

THE PHONOLOGICAL HISTORY OF MENOMINEE

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0. Introduction. The M(enominee)¹ reflexes of P(roto) A(lgonquian) sounds have been known, for the most part, since Bloomfield's 1925 survey of Central Algonquian historical phonology; work since then has mainly clarified details. But it is one thing to know the fate in a daughter language of the sounds of the parent language, quite another to know the sequence in which sound shifts and other adjustments took place between the ancestor and the descendant. It is the latter that I intend here by "phonological history."

We take, as our terminus a quo, PA as reconstructed by Bloomfield (1925, 1946) with amendments by various others (mostly summarized in Goddard 1979). The terminus ad quem is M of the early twentieth century, on which our data are

¹The Menominee themselves now prefer the spelling with two e's (see the title page of Bloomfield 1975).

Other language-name abbreviations used in this paper are C(ree), F(ox), O(jibwa), P(otawatomi).

I have wanted to undertake the research reported in this paper ever since I completed, in 1958, the editing for publication of Bloomfield's M grammar (1962). But the immediate stimulus that got me seriously to work at it was correspondence in 1978-9 with Kenneth L. Miner, discussing an unpublished paper of his on the same subject (Miner, mss), and I thank him for the push. Our approaches to the topic were not, and doubtless still are not, quite the same. Hence we will all be richer when he has completed his own investigation and has made his results publicly available.

Ives Goddard and Paul Proulx kindly scrutinized the penultimate version of this essay, enabling me to correct many errors. Those that remain are, of course, my own.

also due to Bloomfield (1924, 1928, 1939, 1962, 1975).²

No one will be surprised to find some similarity (even in wording) between our formulation of changes from PA to M and Bloomfield's statement of M morphophonemics (1939, 1962 ch. 2; see especially 1939, §4). Yet I think the differences are more revealing than the parallels.

1. The PA Sound System. As currently understood, PA had eleven consonants, two semivowels, and eight vowels (four short and four long); we also use the term *nonsyllabic* for a consonant or a semivowel, and *vocoid* for a semivowel or a vowel:

PA CONSONANTS	<i>p</i>	<i>t</i>	<i>ʃ</i>	<i>k</i>
		<i>s</i>	<i>ʂ</i>	
	<i>m</i>	<i>n</i>		
		<i>l</i>		
		<i>θ</i>		
SEMIVOWELS	<i>w</i>		<i>y</i>	
VOWELS	<i>o</i> <i>ō</i>	<i>e</i> <i>ē</i>	<i>i</i> <i>ī</i>	<i>a</i> <i>ā</i>

The phonetic implications of the choices and arrangement of symbols are probably roughly correct, except that of **θ* we can say only that it was surely apical, possibly voiceless, and certainly neither a stop nor a nasal. (For the vowels see below.)

A PA word began with a nonsyllabic other than **h*, with a sequence of consonant (not **h*) and semivowel, or with a vowel other than **o* and **i*; those two vowels were found only in noninitial syllables. There were no vowel clusters, and every "full" word ended (except perhaps when disturbed by external sandhi habits: see Hockett 1956) with a short vowel.³ As in F today, there may have been some PA proclitics that deviated from this final-short-vowel pattern. Between successive vowels within the word there intervened a nonsyllabic, a sequence of consonant and semivowel, or any of certain clusters of two consonants with or without a following semivowel. There were some limitations on consonant-vocoid sequences: **hy* and perhaps **ʃw* seem not to be attested (but see §38 about **ʃw*), and **t* and **θ* were found before none of the high front vocoids **y*, **i*, and **ī* (except possibly in sound-imitative forms: see El11), having at some pre-PA time been laminalized in that environment to **ʃ* and **ʂ* respectively.

1.1. Clusters. The most obscure feature of the PA system is the identity of

²I shall permit myself the anachronism of using epithets such as "current," "present-day," or "modern" in referring to the M of the 1920s. Bloomfield noted and reported some tendencies among younger speakers that were probably going to bring about changes in the language, and in 1973-4 Miner was able to observe the consequences. In a recent review (1977) Miner includes (pp 70-71) a brief summary of these developments of the last half century. When fleshed out, that will form an interesting codicil to this--and to his own--account of earlier events.

³This has been the standard assumption. But Proulx, in the course of a wild and woolly paper (1980b) full of outrageous notions, some of them surely correct, proposes (p 12) that PA had both short and long word-final vowels; that in F (and Shawnee) the shorts were retained, the longs shortened; and that in M, O, P, and a number of the other languages both longs and shorts were mostly lost. Thus it becomes possible, e.g., to set up a PA ending *-*ē* for the conjunct subjunctive attested in C as -*ē* and -*i(h)*, in F as -*e*. This proposal deserves careful study.

the first consonants of some of the clusters (the discussion of this in Goddard 1979 is excellent). For many of these the symbols used are avowedly arbitrary, for which reason they do not appear in the consonant table given earlier:

PA CLUSTERS	<i>mp</i>	<i>nt</i>	<i>nč</i>	<i>nk</i>		<i>ns</i>	<i>ns</i>	<i>nł</i>	<i>nθ</i>
	<i>h_p</i>	<i>ht</i>	<i>hč</i>	<i>hk</i>		<i>hs</i>	<i>hš</i>	<i>hl</i>	<i>hθ</i>
					<i>Hm</i>				
		<i>?t</i>	<i>?č</i>			<i>?s</i>	<i>?š</i>	<i>?ł</i>	<i>?θ</i>
	<i>šp</i>	(<i>št</i>)		<i>šk</i>					
	<i>xp</i>			<i>xk</i>					
	<i>θp</i>			<i>θk</i>					
	<i>čp</i>			<i>čk</i>					
				<i>qk</i>					

The cluster in parentheses is questionable, and in any case occurred in no form with a known reflex in M.

1.2. Vocoids. The vowels need more comment. Of course we cannot know their exact sound, but we can specify some reasonable bounds. The long vowels are the easier. In quality, **ī* was surely [i] (some of its reflexes are lower or laxer or both, but as laminal and laminalizing--see the next paragraph--**ī* must have been fairly high); **ō* was high back rounded in the range between [o] and [u] inclusive; **ā* was low central-to-back unrounded [a]; **ē* was front unrounded, not higher than [e] and conceivably as low as [æ]. The short vowels may well have differed from the longs not alone--perhaps not even chiefly--in duration, but also in being lax instead of tense, and somewhat centered or "obscure." That would suggest approximately [ɪ] for **i*, something like [ʊ] for **o*, [ʌ] for **a*, and perhaps [ɛ] for **e* when articulated most clearly.

It has been customary (except with Bloomfield) to display the four short or four long vowels in a square, giving the impression that the relevant features are high versus low and front versus back. Bloomfield avoided this implication by presenting his symbols in lists rather than tables; I have broken with the custom in the present essay because I have come to believe that the implication not only is unjustified but is particularly likely to be misleading in connection with the history of M. I think there is good evidence suggesting that in PA (much as in F: see Hockett 1976) each of **i*, **o*, and **a* had a positive "mark" lacking in **e*: starting with the neutral or unmarked **e* (which is "just plain vocality"--just vocoid syllabicity), you add laminalization (blade raised towards palate) to get **i*, labializing (rounding) to get **o*, and velarization (backing) to get **a*. The longs then add a feature of length or tenseness (or both) to the corresponding shorts.

One point that I think favors this is that PA may actually not have had the short vowel **o* at all--not even in noninitial syllables--but, instead, the sequence **we*, which then became **o* in many of the daughter languages (Goddard 1979, p 75). For example, whereas Bloomfield, using only central-language data on this point, could reconstruct PA **nekotwi* 'one', we now know that the eastern languages demand **nekwetwi*. But even if PA already had some instances of **o*, it may have been just emerging from an earlier *o*-less stage. The change, whatever its date, is especially easy to understand given our hypothesis, for if **w* is essentially just labiality and **e* is vocality, then in an antecedent **we* the two occur in succession, while in a consequent **o* they have merely become simultaneous. Similarly, some instances of later **i* perhaps reflect an earlier **ye*: Siebert (1975, p. 298), in order to provide for eastern reflexes, revises Bloomfield's PA **nemihsa* 'my older sister' to **nemyehsa*.

Proulx (1980a) makes what is to me an even more tantalizing proposal about these "contractions": (1) At an early time--definitely prior to PA--*ewe and *eye became respectively *ō and *ī. (2) Then *e generally dropped before a semivowel; also, various cases of *we and *ye were analogically reintroduced, yielding doublets with *we versus *ō and with *ye versus *ī. For example, alongside inherited *a'senīnki 'on the stone', PA speakers created *a'senyeŋki (cf PA *a'senya 'stone', showing the *y, and *wīkenki 'at his house', showing the *e). (3) When the new *we and *ye contracted (during or just after PA times), the yield was the short vowels *o and *i. This accounts realistically for certain otherwise puzzling data: in the case given, the incompatibility of M a'seneh and O assinīnki, and the presence in F of two forms, aŋeniki and ase-nīki. Of course this is tentative--like most proposals, as it solves some problems it creates others.⁴

2. The M Sound System. M has nine consonants, two semivowels, twelve vowels (six short and six long), and a pair of centering diphthongs that relate structurally to semivowel-vowel sequences:

M CONSONANTS	p	t	k	ʔ
		c		
		s		h
	m	n		

SEMIVOWELS	w		y	
VOWELS	u ū		i ī	
	o ō	ε ē	e ē	a ā
DIPHTHONGS	ua		ia	

M *e* and *s* range nondistinctively from apical [ts, s] to laminal [tʃ, ʃ]; the amount of the blade involved is irrelevant. In one gross structural sense (though with many complicated interchanges to be presented later), *ε* and *a* continue PA **e* and **a* respectively, while the regions of PA **i* and **o* have each been split into contrasting higher (*i*, *u*) and lower (*e*, *o*) subregions. In another way, it would be more appropriate to say that M *e* is the continuation of PA **e*, in that it is the "unmarked" or "neutral" vowel of its system. The longs go with the shorts as shown. It is as misleading to tabulate the M short (or long) vowels in two columns of three each as it is to present those of PA or of F in a square. Very roughly, the qualities of the short vowels are

[u]	[i]
[ʊ]	[ɪ]

all with a tendency towards centering and indistinctness; the longs are longer and clearer, roughly with the qualities

[u]	[i]
[o]	[æ]

The diphthongs are approximately [uə] and [iə].

A M word begins with any of the sounds in the above table except ʔ, h, i, ε, and ia; but u, ū, and ua are rare (vowel-initial words have an [h]-like onglide

⁴Goddard (1980, p. 155, note 5) offers an alternative explanation for the locatives, which, if correct, greatly weakens Proulx's case.

that Bloomfield takes to be nonphonemic). The only word-initial sequence of consonant and semivowel is *kw*. Except for a few proclitics, every word ends with a nonsyllabic; all the nonsyllabics occur in this position, as do the clusters *?c* and *?s*. There are no vowel sequences (unless the diphthongs *ua* and *ia* be interpreted as such). Between successive vowels within the word there intervenes a nonsyllabic, any of a limited number of sequences of consonant and semivowel, or any of the following clusters of two consonants, with or without a following semivowel (the three clusters in parentheses are found only in new formations, §29, or loans, §40, not as the continuation of anything in PA):

M CLUSTERS	<i>hp</i>	<i>ht</i>	<i>hc</i>	<i>hk</i>	<i>hs</i>	<i>hm</i>
	(<i>?p</i>)	<i>?t</i>	<i>?c</i>	<i>?k</i>	<i>?s</i>	(<i>?m</i>) <i>?n</i>
	<i>sp</i>	(<i>st</i>)		<i>sk</i>		
	<i>ap</i>			<i>ek</i>		

Between consonants or clusters within the word, all the vowels and diphthongs occur, but of semivowel-vowel sequences only *wa* and *ya*, plus *wē* in a few words characterized by Bloomfield as "foreign-sounding" (1962, §1.32), a handful of cases of *we* (§29, fifth paragraph from the end), and one instance of *ye*, in the particle *sa?yeh* 'soon'.

3. The Basic Shifts. We now (§§4-25) state, illustrate, and discuss 23 changes between PA and M all but the last of which I take to be sound shifts. These are numbered for convenience of cross-reference (S1 through S22, with a belatedly inserted S4'), but the order suggested by the numbering is only in a general way the order in which the changes are assumed to have occurred. The actual order of two changes can be known only when one of them can be shown to have consequences that are necessary antecedents for the other. That is not always obvious. In fact, sometimes a rephrasing of the statement of a change, or a splitting of what one had thought was a single change into two, can alter the

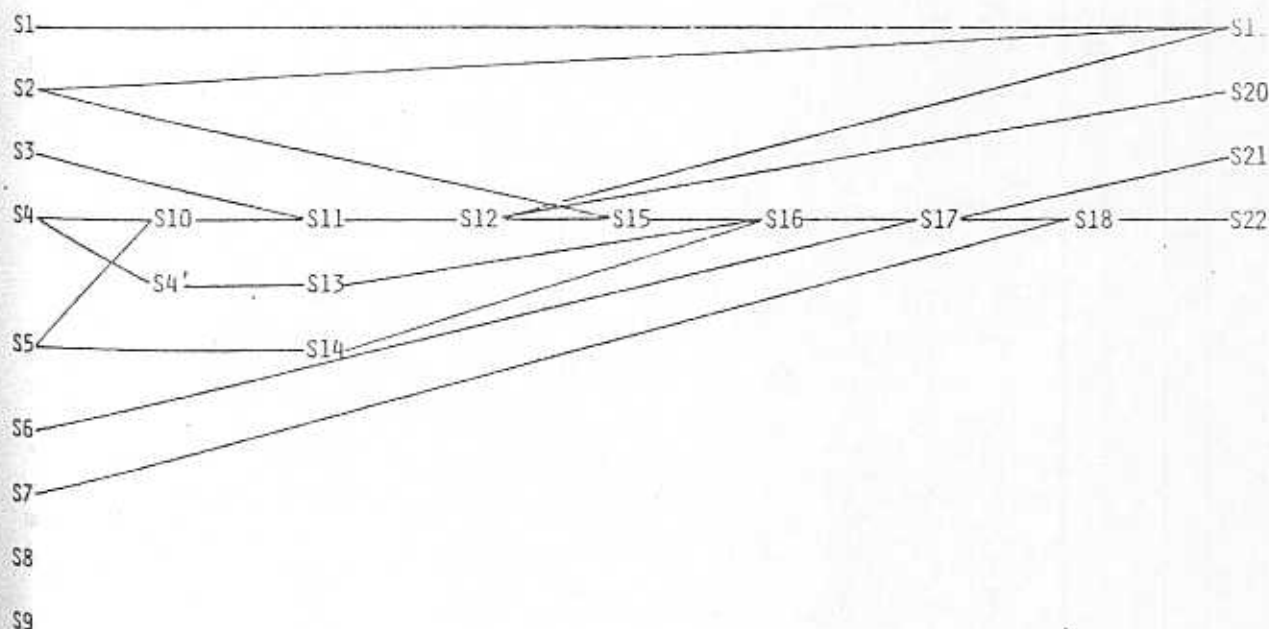


FIGURE 1

picture. If I have managed to avoid all the pitfalls connected with this (surely unlikely), then Figure 1 displays what can be inferred with reasonable security about the historical sequence of the shifts. The vertical arrangement of entries in the diagram means nothing, nor does the relative horizontal placement of two entries unless you can move from one to the other from left to right, without backtracking, along one or more line segments. If you can, then the diagram says that the first preceded the second. (Thus, for example, S19 followed S1, S2, S3, S4, S5, S10, S11, and S12; but we don't know the relative order of S1, S2, and S12, and we don't know whether S19 preceded or followed S15.)

