dy cited.

does not reflect his present views on

Course; Arapaho from Salzmann,

ewhere in this volume), Appendix

es this word as 'tube, gun, whistle,'

ıary, p. 83.

THE ORIGINAL HOME OF THE PROTO-ALGONQUIAN PEOPLE

By Frank T. Siebert, Jr.

The conviction exists that the study of American Indian languages has contributed little information to advance our knowledge of prehistory beyond linguistic classification into stocks. This impression is not without justification, since the archaeologist and ethnohistorian desire more elaborate information and look to linguistics as a science for substantial contributions that go further than mere classification. Glottochronology and the lexicostatistical analysis of individual language stocks represent a notable effort in this direction, but the underlying assumptions of this type of study are subject to some serious objections. A uniform retention rate of basic vocabulary in terms of time throughout language groups of dissimilar structure may be false, and there are interfering biological, demographical, and cultural variables.

The technique of using natural history terms that can be reconstructed in a proto-language in an attempt to locate the original home or 'Urheimat' of a stock is not new. It has been applied to Indo-European with limited success, but it has not been tried on any scale with regard to American languages. The present study is directed at determining the home of the original Algonquian people before their general dispersion approximately three thousand years ago. To the archaeologists and other students of prehistory this is of major interest. The Algonquian stock is the largest, comprising about thirty-four living and extinct languages, and geographically the most widely distributed in North America, extending from Labrador to California and from Hudson Bay to Georgia, except for some interrupting enclaves of other stocks.

The method of using natural history terms in this type of study involves a number of difficulties which may lead to error. The original distributions of individual species before the disturbing forces of civilization altered them must be determined. Forests have been destroyed, dams built, and streams polluted. The numbers and ranges of some species have been reduced by persistent hunting and fishing. Many kinds of fish have been introduced deliberately or by accident into lakes and streams where they were not native. Slow climatic changes have made alterations in the ranges of some species, such as the more northern and eastern extensions of the moose in the Labrador Peninsula and a corresponding advance northward in Ontario,[1] even since the arrival of the Europeans. A large number of sources have been consulted in preparing the accompanying maps which attempt to portray the approximate original ranges of the various species with which I shall deal. In some instances my own observations have aided. It is to be hoped, therefore, that these maps are reasonably accurate.

For convenience, the linguistic terms for the fauna and flora will be treated separately in the following groups: birds, mammals, fish, and trees. Only the species having linguistic terms that can be reconstructed as Proto-Algonquian and that have cognates in both the geographically determined eastern and

central Algonquian languages will be considered. In the past, Algonquianists, with the exception of James H. Trumbull in the nineteenth century, have been quite remiss about making accurate species identifications for linguistic terms dealing with natural history. Semantic changes are not unusual, especially following the migration of a speech community, for in such cases an old linguistic term is often applied to a similar but different species not previously known to the speakers of the language.

For obvious reasons, ornithological terms are of the least value to this inquiry. Most birds migrate seasonally, often being driven by storms or the quest for food to localities in which they are only incidental. Furthermore, most species of birds given here have an extensive geographical range. On the other hand, trees are fixed, and their range is governed by climate, soil, and moisture. Although there has been some warming and amelioration of the climate in the Northern Hemisphere in this century, there is reason to believe that the distributions of arboreal species have remained essentially constant during the past millennium. Fish are also limited to their environment of the streams and lakes in which they are native. Therefore, the terms for fish and trees have greater merit in this study.

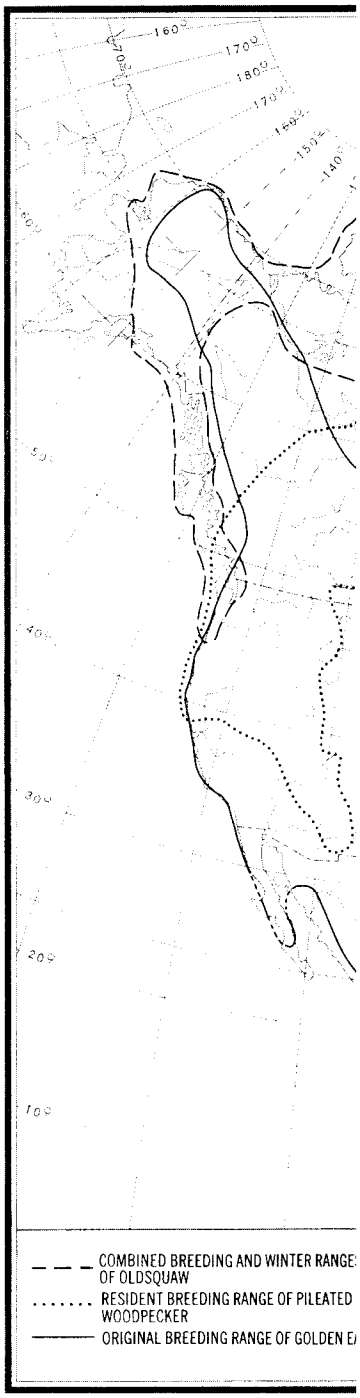
Lexical citations[2] in Fox,[3] the Munsee dialect of Delaware,[4] the Lake St. John dialect of Montagnais,[5] and Penobscot[6] are from my own field notes. Menomini forms are from Bloomfield,[7] and Ojibwa forms are from Bloomfield[8] and Baraga.[9] Cree terms are from Bloomfield,[10] Lacombe,[11] and Watkins.[12] The Shawnee and Miami forms are from Voegelin,[13] and Massachusetts forms are from the John Eliot Indian Bible, Cambridge, 1663, with suitable passage citation. Abenaki forms are from Day[14] and a few notes I collected many years ago. My Proto-Algonquian reconstructions employ the principles established by Bloomfield.[15] When meaning differences between various languages occur, the apparent original significance is given and the sign # follows to indicate that some semantic changes have taken place.

An additional word is required concerning the accompanying maps. No attempt has been made to illustrate the ranges of widespread species, such as the Kingfisher and the Nighthawk. With regard to all species, uncommon occurrences outside the main distribution are not usually recorded.

EVIDENCE OF BIRD NAMES

1. PA **keliwa* 'Golden Eagle' (*Aquila chrysaëtos canadensis* Linnaeus), based on M *kene·w*, C *kiyiw*, O *kiniw*, P *kàlo*. On the other hand, Fox and Miami agree in having a discrepant set, with F *ketiwa*, MI *kintiwa* (also MI *kintiwe·nsa* 'golden eaglet,' with dimin. noun final *-e·ns-a*), which posit **kentiwa*, which is somehow related to **keliwa*. Perhaps these were an original PA doublet. This species was always uncommon in the east, being confined chiefly to isolated mountainous districts. The original distribution as nearly as it can be determined is given in Map 1. Different terms exist in most languages for the Bald Eagle.

2. PA **me·me·wa* 'Pileated Woodpecker' or 'logcock' (*Dryocopus pileatus* Linnaeus). F *me·me·wa*, M *mɛ·mɛ·w*, MSj *me·me·w*, O *me·me·*, Dm *mé·me·w*, P *mème* (pl. *mèmak*). This crow-sized shy bird of the deep woods continues to retreat before civilization. Its distribution is given on Map 1.



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of Delaware,[4] the Lake St.
from my own field notes.
forms are from Bloomfield[8]
Lacombe,[11] and Watkins.[12]
[13] and Massachusetts forms
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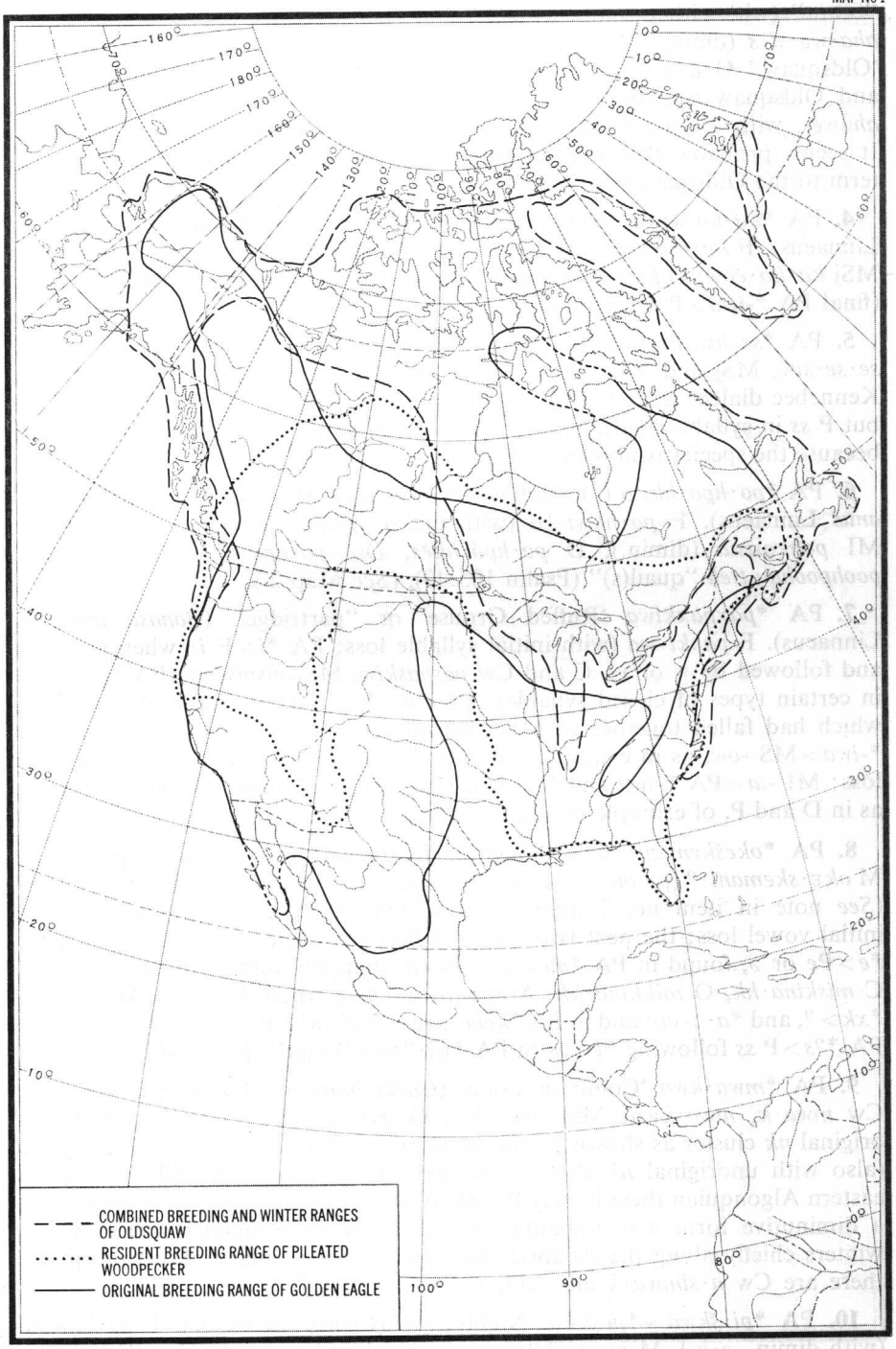
the deep woods continues
on Map 1.

MAP No 1



3. PA **aʔa·we·wa* 'Oldsquaw' (*Clangula hyemalis* Linnaeus). M *aʔa·wɛ·w* "brant" (with either semantic change or faulty species identification[16]), Cw *aha·we·si·s* (dimin.), MSj *aha·we·ši·š* 'Oldsquaw' (dimin.), MSs *aha·we·w* 'Oldsquaw,' O *aʔa·we·* "pigeon-tail duck" (Baraga, p. 3. Only the Pintail and Oldsquaw qualify for this description.), P *ahɑ̃wehso* 'Oldsquaw' (root *ahɑ̃we-*, with quasi-diminutive *-əhs-* 'living creature,' and animate final *-o*). It seems probable that most languages except perhaps Menomini refer this term to the Oldsquaw (*see* Map 1).

4. PA **ka·ka·kiwa* 'Common Raven' or 'Northern Raven' (*Corvus corax* Linnaeus). F *ka·ka·kiwa*; M *ka·ka·kew*; C and Cw *ka·ka·kiwa, ka·ka·kiw*; MSj *ka·ka·čow*; O *ka·ka·ki* (final **-wa* after **i* is always lost in O); P *kɑ́kɑ̃ko* (final PA **-iwa* > P *-o*). (*See* Map 2.)

5. PA **se·hse·hsiwa* (?), 'Greater Yellowlegs' (*Totanus melonaleucus*). Cw *se·se·siw*, MSj and MSs *še·še·šow*, A *sasasso*, P **sésesso* (based on Rasles' Kennebec dialect *séséss8*, unglossed bird name; PA **hs* > P *s* in word medial, but P *ss* in syllable final). Modern Penobscots do not know the term, perhaps because the species is now very rare in central Maine.

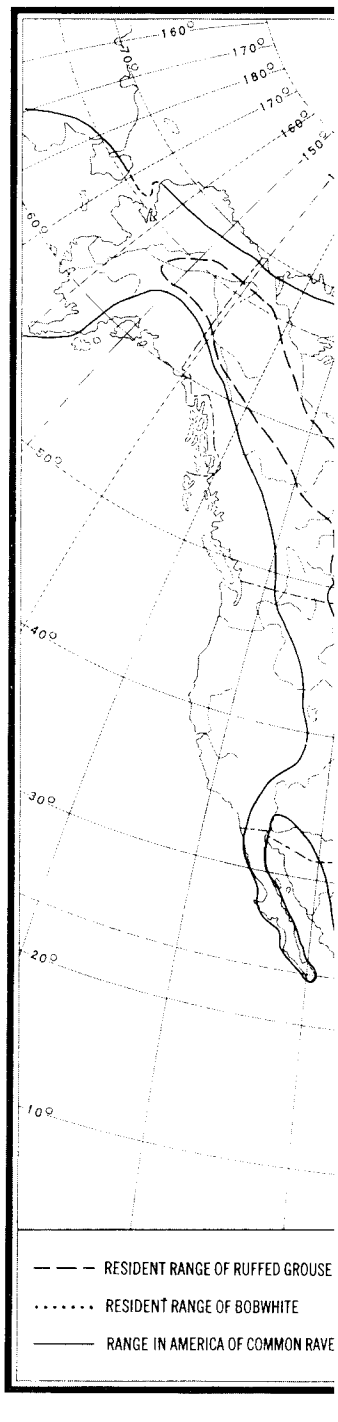
6. PA **po·hpo·hkwa* (?), 'Bobwhite' or "quail" (*Colinus virginianus virginianus* Linnaeus). F *po·hkwi·ha* (with initial syllable loss, and dimin. *-i·h-*), MI *pohkosisia* (dimin.), D *po·hpó·hkəs*, Dm *po·hpó·hkwi·s* (dimin.), N *poohpoohqu-tteh* "quail(s)" (Psalm 105:40). (*See* Map 2.)

7. PA **paxpaxkiwa* 'Ruffed Grouse' or "partridge" (*Bonasa umbellus* Linnaeus). F *pahki·wa* (with initial syllable loss; PA **i* > F *i·* when accented and followed by *w* or *y*), C and Cw *paspaskiw*, MSj *pispisčow* (PA **a* > MS *i* in certain types of closed syllables; PA **k* > MS *č* before original **i* and **e*, which had fallen together to MS *i* before the consonant shift occurred; PA **-iwa* > MS *-ow*, as in examples no. 4 and 5), MI *pahkia* (with initial syllable loss; MI *-ia* < PA **-iwa* and **-e·wa*), Dm *pahpáhko* (final PA **-iwa* > Dm *-o*, as in D and P, of example no. 4). (*See* Map 2.)

8. PA **okeškemani·ʔsiwa* 'Kingfisher' (*Megaceryle alcyon*). Supported by M *okɛ·skemani·ʔ* (pl. *okɛ·skemani·ʔsak*), Cw *okiskimanisiw*, MSj *očisčiminšow* (*See* note in item no. 7 above), O *okiškimani·ssi*, P *kaskamánəsso* (with initial vowel loss; the next two vowels reflect the ancient variation of PA **a* **e* > Pe or *ə*, found in PA **mexkena·hkwa* 'snapping turtle' > P *ámihkənahkʷ*, C *miskina·hk*, O *mikkina·kk*, Arapaho *beʔénoo*, where PA **m* > Arapaho *b*, **xk* > ?, and **a·* > *oo*; and in PA **keno·šye·-* 'willow' > P *kanose-*, M *kenu·si·-*; PA **ʔs* > P *ss* following **i·*, as in PA **wi·ʔsak-* 'bitter' > P *wəssak-*).

9. PA **mwa·kwa* 'Common Loon' (*Gavia immer*). M *muak*; C *ma·kwa*; Cw *mwa·k, mwa·kwa*; MSj *mwa·kw*; O *ma·nk* (pl. *ma·nkwak*; with unoriginal *nk* cluster as shown by the Menomini and Cree forms); MI *ma·nkwa* (also with unoriginal *nk* cluster, and perhaps a loan from Ojibwa); but in eastern Algonquian there is only P *màkʷis* 'Red-throated Loon' (*Gavia stellata*), a diminutive form with semantic specialization for a smaller species which winters chiefly along the Atlantic coast and is scarce inland. For this species there are Cw *a·simwa·k* and MSj *a·šimwa·kw*.

10. PA **pi·škwa* ~ **peškwa* 'Nighthawk' (*Chordeiles minor*). F *peškwe·ha* (with dimin. *-e·h-*), M *pɛ·skiʔ* "mosquito hawk" (dimin. *-iʔ*, *-iʔs-*), C *pi·skwa*,



alis Linnaeus). M *aʔa·wɛ·w* species identification[16]), Cw *aw'* (dimin.), MSs *aha·we·w* raga, p. 3. Only the Pintail *ahɑwehso* 'Oldsquaw' (root ture,' and animate final *-o*). perhaps Menomini refer this

thern Raven' (*Corvus corax* Cw *ka·ka·kiwa, ka·ka·kiw*; s always lost in O); P *kákɑko*

(*Totanus melonaleucus*). Cw **sésesso* (based on Rasles' PA **hs* > P *s* in word medial, not know the term, perhaps ine.

' (*Colinus virginianus virgini-* able loss, and dimin. *-i·h-*), *po·hpó·hkwi·s* (dimin.), N Map 2.)

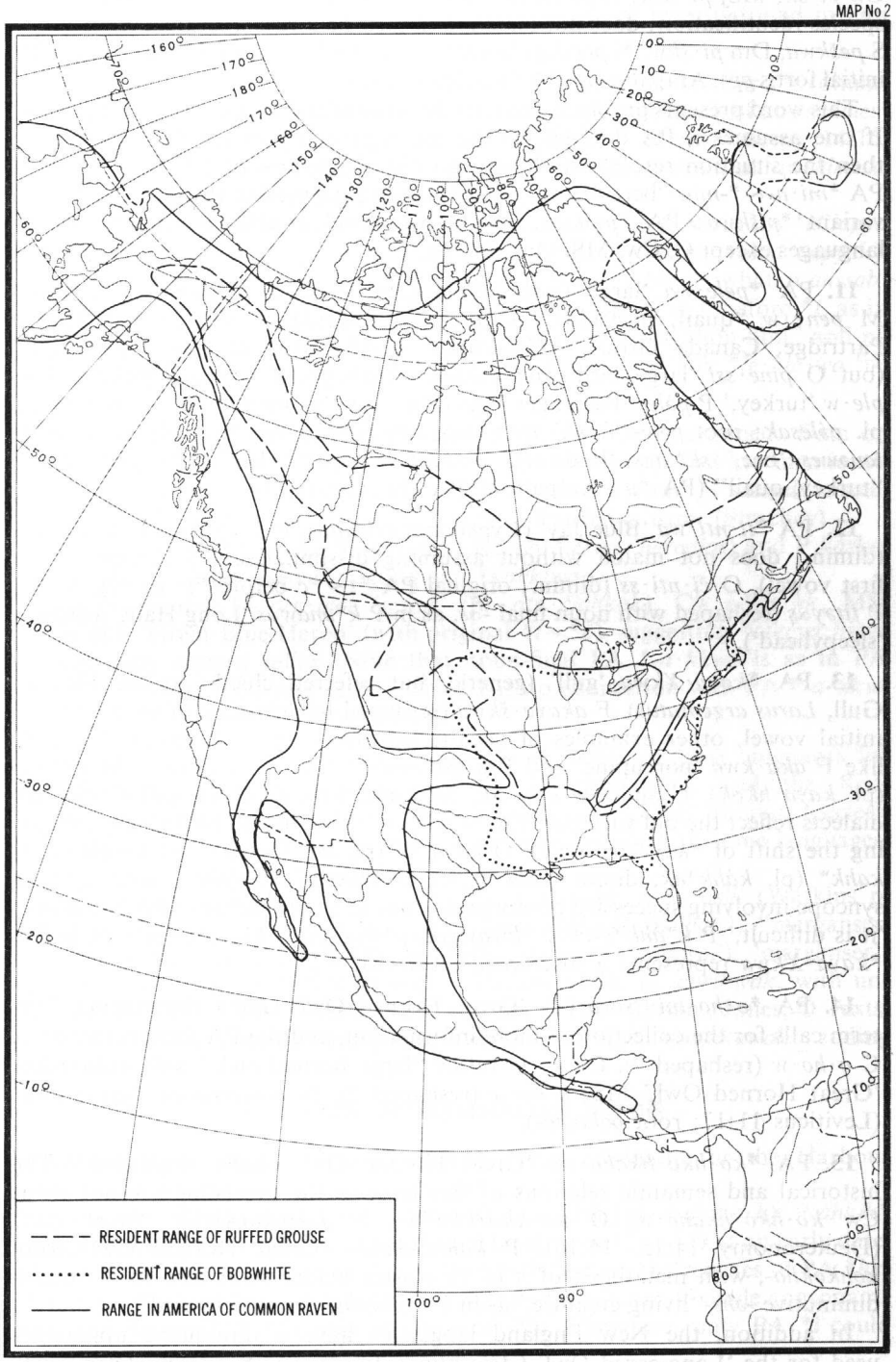
artridge" (*Bonasa umbellus* PA **i* > F *i·* when accented MSj *pispiščow* (PA **a* > MS *i* *č* before original **i* and **e*, onsonant shift occurred; PA *pahkia* (with initial syllable *ko* (final PA **-iwa* > Dm *-o*,

eryle alcyon). Supported by *kimanisiw*, MSj *očisčiminšow* *ssi*, P *kaskamánəsso* (with ancient variation of PA **a* ing turtle' > P *ámihkənahkʷ*, where PA **m* > Arapaho *b*, w' > P *kanose-*, M *kenu·si·-*; itter' > P *wəssak-*).

ner). M *muak*; C *ma·kwa*; (pl. *ma·nkwak*; with un- Cree forms); MI *ma·nkwa* loan from Ojibwa); but in oated Loon' (*Gavia stellata*), for a smaller species which rce inland. For this species

deiles minor). F *peškwe·ha* dimin. *-iʔ*, *-iʔs-*), C *pi·skwa*,

MAP No 2



Cw *pi·sk*, MSj *pi·škw*, O *pe·škwe·* "a kind of owl" (Baraga p. 350, with faulty species identification; does not match, and may be a reshaped loan from Fox), S *peškwa*, Dm *pi·škw*, N *peeskq* (Deuteronomy 14:15), P *ppəsk*^{w} (reshaped with initial fortis *pp*), Arapaho *čís* (PA **p* > Arapaho *č*).

