

**The historical ethnography of the Micmac of the
sixteenth and seventeenth centuries:
Part 4**

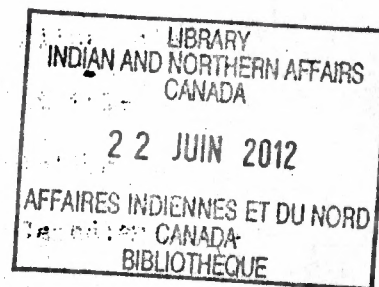
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CHAPTER IV - MICMAC ECOLOGY

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IV. MICMAC ECOLOGY



The Micmac Environment

In its general physiographic aspects the Maritime region of eastern North America is not strikingly different from other sections of the continent. The broad lowlands characteristic of the coastal areas are also to be found farther to the south; the dissected uplands and mountains are merely a part of the Appalachian system; and the surface glacial features are paralleled in more western sections of the country. From the standpoint of soil type, the Maritime region is simply a part of the podzolic complex characteristic of the entire Northeastern section of North America.

A more detailed examination of the Micmac home—the region including the modern Canadian provinces of New Brunswick, Nova Scotia, Cape Breton Island, Prince Edward Island, and the Gaspé area of Quebec—reveals a number of unique features, however. We find a varied picture of dissected uplands, broad lowlands, endless swamps and marshes, and rugged hills and mountains. The effects of glaciation are everywhere visible in the form of glacial debris littering the hillsides, in the innumerable lakes and swamps, and in the rolling features of the terrain. New Brunswick has been described as,

...generally level. In the principal part of it, bounding on the Bay of Fundy, and for twenty miles inland, there are a few hills of considerable size. At this distance from the shore the land becomes undulating, until beyond Tobique, and from thence to the Canadian border, it may almost be considered as mountainous, but the hills are not of great height, nor the acclivities generally so steep as to preclude cultivation and pasturage to a considerable extent. As we return from the northward, there is almost an uninterrupted level, extending from the Restigouche to the Nova Scotia boundary, and forming a strong and decided contrast with the Bay of Fundy coast. Here, while the shore line presents the fertile corn field, the busy saw mill, and the frequent harbour, the interior is still, except where it has been ravaged by fire, a deep and almost unbroken forest... (Monro, 1855, p. 8).

Nova Scotia presents a still more forbidden appearance, consisting in large part of the "Atlantic peneplain," which has been uplifted, eroded, and glaciated.

The Atlantic slope is located on granite, quartzites and slate, besides glacial deposits, and is topographically much diversified, with hills and dales, lakes and swamps. Three-eighths of the western peninsula, or 3000 square miles, and only 550 square miles on the eastern peninsula, are granitic, more or less disturbed by ice action. While,

on account of rocky conditions, this granitic area does not often furnish good farming ground, it furnishes good forest soils, especially where sorted by glacial movement... The quartzite areas which enclose the centrally located granite areas are formed of less easily disintegrated, harder rock, and give rise more frequently to barrens; while the slate formations and the better glacial deposits in the valley are the farm country, or support the better character of forest growth... The northern slope, or drainage of Northumberland Strait and Minas Basin, although simpler in topography, is geologically, and thence as regards soil and forest growth, much more diversified... Cape Breton can be subdivided into two distinct sections, the Southern peninsula, an undulating plain, and the Northern peninsula, a high plateau, with very little topographic differentiation except in the northern part, where it is broken up by hills... (Fernow, 1912, pp. 9-10).

This physiography is essentially determined by the old geological features of the region, and has been only superficially influenced by the Pleistocene glaciation—despite the fact that several centers of glaciation occurred within it. This "superficial" surface covering, however, is of crucial importance in the ecology and economics of the region—causing such geographic features as poor soils, gravel and sand deposits, and the high percentage of land area covered by water configurations.