The following outcomes we regard as direct continuations. That is, if a PA sound is unaffected by any of the changes listed and discussed below, the M outcome is as shown here:

PA	*p	*t	*k	*h	*m	*n	*w	*y	*o	*ō	*e	*ē	*i	*ī	*a	*ā
M	p	t	k	h	m	n	w	y	o	ō	ɛ	ē	e	ē	a	ā

No historical inferences should be based on the fact that in four cases the symbol for the unperturbed M reflex is not the same as that for the PA antecedent. That is purely an artifact of the customary notations.

The sound shift that renders the change of notation useful for those four cases is S13 (§16). Four of the other shifts (S9, S11, S14, and S20) are presented below in rough phonetic terms rather than with the presumably phonemic orthographies because we do not know whether they preceded or followed S13. For any of them that in fact preceded S13, [ɛ] > [i] was *e > *i; for any of them that in fact followed S13 (as S21 clearly did), [ɛ] > [i] was *ɛ > *e.

The examples are numbered consecutively; cross-references to them take the form of the numeral preceded by an "E". For ease of search, the numbers of the examples that appear on any one page are given at the bottom of the page as a running foot.

4. Shift S1. *θ (not as first element of a cluster) and *ʔ fall together.

This happens also in all the other central and eastern languages except C, so may have come about when early post-PA was still differentiated only into adjacently mutually intelligible dialects whose speakers were more or less in touch with one another (like, say, the many local bands of Ojibwa speakers in more recent times). Henceforth we will call this simply the "dialect period."

Although ultimately PA *θ, *ʔ, and *n all fall together in M (and in F, O, and P) as n, the coalescence of *θ and *ʔ came first, the loss of contrast with *n only later (§22). Bloomfield 1946, §20 gives the evidence for this: in PA, *θ stood in alternation with *ʃ; in M, F, O, and P that alternation has been extended to forms with n from PA *ʔ, but not to forms with n from PA *n. Thus 1 PA *mīkāvewa 'he fights him', M mēkāvew, and 2 *mīkāšī(nV) 'fight thou him', M mēkāsēn; 3 PA *mīlēwa 'he gives it to him', M mēlēw, and 4 PA *mīli(nV) 'give thou it to him', reshaped between S1 and S19 to *mīšī(nV), M mēsen; but 5 PA *kavēnēwa 'he prostrates him by hand', M kavēnēw, and 6 PA *kavēni(nV) 'lay thou him prostrate', M kavēnen. (For the terminal *-nV see §33.)

For graphic convenient we write the result of the coalescence of *θ and *ʔ as *ʔ. The analogical extension of the alternation might perhaps be easier to understand on the assumption that in the antecedents to M, F, O, and P this *ʔ was like *ʃ in being voiceless or fricative or both. In the antecedents to

Shawnee, Miami-Peoria, and the eastern languages, however, sooner or later the coalescent *ʔ came to be voiced (and largely remained so into historical times), and in a number of these languages, instead of the alternation of PA *θ and *ʃ being extended to *ʔ from PA *ʔ, the invariance of the latter was extended to *ʔ from PA *θ (Goddard, forthcoming, §3.21).

5. Shift S2. *hm > *m.

*hm is "Goddard's cluster" (1974, p 322), yielding p in F, hp in C, hm in Munsee, and m in O, P, and M; thus 7 PA *wikiwāhmi 'house', F wikiyāpi, Munsee wīkwahm, M wēkewam, cf C mīkiwāhp 'somebody's house'. Goddard assumes that the cluster was either *ʔm or *hm, but uses a cover symbol because there is no evidence clearly indicating which. Either way, S2 antedated S19: the latter produced clusters *ʔn and *hn, and one would assume that if the language still at that time retained *ʔm (or *hm) the subsequent treatment of *ʔm and *ʔn (or of *hm and *hn) would have been parallel. It also predated S15, or M 'house' would end with the reflex of *H instead of with -m.

6. Shift S3. As first members of clusters, *h, *x, *θ, and *g all fall together as *h.

Examples are given below in the discussion of S11 and S15.

These coalescences may not all have happened at the same time. That of *x and *θ is shared by all the central languages and thus may date from the dialect period (§4). That of *h with *x and *θ must have preceded S11, since one of the conditioning factors for S11 is the absence of a glottal consonant (*ʔ or *h) after the vowel, and the PA source of the *h does not matter. *g appears only in the cluster *gk, which is relatively rare; I can find no case of it in a word that would be affected by S11 or in which, by S15, everything after the reflex of *g would drop, and so can really assert only that by historic M times *gk had become hk, leaving no trace of its earlier separate status.

7. Shift S4. After a consonant, *we > *o and *ye > *i.

Thus 8 PA *nekwetwi 'one', M nekot (an atonic or "static" word; see §27); 9 PA *nemyehsa 'my older sister', M nemēh.

This assumes, of course, that PA had *we and *ye instead of, or in addition to, *o and *i. Comparative data would suggest that in any case this change was very early, perhaps in the dialect period--actually, in the central languages the only really clear evidence for either *we or *ye either after a consonant or initially is P initial preconsonantal w-, as in 10 wte? 'his heart' < PA wetēhi (M otēh).

But all M tells us is that S4 must have preceded S10 and S13 (whose order relative to each other we do not know) and S4' (which in turn preceded S13). The first part of this is reasoned as follows. If pre-M had retained *we in the second syllable of such words as 11 PA *wenswewa 'he comes to a boil' or 12 PA *natwehtamwa 'he listens for it' (both reconstructed by Bloomfield, of course, with *o), then S10 and S13, depending on their order of application, would ultimately have yielded M *ohsiw or *ohswew and *natih̄tam or *natwehtam instead of the actual forms ohsōw and natōhtam. For the second part see directly below.

Shift S4'. *hwV > *hV (V is any vowel).

Since this shift followed S4, there were no cases of *hwe for it to affect. After S4, there were no occurrences of *w between *h and a vowel. The main ef-

fect of this shift, with S4 before it and S13 after it, was to render the M behavior of PA transitive animate verbs in **-hw* in part like that of PA verbs in **-h* and in part like that of PA verbs in **-Cw*, where *C* is some consonant other than **h*. This is shown in the following table; the braces mark the resemblance of E14 to E13 and of E17 to E18:

	PA	AFFECTED BY			M	
		S4	S4'	S13		
13	<i>*menahēwa</i>	no	no	no	<i>menāhēw</i>	'he gives him a drink'
14	<i>*tepahwēwa</i>	no	yes	no	<i>tepahēw</i>	'he pays him'
15	<i>*sakupwēwa</i>	no	no	yes	<i>sakupīw</i>	'he bites him'
16	<i>*nemenahēkwa</i>	no	no	no	<i>nemēnahēk</i>	'he gives me a drink'
17	<i>*netepahwēkwa</i>	yes	no	no	<i>netēpahok</i>	'he pays me'
18	<i>*nesakupwēkwa</i>	yes	no	no	<i>nesākepok</i>	'he bites me'

PA transitive animate verbs in **-hw* show a special development also in O, calling for the recognition of a shift something like S4 early in the history of pre-O (part of the reason for assigning S4 to the dialect period). But the next step in pre-O was, in a sense, just the opposite of that in pre-M: the sequence **hwV*, instead of losing the **w*, lost the **h*, leaving an alternation between O ? (< PA **h*) before *o*, *w* otherwise: *nintipa'ok* 'he pays me', *tipawāt* 'that he pays him' (conjunct).

8. Shift S5. A disyllable with short vowels adds **-h*; in all other words the final short vowel drops (presumably along with any preceding postconsonantal semivowel).

Thus 19 M *ewāh* 'he says so' goes back to the PA disyllable **ewa*, but the now similar M *otēh* 'his heart' is from the PA trisyllable **wetēhi* (E10). Other examples passim.

It seems likely that a postconsonantal semivowel before a final vowel was lost along with the vowel; an argument to that effect is presented in §37. If not, it disappeared before or as part of S15.

S5 was a rhythmically conditioned change: the vowels that were lost must have been unstressed, and perhaps (as in F today) often dropped in external sandhi and whispered in phrase-final; but the second syllable of a short-vowel disyllable must have been stressed. After S5 every word ended in a nonsyllabic. This new canonic shape of words led to a restructuring of rhythmic design. Some particles and pronouns, and the vocative forms of kinship terms, came to be spoken without noticeable stress and without contrasts of vowel length; these *atonic* words (§27) were then exempt from some of the subsequent changes. Tonic words in which the first syllable had a short vowel followed by a preconsonantal glottal stop (*glottal* words) had one rhythmic pattern; all other tonic words (*non-glottal* words) had another.

S5 preceded S10 and S14 because the rhythmic reorganization followed S5 and is presupposed by S10 and S14.

9. Shift S6. **maw* > **mow* except in the first syllable.

This provides for M double-object verbs in *-amow* where the other languages point to PA **-amaw*: thus 20 PA **nātamawēwa* 'he helps him', M *nātamowēw*. The first-syllable exception allows for M *mawēhsow* 'he (a bear) gathers acorns', from 21 PA **mawinsowa* 'he gathers berries' (C *mawisōw*, O *mawinso*); this is the

only case in Bloomfield's lexicon (1975) of first- or second-syllable *maw* or *mow*. I don't know what a bear would say about himself; if *nemcawehsom* 'I gather acorns', by S10 from an earlier **nemcawehsom*, then the exception presumably should be stated as applying in the first two syllables. In the third or later syllables of a M word, *maw* is common enough, but is the result of the shortening of an earlier **maw*: 22 PA **wāpamāw* 'he is looked at', M *wāpamaw* (that tells us S6 preceded S17). M *maw* can be a stem or theme in *m* followed by the pluralizer *-owaw* (e.g., *osūriyanemowaw* 'their money'), but that does not help us because the *o* of this element is of unknown origin. Since most or all the M words that point to S6 are double-object verbs in *-amow*, S6 may not have been a sound shift at all, but some sort of analogical reshaping the basis for which is lost.

10. Shift S7. Initial **we-* > **o-*. (Initial **ye-* apparently did not occur.)

Thus E10 and E23.

The remark in §7, as to central-language evidence for **we* and **ye*, is relevant here also. S4 and S7 may in fact have taken place together. However, all the M evidence tells us is that, although S4 had to precede S10 and S13, S7 could have been later provided it happened before S18: the antecedent of such a word as M *uʔayapetch* 'pin' had to have **o-* rather than **we-* in time for S18 to raise it to **u-*.

11. Shift S8. The contrast between **s* and **ʃ* is lost (yielding ultimately M *s*); presumably at the same time, **c* loses its originally criterial laminality. Thus 23 PA **wesihkwa* 'fish-duck' and 24 PA **pešiwā* 'lynx', but M *osēh* and *pesēw*; note also E2 and E11.

This change cannot be dated relative to any of the others (although I have a tentative hypothesis to be presented later; see §30). We know only that it postdated PA and predated M. Purely as a matter of convenience, ancestral M forms cited from any post-PA stage will be written only with **s* and **c* (instead of with **s*, **ʃ*, and **č*).

For **č* > M *c* we have, for example, 25 PA **nečyaʔenki* 'in my nose', M *neciʔaneh*. This change in the affricate lost no contrasts and gained none; it was what some scholars thirty years ago were describing as "a phonetic change but not a phonemic one." Just the same, it was a restructuring of the sound system, since, before it, **t* and **č* could be described as fundamentally apical versus laminal, whereas after it **t* and **c* contrasted primarily in the absence versus the presence of fricative release.

12. Shift S9. Initial [ɛ-] > [i-]. On the notation, see the remark in §3.

Thus 26 PA **ehkwa* 'louse', M *ehkuah* (C *ihkwa*, O *iklwa*, but F *ahkwa*); 27 PA **ešikenwi* 'it grows thus', M *esēken* (F *išikenwi* 'it is thus').

The agreement of the C and O forms does not mean much, since in those languages PA **e* and **i*, unless contracted, everywhere fall together as *i*. F has no initial *e*; in general, it shares the M change, though with some unexplained replacements by *a-*. Maybe this support from F is enough to suggest that the shift took place in dialect times. But the M data tell us nothing--this change, like S8, cannot be dated relative to any of the others.

13. Shift S10. If the first two syllables of a nonglottal word both have short vowels, the second is lengthened. (For the definition of a nonglottal word see §8.)

Examples: E5, E6, E9, E16, E23, E24, E26, E27; but not E10 or E25, in which the second vowel is already long; not E4, E7, or E20, where the first vowel is long; not E1, E2, or E3, where the first two vowels are both long; not in 28 PA *aʔlapyā 'net', M aʔnap or 29 PA *keʔðikamyi 'sea', M keʔækam, which are glottal words; and not in E8, which is an atonic word.

This shift followed both S4 and S5, for reasons stated in the discussion of those two, and preceded S11 for a reason to be stated below.

14. Shift S11. In the syllable next after a syllable with a long vowel, except directly before a glottal consonant (*ʔ or *h), [ɛ] > [ɪ]. (For the notation, see once again the remark in §3.)

30 PA *kīšekwi 'day, sky', M kēsek; 31 PA *neškinšekwi 'my eye', M neskēhsek; 32 PA *kaškelentamwa 'he grieves at it', M kaskēnehtam; 33 PA *elenāhtekwa 'ordinary tree', M enēnāhtek; 34 PA *ākema 'snowshoe', M ākem; E25, E27.

S11 followed S3 because the raising is prevented by a following *h of diverse PA sources: 35 PA *kešyāpeθkesamwa 'he heats it as stone or metal', M kesiapθkesam; 36 PA *nešihēhsa 'my father-in-law', M nesēneh. S11 followed S10 because vowels lengthened by S10 serve like older long vowels to bring about the change: E27.

15. Shift S12. As first element of a cluster, *n > *h.

37 PA *šenkihšimwa 'he lies extended', M schkēhsen; E25, E31, E32.

I posit S12 as having followed S11 because, as E25 and E32 show, the raising was not prevented by *h from PA *n; see §41 for the discussion of an alternate possibility. S12 preceded S15 because the simplification of final clusters in words such as E25 left *-h, not *-n. S12 preceded S20 because *h from preconsonantal *n prevented the raising, as E37 shows. That S12 preceded S19 can be argued by noting what the two different orders for the shifts would involve: *-nɪ (S19) > *-nm (S12) > *-hn, where the required intervening-stage *-nn strikes me as highly unlikely; but *-nɪ (S12) > *-hɪ (S19) > *-hn, in which all stages seem reasonable.

It is interesting to compare what happened to PA nasal clusters in M (and in C) with their fate in O. Central Algonquian nasals are generally voiced; the stops and spirants, except in O and P, tend normally to be voiceless (though lenis). In O, in such clusters as PA *mp, *nt, *nč, *nk, *ns, *nš, the voicing of the nasal spread through the stop or spirant. In M and C, on the other hand, it seems as though the voicelessness of the stop or spirant spread backward through the nasal; at least, a change from a sequence like [nt] to [ht] seems easiest to understand if we think of [nt] as an intermediate stage.

16. Shift S13. Before *w, postconsonantal *wi > *o (and *wī > *ō?). Between consonants otherwise, *wi, *yi > *i and *wī, *yī, *wē, *yē > *ī.

38 PA *wāpantwiwaki 'they look at each other', M wāpahtowak; 39 PA *nešwihša 'my maternal aunt', M nenih; 40 PA *elenyiwa 'person', M enēniw; 41 PA *kawīnkawīhšaki, M kīhkihsak 'mud hens'; 42 PA *kyišpene 'if', M kīšpen; 43 PA *pemwēwa 'he shoots him', M pemw; 44 PA *keškyēwa 'he is old', M keškiw.

Ives suggests (in a letter) that since all cases of *wi > M *o are before third-person -w, the change may be not a sound shift but analogical; a basis would be the PA middle reflexives (Bloomfield 1946, §73).

S13 followed S4 (§7). S13 was a rather general readjustment whereby that

which intervened between two single nonsyllabics or consonant clusters, be it a vowel or a sequence of semivowel and vowel, became a sort of unit--a state of affairs that persists in M today. After S13 the only remaining semivowel-vowel sequences between successive consonants were **wa*, **wā*, **ya*, and **yā*; the others mentioned in §2 were later developments (§§29,38).

