspondence $\overset{3}{s}/\overset{3}{s}$ in the present corpus is 317. Statistically $\overset{3}{s}$ occurs with relative infrequency in both J and I and, in I at least, occurs most often in words of Spanish origin, where it is an Ixil reflex of Spanish s. This combination of infrequent occurrence in the morphemes of the language as a whole and relatively frequent occurrence in words of Spanish origin as compared with its occurrence in native words renders the reconstruction of * $\overset{3}{s}$ suspect, especially in view of the fact that no other $\overset{3}{s}$ occurs in the Ixil data, and that for the total of four J $\overset{3}{s}$ reflexes in the data, three of them correspond to I reflexes $\overset{3}{c}$ (220, 242) and s (138). More data are called for before any confidence can be felt in the reconstruction of * $\overset{3}{s}$.

* $\overset{2}{y}$ Initial $y/\overset{2}{y}$ -

112. $y\overset{2}{a}?$ $y\overset{2}{a}?$ weak, sick
 174. $y\overset{2}{ax}$ $y\overset{2}{ax}$ to make mistake
 202. $y\overset{2}{o}q$ $y\overset{2}{o}q$ to notch/notched log

Final $-y/\overset{2}{y}$ -

40. $\overset{2}{c}o\overset{2}{y}$ $\overset{2}{c}o\overset{2}{y}?$ caterpillar
 52. $k\overset{2}{ay}$ $\overset{2}{c}ay$ fish
 226. $m\overset{2}{oy}$ $m\overset{2}{oy}$ cloud, fog/dusk

The present corpus contains no examples of $-y/\overset{2}{y}$ -.

Included in the data, but subject to correction or to further study, are the following correspondences: -y/-ɸ (170), -y/-ɸ- (172), y-/č- (94, 122, 196), -y/-² (277) y-/k- (81), -y/-t (149, 193, 313), -y/-x (169, -ɸ/-ɣ (104), 188, 218), ɸ-/y- (241), h-/y- (299), -h-/y (83), -h-/y (88), -ɣ/-y (152, 199, 253), -a-/y- (30), -ŋ/-y- (248), p-/y- (156), ɣ-/y- (276).

PJI RETROFLEXED SERIES

*č Initial č-/č-

95. čo	čun	lime
109. čah	ča	sacred
140. čučup ²	čok ²	to hiccup
147. čuču	čuč	to nurse/mother
171. čum	čum	to understand/to think, to be sad
182. čal	čal	to one side of
263. čow	čow ² či ² ?	blanket

Final -č/-č

1. hač	xač	harvest/separate
54. šoč	šuč	snail

The present corpus has no examples of -č/-č-.

Included in the data, and subject to correction or to further study, are the following correspondences: č-/č- (70, 142), č-/č- (146), č-/č- (221), -č-/č- (146), č-/k- (248), -č/-l- (132), -č/-l- (154), č-/ɸ- (118), ɸ-/č- (77), -č-/č (276), č-/č- (228), s-/č- (170), č-/č- (266), -č-/č (202), k-/č- (52), l-/č- (175).

*č Initial č-/č-

63. čow	čow ²	mouse
67. či ² ?	či ² ?	dog
87. ča	ča ² ?	to chew/to eat a meal

225. ²çunel ²çunil star

The present corpus has no examples of ²-ç/-ç² or of ²-ç̣/-ç̣².

Included in the data, and subject to correction or further study are the following correspondences: ²-ç̣/-ç̣² (207), ²ç̣̣/-ç̣̣² (31), ²ç̣̣̣/-ç̣̣̣² (245, 279), ²ç̣̣̣̣/-ç̣̣̣̣² (266), ²-ç̣̣̣̣̣/-ç̣̣̣̣̣² (202), ²ç̣̣̣̣̣̣/-ç̣̣̣̣̣̣² (151), ç̣̣̣̣̣̣̣/-ç̣̣̣̣̣̣̣² (221).

*š Initial ṣ̌-/ṣ̌-

33.	ṣ̌e [?]	ṣ̌e [?]	root/rump
35.	ṣ̌ax	ṣ̌ax	leaf
41.	ṣ̌im	ṣ̌im	spider
47.	ṣ̌en	ṣ̌a [?] n	gnat/mosquito
54.	ṣ̌oc	ṣ̌uo	snail
61.	ṣ̌ik [?]	ṣ̌ic [?]	wing
115.	ṣ̌aw	ṣ̌a [?] w	to vomit
131.	ṣ̌il	ṣ̌i [?] l	hair
137.	ṣ̌uh	ṣ̌ul	to blow
141.	ṣ̌es	ṣ̌e [?] w	to breathe
246.	ṣ̌iv	ṣ̌o [?] w	to be afraid

Medial -ṣ̣̌/-ṣ̣̌-

7.	ʔiṣ̣̌im	ʔiṣ̣̌i [?] m	shelled corn
38.	ʔiṣ̣̌hap	ʔiṣ̣̌hap [?]	scorpion
68.	ʔiṣ̣̌	ʔiṣ̣̌ox	woman
153.	ʔiṣ̣̌pis	piṣ̣̌na [?] k	wart
234.	ʔiṣ̣̌al	ʔiṣ̣̌qal	wife
245.	ʔiṣ̣̌vi	ʔiṣ̣̌vu	to be ashamed

Final -ṣ̣̌/-ṣ̣̌

31.	ciṣ̣̌	ʔci [?] ṣ̣̌	thorn
94.	yaṣ̣̌	ca [?] ṣ̣̌	green

294. ʔoš ʔoš three-

Included in the data, and subject to correction or further study, are the following correspondences: -š/-β- (230), -š/-w (141), t-/-š- (177), č-/-š- (118), -ʔ/-š (81), -k/-š (120), -ŋ/-š (251), s-/-š- (217), -x/-š (151).