We are told, in fact by one geologist, that

...the ponded condition which characterizes so much of the Southern upland today, where bogs, pond and stillwater stretches occur in endless repetition, is a direct result of the passage of the ice-sheet across the region, leaving its load of ill-assorted rubbish scattered without respect to the operation of running water. The old drainage lines were dammed at thousands of places, and the rivers thoroughly disorganized. Thus the present unsystematic and inefficient systems of drainage were substituted for the earlier ones... The idea that the ice-sheet carved out the valleys which indent the southern coast is, it should be noted, a mistaken one. These valleys are plainly the work of rain and rivers during the period preceding the Ice Age, drowned and subsequently altered in detail only, by the activity of the ice-sheet... (Goldthwait, 1924, p. 103).

Similar deposition of glacial drift throughout New Brunswick and New England has resulted in innumerable lakes and endless swamps, and has favored the development of the intrazonal and podzolic pedalferic soils characteristic of the region.

The postglacial history of the Maritime Peninsula region is a complex one, involving many shifts of relative elevation and of coastlines. This is of direct importance to us, however, in only one respect. According to Lougee's reconstruction of

the postglacial events that took place within the area, Prince Edward Island has probably been isolated from the mainland since the time of deglaciation; this may partially explain the meager fauna to be found on this island (Lougee, 1953).

The meteorological characteristics of the Northeastern sector of North America serve to set this region off from all others—not only with respect to its climate, but also with respect to its flora and fauna. These characteristics are particularly pronounced in the Maritimes. Put briefly, this is an area over which masses of cold Polar Continental Air regularly invade the zone of warm Atlantic Maritime Air (polar outbreak or frontogenesis) resulting in the extensive precipitation of moisture deriving from the Atlantic tropics or from the Caribbean. During the summers, when this zone of frontogenesis lies directly over the Maritimes, the precipitation is heavy and the temperatures are cool. In winter the zone shifts more to the south, and the area comes under the influence of the dry and intensely cold air from the interior of the continent. Precipitation, both in the form of snow and rain, continues to be heavy; in the more eastern sections of Nova Scotia the rainfall may even be heavier than in the summer (Holzman, 1937, pp. 13-24; Pettersson, 1940, pp. 267-272, 374-377; Putnam, 1940).

From the descriptions of Acadian weather given in the early French sources, who devote considerable space to this matter (although with an emphasis somewhat different from our own), it would seem that the weather was much the same then as at present.

Denys, speaking from his experiences in Acadia between 1633 and 1671, tells us that:

...the spring there is a little later [than in France], and only commences in the month of April on the North Shore. On the most southern coast of Acadie it begins on the twentieth or twenty-fifth of March. The beginning of spring is, as a rule, rainy...The month of May having arrived, the rains are not so common, but fogs form in the mornings up to nine or ten o'clock, when the Sun overcomes them...

The summer as a rule is always fine and very warm. There is some rain of short duration, and still sometimes fog in the morning, but it does not last beyond seven to eight o'clock...There are years when the fog lasts up to ten o'clock, and sometimes all day long...

From the end of the spring and during the summer and autumn, there often occur thunderstorms, but they do not last. Nevertheless the thunder falls sometimes in fire and strikes in the woods, where everything is so dry that it continues there some three weeks or a month. Unless rains fall sufficiently to extinguish it, the fire will burn sometimes ten, twelve, and fifteen leagues of the country...

The meteorological facts just presented, although important with relation to direct human adaptation, do not give us all

the information necessary for an ecological analysis. The difficulty lies in the fact that the meteorological elements do not enter into a simple one-to-one relationship with the biome. As has been observed by F. Kenneth Hare (1950, p. 627), "raw climatic data have little application in eco-climatology. Effort must be made to find means of combining and integrating the elements into indices having a more direct applicability to ecological problems."

Fortunately, recent research in climatology, notably by Thornthwaite (1948), has led to the invention of a number of such "significant indices" which show more definite correlations with ecological fact. These tell us that the Maritime provinces possess an exceptionally humid, mesothermic climate—more humid, in fact, than the Northwest Coast of North America. This is reflected in the diverse and sometimes unique flora to be found in this region (Thornthwaite, 1948; Sanderson, 1950, p. 645).