This word presents problems, perhaps because of reshaping in some languages. If one assumes a PA doublet, as the incompatibility of the forms suggests, then the situation resolves itself into an old alternation of PA **i· ~ *i* (as in PA **mi·n- ~ *-min-* 'berry') and, since **i* is not permitted in PA initial syllables, variant **pišk*^{w}*a* > PA **peškwa*. This short vowel doublet is reflected in all languages except C, Cw, MS, Dm, and N.

11. PA **pele·wa* 'large fowl, edible game bird.'≠ F *pene·wa* 'turkey,' M *penɛ·w* "quail, partridge," C *piye·w* "partridge," MSj *pile·w* 'Spruce Partridge, Canada Grouse' (*Canachites canadensis*),[17] O *pine·* "partridge" (but O *pine·ssi* 'large bird' and *misisse·* 'turkey'), S *peleewa* 'turkey,' Dm *ple·w* 'turkey,' P *pàles* 'Passenger Pigeon' (*Ectopistes migratorius*, now extinct; pl. *pálesak*; root *pəle-* 'fowl,' with quasi-diminutive *-es* 'little flyer,' as in P *àməwes* 'bee,' *sk*^{w}*àtes* 'Redstart,' *mk*^{w}*iptes* 'autumn leaf'), Arapaho *čénee* "turkey, quail" (PA **p* > Arapaho *č*, PA **l* > Arapaho *n*).

12. PA **ti·nti·wa* 'Blue Jay' (*Cyanocitta cristata*). F *ti·ti·wa*, Cw *te·hti·siw* (dimin.; does not match without assuming dissimilative (?) change of the first vowel), O *či·nti·ss* (dimin.; original PA **t ~ *č* before **i·* or **i*), S *tiiti*, P *titəyαs* (reshaped with noun final *-αs*, as in P *k*^{w}*ánawαs* 'Long Hair,' *kàwəyαs* 'sleepyhead').

13. PA **kaya·Xkwa* 'gull' (generic, but referred chiefly to the Herring Gull, *Larus argentatus*). F *akaya·škwa* (reshaped by accretion of an unoriginal initial vowel, other examples of vocalic prosthesis being found in F and P, like F *aka·kwa* 'porcupine' and P *ámihkənahk*^{w} 'snapping turtle'), M *kaya·h* (pl. *kaya·hkok*), C and Cw *kiya·sk*, MSj and MSs *čiya·škw* (all C and MS dialects reflect the old variation PA **a ~ *e* as **e* > *i*, in MS historically preceding the shift of **k* > *č* before *i*), O *kaya·šk* (pl. *kaya·škok*), MI *kiyahkwa*, P *kahk*^{w} (pl. *kàhk*^{w}*ak*, dimin. *kàhk*^{w}*is*; < pre-Abenaki **kàyahk*^{w}, with syllabic syncope involving successive homorganic vowels, as in P *sàkat* < PA **salakatwi* 'it is difficult,' P *k*^{w}*àhk*^{w}*i* < PA **kwayaxkwi* 'straight'). The cluster **Xk* in PA **kaya·Xkwa* represents a discrepant cluster in **-k*.

14. PA **o·ho·mi·ʔsiwa* (?), 'Great Horned Owl' (*Bubo virginianus*). This term calls for the collection of more information, and the PA form is tentative. C *o·ho·w* (reshaped ?), Cw *o·ho·misiw* "large horned owl," MSj *o·ho·mšow* 'Great Horned Owl,' MSs *o·ho·w* (reshaped ?), N *oohoomooen* "great owl" (Leviticus 11:17; root *oohoom-*).

15. PA **ko·hko·hkaho·wa* 'Great Horned Owl' (*Bubo virginianus*). The historical and semantic relations of this term to the preceding are not clear. Cw *ko·hko·hkaho·w*, O *ko·kko·kkaʔo·*, N *koohkookhaus* "great owl" (Deuteronomy 14:15, 14:16), P *kohkókhahso* 'Great Horned Owl' (root *kohkokha-*, with metathesis of *h* in *hk* cluster before *a*, as also in N; quasi-diminutive *-əhs-* 'living creature,' as in P *anéhtahso* 'humming-bird').

In addition, the New England languages have a diminutive apparently used for the 'Long-eared Owl' (*Asio otus wilsonianus*), N *koohkookhes* "owl" (Leviticus 11:16), P *kóhko* 'little flyer,' in item no 11). *kókho·s* 'Great Horned Ow

16. PA **awe·ʔle·wa* 'hav *-e·ns-* as in example no. 1; (dimin. *awéhle·šo·š* 'bird') with pl. *-og*), P *áwehle* 'haw with quasi-diminutive *-es*, a

PA **ʔl* > P *hl*, M *ʔn*, C *hy* 'net' > P *-hlapi-* 'net, web' (a C *ahyapiy*, O *assap*, N *hash* PA **nene*^{ʔ}*la·wa* 'I kill him' PA **ne*^{ʔ}*ši* 'kill thou him' > 'kill thou me'). On the oth breathes' > P *nèhse*.

17. PA **sa·ʔsake·wa* (? this term are too scanty to only to point out a corres (Isaiah 38:14; PA **k* > N *t*

Unrelated are Dm *káxko* suggesting an earlier eastern

There are also M *otɛ·č očiča·hkw* 'Great Blue Her without any eastern reflex **mexkena·hkwa* 'snapping 'wood; hardwood or decidu

18. PA **wesehkwa ~ *as* the American Merganser, breasted Merganser, *M. s* PA either had a doublet or Data are insufficient to dra

M *ose·h* "sawbill duck" 64, 119, 392; these varian saw-bill duck, fish duck"; O *ansik* "saw-bill, kind of original *ns* cluster), and O *a* II:60–62); P *wəsíhkawe* reshaped).

EVIDEN

19. PA **a·skikwa* 'seal' Seal, *Phoca vitulina concolo*

Cw *a·hkik*, MSj *a·hčok* (pl. *áhkik*^{w}*ak*). Although PA P shows that the original vo **ʔl*, **xk*, **sk*, and **ht*, but and the clusters PA **θk*, be correct (*See* Map 3).

" (Baraga p. 350, with faulty
a reshaped loan from Fox),
15), P *ppəsk*^{w} (reshaped with

reshaping in some languages.
ɔility of the forms suggests,
nation of PA **i· ~ *i* (as in
mitted in PA initial syllables,
l doublet is reflected in all

rd.'# F *pene·wa* 'turkey,'
idge," MSj *pile·w* 'Spruce
sis),[17] O *pine·* "partridge"
'), S *peleewa* 'turkey,' Dm
tes migratorius, now extinct;
ive *-es* 'little flyer,' as in P
ɹmn leaf'), Arapaho *čénee*
ɔaho *n*).

a). F *ti·ti·wa*, Cw *te·hti·siw*
imilative (?) change of the
**č* before **i·* or **i*), S *tiiti*,
inawɑs 'Long Hair,' *kàwəyɑs*

red chiefly to the Herring
ɔy accretion of an unoriginal
is being found in F and P,
snapping turtle'), M *kaya·h*
Ss *čiya·škw* (all C and MS
i, in MS historically preced-
aya·škok), MI *kiyahkwa*, P
ɪki **kàyahk*^{w}, with syllabic
s in P *sàkat* < PA **salakatwi*
ht'). The cluster **Xk* in PA
-k.

wl' (*Bubo virginianus*). This
ɪnd the PA form is tentative.
ɔrned owl," MSj *o·ho·mšow*
N *oohoomooen* "great owl"

wl' (*Bubo virginianus*). The
the preceding are not clear.
koohkookhaus "great owl"
'Great Horned Owl' (root
fore *a*, as also in N; quasi-
'humming-bird').
ve a diminutive apparently
ɪnus), N *koohkookhes* "owl"

(Leviticus 11:16), P *kóhkokhes* 'Long-eared Owl' (with quasi-diminutive *-es* 'little flyer,' in item no 11). A reshaped and contracted form is found in Dm *kókho·s* 'Great Horned Owl.'

16. PA **awe·ʔle·wa* 'hawk of any species.' MI *awe·hse·nsa* 'bird'[18] (dimin. *-e·ns-* as in example no. 1; root *awe·hse·-*), Dm *awéhle·w* 'hawk of any species' (dimin. *awéhle·šo·š* 'bird'), N *owóhshaog* "hawk(s)" (Deuteronomy 14:15, with pl. *-og*), P *áwehle* 'hawk of any species' (or dimin. *áwehles*, pl. *awéhlesak*, with quasi-diminutive *-es*, as in items no. 11 and 15).

PA **ʔl* > P *hl*, M *ʔn*, C *hy*, O *ss*, MI *hs*, N *hs*, Powhatan *ss*, as in PA **aʔlapya* 'net' > P *-hlapi-* 'net, web' (as in P *ɑmoslápihke* 'spider'), M *aʔnap* (pl. *aʔnapyak*), C *ahyapiy*, O *assap*, N *hashabp* (Ecclesiastes 9:12, Job 8:14), Powhatan *aussab*; PA **nene ʔla·wa* 'I kill him' > P *nánihlɑ* (with immutable *l* in P before **i*, as in PA **neʔši* 'kill thou him' > F *neši*, M *neʔsin*, but P *nle* 'kill thou him,' and *nli* 'kill thou me'). On the other hand, PA **hl* > P *hs*, as in PA **le·hle·wa* 'he breathes' > P *nèhse*.

17. PA **sa·ʔsake·wa* (?) 'heron, crane,' species not determined. Data on this term are too scanty to ascertain a definite archetype, and are mentioned only to point out a correspondence. M *sa·ʔsakɛw* 'heron,' N *sassadt* 'crane' (Isaiah 38:14; PA **k* > N *t* before **i* and **e·*), Powhatan *ussac* (Strachey).

Unrelated are Dm *káxko* 'Great Blue Heron' (*Ardea herodias*) and P *kàsko*, suggesting an earlier eastern Algonquian **kaθkiwa*.

There are also M *otɛ·čiah* 'crane' (pl. *otɛ·čiahkok*), Cw *očiča·hk*, MSj *očiča·hkw* 'Great Blue Heron' (with original **t* ~ **č*), suggesting **otečya·hkwa* without any eastern reflex. Note that noun-final PA **-a·hkwa* is as in PA **mexkena·hkwa* 'snapping turtle,' which has no connection with PA **-a·xkw-* 'wood; hardwood or deciduous tree.'

18. PA **wesehkwa* ~ **asekwa* (?), 'merganser' (used in most languages for the American Merganser, *Mergus merganser americanus*, and the Red-breasted Merganser, *M. serrator*, and perhaps some other similar species). PA either had a doublet or the forms have been reshaped in some languages. Data are insufficient to draw firm conclusions.

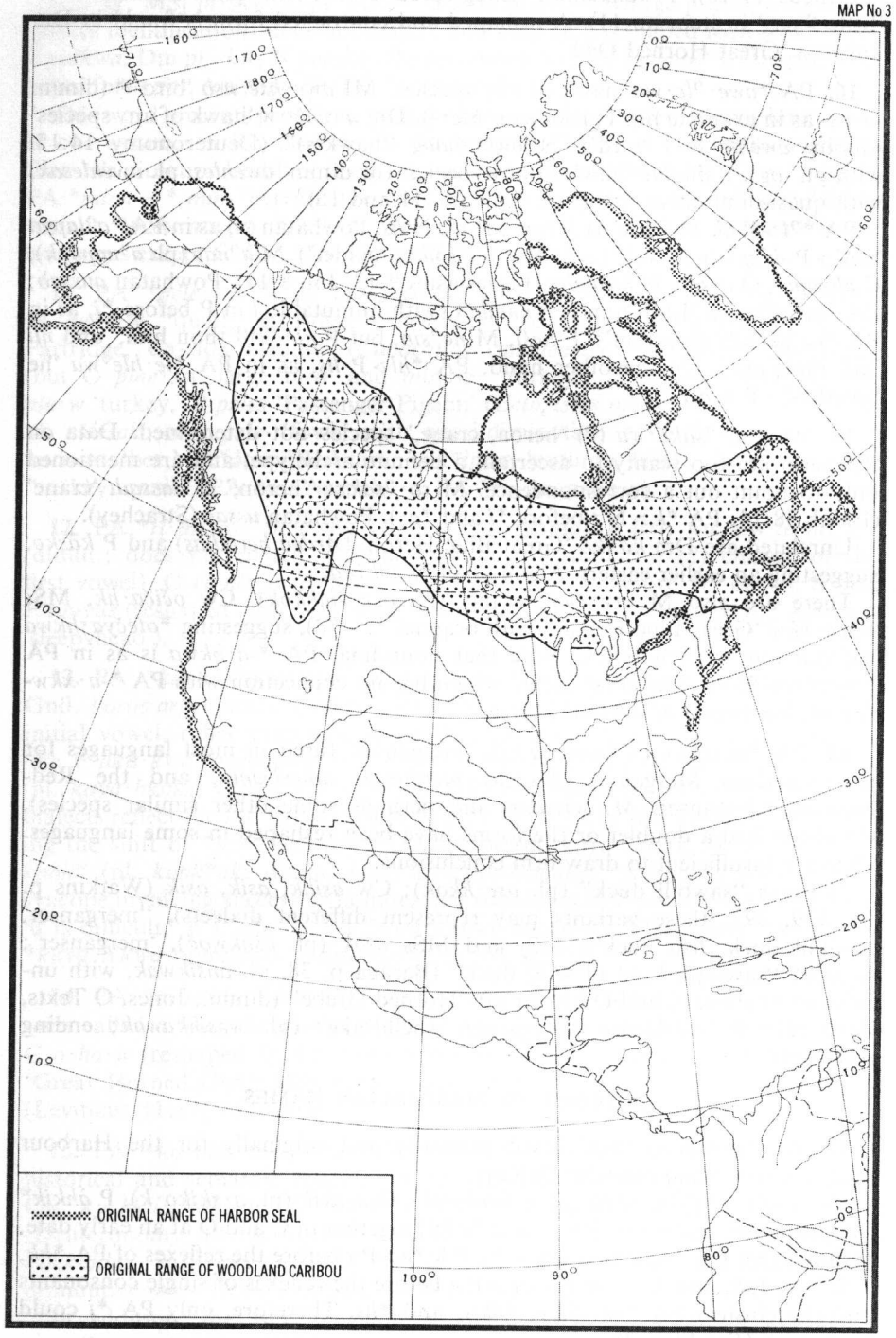
M *ose·h* "sawbill duck" (pl. *ose·hkok*); Cw *asihk*, *asik*, *osik* (Watkins p. 64, 119, 392; these variants may represent different dialects), "merganser, saw-bill duck, fish duck"; MSj and MSs *ošok* (pl. *ošokwoč*), 'merganser'; O *ansik* "saw-bill, kind of wild duck" (Baraga p. 38, pl. *ansikwak*, with unoriginal *ns* cluster), and O *osihka·ssi* "Horned Grebe" (dimin., Jones, O Texts, II:60–62); P *wəsíhkawe* 'merganser, shelldrake' (pl. *wəsíhkawak*; ending reshaped).

EVIDENCE OF MAMMALIAN NAMES

19. PA **a·skikwa* 'seal' (used primarily and originally for the Harbour Seal, *Phoca vitulina concolor* DeKay).

Cw *a·hkik*, MSj *a·hčok* (pl. *a·hčokwoč*), O *a·skik* (pl. *a·skiko·k*), P *àhkik*^{w} (pl. *áhkik*^{w}*ak*). Although PA **i* and **e* fell together in C and O at an early date, P shows that the original vowel is **i*. PA **e* > P *i* before the reflexes of PA **hk*, **ʔl*, **xk*, **sk*, and **ht*, but PA **e* > P *ə* before the reflexes of single consonants and the clusters PA **θk*, **kw*, **θkw*, and **hs*. Therefore, only PA **i* could be correct (*See* Map 3).

MAP No 3



Note noun-final PA *-ikw
*wa·pikwa ~ *a·pikwa 'rat,
wa·pikono·ha 'mouse,' Cw a

20. PA *e·hsepana 'racco
O e·ssipan, Dm e·spán, P és
raccoon has extended its ran

21. PA *pešiwa 'lynx, bob
canadensis and L. rufus). F
(pl. pišo·č), O pišiw, S pešiw

22. PA *anikwa 'squirrel'
19). F anikwa, C and Cw anik
Dm ani·kwəs (dimin.), P
The D and P forms have be
and there is semantic speciali

23. PA *pele·nikwa 'flyin
M penɛ·nik, D ple·ni·kw, D
pəlénikʷak). Apparently this
and final *-anikw-a 'squirrel,
examples no. 11, 19, 22).

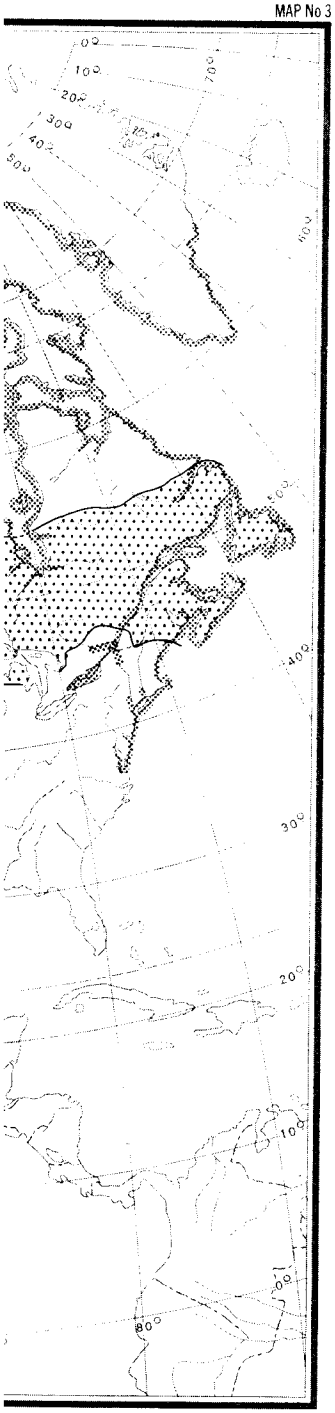
24. PA *mo·swa 'moose'
mo·hsok), C and Cw mo·swa
(pl. mo·nsok; with unorigin
mo·sak), P mos (pl. mòsok).
Map 5).

25. PA *ka·kwa 'porcupi
tailed animal'). F aka·kwa
vowel, as in example no. 13
O ka·k (pl. ka·kok), S kaak
5).

26. PA *šeka·kwa 'skunk'
F šeka·kwa; M seka·k; C sik
(pl. šika·kok); S šekaakwa;
unoriginal prosthetic n-).

27. PA *wa·kwa, with
*-a·kw- 'bushy-tailed anima
form, and some have a su
(dimin. -e·h-, as in exampl
wa·kohsak), O wa·košš
(wonkquss-iss-og 'little foxes,'
P kʷăkʷsəss (reshaped with
and a different superadded
PA *-ehš- > P -ohs-, reduce
cluster).

28. PA *maθkwa 'bear'
maškw, O makkwa, S mkwa
Samuel 17:34, II Kings 2:24



Note noun-final PA *-*ikw-a* 'small gnawing animal, rodent,' as in PA **wa·pikwa* ~ **a·pikwa* 'rat, mouse' (supported by the diminutives F *wa·pikono·ha* 'mouse,' Cw *a·pikosi·s*, P *ɑpík^{w}sehso*, and so on.

20. PA **e·hsepana* 'raccoon' (*Procyon lotor*). F *e·sepana*, M *ɛ·hsepan*, O *e·ssipan*, Dm *e·spán*, P *ésəpanəss* (dimin.; pl. *ésəpansak*) (*See* Map 4). The raccoon has extended its range northward in recent centuries.

21. PA **pešiwa* 'lynx, bobcat' (applies in some languages to both *Lynx canadensis* and *L. rufus*). F *pešiwa*, M *pese·w*, C and Cw *pisiw*, MSj *pišow* (pl. *pišo·č*), O *pišiw*, S *pešiwa*, P *pàso* (pl. *pàsəwak*).