PJI VELAR SERIES

*k Initial k-/k-

34.	kućam	kućam	cut trunk/trunk
51.	kap ¹	kap ²	honey/bee
64.	kuk	ku ² k	squirrel
99.	ka ²	ka ²	grindstone
155.	kan	kan	to die
159.	kax	kax	red
290.	kaŋšukut	ka ² šo ² p	square
293.	kaw	ka ² w	twice(?) / second
297.	kaŋ	kax	four(th)
301.	koŋe	koe	four days from now

Medial -k/-k-

38.	ʔiškap ²	ʔiškap ²	scorpion
57.	ʔikin	ʔikin	partridge/bird
111.	kunlan	ʔakun	<u>brujo</u>
118.	šikin	šikin	ear
210.	čičkap ²	kaplano	thunder
290.	kaŋšukut	ka ² šo ² p	square

Final -k/-k

64.	kuk	ku ² k	squirrel
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Included in the data, and subject to correction or further study, are the following correspondences: -k/-c (46), -k/-č- (230), k-/č- (52), -k/-k²- (106),

k-/k- (154), -k/-k⁷⁸ (200), k-/k- (265), -k/-q- (300), -k/-q̃ (120), -k/-t (198),
 ʃ-/k- (166, 303), č-/k- (143), ʑ-/k- (151), k-/k- (152), -k/-k (212), ɲk/k- (270),
 x-/k- (224), -ŋ/-k (175, 264).

*k	<u>Initial</u>	k-/k-		
12.	kun	kun		squash
42.	kax	kax		flea
83.	kah	kay		bitter
93.	kah	ka-		<u>pinole</u>
96.	koč	kico ⁷ m		to shell corn
127.	kul	ku ⁷ l		belly/belly (=seat of emotions)
197.	kai	kai		to tie
218.	ku	kumy		(water)well
231.	kahol	kael		son(of male)
	<u>Medial</u>	-k/-k-		
258.	uke	uha ⁷		liquor/beverage

The present corpus contains no examples of -k/-k.

Included in the data, and subject to correction or further study, are the following correspondences: k-/q̃- (169), -k/-č (61), k-/k- (152), -k/-k (212), -k/-p- (262), -k/-x (143), -ʃ/-k (122), č-/k- (248), k-/k- (154), -k/-k⁷⁸ (200), -k/-k- (106), k-/k- (265), -l/-k (142), ŋ-/k- (183), -q-/k- (140¹⁵⁰), q̃-/k- (113, 136), -q̃-/k- (128), ~~q̃-/k- (180, 205)~~, y-/k- (81).

PJI BACK VELAR SERIES

The present corpus exhibits no correspondences of q/q. J q may correspond to I k in 140, and to I q̃ in 29, 53 and 116, although these may prove to be errors in transcription. The data show several J phonemes to correspond to I q: ʃ in 134, ʑ in 55, k in 300, and q̃ in 284. There is no possibility of reconstruction without

more data; from the present corpus, one can only surmise that PJI did not contain *q.

*q Initial $\overset{1}{q}/\overset{1}{q}$ -

13.	$\overset{1}{q}\overset{1}{o}$	$\overset{1}{q}\overset{1}{o}\overset{1}{q}$	squash (<u>chilacayote</u>)
26.	$\overset{1}{q}\overset{1}{a}\overset{1}{p}$	$\overset{1}{q}\overset{1}{a}\overset{1}{p}$	branch, arm, hand
27.	$\overset{1}{q}\overset{1}{o}\overset{1}{l}$	$\overset{1}{q}\overset{1}{o}\overset{1}{l}$	turpentine, pitch
60.	$\overset{1}{q}\overset{1}{u}$	$\overset{1}{q}\overset{1}{u}$	feathered headdress/ <u>guatzal</u> bird
69.	$\overset{1}{q}\overset{1}{o}\overset{1}{p}\overset{1}{o}$	$\overset{1}{q}\overset{1}{o}\overset{1}{p}\overset{1}{o}$	unmated
160.	$\overset{1}{q}\overset{1}{a}\overset{1}{n}$	$\overset{1}{q}\overset{1}{a}\overset{1}{n}$	yellow
162.	$\overset{1}{q}\overset{1}{a}\overset{1}{x}$	$\overset{1}{q}\overset{1}{a}\overset{1}{x}$	black
254.	$\overset{1}{q}\overset{1}{i}\overset{1}{\eta}$	$\overset{1}{q}\overset{1}{i}$	fiesta/day

Medial $\overset{1}{q}/\overset{1}{q}$ -

2.	$\overset{1}{a}\overset{1}{q}\overset{1}{i}\overset{1}{n}$	$\overset{1}{a}\overset{1}{q}\overset{1}{o}\overset{1}{n}$	work
21.	$\overset{1}{a}\overset{1}{q}\overset{1}{i}\overset{1}{n}$	$\overset{1}{a}\overset{1}{q}\overset{1}{e}\overset{1}{n}$	plank
250.	$\overset{1}{a}\overset{1}{e}\overset{1}{l}\overset{1}{q}\overset{1}{o}\overset{1}{m}$	$\overset{1}{a}\overset{1}{e}\overset{1}{l}\overset{1}{q}\overset{1}{o}\overset{1}{m}$	thief
298.	$\overset{1}{a}\overset{1}{c}\overset{1}{p}\overset{1}{a}\overset{1}{l}$	$\overset{1}{a}\overset{1}{c}\overset{1}{p}\overset{1}{a}\overset{1}{l}$	night

Final $\overset{1}{q}/\overset{1}{q}$

32.	$\overset{1}{a}\overset{1}{q}$	$\overset{1}{a}\overset{1}{q}$	vine, tongue
84.	$\overset{1}{h}\overset{1}{i}\overset{1}{q}$	$\overset{1}{x}\overset{1}{i}\overset{1}{q}$	to choke
86.	$\overset{1}{p}\overset{1}{i}\overset{1}{q}$	$\overset{1}{w}\overset{1}{i}\overset{1}{q}$	to swallow
164.	$\overset{1}{o}\overset{1}{q}$	$\overset{1}{e}\overset{1}{q}$	to cry
224.	$\overset{1}{x}\overset{1}{a}\overset{1}{q}\overset{1}{e}\overset{1}{q}$	$\overset{1}{k}\overset{1}{a}\overset{1}{x}\overset{1}{i}\overset{1}{q}$	wind
239.	$\overset{1}{t}\overset{1}{a}\overset{1}{q}$	$\overset{1}{s}\overset{1}{a}\overset{1}{q}$	to answer
247.	$\overset{1}{l}\overset{1}{o}\overset{1}{q}$	$\overset{1}{l}\overset{1}{o}\overset{1}{q}$	to buy

Included in the data, and subject to correction or further study, are the following correspondences: $\overset{1}{q}/\overset{1}{o}$ (284), $\overset{1}{q}/\overset{1}{l}$ (58), $\overset{1}{q}/\overset{1}{k}$ (113,136), $\overset{1}{q}/\overset{1}{h}$ (128), $\overset{1}{q}/\overset{1}{k}$ (180, 285), $\overset{1}{q}/\overset{1}{q}$ (284), $\overset{1}{q}/\overset{1}{x}$ (224), $\overset{1}{q}/\overset{1}{y}$ (276), $\overset{1}{h}/\overset{1}{q}$ (97), $\overset{1}{l}/\overset{1}{q}$ (55),

-ʔ/-q̄ (13, 60), -q̄/-q̄ (29, 53, 116).