The forests of the Maritime Peninsula and neighboring regions have long attracted attention because of their composition, luxuriance, and beauty. An interesting description has been given by the Reverend Christopher Atkinson (1844, pp. 113, 116-117, 135-136, 139-140):

The distribution of the forest is not such as an Englishman, accustomed to the cultivated woods in his own country, might reasonably imagine; instead of being tastefully intermingled in accordance with the reveries

of St. Pierre, nature has disposed the growth generally in stripes, ridges, or groves—the deciduous trees, for the most part, by themselves, and changing suddenly, often with scarcely a shade of admixture, to an evergreen growth. The great distinguishing denominations of wilderness land, as usually understood throughout North America, are hardwood and softwood land, and barren plain. The hardwoods are the ash, beech, birches, maples, oak, and all the deciduous trees. The softwoods are cedar, hemlock, spruce, pine—the larch (though not an evergreen) included.

...Barren or cariboo plains bear on the peat, which is often many feet in depth, a few scattered spruces and creeping cranberries, and these parts of the country have as yet received no attempts to reclaim the soil. The land which produces the hardwoods is generally good, and is brought into cultivation with the least expense... Land covered with a growth of spruce or pine alone, is seldom found to repay the outlay of the farmer. High land entirely covered with beech, generally proves gravelly, cold, and hungry soil...Clay generally predominates in a cedar swamp...[and] affords to that evergreen the moisture it loves...Along the shore of the Bay of Fundy, the spruce growth prevails in the woods, and indeed, the hard blue rock, which there presents an impassable barrier to the mountain wave of the Atlantic, is covered by so little soil, that none but the spruce can derive any nourishment...

...The chief kinds of timber are, the oak, ash, cedar, beech, birch, elm, and maple...

The forest cover of the Maritime Peninsula demonstrates an alternation of deciduous, coniferous, and mixed forest communities: of climaxes and sub-climaxes: of mesophytic, hydrophytic, and xerophytic zones. Throughout the area the climax forest—i.e., the forest which occupies the average sites, and which is the end product of plant succession under the existing climatic conditions—is composed largely of deciduous species, including such forms as hemlock (Tsuga canadensis (L.) Carr.), sugar maple (Acer saccharum Marsh.), basswood (Tilia americana L.), beech (Fagus grandifolia Ehrh.), yellow birch (Betula lutea Michx.), white pine (Pinus strobus L.), red spruce (Picea rubens Sarg.), and white spruce (Picea glauca (Moench) Voss) and balsam fir (Abies balsamea (L.) Mill.) in the north. Of even greater importance, however, are the subclimax associations—the edaphic climax, displaying white pine, red pine (Pinus resinosa Ait.), jack pine (P. Banksiana Lamb.)(on drier soil), black spruce (Picea mariana (Miller) BSP.)(on wet soil), beech, hophornbeam (Ostrya virginiana (Miller) K. Koch), red oak (Quercus rubra L.), and elm (Ulnus americana L.); the xeroseres; and the hydroseres. The seral zones, or areas undergoing physiographic and floral development either from (1) very dry and rocky conditions to normal mesic conditions, or from (2) very wet and swampy conditions to mesic conditions, contain the all-important edible aquatics, sedges, herbs, and

shrubs, such as: water-gladiole (Lobelia Dortmanna L.), pond-
lilies (Family Nymphaeaceae), Labrador-tea (Ledum groenlandicum
Oeder), leather-leaf or Cassandra (Chamaedaphne calyculata (L.)
Moench.), kinnikinnik (Arctostaphylos Uva-Ursi (L.) Spreng.),
mountain sorrel (Oxyria digyna (L.) Hill), alpine bearberry
(Arctostaphylos alpina (L.) Spreng.), serviceberries (Genus
Amelanchier Medic.), cranberries (Genus Vaccinium L.), wild-
raisin (Viburnum cassinoides L.), dwarf raspberries (Rubus
pubescens Raf., and R. acaulis Michx.), and gooseberries (Ribes
lacustre (pers.) Poir.). The enormous areas covered by sub-
climaxes, especially by hydroseres, is a major ecological fact
of this region, since the abundance and nature of the regional
fauna is directly proportional to the food resources and
habitat niches available, and these are largely provided by
the subclimax seral zones (Cooper, 1913c, pp. 189-214; Braun,
1950, pp. 37-38, 337-440; Ganong, 1903a, pp. 53-60; Halliday,
1937, pp. 32-39; Hill, 1923, pp. 325-352; Nichols, 1935; Scoggan,
1950; Transeau, 1903).