The argument that S13 preceded S16 is not very strong. The crucial point is that, when shortened by S16, **ī* yields **i* whether it is from an earlier **wī*, **yī*, **wē*, or **yē*. If the shortening had come first, then the resulting **wī* and **yī* would yield subsequent **i* by S13, but the resulting **we* and **ye* would have been anomalous. The weakness of the argument is that S13 could doubtless be re-formulated to take care of that.

17. Shift S14. In the second syllable of a glottal word, [e] > [i] before **k* or **m*. Thus 45 PA **me?tekwa* 'tree', M *me?tek*; 46 PA **ne?them(y)a* 'daughter of my sibling of opposite sex', M *ne?nem*. The exact conditions are not clear, but the raising was not made before **n*: 47 PA **pe?tenamja* 'he takes it by mistake', M *pe?tenam*.

S14 followed S5 (§8). S14 preceded S16 because an **ē* shortened from **ē* by S16 is kept: 48 PA **a?tēki* 'when it is there', M *a?tek*.

18. Shift S15. A final cluster drops all but its first consonant (and if there are still final postconsonantal semivowels, they are also lost; §8).

See E9, E23, E25, E36, E39; 49 PA **kwīkwīhša*, M *kīhkih* 'mud hen'.

If the cluster began with a glottal catch there were complications. M has two nouns whose singulars end in *-ʔs*: 50 PA **nekwiʔsa* 'my son', M *nekīʔs*, and 51 PA **namēʔsa* 'fish', M *namēʔs*. These are the exceptions; a half dozen other nouns show plurals in *-ʔsak* (animate) or *-ʔsan* (inanimate) but singulars in *-ʔ*, and some of these have known PA etymologies: for example, 52 PA **neteʔsi* 'my na-vel', M *netēʔ*. Three nouns show *-ʔn-* (as though from PA **-ʔn-* or **-ʔl-*) before an ending, but singulars in *-ʔ*. A few particles end in the cluster *-ʔa*: 53 PA **keʔči* 'big', M *keʔc* in *keʔc-enēniw* 'old man'; a few fluctuate between final cluster and final single consonant: *mēʔa* ~ *mēʔs* ~ *mēʔ* 'using all up'.

We may assume either or both of two realistic sorts of explanation (though there is no concrete evidence for either, and probably never can be). One is that the dialects of some communities simplified all the final clusters and others did not, and that dialect mixture then yielded the observed results. The other is that the simplification was complete in certain positions, as, perhaps, when the next word began with a consonant, but that some clusters remained in other environments, as before an initial vowel in the next word; and that these external-sandhi alternants were then analogically spread from their originally appropriate environments.

S15 followed S2 (§5) and S12 (§15). It preceded S16 because a final single consonant has a different effect on vowel length than does a cluster (either medial or final); compare E49, with its last vowel shortened, with the plural of the same noun, E41, where the same vowel remains long.

19. Shift S16. After the first long vowel of a nonglottal word, and everywhere in a glottal word, a long vowel preceded by a consonant cluster and not followed by a consonant cluster is shortened.

Compare E49 with E41; E48; 54 PA **meʔšyēwi* 'it is big', M *meʔsiw*; 55 PA **aʔ-tāwa* 'he places it', M *aʔtaw*; 56 PA **kweʔtāmikosiwa* 'he is a good hunter', M *kweʔtāw*.

ko'tamekasew; 57 PA *šī'šīpa 'duck', M *sē'sep*; 58 PA *pīntēwi 'it is enclosed', M *pēhtew*; 59 PA *nōgkwātama 'he licks it', M *nūhkwatam*.

S16 followed S13, S14, and S15. S16 preceded S17 because a rhythmic pattern that defines the conditions for S17 assumes the vowel-length adjustments of S16.

After S16, the first vowel of a word is *odd*; the next vowel after a short odd vowel is *even*; the next vowel after a long odd vowel is *odd*; the next vowel after an even vowel is *odd*.

20. Shift S17. A short even vowel is lengthened before a consonant cluster; a long even vowel not in the second syllable of a nonglottal word is shortened if not followed by a consonant cluster.

E7 and E22 are examples. For the order (S16 before S17), consider 60 PA *kase-šīhtāwa 'he respects it', which after S16 was *ko'sehtaw, after S17 *ko'sēhtaw* (the actual M form); if S17 had come first it would have given *ko'sēhtāw, which would then not have been altered by S16.

S17 also followed S6 (§9). S17 redistributed odd and even as well as long and short, and S21 operated in terms of the new distribution which means that S17 preceded S21. It also preceded S18, since the vowels involved in S18 were those resulting from S17.

21. Shift S18. *ō > *ū, *ē > *ī, and *o? > *u? if, later in the word, with no intervening *e or *ē, there occurs *i, *ī, or postconsonantal *w or *y.

Thus 61 PA *maškiakylwi 'grass', before S18 *maukēhkiw, M *maskīhkiw*; 62 PA *sakiwēwa 'he bites him', before S18 *sakēpiw, M *sakīpiw*; E59. 63 PA *kōm 'snow' gives M *kōn*; the PA plural 64 *kōnaki 'lumps of snow' was reshaped in pre-M, before S18, to *kōnyak, whence M *kūnyak*. This last pair shows that the consequences of S18 continue in M as a fully active pattern of morphophonemic alternation. In this alternation, as a synchronic phenomenon, the raising takes place also before an *u* later in the word: M *kesī'necekwew* 'he does washing for him', but *kesē'necekēw* 'he washes'. But I am unable to cite an example for which the etymon is of PA age. Most or all current cases involve the *de* 3rd-obj verb formative -*uw*-, as in the example just above, and this specifically M element is of unknown origin--though, to be sure, it may be older than S18. Also, Bloomfield posits the raising as taking place (morphophonemically) before *ū* (1939, §35; 1962, §4.66), but this was probably a slip, since both morphophonemically and historically (as he also points out) M *ū* has no native source except *ō* raised by S18.

That S18 happened not long ago is shown by the fact that Bloomfield (loc. cit.) noted many fluctuations in its workings: sometimes the raising takes place despite an intervening *e* or *ē*; sometimes it operates across the boundary between the members of a compound and sometimes it does not; many speakers, particularly younger ones, in the 1920s did not maintain the distinction between higher *u*, *ī* and less high *o*, *e*. The situation points to a relatively recent sound shift in the speech only of some M communities, by which, as it were, the extra highness of *u*, *ū*, *w*, *ī*, *ī*, *y* became a "long component," followed ever since by all manner of back-and-forth influencing among the dialects (which were in any case only minimally divergent).

S18 followed S7 (§10) and S17 (§20). S22 is most easily formulated on the assumption that it followed S18: 65 PA *kwečimjāntama 'he tries to smell it' just before S18 was *kocēmyāntam; because of the postconsonantal *y, S18 turns

this into **koc̣myāhtam*, and then the **y* disappears as S22 converts this to *koc̣mīhtam* (the actual M form). But upon reflection I do not find this convincing, since S18 could itself be rephrased so as to follow S22 or perhaps be simultaneous with it. (For another relevant consideration see §25).

22. Shift S19. **l̥* and **n* fall together as *n*.

Examples of **n* passim; examples of the syncretic **l̥* that resulted from S1: E1, E3, E25, E32, E33, E39, E40.

S19 followed S1, S2, and S12 (§§4,5,15) but cannot otherwise be dated.

23. Shift S20. After an initial nonsyllabic, [ɛ] > [ɪ] except before **h* or preconsonantal **ʔ*. (For the notation see §3.)

Examples passim. That this raising was prevented by a following **h* or preconsonantal **ʔ* is shown by E29, E37, E45, E54. For the dating the only secure inference is that S20 followed S12 (§15).

Bloomfield says (1962, §1.20) that "variants [of the short vowel ɛ] with higher coloring, tending towards Menomini *e*, appear in the personal prefixes before *h* plus *p*, *t*, *k*, *c*"; in §4.62 of the same work (which may have been written several years before or after the first chapter) he proposes rather that the higher variants occur only when there is a "back vowel" (*ā*, *ō*) in the next syllable (on all this, see also Bloomfield's second letter to Bernard Bloch, 1970 pp 367-8, and §41 below). If these pronunciations at the time of his observations were actually cases of *e*, and not just part of the general tendency of in unstressed positions to be raised, then they neither constituted an exception to nor require a reformulation of S20; rather, they represented an analogical extension of the prefix shapes *ke-*, *ne-*, regular before all other consonants, to use before *h* plus a stop. Instances of *e* in this environment from other sources (atonic words and loans) perhaps paved the way (§§27, 29 fn 11, 40).

24. Shift S21. In a nonglottal word, a short odd **ɛ* is raised to **e* except before **h*, **w*, or **y* (or **ʔ*). (For glottal words see the last paragraph of this section.)

For "odd" see §19, and remember that S17, preceding S21, redistributed odd and even. The results of S21 (and of S11) remain in M as a fully living morphophonemic alternation, which is automatic in the sense that *ɛ* does not occur--is not pronounceable--in the syllables defined by the conditions.

The raising appears in 66 PA **lēhlēži* 'when he breathes', M (with final *-t* analogically restored and with the second vowel shortened by S16) *nēhmet*; note that this raising could not be due to S11, since at the time of S11 the second vowel was still long. The retention of the lower vowel is shown by 67 PA **wāpa-ntamenke* 'if it is looked at', M *wāpahtameh*; 68 PA **lēhlēwa* 'he breathes', M *nēhnew*; 69 PA **lēhlēyani* 'when thou breathest', M *nēhneyan*.

S21 followed S17 (§20).

For glottal words the situation seems to have been somewhat different, as though "odd" and "even" had been redistributed after S17. There are too few examples to be sure of the details, but it is clear that the raising did not take place in the third syllable if the first and second syllables both had short vowels: M *aʔsekenew*, *aʔsekenam* 'he picks him/it up by hand' (cf O conjunct with initial change *ēssikināt*, *ēssikinank*), *aʔsetmēhkow* 'he dips bread into broth', *aʔsetenew*, *aʔsetenam* 'he places or holds him/it close'; *keʔsinemew* 'he is over-

taken by the cold', *meʔneken* 'he is big', *peʔcehesow* 'he hurts himself accidentally'.

25. Shift S22. After a nonsyllabic, **wā* > *ua* and **yā* > *ia*.

See E25, E26, E35, E65.

This was not a sound shift, but a restructuring through allophonic analogy. *M wā* and *ua*, *yā* and *ia*, though by report quite distinct to the ear, are very nearly in complementation; *yā* and *ia*, in fact, are completely so. After a nonsyllabic only *ua* and *ia* are found, initially and after a vowel only *wā* and *yā* except for a few cases of initial *ua* in inflected forms of just one verb. The differentiation of pronunciation (by sound change) may be indefinitely old, but the event that threw *wā* and *ua* into contrast must have been the analogical transfer of the historically appropriate word-medial pronunciation of etymological **wā* in such a reduplicated inflected form as *ayuah* 'he uses it' to word-initial position in unreduplicated *uah*, which thereupon contrasted minimally with *wāh* 'roe'. I think the weakness of the contrast signals recency.

26. Other Adjustments. The restructurings described and illustrated in the foregoing can now serve as a frame of reference for our examination (§§27-40) of a number of other developments in the history of M. If we are lucky, we may even find evidence rendering the chronological orderings of S1 through S22 a bit less vague.

27. Atonic Words. Bloomfield's distinction between mobile and static words in modern M (1962, §§4.46-58) is not to be identified with the earlier contrast of tonic and atonic (§8): it reflects the latter, but with an overlay of later developments.

The older distinction developed after PA times but before S10. We cannot describe it in exact structural terms because that would require an unattainable precision of information about suprasegmental and intonational phenomena in ancestral Algonquian. So we must characterize it impressionistically. As in many languages (including English), it must have been the custom, in speaking, to give short shrift to certain "unimportant" words, uttering them quickly, quietly, and with relatively imprecise enunciation, although the same words would be delivered more loudly and clearly for special emphasis, as when cited in isolation. The special thing that happened in early pre-M was that words being spoken atonically lost all vowel lengths. There ensued a period, which may have lasted a long time, during which if you wanted to make an ordinary word atonic you pronounced it quietly and with only short vowels; while to restore an atonic word to tonic status you pronounced it louder and gave it back its long vowels if you could remember what they were. When S10 happened, the habitually atonic words of the time were unaffected: their vowels remained short.

Modern M static words of (collectively) atonic origin include many particles, most demonstratives, the personal pronouns, the word for 'one' (E8), and the vocatives of kinship terms and of a few nouns of allied meanings. A handful of these forms are demonstrably old, but others may be more recent; many of them, particularly particles and demonstratives, have been so mutilated by repeated unstressing and restressing--or in other ways--as to conceal all trace of possible PA etyma.⁵

⁵The concealment is of course compounded in that "little words" in the other daughter languages have also been subject to all manner of cantankerous reshaping. Is this not in fact the case for the small-change vocabulary of every language?

27.1. Pronouns and Particles. The singular personal pronouns must have become atonic even before S5. The PA forms were 70 **kīla*, **nīla*, **wīla* 'thou, I, he/she'. These have no tonic descendants in M. Their atonic byforms, before S5, would have been **kila*, **nila*, **wila*, to which S5 would add a final *-h; with no further reshaping except through the falling-together of *l and *n (S1, S19), these became current M *kenah*, *nenah*, *wenah*.⁶

On that model, one would expect 71 PA **eši* 'thither, thus', if it survived, to yield tonic *esēh* or atonic **eseh* or both. The former is attested: it is a prenoun particle meaning 'that sort of'. But the atonic form is *es*. Possibly this can be accounted for as a later back-formation, along the following lines. One kind of word in Algonquian--phonologically speaking--consists of a particle preceded by a personal prefix: for example, with the particle just mentioned, we have 72 PA **neteši* 'I thus ...' (followed by an appropriate verb). The regular reflex of this in M is (tonic) *netēs*. Now in M there are a great many stems (nouns, verbs, and some particles) which have a short vowel in the first syllable if no prefix precedes but (because of S10) a long vowel after a personal prefix. We illustrate listing the form with prefix first: *nekātew* 'I in intention ...' : *katēw* 'in intention'; *netēhkwapem* 'I sit up erect' : *ehkwapew* 'he sits up erect'; *netēhkom* 'my louse' : *ehkuah* 'louse'. In the same way, given *netēs* followed by some appropriate verb, and switching to a form that calls for no prefix, one gets *es*.

Against the prefix habit just mentioned, there are a very few atonic particles, all preverbs, in current M that keep their vowels short after a personal prefix: *ap* 'go off to (and return)' : *netap*; *kew* (repeated or habitual action) : *nekew*; *pec* (~ *pes*) 'hither; coming' : *nepec* (~ *nepes*); and one which is shortened after a prefix, *cew* (hypothetical or reported action) : *neo*. I had thought of the retention of short vowel after the personal prefix as a relatively recent development, postdating the disruption of the older systematic relationship between tonic and atonic, but I am not sure that impression can be backed up; atonic particles may have done all manner of funny things on their own, following patterns that are no longer discernible.

One of the preverb particles listed just above can be etymologized: 73 PA **pyēši* 'hither' will provide for M *pec* provided it was shifted from tonic to atonic after S5 but before S13 (if the shift had preceded S5 the M form would be disyllabic, like the singular pronouns; if after S13, the vowel would be *i* instead of *e*). For the alternative form *pes* compare the prenoun particle *pōc* ~ *pōs* 'genuine, real' and *mēʔc* ~ *mēʔs* (~ *mēʔ*) 'till all is gone'; but that is all that can be said.