*x ~~Medial~~

Correspondences for x/x occur in the present corpus only in medial and final positions. With few exceptions (4, 20, 49, 181) the correspondences h/x are in initial position. This leads us to set up the statement

$$*x > \left[\begin{array}{l} h-/x- \text{ in env. } \# \underline{\quad} \\ x/x \text{ elsewhere} \end{array} \right]$$

and hypothesize that the counterexamples mentioned are to be explained by developments subsequent to the PJI > J/I split. Supporting data are as follows:

Initial h-/x-

1. hač	xač	harvest/separate
56. hoh	xə	crow
84. hiq̄	xiq̄	to choke
106. hukup̄	xukup̄	slop trough
108. hulo	xupən	to hunt
194. hax	xax	to open
205. hōl	xul	hole
295. hun	xun	one/combining form of)one

Medial -x-/-x-

40. soxy	soxo y	caterpillar
44. saxuk̄	saxuk̄	body louse
113. qaxəč	ḡaxəč	itch
206. pəox	pəox	dust
217. suxu	ḡox	foam
282. ?ixəḡ	?ixəḡ	cargo (carried on back)

Final -x/=x

35. ḡax	ḡax	leaf
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42.	ʔax	ʔax	flea
100.	pax	pax	to fold
121.	ʔox	ʔox	foot
128.	ʔuqax	ʔiʔax	finger nail
157.	mux	mux	to bury
159.	hax	hax	red
162.	qax	qax	black
163.	sax	sax	white
194.	hax	xax	to open
216.	tax	ʃax	dry
238.	wanax	nax	man
240.	čax	čax	to send
280.	ɲix	ʔuʔx	whetstone
287.	nohax	no-nax	full

The data include the following correspondences, which may be resolved by correcting errors in the word lists or by assembling more data pertinent to these correspondences: -x/-ʃ (206), -x/-ʃ- (259), x-/k- (224), -x/-n (174), -x/-ʒ (151), -č/-x- (189), ʔ-/x- (107, ^{-k/-x} c-/x- (143), -m/-x (168, 196), ɲ-/x- (5, 72, 181, 227), -ɲ/-x (297), -p/-x (274), -ʒ/-x- (224), -y/-x (169).

PJI LARYNGEAL SERIES

*? Initial ʔ-/ʔ- (These sets are only representatives of a large list of

ʔ-/ʔ- correspondences.)

17.	ʔah	ʔa-	reed
89.	ʔal	ʔaʔi	juice
19.	ʔekʔ	ʔekʔ	flowering tree parasite
133.	ʔeh	ʔe-	tooth
ʔ.	ʔiʃin	ʔiʃiʔn	shelled corn

68.	ʔis̃	ʔisox	woman
11.	ʔoŋ	ʔo.	avocado
185.	ʔək	ʔok	to enter
45.	ʔuk̃	ʔuk̃	head louse
258.	ʔuks̃	ʔuks̃	liquor/beverage

Final -ʔ/-ʔ

25.	tsʔ	ʔeʔ	tree
33.	ʃeʔ	ʃeʔ	root-rump
67.	ʃiʔ	ʃiʔ	dog
77.	ʃaʔ	ʃaʔ	empirement
80.	siʔ	siʔ	firewood
82.	ʃiʔ	ʃiʔ	sweet
99.	kaʔ	kaʔ	grindstone
119.	tiʔ	ʃiʔ	mouth
124.	wiʔ	wiʔ	head

The present corpus contains no instances of -ʔ/-ʔ-, but at the same time it presents the problem of accounting for a large number of occurrences of -ʃ/-ʃ-, usually in morpheme (or syllable) shapes CV_C/CV_C. The solution to this problem will likely be found bound up with the interpretation of long vowels in Ixil, and possibly with the interpretation of vowel clusters and reconstruction of lost consonants in Ixil (e.g., 231. kahol/ʃol). The present data include: 4, 6, 7, 31, 36, 37, 40, 47, 55, 59, 64, 87, 88, 89, 90, 94, 102, 115, 127, 131, 141, 151, 154, 161, 168, 183, 246, 278, 280, 293, 327, 328. In sets 7, 64, 89, 102, 115, 127, 131, 293 and 327, the words differ only in that CVC/CVʔC. Here we apparently have the option of positing PJI without medial ʔ, in which case its presence in Ixil must be explained; or of positing a PJI morpheme pattern of *CVʔVC which was reduced to CVC (by loss of ʔV) in J and to CVʔC (by loss

of V) in I; or we could posit a PJI *CV²C which lost ? in J and remained unchanged in I. Nothing in the J/I data seems to point definitely to one or the other of these possibilities; we will say for the sake of having a starting point that (with the exception of 7, ?i?im/?i?i?m) PJI had as one of its morphemes the shape CVCVC, in which intervocalic C was ?. Thus -²-/²- is added to the list which already includes ? in initial and final position, and we may state that

$$*CV^2VC > CVC/CV^2C$$

This allows reconstructions for 64, 89, 102, 115, 127, 131, 293, 327 and creates a problem in 7, where the extra syllable would lead to the reconstruction of *?i?i?in. Application of the same formula to other occurrences of non-initial and non-final I ? has implications for the reconstruction of 4, 6, 31, 40, 47, 55, 59, 75, 88, 94, 96, 141, 151, 154, 161, 168, 246, 263, 280, 290, 322, 328.

The following correspondences may be eliminated by further study of more extensive data, or by corrections in the present word lists: -²/²- (244), -²/²- (112), ²-/²- (55), -²/²- (13, 60), -²/²- (81), ²-/²- (107), ²-/²- (215), -²/²- (146), p-/²- (145), -²/²- (58), -u-/²- (263), -y-/²- (277).