Despite its unique floral features and deciduous components,
the mixed forest of the Maritime Peninsula supports a fauna
which is essentially the same as that of the Boreal forest as
a whole. This northern affinity is largely the result of a
basic meteorological fact—that the deep snows of the Maritimes
are not favorable for the survival of forms unadapted for
hibernation or for movement over deep snow. Within the region
over which this initial condition must be fulfilled the faunal

forms are strikingly homogeneous, and are distinctive. The most conspicuous mammal form is the moose (Alces americanus); only slightly less noticeable are the caribou (Rangifer caribou), black bear (Ursus americanus), and American beaver (Castor canadensis). Other important species are the varying hare (Lepus americanus), the woodchuck (Marmota monax), the muskrat (Ondatra zibethica), gray wolf (Canis lupis), red fox (Vulpes fulva), raccoon (Procyon lotor), shorttail and long-tail weasel (Mustela erminea, M. frenata), mink (M. vison), marten (Martes pennanti), fisher (Martes americana), lynx (Lynx canadensis), bobcat (L. gigas), and panther (Felis concolor). A form now extinct—the sea mink (Mustela macrodon)—formerly occurred along the New Brunswick coast, but is now known only from bones in archaeological sites and from a few faded mounted skins. The whitetailed deer (Odocoileus virginianus) has occupied southern New Brunswick at intermittent periods during the prehistoric and historic, probably at times when climatic oscillation had resulted in a reduction of the winter snow pack. The whitetail deer does not seem to have been present in New Brunswick during the French period, and, according to Gesner as quoted by Chamberlain (1897, p. 39), it first reappeared in the southern part of this province in the year 1818 (Burt, 1952; Cahalane, 1947; Chamberlain, 1883; Shelford and Olson, 1935; Smith, 1940).

As mentioned earlier, the fauna of Prince Edward Island seems to be extremely impoverished in comparison to that which

exists on the mainland a few miles to the south. According to the literature, no moles are to be found, and only two species of bats, as compared to five known from the adjoining mainland. Within the category including shrews, hares, squirrels, chipmunks, lemmings, voles, mice, and ungulates, only three species are reported (Masked shrew (Sorex cinereus); Arctic shrew (Sorex arcticus); and eastern chipmunk (Tamias striatus)), while the mainland displays twenty-five. Besides this, raccoons, striped skunks (Mephitis mephitis), and river otters (Lutra canadensis) are also reported. Part of this faunal impoverishment may be due to recent extermination by hunters: Speck, for example, tells us that,

...in recent years, it appears, the hunting has been growing worse on the island, the natives having had to resort more and more to fishing. An interesting legend accounts for the disappearance of the moose from the region many years ago. Owing to the small size of the island and the increasing population, the moose at first began to diminish. Then later the Indians planned a great round-up, and in a short time killed nearly all that were left, although some of the older people advised against the procedure. Consequently the remaining moose, offended at the thoughtless improvidence of the Indians, departed from the island, never to return. Some of the hunters claimed to have seen their footprints on the shore whence they made their escape by swimming... (Speck, 1922, p. 115).