M *men* 'also' can be derived from 74 PA **mīna* 'and', which could have been rendered atonic any time after S5. M *kanapac* 'maybe', from 75 PA **kanapaši*, seems to have been atonic from the beginning and to have been reshaped only by S5 and S8. The possible affiliations of other M atonic particles are too tenuous to help us: for example, M *as* works much like O *a*, common in O also in the

⁶Since the role of the personal pronouns in current Algonquian is mainly to emphasize the identity of a referent shown also by the inflection of the verb, Proulx doubts that they would ever have been atonic and thinks we should seek some other explanation of the M forms. I disagree. The mere presence of the pronoun, with no highlighting, would surely be enough to emphasize the referent.

form with initial change, $\bar{e}$, and known in F, C, and P only with initial change; but since we have no idea where the -s came from the observation gets us nowhere.

27.2. Vocatives. The vocatives of kinship terms all (not surprisingly) incorporate the first person prefix. In addition to being atonic, such a vocative is in some cases based on a stem shorter than that of the same term used for reference, understandable if we remember that the conditions for address are presumably always more intimate, if not invariably more informal, than those for reference. We begin with five vocatives that, as far as their shapes are concerned, could be as old as the atonic habit we have described; note that none of them denotes really close kin:

	PA	M (REFERENCE)	M VOC	MEANING
E40	*neʔθema ⁷		neʔnem	'daughter of my sibling of opposite sex'
76	*neʔθemehsa ⁷	neʔnemeh		(ditto)
77	*nīθemwa	nēnem	nenem	'my sibling-in-law of opposite sex'
78	*nīʔtāwa	nēʔtaw	neʔtaw	'my (man's) brother-in-law'
79	*nōhšihsa		nohseh	'my grandchild'
80	*nōhšihsehsa	nōhsehseh		(ditto)
E36	*nešīθehsa	nesēneh	neseneh	'my father-in-law'

A sixth case is similar, except that the atonic vocative would have had to be created after S12 to obtain its final -h: 81 PA *neθenkwa, M neneh 'son of my sibling of opposite sex'; the nonvocative, here again, has a longer stem: 82 PA *neθenkwaθehsa, M nenēhkwaneh.

Six terms of PA age have vocatives like the preceding except that the nonvocative ends in -h, the vocative in -ʔ:

	PA	M (REFERENCE)	M VOC	MEANING
83	*nehsehsa	nehseh	nehseʔ	'my younger sibling'
84	*nemehšōhsa	nemēhsoh	nemehsoʔ	'my grandfather'
E9	*nemyehsa	nemēh	nemeʔ	'my older sister'
85	*neθwihša	nenih	neniʔ	'my mother's sister'
86	*nesekwihsa	nesēkih	nesekiʔ	'my father's sister; my mother's brother's wife'
87	*nešihsa	nesēh	neseʔ	'my mother's brother or direct male descendant thereof'

⁷Goddard (1973, §6.4), having detected the errors in my treatment of these two words (Hockett 1964, §20), cites the F as *nesemya* instead of as *nešemya*, explains the $\bar{s}$ in the F and O diminutive forms as secondary, and reconstructs *neʔθemya, *neʔθemihsa. I am not sure there is any evidence for the *y other than in F. Furthermore, positing the *y entails explaining M neʔnemeh for "expected" *neʔnemeh as a case of vowel metathesis, like M meʔneken 'he is big' for "expected" *meʔneken. But our explanation of the last form by shifts S14 and S21 seems much more reasonable. So if the etymon did have the *y, it was lost analogically in pre-M after S5.

These forms could hardly have come into existence until the language had word-final glottal catches in its sound system, and the only obvious source thereof is S15 (§18).

Even then, there is the problem of how and why that sound should have come to be used at the end of vocatives. Given a single case as a starter, the habit could of course spread. That case is not obvious, but just possibly it may have been the vocative *neko?* 'O my sibling or parallel cousin of opposite sex', which relates to the nonvocative *nekō?semaw* (no known PA etymon) in something like the way E40 relates to E76 and E79 to E80, and so may have been created on that pattern: that is, discard everything after the first consonant after the second vowel, and shorten the vowels. That is pretty tenuous, but is the best I have to offer at present.

Perhaps it helps a little that several kinship terms whose vocatives are highly irregular (as though through constant reshaping from "baby talk") show the final glottal catch: 'Hey Ma!' is *ne?ēh* or *nē?*; 'Hey Big Brother!' is *nanē?*; and 'Hey Granny!' is *nōhko?*; compare with these the perfectly normal nonvocatives 88 PA **nekya*, M *nekiah* 'my mother', 89 PA **ne?θehsa* (shape uncertain), M *ne?neh* 'my older brother', and 90 PA **nōhkomehsa*, M *nōhkomeh* 'my grandmother'. But the final glottal catch of these forms is equally obscure. As if to mock us, E50, which would seem to have a legitimate reason for a vocative ending in *-?*, in fact has the vocative *nekih*.

Even more puzzling (if that be possible) is that the atonic form *netah*, which looks like it should go with tonic *netāh* 'my father's brother' (no known PA etymon), doesn't; instead, the latter has the vocative *neta?*, and *netah* goes with 91 PA **netāna*, M *netān* 'my daughter'.

The form *nōhne?* 'Hey Dad!' would seem to belong with the highly irregular familiar vocatives given above. It is equally unexplained, but can itself help us understand another historically irregular form: the nonvocative *nōhne?* 'my father', which has an otherwise cryptic extension as compared with 92 PA **nōhθa*, is just the atonic vocative rendered tonic. For the stem, compare the entirely regular 93 PA **ōhθali*, M *ōhnan* 'his father'.

Atonic (or, better, static) vocatives of nouns other than kinship terms are rare (Bloomfield 1962, §6.35) except as archaisms in traditional narrative. The static forms in that context are made not by the really old pattern described earlier in this section but by what must be a later--yet now obsolescent--modification: the first two vowels are made short, but any later long vowels are retained. Thus, though *enenīw* 'O husband!', from E40, would fit either the earlier or the later pattern, *ketēmīw* 'O porcupine!' (nonvocative *ketēmīw*) fits only the later. There are a few static particles of this sort: e.g., *apespēc* 'not a chance'. The disruption of the older pattern may have been due to loans (§40).

28. Initial Change. The regular pattern for initial change in PA (Bloomfield 1946, §45; Goddard 1979b, p. 196, note 3) seems to have been as follows ("C" = any nonsyllabic):

UNCHANGED	CHANGED
(C)a-	(C)ē-
(C)e-	(C)ē-
(C)ī-	(C)ā-
(C)ō-	(C)wā-
(C)ā-	(C)ayā-
(C)ē-	(C)ayē-

In M the pattern of PA $*\bar{a}$ and $*\bar{e}$ is extended to all long vowels, and the PA pattern for $*\bar{o}$ and $*\bar{i}$ has disappeared: from 94 PA $*\bar{p}\bar{o}siwa$, M $\bar{p}\bar{o}sew$ 'he embarks' the M changed form is $\bar{p}ay\bar{o}secen$ 'whenever he embarks'; and note $\bar{k}\bar{e}hkan$ 'it is sharp' : $\bar{k}ay\bar{e}hkah$, $\bar{k}\bar{i}win$ 'he wanders about' : $\bar{k}ay\bar{i}winet$.

Such forms as $\bar{k}ayuahnet$ 'when he jumped' (cf. $\bar{k}uahnew$ 'he jumps') and $\bar{p}ayiat$ 'when he came' ($\bar{p}iat$ 'if he comes') are also innovative. This innovation came about not necessarily after S22, but clearly after the phonetic change of interconsonantal $[w\bar{a}]$ and $[y\bar{a}]$ to $[u\bar{a}]$ and $[i\bar{a}]$ that paved the way for S22 (§25). The new centering diphthongs were vowel-like units, structurally long, and the pattern for long vowels was extended to them: that is, as (C) $\bar{a}$ - is to (C) $\bar{a}y\bar{a}$ -, so (C) $\bar{u}a$ - is to (C) $\bar{a}y\bar{u}a$ -, and so on.

M initial $\bar{o}$ -, from PA $*we$ -, shows the PA pattern of initial change unaltered: with E11 compare 95 PA $*w\bar{e}nswi\bar{c}i$, M $\bar{w}\bar{e}hsit$ (ending reshaped, t for $*\bar{c}$) 'when he came to a boil'. But M $\bar{C}o$ -, from PA $*Cwe$ -, no longer retains the PA pattern; instead, one finds changed forms with $\bar{C}\bar{o}$ -: $\bar{p}\bar{o}'s\bar{e}hkan$ 'he does it' : $\bar{p}\bar{o}'s\bar{e}hkah$ 'when he does it'. Perhaps we can guess that this innovation followed S10, which lengthened the $*o$ of such words when a prefix preceded ($\bar{nep}\bar{o}'s\bar{e}hkan$ and the like).

29. Reduplication. There is no evidence that Algonquian has ever had a single completely dominant pattern of reduplication. Instead, there is evidence for several, one more productive in a particular period (or language), another at some other time or place.

The commonest pattern, undoubtedly of PA age, is (1) for $\bar{C}\bar{a}$ - to be prefixed to the stem, where $\bar{C}$ is the initial nonsyllabic of the stem; if the stem begins with a vowel then $\bar{C}$ is zero, but y is inserted after the $\bar{a}$: 96 PA $*w\bar{a}pam\bar{e}wa$ 'he looks at him', M $\bar{w}\bar{a}pam\bar{e}w$: 97 PA $*w\bar{a}w\bar{a}pam\bar{e}wa$ 'he keeps looking at him, examines him', F $\bar{w}\bar{a}w\bar{a}pam\bar{e}wa$, C $\bar{w}\bar{a}w\bar{a}pam\bar{e}w$, O (conjunct) $\bar{w}\bar{a}w\bar{a}pam\bar{a}t$, probably M $\bar{w}\bar{a}w\bar{a}pam\bar{e}w$ but not recorded. Thus also M $\bar{k}\bar{a}n\bar{a}weh\bar{e}w$ 'he supports him' : $\bar{k}\bar{a}k\bar{a}n\bar{a}weh\bar{e}w$; $\bar{p}\bar{a}h\bar{p}\bar{e}sew$ 'he hunts' : $\bar{p}\bar{a}p\bar{a}h\bar{p}\bar{e}sew$; 98 PA $*\bar{a}piwa$ 'he sits, is in place', M $\bar{a}p\bar{e}w$: $\bar{a}ya\bar{p}\bar{e}w$.

If the M initial stem nonsyllabic is $\bar{c}$ then there are two forms for the prefixed syllable: $\bar{c}\bar{e}'\bar{nep}\bar{a}ht\bar{a}m$ 'he observes it' yields both $\bar{t}\bar{a}\bar{c}\bar{e}'\bar{nep}\bar{a}ht\bar{a}m$ and $\bar{c}\bar{a}\bar{c}\bar{e}'\bar{nep}\bar{a}ht\bar{a}m$, the former reflecting a pre-PA period when $*\bar{t}$ had not yet been laminalized to $*\bar{c}$ before a laminal vocoid.

Among the other patterns whose effects show up in M are (2) the prefixing of $\bar{C}V\bar{C}'$ -, where $\bar{C}$ is as before, $\bar{V}$ is the vowel (always long in our examples) of the first syllable of the stem, and $\bar{C}'$ is the consonant or cluster that follows that vowel; and (3) the prefixing of $\bar{C}a\bar{C}'$ -, where the short $\bar{a}$ is invariant. Either of these produces a medial cluster $\bar{C}'\bar{C}$ at the junction of the prefixed syllable and the stem, but that is in general simplified. In pattern (2) the simplifications are these:

$\bar{p} + \bar{c} \rightarrow ?\bar{c}$	$\bar{k} + \bar{m} \rightarrow ?\bar{m}$
$\bar{p} + \bar{s} \rightarrow ?\bar{s}$	$\bar{h}\bar{k} + \bar{p} \rightarrow \bar{h}\bar{p} \text{ or } ?\bar{p}$
$\bar{p} + \bar{w} \rightarrow ?\bar{w}$	$\bar{s}\bar{k} + \bar{k} \rightarrow \bar{s}\bar{k} \text{ or } \bar{h}\bar{k}$
$\bar{k} + \bar{p} \rightarrow \bar{h}\bar{p}$	$?t + \bar{k} \rightarrow \bar{h}\bar{k}$

Thus $\bar{c}\bar{e}p\bar{e}skaw$ 'he moves with a jerk' : $\bar{c}\bar{e}'\bar{c}ep\bar{e}skaw$ 'he jerks repeatedly'; $\bar{s}\bar{e}p\bar{e}kat\bar{e}'\bar{t}aw$ 'he moves with stiff legs' : $\bar{s}\bar{e}'\bar{s}ep\bar{a}kat\bar{e}'\bar{t}aw$ 'he makes stiff leg movements'; 99 PA $*w\bar{e}pen\bar{e}wa$, M $\bar{w}\bar{e}pen\bar{e}w$ 'he swings him' : $\bar{w}\bar{e}'\bar{w}ep\bar{e}n\bar{e}w$ 'he waves him'; $\bar{p}\bar{a}kah\bar{a}m$ 'he hits it with a stick' : $\bar{p}\bar{a}h\bar{p}\bar{a}kah\bar{a}m$ 'he drums on it'; PA root 100

**mākw-* 'press, jab', attested in M only with reduplication, as in *mā?makonew* 'he handles him roughly'; M *pōhkoskaw* 'it breaks crosswise' : *pōhpōhkoskaw* 'it breaks up', with the PA root **poakw-*, but, with the same root, 101 PA **pōskonamwa* 'he breaks it by hand', M *pōhkonam* : *pō?pōhkonam* 'he repeatedly breaks it across by hand'; 102 PA **kīškahamwa* 'he chops it through', M *kēskaham* : *kēskēskaham* ~ *kēhkēskaham* 'he chops it to pieces'; *kī?taham* 'he pries it out' : *kīhkī?taham*.

In pattern (3) the simplifications mainly replace *C'* by *h*:

<i>p + t</i> → <i>ht</i>	<i>c + p</i> → <i>hp</i>
<i>hk + p</i> → <i>hp</i>	<i>s + p</i> → <i>hp</i>
<i>hk + t</i> → <i>ht</i> or <i>?t</i>	<i>?s + p</i> → <i>hp</i>
<i>k + s</i> → <i>hs</i>	<i>w + p</i> → <i>hp</i>
<i>hk + s</i> → <i>?s</i>	<i>w + t</i> → <i>ht</i>

Thus *tapāsow* 'he dodges' : *tahtāpasow* 'he repeatedly dodges'; *pahkipotaw* 'he pulls it off' : *pāhpākipotaw* 'he pulls it to pieces'; PA root 103 **tahk-* 'cool', M *tāhkēpi?nen* 'a cool rain is falling' : *tahtāhkēpi?nen* 'it is raining in scattered drops'; PA root 104 **tank-* 'foot action', M *tāhkī?taw* 'he stamps his foot' : *tahtāhkī?taw* 'he repeatedly stamps his foot', but 105 **tankeškamwa* 'he kicks it', M *tāhkēkam* : *ta?tāhkeskam* 'he repeatedly kicks it'; (E15) PA **sakipwēwa* 'he bites him', M *sakīpiw* : *sāhsākepiw*; *sūhkihsen* 'he slips in walking' : *su?sūhkihsen*; *pacēskaham* 'he stabs it' : *pāhpāceskaham*; *pasēpaham* 'he transfixes it' : *pāhpāsepaham*; *pa?saham* 'he splits it by tool' : *pāhpā?saham*; *pawāham* 'he knocks it down by tool' : *pāhpāwaham*; PA root 106 **taw-*, M *tawēsam* 'he cuts a hole in it' : *tahtāwesam* 'he cuts holes in it'.

In one respect all these reduplicated forms look as though they had been inherited from pre-S10 times: the differences in vowel lengths and heights between the forms with and without reduplication are just what would have been produced by S10, S16, S17, and S21. The secure inference is that some of them are old-enough to serve as effective basis for the appropriate analogical reshaping of newly created ones. Thus there is no conflict between this mark of apparent antiquity and evidence of innovation.