The reflexes in I which corresponds to J h, η and x present a confused and tangled picture. It is not at all certain that the uniting of h-/²- with -x-/²- and -x-/²- under PJI *x will prove to be satisfactory. For one thing, h/x does occur in medial (49) and final (181, 20, 4) positions as well as initial (see above under *x), which could be taken as (scant but) indicative evidence for the reconstruction of a proto-phoneme of which h/x would be reflexes, apart from *x. This would leave us with the curious situation that of 24 correspondences x/x, not one is x-/²-. What could account for that defective pattern, and what kind of reconstruction would fill the gap?

The data also include 9 instances of h/?², eight of which (4, 30, 168, 184, 307, 312, 312, 316) are h-/?²- and one (322) is medial preceding ². There are 12 instances

of h/ϕ , of which none is initial, seven are final and five are medial. Thus we could make a case for a proto phoneme which in all positions is h in J but is $?$ in initial and ϕ in medial and final positions in I . This proto phoneme could not be identical to the one which accounts for the h/x - correspondences, whether or not this latter is identical to the phoneme which accounts for $-x/-x-$ and $-x/x-$. Nor could it be h which we have now reconstructed in all three positions. We can call this phoneme $*h$ and describe its history as

$$*h > \begin{bmatrix} h-/?- \\ -h-/\phi-, -h/-\phi \end{bmatrix}$$

This is not a very tidy solution, since it requires that we seek some explanation for the loss of h in I in medial and final positions and for its change to $?$ in initial position, as well as for the h/x - treated as part of $*x$. It begins to be evident either that we must recognize an unreasonably large inventory of proto phonemes if we account for the correspondences in the data in a way that reflects a single-stage process for $PJI > J/I$, or we must assemble sufficient evidence to provide some clues to several stages or processes of split, reassignment and merger. We might note an additional factor: $*h$ as reconstructed here would indicate that J h came down unchanged while in I $*h > ?-, \phi-$ and $-\phi$. Theory assumes that I split from the proto-Mayan stock at an earlier stage than did J , and that I is more likely to reflect the proto-Mayan forms than is J . As reconstructed here, $*h$ would be counter to this assumption, although not historically impossible. If we bring in the items called counterexamples to the reconstruction of $*x > h/x-, -x/-x-, -x/x-$ (4, 20, 49, 181) and instead reconstruct $*h > h/x$ in all three positions (but leaving a gap in initial position for $*x$), it is possible to combine the correspondence sets $h/\phi-$ with $-x/-x-$ and $-x/x-$ as coming from $*x$, but this seems a little too far-fetched phonetically, and leaves us with the problem of accounting for $-h-/\phi-$ and $-h/-\phi$ in some other way. Poor as the suggested solution is, it

seems to be the best choice in a bad situation. We still have no place in the pattern for h/x in 4, 20, 49 and 131.

The following correspondences may be eliminated by further study of more extensive data, or by corrections in the present word lists: -h/-w- (292), -h/-l (137), h/-n- (244), -h/-n (214), -h/-q (97), h-/y- (299), -h/-y (83), -h/-y (88).

JACALTEC η

While η is phonetically present in Ixil, it is not phonemically contrastive. In Jacaltec η is phonemically contrastive, and it has several different correspondences in Ixil: \emptyset , η , k, k', l, n, s, η , x and y (see data below). If we posit PJI * η on the basis of its phonemic status in present-day Jacaltec, it becomes necessary to account for its loss of phonemic status in Ixil and for the wide variety of phonetic features of its Ixil correspondences. If, on the other hand, we posit a PJI with no phonemic * η , it seems most natural to assume that *n at one time had submembers [n] and [η], possibly with the latter occurring only before velars as in present-day Ixil; further that in Jacaltec a phonemic contrast developed between /n/ and / η / and that once the phonemic contrast was established, a number of influences combined to produce one after another phonemic change in Jacaltec morphemes such that phonemes which did not come from * η became changed in some morphemes to η and that other morphemes changed to η by analogy. Such a series of steps could be partially symbolized as follows:

*n > n/n

J n = J [n], [η]

J [n], [η] > /n/, / η /

J /C/ > / η /, where /C/ symbolizes one of several Jacaltec phonemes at one of several stages of Jacaltec development, which by analogic change or perhaps to resolve difficulties created by homonymy (e.g.) changed to / η /. The result of

this process presumably could be that *n > n̄, ŋ/n, but that as other consonants in certain morphemes changed to J ŋ, there would be a growing list of I reflexes for J ŋ. This is specifically the present-day case, as note the list in the early part of this section.

If we suppose this to be the base, however, we would expect to find correspondences ŋ/n more numerous than they are in the present data and, under appropriate conditions, we would expect to find a number of these correspondences ŋ/n to be in medial position before velar consonants. Thus this possible explanation is far from satisfactory so far as accounting for the present data is concerned.

If further research should indicate neither of these possibilities to be a satisfactory explanation of Jacalteco ŋ, it can only be hoped that additional data will point clearly to an acceptable solution. For the present we can only surmise either that *ŋ was in PJI and was lost in Ixil, or that it was not in PJI and has reached phonemic status in Jacalteco by means of a series of developments after PJI > J/I. There are difficulties with each hypothesis.

The Jacalteco words with ŋ and their correspondences in Ixil are:

- | | | |
|---------|----------------------------------|--------------------------|
| -ŋ/-ʔ | 11. ʔoŋ/ʔo avocado | 125. palaŋ/pala forehead |
| | 189. ʔičiŋ/ʔixi to carry on back | 254. ʔiŋ/ʔi fiesta/day |
| -ŋ/-/ʔ | 301. koge/koe four days from now | |
| ŋ-/ʔ- | 280. ŋix/ʔuʔx whetstone | |
| -ŋ/-/ʔ- | 290. kaŋʔukut/ka ʔoʔp square | |
| -ŋ/-ʔ | 24. ʔiŋ/iʔ anterior color | 75. taŋ/kaʔ ax ashes |
| | 314. ʔoŋ/ʔoʔ we, us | |
| ŋ-/k- | 270. ŋa/kaʔal house | |
| -ŋ/-k | 175. liŋ/čak standing | 264. čaŋ/čik skirt |
| ŋ-/k- | 183. ŋo/koʔ crawl | |
| -ŋ/-l | 292. lahoŋ/laʔal ten | |