22. PA **anikwa* 'squirrel' (generic), (PA **-ikw-* 'rodent,' as in example no. 19). F *anikwa*, C and Cw *anikwača·s* (with quasi-dimin.), S *hanikwa*, D *xáni·kw*, Dm *ani·kwəs* (dimin.), P *mánik^{w}səss* 'chipmunk' (dimin.; pl. *mánik^{w}sak*). The D and P forms have been reshaped by initial accretion of a consonant, and there is semantic specialization in P.

23. PA **pele·nikwa* 'flying squirrel' (*Glaucomys volans* and *G. sabrinus*). M *penɛ·nik*, D *ple·ni·kw*, Dm *ple·n* (pl. *ple·nak*), A *planikw*, P *pálenik^{w}* (pl. *pəlénik^{w}ak*). Apparently this is an ancient compound of PA **pele·-* 'fowl' and final **-anikw-a* 'squirrel,' in turn a derivative of PA **-ikw-* 'rodent' (*See* examples no. 11, 19, 22).

24. PA **mo·swa* 'moose' (*Alces americana*).# F *mo·swa*, M *mo·s* (pl. *mo·hsok*), C and Cw *mo·swa* (pl. *mo·swak*), MSj *mo·s* (pl. *mo·sič*), O *mo·ns* (pl. *mo·nsok*; with unoriginal *ns* cluster), MI *moswa* 'deer,' Dm *mo·s* (pl. *mo·sak*), P *mos* (pl. *mòsok*). Semantic change has occurred only in MI (*See* Map 5).

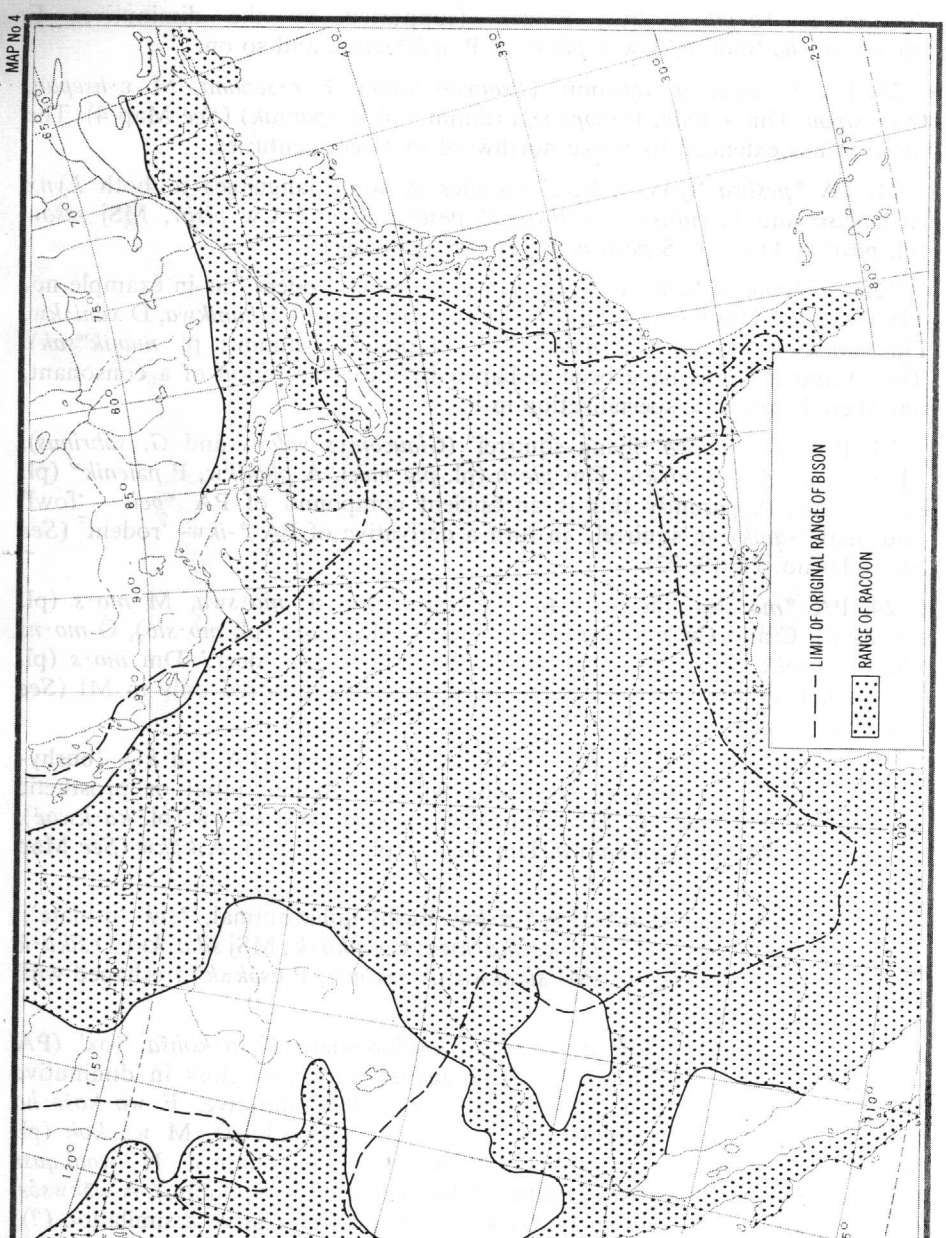
25. PA **ka·kwa* 'porcupine' (*Erethizon dorsatum*), (PA **-a·kw-* 'bushy-tailed animal'). F *aka·kwa* (reshaped with unoriginal initial or prosthetic vowel, as in example no. 13), C and Cw *ka·kwa*, MSj *ka·kw* (pl. *ka·kwoč*), O *ka·k* (pl. *ka·kok*), S *kaakwa*, Dm *ka·kw* (pl. *ká·kwak*), A *kɔ̃kw* (*See* Map 5).

26. PA **šeka·kwa* 'skunk' (PA **-a·kw-* 'bushy-tailed animal,' **šek-* 'urinate'). F *šeka·kwa*; M *seka·k*; C *sika·k*, *sika·kwa*; Cw *sika·k*; MSj *šika·kw*; O *šika·k* (pl. *šika·kok*); S *šekaakwa*; MI *sikakwa*; A *səkɔ̃kw*; P *nsàkɑk^{w}* (reshaped with unoriginal prosthetic *n-*).

27. PA **wa·kwa*, with dimin. **wa·kwehša* ~ later **wa·kohša* 'fox' (PA **-a·kw-* 'bushy-tailed animal'). All languages have this gloss in diminutive form, and some have a superadded or double diminutive. F *wa·koše·ha* (dimin. *-e·h-*, as in examples no. 6 and 10, superadded), M *wa·koh* (pl. *wa·kohsak*), O *wa·košš* (*wa·košši*?, with double dimin.), N *wonkquss* (*wonkquss-iss-og* 'little foxes,' Psalm 63:10; pl. with double dimin.), A *wɔ̃kwsə́s*, P *k^{w}ɑk^{w}səss* (reshaped with initial *k^{w}* for **w*, by regressive assimilation (?); and a different superadded or second diminutive. PA **-ehs-* > P *-əss*, following PA **-ehš-* > P *-ohs-*, reduced to *-s-* by syllabic syncope before *h*-consonant cluster).

28. PA **maθkwa* 'bear' (generic). F *mahkwa*, C and Cw *maskwa*, MSj *maškw*, O *makkwa*, S *mkwa*, D and Dm *maxkw*, N *masq* (pl. *mashquog*; I Samuel 17:34, II Kings 2:24), Arapaho *wóx* (PA **m* > *w*, PA **a* > *o*).

MAP No 4

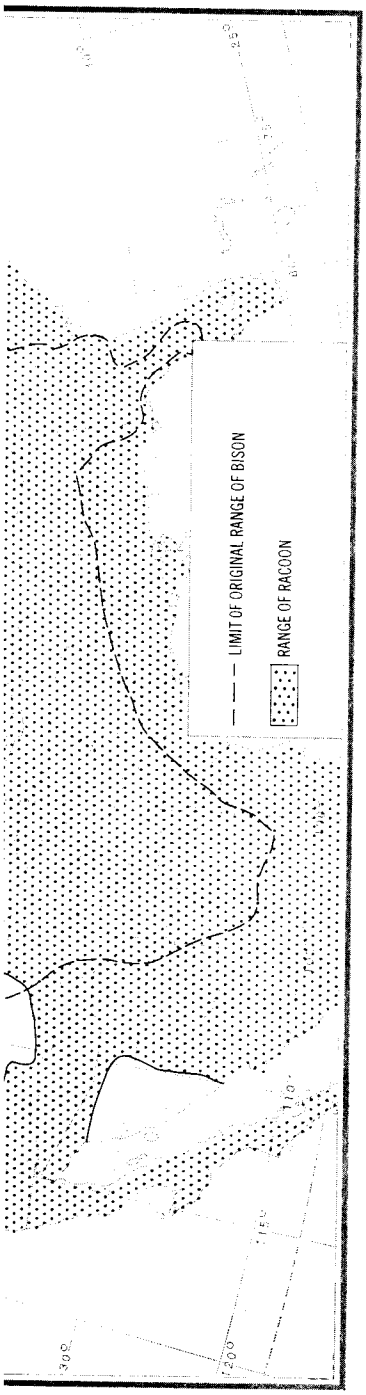


There is also the substitute f
arily 'bear,' because of taboo
'bear' (pl. *awɛ·hsɛhsak*) and
as in example no. 27 above; P
**w*, as in PA **nemehšo·mehsa*
kehkwa 'my kettle, pot' > P *ná*

29. PA **akwaθkwa* 'woodch
'adhere; dirty,' **-aθkw-a* 'bea
dissimilative loss of *w*, as also i
"conies"; Proverbs 30:26) (*Se*

30. PA **pešehkiwa* 'buffalo
(pl. *pišikkiwak*), A pəsihkó, F
sequences **-eCehk-* and **-elw-*
This is the PA term for t
Shoemaker), which, when co
was darker and had a less pro
The first English-speaking pe
Argoll, who in 1612 found th
land" (Purchas). Wood bison
York, and made seasonal m
mountain valleys of central Pe
and as far south as southeast
names ("Buffalo Creek") attes
New York, and West Virgi
parts of their range, they form
the plains bison. Hybrids of t
the two is known. Like the
because of their poor eyesigh
The eastern subspecies becam
1770, in northern and centra
Ohio and Kentucky between
species of wood bison (*Bison*
Great Slave Lake region of
northern Alberta eastward to
that the Swampy Cree term p

31. PA **atehkwa* 'caribou'
caribou caribou Gmelin, or
who group all varieties in o
atihk, MSj *atohk* (pl. *atohkw*
Texts, vol. I, p. 406), P *atoh*
tree,' *Acer pennsylvanicum*, th
before PA **hš* and **hkw* wit
28), and languages with sem
ətohk 'deer,' Arapaho *hóte*ʔ '
N *ahtuhq* 'deer' (pl. *ahtuh*
Dm *ahtó* 'deer' seem to be r
PA **e* > *o* before PA **hkw*,
Dm at least before this co



There is also the substitute form, PA **awe·hsehša* 'little who is it?,' secondarily 'bear,' because of taboo or word avoidance, supported by M *awɛ·hsɛh* 'bear' (pl. *awɛ·hsɛhsak*) and P *áwehsohs* (pl. *awéhsohsak*; PA dimin. **-ehš-*, as in example no. 27 above; PA **e* > P *o* before PA **hš* and **hkw* with loss of **w*, as in PA **nemehšo·mehsa* 'my grandfather' > P *nəmóhsoməss*; PA **netaxkehkwa* 'my kettle, pot' > P *nátahkohk*).

29. PA **akwaθkwa* 'woodchuck, groundhog' (*Marmota monax*), (PA **akw-* 'adhere; dirty,' **-aθkw-a* 'bear'). M *akuah* (pl. *akuahkok*), A *akaskw* (with dissimilative loss of *w*, as also in the N form to follow), N *ogkosq* (pl. o*g*koshquog "conies"; Proverbs 30:26) (*See* Map 5).

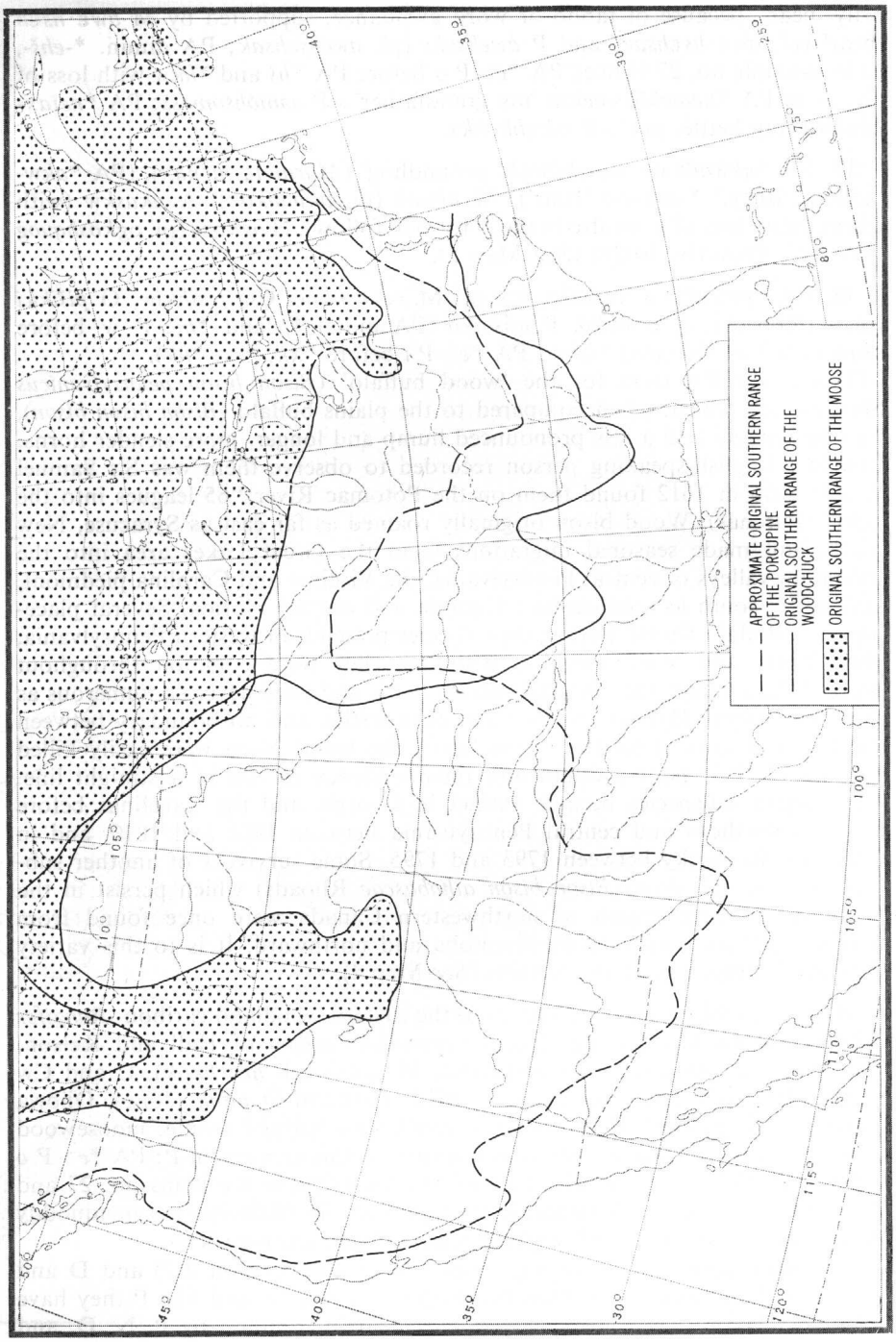
30. PA **pešehkiwa* 'buffalo, bison.' M *pesɛ·hkiw*, Cw *pisihkiw*, O *pišikki* (pl. *pišikkiwak*), A p*ə*sihkó, P *wásihko* (PA initial **p* and **m* > P *w* before sequences **-eCehk-* and **-elw-*; PA **e* > P *i* before **xk*, **sk*, **hk*).

This is the PA term for the 'wood buffalo' (*Bison bison pennsylvanicus* Shoemaker), which, when compared to the plains buffalo (*Bison bison bison*), was darker and had a less pronounced hump and longer, more slender horns. The first English-speaking person recorded to observe them was Sir Samuel Argoll, who in 1612 found them on the Potomac River "65 leagues into the land" (Purchas). Wood bison originally roamed as far east as Syracuse, New York, and made seasonal migrations from the Great Lakes area into the mountain valleys of central Pennsylvania, the Virginia and Carolina piedmont, and as far south as southeastern Georgia and central Florida. Several placenames ("Buffalo Creek") attest their former presence in western Pennsylvania, New York, and West Virginia. Although they were common throughout parts of their range, they formed smaller herds and were never so numerous as the plains bison. Hybrids of the races were fertile, and no boundary between the two is known. Like the plains bison, the wood bison were easily killed because of their poor eyesight and their tendency to run in a straight line. The eastern subspecies became extinct in Georgia and the Carolinas before 1770, in northern and central Pennsylvania between 1801 and 1810, and in Ohio and Kentucky between 1793 and 1795. Some survivors of another subspecies of wood bison (*Bison bison athabascae* Rhoads) which persist in the Great Slave Lake region of northwestern Canada were once found from northern Alberta eastward to Manitoba and northward. It is to this variety that the Swampy Cree term pertains (*See* Map 4).

31. PA **atehkwa* 'caribou' (refers to the eastern woodland caribou, *Rangifer caribou caribou* Gmelin, or *Rangifer tarandus caribou* of Hall and Kelson, who group all varieties in one species). M *atɛ·h* (pl. *atɛ·hkok*), C and Cw *atihk*, MSj *atohk* (pl. *atohkwoč*), O *atikk*, northern O *atihk* (Jones, Ojibwa Texts, vol. I, p. 406), P *atohk-* (in P *atohkímosi* 'striped maple, moosewood tree,' *Acer pennsylvanicum*, the only example of this element in P; PA **e* > P *o* before PA **hš* and **hkw* with loss of **w*, for example *see* items no. 27 and 28), and languages with semantic change, such as Malecite-Passamaquoddy *ə*tohk 'deer,' Arapaho *hóte*ʔ 'bighorn sheep' (*Ovis canadensis*).

N *ahtuhq* 'deer' (pl. *ahtuhquog* "roes," Song of Solomon 2:7) and D and Dm *ahtó* 'deer' seem to be reshaped with *ht* for PA **t*, and like P they have PA **e* > *o* before PA **hkw*, a vowel shift held in common by P, N, D, and Dm at least before this consonant cluster. N, D, and Dm show semantic

MAP No.5



change by transferring the
migrated south of the range

32. PA **aya·pe·wa* 'buck
M *aya·pɛ·w*; C and Cw *aya*
hayaapeeki); N *aiump*, *eiyo*
P *áyαpe* (pl. *áyαpak*).

33. PA **mahkwehsehsa* ~
(PA dimin. **-ehs-*). Since th
is undetermined. F *mahkose*
in F, with a double diminu
the very common living dimi
(pl. *mákʷsəssak*; dimin. *-əss*
the third litter' (last one bor
diminutive (pl. *makʷsə́ssisak*)
itself may be of diminutive
'bear.'[19]

34. PA **ameθkwa* 'beave
O *amikk*; S *hameʔkwa*; Dm
**eθkwe·wa* 'woman' > Dm *ó*

35. PA **waʔšaškwa* 'mus
waššašk, *oššašk* (pl. *oššaško*
initial syllable loss, and PA
only, as in PA **no·hšihse*
osasquus (dimin., Strachey).

C and Cw *wačask* 'muskra
by diminutive symbolism.

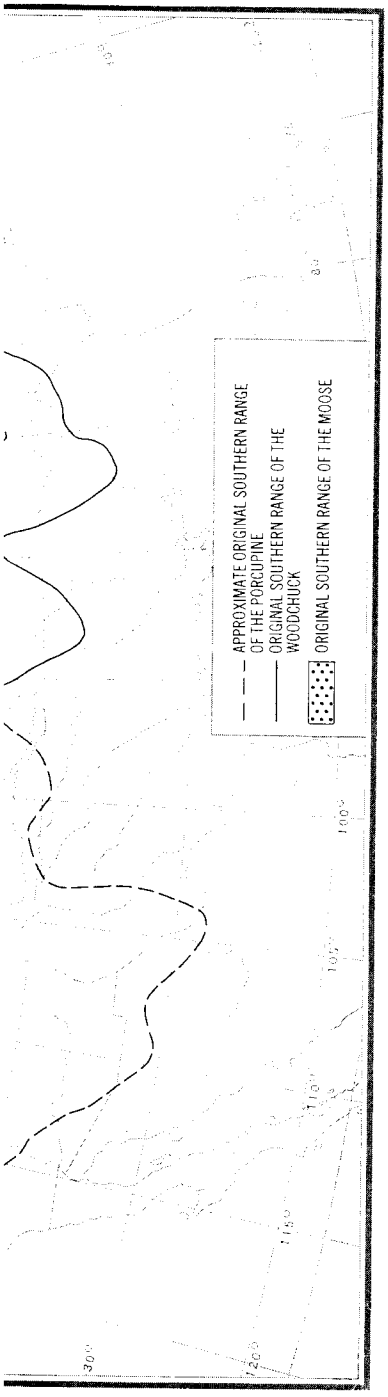
36. PA **šenkwehsa* 'weasel
perhaps by analogy, to M *s*
MSj *šihkoši·š* (dimin.); O
šinkosaki) (*See* the next item)

37. PA **ša·nkwe·hšiwa* 'r
sa·hkwe·siw (pl. *sa·hkwe·*
reshaped or different dimin.)
(pl. *sákʷehsəwak*).

Apparently because of th
and the close resemblance of
changes have occurred in M
have transferred the original

EVI

38. PA **ka·wa·ntakwa*
'evergreen or needle tree,' as
with PA **-a·xkw-* 'wood; ha
spruce tree' (pl. *ka·wa·ntako*
but M *ka·wa·htek* "spruce"



change by transferring the term to the deer when their speech communities migrated south of the range of the caribou (*See* Map 3).