The second and third patterns are not attested in modern languages other than M, except that something like the second appears, often with no matching unreduplicated forms, in one apparently onomatopoeic verb and in some bird names: 107 PA **kwiškwihsīwa* 'he whistles', M *kīskihsow* (ending reshaped); compare E49; 108 PA **kēhkēhwa* 'hawk', M *kēhkeh*; 109 PA **sā?sakēwa* 'heron, crane', M *sā?sakew* (or, as recorded by Goddard in 1974, *sā?sakew*); E57; 110 PA **kōhkōhkahōwa* 'great horned owl' and 111 PA **tīntīwa* 'bluejay', not attested in M. The reconstructions are all highly suspect, since bird names are especially susceptible to onomatopoeic reshaping; and, in fact, the P form for 'bluejay', *titis?e*, does not fit E111. But the pattern is clear, and the model may have been sufficiently alive in the seventeenth century to be followed as Algonquian speakers adopted and adapted the French word *coche* 'pig' (despite the winglessness of that animal): the O is now, in various dialects, *kōhkōšš* or *kōkkōšš*, and the M loan from O is *kōhkōs* (plural *kōhkōhsak*).⁸ Thus the second pattern may well have grown within M from a PA seed. The origin of pattern three remains unknown.

Further evidence of innovation is that there is no PA source for the M clusters *?p* and *?m*, or for the sequence *?w*, found in patterns two and three for *C'C*.

⁸Or did the reduplication take place in French before the borrowing? Goddard (1975, p. 155, note 5) thinks so, and cites a north French form *coucouché* in support.

The first two of these are found only in reduplicated forms. The third occurs also in the peculiarly shaped personal name *kā?wekit* 'Rough-Face', which apparently shows metathesis from an underlying *kāwe?ki-* (Bloomfield 1962, §§1.32, 4.41, 18.148). Associated with this is the retention of interconsonantal *-we-* both in the name and in the reduplicated form *wē?wepenēw* (E99) and a few words related to it (e.g., *wē?wepeswakan* 'cradle, swing, rocking-chair'): *-we-* is [wɪ], so these must postdate S13 or this would have become *-i-*.

Finally, there are the instances in which one and the same *C'C* combination is treated in two different ways; in fact, in each case the members of the pair involve the same PA root: **pōkw-* reduplicating in M to *pōhpōkw-* or *pō?pōkw-*, **kīšk-* to M *kēskesk-* or *kēhkēsk-*, **tānk-* to M *tahtānk-* or *ta?tānk-*; and, though less securely, *C' = M h < PA *n* in E48 but *C' = M s < PA *š* in E107, which is significant only if the bird name is derived from the bird's whistlelike call. In each pair presumably one must be the younger, though we may not be able to tell which.

For the third pattern, so many different consonants and clusters (as *C'*) are simply replaced by *h* that the pattern perhaps ought to be set out as *Cah-* instead of as *CaC'-*. M clusters of shape *hC* have more diverse PA sources than any of those with other first members, and *hC* clusters are more frequent in M than any others. So, however the pattern got started, what we see now is the result of an indefinitely old generalization of *h*. But that, of course, leaves unexplained the few cases of *?t* and *?s*.

We know that in PA there was an active morphophonemic habit by which, if an element that ended ordinarily in **p* was followed without connective **-i-* by one beginning in **t* or **ʔ*, the first consonant was replaced by **ʔ*. For **p + *t → *ʔt*, compare E98 and E55. For **p + *ʔl → *ʔʔl*, compare 112 PA **nepwa* 'he dies', M *nepuah* and 113 PA **ne?lēwa* 'he kills him', M *ne?new*. If E57 is really reduplication, then it shows **p + *š → *ʔš*. Similarly, it looks very much as if the PA root 114 **pāk-* 'dry, hard', as in M *pākatn* 'it freezes solid', appears in altered form in 115 PA **pā?tēwi* 'it dries as in heat', M *pā?tew* (C *pāstew*), showing **k + *t → *ʔt*; and the beginning of M *pa?saḥam* 'he splits it by tool' may be a byform of the PA root 116 **paθk(ē)-* 'split, branch off', as in 117 PA **paθkenamwa* 'he plucks it by hand', M *pahkenam* (F *pahkenamwa*, C *pask-* in kindred forms), showing **θk + *s → *ʔs*.⁹ The evidence is uneven, but seems to suggest that either **p* or **k*, or any of various clusters with one of those as second element, when followed without connective **-i-* by any consonant, was regularly replaced by **ʔ*; it can even be suspected that if we could discern sufficient detail far enough back in time, all PA clusters beginning with **ʔ* would turn out to have this origin.¹⁰

⁹Goddard (correspondence) thinks the last example confuses distinct PA roots **paθk-* 'cut, break (of stringlike objects)' and **paθkē-* 'branch off', and wonders what the **-s-* would be if we tried to relate **pa?sa-* to **paθk-*. Our knowledge of ancestral Algonquian morphology is secure enough to justify his doubts, but also insecure enough to warrant my tentative suggestion. (After all, the speakers of a language sometimes confuse things too.)

¹⁰In 1952 and 1958, while editing Bloomfield's description of M for publication, I discovered the possibility of interpreting the glottal catch in clusters as (historically and morphophonemically) derived from one or another of the ordinary stops, and inserted bracketed notes about that into the work as

In M's sister languages the initial *ʔ of clusters was always turned into something else. In M not only was the *ʔ kept--or, better expressed (since, after all, we do not really know what PA *ʔ was phonetically) not only did *ʔ become [ʔ]--but the pattern of replacement was retained and generalized. Thus the ʔC clusters in reduplications of patterns two and three may date back almost to PA times (not ʔw, by the way; remember that this is not a cluster because w is not a consonant). The hC clusters in pattern three are perhaps for the most part younger. The hC clusters in pattern two, on the other hand, may be older. For the one doublet showing sk versus hk I think the data afford no leverage for a historical inference.¹¹

30. Contraction. Certain PA forms show contraction: *-awe- is replaced by *-ā- if followed by *t, *s, or *k, but by *-ō- otherwise. Presumably this morphophonemic alternation resulted from earlier sound shifts, possibly related to Proulx's proposed pre-PA contractions of *-ewe- to *-ō- and of *-eye- to *-ō- (§1), but the exact conditions are obscured. M inherits the consequences. We illustrate with Bloomfield's examples (1946, §19): 118 PA *newāpamekwa 'he looks at me', M newāpamek shows ending *-ekwa in full form; 119 PA *kewāpameθene 'I look at thee', M (haplologic¹²) kewāpamen shows ending *-eθene in full form; 120 PA *newīntamawāwa 'I tell it to him', M newēhtamowāw shows an uncontracted stem in *-aw-; 121 PA *newīntamākwa 'he tells it to me', M newēhtamak shows *-awe- → *-ā-; 122 PA *kewīntamōθene 'I tell it to thee', M (haplologic) kewēhtamon shows *-awe- → *-ō-.

Note that, by virtue of shift S6, the M alternation in E120, E121, and E122 appears to be between -awe- and -ā- or -ō-. See Bloomfield's statement and examples in 1962 §§4.30-32.

Between PA and M the following contracting shifts took place: *-ēwe-, *-iwe-, and *-īwe- became *-yā- (or, rather, the appropriate M reflexes of *-yā-). Thus 123 PA *nenēwekwa 'he sees me', M neniak; 124 PA *eškotēwenki 'in the fire', M eskōtia; 125 PA *wetelenyiwemali 'her man' = 'her husband' (cf E40), M otēnenyaman; 126 PA *kiwe?tāhšimowa 'he dances around in a circle', M kia?tāhsemow. These results do not appear in the other languages (so Bloomfield's cautious guess, loc. cit., that some of them might be of PA age is apparently wrong). The change took place before S17, because otherwise the fourth syllable of E125

published (Bloomfield 1962). Meeussen (1959) reports an entirely independent discovery of the same possibility. A superficially similar proposal by Pinnow (1958) is based solely on complementation and (supposed) phonetic similarity, with no morphological evidence--hardly a reliable procedure when working with a language known only through reconstruction.

¹¹M also shows scattered cases of reduplication by other patterns, most of them presumably relics of pre-PA times (see Bloomfield 1962, §§21.16-30; also 1946, §§106-7). One isolated case is bothersome: in view of the nonoccurrence in PA of first-syllable *i and in view of shift S20, it is hard to account for the word *cehce?nesew* 'he is fidgety' as anything but a neologism, and hard to account for it as a neologism because there is no other attested example of the same pattern.

¹²Here and in §31 I follow Geary (1943) and Bloomfield (1946, §40). Goddard (1967, p. 88, n. 4) and Proulx (1980c), calling on more reliable evidence from more of the daughter languages, both take the shorter I-thee ending as original and propose diverse explanations for the longer C ones.

would show *-ia-* (from *-yā-* by S22) instead of the shortened *-ya-*. On the other hand, the *t* of E124 remains unlaminalized despite the following *i*--as it does also before a new *i* or *ĩ* produced by S13 from old **wi*, **wĩ*, or **wē*. This means that both S13 and the contractions occurred long enough after S8 for laminality (versus apicality) to have ceased to be a crucial distinctive feature in the sound system. And that is our one reason for believing that S8, otherwise undateable, was in fact early (§11). The exact conditions for these contracting shifts are concealed by new formations or dialect mixture: witness *kēwε'sew* 'he is blown about', with the root of E126 uncontracted.

Proulx (1980c) presents tantalizing evidence in favor of another contracting shift between PA and M: of PA **-aye-* to M *-ĩ-*, the same PA sequence yielding *-ā-* in the other central languages; thus 127 PA **netayehsi* 'my legging', M *netĩh* (C *netās*, O *nintāss*); 128 PA **wetayenki* 'before, earlier', M *otĩh* (C *otāhk*); 129 PA **meqkwayewi* 'it is red', M *mehkĩw* (F *meškwāri*, C *mihkwāw*, O *miskwā*, all regular instead of having to be explained as "reshaped").

31. Haplogogies. If we follow Geary and Bloomfield, the PA transitive animate independent indicative 'I-thee' ending was **-eθene*, which shows haplogogy not only in M but in F, O, and P: E119 and E122 give F *kewāpamene*, *kewitāmōne*, O *kiwāpamin*, *kiwintāmōn*, P *kwāpman* (E119 unrecorded). These are the central languages in which PA **θ* and **n* fall together as *n*. Only in C, where **θ > t*, does the ending appear in full form: *kiwāpamitin*, *kiwihitamātin*. One would therefore guess that the reduction took place in the dialect period. But for M that conflicts with internal evidence (given in §4) as to the timing of S19. Perhaps this supports the contention of Ives and of Proulx (see fn. 12) that the shorter form was original, the longer C form an innovation.

There is a more certain haplogogy in M, undateable except that it followed S10 and S19 and preceded S17. This dropped certain instances of the sequence **-en-* when followed by another **-en-* or by **-ēn-*. The sequence had to be in the latter part of a word (somewhere after the first long vowel of a nonglottal word, for example) and had to form part of a series of one or more syllables with short vowels; that series, in turn, had to be followed by a syllable containing **ε* or a long vowel (always **ē* in our examples). The **-en-* was dropped if that brought the **ε* into an *even* syllable (so that it was not raised by S21) or if it brought the **ē* into an *odd* syllable (so that it was not shortened by S17). Our examples are from Bloomfield 1962, §§5.9, 38, 8.32, 9.1 and are given in current M notation. In *kenātomenenemucaw* 'I call you' and *kan opōsenenēnan* 'the other does not embark' the specified rhythmic conditions are not met and there is no haplogogy. But in what would have been **kekēs-natōnenenemucaw* 'I have called you', **kemēkānenenemen* 'I am said to hate thee', and **kan opianenēnan* 'the other does not come' the conditions are met and the actual forms are *kekēs-natōmenemucaw*, *kemēkānenemen*, and *kan opianēnan*.

There was still another haplogogy, apparently quite recent. In a sequence *-V₁wV₂wV₃-*, where *V₂* was short but at least one of *V₁* and *V₃* was long, *-V₂w-* was dropped. Our examples (again in current M notation) are from Bloomfield 1962, §§6.55, 56: *wēkowaw* 'their house' (by S17 from **wēkowāw*) shows the pluralizer *-owāw* in full form; *kemāncāwāwak* 'your cheeks' for expected **kemāncāwōwāwak* shows the haplogologic deletion. In the case of *wē'towāwan* 'their (men's) brother(s)-in-law' for expected *wē'tawōwāwan* we see not only the loss but also the shortening effect of S17, suggesting that this haplogogy happened before S17. But the shape of *ketāhtawāwāw* 'your fellow parent-in-law', which likewise shows the haplogologic loss compared with expected **ketāhtawāwōwāw*, suggests otherwise. Its

first $\bar{a}$ is long despite S17. Most M words of this sort, with persistent long vowels, must be the result of loans and other reshaping well after S17 (§39). That places this haplology at a later time, and leaves the short a of $w\bar{e}'tawawan$ to be accounted for in terms of a morphophonemic alternation that resulted from S17 and that has remained alive ever since for such constantly used inherited material as $-ow\bar{a}w$.

For the proposed recency of this haplology it may also be significant that the unshortened forms are occasionally heard, presumably as analogical restorations. Bloomfield reports not only $w\bar{e}'tawowawan$, listed above without asterisk, but also (1962, §7.4) unreduced $n\bar{i}w\bar{i}wak$, $n\bar{i}w\bar{i}wan$ alongside reduced $n\bar{i}wak$, $n\bar{i}wan$ for the verbs 'they (respectively animate and inanimate) are four in number'.

32. The Locative. The PA locative ending was $*-enki$. E25 shows this giving M $-eh$ by regular shifts S11, S12, S15. The same appears in 130 PA $*w\bar{i}kenki$ 'at his home', M $w\bar{e}keh$, and in 131 PA $*w\bar{i}kiw\bar{a}hmenki$ 'at his house' (cf. E7), M $w\bar{e}kewameh$, where we see further evidence that S11 preceded S17, since the vowel in the third syllable was long for the operation of S11. The regular ancient replacements of interconsonantal $*we$ by $*o$ and $*ye$ by $*i$ (§1) appear in 132 PA $*a\bar{s}kehkwenki$ or $*a\bar{s}kehkönki$ 'in the kettle', M $ahk\bar{e}hko\bar{h}$ and 133 PA $*a'senyenki$ or $*a'seninki$ 'on the stone', M $a'seneh$. 134 PA $*n\bar{i}y\bar{o}nki$ 'on my body' < pre-PA $*n\bar{i}y\bar{a}wenki$, M $n\bar{i}y\bar{o}h$ shows the pre-PA contraction (§30); M $esk\bar{o}tiah$ 'in the fire' (E124) shows one of the M contractions.

Locative forms of other shapes in PA would be expected to yield different M results, but don't. Instead, apart from locatives in $-oh$ and those showing contraction, the ending $-eh$ has been generalized. Thus, if our tabulation of regular shifts (§3) is correct, 135 PA $*nekepahonenki$ 'at my waist', if undisturbed, would have become M $*nek\bar{e}pahoneh$, but the actual M form is $nek\bar{e}pahoneh$, and there are no locatives in $-eh$.

Even apart from that, some M locatives are new formations. 136 PA $*a\bar{s}kyi$ 'land, earth', M (reshaped) $ahk\bar{e}w$, presumably had a PA locative $*a\bar{s}kinki$ < $*a\bar{s}kyenki$, but S5 and S10 turned the nonlocative into $*ahky\bar{i}h$, and a new locative was made by tacking $*-enki$ onto that, resulting in M $ahk\bar{i}heh$ (there is also an even newer one based on the reshaped nonlocative: $ahk\bar{e}weh$). 137 PA $*nepyi$ 'water' experienced the same adventures, so that M has nonlocative $nep\bar{e}w$ and locative $nep\bar{i}heh$. For M $pem\bar{e}h$ 'oil, grease', Bloomfield gives the locative as $pem\bar{e}heh$ in the lexicon (1975) but as $pem\bar{i}heh$ in 1962, §6.27. The etymon for the nonlocative seems to have been 138 PA $*pemyi$ (rather than $*pemi$, as proposed years ago by Michelson), called for by C $pimiy$ and Munsee $p\bar{e}m\bar{a}y$. This has been reshaped in M somewhat the way 'land' and 'water' have been (except for the final $-h$ instead of $-w$), and the M locative $pem\bar{i}heh$ would be entirely parallel to $nep\bar{i}heh$ 'in the water'. The other locative shape, $pem\bar{e}heh$, is (if also genuine) simply the current nonlocative $pem\bar{e}h$ plus $-eh$.