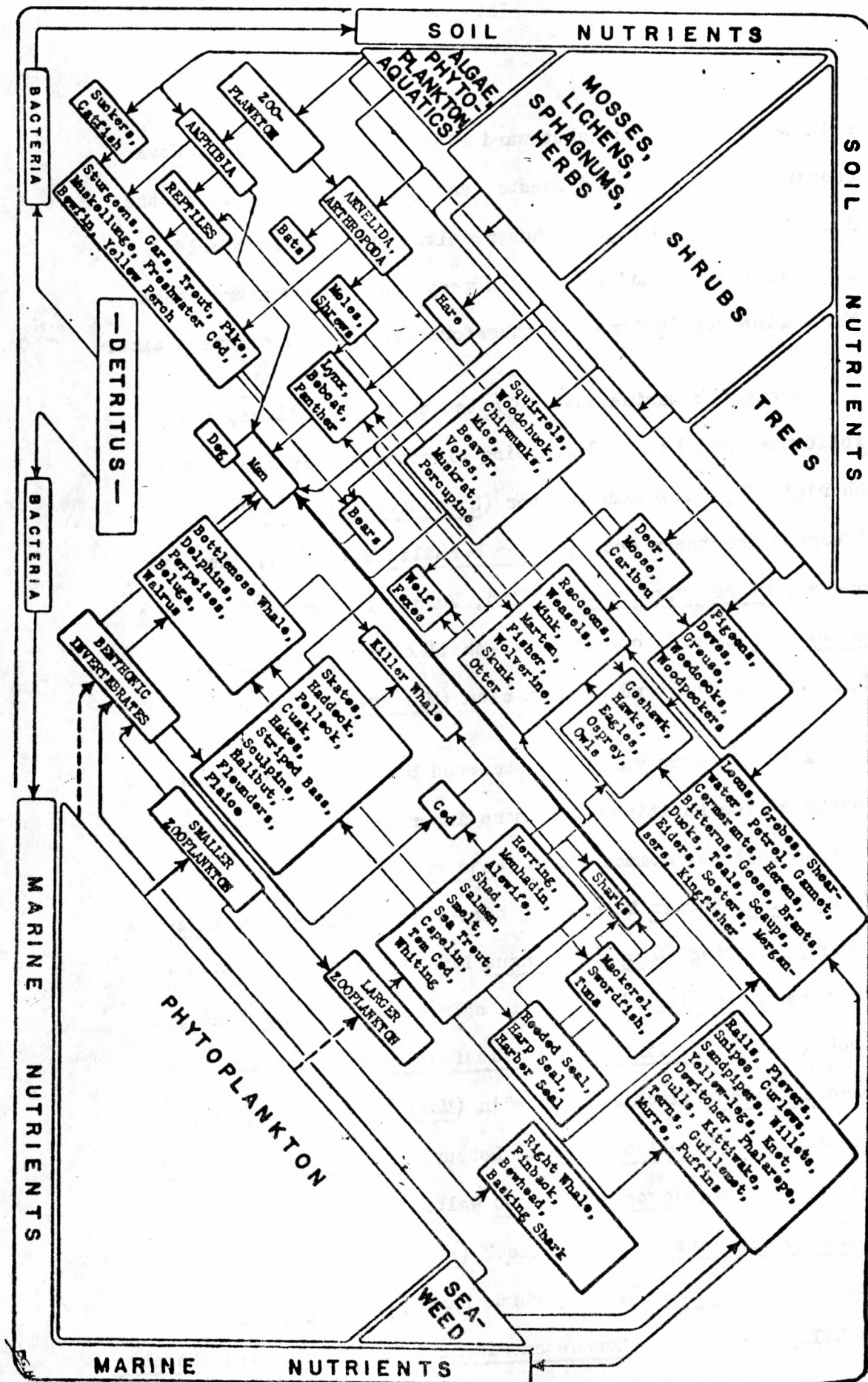
Denys gives us a slightly different and very interesting account, however. Referring to Prince Edward Island, he states:

...As for Moose, there are none of them. There are Caribou, which are another species of Moose. They have not such strong antlers; the hair is denser and longer, and nearly all white. They are excellent to eat. Their flesh is whiter than that of Moose. Few of them are found there; the Indians find them too good to let them increase... (Denys, 1908, p. 209).