32. PA **aya·pe·wa* 'buck; male of moose, deer, elk, caribou.' F *aya·pe·wa*; M *aya·pɛ·w*; C and Cw *aya·pe·w*; MSj *aya·pe·w*; O *aya·pe·*; S *hayaape* (pl. *hayaapeeki*); N *aiump, eiyompa* (Proverbs 5:19, 6:5; Song of Solomon 8:14); P *áyɑpe* (pl. *áyɑpak*).

33. PA **mahkwehsehsa* ~ **maxkwehsehsa* 'fawn,' itself a diminutive form (PA dimin. **-ehs-*). Since there is no C cognate the first cluster (**hk* or **xk*) is undetermined. F *mahkosese·ha* 'little fawn,' an archaic or obsolescent word in F, with a double diminutive (F *-es-* < PA **-ehs-*, to which is added *-e·h-*, the very common living dimin., as in examples no. 6, 10, 27), P *màkʷsəss* 'fawn' (pl. *mákʷsəssak*; dimin. *-əss* < PA **-ehs-*), P *mákʷsəssis* 'little fawn; fawn of the third litter' (last one born in a litter of three, and stunted in size), a double diminutive (pl. *makʷsássisak*). The stem (PA **mahkwehs-* ~ **maxkwehs-*), which itself may be of diminutive origin, has no relationship with PA **maθkw-a* 'bear.'[19]

34. PA **ameθkwa* 'beaver.' F *amehkwa*, C and Cw *amisk*, MSj *amiškw*, O *amikk*; S *hameʔkwa*; Dm *amóxkw* (PA **e* > Dm *o* before **θkw*, as in PA **eθkwe·wa* 'woman' > Dm *óxkwe·w*).

35. PA **waʔšaškwa* 'muskrat.' F *ašaškwa*; M *oʔsas* (pl. *oʔsaskok*); O *waššašk, oššašk* (pl. *oššaškok*); S *hoθaškwa*; Dm *xwáškwašəš* (dimin.; with initial syllable loss, and PA **ʔš* and **hš* > Dm *xw* before original short vowels only, as in PA **no·hšihsema* 'my grandchild' > Dm *nó·xwi·s*); Powhatan *osasquus* (dimin., Strachey).

C and Cw *wačask* 'muskrat,' and MSj *očiškw* agree, having *č* for expected *s*, by diminutive symbolism.

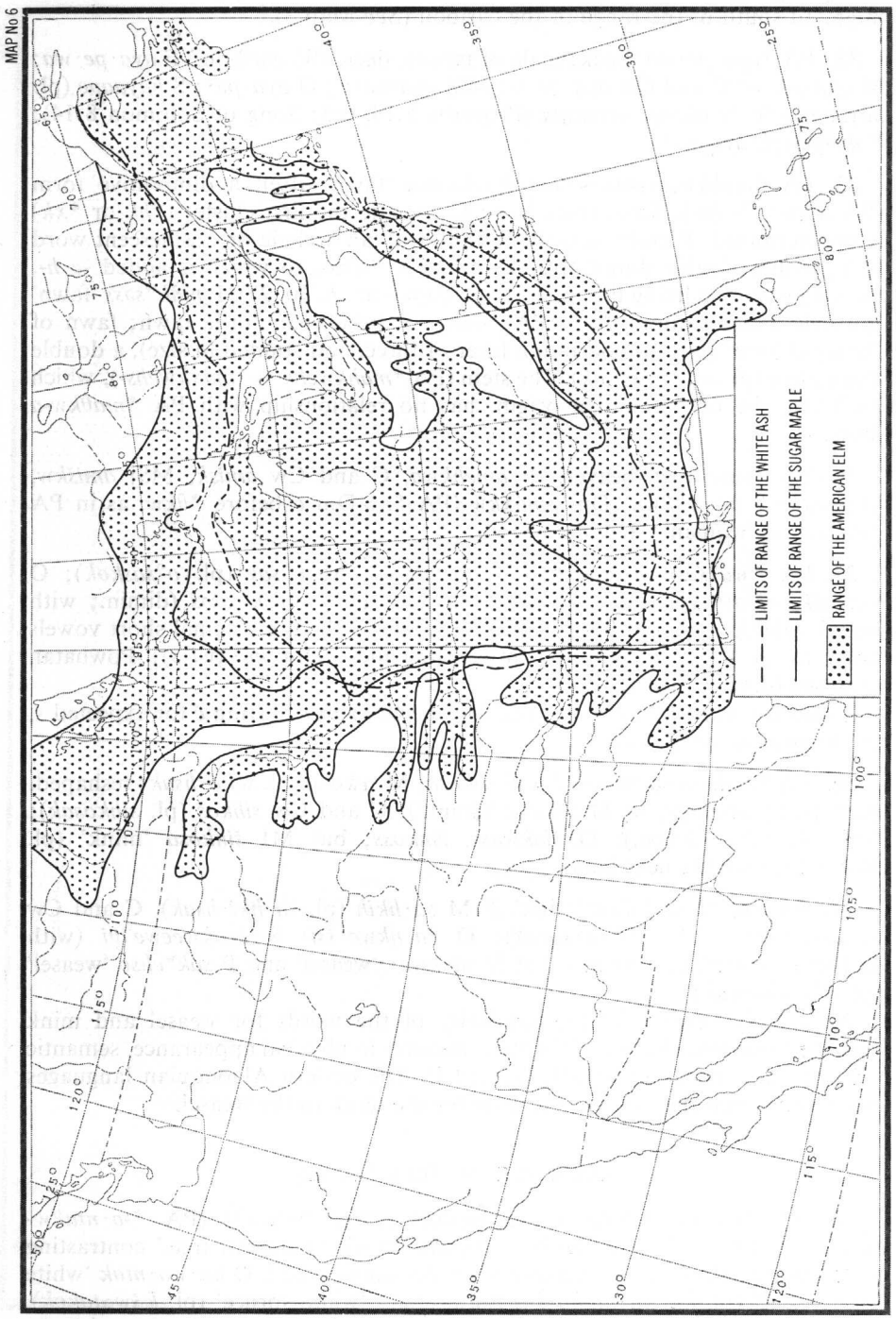
36. PA **šenkwehsa* 'weasel.'# F *šekosa*; M *seko·h* (pl. *seko·hsak*; reshaped, perhaps by analogy, to M *seka·k* 'skunk'); C and Cw *sihkos* (pl. *sihkosak*); MSj *šihkoši·š* (dimin.); O *šinkwass, šinkoss*; but MI *šinkosa* 'mink' (pl. *šinkosaki*) (*See* the next item).

37. PA **ša·nkwe·hšiwa* 'mink'.# M *sa·hkih* (pl. *sa·hki·hsak*), C and Cw *sa·hkwe·siw* (pl. *sa·hkwe·siwak*); O *ša·nkwe·šši*; S *šaakweewe*ʔ*θi* (with reshaped or different dimin.), but D *sánkwe·* 'weasel' and P *sákʷehso* 'weasel' (pl. *sákʷehsəwak*).

Apparently because of the similarity of the words for weasel and mink and the close resemblance of the two creatures in physical appearance, semantic changes have occurred in MI, D, and P. The eastern Algonquian languages have transferred the original PA term for the mink to the weasel.

EVIDENCE OF TREE NAMES

38. PA **ka·wa·ntakwa* 'white spruce' (*Picea glauca*); (PA **-a·ntakw-* 'evergreen or needle tree,' as in F *papaka·takwa* 'evergreen tree,' contrasting with PA **-a·xkw-* 'wood; hardwood or deciduous tree'). O *ka·wa·ntak* 'white spruce tree' (pl. *ka·wa·ntako·k*), P *kɑ́wɑtakʷ* 'white spruce' (pl. *kɑ́wɑtakok*), but M *ka·wa·htek* "spruce" which does not match due to reshaping with the



M noun-final *-a·htek* which
'stick, stem' > C *-a·htik*, O
wətamɑkánahtək^{w} 'pipestem

39. PA **menahekwa* 'ta
Cw *minahik* "spruce" (pl.
(pl. *minihikwoč*), P *mənəho*

PA **e* > P *ə* before a sin
and **kw* (only when treated
loss of **w* (*See* examples n

Penobscot has preserved
spruce' is already provided
semantic change (*See* Map

40. PA **a·kema·xkwa* '
root **a·kem-*, from PA **a*
P *ɑ̀kəm*; and PA **-a·xkw-*
no. 38). Cw *a·kima·sk* 'blac
O *a·kima·kk* 'white ash,' P
**sk*, **θk*, and **nk*, rather th

Ojibwa and Penobscot
Montagnais transferred the
of the range of the white as

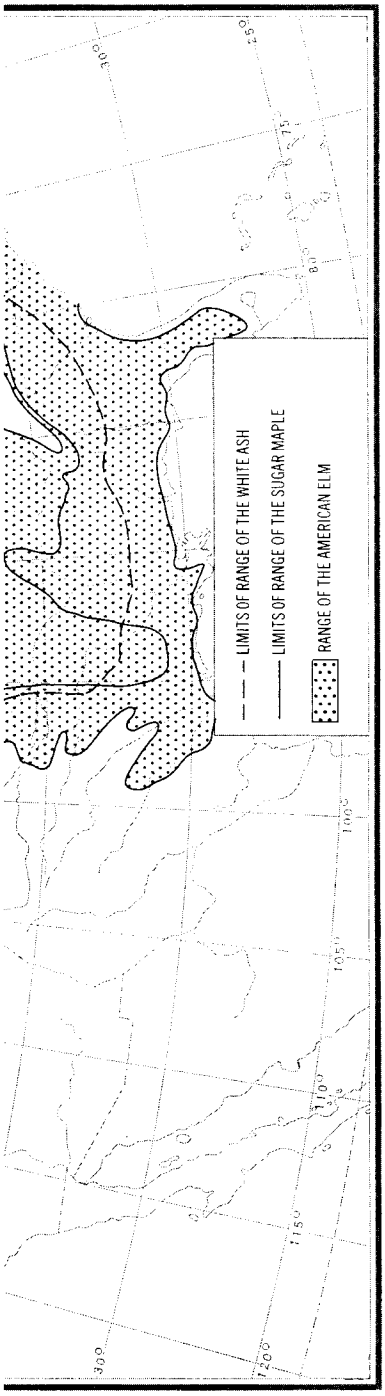
41. PA **wi·ʔsaka·xkwa*
**wi·ʔsak-* 'bitter,' **-a·xkw*
hkwa, M *we·ʔsaka·htek* (
'tree' < PA **-a·htekw-* 'tree
accurately determined for
wi·ssaka·kk '*frêne gras* or
both *Populus tremuloides* an
**-i·ʔs-* > P *-əss-*, *see* exampl

42. PA **šenta* 'conifer,
M *sɛhta·k* 'bough of needle
**sɛhta·h*, similar to M *mɛh*
supported by F *anehka*, C
'evergreen' (pl. *sihtak* "ever
canadensis) (pl. *šə́ntak*), P
sə̀təyak; ending reshaped by

The reconstruction of PA
appears to be an early borro
since Riggs records Dakot
Munsee Delaware is a speci
the most common conifer in

43. PA **ani·pya* 'elm' (
AN. F *ani·pi* (pl. *ani·pye·*
(pl. *ani·pi·k* AN), S *haniip*
(*See* map 6).

44. PA **wato·xpyi* 'alde
alder,' *Alnus rugosa*, former



M noun-final *-a·htek* which has the generalized meaning 'tree' (PA **-a·htekw-* 'stick, stem' > C *-a·htik*, O *-a·ttik* 'stick, tree,' P *-ahtəkʷ* 'stick, stem,' as in P *wətamɑkánahtəkʷ* 'pipestem') (*See* Map 7).

39. PA **menahekwa* 'tamarack, American larch' (*Larix laricina*).# C and Cw *minahik* "spruce" (pl. *minahikwak*), MSj *minihikw* 'white spruce tree' (pl. *minihikwoč*), P *mànəhok* 'tamarack' (pl. *mánəhokak*).

PA **e* > P *ə* before a single consonant, and PA **e* > P *o* before **hš*, **hkw*, and **kw* (only when treated as **hkw* following **h* in the sequence **-hekw-*) with loss of **w* (*See* examples no. 27, 28, 31); otherwise PA **e* > P *ə* before **kw*.

Penobscot has preserved the original meaning of the PA term since 'white spruce' is already provided for (*See* example no. 38), and C, Cw, and MS show semantic change (*See* Map 7).

40. PA **a·kema·xkwa* 'white ash' (*Fraxinus americana*).# (a compound of root **a·kem-*, from PA **a·kema* 'snowshoe' > F *a·kema*, M *a·kem*, O *a·kim*, P *ɑ̀kəm*; and PA **-a·xkw-* 'wood; hardwood or deciduous tree' (*See* example no. 38). Cw *a·kima·sk* 'black ash' (*Fraxinus nigra*), MSj *a·čima·škw* 'black ash,' O *a·kima·kk* 'white ash,' P *ɑ̀kəmahkʷ* 'white ash' (PA **a·* > P *a* preceding **xk*, **sk*, **θk*, and **nk*, rather than the regular correspondence to P *ɑ*).

Ojibwa and Penobscot preserve the original meaning, and the Cree-Montagnais transferred the name to a similar species when they migrated north of the range of the white ash (*See* Map 6).

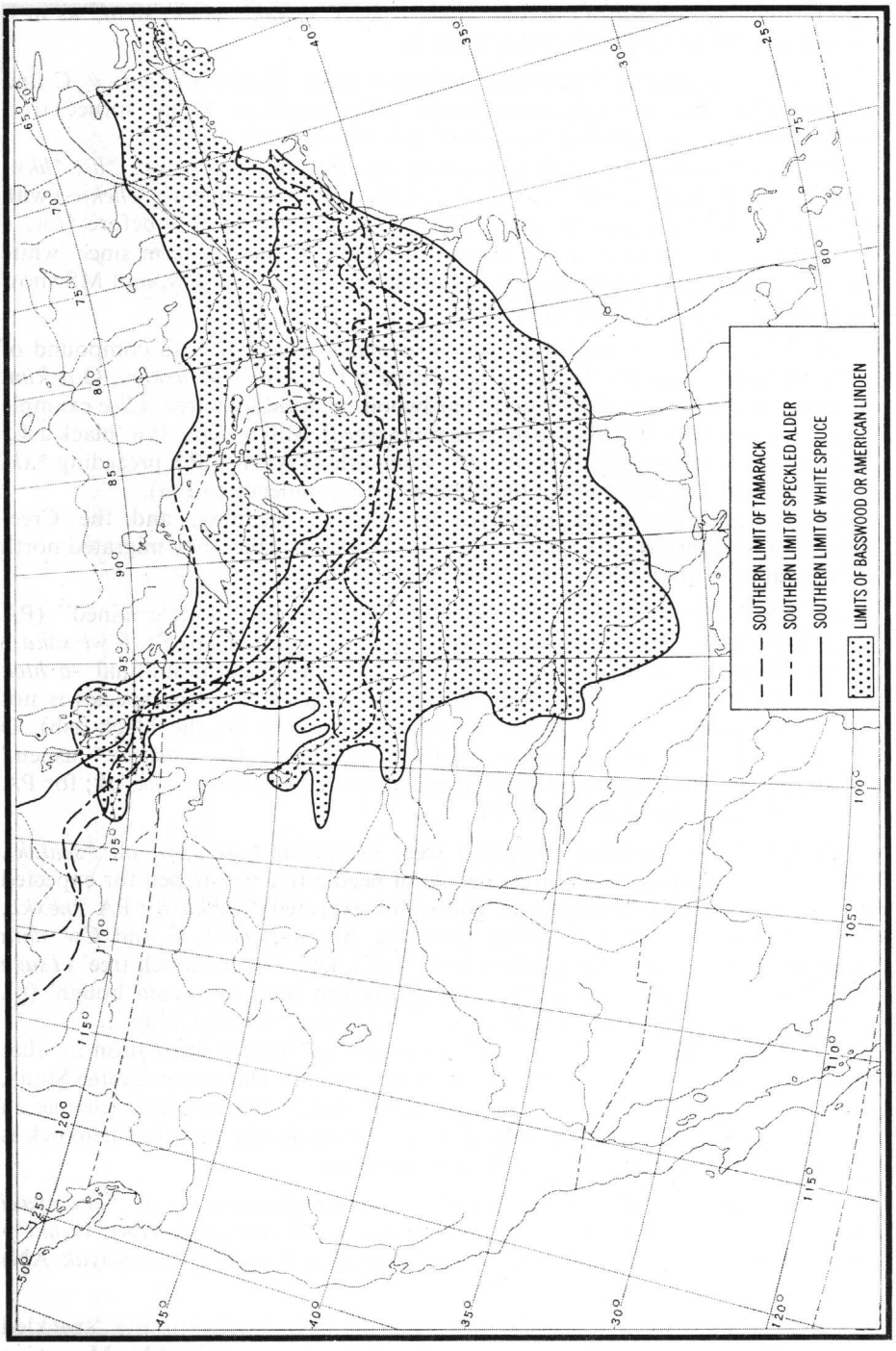
41. PA **wi·ʔsaka·xkwa* "kind of tree, PA species not determined" (PA **wi·ʔsak-* 'bitter,' **-a·xkw-* 'wood; hardwood or deciduous tree'). F *wi·saka·hkwa*, M *we·ʔsaka·htek* (reshaped with M generalized noun-final *-a·htek* 'tree' < PA **-a·htekw-* 'tree; stick, stem.' *See* item no. 38) (the species is not accurately determined for either F or M, but it may be the black ash), O *wi·ssaka·kk* '*frêne gras* or black ash' (*Fraxinus nigra*), P *wássakahkʷ* 'aspen,' both *Populus tremuloides* and *Populus grandidentata* (pl. *wəssákahkʷak*; for PA **-i·ʔs-* > P *-əss-*, *see* example no. 8).

42. PA **šenta* 'conifer, evergreen tree; evergreen bough,'# pl. **šentaki*. M *sɛhta·k* 'bough of needle tree, needle of needle tree' (reshaped for expected **sɛhta·h*, similar to M *mɛhka·k* 'goose' for expected **nɛhka·h* < PA **nexka*, supported by F *anehka*, C *niska*, O *nikka*, Arapaho *néʔ*), C and Cw *sihta* 'evergreen' (pl. *sihtak* "evergreen brushwood"), Dm *šənt* 'hemlock tree' (*Tsuga canadensis*) (pl. *šántak*), P *sàti* 'conifer, evergreen tree; evergreen bough' (pl. *sàtəyak*; ending reshaped by analogy to P *ánipi* 'elm,' *wátohpi* 'alder').

The reconstruction of PA **šenta* 'evergreen tree' finds confirmation in what appears to be an early borrowing from Algonquian in Dakota or Santee Sioux, since Riggs records Dakota *šiⁿtá* 'tamarack tree.' The semantic change in Munsee Delaware is a specialization accounted for by the fact that hemlock is the most common conifer in the Munsee country.

43. PA **ani·pya* 'elm' (refers chiefly to *Ulmus americana*), pl. **ani·pyaki* AN. F *ani·pi* (pl. *ani·pye·ni* INAN), M *ane·p* (pl. *ane·pyak* AN), O *ani·p* (pl. *ani·pi·k* AN), S *haniipi* (pl. *haniipiye* INAN), P *ánipi* (pl. *ánipəyak* AN) (*See* map 6).

44. PA **wato·xpyi* 'alder' (refers originally and chiefly to the 'speckled alder,' *Alnus rugosa*, formerly *A. incana*), pl. **wato·xpyali* INAN. M *wato·p*



(pl. *wato·pyak* AN), C and
(pl. *ato·špi·č*), O *wato·pp*
INAN) (*See* Map 7).

45. PA **wi·kopiminšya*
pl. **wi·kopiminšyaki* AN.
we·kopemeh (pl. *we·kopem*
S *wiikopimiiši*, MI *wikopimi*

The term is a derivative
bark' (a compound of PA **
**-eminšy-a* 'tree; originally a
F *-emiši*, M *-ɛmehsy-* (singu
-imənši, N *-imis*, and P *-əmis*
has been phonetically unstal
the result of the ancient fluc
'berry' and the noun-final **-
'duck' and the noun-final **
the forms do not all match
reshaped the element with
having *-imi·šš* for expected
served the original **nš* clust
in the eastern languages by
trasting sets, so that Dm has
and *-osi* (*See* Map 7).

46. PA **aʔsena·minšya* 's
(PA **aʔsenyi* 'rock, stone,'
asena·miši (pl. *asena·mišye*
(pl. *ahsəna·mánšəyak* AN), M
noun-final *-αw* 'tree exudin
(*See* Map 6).