-ŋ/-n	135. tiŋ/tin to beat (heart)	177. ʔon/ʔon to sit down on block of wood/to sit down
ŋ-/s-	76. ŋup/ʔip smoke	
-ŋ/-s	251. kəŋ/ʔiŋ to dance	
ŋ-/x-	5. ŋai/xai ear of dry corn	72. ŋeh/xə tail
	181. ŋoh/xoh lying face up	227. ŋəp/xəp rain
-ŋ/-x	297. kəŋ/kəx four	
-ŋ-/y-	30. hiŋat/ʔiya seed	
-ŋ/-y	152. kəŋ/koy hunchback	199. tən/ʔuy to hang
-ŋ/-y-	248. ʔəŋ/kəyi to sell	

Thus there does not seem to be a reasonable basis for a statement about ŋ analogous to those for J h- or J t- whereby

$$*n > \left[\begin{array}{l} \text{ŋ/_ in some definable environment} \\ \text{/_ elsewhere} \end{array} \right]$$

nor any great assurance that if such a statement were possible, the Ixil reflex would be n. In any case the other sets must still be explained in some other way.

q/q Another problem involved in the present data is that of q/q. Both J and I have a fair number of words containing q (although not so many as those containing ʔ, for example), but the data does not contain a correspondence q/q. J q has as correspondences the ¹ reflexes k (140) and ʔ (29, 53, 116), both of which are suspect so far as accuracy of transcription are concerned. I q has as correspondences the J reflexes ʔ (134), ʔ (55) and k (300), none of which are particularly convincing as bases for reconstruction. More data are needed, and the data in the present corpus needs careful rechecking in the field. The present assumption is that no *q is to be reconstructed on the basis of this corpus.

VOWELS OF PJI

While no thorough-going attempt is made in the present paper to reconstruct

the vowels of PJI, it is possible to indicate some of the features which must be taken into consideration. No vowel length was marked for the Jacalteco data; vowel length is phonemically contrastive in a number of pairs of words in Ixil, but the whole subject of length in Ixil has not been adequately studied. It is not possible, from this corpus, to reconstruct length and interpret Ixil vowel nuclei and clusters. The occurrence of $\phi/?$ will doubtless be found to be related to the problems of vowel reconstruction. Numerous examples document the reconstruction of *a > a/a (112 exx.), *e > e/e (22 exx.), *i > i/i (59 exx.), *o > o/o (48 exx.), *u > u/u (38 exx.). Counterexamples, while included in the data, are statistically infrequent and can perhaps be considered to be developments subsequent to PJI > J/I in those cases where further investigation does not eliminate the listed sets as not being cognate. These counterexamples are as follows:

a/e: 74, 98, 169	a/i: 251, 264, 266, 322
a/o: 53, 271, 275, 284	a/u: 233, 322
e/a: 47, 120, 240, 258, 303, 321	e/i: 211, 224
e/o: none	e/u: 228
i/a: 143, 156, 175, 189	i/e: 10, 212
i/o: 203, 246, 261	i/u: 280, 305
o/a: 248, 292	o/e: 132
o/i: 96	o/u: 54, 95, 205, 209, 311
u/a: 196, 214	u/e: none
u/i: 76	u/o: 140, 217, 271

Thus there seems to be good evidence for reconstruction of five PJI vowels *a, *e, *i, *o, *u and no convincing evidence in the present corpus for reconstructionⁿ² additional vowels.

RECONSTRUCTED PJI MORPHEMES

The phonemes of PJI represented by these reconstructions may be charac^d as follows:

	<u>*p</u>	<u>*t</u>	<u>*ty</u>	<u>*c</u>	<u>*c̃</u>	<u>*k</u>	<u>*?</u>	
Initial	$\frac{?}{p/p}$	t/t̃	t/č	č/č̃	č̃/č̃	k/k	ʔ/ʔ	<u>*a</u> > a/a
Medial	p/p	t/t̃	t/č	č/č̃		k/k	ʔv/ʔv	<u>*e</u> > e/e
Final	p/p	t/t̃	t/č	č/č̃	č̃/č̃	?	ʔ/ʔ	<u>*i</u> > i/i

	<u>*p</u>	<u>*ty</u>	<u>*c</u>	<u>*c̃</u>	<u>*k</u>	<u>*q</u>	
Initial	$\frac{?}{p/p}$	$\frac{?}{t/c}$	$\frac{?}{c/c}$	$\frac{?}{c̃/c̃}$	$\frac{?}{k/k}$	$\frac{?}{q/q}$	<u>*o</u> > o/o
Medial	$\frac{?}{p/p}$		$\frac{?}{c/c}$?	$\frac{?}{q/q}$	<u>*u</u> > u/u
Final	$\frac{?}{p/p}$		$\frac{?}{c/c}$			$\frac{?}{q/q}$	

	<u>*m</u>	<u>*n</u>	<u>*l</u>
Initial	m/n	n/n	l/l
Medial	m/n	n/n	l/l
Final	m/n	n/n	l/l

	<u>*w</u>	<u>*s</u>	<u>*š</u>	<u>*y</u>	<u>*ž</u>	<u>*x</u>	<u>*h</u>
Initial	w/w	s/s		y/y	ž/ž̃	h/x	h/?
Medial		s/s			ž/ž̃	x/x	h/ʔ
Final	w/w	s/s	š/š̃	y/y	ž/ž̃	x/x	h/ʔ

On this basis, the morphemes in the data list are tentatively reconstructed in the column to the left of the item numbers. For those items in which cognate status is in doubt, the item numbers are enclosed in parentheses.

There are a number of words which cannot yet be completely reconstructed with the PJI symbols available at this stage, yet which seem to be cognate and which would yield to reconstruction if a solution were found to one or another of the problems referred to previously.

There are a few further items upon which a comment may be made. Item 6 would

appear to be the result of metathesis (cf. also 191, 224), and a presumption from Ixil words [?]pax 'bone' and xal 'ear of dry corn' would be that the J word could be a result of combining these two, if they are the same in J as in I. If this is the case, then the I word in 6 is the one which has undergone metathesis. But this would seem to negate the type of reconstruction which has been posited to handle *? as reflected in -~~ɸ~~-/?-. If we assign to the I word the slightly more archaic status, then J has undergone the metathesis and lost two occurrences of -/?- with the vowels following each. If I has been the word to undergo metathesis, it is necessary to recognize the doubt into which this could throw the reconstruction of *? in medial position as reflected in -~~ɸ~~-/?-.