We must here note that if Denys is correct in his assertion that the hair coat was almost all white, the description points to the barren-ground caribou (Rangifer tarandus) instead of to the woodland caribou (Rangifer caribou), which has a fairly dark coat. Returning to the problem of the impoverished fauna of Prince Edward Island, it is apparent that in the case of moose or caribou recent extermination has taken place. This does not explain, however, the meager representation of the smaller species forms. The small number of forms present must rather be explained in terms of the restricted ecological niches available, the environmental uniformity, and the limited food resources. In this respect Cape Breton island is somewhat similar, although its larger size and more variable resources are more favorable for the faunal forms.

Due to a happy combination of oceanographical conditions, the waters off the Maritime Peninsula support a wealth of marine life. In large part this is due to the passage of the

Fig. 6. Diagrammatic representation of the metabolic interrelations (food web) in the region of the Maritime Peninsula in precontact times, showing the interlocking nature of the food chain within the terrestrial (Man-moose-caribou-bear-beaver) biome, and within the marine (walrus-beluga-cod-killer whale) biome. The arrows indicate prey-predator relationships, and proceeds from the producers to higher trophic levels. Compiled from various sources.



cold Labrador current southward along the Newfoundland, Nova Scotia, and New England coasts, and the close presence of the Gulf Stream. The region thus receives nutrient-rich cold northern waters, and displays a very great temperature range; the marine populations are therefore diverse and of great size.

Among the marine invertebrates of the Maritimes, the following must be named as being of considerable importance aboriginally: American lobster (Homarus americanus Milne-Edwards), northern crab (Cancer borealis Stimpson), American oyster (Ostrea virginica Gmelin), Venus clam or quahog (Venus mercenaria Linn.), common razor-shell clam (Ensis directus Conrad), and the sand or soft clam (Mya arenaria Linn.).

Although some variation occurred between the different coasts of the Maritimes, the more important fish generally were as follows: common skate (Raja erinacea Mitchill), big skate (R. diaphanes Mitchill), barn-door skate (R. stabuliformis Garman), herring (Clupea harengus Linn.), alewife (Pomolobus pseudoharengus Wilson), Atlantic salmon (Salmo salar Linn.), brook trout (Salvelinus fontinalis fontinalis Mitchill), smelt (Osmerus mordax Mitchill), capelin (Mallotus villosus Müller), American eel (Anguilla rostrata LeSeur), cod (Gadus callarias Linn.), tomcod (Microgadus tomcod Walbaum), haddock (Melanogrammus aeglefinus Linn.), pollock (Pollachius virens Linn.), cusk (Brosme brosme Müller), white hack (Urophycis tenuis Mitchill), sea perch (Morone americana Gmelin), mackerel (Scomber

soomber Linn.), swordfish (Xiphias gladius Linn.), sculpins (Myoxocephalus aeneus Mitchill, M. scorpius Linn., and M. octodecimspinosus Mitchill), tuna (Thunnus thynnus Linn.), halibut (Hippoglossus hippoglossus Linn.), American plaice (Hippoglossus platessoides Fabricius), and flounders (Pseudopleuronectes americanus Walbaum and Lophopetta maculata Mitchill). Among the freshwater fish we find brook trout, northern pike (Esox lucius Linn.), yellow perch (Perca flavescens Mitchell), and striped bass (Morone lineatus Bloch). In addition to these members of the Section Pisces, the coastal waters contained numerous representatives of the Class Mammalia, including: cetacean whale (Hyperoodon amplexatus Forster), white whale (Delphinapterus leucas Pallas), Atlantic whitesided dolphin (Lagenorhynchus acutus Gray), killer whale (Orcinus orca Linn.), common blackfish (Globicephala ventriosus Lacépède), Atlantic harbor porpoise (Phocaena phocaena Linn.), finback whales (Balaenoptera physalus Linn.), bowhead whale (Balaena mysticetus Linn.), Atlantic right whale (Eubalaena glacialis Bonnaterre), Atlantic walrus (Odobenus rosmarus Linn.), harbor seal (Phoca vitulina concolor De Kay), harp or saddleback seal (Phoca groenlandica Erxleben), and hooded seal (Cystophora cristata Erxleben). Although not all of these marine resources were utilized by the natives of the Maritimes, many were, and we may have little doubt that the sea offered these people considerably more in the line of food resources than did the land.