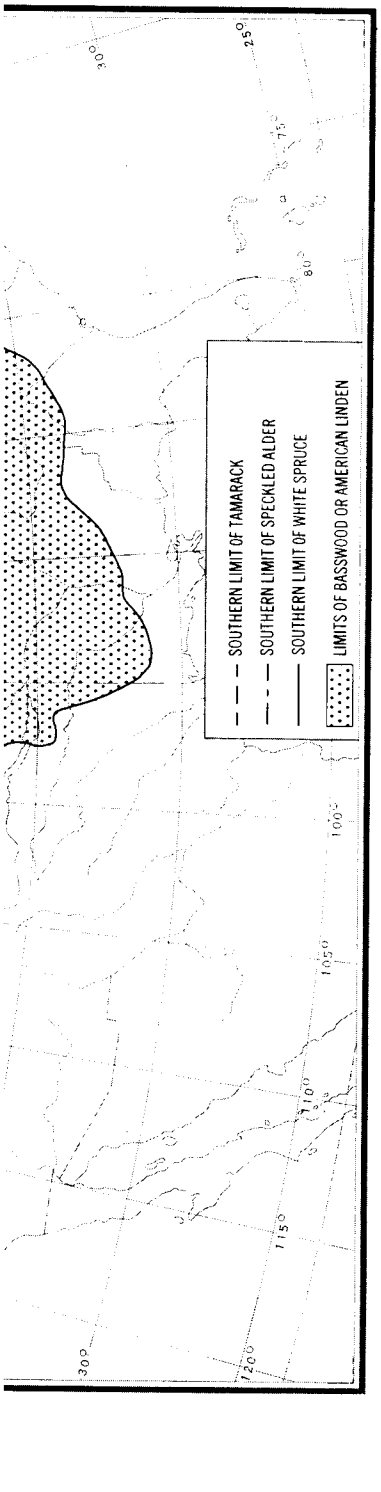
47. PA **waʔša·we·minš*
**-eminšy-a* 'tree'; *see* exampl

M *sa·wɛ·meh* 'beech' (pl
expected M *ʔs*, O *šš* < PA
**neʔšwa·šika*), O *ašša·we·m*
'beech tree' (pl. *waša·we·ma*
and does not match (*See* Ma

48. PA **keno·šye·ʔsiwa*
cent (root PA **keno·šye·-*
**name·ʔsa* 'fish' > M *namɛ·*

M *kenu·si·ʔs-* in *kenu·si*
quasi-diminutive; reshaped
of M *-aweh*, *-awe·hsy-* 'tree
'bark'), P *kanósehso* 'willow
'living creature,' a quasi-dim

PA **e* ~ **a* > P *ə* ~ *a*, as in
nahs 'three' < PA **neʔθwi*. P
ing **i·* (as in examples no. 8



(pl. *wato·pyak* AN), C and Cw *ato·spiy* (pl. *ato·spiya* INAN), MSj *ato·špiy* (pl. *ato·špi·č*), O *wato·pp* (pl. *wato·ppi·n* INAN), P *wàtohpi* (pl. *wàtohpəyal* INAN) (*See* Map 7).

45. PA **wi·kopiminšya* 'basswood, American linden' (*Tilia americana*), pl. **wi·kopiminšyaki* AN. F *wi·kopimiši* (pl. *wi·kopimišye·ni* INAN), M *we·kopemeh* (pl. *we·kopemehsyak* AN), O *wi·kopi·mi·šš* (pl. *-i·n* INAN), S *wiikopimiiši*, MI *wikopiminši*, P *wikəpímisi* (pl. *wikəpímisəyak* AN).

The term is a derivative of PA **wi·kopyi* 'fibrous, building, or basswood bark' (a compound of PA **wi·k-* 'shelter, house, dwell,' **-ekop-* 'bark') and PA **-eminšy-a* 'tree; originally a fruit, berry, or nut bearing tree,' with the reflexes F *-emiši*, M *-ɛmehsy-* (singular *-emeh*), O *-imi·šš*, S *-imiiši*, MI *-iminši*, Dm *-imənši*, N *-imis*, and P *-əmisi*. From the historical point of view this noun-final has been phonetically unstable, a feature which goes back to PA times and is the result of the ancient fluctuation of **i· ~ *i*, which is evident in PA **mi·n-a* 'berry' and the noun-final **-min-a* 'berry of a certain type,' and PA **ši·ʔši·p-a* 'duck' and the noun-final **-eʔšip-a* 'duck of a certain species.' Consequently the forms do not all match in the various languages. Ojibwa has apparently reshaped the element with loss of *n* and compensatory vocalic lengthening, having *-imi·šš* for expected **-iminš*, whereas Miami and Delaware have preserved the original **nš* cluster. The instability of the vocalic length is reflected in the eastern languages by the splintering of the element into a series of contrasting sets, so that Dm has *-imənši*, *-imonši*, and P has *-əmisi*, *-əmosi*, *-əməsi*, and *-osi* (*See* Map 7).

46. PA **aʔsena·minšya* 'sugar maple' or 'rock maple tree' (*Acer saccharum*), (PA **aʔsenyi* 'rock, stone,' F *aseni*, pl. *asenye·ni*; PA **-eminšy-a* 'tree'). F *asena·miši* (pl. *asena·mišye·ni* INAN), O *assina·mi·šš*, Dm *ahsəná·mənši* (pl. *ahsəna·mánšəyak* AN), MI *se·naminši*, A *sənɔ̃mosi*, P *ssànɑw* (reshaped with noun-final *-ɑw* 'tree exuding sticky sap,' as in P *pkʷàhɑw* 'balsam fir tree') (*See* Map 6).

47. PA **waʔša·we·minšya* 'American beech' (*Fagus grandifolia*), (PA **-eminšy-a* 'tree'; *see* examples no. 45 and 46).

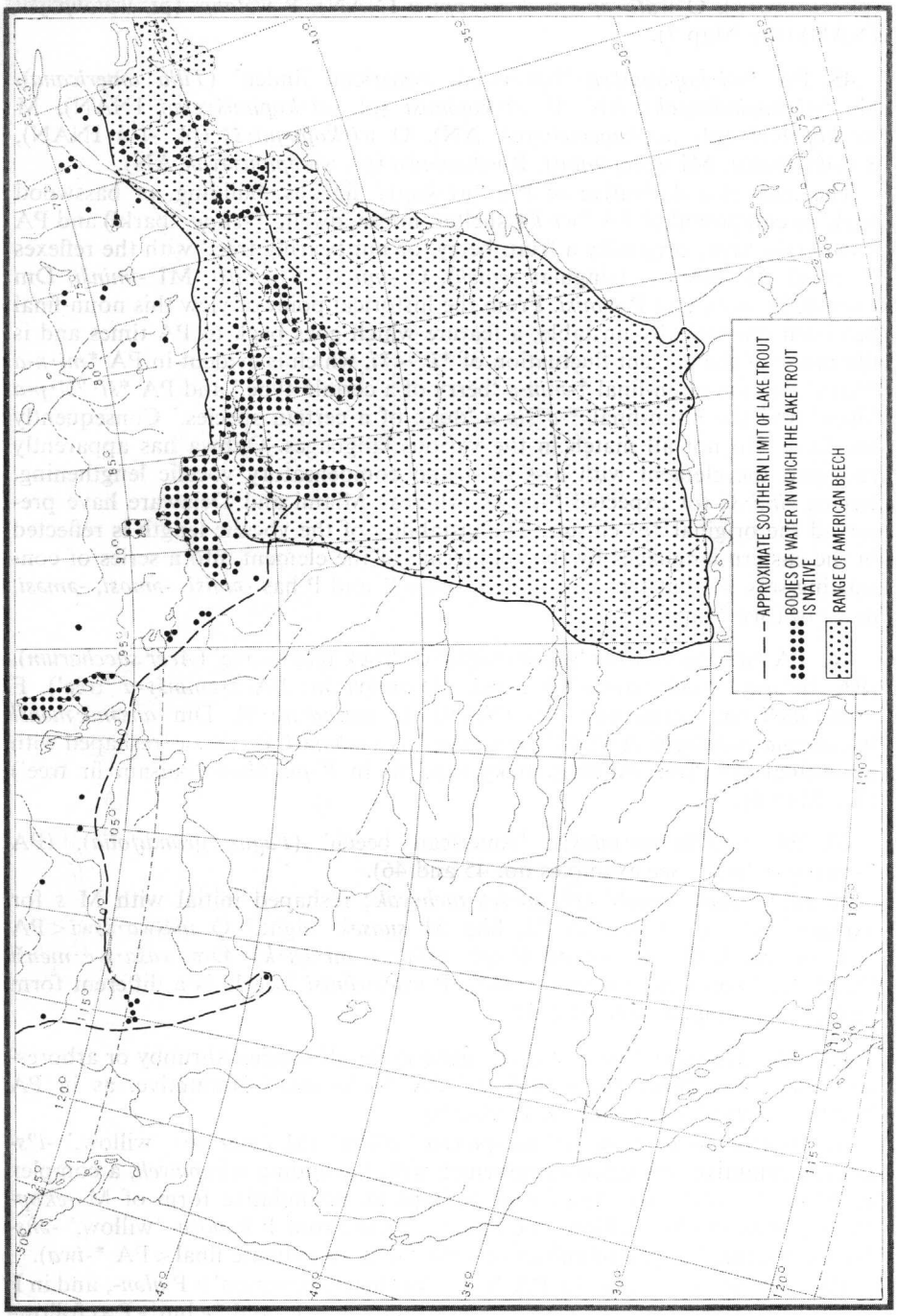
M *sa·wɛ·meh* 'beech' (pl. *sa·wɛ·mehsyak*; reshaped initial with M *s* for expected M *ʔs*, O *šš* < PA *ʔš*, like M *suasek* 'eight,' O *niššwa·sswi* < PA **neʔšwa·šika*), O *ašša·we·mi·šš* (pl. *ašša·we·mi·šši·k*), Dm *waša·wé·menši* 'beech tree' (pl. *waša·we·mánšəyak*). P *wačəwímisi* 'beech' is a different form and does not match (*See* Map 8).

48. PA **keno·šye·ʔsiwa* 'willow,' generic for all species, shrubby or arborescent (root PA **keno·šye·-* 'willow,' PA **-eʔs-* quasi-diminutive, as in PA **name·ʔsa* 'fish' > M *namɛ·ʔs*, P *nàmehs*).

M *kenu·si·ʔs-* in *kenu·si·ʔsekapaweh* 'willow' (M *kenu·si·-* 'willow,' *-iʔs-* quasi-diminutive; reshaped or reformed with the ending *-ekapaweh*, a complex of M *-aweh*, *-awe·hsy-* 'tree,' and perhaps an assimilative form of M *-ekop-* 'bark'), P *kanósehso* 'willow' (pl. *kanósehsəwak*; root P *kanose-* 'willow,' *-əhs-* 'living creature,' a quasi-diminutive < PA **-eʔs*, *-o* animate final < PA **-iwa*).

PA **e ~ *a* > P *ə ~ a*, as in PA **elen-* 'ordinary, common' > P *alən-*, and in P *nahs* 'three' < PA **neʔθwi*. PA **ʔs* > P *hs* following **e·* and **e* but > P *ss* following **i·* (as in examples no. 8 and 41). Compare Dm *kano·še·sa·hkw* 'willow.'

MAP No 8



49. PA **mi·twiya* 'quakin
F *mi·twiya* 'quaking aspen,'
PA **wi*>C *o* after a nons
MSj *mi·toš* 'quaking aspen,
loss of postconsonantic *w*),
very probably refers to *P. tr*

None of the above lang
Shawnee has *miitwaʔki* "re
tree," both of which show res
species identification. The ap
is semantic change due to th
to regions south of the rang
the Ohio and Cumberland ri
it extends southward to occ
of Illinois, Indiana, Ohio, Pe
Mountains south to southwe
absent on the Great Plains,
eastern Utah, Colorado, and
and the semantic change in S
clusions to be set forth.

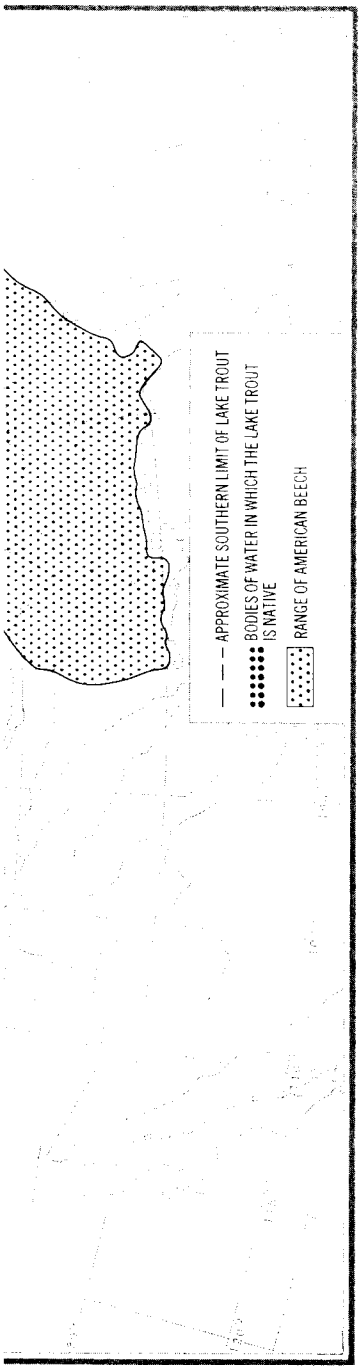
EVI

50. PA **aʔšikanwa* 'black
mouth bass, smallmouth bla
mieu Lacepède; although i
languages (Fox, and so on) a
southern species, the 'large
term, achigan, is an obvious

F *ašikanwa* 'black bass,'
ásikanak AN; contrasting w
from PA **ašikanwi* 'sock').

This species is not native i
of this fish in Lake Champla
of the same term are found
'common sunfish' or 'pump
mɑlásikan 'striped bass' or 'r
Atlantic coast from the St.
The smallmouth bass is not r
the headwaters of the Ocn
northward to Lake Champl
slightly north of Lake Nipis
Woods in northern Minnes
Map 9).

51. PA **name·kwa* 'lak
**name·kohsa* 'lake trout,' al
namaycush' (*Cristivomer n*
The scientific term and at lea
Algonquian. In Maine the fi
this species alone, and all la



49. PA **mi·twiya* 'quaking aspen, American poplar' (*Populus tremuloides*). F *mi·twiya* 'quaking aspen,' C and some Cw dialects *mi·tos* "poplar" (dimin.; PA **wi* > C *o* after a nonsyllabic; term probably refers to *P. tremuloides*), MSj *mi·toš* 'quaking aspen,' Malecite *mit* 'quaking aspen' (pl. *mitiyək*, with loss of postconsonantic *w*), N *meetwe* "poplar" (Genesis 30:37, Hosea 4:13; very probably refers to *P. tremuloides*).

None of the above languages show evident semantic change. However, Shawnee has *miitwaʔki* "red root willow" and *miitwaʔkiiθa* "water willow tree," both of which show reshaped or reformed endings and need more accurate species identification. The apparent change of meaning to "willow" in Shawnee is semantic change due to the early migration of the speakers of this language to regions south of the range of the quaking aspen, probably to the valleys of the Ohio and Cumberland rivers. The quaking aspen is a northern species, but it extends southward to occupy eastern and central Iowa, the northern halves of Illinois, Indiana, Ohio, Pennsylvania, and New Jersey, and the Appalachian Mountains south to southwestern Virginia as its southern limit. Although it is absent on the Great Plains, it extends southward in the Rocky Mountains to eastern Utah, Colorado, and northern New Mexico. The range of this species and the semantic change in Shawnee add some supporting evidence to the conclusions to be set forth.

EVIDENCE OF FISH NAMES

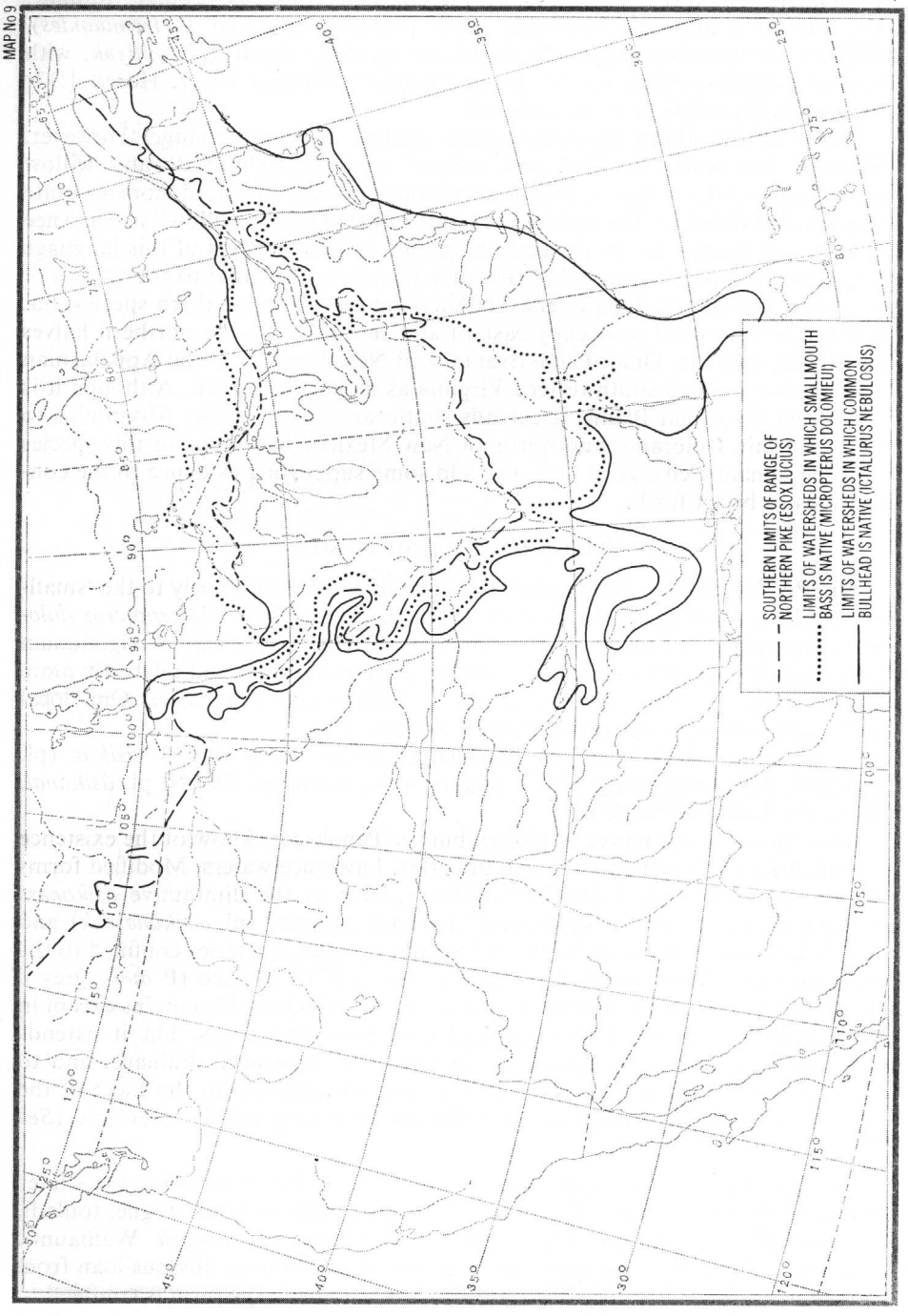
50. PA **aʔšikanwa* 'black bass' (refers originally and primarily to the 'smallmouth bass, smallmouth black bass, achigan, or tiger bass,' *Micropterus dolomieu* Lacepède; although in the Mississippi River basin some Algonquian languages (Fox, and so on) also apply the term to a similar and relatively more southern species, the 'largemouth bass,' *Micropterus salmoides*). One local term, achigan, is an obvious loan from Algonquian.

F *ašikanwa* 'black bass,' M *aʔsekan*, O *aššikan*, S *aʔšika*, P *ásikan* (pl. *ásikanak* AN; contrasting with P *ásikan* 'sock, footwrap' INAN, pl. *ásikanal*, from PA **ašikanwi* 'sock').

This species is not native in Maine, but the Penobscots know of the existence of this fish in Lake Champlain and upper St. Lawrence waters. Modified forms of the same term are found in Penobscot, such as the diminutive *ásikanəss* 'common sunfish' or 'pumpkinseed,' *Lepomis gibbosus* (pl. *asikánəssak*) and *mɑ́lásikan* 'striped bass' or 'rockfish,' *Roccus saxatilis*, a species confined to the Atlantic coast from the St. Lawrence to the Gulf of Mexico (P *mɑ́l-* 'grey'). The smallmouth bass is not native east of the Appalachian Mountains except in the headwaters of the Ocmulgee and Chattahoochee rivers, but it extends northward to Lake Champlain, to the upper St. Lawrence drainage, and to slightly north of Lake Nipissing. It has been introduced into the Lake of the Woods in northern Minnesota and Ontario and very widely elsewhere (*See* Map 9).

51. PA **name·kwa* 'lake trout,' and dimin. PA **name·kwehsa* ~ later **name·kohsa* 'lake trout,' also called 'lake charr, salmon trout, togue, touladi, namaycush' (*Cristivomer namaycush* or *Salvelinus namaycush* Walbaum). The scientific term and at least one of the local names is an obvious loan from Algonquian. In Maine the fish is usually called 'togue.' The term is confined to this species alone, and all languages agree.