The possibility that different stages or different processes of change are reflected in the present corpus is suggested by comparing cognate sets such as the following:

268 with 281	212 with 143	146 with 147
184 with 108	89 with 190	317 with 220
14 with 309	11 with 314	121 with 320
48 with 55	93 with 83	191 with 285
260 with 120 and 319	156 with 145	22 with 97
277 with 278	325 with 77	

In 129, the J word would seem to be a combination of 'head' and 'dog'; the I word seems to be a combination of 'head' and 'griddle (coml)'. The cognates for 'head' are in the list as item 124.

Item 191 may well indicate another case of metathesis, but it furnishes no clues as to which word has been thus changed. In such cases, comparison of these words with their cognates in other Mayan languages can help to establish the facts of the case. This paper has been written deliberately without recourse to material from other Mayan languages, and in subsequent work it will be of interest to see how

much of the reconstruction attempted here survives comparison with a wider range of data within J and I and with cognates in other related languages.

Items such as 286 and 271 are sobering reminders of the fact that several characteristics of the data might throw doubt on the reconstructions (in these cases, for example, the way in which t/ξ is handled here).

There is ground for suspicion that in 302 pet/pet , which provides the only example of $-t$ in the present data, both words are assimilated from Spanish 'pere'.

JACALTEC-IXIL CORPUS

*xəç	1.	haç	xəç	to harvest/to separate
*ʔəq̃	2.	ʔəq̃in	ʔəq̃on	work
*ʔaw	3.	ʔawal	ʔaw	to plant
*hiʔi_	4.	hih	ʔiʔx	ear of young corn
*_al	5.	nal	xal	ear of dry corn
	6.	ʔaxal	paʔiaʔx	corncob
*ʔiʔiʔin	7.	ʔiʔin	ʔiʔiʔa	shelled corn
*_aʔ	8.	sat	waʔ	face
*map	9.	map	map	<u>coyol</u> (fruit of a palm)
*c̣_w	10.	c̣iw	c̣ewəç	<u>anona</u> (type of fruit)
	11.	ʔon	ʔo-	avocado
*kum	12.	kum	kum	squash
	13.	q̣oʔ	q̣oq̣	squash (<u>chilacayote</u>)
*ʔis	14.	ʔis	ʔis	potato
*ʔin	15.	ʔinteʔ	ʔin	yuca
*ʔic̣	16.	ʔic̣	ʔic̣	chile
	17.	ʔah	ʔa-	reed
*c̣in	18.	c̣in	c̣in	thatch
*ʔəḳ	19.	ʔəḳ	ʔəḳ	flowering tree parasite
	20.	ʔitah	ʔiçax	herb
*ʔəq̃	21.	ʔəq̃in	ʔəq̃en	plank
*_a_	22.	tah	a-	pine
	23.	c̣isis	c̣isis	cypress (Sp. <u>ciprés</u>)
	24.	ʔin	-iʔ	exterior color
*_eʔ	25.	teʔ	eʔ	tree

*qap ²	26.	qap ²	qap ²	branch, arm, hand
*qol ²	27.	qol ²	qol ²	turpentine, pitch
*sač	28.	sačil	sačil	squash seed
	29.	paq ²	paq ²	(fruit)pit, (fruit)stone
	30.	hiyat	ʔiya	seed
	31.	ciš ³	ci ³ š ²	thorn
*ʔaq ²	32.	ʔaq ²	ʔaq ²	vine, tongue
*še ²	33.	še ²	še ²	root/rump
*kučam	34.	kučam	kučam	cut trunk/trunk
*sax	35.	sax	sax	leaf
	36.	lo	lo ²	to eat (generic) / to eat fruit
	37.	lopal	lo ² paš	fruit
*(ʔiš)kap ²	38.	ʔiškap ²	ʔiškap ²	scorpion
	39.	nam	navi ²	butterfly
	40.	šomoy	šomoy ²	caterpillar
*šin	41.	šin	šin	spider
*kax	42.	kax	kax	flea
*sip	43.	sip	sip	tick (insect)
*sax (white)	44.	saxuk ²	saxuk ²	body louse
*ʔuk ²	45.	ʔuk ²	ʔuk ²	head louse
	46.	sanik	sanič	ant
	47.	šen	ša ² n	gnat/mosquito
*ʔus	48.	ʔus	ʔus	mosquito
	49.	ʔahan	ʔama	wasp nest
	50.	čuču	qenčuču	wasp

*kəp ¹	51.	kəp ²	kəp ²	honey/bee
	52.	kəy	çəy	fish
?	(53).	molaq ¹	mocoq ²	tadpole
	54.	şoc̣	şuc̣	snail
	55.	ʔusmix	qu ¹ s	buzzard
*xoh	56.	hoh	xo	crow
*ʔikin	57.	ʔikin	ʔikin	partridge/bird
*ʔah-fo	58.	ʔahfoq ¹	ʔafo ²	male turkey
	59.	ʔunun	ʔu ¹ m	hummingbird
	60.	qu ¹	quq ²	feathered headdress/quetzal bird
	61.	şik ¹	şio ²	wing
	62.	çik ²	ʔikin	bird
63	63.	çov ¹	ço ²	mouse
*ku ¹ uk	64.	kuk	ku ² k	squirrel
*palam	65.	palam	palam	cougar
*ʔip ¹	66.	ʔip ²	ʔipoy	armadillo
*çi ¹	67.	çi ²	çi ³	dog
*ʔis	68.	ʔis	ʔisox	woman
*qopo	69.	qopo	qopo	unmarried, unmated
*_ityan	70.	çitan	çicəm	pig
*çe	71.	çe	çe	horse/deer
*_əh	72.	neh	xə	tail
*lit ²	73.	lit ²	lit ²	spark/lightning
	74.	ʔa ¹	ʔe ²	to burn(intr) / to burn(tr)
	75.	taq	ʔa ¹ ax	ashes