33. Word-Final Accretions. M animate intransitive verbs, independent order, singular first- or second-person actor, show $-m$; C shows $-n$; F, O, P show zero. The M plural first-person exclusive and second-person endings begin with m , the C ones with n , and the singulars may have been back-formations (Proulx, 1980c, offers quite a different explanation for the C forms, but our argument for M is unaffected). If this is so, the M singulars may have come into existence any time between PA and the present, provided it was long enough ago for all traces of any older competing forms to have been wiped out. Bloomfield bases his PA

reconstructions here on the F, O, and P: thus 139 PA **nesi* 'I say so', 140 PA **kepemipahto* 'thou runnest by'. If the relevant plurals in pre-M just after PA times--or even in PA--were **nesiHmenawV* 'we (exc) say so' and **kepemipahtō-HmawV* 'ye run by' (I use "V" because the final short vowels in these assumed forms are unidentifiable), yielding M *nesēmenaw* and *kepēmeпахтomaw*, the singulars could have been made at any time by lopping off everything after the *m*, and the outcome in modern M would be just the attested *nesēm* and *kepēmeпахтом*.

Of course that leaves the plurals to be accounted for; but there the evidence is slightly better; they are not so isolated as the singulars. Thus M *-menaw* can be compared with O *-mīn*, P *-mən*, and F *-pena*, and M *-maw* with O, P *-m* and F *-pwa*; hence the PA or just-post-PA shapes proposed above (see Goddard 1967, 1974).

M transitive inanimate verbs in the nonindicative modes of the independent order with singular first- or second-person actor also show an *-m*, not final but followed by the various mode signs. We can suspect a history in part parallel to that of the animate intransitive forms. Corresponding to 141 PA **pōnamwa* 'he puts it down', M *pōnam* 'he puts it in the pot', C *pōnam* 'he puts it as fuel in the fire', early pre-M plurals would have been **nepōnēHmenawV* 'we (exc) ...' and **kepōnēHmawV* 'ye ...', from which the actual M indicative forms *nepōnēmenaw* and *kepōnēmucaw*. Back-formed indicative singulars **nepōnēm* 'I ...' and **kepōnēm* 'thou ...', though no longer in use, could have served as the basis for such nonindicatives as *nepōnēmen* 'it is said that I put it in the pot' and *kepōnēmet* 'dost thou put it in the pot?' before being displaced by the now current shapes.

M transitive inanimate verbs in the indicative mode of the independent order show a final *-n* for a singular goal, *-nan* for a plural one. These are the endings that have displaced the back-formed *-m* in that mode; but they are inherited forms, not upstarts, since they appear also in O and P, the *-n* also in C. Thus 142 PA **nenontāni* 'I hear it', M *nenōhtan* (O *ninōntān*); 143 PA **kenātenali* 'thou fetchest them', M *kenātenan*.

The M animate intransitive imperatives and the transitive animate imperatives for 'ye-me', 'thou-him/them', and 'ye-him/them' all show a final *-n*, missing in the sister languages. We would know more about the time of this innovation if we knew whether postconsonantal semivowels before a PA final vowel were dropped as part of S5 or subsequently (though not later than as part of S15). If the former, then the M extension in the imperatives represents **-nV* (or conceivably **-lV*) added to the inherited shape before S5. If the latter, then the extension could have been **-en* added to the inherited shape not later than S15, with the regular replacement of interconsonantal **we* by **o* (that would be the old **e*, not the new M **e* after S13). It seems to me that the former is more likely (see also §37), and I phrase the first example accordingly: 144 PA **pōsilo* 'embark thou!' (cf E94), extended to **pōsilonV*, M *pōsenon*; 145 PA **pōsiko* 'embark ye!', M *pōsekon*; 146 PA **ne?li* 'kill ye me!', M *ne?sekon* (laminalization analogical); 147 PA **ne?li* 'kill thou him/them!', M *ne?sen* (ditto); 148 PA **wāpamēhko* 'look ye at him/them!', M *wāpamēhkon*.

34. Independent-Order Modes. Of the M nonindicative modes of the independent order, the preterit, emphatic present, and dubitative are elaborations of elements of PA age. The indicative is mostly old, but with a few innovations (see §33 and below).

The only securely reconstructible feature of the preterit, shared by C, M, O,

and P, is a PA piece **-epan-* which occurs, with one or another extension, before the endings for third-person plural and obviative. The extension is M, C, O *-i-*, P *-in-*; but some O dialects have *-ē-* instead of *-i-*, which renders any single PA reconstruction impossible. There is also disagreement as to what this ending is added to. Thus, corresponding to 149 PA indicative **pemātesiwakī* 'they live', M *pemātesewak*, C, O *pimātesiwak*, P (reshaped) *pmatsək*, the preterits are C *pimātesipānik* 'they once lived', O *pimātesipanik*, P *pmatsəpānik*, and M *pemātesyapanik* 'but they were alive!' (the M as though from a PA or early post-PA **pemātesiwepanyēki*, with the M contraction, §30). Except in P, the third-person singulars look like possible independent back-formations from the plural (and obviative): C *pimātesipan*, O *pimātesipan*, M *pemātesyapah*. In P, on the other hand, the plural and obviative must be very new: if old, the plural would be **pmatsəpninək*, but the *-pən-* in fact keeps its vowel regardless of rhythmic environment. Most forms with a stable *ə* in P are recent loans, as *motəy* 'bottle' (< F *bouteille*), plural *motəyən*. So for this language one must assume that the singular is old and underlies the new plural and obviative.

It is also possible that the P and M preterit forms are to be explained in part as due to O influence. The proliferation of the M preterit, whether initiated or only promoted by O, took place early enough for the **e* of **-epan-* to merge with a preceding postconsonantal **w* into **o*: 150 PA **kenātamākwa* (< pre-PA **kenātamawekwa*) 'he helps thee' of course loses its final **wa* in M *kenātamak*, but the corresponding preterit *kenātamakopah* shows its influence.

The emphatic present as a mode of the independent order is unique to M. It is so closely modeled on the preterit that its elaboration surely followed that of the latter; to make a present form, you take the preterit and either insert *-sa-* before *-pani-* or, if it contains no *-pani-*, replace *-p-* by *-s-*: *piapanik* 'but they came!': *piasapanik* 'so they have come after all!'; *piapah* 'but he came!': *piasah* 'so he has come after all!'. But the materials are ancient. The *-sa-* reappears in a few F endings of the potential mode and in the C particle *ēsah* 'so it appears'; both the *-sa-* and the seeming combination *-sapan-* appear in Eastern and Plains conjunct formations.

The dubitative inflection of verbs found in F, C, and O (I did not record it for P but may simply have missed it) does not appear in M, but certain M predicative pronouns and particles are dubitative, as also are a few in F and O. The characteristic mode marker in M is *-tok* or *-towak*; the former recurs in one or two F particles and in some of the dubitative verb forms of F, C, and Lake Superior O; in Walpole Island O the nearest thing to this is *-tik*, which is not near enough to help. There seem to be no whole-word cognates between M and any of the other languages. Even the verb inflections of F, C, and O show great divergences of detail. I am led to suspect that PA had only a limited dubitative--a few bits and pieces in verbs and other predicative forms, on which each daughter language has rung its own changes.

The M interrogative mode is quite unlike anything in the sister languages. Its forms end in *-ʔ* replacing a final *-w* of the indicative, in *-eʔ* after the final *-n* of indefinite-actor forms (Bloomfield's "passives"), in *-wat* ~ *-ot* after indicative forms that formerly ended in a postconsonantal *w*, and otherwise in *-t* or *-et* added to the indicative. The marker with glottal catch recurs in interrogative pronouns and particles: e.g., *wēkiʔ* 'what is it? what are they (inan.)?', *awēʔ* 'who is he? who are they (an.)?'. There is no evidence as to the source of any of these marking shapes, and no sign of antiquity except for the continuing manifestation of now long lost final postconsonantal *w*'s.

For the M quotative, finally, there is not even that: it must have developed entirely after the loss of final postconsonantal semivowels, thus well after S5, perhaps even after S15: with the preterit listed alongside E150 compare *kenātamaken* 'it is said that he helps thee'. The recency of the inflectional formation is clear even though we know the likely source of the ending: an earlier M atonic particle *enah*, from 151 PA **ena* 'it is said' (Goddard 1974, p. 327); the particle may well have been joined enclitically to the indicative to achieve the semantic flavor now obtained by the quotative. (One wonders if the O enclitic *ina*, P *nə*, could be the same element, even though their force is interrogative rather than quotative.)

Since the quotative, like the other nonindicative modes, is based on the old inherited indicative forms even in those cases in which the latter have now been displaced, we learn from the dating just given that those displacements in the indicative also had to be well after S5, perhaps even after S15. They are listed and illustrated (in synchronic guise) in Bloomfield 1962, §8.2. For first-person plural inclusive actor, *-ʔ*, appearing as far as we can see out of thin air, replaces *-menaw*; *kepōseʔ* 'we (inc.) embark'. For transitive animate 'I-thee', the inherited *-en* drives out its competitor, inherited *-enen*: *kenāto-men* 'I call thee'. For transitive inanimate with first- or second-person singular actor, inherited *-n* for singular goal and *-nan* for plural drive out inherited *-m* (§33).

35. Consequences of Word-Final Vowel Loss. The loss of most PA word-final vowels (S5, §8) had relatively trivial consequences for nouns and particles, somewhat more far-reaching ones for verbs.

F nouns have an adverbial form in *-e* and a compounding form in *-i*, and the animate ones have also a vocative in *-e* (Bloomfield 1927, §§74, 75, 54). If PA had any of these, the distinctions among them and between them and the singulars (animate in **-a*, inanimate in **-i*) disappeared in pre-M with S5. So, of course, did the overt marking of gender in the singulars. The only exceptions, in principle, would have been (1) nouns with "short stems" (like **ehkwa* 'louse' E26), and (2) those cases where a vanishing **-i* left behind a final mutated **-ǝ* or **-ʒ*, whereas all other endings, dropped or not, called for stem-final unmutated **t* or **θ*. After S5 what happened was that in almost all cases the force of numbers was overpowering: the unmutated forms were spread to all uses and the mutated ones disappeared. So although 152 PA **nesitali* 'my feet' and 153 PA **nesiǝi* 'my foot' would be expected to give M *nesetan* and **nesēc*, the singular is in fact *nesēt*. For PA stem-final **t* this has apparently been universal: I can track down no M singulars in *-a*. But the PA alternation of **θ* and **ʒ* has left a few traces, such as 154 PA **nīwaθali* 'my packs', M *nēwanan*, 155 PA *nīwa-ʒi* 'my pack', M *nēwas* (Bloomfield 1962, §§6.14, 58, 81). Nouns with short stems have mostly been reshaped. In the case of the unreshaped *ehkuah* 'louse' (E26), with plural *ehkuak* and obviative *ehkuan*, the *-ah* is of course historically from the PA ending **-a*, but can hardly be thought of any more as a marker of animate singular.

The PA noun endings **-aki* (animate plural) and **-ali* (animate obviative singular, inanimate plural) were merely shortened by S5. The PA obviative plural ending **-ahi* has disappeared in M and the old singular obviative is now used indifferently for both numbers, but phonological changes seem not to have played any part in that.

For particles, PA **-i* was a common final, and its dropping in pre-M left
PA 151-155

many ending in *e*: E75. With no inflectionally related competing unmutated shapes, of course there was no analogical leveling. It is perhaps just barely possible that the commonness of final *-e* in particles exerted some pressure against that consonant at the end of a noun, and thus supported the generalization of unmutated noun singulars in *-t*.

In verbs, the PA conjunct distinguished modes by the absence or presence of initial change (§28), and by different word-final suffixes after the person-number endings (Bloomfield 1946, §45; Hockett 1950). Some of the mode signs consisted of a single short vowel: **-e* for subjunctive (but see fn. 3); **-i* (and **-e?*) for indicative; **-a* for an animate singular third person participle and **-i* for an inanimate singular one. With S5, the distinctions thus made were wiped out except, as with nouns, where a lost final **-i* left behind a final **š* whereas the other lost vowels left unmutated final **t* (one would expect the same with mutated **š* and unmutated **θ*, but there were apparently no cases). That is, immediately after S5, 156 PA **pyāš-i* 'that he comes' (indicative) should have been **pyāš*, while 157 PA **pyāte* 'that he come' (subjunctive) should have been **pyāt*. But in so many cases the forms had become identical--for example, 158 PA **pyāyani* 'that thou comest' and 159 PA **pyāyane* 'that thou come', both M *pīyan* (with reshaped stem)--that the functional syntactic difference between the indicative and the subjunctive, whatever it had been, was lost, and shapes in final **e* were entirely replaced by those in **t* (so M *piat*, and no indicative-subjunctive contrast).

The PA iterative, with initial change and with mode marker **-ili* (Goddard 1974, 112-13), survives in M with no mutilation except that all trace of a preceding postconsonantal semivowel is lost; for that problem, see §37.

36. Reshaping of Suffixes with Initial **e*. In 32 we saw that, although the regular shifts from PA to M would have led to two shapes of the locative ending **-enki*, one with *e-* and one with *ε-*, the former has entirely displaced the latter. There are a number of similar cases.

In fact, that is what has happened with all inherited verb inflectional endings that in PA began with **e*, except only the imperative plural ending M *-ehkon* 'ye-him/them'. If the **e* of such an ending was immediately preceded (after S10 if not earlier) by a syllable with a long vowel, then the regular M reflex (by S11) is *e*. If the PA ending began with **ek*, as a fair number of them did (transitive animate inverse forms, both independent and conjunct), then M *e* is also the regular reflex (by S14) when the PA **e* was in the second syllable of a glottal word. Otherwise, barring contraction within PA or lengthening of the **e* by S10 or S17, the M reflex ought to be *ε*; but, with the one exception noted, it never is.

So these are regular: 160 PA **neʔlekwa* 'the other kills him', M *neʔnek*; 161 PA **nāθeθankwa* 'if he fetches us (inc.)', M *nānenah*; 162 PA **pyētōmekwa* 'the other carries him hither on his back', M *pītōmek*; 163 PA **ketōtākwa* (< pre-PA **ketōtawekwa*) 'he treats thee so', M *ketōtāk*; 164 PA **nāθenāi* 'if he is fetched', M *nāneh*. But these are all analogical, with *e* for *ε*: 165 PA **wāpamekwa* 'the other looks at him', M *wāpamek*; 166 PA **wāpamekote* 'if the other looks at him', M *wāpamekot*; 167 PA **wāpameθankwa* 'if he looks at us (inc.)', M *wāpamenah*; 168 PA **wāpamenāi* 'if he is looked at', M *wāpameh*.

Again with one exception, it is only a PA **e* at the beginning of an inflectional ending, immediately preceded by the stem, that has been subject to the analogical leveling just illustrated. A PA **e* later in an ending normally re-

ceives undisturbed treatment: thus 169 PA **wāpamiyamente* 'if he looks at us (exc.)', M *wāpameyameh* is regular, as are both 170 PA **nōntamenke* 'if it is heard' (transitive inanimate conjunct, indefinite actor), M *nōhtameh* and 171 PA **wāpantamenke* 'if it is look-d at', M *wāpahtameh*. The exception is in the transitive animate conjunct ending for 'we-him/them': 172 PA **wāpamakente* 'if we look at him/them', M *wāpamakeh*. The analogical basis for this reshaping is not evident.