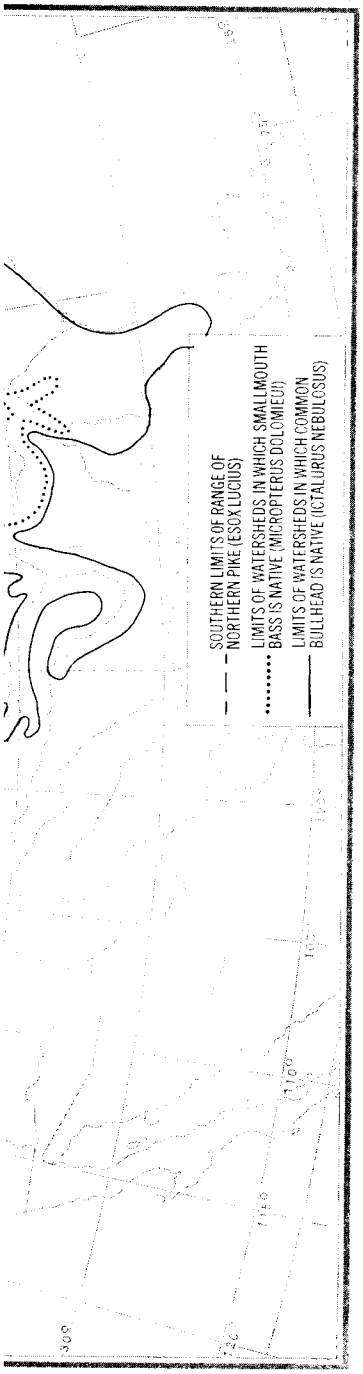
MAP No 9



This ancient species, one o
North America, extending f
the Arctic Circle. Its range lie
glaciation. It is not found in
River basin or Vancouver
cold lakes with rocky botto
distribution which calls for
the Great Lakes; they are p
but less common in Lake E
portion, and reach their be
Superior. In Lake Superior t
namaycush siscowet Agassiz)
in the eastern portion of Ca
Lake Minto in Ungava. Fur
the Mackenzie and Yukon ri

Therefore, we are largely
where localities of occurren
Available distributional data
original presence of the lak
follows: (1) Idaho: Henry
Lake (Glacier County), Glen
lakes in the same area; (3)
Minnewanka Lake (near Ba
Lake, Glacier Lake; (5) M
(chiefly in the northern, deep
wood Lake (Lake County),
Pokegama Lake (Itasca Cou
(7) southern Ontario: Rainy
Opeongo Lake (in Algonquin
and a few other lakes in the n
County), Manistique Lake
northern peninsula only; (10
Champlain; (11) southern
Tchitogama Lake, Chibougi
Betsiamites River, Restigouc
(Addison County), Lake M
Bellwater Pond in Barton, E
stone Lake (Essex County); (
Enfield, Mascoma Lake, Squ
Winisquam Lake (Belknap C
gin County), Wilton Pond (F
Sebec Lake, Haymock Lake
Stream Pond in Enfield (Penc
Hill Pond, Tunk Lake (Han
Lake (Aroostook County); (1
St. John River headwaters ab
in southwestern New Brunsw

The lake trout was intro
Pennsylvania, about 1887, b



This ancient species, one of the largest of freshwater fish, is confined to boreal North America, extending from the northern borders of the United States to the Arctic Circle. Its range lies almost entirely within the limits of the Pleistocene glaciation. It is not found in Newfoundland and is not native in the Columbia River basin or Vancouver Island. Since this fine fish occurs only in deep, cold lakes with rocky bottoms and in a few cold streams, it has an irregular distribution which calls for detailed investigation. Lake trout are found in all the Great Lakes; they are prevalent in lakes Huron, Michigan, and Superior but less common in Lake Erie where they are confined to the deeper eastern portion, and reach their best development in lakes Huron, Michigan, and Superior. In Lake Superior there is a special variety, the Siscowet (*Cristivomer namaycush siscowet* Agassiz), which is paler. The lake trout is more common in the eastern portion of Canada and is found as far north as Payne Lake and Lake Minto in Ungava. Further west it is less common, occurring sparsely in the Mackenzie and Yukon rivers.

Therefore, we are largely concerned with the southern portion of the range where localities of occurrence are scattered except for the five Great Lakes. Available distributional data are incomplete, but the facts ascertained as to the original presence of the lake trout in the southern part of its range are as follows: (1) Idaho: Henry Lake (Fremont County), (2) Montana: St. Mary Lake (Glacier County), Glenn Lake (Lincoln County), and a few other smaller lakes in the same area; (3) Alberta: Waterton Lake (in extreme southwest), Minnewanka Lake (near Banff), Lesser Slave Lake; (4) Saskatchewan: Swan Lake, Glacier Lake; (5) Manitoba: Lake Athapapuskow, Lake Winnipeg (chiefly in the northern, deeper part), West Hawk Lake; (6) Minnesota: Greenwood Lake (Lake County), Seagull Lake (Cook County), Trout Lake and Pokegama Lake (Itasca County), and a few other small lakes in the same area; (7) southern Ontario: Rainy River, Lake Nipigon, Lake Nipissing, Lake Simcoe, Opeongo Lake (in Algonquin Park); (8) Wisconsin: Trout Lake (Vilas County), and a few other lakes in the northern part, (9) Michigan: Lake Gogebic (Gogebic County), Manistique Lake (Mackinac County), and a few other lakes in the northern peninsula only; (10) New York: Cayuga Lake, Lake George, Lake Champlain; (11) southern Quebec: Lac des Neiges (in Laurentide Park), Tchitogama Lake, Chibougiche Lake, Lake Chibougamou, Obatogamau Lake, Betsiamites River, Restigouche River (Gaspé); (12) Vermont: Lake Dunmore (Addison County), Lake Memphremagog, Lake Willoughby, Caspian Pond, Bellwater Pond in Barton, Echo Pond, Glover Pond (Orleans County), Maidstone Lake (Essex County); (13) New Hampshire: Newfound Lake, East Pond in Enfield, Mascoma Lake, Squam Lake (Grafton County), Lake Winnipesaukee, Winisquam Lake (Belknap County); (14) Maine: Thompson Pond (Androscoggin County), Wilton Pond (Franklin County), Moosehead Lake, Schoodic Lake, Sebec Lake, Haymock Lake (Piscataquis County), Mattamiscontis Lake, Cold Stream Pond in Enfield (Penobscot County), Phillips Lake, Branch Pond, Beech Hill Pond, Tunk Lake (Hancock County), St. John and Allagash rivers, Eagle Lake (Aroostook County); (15) New Brunswick: headwaters of St. Croix River, St. John River headwaters above Grand Falls, Oromocto Lake, and other lakes in southwestern New Brunswick.

The lake trout was introduced into Eaglesmere Lake, Sullivan County, Pennsylvania, about 1887, but it is not native in any lake in that state. It is

absent in the central and southern districts of New England and is not found to any extent in the White Mountain region, Androscoggin waters, or Rangeley Lake area. It is not found in the interior of the lower peninsula of Michigan. In Wisconsin the lake trout is confined to Lake Michigan and a few small lakes in the northern part; it is wanting in Green Lake and lakes Wingra, Geneva, Mendota, and Pepin and absent in Lake Winnebago, which, despite its large size, is quite shallow. It is not found in Lake of the Woods, and occurs in only a few small lakes in the north-central portion of Minnesota (*See* Map 8).

M *namɛ·koh* (dimin.; pl. *namɛ·kohsak*), C and Cw *name·kos* (dimin.), MSj *name·kwoš* (dimin.), O *name·koss* (dimin.), A *namákw*, P *nàmekʷ* (pl. *námekʷak*; dimin. *námekʷəss*). A and P are the only languages that have preserved the term in its original non-diminutive form.

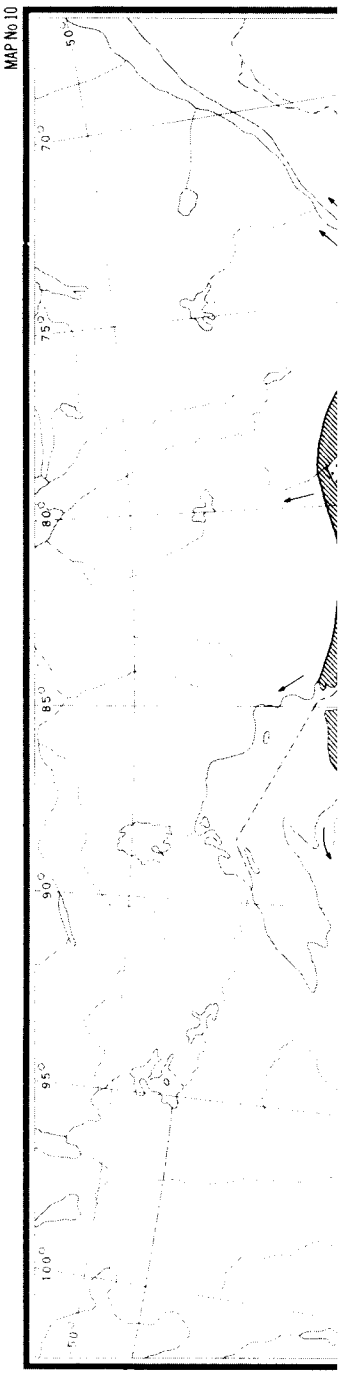
The word is of great antiquity and is a formative of the deverbal medial and noun-final PA **-ame·kw-* 'fish of a particular kind or species' plus the animate final ending **-a* and the prefix of universal existence PA **ne-* (as in PA **nepyi* 'water,' **na·pe·w-* 'male, man'). The term is paired with PA **name·wa* 'lake sturgeon' (*Acipenser fulvescens*), with the supporting forms F *name·wa*, M *namɛ·w*, O *name·*, C and Cw *name·w*, but MSj *name·w* which in this dialect is applied to both the 'lake sturgeon' and 'Atlantic sturgeon' (*Acipenser oxyrhynchus* Mitchill), and there are no reflexes in the eastern Algonquian languages since the lake sturgeon is found only as far east as the upper St. Lawrence waters; it is formed from the contrasting noun-final PA **-ame·w-* 'fish,' the animate final **-a*, and the prefix **ne-*. From the same primary elements comes the diminutive PA **name·ʔsa* 'fish,' with quasi-diminutive PA **-eʔs-*, posited by F *name·sa*, M *namɛ·ʔs*, C and Cw *name·s* ('fish' in Cw about James Bay, but 'small lake sturgeon' elsewhere), P *nàmehs*, Dm and D *namé·s*.

52. PA **kenwešye·wa* ~later **kenošye·wa* 'northern pike' (*Esox lucius* Linnaeus).# This species is not native east of the Appalachian Mountains or south of the Ohio River.

F *keno·še·wa*, M *kenu·si·w*, C and Cw *kinose·w* ('pike' in Cw dialects south and west of James Bay, but generic 'fish' in C and all other Cw dialects), MSj and MSs *činoše·w*, O *kino·še·*, MI *kinoša* (pl. *kinošaki*), but P *kʷánose* 'chain pickerel' (*Esox niger* Le Sueur) (pl. *kʷánosak*; with metathesis of **w*, since the only clusters with second member *w* permitted in P are unit phoneme *kʷ* and *-hw-*, only the former occurring in word initial). Otherwise PA **-we-* > **o* between nonsyllabics in late PA times after the separation of the eastern Algonquian languages, as shown in PA **ešk wete·wi* ~ **eškote·wi* 'fire,' F *aškote·wi*, C *iskote·w*, O *iškote·*, but P *skʷəte*.

Concerning late PA **kenošye·wa*, only C, Cw, and MS preserve the original short **o* < **-we-* between consonants, whereas F, M, and O show a secondary lengthening of the vowel to *o·* which occurs elsewhere in the second syllables of words in these languages. The contracted stem **kenošye·w-* was in phonemic contrast with PA **keno·šye·-* 'willow' (*see* example no. 48), and when lengthening occurred in the M form, the M term for 'willow' was reshaped or reformed with a new noun-final *-ekap-aweh*.

Semantic changes have taken place with some departures from the original meaning 'northern pike.' The Penobscot transferred the term to a very similar species when they migrated beyond its habitat, and most Cree dialects have generalized the meaning to 'fish' (*See* Map 9).



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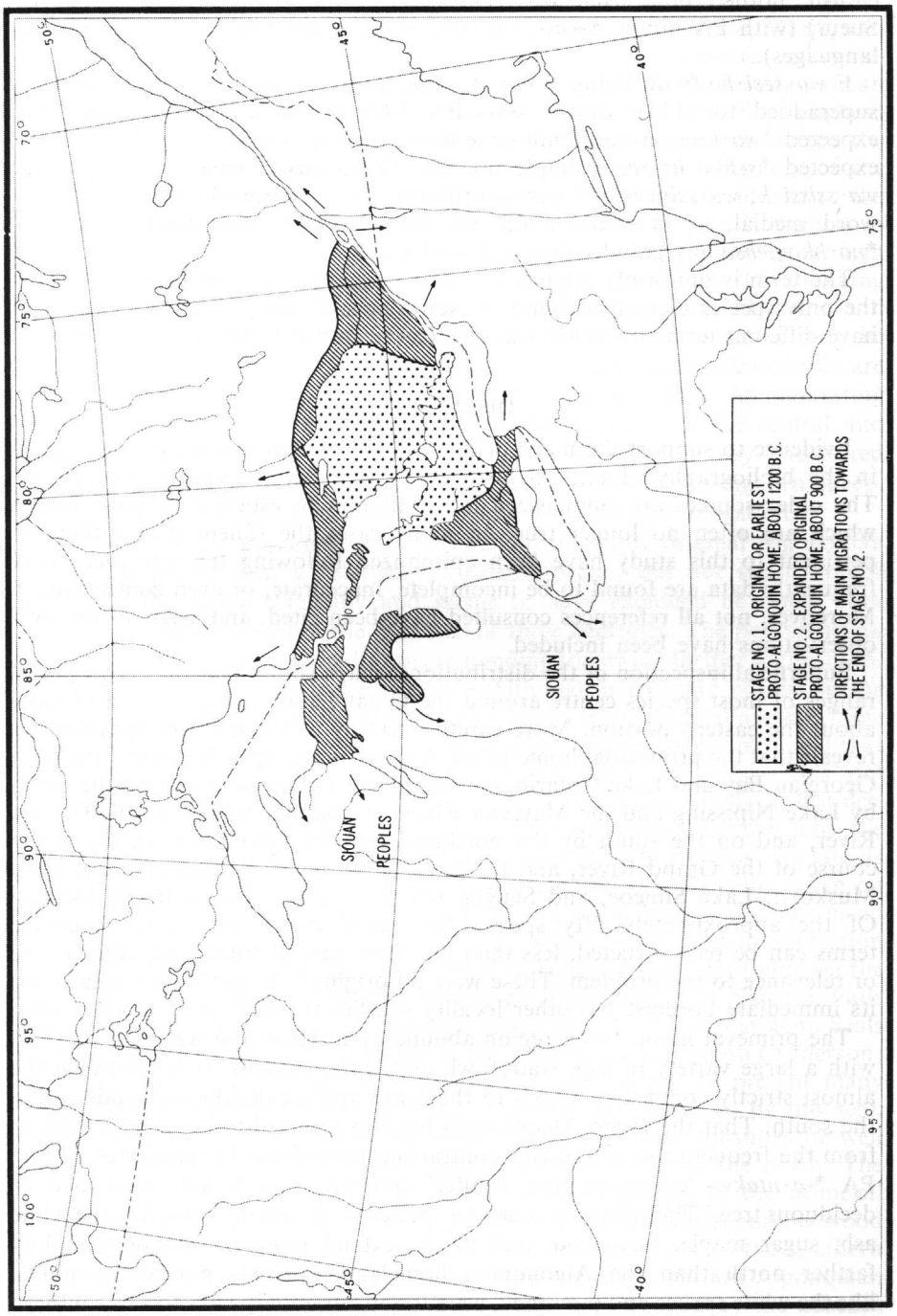

53. PA **wa·hsiwa* and dimin. PA **wa·hsehsiwa* 'brown bullhead, eastern catfish, horned pout' (*Ictalurus nebulosus*, or older *Ameiurus nebulosus* Le Sueur) (with PA dimin. **-ehs-*, the form more commonly used in the various languages).

F *wa·sesi·ha* (with living F dimin. *-i·h-*, as in examples no. 6, 10, and 27, superadded to old F dimin. *-es-* < PA **-ehs-*); M *wa·sew* (reshaped, for expected **wa·hsew*, a non-diminutive form, similarly to M *seko·h* 'weasel' for expected **sehko·h*; *see* example no. 36); O *wa·ssissi*, *wa·ssi* ~ (dimin.; pl. *wa·ssissi·k*, *wa·ssinyak*); P *wásəsso* (dimin.; pl. *wásəssəwak*; PA **hs* > P *s* in word medial, as in example no. 20, but > P *ss* in word final, as in PA **no·hkomehsa* 'my grandmother' > P *nòhkəməss*).

The term is uniformly applied in all languages to the same species. This is the only species of catfish found in New England, and the central languages have different terms for other varieties of the catfish family (*See* map 9).

DISCUSSION

Evidence to support the maps of distribution of the various species is given in the bibliography of natural history references at the end of this article. The older sources are emphasized in an attempt to establish original ranges which are often no longer true. In many cases the salient points that are pertinent to this study have been epitomized following the reference. Very frequently data are found to be incomplete, inaccurate, or even contradictory. Moreover, not all references consulted have been cited, and a few of my own observations have been included.

Superficial inspection of the distributional maps shows that the geographical ranges of most species centre around the Great Lakes region, and specifically about the eastern portion. More careful scrutiny of the multiple intersections reveals that the primordial home of the Algonquian peoples lay chiefly between Georgian Bay and Lake Ontario, embracing the region bordered on the north by Lake Nipissing and the Mattawa River, on the east by the middle Ottawa River, and on the south by the northern shore of Lake Ontario, the upper course of the Grand River, and the Saugeen River. The districts about Lake Muskoka, Lake Simcoe, and Scugog and Rice lakes were centrally located. Of the approximately fifty species for which Proto-Algonquian linguistic terms can be reconstructed, less than half have any distributional significance or relevance to the problem. These were all originally found in this area or on its immediate borders. No other locality satisfies the ecological requirements.

The primeval home was a region abounding in lakes and was well supplied with a large variety of fish, waterfowl, and game animals. It lay between the almost strictly coniferous forests to the north and the deciduous woodlands to the south. That the Proto-Algonquians lived in a mixed-forest zone is evident from the frequent use of the two contrasting noun-finals in many tree names, PA **-a·ntakw-* 'evergreen tree, conifer' and **-a·xkw-* 'wood; hardwood or deciduous tree.' The relatively southern species of deciduous trees, like the white ash, sugar maple, basswood, and beech, extend more or less only slightly farther north than the Algonquian homeland, whereas northern conifers, like the white spruce and tamarack, were found commonly only to the southern borders of the original home or slightly beyond.

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The original home lay at the southern limit of the woodland caribou, which extended into the upper Ottawa valley just to the south of the Mattawa River and Lake Nipissing, and westward to Manitoulin Island, Sault Ste. Marie, and the northern part of the lower peninsula of Michigan. The moose ranged somewhat farther southward and occupied all the area of the Proto-Algonquian residence. When the ancestors of the Delawares and southern New England Algonquians migrated south of the range of the caribou they transferred the term for that animal to the deer, and correspondingly the ancestors of the Miami in their southward movement applied the term for the moose to the deer. In the east of North America the wood bison was largely limited to deciduous forests and was found on the southern borders of the Algonquian 'Urheimat' in extreme southern Ontario, more plentifully in the adjoining regions of western New York, and on the flatlands of southern Michigan and northern Ohio and Indiana. Insufficient information is available on the Algonquian languages of the western Plains, but many semantic changes are to be expected regarding the terminology of fauna and flora. An interesting example is provided in the fact that when the Arapaho of the central and southern Plains migrated far from the range of the caribou they transferred the Proto-Algonquian term for the woodland caribou to the bighorn sheep. Both beasts have large, prominent horns and a similar fur coloration.

The raccoon and porcupine lived throughout the entire original Algonquian home, but the former, a relatively southern species, did not subsist much farther to the north originally and seems to have extended its range both northward and westward in the past two or three centuries. The porcupine, an essentially northern animal, had a range extending somewhat farther to the south.

The harbour seal is of special interest. Although it is found chiefly on the shores of both oceans and the Hudson and James bays, the seal ascends large rivers for long distances above tidewater. The harbour seal is the only seal that is common on the eastern coast of the United States. At present this seal ascends the St. Lawrence waterway only as far as Tadoussac and Trois Pistoles. However, in aboriginal times its ascent penetrated much farther into the interior along the upper St. Lawrence River and affluent streams. As late as the nineteenth century there are three or four records of seals being taken on Lake Champlain (Kirk; Miller; Thompson) and on at least one occasion on Onondaga Lake near Syracuse, New York, which has a stream connection with Lake Ontario (Miller). In former times seals were commonly found on the shores of Lake Ontario (DeKay; Downing; Anderson), but Niagara Falls served as a barrier to further penetration along the Great Lakes system. Seals also ascended the Ottawa River as far as the present city of Ottawa (Anderson; Downing), where the Chaudière Falls limited their range. At present many inland lakes throughout the Hudson Bay drainage are inhabited by this seal, but the distributions of many other species show that these localities lie well outside any possible original Algonquian homeland so far in the north. The harbour seal, therefore, was found on the southern margin of the primeval Algonquian home; the ranges of the harbour seal, the bobwhite, and the wood bison show that the northern peninsula or the northern part of the southern peninsula of Michigan could not have been the site of the earliest Algonquian residence. The western half of New York State is eliminated by the absence of the woodland caribou and of the white spruce.