?	(76).	ɲup [?]	sip [?]	smoke
	77.	ʃa [?]	ča [?]	excrement
*ʃok [?]	78.	ʃok [?]	ʃok [?]	to chop, cut
*pop	79.	pop	pop	straw mat
*si [?]	80.	si [?]	si [?]	firewood
	(81).	ya [?]	ka [?]	hot (<u>=picante</u>)
*či [?]	82.	či [?]	či [?]	sweet
*ka ₋	83.	ka [?]	ka [?]	bitter
*xiq [?]	84.	hiq [?]	xiq [?]	to choke
*ʃup [?]	85.	ʃup [?]	ʃup [?]	to suck
*_iq [?]	86.	piq [?]	wiq [?]	to swallow
	87.	ča [?]	ča [?]	to chew/to eat a meal
	88.	wahil	wa [?] y	hunger
*ʔa [?] ai	89.	ʔai	ʔa [?] i	juice
*ci	90.	či	či	to eat meat
*cip [?]	91.	čipe [?]	čip [?]	meat
*ʔa [?] am	92.	ʔa [?] am	ʔa [?] am	salt
*ka [?]	93.	ka [?]	ka [?]	<u>pinole</u> (toasted ground corn)
*_a [?] as	94.	ya [?]	ča [?] ʃ	green
	95.	čo	čun	lime (<u>=cal</u>)
	(96).	ho [?]	hico [?] a	to shell corn
?	97.	tah	ʃa [?]	cooked
	98.	san	semic [?]	griddle
*ka [?]	99.	ka [?]	ka [?]	grindstone
*pax	100.	pax	pax	to bend (something) double, to fold

	(101).	ça [?]	sa [?] mal	light/fire, light
*ce [?] ew	102.	cew	ce [?] w	cold
*fu	103.	fu	fu.	gourd (watercarrying)
*fina ₋	104.	fina	fina [?]	gourd dipper
	105.	hak [?]	ka [?] c	cargo net
106	106.	hukup [?] (sa)	ku [?] kup [?]	slop trough
107.	107.	ʔupulte [?]	xup [?] ʔe [?]	blowgun
	108.	hulo	xupen	to hunt
*cah	109.	cah	ca [?]	sacred
*pom	110.	pom	pom	incense
*kun	111.	kuniam	akun	<u>brujo</u> (witchdoctor)
	112.	ya [?]	ya [?] p	weak, sick
*axac [?]	113.	qaxac [?]	ka [?] ca [?] c	itch
	114.	poho	po-	pus
*sa [?] aw	115.	saw	sa [?] w	to vomit
	116.	—	—	—
	117.	—	—	—
	118.	qikin	qikin	ear
*fi [?]	119.	ti [?]	fi [?]	mouth
	(120).	sek	sa [?]	left(hand)
*ox [?]	121.	ox [?]	ox [?]	foot
	(122).	yuf	cu [?] t	to defecate
*fun	123.	fun	fun	skin
*wi [?]	124.	wi [?]	wi [?]	head
*pala ₋	125.	pala [?]	pala	forehead

	(126).	nuq̣	cul	neck
*ku [?] ul	127.	ku [?] l	ku [?] l	belly/belly(=seat of emotions)
	128.	ʔuq̣ax	ʔiskax	finger nail
	¶129).	wiç [?] i	wi [?] semic̣	knee
	130.	—		
*ši [?] il	131.	šil	ši [?] l	hair
	(132).	noç̣	neleḳ	rib
*ʔeh	133.	ʔeh	ʔe-	tooth
	(134).	čun	cul	throat
	135.	tin	tin	to beat(heart) / to beat(heart), move
*on	136.	ʔon	ʔon	brain
	137.	šuh	šul	to blow
	138.	hatiṣ	tisnap̣	to sneeze
	(139).	malkul [?]	qalpici [?] il	to belch
	140.	čup̣up̣ [?]	čeḳ [?]	to hiccup
*se [?] q̣	141.	seṣ̌	se [?] w	to breathe
	142.	čul	čuḳ [?]	to urinate
	(143).	čiḳ [?]	kax	blood
*šup̣ [?]	144.	šup̣ [?]	šup̣ [?]	saliqa
?	145.	piška	ʔišep̣ [?]	to be born
?	146.	čuçu	ču [?] un	to nurse, to suckle
	147.	čuçu	čuç̣ [?]	to nurse/mother
	148.	čip̣ [?]	či [?]	to grow
	149.	way	wat	to sleep
	(150).	noç̣o [?]	çot	blind

	(151.)	ḡox	ko [?] š	lame
	152.	koḡ	koy	hunchback
*piš	153.	ʔiḡpiš	piḡnak [?]	wart
	(154.)	koči	ko [?] ʔi	to limp
*kan	155.	kan	kan	to die
	(156.)	piš	yaš	to kill
*mux	157.	mux	mux	to bury
*ʔi1	158.	ʔi1	ʔi1	to see
*kax	159.	kax	kax	red
*qan	160.	qan	qan	yellow
*_a [?] aš	161.	yaš	ca [?] š	green
*qex	162.	qex	qex	black
*sax	163.	sax	sax	white
*ʔoq	164.	ʔoq	ʔoq	to cry
*ʔap	165.	ʔape	ʔapi	to hear
	(166.)	šap	kan	to touch
*šip	167.	šip	šip	to write
*hu [?] u	168.	hu	ʔu [?] x	paper
	(169.)	ku	šex	to lose
	(170.)	say	ca	to choose
*čum	171.	čum	čum	to understand/to think, to be sad
	172.	wayke	wašku	to dream
	173.	wayik	wašik [?]	a dream
	174.	yax	yan	to make mistake
	(175.)	liḡ	čak	standing

	(176).	pis	ʃon	to sit down
?	177.	ʃon	ʃon	to sit on block of wood/to sit down
	(178).	čoh	ʃot	sit on haunches
	(179).	hii	koš	lying down
	180.	paq	paq ²	lying face up
	181.	poq	xox	lying face upward
*čal	182.	čal	čal	to one side of
	(183).	go	ko ²	to crawl
*hul	184.	hul	ʔul	to come
*ʔok	185.	ʔok	ʔok	to enter
*ʔei	186.	ʔei	ʔei	to go out
	187.	ʔel	ʔen	to walk/to go
188	188.	ʔe	ʔey	road
	(189).	ʔiçin	ʔira	to carry on back
*ʔal	190.	ʔal	ʔal	heavy
	191.	laq ²	čal	to embrace
	(192).	welnen	lawup ²	a fan
	193.	ʔay	ʔat	there is
*xax	194.	hax	xax	to open
*sik	195.	sik ²	sik ²	to pick up
	(196).	yum	čax	to throw down, to drop
*kal	197.	kal	kal	to tie
?	198.	ʃik	čit	to shake
?	199.	tuq ²	čuy ³	to hang
	200.	—		