The leveling that largely eliminated the *ε*-shapes initially in endings may have been relatively recent, since if the vowel is lengthened by either S10 or S17 it appears (almost always) as *ē*. So 173 PA **netekwaki* (or **netekoki*) 'they say so to me' is M *netēkok*, and 174 PA **wayāpameθkini* 'whenever he looks at thee' yields M *wayāpamēhken*. (It is this alternation between *ε* and *ē* that Bloomfield symbolizes with his morphophoneme "E"). But even more recently the analogical force of the commoner alternation between *e* and *ē* (from PA **i* and **ī*, with the various M shortenings and lengthenings) has affected the behavior of some of the endings, possibly rarer ones or common ones accompanying rarer stems, yielding a long *ē* instead of, or in competition with, the historically expected *ē*. So 175 PA **eθeθki* 'when he says so to thee' and 176 PA **eθenči* 'when he is told so' both yield M *enēh*, but for both the shape *enēh* is also heard. (For other examples see Bloomfield 1962, §§10.18-20. When *ē* predominates, instead of *ē*, he writes "æ" instead of "E", but clearly he had great trouble deciding where to draw the line.)

The proposals in this section should be regarded as tentative; see the final remarks in §41.

37. Conjunct Non-Third-Person Endings. We are concerned here only with the PA markers *-*ān*- 'I', *-*an*- 'thou', *-*ānk*- 'we (exc.)', *-*ankw*- 'we (inc.)', and *-*ēkw*- 'ye'. On the assumption that PA postconsonantal semivowels before a PA final vowel were lost, along with the vowel, as S5, the history of these endings in M can be outlined as shown in the following table:

	AFTER S5	AFTER S12	AFTER S13, S15	AFTER S16, S17	M
'I'	*- <i>ān</i>	*- <i>ān</i>	*- <i>ān</i>	*- <i>ān</i> ~ - <i>an</i>	} - <i>an</i>
'thou'	*- <i>an</i>	*- <i>an</i>	*- <i>an</i>	*- <i>an</i>	
'we exc'	*- <i>ānk</i>	*- <i>āhk</i>	*- <i>āh</i>	*- <i>āh</i> ~ - <i>ah</i>	} - <i>ah</i>
'we inc'	*- <i>ank</i>	*- <i>ahk</i>	*- <i>ah</i>	*- <i>ah</i>	
'ye'	*- <i>ēk</i>	*- <i>ēk</i>	*- <i>ēk</i>	*- <i>ēk</i> ~ - <i>ek</i>	- <i>ēk</i> ~ - <i>ek</i>
'I'	*- <i>ānin</i>	*- <i>ānin</i>	*- <i>ānen</i>	*- <i>ānen</i> ~ - <i>anen</i>	} - <i>anen</i>
'thou'	*- <i>anin</i>	*- <i>anin</i>	*- <i>anen</i>	*- <i>anen</i>	
'we exc'	*- <i>ānkin</i>	*- <i>āhkin</i>	*- <i>āhken</i>	*- <i>āhken</i>	} - <i>ahken</i> ~ - <i>āhken</i>
'we inc'	*- <i>ankon</i>	*- <i>ankon</i>	A*- <i>ahken</i>	*- <i>ahken</i> ~ - <i>āhken</i>	
'ye'	*- <i>ēkon</i>	*- <i>ēkon</i>	A*- <i>ēken</i>	*- <i>ēken</i> ~ - <i>eken</i>	- <i>ēken</i> ~ - <i>eken</i>

The upper part of the table is for the collapsed indicative-subjunctive (§35); the lower part is for the iterative. The "A" in the last two rows means analogical. We suppose that after S5 the iterative fell into relative disuse for at least a generation or so, and that when it once again became common (before S15) new forms for 'we inc.' and 'ye' were made in the obvious way--by combining the mode marker still in use for the other person-number categories with the noniterative forms for these two (and, of course, making initial change).

After S16 and S17, the 'I' form had in many cases become identical with the

'thou' form, and the 'we exc' form often identical with the 'we inc' form. Thus 177 PA **pōsiyāni* 'that I embark' and 178 PA **pōsiyani* 'that thou embarkest' both, without any tinkering, gave M *pōseyan* (different until S17, thereafter the same) and 179 PA **pōsiyānki* 'that we (exc) embark' and 180 PA **pōsiyankwi* 'that we (inc) embark' both yielded M *pōseyah*. So the distinctions no longer made by the verb had to be indicated--when necessary for clarity--elsewhere in the sentence. The commoner shapes of the endings were then generalized into all rhythmic positions, and the inflectional distinctions abandoned. Thus, the expected M reflexes **wāpahtamān* and **wāpahtamāh* of 181 PA **wāpantamāni* 'that I look at it' and 182 PA **wāpantamānki* 'that we (exc) look at it' do not exist; they have been replaced by the normal reflexes *wāpahtaman* and *wāpahtamah* of 183 PA **wāpantamāni* 'that thou lookest at it' and 184 PA **wāpantamānki* 'that we (inc) look at it'.

38. Postconsonantal *wē*. Since S4, S4', and S13 wiped out all cases of **CwV* except where **V* was **a* or **ā*, any such sequences in M are due to developments after S13. The handful of cases of M *Cwē* have already been dealt with (§29). The somewhat larger number of cases of M *Cwē* are a more complex problem.

Some such forms are incontestably loans: the woman's name *saswēs*, which comes, either directly or through O, from French *Françoise*; *moswēn* 'shawl' from French *mouchoir*. For the latter note also the M derivative *moswēnēhsch* 'little shawl, handkerchief', and the likely immediate models in O, *mōššwē* 'shawl', *mōššwēs* 'handkerchief' (for Walpole Island O, Bloomfield records somewhat different shapes).¹³

Others are most probably loans, in that they have a "foreign flavor" (Bloomfield 1962, §4.27) and in that related languages with which the speakers of M have had contact show possible models. For M *mahwēw* 'wolf' there are F *mahwēwa* and its P cognate *m'we*, but the F is the more likely because of the *h*; O (and C) here have a different word (O *ma'īnkan*). With *meswēw* 'rabbit' compare F *mešwēha* O (Walpole Island) *mišwē* 'cottontail'. An O word for 'rattlesnake', *šiššikwē*, is somehow related to the word for 'gourd, gourd rattle', 185 PA **šiššikwani*, F *šiššikwani*, M *šiššekwan*, O *šiššikwan*; M *sehsikwēw* names some sort of dangerous snake. M *mimikwēw* 'butterfly' looks like a loan from some kind of O, where forms such as *mēmēnkāwā* and *mēmikwā* are on record; the *ī* in the first syllable of the M suggests that the word had been naturalized before S18.

For *poswēw* 'master, employer' I have no suggestion.

Akin to the clearly foreign man's name *pītwēwēskan* 'Steps-Hither-With-Noise' there is a verb that retains the foreign coloring by keeping the shape *-wēw-* in place of native *-īw-* 'sound': *pītwēwātesew* 'he reacts to the sound of someone approaching'.

Many women's names contain *-ehkwēw-* 'woman': *macekehkwēwes* 'Silly Maiden'. They are loans, or coinages in imitation of loans (see §40).

More problematic are the M verbs, and a few nouns derived from them, that contain *-wēp-* 'throw, fling' after a consonant. PA had a paired root and medial suffix 186 **wēp-*, **-wēp-* with this meaning, both well attested in the daughter languages (not much in F). For the root, note 187 PA **wēpenēwa* and 188 PA **wēpenamāwā* 'he throws him, it away', C *wēpinēw*, *wēpinam*, M *wēpenew*, *wēpenam*, O (conjunct) *wēpināt*, *wēpinank*: cf F *wēpāhkēwa* 'he throws things'. The redupli-

¹³In the transcription of O a vowel with a tilde is long and nasal.

cated root 189 PA **wēwēp-* means 'swing, wave' in F, C, O; in M it has been reshaped (§29). The medial suffix seems to have been irregular in PA in that (1) after some roots ending in a consonant a connective *-i- was inserted (not customary before element-initial *w), and (2) even without a connective *-i-, a preceding *t or *θ was replaced by *č or *š, as though an *-i- had been there formerly and had then disappeared. But the evidence on these matters is not unambiguous; see below.

When, within the PA word, *-wēp- is preceded by a vowel, all is plain sailing: 190 PA **kawiwēpenēwa* 'he throws him down by hand', M *kawēwēpenew*, C *kawiwēpinew*, O (conjunct) *kawiwēpināt*; 191 PA **ešiwēpenēwa* and 192 PA *ešiwēpenamwa* 'he throws him, it thither by hand', M *esēwēpenew*, *esēwēpenam*, C *isiwēpinēw*, *isiwēpinam*. There are two or three dozen M verbs of this sort, mostly built from widespread material though many of them have no known whole-word cognates.

When, in the PA word, *-wēp- was preceded by a consonant, the outcome in M should of course be -čp-. But I have found only one word in Bloomfield's M lexicon (1975) which may show this: *kāhāč'new* 'he pushes off' (as in a canoe). This could reflect a PA **kānč(i)wēpēwa*, from an earlier **kānč(i)wēpēwa*, with *? for *θ before a consonant (§29); the combination **kānč(i)wēp-* occurs in a number of M and O words with the meaning 'set into motion by pushing'. However, Bloomfield's analysis (1962, §18.85), which is quite different, is perhaps equally plausible.

With that one possible exception, M shows the shape -wēp- postconsonantally as well as after vowels (and initially). There seem to be three possible explanations. First note the following forms, which are typical of the ones that must be accounted for: 193 PA **pakič(i)wēpenēwa* and 194 PA **pakič(i)wēpenamwa* 'he flings him, it free or down', M *pakēčwēpenew*, *pakēčwēpenam*, C *pakiciwēpinēw*, O (conjunct) *pakičwēpinank*. The first suggested explanation assumes the PA forms without the connective *-i- (that has been the standard assumption in the past, as implied earlier); the other two assume the PA forms with the connective.

First proposal: All the M words with postconsonantal -wēp- are new formations, postdating S13, partly under the influence of obvious and familiar O cognates, but also with the reinforcement of the abundant cases of postvocalic -wēp- and initial wēp- in words of allied meaning. One then has to explain why the wave of reformation in M left no detectable wreckage of what must have been the preceding state of affairs, and also why C restored the connective -i- in all or almost all words of this sort.

Second proposal: The PA etyma had the connective *-i-, mostly retained in C. In the history of M this short vowel dropped. This alternative--and the third--account for the otherwise puzzling laminalization of a preceding *t or *θ, and of course fit the C evidence neatly. It is true that Bloomfield recorded one C form with no connective: *sīkwēpinam* 'he pours it away' (compare, with the same root and medial, his C *sīkiwēpiskam* 'he spills it by foot', with the -i- we want); it would help if we could discount this as a scribal error. But there are also the difficulty of accounting for the absence of the connective -i- in the O cognates, and that of specifying the exact conditions and timing of the necessary short-vowel loss in M. That short-vowel loss had to follow S13; therefore we cannot push it back to the dialect period, as an adjustment that spread through pre-M and pre-O dialects and missed others. We might propose that the O words in question are loans from M, but all the indications are that O tended to be the donor and M the recipient in such matters. Anyway, pin-

ning down the alleged M short-vowel loss turns out to be extremely tricky--perhaps because it never happened.

Third proposal: The PA etyma had the connective; the *-i- was lost at some point in the history, not of M, but of O; the M forms in question are loans from O and coinages in imitation of such loans, with reinforcement (as under the first proposal) by the M vocabulary in which (-)wēp- had been inherited unperturbed. This circumvents the problems of the second proposal, but shares one with the first and, of course, introduces some of its own.

Perhaps with more digging we shall be able to choose among these alternatives. The one certainty at the moment is that the M forms we have been examining, in the shapes they now have, are recent.

39. Irregular Vowels. The M medial -wēp- has also a peculiarity not shown by any of the examples cited in §38: its vowel remains long in defiance of S16, though not of S17. Thus *ciāhkawēpenew*, *ciāhkawēpenam* 'he flings him, it off or down'; *kāhewēpenew*, *kāhewēpenam* 'he flings him, it with a push by hand'; *pīhawēpenew*, *pīhawēpenam* 'he throws him, it inside something'; but *ahpēhcewēpenew*, *ahpēhcewēpenam* 'he flings him, it so hard'; *tetēpahkiwēpenam* 'he flings it to wind around a solid'. Obviously this suggests that the words in question were created (or borrowed) after S16 but before S17.

Shifts S10, S16, and S17 resulted in patterns of morphophonemic alternation that mostly continue to operate in modern M. Yet quite a number of current words contain vowels that are short although, by those patterns, they should be long, or that are long though they ought to be short. The once atonic words we surveyed in §27 constitute one category, but there are also some others.

39.1. Persistent Shorts. The first two vowels are short (despite S10) not only in formerly atonic words but also in two verbs and in quite a number of nouns, many of them obvious loans from O. The verbs are *anohkīw* 'he works' (O *anokkī*) and *mamasewēw* 'she copulates' (O *mamašiwē*). The first vowel is lengthened after a personal prefix: *netānohkīm* 'I work' (with vowel of final syllable short by S16). Derivatives retain the peculiarity of the primitive: *anohkīw?tanowēw* 'he works at it for him'.

The nouns include *awēw* 'brant' and a few other common nouns of assorted meanings, but are mostly personal names, such as *kehtekān* 'Farm' (O *kittikān*) and *macehkewes*, the oldest of the Thunderers and a favorite name for the oldest of a set of brothers (O *manšikkiwīss* 'oldest brother').

All these loans must have entered M well after S10. 'Work' must have been firmly established at least before S17 (since either S16 or S17 would shorten the last vowel of *netānohkīm*). The nouns could be indefinitely more recent.

The O verb *anami?ā* 'he prays; he is a Christian' must have been borrowed into M at a different time or under different circumstances, because it received different treatment, its first two vowels coming to show the regular length alternations (though its last vowel resists shortening; see below): *anā-mehaw* 'he goes to church', *netānamehcam* 'I go to church'.

39.2. Old Native Persistent Longs. Many of the Algonquian languages have a phenomenon called "rhetorical stress" or "rhetorical lengthening": a vowel, whether ordinarily short or long, is prolonged and loudened for emphasis (for M see Bloomfield 1962, §1.53). Back in §27 I proposed that words which at a certain stage of pre-M were typically pronounced atonically were not subject to

certain of the shifts that affected words spoken in the ordinary fashion; I now want to suggest that at a later period words characteristically pronounced with rhetorical lengthening escaped the effects of S16.

This strikes me as a reasonable diagnosis for a set of interrogative and exclamatory predicative pronouns (Bloomfield 1961, §§12.27, 17.14), including *wē-sēkew* 'what sort is he?', *awē-sēkewak* 'what do they amount to!', and the pre-noun particle *wē-sēh* 'what sort?'

It also seems appropriate for a set of words interrogative in form but exclamatory in meaning: *apē-cīn* 'what a lot!'; *apē-cīnoket*, *apē-cīnatonet* 'there are so terribly many of them!' (respectively an. and inan.); *apē-cīsehe?*, *apē-cīsehta?* 'what a lot of them (an. or inan.) he has!'. But it should be noted that there are kindred words which lack the phonological peculiarity; e.g., *apē-aeke-tāso?* 'how angry he is!'

There is also the isolated imperative *anēhsānon* 'go away!'

Rhetorical lengthening may be responsible for the fact that, in both M and O, the vowel before the first consonant of the productive diminutive ending is always long. Rhetorical emphasis seems semantically appropriate especially for a diminutive being created on the spot because of the impressive smallness or triviality of that being named. If the M and O diminutive endings are cognate, then 195 PA **anemwa* 'dog', M *anēm*, O (Walpole Island) *anim* could have had a PA diminutive **anemwensa* > **anemonsa*, and rhetorical lengthening at any time between PA and the recent past, perhaps quite independently in pre-M and pre-O, would have yielded the attested long vowel in M *anēmōhseh*, O *animōss*. S16 and S17 are here of no help with the timing, since the long vowel of the diminutive was not in the proper environment to be shortened by either--though invariably long, that vowel is not "persistent" in our special sense of that term.