Of the four species of fishes definitely known to the Proto-Algonquians, all are freshwater varieties. The northern pike is widespread in its distribution and therefore provides the least information. It is not found as a native fish in the Atlantic watershed south of the St. Lawrence drainage and is absent south of the Ohio River. When the ancestors of the Abenaki-Penobscot migrated to the east they transferred the term for this fish to a very similar species, the chain pickerel. The lake trout, a favourite fish of the early Algonquians, is not found south of the Great Lakes, Cayuga Lake, Lake George, and Lake Winnipesaukee. It is found in only a few inland lakes of northern Wisconsin, the upper peninsula of Michigan, and northern Minnesota, and it reaches its maximum development in the waters of Lake Huron. The brown bullhead prefers warm water that is muddy or shallow, and consequently it is most abundant in the lakes and ponds of southern Ontario. Its northern range extends to a line south of Sault Ste. Marie, Lake Nipissing, the Mattawa River, and the Ottawa River south of Mattawa. The smallmouth black bass has a very similar range to the brown bullhead, except that it extends northward to slightly beyond Lake Nipissing and does not occur east of the Appalachian Mountains except for the headwaters of some streams in upper Georgia and western North Carolina. The distributions of these fishes provide additional reasons for pinpointing the earliest Algonquian residence to southern Ontario rather than to a more western portion of the Great Lakes region.

For the sake of discussion, alternative areas must be examined as possible locations of the primordial Algonquian home. No part of the Atlantic coast east of the Appalachians merits consideration except possibly northern New England and New Brunswick. However, these regions are not satisfactory because of the absence of the smallmouth bass, the northern pike, the wood bison, and the bobwhite. The only other area requiring serious consideration besides southern Ontario is northern New York State, comprising a region bounded on the north by the St. Lawrence River and the lower Ottawa River, on the east by the Green and Berkshire mountains, on the south by the Mohawk River, and on the west by Lake Ontario and lakes Oneida and Onondaga, and including Lake George and Lake Champlain. All species that have reconstructible linguistic terms are found in either the northern or southern districts of this area except the wood bison and the woodland caribou. That the wood bison was found on its western borders suffices for this requirement. However, there are several weighty objections against this conjecture. First, the nearest caribou were a few strays from Maine in extreme northeastern Vermont; essentially caribou ranged considerably outside the area under consideration. Second, the Oldsquaw was rare in this area and appeared as an uncommon migrant only on the eastern shores of Lake Ontario. Finally, the region does not form a cohesive geographical, topographical, or ecological unit; the northern and southern portions are quite distinct with intervening high mountainous areas connected only by the Lake Champlain and St. Lawrence waterways.

SUMMARY

In order to allow for possible undetermined changes in the distribution of fauna and flora in the prehistoric period, and partly in order to account for alternative interpretations of the linguistic facts themselves, the earliest original

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home is diagrammatically represented as Stage Number 1 (*See* Map 10) and an expanded area of occupancy of slightly later date, which certainly includes the entire Algonquian homeland, is characterized as Stage Number 2. To these the tentative dates of 1200 B.C. and 900 B.C., respectively, are assigned as suppositions to serve as a basis for further discussion. The hypothetical estimates for the times of these two periods are based only on impressions of the history of the Algonquian languages as a whole, so far as it is known at present. The directions of the main streams of migration subsequent to Stage Number 2 are indicated on the map. At this period those speakers of Algonquian who by preference pursued the caribou went northward or to the northwest, while those who preferred to earn part of their livelihood by hunting bison migrated to the south, southwest, and southeast. The ancestors of the Cree, Montagnais, and Naskapi were certainly among the former.

There is no proof that the Proto-Algonquian language was ever an absolutely uniform mode of speech or that all terms labelled as PA are necessarily of equal antiquity. An expanded early home may more readily account for the existence of PA words for some more marginal species, and therefore these archetypes may be of slightly later date. The apparent reality of linguistic doublets and fluctuating forms for such species as the Golden Eagle, Nighthawk, and others, lends support to this concept.

CONCLUSION

About fifty natural history terms are determined in the Proto-Algonquian language. These are reconstructed, using principles of uniform sound change and systematic patterning of phonetic correspondence, from the forms that survive in the various descendent eastern and central Algonquian languages. The western or Plains languages are disregarded largely because inadequate data are available. Doubtlessly there are some natural history names that have escaped attention, and others are omitted because of insufficient information or because they are unrecorded in both the eastern and central languages.

Fortunately many terms refer to a particular species and are found in all or most languages without change in meaning. In other examples only minor and transparent semantic changes have occurred because of the migration of a body of Algonquian speakers beyond the range of the species. The original designation can be accurately inferred from the group of the other languages in perfect agreement. In this manner a considerable number of species of birds, mammals, trees, and fish known to the Proto-Algonquian people are determined by projection from the linguistic archetypes that can be reconstructed. Numbers of these, however, have generic significance or have ranges that are too extensive to be relevant to this study. On the other hand, about twenty reconstructible terms denote species that have sufficiently characteristic and limited geographical distributions to contribute valuable information germane to the problem under consideration. The original ranges of these species during the period of earliest European contact are investigated so far as is feasible and are recorded on maps to determine foci of intersection. Alterations of range in prehistoric times because of climatic or other conditions remain an uncontrolled

factor conducive to error, but these alterations are believed to be trivial when they are compared to the enormous changes that have taken place since the advent of Europeans.

The earliest residence of the speakers of Proto-Algonquian is ascertained by the multiple intersections of the distributional lines of significant species. The original home of the Algonquian peoples lay in the region between Lake Huron and Georgian Bay and the middle course of the Ottawa River, bounded on the north by Lake Nipissing and the Mattawa River and on the south by the northern shore of Lake Ontario, the headwaters of the Grand River, and the Saugeen River.

NOTES

[1] Harper, Francis. "Changes in Climate, Faunal Distribution, and Life Zones in the Ungava Peninsula," *Polar Notes*, Dartmouth College Library, Hanover, N.H., no. III, Nov. 1961. Also, Peterson, Randolph L. "North American Moose," p. 46, fig. 8, Toronto, 1955.

[2] Abbreviations used are as follows: PA for Proto-Algonquian, F for Fox, C for Plains Cree, Cw for Swampy or Woodland Cree, M for Menomini, MSj for Lake St. John dialect of Montagnais, MSs for Montagnais of Seven Islands, O for Ojibwa, S for Shawnee, MI for Miami, D for Unami dialect of Delaware, Dm for Munsee dialect of Delaware, N for Natick or more properly Massachusetts, P for the Penobscot dialect of Abenaki, A for St. Francis dialect of Abenaki; * indicates reconstructed form, ≠ marks glosses with semantic change, ~ varies or alternates with, pl. for plural, dimin. for diminutive, < is derived from historically.

[3] Fox forms cited were collected by myself from Horace Whitebreast and Daniel Youngbear of Tama, Iowa, in September 1962. The published texts of Jones and Michelson show a paucity of natural history terms.

[4] Munsee terms were collected from Nicodemus Peters in June 1938, at Smoothtown, Six Nations or Grand River Reserve, Ontario.

[5] Collected in July 1934 (from Andrew Gunner), and in August 1963 and September 1964 from Gabriel Kurtness and Marie Raphail.

[6] From many informants at intervals from August 1932; chiefly Andrew Dana, Newell Gabriel, Louis Lolar, Sylvia and Francis Stanislaus, Emma Nicolar Ranco.

[7] Bloomfield, Leonard. The Menomini language, New Haven (Yale Univ. Press), 1962. Also, Menomini texts, (Pub. of The Am. Ethnol. Soc., vol. 12), New York, 1928.

[8] Bloomfield, L. Eastern Ojibwa (Univ. of Michigan Press), Ann Arbor, 1958.

[9] Baraga, Frederic. Dictionary of the Otchipwe language, Cincinnati (first ed.), 1853.

[10] Bloomfield, L. Sacred stories of the Sweet Grass Cree, Bull. 60, Nat. Mus. Canada, Ottawa, 1930.

[11] Lacombe, A. Dictionnaire et grammaire de la langue des Cris, Montreal, 1874.

[12] Watkins, E. A. A dictionary of the Cree language (2nd ed. by R. Faries), Toronto, 1938.

[13] Voegelin, C. F. Shawnee stems and the Jacob P. Dunn Miami dictionary (Indiana Hist. Soc., vol. 1, parts 8–10), Indianapolis, 1939–40.

Additional Shawnee forms are taken from some typed notes supplied me by Voegelin.

A few liberties have been taken with the Miami forms in order to standardize the orthography, such as changing Dunn's *ä* to *e·*, *d* to *t*, and *z* to *s*.

[14] Day, Gordon M. A St. Francis Abenaki vocabulary, Int. J. of America. Ling., 30: 371–392, 1964.

[15] Bloomfield, Leonard. Algonquian. *In* H. Hoijer, Linguistic Structures of Native America, Viking Fund Pub. in Anthrop., no. 6, New York, 1946; p. 85–129.

In PA reconstructions, ʔ replaces Bloomfield's *q* for the glottal stop phoneme; and PA **sk* is used to replace Bloomfield's **çk*, since no **sk* is otherwise provided for, and Ojibwa and Natick have *sk* as a reflex of PA **sk*; and **Xk* is used to represent a discrepant consonant cluster ending in **-k*, which is not to be confused with the regular correspondence **xk*.

A few Arapaho terms are from Salzmann, Zdeněk. Arapaho V: noun, Int. J. of America. Ling., 31: 39–49, 1965; as well as a few Arapaho notes which I collected in July 1935 from Oscar Grasshopper at Ethete, Wyoming.

[16] The latter seems possible since M has *apɛ·hsahkyah* "brant" also.

[17] In the Montagnais of Lake Mistassini and of Seven Islands (Moisie), *iline·w* is 'Spruce Partridge.'

[18] Reconstructed from Dunn's *wäsänza* (p. 429) and Volney's *ahouèhsensa* 'bird.'

[19] Correcting Bloomfield, *Language*, vol. 1, p. 155 (Dec. 1925).

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HARMON, DANIEL W. A jo
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URQUHART, FREDERICK A.
Mus., Toronto (1957).
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p. 26–42.]

II. Birds

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Mus., Bull. 167, Wash
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NATURAL HISTORY REFERENCES

I. General

HARMON, DANIEL W. A journal of voyages and travels in the interiour of North America. Andover (Flagg and Gould), 1820.

[*Elm* and *basswood* on upper and lower Red River (p. 140–141); *moose* and *woodland caribou* about Lake Nipigon (p. 159), Sturgeon Lake (p. 160), Isle a la Crosse Lake (p. 168), and Athabasca River (p. 170); *wood buffalo* along and between the Saskatchewan and Peace rivers (p. 416).]

HARPER, FRANCIS. Changes in climate, faunal distribution, and life zones in the Ungava Peninsula. Polar Notes, Occas. Pub. of the Stefansson Coll., Hanover (N.H.), no. 3, 1961.

URQUHART, FREDERICK A. Changes in the fauna of Ontario. Contrib. of the Roy. Ont. Mus., Toronto (1957).

[Excellent articles on the changes of the ranges of birds and mammals in Ontario, including one by L. L. Snyder on the "Changes of the Avifauna of Ontario," p. 26–42.]

II. Birds

BENT, ARTHUR C. Life histories of North American birds of prey. Pt. I, U.S. Nat. Mus., Bull. 167, Washington, 1937.

[Nesting range of *Golden Eagle* given (p. 293–315); extending in the *north* from Alaska (Ft. Yukon and Pt. Barrow) across to Quebec (Ft. Chimo and Anticosti Island); in the *east* to Nova Scotia, Maine (Sandy River Mountain), North Conway (N.H.), West Point (N.Y.), Appalachian Mountains (N.J., Pa., W. Va., Va.), western North Carolina (Weaverville), eastern Tennessee (Le Conte, Cumberland, and Chilhowee Mountains); in the *south* to northern Mexico (Chihuahua, Nueva Leon, Sonora, and Lower California); and in the *west* to Washington (Mt. Ranier and Cascade Mountains), Oregon (Ft. Klamath); most frequent in Montana, Arizona, and wilder portions of southern California (San Diego and Santa Barbara).]

BENT, ARTHUR C. Life histories of North American Woodpeckers. U.S. Nat. Mus., Bull. 174, Washington 1939.

[*Northern Pileated Woodpecker* (p. 171–189) breeds in *north* from Great Slave Lake, *south* to southern Pa. and W. Va., and southern Illinois and Missouri.]

BROUN, MAURICE. Hawk Mountain sanctuary. Nature Magazine 27:367–368, 1936.

[*Golden Eagle* at Hawk Mountain sanctuary, near Drehersville, Pa., chiefly in migration during autumn. During the year 1935, counted 66 individual Golden Eagles at this locality.]

CHECK-LIST OF NORTH AMERICAN BIRDS. Prepared by a Committee of the American Ornithologists' Union, 5th ed., Baltimore, 1957.

[*Oldsquaw* (p. 87), North American breeding range from both coasts of Greenland, Parry Islands, Ellesmere Island, and the Arctic coasts of Alaska and Canada, south to northwestern British Columbia (White Pass), northern Manitoba (Churchill on west shore of Hudson Bay), and southern Labrador (Strait of Belle Isle); winters in North America on the Atlantic from southern Greenland and southern Labrador south on the Atlantic coast to South Carolina, centrally chiefly on the Great Lakes (but occasionally to Kentucky and Tennessee), and on the Pacific coast to southern Washington (occasionally to southern California).

Golden Eagle (p. 112) breeding range extends on the *north* from Alaska, northern Ontario, and Quebec (Ft. Chimo, Anticosti Island, and Gaspe); on the *east* to Nova Scotia (Colchester Island), northern Maine and N.H., Vt. and western Mass., and the mountains of Pa., W. Va., Va., western North Carolina, eastern Tennessee, and southern Ontario; *west* to California and northern Mexico, including western Texas, western Oklahoma, western Kansas, western Nebraska, and western South and North Dakota.

Ruffed Grouse (p. 128) resident in *north* from central Alaska, southern MacKenzie (south of Great Slave Lake), northern Ontario (south and west of James Bay), to southern Labrador (south of Hamilton Inlet); *east* to Nova Scotia and New Jersey; *south* in the Appalachians (northeastern Virginia, western North and South Carolina, northern Georgia, northeastern Alabama) to Tennessee and central Arkansas; and *west* to eastern Kansas, eastern Nebraska, central Iowa, and southern Minnesota, to western South Dakota, Wyoming, and Alberta.
Bobwhite (p. 140) resident in the *north* from eastern South Dakota, southern Minnesota, southern Wisconsin, southern Michigan, southern Ontario (Toronto, Port Hope), central New York, southern Vt. and N.H., to southwestern Maine (Fryeburg); *south* to northern Florida (Palatka, Gainesville), and the Gulf Coast of Louisiana; *west* to eastern Texas, Arkansas, northeastern Kansas, and eastern Nebraska.
Northern Pileated Woodpecker (p. 315) breeds in the *north* from extreme northeastern British Columbia, southern MacKenzie (south of Great Slave Lake), southern Manitoba, northern Ontario, central Quebec, and Anticosti Island; *east* to New Brunswick, Nova Scotia, western and central Massachusetts, western Connecticut, central New Jersey, and south-central Pennsylvania (not in southeastern portion); *south* to northeastern Ohio, northern Indiana and Illinois, and northern Missouri; and *west* to northeastern Kansas, Iowa, Minnesota, and western Alberta.
Southern Pileated Woodpecker resident from southeastern Kansas, central Missouri, southern Indiana, Kentucky, W. Va., Maryland, and southeastern Pennsylvania, south to Georgia, northern Florida, and the Gulf Coast; *west* to eastern Oklahoma.
Northern Raven or *Common Raven* (p. 377) ranges in North America on the *north* from Greenland, northern Canada, and subarctic Alaska; *south* to North Dakota and in Rocky Mountains to Mexico and Nicaragua, to Minnestoa, Wisconsin, northern Michigan, central Ontario, southern Quebec, and Maine (including coast), and south in the Appalachian Mountains to northwestern Georgia.]

CHAPMAN, FRANK M. Handbook of birds of eastern North America. 6th ed., New York, 1904.

DEKAY, JAMES E. Zoology of New York, or the New York fauna. Pt. II, Birds; Albany (Carroll and Cook), 1844.
[*Golden Eagle* (p. 4), highlands of Hudson River, Lake Erie; *Pileated Woodpecker* (p. 184–185), "almost unknown in Atlantic district" of N.Y.; *Northern Raven* (p. 134), rare except in northern New York State; *Bobwhite* (p. 202–203), most of New York State and Mass.]

GODFREY, W. E., and A. L. WILK. Birds of the Lake St. John region, Quebec. Nat. Mus. Canada, Bull. 110, Ottawa, 1948.

GRINNELL, JOSEPH. The designation of birds' ranges. Auk 44:322–325, 1927.

GYLES, JOHN. Memoirs of odd adventures, strange deliverances, etc., in the Captivity of John Gyles, Esq. Boston (S. Kneeland and T. Green), 1736.
[For the year 1689 describes (p. 23) the *Golden Eagle* nesting on Mt. Katahdin and in the upper Penobscot Valley, Maine.]

HARPER, FRANCIS. Birds of the Ungava Peninsula. Univ. of Kansas Mus. Nat. Hist., Misc. Pub. no. 17, Lawrence (Kansas), 1958.

KNIGHT, ORA W. The birds of Maine. Bangor, 1908.

PETERSON, ROGER T. A field guide to the birds. 2nd revised ed., Cambridge (Houghton Mifflin), 1959.

SNYDER, L. L. On the distribution of the Golden Eagle in eastern Canada. Canadian Field-Naturalist 66: 39–41, 1949.
[Gives data on the Golden Eagle nesting on the upper Hamilton River and at the head of Lake Michikamau (Mishikamou) in Labrador, on the Koksoak River near Ft. Chimo and at the juncture of the Larch and Kaniapiskau rivers in extreme northern Quebec, on Coats Island in northern Hudson Bay, and at Repulse Bay in extreme northeastern Keewatin.]

SPOFFORD, WALTER R. Nest
Canadian Field Naturali
[Gives data on the Go
coast of the Ungava P

TAVERNER, P. A. Birds of e

III. Mammals

ANDERSON, RUDOLPH M. C
Bull. 102, Ottawa, 1946.
[*Harbour seal* (*Phoca*
River at the mouth of
a few records in Lake
Gmelin) recorded (p.
Quebec, and Ontario;
(*Bison bison bison* Lin
vanicus Shoemaker), w
found in northern Alb

BARTRAM, WILLIAM. Travel
West Florida. Philadelp
[In the year 1773 visit
saline deposit on the
Georgia (p. 35, 39); bu
day to be seen in this
(p. 322) "heaps of whi

BURT, WILLIAM H., and RIC
Cambridge (Houghton M

CAMERON, AUSTIN W. Mam
Natural History of Cana
[Gives present range
Pistoles.]

DEKAY, JAMES E. Zoology
Albany (White and Viss
[*Harbour seal* (p. 53–55
County, N.Y.; also In
Ontario; also New Yo

DOUTT, J. KENNETH. A rev
29: 61–126, 1942.
[*Harbour seal* in Seal

DOWNING, STUART C. A pr
Mus. of Zool., Misc.
[*Woodland caribou* (p.
Nipissing"; *harbour s*
Lake Ontario and the

FILSON, JOHN. The discove
(James Adams), 1784.
[Account of the *wood*

HALL, E. RAYMOND, and K
York (Ronald Press), 19
[Maps of distribution
caribou (all species an
caribou, p. 1019), and

HARPER, FRANCIS. Land ar
Kansas, Mus. Nat. Hist

JONES, REV. DAVID. A jour
side of the River Ohio,
[Account of the *wood*
the Ohio River near t

ıtral Alaska, southern MacKenzie
› (south and west of James Bay),
t); *east* to Nova Scotia and New
ɛrn Virginia, western North and
ɛrn Alabama) to Tennessee and
, eastern Nebraska, central Iowa,
ota, Wyoming, and Alberta.
eastern South Dakota, southern
ıigan, southern Ontario (Toronto,
ınd N.H., to southwestern Maine
, Gainesville), and the Gulf Coast
northeastern Kansas, and eastern

in the *north* from extreme north-
ie (south of Great Slave Lake),
l Quebec, and Anticosti Island;
nd central Massachusetts, western
ntral Pennsylvania (not in south-
ıorthern Indiana and Illinois, and
Kansas, Iowa, Minnesota, and

n southeastern Kansas, central
/a., Maryland, and southeastern
ida, and the Gulf Coast; *west* to

ɛs in North America on the *north*
ic Alaska; *south* to North Dakota
ıragua, to Minnestoa, Wisconsin,
ı Quebec, and Maine (including
s to northwestern Georgia.]

rn North America. 6th ed., New

York fauna. Pt. II, Birds; Albany

, Lake Erie; *Pileated Woodpecker*
istrict" of N.Y.; *Northern Raven*
tate; *Bobwhite* (p. 202–203), most

ke St. John region, Quebec. Nat.

. Auk 44:322–325, 1927.

leliverances, etc., in the Captivity
Green), 1736.
Eagle nesting on Mt. Katahdin and

Univ. of Kansas Mus. Nat. Hist.,

revised ed., Cambridge (Houghton

agle in eastern Canada. Canadian

: upper Hamilton River and at the
Labrador, on the Koksoak River
and Kaniapiskau rivers in extreme
Hudson Bay, and at Repulse Bay

SPOFFORD, WALTER R. Nesting of the Golden Eagle at Sugluk Inlet, Ungava, Quebec. Canadian Field Naturalist 73: 177, 1959.

[Gives data on the Golden Eagle nesting at Sugluk Inlet on the extreme northern coast of the Ungava Peninsula.]

TAVERNER, P. A. Birds of eastern Canada. Can. Geol. Surv. Mem. 104, Ottawa, 1919.

III. Mammals

ANDERSON, RUDOLPH M. Catalogue of Canadian recent mammals. Nat. Mus. Canada, Bull. 102, Ottawa, 1946.