Settlements

The summer villages of the Micmac were usually located on the banks of streams or in saltwater coves near the mouths of streams or rivers. The most important factor in the choice of a site seems to have been proximity to a navigable body of water, for canoes were the primary means of transportation; the second and only slightly less important factor was the nature of the food resources. Such sites as the mouths of large rivers with heavy spawning runs were highly favored, or, alternately, smaller rivers running back into a system of lakes. Also favored were sites situated on salt lagoons or ponds, or on shallow bays, having large shellfish beds and some protection from the full force of the ocean and the wind. One favorite location seems to have been on the mouths of large rivers but off the main channel on a small subsidiary stream. Minor influences in the selection of summer camp sites included such features as level sandy terrain with good drainage, and an easily reached spring.

Some of the factors entering into the selection of a camp site were of a highly seasonal nature. Thus, the nearby presence of seal rocks or seal islands (and also walrus beaches) was highly desirable, but such islands, rocks, or beaches were occupied in great numbers only during the seal whelping season—i.e., during the months of January and February. Similarly, a location near extensive salt marshes meant easy access to the herds of

spring and autumn bird migrants. In general however, we may suspect that the important factors in the selection of a camp site were as stated—proximity to navigable water, abundant fish and shellfish resources, a well drained and level site, and a good water supply—while highly seasonal factors played only a minor role.

Approximately 46 Micmac summer villages are known to us; of these, 35 are located near the mouths of respectable rivers, while the remainder ^{lay} on favorable locations on saltwater lagoons, coves, and bays. The largest and most important Micmac villages seem to have included TJIGOG (or TEDJIGUKH) and SIGITÔMEG at the mouth of the Restigouche river (see Figs. 19 and 20); OIH-PEGITJOIG at the mouth of the Nepisiguit river and in Nepisiguit Basin, SAGAETJOEGATIG at the mouth of the PÔGÔMOTJG or Pokemouche river, SKINOUGONDICHE or ESGENOOPOTITJG at Burnt Church in Miramichi Bay, SIPAITJ MENIGO or NATOAGANEG in the mouth of the Miramichi, INOI MENIGO ("Indian Island") and TETTOETJITTAON at the mouth of the Richibucto (see Fig. 19); OALETJG and OGOASGOG at the mouth of the PICTOG or Pictou River, TLAGATIG at Tracadie, MOGLAGATIG and OEGOGMAG on Brâs D'Or (originally Labrador) Lake in Cape Breton Island, SOLAGATIG in Mira Bay in Cape Breton Island, NOTOGETETOALNEG on the Salmon River (ANISAG) in Chedabucto Bay (SETAPOGTOG) (see Fig. 18); GAMSOG at Canso, SHITIG on the Shubenacadie River, NIPMANEGATIG at Beaver Bank in Halifax Harbor, EINOI OGSAOEI at the mouth of the La Have River, OGUMWEGEOK at Port Liverpool (Port Rossig-

not), PESPOGOITG near Cap le Sable, OTJIPANOG at the mouth of the Tusket River in Tusket Bay, GTJISIPOG at the mouth of the Sissiboo or Weymouth River, TEOOPSGIG at the mouth of the Annapolis River (see Fig. 17); and OUIGOUGI at the mouth of the St. John.

Of these villages, TJIGOG, SIGITOMEG, OINPEGITJOIG, SIPAITJ MENIGO, TETTOETJITTAON, OGOASGOG, MOGLAGATIG, NOTOGETETOALNEG, GTJIPANOG, GTJISIPOG, and OUIGOUDI were especially favored in being situated at the mouths of rivers with extraordinarily heavy spawning runs. The villages of SAGAETJOEGATIG, OGOASGOG, and PESPOGOITG were situated near seal and walrus beaches and islands: the first near the walrus beaches of Miscou and Shipagan (SIPAGANTJITJG and SIPAGAN) islands; the second near the walrus and seal beaches of Prince Edward Island (namely, Seacow Point, designated "A" on figure 19; Seal Point, designated "B"; Seacow Pond near Tignish, designated "C"; and NTOAGOAGANTITJG ("seal hunting") or Pownall Bay, on the southeastern part of the island); and the last near the gray seal whelping grounds on the Seal Islands, Mud Island, and Round Island, off the southeastern tip of Nova Scotia.