It is just barely possible that rhetorical lengthening is responsible for the irregular long vowel in the second syllable of *kēskanowēhew* 'he cuts off his tail', used euphemistically for 'he castrates him (bull, calf, colt)' (Bloomfield 1962, §18.137). This word defies S16; it is a byform of an entirely regular *kēskanowēhew* which has the literal but not the metaphorical meaning.

I think that is as far as we can go. There are also two cases of persistent long vowels in clearly old native material that assuredly cannot be explained in terms of rhetorical lengthening. In these it is S17 rather than S16 that is defied. In the negative order, the first person is pluralized by a suffix *-īnaw* with persistent *ī*: *kan nepusenīnawān* 'we (exc.) did not embark'. In the conjunct, the third person is pluralized by a suffix *-wāw* ~ *-wā?* with persistent *ā*: *pūsetua?* 'when they embark' (*-ua-* by S22). Of course one can propose that, subsequent to S17, the long-vowel shapes of these suffixes appropriate for certain rhythmic positions were analogically generalized; but why just these particular two and no others?

39.3. Longs Now Persistent under Prefixation. Bloomfield points out (1962, §§4.53, 83, 6.41-42) that vowel-length alternations are often neglected in the inflection for allocation of nouns rarely so inflected: the vowel in the syllable immediately after the prefix is lengthened, but long vowels later in the word may be kept long regardless of their rhythmic position. These habits, in their current form, are surely recent, postdating both S16 and S17. Thus, despite S16, *mehnōs* 'raft' is heard in possessed form as *nemēhnōnem* or even *nemēhnōsem*; despite S17, *mē-tekōs* 'dugout canoe' turns up possessed as *nemē-tekōnem*;

and the lengthening of S10 in *anīh* 'bullet' (PA probably **arwi*) is retained in the possessed form *netānōm* (< **netanomi* < **netanwemi*).

39.4. Persistent Longs in Recent Loans. Apart from the prefixing situation just described, many loans have long vowels in positions where S16 or S17 would have eliminated them, and are marked as recent by that fact. Except for the verbs with *-wēp-* (§38) and for *anānehāw* (§39.1) they are all nouns: *sēwehtākan* 'salt' (O *šiwittākan*); *pōtawētemiū* 'Potawatomi'; *ēspayōw* 'Spaniard'; *mōhkomān* '(white) American' (O *mōkkomān* 'knife', *kičči-mōkkomān* 'big knife' = 'sword' = 'white American'); *ānemāw* 'German (F *allemand*)'; and a great many personal names, for which see §40.

39.5. New Deverbal Formations. I think there is evidence for a new pattern of word-formation, postdating S16 and S17, in which a long vowel at the beginning of a medial suffix (or at the end of what precedes that suffix) is kept long despite S16 or S17 because it is long in other occurrences and the length keeps the resemblance in shape greater. This, it will be remembered, was a proposed diagnosis for some of the words with the medial *-wēp-*, where that shape should not occur (§38). And for some of the others, as for *-wēp-*, O forms akin in sound and meaning may have played a part in the overriding of older patterns. Some of the meanings are clearly recent, but by no means all of them.

First some that defy the morphophonemic consequence of S16. With *maskīhki-weneniw* 'medicine man, physician' compare *maskīhkiw* 'herb, medicine', *enēniw* 'person, man', and O *mašikkīwinini* 'physician'. The first part recurs in *mašikkīwikamek* 'drugstore'; the latter part of that recurs, in turn, in *semākanehsīwikamek* 'barracks', whose first constituent *semākane*s (plural *semākanehsak*) 'soldier' is a loan from O *šimākanišš*. With *kīskānahkwat* 'the clouds come low' and *wīhsānahkwat* 'the clouds are coming up' compare *ānahkwat* 'it is cloudy; cloud' (O *ānakkwat*), *nīkānahkwat* 'the clouds descend', *osāwānahkwat* 'there are yellow clouds'; the verb *papīhkwānahkwat* 'the sky is now cloudy, now bright', with regular shortening and lengthening, is presumably an inherited older word. With *mōhkācemow* 'he prophesies' compare *acemow* 'he narrates', *kē sācemow* 'he finishes telling his story', *enācemow* 'he narrates thus'. With *nōhkāpamēw*, *nōhkāpahtam* 'he detects a weakness in him, it' compare many forms in which the *ā* "should" be long, such as *enāpamēw*, *enāpahtam* 'he looks thus at him, it', as well as *wāpamēw*, *wāpahtam* 'he looks at him, it'; here, again, there are inherited older regular formations, such as *cē'napamēw*, *cē'napahtam* 'he closely watches him, it'. In all these examples, S17 applies whenever relevant.

S16 is also optionally violated in *nīcīskīw* ~ *nīcīskiw* 'my enemy', but none of the explanations proposed in the foregoing will apply.

Next some that defy the morphophonemic consequence of S17. With *tepāhekīsu'nyah* 'clock' compare *tepāhekan* 'measure, mile, yard, hour' and *kēso'* (plural *kēso'nak*) 'sun, moon, month'. The latter appears also in the bird name *wāpekīsu'nyah*, literally 'sun-looker'.¹⁴ Both *kīskānītepēhkan* 'dark of night' and *oskīwanītepēhkan* 'early part of the night' relate to *wānītepēhkan* 'night, darkness', in which the longs are of course regular. For the second of these, note that there is a prenoun and preverb *oskēh* 'new, young, fresh, recent', so that a (not

¹⁴Bloomfield identifies the bird as the green heron. Goddard, following clues in Skinner 1921 (pp. 48, 197) thinks the reference is more likely to be to the American bittern, because of the posture that bird adopts when frightened.

attested) compound **oskēh-wanītepēhkan* (or **oskīh-wanītepēhkan*, by S18; see §21 end) would be perfectly regular and would have much the same meaning as the one-word derivative. Compounds of this sort may also have contributed to the new habit of keeping certain vowels long.

For the following additional cases no relevant related forms in either M or O can be cited, but the words may belong here just the same: *pēhkanāmow* 'he drowns' (and some derivatives--as for many of the examples we have given); *pēhkapākōw* 'he is very thirsty'; *kīhkapākōw* 'he is injured by thirst'.

40. Loans. There is abundant evidence to show that in recent centuries M and O have been in repeated intimate contact, under conditions that led to extensive borrowing from O into M, relatively little (if any) in the other direction. Among the reasons for this one-sidedness are that M was spoken only in a small set of villages in a restricted territory, whereas dialects of O were scattered far and wide, and that speakers of O had earlier and more extensive contact with arriving Europeans, with all their new things and ways, than did speakers of M. Even before any European influence to speak of, it is likely that such institutions as the Medicine Lodge passed from other peoples (perhaps O speakers) to the M rather than the other way around, and the appropriate terminology surely accompanied the new rites. Both before and after European contact, an important channel for cultural and linguistic diffusion in all directions was the rather common practice of taking a wife from a neighboring tribe.

We have already in several places mentioned M borrowings, mainly though not exclusively from O: the preterit in §34; verbs in §38 and §39.1, nouns in §38, §39.1, and §39.4; general diffuse influence in §38 and §39.5. Until very recently, loans ultimately from European sources were mediated by O (e.g., 'pig', §29), so that, from the M point of view, they were simply further imported O words. Here we need add only three points.

(1) The M cluster *st* occurs in a few interjections, but otherwise (like the consonant *ʒ* in English) is heard only in loans: *mānestānes* 'sheep; cotton batting', plural *mānestānehsak*, from O *mānistānišš*, -ak; *wīstiyah* 'blacksmith', plural *wīstiyāhsak*, from O *wīštoyā*, -k.

(2) Just as in the case of English borrowing from Latin, M has borrowed a number of O nouns both in the singular and in the plural (in the case of animate nouns, also in the obviative). The M singular shows final -s, from O -ss or -šš, while the M forms with overt suffix show -hs- corresponding to O -ss- or -šš-; derivatives (made within M) show -hs-. 'Sheep', directly above, is an example, and we have already seen *semākanes* 'soldier', plural *semākanēhsak*, O *šimākanišš*, -ak; likewise 'pig', M *kōhkōs*, *kōhkōhsak*, O *kōkkōšš*, -ak; note the M derivative *kōhkōhsehnak* 'pork barrel'. The O model is different, but the M pattern the same, in *mōs*, *mōhsak* 'moose', reflecting O *mōs*, *mōsōk*. The more complex plural ending of M *menēs*, *menēhsyan* 'island', as compared with the straightforward O *miniss*, -an, is unexplained. I cannot find an O model for M *tūtīs*, *tūtīhsak* 'snipe', but it may merely have escaped being recorded in the materials I have at hand.

Foreign final -s alternating with presuffixal -hs- appears also in a few dependent nouns of relationship (Bloomfield 1962, §6.9, and 1975). Two of these suggest the role of in-marrying O women: *netānes* 'my little daughter' and *netānīs* 'my dear little daughter'. Less likely to have arrived by that route are *nēhtās* 'my (man's) male cross cousin' and its more intimate diminutive byform

nēhtāwes. The Medicine Lodge (*metēwen* 'Mystic Rite') is clearly responsible for *nēhkān* and *nēhkānes* 'my fellow participant in a rite' [only the second of this pair is relevant here, though the first is also a loan: O *nīkkān* 'my (man's) brother or male friend'].

(3) There has obviously been a fashion of borrowing personal names from O, preferred even when cognate (and phonetically similar) names were available in M itself. And on the basis of a sizable load of such loans, there arose the habit of coining new foreign-sounding names whether or not there was any known O model.

Alongside *macehkewes*, the oldest of the Thunderers, for which there is the clear O model *mančīkkiwīss* (§39.1), there is a feminine *macekehkwēwes* with various un-M features (first two vowels both short; postconsonantal *wē*), the 'Silly Maiden' of mythology and a popular name for the oldest of a set of sisters; but this represents a conflation of two O models, an archaic diminutive *mančiki-kkwēwīss* 'oldest sister' and a "pejorative" *mančikikkwēwīšš*, the 'Silly Maiden'.

The foreign element *-hkwēw* 'woman' recurs in various other feminine names: *nekānesēhkwēw* 'Leader Woman', from the man's name (with foreign final *s*) *nekānes* 'Leader'; and various ones which have no obvious other foreignism, such as *akecewēhkwēw*, *māhkūsehkwēw* 'Pawnee Woman', *wākohsēhkwēw* 'Fox Woman' (legendary; cf. *wākoh*, plural *wākohsā* 'fox'). The native M form of this suffix is *-hkīw*, which also occurs in various common nouns and in the women's names *kīsekūhkiw* 'Sky Woman' (*kēsek* 'sky') and *mūhsūhkiw* 'Moose Woman', the latter with a borrowing from O as prior element.

Little can be said about the dates of the loans. Obviously the borrowing went on over a long period of time. For calendrical dating, we can know only that words indirectly from European languages, or with clear European meanings, cannot have reached M earlier than the mid seventeenth century. All other dating is relative. 'Island', which in O shows two short vowels (*miniss*) but in M has the second one lengthened (*menēs*), had to come in early enough to be subject to a live morphophonemic consequence of S10, if not actually before S10, and so was surely an earlier arrival than the diverse borrowings which keep the first two vowels both short. The lengthening in the plural *semākanēhsā* 'soldiers' puts its importation before the impact of S17 was dead. The alien *e* in the first syllable of *kehtekān* 'Farm' and a handful of others (§23) means they came in after S20. The bulk of the loans whose lengths defy S16 or S17 must have come in after those shifts; perhaps it was the weight of these words, some of them prestigious because of their foreign flavor, that paved the way for indigenous new patterns that violated the consequences of the same two shifts. Yet the big fashion in O personal names must have started long enough ago for the inherited and imported ingredients to become thoroughly mixed together.

In all of this, it should be borne in mind that O had many local dialects, and that the forms we are able to cite as models for M borrowing are not likely to be identical with those to whom M speakers were actually exposed.

41. Problems. Of course the discussion of the preceding sections leaves a great many features of current M unexplained. A number of difficulties and uncertainties have been noted passim, and in a moment I will present two concluding ones. Some of the points which remain puzzling for me might well be clarified in the light of greater familiarity with eastern and Plains Algonquian than I command. With a knowledge of Winnebago, one might be able to identify M loans from that source and thus reduce the number of etymological blanks. At

present the most I can hope is that the main lines of the history of the language have been discerned and delineated in this paper and that the presentation incorporates no major errors. I think it proper to point out that in a tabulation of something more than 600 M words for which PA etyma can reasonably be proposed (because of supporting evidence in sister languages) there are virtually no discrepancies other than those noted somewhere in this report.

The first final discrepancy could have been mentioned in §38. The M word *kēwaskepīw* 'he is drink', and all its double handful of derivatives, show the wrong vocalism in the third syllable, as compared with 196 PA **kīwaškwēpyēwa*, F *kīwaškwēpyēwa*, O *kīwaškwēpī*; cf P *kīwaškwēpyeʔat* (conjunct) 'he makes him drunk'.

Much more serious is the following. One of the trickiest features of the M sound system is the short front vowels *e* and *ə*. Bloomfield acknowledges this (1962, §1.17), and his uncertainties on the matter are reflected by various inconsistencies of recording in the manuscripts of his grammar and lexicon (1962 and 1975); clearly he spent years trying to straighten them out and achieve accuracy in each case. Residual inconsistencies can in large measure be eliminated by careful cross-checking, and I think the treatment in the present paper--which has ventured to "explain" no cited M form as merely an error of recording--is almost entirely correct. Historically, however, the situation is complicated. To provide for what seem to be the distributions of the two vowels I have had to formulate shifts S9, S11, S14, S20, and S21, as well as the proposals of §§32 and 36.

Yet that historical formulation does not provide for one crucial word: 197 PA **āvēnta* 'some, a few', F *āvēnta*, C *āvēnt*, O *āvēnt*, P *ʔāvēnt* should, by S1, S5, S11, S12, S15, and S19, give M **āvēh*, but the M is in fact, and beyond all challenge, *āvēh*.

That one maverick, of course, casts doubt on the whole formulation. The various alternatives I have tried have not been helpful: they have provided for E197, but have left large unexplained residues elsewhere. Clearly, closer scrutiny and further trial and error are called for.

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ERRATA IN "THE PHONOLOGICAL HISTORY OF MENOMINEE"

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The following superficial errors have been discovered by various readers in the article that appeared in Vol. 23, No. 2, of this journal (February 1981). Except where otherwise indicated, the reference is by page, paragraph (from top), and line:

	FOR	READ
56/8/1	convenient	convenience
57/12/2	S4	S4'
59/5/2	a	ǝ
60/3/5	*ʔ for *θ	*ʔ for *p
61/3/2-4	The M reflex of E46 is vocative and should be so labeled	
66/first table/stub of first line:	E40	E46
66/second table/stub of fourth line:	85	E39
70/2/5	E48	E49
77/4/1	32	§32
78/1/4	look-d	looked
78/table/line 9, column 2:	*-ankon	*-ahkon
79/8/4	187	E99
80/4/5	<i>pakēwēpenew, pakēwēpenam</i>	<i>pakīwēpenew, pakīwēpenam</i>

Since examples E85 and E187 were unintended duplications of earlier examples (E39 and E99 respectively), the paper includes two fewer examples than originally thought.

John N. Seaman has pointed out to me that if the haplology of the second paragraph of §31 really did follow S19 and precede S17, then Figure 1 (p. 55) should be redrawn to show S19 preceding S17.

The above list appears also in a contemporary issue of the newsletter *Algonquian and Iroquoian Linguistics*.

I greatly appreciate the willingness of the editor of this journal to publish my technical articles by direct photography from my typescript. That eliminates a step at which typographical errors might be introduced, and evades any argument about the responsibility for those that appear--the blame is entirely mine.