[*Harbour seal* (*Phoca vitulina concolor* DeKay) recorded (p. 78) in the Ottawa River at the mouth of the Gatineau River near Ottawa in the year 1865, and also a few records in Lake Ontario; *eastern woodland caribou* (*Rangifer caribou caribou* Gmelin) recorded (p. 180) in Nova Scotia, New Brunswick, southern Labrador, Quebec, and Ontario; line of merger not known (p. 182) between *plains bison* (*Bison bison bison* Linnaeus) and extinct *eastern wood bison* (*Bison bison pennsylvanicus* Shoemaker), while surviving *wood bison* (*Bison bison athabascae* Rhoads) found in northern Alberta to the north side of Great Slave Lake.]

BARTRAM, WILLIAM. Travels through North and South Carolina, Georgia, East and West Florida. Philadelphia, 1791.

[In the year 1773 visited the Great Buffalo Lick, an area of three or four acres of saline deposit on the great ridge near present Philomath, Oglethorpe County, Georgia (p. 35, 39); but (p. 46) "The buffalo once so very numerous, is not at this day to be seen in this part of the country," although throughout Georgia he found (p. 322) "heaps of white, gnawed bones of the ancient buffalo."]

BURT, WILLIAM H., and RICHARD P. GROSSENHEIDER. A field guide to the mammals. Cambridge (Houghton Mifflin), 1952.

CAMERON, AUSTIN W. Mammals of southeastern Quebec. *In* The Provancher Society of Natural History of Canada (p. 20–86). Quebec, 1951.

[Gives present range of *harbour seal* (p. 54–55) up the St. Lawrence at Trois Pistoles.]

DEKAY, JAMES E. Zoology of New York, or the New York fauna. Pt. I, Mammalia; Albany (White and Visscher), 1842.

[*Harbour seal* (p. 53–55) found in the year 1823 in eastern Lake Ontario off Jefferson County, N.Y.; also Indian traders say seals formerly found on the shores of Lake Ontario; also New York Harbour and Passaic River in New Jersey.]

DOUTT, J. KENNETH. A review of the genus Phoca. Annals of the Carnegie Museum, 29: 61–126, 1942.

[*Harbour seal* in Seal Lake, Clearwater Lake, and others east of Hudson Bay.]

DOWNING, STUART C. A provisional check-list of the mammals of Ontario. Roy. Ont. Mus. of Zool., Misc. Pub. no. 2, Toronto, 1948.

[*Woodland caribou* (p. 11) "formerly ranged our north woods as far south as Lake Nipissing"; *harbour seals* (p. 11) "occasionally ascend the St. Lawrence River to Lake Ontario and the Ottawa River as far as Ottawa."]

FILSON, JOHN. The discovery, settlement and present state of Kentucke. Wilmington (James Adams), 1784.

[Account of the *wood bison* in Kentucky (p. 50–51).]

HALL, E. RAYMOND, and KEITH R. KELSON. The mammals of North America. New York (Ronald Press), 1959.

[Maps of distribution of *porcupine* (p. 782), *raccoon* (p. 885), *moose* (p. 1015), *caribou* (all species and subspecies, including reindeer lumped as *Rangifer tarandus caribou*, p. 1019), and *bison* (p. 1025).]

HARPER, FRANCIS. Land and fresh-water mammals of the Ungava Peninsula. Univ. of Kansas, Mus. Nat. Hist., Misc. Pub. no. 27, Lawrence (Kansas), 1961.

JONES, REV. DAVID. A journal of two visits made to some nations of Indians on the west side of the River Ohio, in the years 1772 and 1773. Burlington (N.J.), 1774.

[Account of the *wood bison* (p. 17) in the year 1772 on the West Virginia side of the Ohio River near the Little Kanawha.]

KIRK, GEORGE L. The mammals of Vermont. Joint Bull. 2, Vermont Botanical and Bird Clubs, 1916.

[*Harbour seal* at Otter Creek, Lake Champlain drainage, in the year 1846 (p. 28–34).]

LAWSON, JOHN. A new voyage to Carolina, London, 1709.

[Tutelos of the westward mountains about Roanoke, Virginia, have plenty of buffaloes (p. 48); in the year 1700 saw no buffalo in the eastern half of North or South Carolina, or along the Catawba River, and the buffalo "seldom appears amongst the English inhabitants," yet "some killed on the hilly part of Cape Fear River" (p. 115), apparently in what is now Alamance County, North Carolina, east of Greensboro.]

LOGAN, J. H. A history of the upper country of South Carolina, from the earliest periods to the close of the War of Independence. (vol. I, all published), Columbia (Courtenay and Co.), 1859.

[Large herds of buffaloes in cane brakes and on prairie ridges around present Abbeville and Edgefield (p. 6, 15–16); bison still plentiful till about the year 1760 in upper south Carolina, but very scarce at the beginning of the Revolution. The range of bison in South Carolina lay chiefly west of the Broad River and the Fall Line from Augusta, Georgia, to Columbia, South Carolina, the buffalo being most common in Edgefield and Abbeville Counties.]

MILLER, GERRIT S., JR. Preliminary list of the mammals of New York. New York State Mus. Bull. no. 29, vol. 6, Albany, 1899.

[*Harbour seal* in Onondaga Lake near Syracuse, N.Y., in the year 1882, ascending from Lake Ontario; and an unauthenticated record on Lake Champlain off Crown Point, N.Y., about the year 1894 (p. 355–356).]

MILLS, ROBERT. Statistics of South Carolina, including a view of its natural, civil, and military history, general and particular. Charleston (Hurlbutt and Lloyd), 1826.

[*Wood bison* so numerous about Laurens, S.C., in the year 1750 when the first settlement was made that it was not uncommon for three or four men with dogs to kill from ten to twenty buffaloes in a day. They have entirely disappeared (p. 608).]

OSGOOD, FREDERICK L., JR. The mammals of Vermont. J. of Mammalogy 19: 435–441, 1938.

PALMER, RALPH S. The mammal guide. New York (Doubleday), 1954.

PALMER, RALPH S. Late records of caribou in Maine. J. of Mammalogy 19: 37–43, 1938.

[*Woodland caribou* (*Rangifer caribou caribou*) till the year 1908 ranged from northern Maine south to the Moosehead Lake region and Hancock County on the coast (Ellsworth).]

PALMER, RALPH S. (pers. comm.).

["The *Raccoon* probably has extended its range in the last 200 years. . . . It is reasonable to expect that, some time in the past, the *Harbor Seal* was distributed from salt up into fresh water until stopped by some physical barrier, as Niagara Falls."]

PETERSON, RANDOLPH L. North American moose. Toronto (Univ. of Toronto Press), 1955.

[Excellent detailed study of original and present range of the *moose*.]

PURCHAS, SAMUEL. Purchas His Pilgrimes. London, 1625.

[Gives the earliest English account (vol. 4, p. 1765) of the *wood bison* observed by Sir Samuel Argoll in the year 1612 on the Potomac River, at or near present Harper's Ferry (wrongly ascribed by some writers to Washington, D.C.).]

RHOADS, SAMUEL N. The mammals of Pennsylvania and New Jersey. Philadelphia, 1903.

[*Wood bison* in Pennsylvania (p. 47–51).]

ROE, FRANK G. The North American buffalo. Toronto (Univ. of Toronto Press), 1951.

SETON, ERNEST THOMPSON. and Co.), 1929.

[Distributions and ma *caribou* (vol. 3, pt. 1, pt. 2, map p. 647, and

SHOEMAKER, HENRY W. Ext

[Much fact and some *moose* (p. 11–35), *woo*

SHOEMAKER, HENRY W. A

[*Wood bison* ranged ea ous on the west bra Haven.]

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STORK, WILLIAM. An accou

[*Wood bison* ranged in

THOMPSON, ZADOCK. Histor (Vt.), 1853.

[*Harbour seal* south o *moose* in northern Ve Vermont (p. 140–141)

TOULMIN, HARRY. A descri

[Gives passages on th species there.]

IV. Trees

COLLINGWOOD, G. H., and W Assoc., Washington, 19

[Gives maps of "natu (p. 181), *elm* (p. 231), 311). These vary in de

GRIMM, WILLIAM C. The tr

[Gives the correct dis boggy areas across th the west (Sharon), C County in the east (n

GRIMM, WILLIAM C. The sh

[Gives (p. 105–106) t formerly *A. incana*) fr England, northern Pe and West Virginia, re

HOUGH, ROMEYN B. Handb (N.Y.), 1907.

[More or less accurat (p. 25), *elm* (p. 183), *white ash* (p. 391).]

MATHEWS, FERDINAND S. F 1915.

[Distributional maps *speckled alder* (p. 423 *basswood* (p. 436). So

SETON, ERNEST THOMPSON. Lives of the game animals. New York (Doubleday, Doran, and Co.), 1929.
[Distributions and maps of ranges of *porcupine* (vol. 4, pt. 2, map p. 607); *woodland caribou* (vol. 3, pt. 1, map p. 60); *moose* (vol. 3, pt. 1, map p. 160); *bison* (vol. 3, pt. 2, map p. 647, and discussion of *wood bison*, p. 639–717).]

SHOEMAKER, HENRY W. Extinct Pennsylvania animals. Pt. II, Altoona, 1919.
[Much fact and some questionable tradition on extinct mammals of Pennsylvania; *moose* (p. 11–35), *wood bison* (p. 64–104).]

SHOEMAKER, HENRY W. A Pennsylvania bison hunt. Middleburg (Pa.), 1915.
[*Wood bison* ranged east to present Northumberland and Carlisle and were numerous on the west branch of the Susquehanna River about Clearfield and Lock Haven.]

SPALDING, THOMAS. National portrait gallery of distinguished Americans, 1836.
[Spalding was told by Lachlan McIntosh that when he was a boy he saw 10,000 buffaloes within ten miles of Darien (vol. III, p. 2). Darien (formerly Iverness) is near the coast of Georgia in McIntosh County just north of the Altamaha River. McIntosh was a resident there from the age of eleven in the year 1736 until he left Georgia for Charleston in 1748.]

STORK, WILLIAM. An account of East-Florida. London (G. Woodfall), 1766.
[*Wood bison* ranged into the interior of East Florida (p. 19).]

THOMPSON, ZADOCK. History of Vermont, natural, civil, and statistical. Pt. I. Burlington (Vt.), 1853.
[*Harbour seal* south of Burlington on Lake Champlain in February, 1810 (p. 38); *moose* in northern Vermont (p. 49–50); also a good account of the *lake trout* in Vermont (p. 140–141).]

TOULMIN, HARRY. A description of Kentucky, in North America. London, 1792.
[Gives passages on the *wood bison* in Kentucky and the gradual extinction of the species there.]

IV. Trees

COLLINGWOOD, G. H., and WARREN D. BRUSH. Knowing your trees. American Forestry Assoc., Washington, 1955.
[Gives maps of "natural ranges" of *tamarack* (p. 59), *white spruce* (p. 67), *beech* (p. 181), *elm* (p. 231), *sugar maple* (p. 272), *basswood* (p. 295), and *white ash* (p. 311). These vary in degree of accuracy.]

GRIMM, WILLIAM C. The trees of Pennsylvania. Harrisburg, 1950.
[Gives the correct distribution of the *tamarack* in Pennsylvania (p. 83), in wet or boggy areas across the northern tier of counties, as far south as Mercer County in the west (Sharon), Centre County (Bellefonte and State College), and Monroe County in the east (north of Blue Mountain in the Poconos).]

GRIMM, WILLIAM C. The shrubs of Pennsylvania. Harrisburg, 1952.
[Gives (p. 105–106) the correct distribution of the *speckled alder* (*Alnus rugosa*, formerly *A. incana*) from southern Labrador to Saskatchewan, southward to New England, northern Pennsylvania, and southward in the mountains to Maryland and West Virginia, region of the Great Lakes, and west to Iowa.]

HOUGH, ROMEYN B. Handbook of the trees of the northern States and Canada. Lowville (N.Y.), 1907.
[More or less accurate distributional maps of the *tamarack* (p. 21), *white spruce* (p. 25), *elm* (p. 183), *sugar maple* (p. 325), *basswood* (p. 351), *beech* (p. 133), and *white ash* (p. 391).]

MATHEWS, FERDINAND S. Field book of American trees and shrubs. New York (Putnam), 1915.
[Distributional maps of *tamarack* (p. 408), *white spruce* (p. 408), *beech* (p. 421), *speckled alder* (p. 423), *elm* (p. 426), *sugar maple* (p. 434), *white ash* (p. 434), and *basswood* (p. 436). Some of these are inaccurate.]

MUNNS, E. N. The distribution of important forest trees of the United States. U.S. Dept. of Agriculture, Misc. Pub. no. 287, Washington, 1938.

[More or less accurate distributional maps of *tamarack* (p. 31), *white spruce* (p. 35), *beech* (p. 91), *elm* (p. 124), *sugar maple* (p. 152), *basswood* (p. 160), and *white ash* (p. 169).]

V. Fishes

BEAN, TARLETON H. Catalogue of the fishes of New York. New York State Mus. Bull. 60, Albany, 1903.

[*A. nebulosus* throughout the state (p. 87–89), *C. namaycush* recorded only in Cayuga Lake (p. 266–271), *E. lucius* only in Lake Ontario, Lake Champlain, and Lake George (p. 298–301), and *M. dolomieu* confined to St. Lawrence drainage and Lake Champlain (p. 486–490).]

COKER, ROBERT E. Studies of common fishes of the Mississippi River at Keokuk. Document 1072, Bull. U.S. Bur. of Fish., vol. 45, p. 141–225, Washington, 1930.

DEKAY, JAMES E. Zoology of New York, or the New York fauna. Pt. IV, Fishes, Albany (White and Visscher), 1842.

[*M. dolomieu* in Lakes Erie and Ontario, Oneida Lake, and Onondaga Creek (p. 28–30).]

EVERHART, WATSON H. Fishes of Maine. Maine Dept. of Inland Fisheries and Game, Augusta, 1950.

EVERMANN, BARTON W. The fishes of Kentucky and Tennessee: a distributional catalogue of the known species. Document 858, Bull. U.S. Bur. of Fish., vol. 35, p. 293–368, Washington, 1918.

[*E. lucius* only in the Ohio River in Kentucky, the southern limit; *M. dolomieu* in most streams of Kentucky and Tennessee, east only to the mountains of western North Carolina; *A. nebulosus* in most Kentucky streams, but only a few in Tennessee.]

FISH, MARIE P. Contributions to the early life histories of sixty-two species of fishes from Lake Erie and its tributary waters. Bull. 10, vol. 67, p. 292–398. U.S. Bur. of Fish., Washington, 1932.

[*C. namaycush* restricted to the deeper parts of Lake Erie, spawning on rocky shoals and reefs in depths of 77 to 90 feet in autumn, and eggs develop on the bottom of rocky caverns and hatch in late winter or early spring; *A. nebulosus* restricted to sheltered bays of Lake Erie and common in sluggish streams and ponds of the surrounding region; *E. lucius* not found in Lake Erie except at the mouths of certain creeks, but is common in weedy larger streams of the region; *M. dolomieu* very abundant along shores of Lake Erie.]

FORBES, STEPHEN A., and ROBERT E. RICHARDSON. Maps showing the distribution of Illinois fishes to accompany a report on the fishes of Illinois. Ill. State Lab. of Nat. Hist., Danville (Ill.) 1908.

[*A. nebulosus* locations given on map 54; *E. lucius* on map 62; and *M. dolomieu* on map 80.]

FORBES, STEPHEN A. On the general and interior distribution of Illinois fishes. Bull. of the Ill. State Lab. of Nat. Hist. vol. 8, no. 3, Danville, 1909.

FOWLER, HENRY W. A list of the fishes recorded from Pennsylvania. Revised ed., Commonwealth of Pa., Board of Fish Commissioners, Harrisburg, 1948.

[Gives lists of all species by county and watershed distribution, and indicates whether native or introduced.]

FOWLER, HENRY W. Fishes of South Carolina. Charleston Museum, Charleston, 1935.
[*A. nebulosus* in Catawba River and other streams.]

HARLAN, JAMES R., and E. B. SPEAKER. Iowa fish and fishing. 2nd ed., 1951.
[*E. lucius* (p. 52); *A. nebulosus* (p. 92); and *M. dolomieu* (p. 108).]

HARPER, FRANCIS. Field an
sula and on certain mai
J. of Elisha Mitchell Sci

JORDAN, DAVID S., and BAR
York (Doubleday), 1903
[*A. nebulosus* (p. 26);
distinguished from g
vomer, which is arme
357).]

KENDALL, WILLIAM C. The
Nat. Hist., vol. 8, p. 1–1
[*C. namaycush* locatio

LA MONTE, FRANCESCA R.
Doran, and Co.), 1945.

LINDSEY, C. C. Problems i
Bd. of Canada, vol. 21,
[*Lake trout* given as
Cristivomer, reverting
differences of opinion
and its limitation to
lamprey. Gives more
absent in Newfoundla
for some states and p
in detail, while for ot

PEARSE, A. S. The food of
Bull. U.S. Bur. of Fish.
[*A. nebulosus* (p. 254
Mendota, Wingra, M
absent.]

PEARSE, A. S. The distributi
Univ. of Wisconsin Stu
[*C. namaycush* found
and Lakes Wingra an

SCOTT, W. B. Freshwater f
1954.
[Significant remarks
A. nebulosus (p. 66),

TRAUTMAN, MILTON B. Th
[Gives complete distr
do so. Classifies the
with the rest of the ca
says the species was
almost never found
(p. 486–489), the sm
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French personal nai
naturalist's name sin
(p. 212–214); and the
Salvelinus which is q
end of Lake Erie, an

VLADYKOV, VADIM D. Co
la peche dans 48 Lacs
Pêcheries, Québec, 194
[*C. namaycush* "asse
the other lakes of thi

HARPER, FRANCIS. Field and historical notes on fresh-water fishes of the Ungava Peninsula and on certain marine fishes of the north shore of the Gulf of St. Lawrence. J. of Elisha Mitchell Scientific Soc., 77: 312–342, 1961.

JORDAN, DAVID S., and BARTON W. EVERMANN. American food and game fishes. New York (Doubleday), 1903.

[*A. nebulosus* (p. 26); *C. namaycush* (p. 203) found in Lake Henry in Idaho, and distinguished from genus *Salvelinus* by a raised crest behind the head of the vomer, which is armed with teeth; *E. lucius* (p. 236); and *M. dolomieu* (p. 355–357).]

KENDALL, WILLIAM C. The fishes of New England. Memoirs of the Boston Soc. of Nat. Hist., vol. 8, p. 1–103, Boston, 1914–1927.

[*C. namaycush* locations in Vermont, New Hampshire, and Maine (p. 11–13).]

LA MONTE, FRANCESCA R. North American game fishes. New York (Doubleday, Doran, and Co.), 1945.

LINDSEY, C. C. Problems in Zoogeography of the lake trout. J. of the Fisheries Res. Bd. of Canada, vol. 21, no. 5, p. 977–994, 1964.

[*Lake trout* given as *Salvelinus namaycush*, with genus *Salvelinus* rather than *Cristivomer*, reverting to the older classification of Walbaum and reflecting the differences of opinion of morphologists. Discusses the distribution of the species and its limitation to the region of Pleistocene glaciation and absence of the lamprey. Gives more or less detailed information on its regional distribution: absent in Newfoundland and not native in the Columbia River basin or Vancouver; for some states and provinces (i.e., Montana) specific bodies of water are named in detail, while for others data are incomplete.]

PEARSE, A. S. The food of the shore fishes of certain Wisconsin lakes. Document 856, Bull. U.S. Bur. of Fish., vol. 35, p. 245–292, Washington, 1918.

[*A. nebulosus* (p. 254), *E. lucius* (p. 258), and *M. dolomieu* (p. 266) in Lakes Mendota, Wingra, Monona, and Waubesa near Madison, but *C. namaycush* absent.]

PEARSE, A. S. The distribution and food of the fishes of three Wisconsin lakes in Summer. Univ. of Wisconsin Studies in Science, no. 3, Madison, 1921.

[*C. namaycush* found only in Lake Michigan; *M. dolomieu* found in Green Lake, and Lakes Wingra and Geneva.]

SCOTT, W. B. Freshwater fishes of eastern Canada. Toronto (Univ. of Toronto Press), 1954.

[Significant remarks on the distributions in Canada of *C. namaycush* (p. 34–35), *A. nebulosus* (p. 66), *E. lucius* (p. 74–75), and *M. dolomieu* (p. 99).]

TRAUTMAN, MILTON B. The fishes of Ohio. Columbus (Ohio State Univ. Press), 1957.

[Gives complete distributional maps, one of the first books on American fishes to do so. Classifies the *brown bullhead* as *Ictalurus nebulosus*, in the genus *Ictalurus* with the rest of the catfish family, rather than as *Ameiurus nebulosus* Le Sueur, and says the species was originally rare or absent in the southern third of Ohio and is almost never found in the Ohio River (p. 424–426). Gives the *smallmouth bass* (p. 486–489), the small-mouth black bass of others, as *Micropterus dolomieui* Lacépède, improperly since the Latin genitive ending should not be applied to a French personal name; nearly all writers have erred in spelling the French naturalist's name since he himself wrote it as Lacepède. Gives data on *E. lucius* (p. 212–214); and the *lake trout* (p. 194–196) as *Salvelinus namaycush* in the genus *Salvelinus* which is questionable, and states that it is common in the deep east end of Lake Erie, and rare in the shallow west end.]

VLADYKOV, VADIM D. Conditions physico-chemiques et biologiques, et statistiques de la peche dans 48 Lacs du Parc des Laurentides. Ministère de la Chasse et des Pêcheries, Québec, 1942.

[*C. namaycush* "assez abondant" in Lac des Neiges (p. 175–176), but absent in the other lakes of this district.]