	(201)	poh	paḥ	to split
*yo_	202.	yoč ³	yoč	to notch/notched-log ladder
*p-č	203.	pič	poč	to wrap up
*lak [?]	204.	lak [?]	lak [?]	to stick (something) together
*x_1	205.	hol	xul	hole
*poxo_	206.	poxox	poxo	dust
?	207.	hoč [?]	qoč [?]	ditch
*wič [?]	208.	wič [?]	wič [?]	mountain
	209.	—		
*kap [?]	210.	čičkap [?]	kaplane [?]	thunder
	(211).	č [?] en	č [?] ic [?]	metal
	212.	čik [?]	čuk [?]	rust
	(213).	pan	nap [?]	lake
	(214).	čuh [?]	č [?] an	drop (of liquid)
?	215.	čak [?]	č [?] ak [?]	wet
*čax	216.	tax	čax	dry
	217.	suxu	šox	foam
*ku [?]	218.	ku [?]	kumy [?]	(water)well
	219.	kaha [?]	ča [?]	bridge
?	220.	č [?] as	č [?] acin	to bathe/to swim
	221.	ča [?]	ča [?]	to wash
*čil [?]	222.	č [?] il	č [?] il	dirt
	(223).	čayik [?]	qi [?]	sun
	224.	xuqeq [?]	kaxiq [?]	wind
*čum [?]	225.	č [?] umel	č [?] umil	star

*moy	226.	moy	moy	cloud, fog/dusk
*_ap ¹	227.	nap ²	xapal ¹	rain
*--ce ² ew	228.	čencew ²	čunce ² w	frost
	229.	čer ²	čel ²	rainbow
?	230.	tušum	kaosucum	whirlwind
*mah-oi	231.	mahoi ²	maoi ²	son (of male)
*?anap ²	232.	?anap ²	?anap ²	son of female sibling/sister
	233.	?ičamil	šumel	husband
	234.	?išai	?išqel	wife
*?alip ²	235.	?alip ²	?alip ²	daughter-in-law
*nan	236.	nan	nan	father/ancestor
	237.	?išnam	nan	lady
*nax	238.	winax	nax	man
*šaq ²	239.	taq ²	šaq ²	to answer
	240.	čax	čax	to send
	(241).	šot	yol	word
	242.	ši	či	they say, it is said
	(243).	yeh	čus	to teach
?	244.	ho ²	kano-	yes
	245.	šišwi ²	šišwu ²	to be ashamed
*s_?w	246.	šiv	šo ² w	to be afraid
*loq ²	247.	loq ²	loq ²	to buy
	(248).	čon	?ay ² i	to sell
*tyoh	249.	toh	če	to pay
*?elqon	250.	?elqon	?elqon	thief

	(251).	kaŋ	piš	dance
*pi_	252.	pit	piš	song
*_oty	253.	soŋ	yoč	rattle
	254.	qin	qi	fiesta/day
*ko	255.	ko	ko	mask
	256.	—		
*yah	257.	tah	ša	pine
*uk	258.	ʔuke	ʔukm	liquor/beverage
	259.	saxči	sa-č	to play
*maš	260.	maš	maš	to fool around/to deceive
	(261).	tii	tos	to undress
?	262.	poŋwi?	poŋal	hat
*čo_	263.	čow	čoʔši?	blanket
	(264).	čaŋ	čik	skirt
	265.	kolqap	ʔiškolqap	ring
	(266).	čal	či	thread
*čem	267.	čem	čem	to weave
*šis	268.	šis	šis	to sew
	269.	—		
?	270.	ŋa	kaŋal	house
?	271.	ʔatut	ʔofof	house
*paty	272.	pat	pač	hut
	273.	—		
?	274.	pašap	šax	wall
?	275.	pašap	pošom	beam of wood

?	276.	yoč	yoč	ladder/notched-pole ladder
	277.	peyap [?]	pe [?]	cerral
	278.	pepil [?]	pe [?]	fence/fenced-in plot
*_aty	279.	cat [?]	cao [?]	bed
?	280.	nix	?u?x	whetstone
	281.	?ispal [?]	?ispal [?]	trash-impliment (broom)
*?ixap ⁽³⁾	282.	?ixap [?]	?ixap [?]	cargo (carried on back)
*pim	283.	pim	pim	thick (solids)
?	284.	qaq [?]	qaq [?]	rough
	285.	—	—	—
*fa_	286.	tat	fat	thick (liquid)
*noh-nax	287.	nohnax	no-nax	full
	288.	—	—	—
*nah-aty	289.	nahat	na·č	distant
?	290.	kanšukut	ka?so??	square
*kap [?]	291.	kapap [?]	kapil	two/second
?	292.	lahop	lawal	ten
*ka?aw	293.	kaw	ka?w	twice ?/second
*?oš	294.	?oš	?oš	three-
*xun	295.	xun	xun	one/combining for of)one
	(296).	sunil	kaxnyil	all, every
	297.	kax	kax	four(th)
*?apal ^{??}	298.	?apal ^{??}	?apal ^{??}	night
?	299.	hapil	yap [?]	year
?	300.	hahai	qaien	tomorrow

?	301.	kəpə	kəe	four days from now
*pet	302	pet	pet	soon/but
?	7303.	ʒet	kam	what, how, why
	304.	—		
* <u>2</u> n-	305.	?in-	?un-	I, my
*w-	306.	w-	w-	I, my
*ha-	307.	ha-	?a-	you, your (sg)
*?aw-	308.	?aw-	?aw-	you, your (sg)
	309.	?is-	?i-	he, his
	310.	y-	t-	he, his
	311.	ko-	ku-	we, our
*he-	312.	he-	?e-	you, your (pl)
*hey-	313.	hey-	?et-	you, your (pl)
*?o_	314.	?oŋ	?o?	we, us
*nax	315.	nax	nax	he, him
*heš	316.	heš	?eš	you (pl) (nom, obj.)
*?aš	317.	?aš	?aš	you (sing) (nom, obj.)
*_ux	318.	tux	yux	to jump
?	319.	maš	?paš	monkey
	(320).	?ox	šo?	coyote
	(321).	weš	yak	fox
*p__-d__	322.	paŋda?	pu?d'in	toad
*kuš	323.	?kuš	?kuš	eat meat/gnav
	324.	ʒaqa?	?aqa	charcoal
	325.	ʒa	ča?	coals

*xos	326.	hos	xos	to slice/to cultivate land
*šo'ol	327.	šol	šo'1	between
	328.	čal	ča'1	thread/to spin (thread)

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