Of the other important villages, most were located near or on shallow saltwater lagoons or bays which contained heavy shellfish populations (for example, OGOASGOG, TLAGATIG, SOLAGATIG, PESPOGOITG), or large populations of shore-fish (for example, OINPEGITJOIG, ESGENOOPOTITJG, LNOI MENIGO, PIGTOG, MOGLAGATIG, OEGOGMAG, SOLAGATIG, NIPMANEGATIG, ELNOI OGSACEI, OGUMKWEGEOK, PESPOGOITG, and GTJIPANOG). A few villages seem

to have become important during the early historic period because of the presence of fishermen and traders in their vicinity; such seems to have been the case with GEGANISG or Ingonish on the northeastern coast of Cape Breton Island, and with GAMSOG. A few villages, especially those near large tracts of shellfish which could be reached in winter by breaking the ice, may have been occupied during the entire year.

Very little information is available to us concerning the nature of a Micmac summer village. Lescarbot gives us one description which derives from his observations at the Micmac-Etechemen village at the mouth of the St. John:

...The town of Ouigoudi, as I call the abode of the said Chkoudum, was a large enclosure upon a rising ground enclosed with trees, great and small, fastened to one another, and within the enclosure many lodges, large and small, one of which was as big as a market-hall, wherein dwelt numerous families; as for that wherein they held their feasts, it was somewhat smaller...

(Lescarbot, 1911, pp. 356-357).

The fact that the Micmac fortified their villages is confirmed in several other references (Lescarbot, 1914, pp. 264, 267; Denys, 1908, pp. 195-196), the latter author informing us that stakes and two kinds of bastions were used on one occasion. The bastions may have been a borrowing from the French, however. From the

available sources it seems that fortifications were anciently used in both southern and northern Micmac territory, for the former area was subject to attack by Almouchiquois, and the latter to attack by the Kwēdēch.

For information concerning the ancient Micmac dwelling type we must turn to Biard. This author begins by describing the behavior pattern followed during a hunt, and touches upon the manner of establishing camp:

...The women go to the woods and bring back some poles which are stuck into the ground in a circle around the fire, and at the top are interlaced, in the form of a pyramid, so that they come together directly over the fire, for there is the chimney. Upon the poles they throw some skins, matting or bark. At the foot of the poles, under the skins, they put their baggage...In Summer the shape of their houses is changed; for then they are broad and long, that they may have more air; then they nearly always cover them with bark, or mats made of tender reeds, finer and more delicate than ours made of straw, and so skillfully woven, that when they are hung up the water runs along their surface without penetrating them... (Biard, 1616; in JR., Vol. 3, p. 77).

The essential points of this description are confirmed by Denys in a passage dealing with the hunting camp:

14p. ...If the family is a large one they make it [the wigwam] long enough for two fires; otherwise they make it round, just like our military tents, with only this difference that in place of canvas they are of barks of Birch. These are so well fitted that it never rains into their wigwams. The round kind holds ten to twelve persons, the long twice as many. The fires are made in the middle of the round kind, and at the two ends of the long sort... (Denys, 1908, pp. 405-406).

From these accounts we may conclude that the "round" structure mentioned is the well known birchbark "tipi," and the presence of this type of structure among the Micmac is confirmed by later ethnographic sources. The identification of the "long" type of structure is another problem, however.

Since our textual sources are extremely obscure concerning the shape of the "long" WIGWOM, it will be necessary to turn to other references to find clues. A number of problems present themselves: was the floor plan oblong or rectangular; was there a center ridge-pole; or was the roof domed over?

Other than the accounts already quoted, our only other historic reference comes from Le Clercq, who tells us that these long types of wigwams were sometimes made so large that three or four fires could be built in them (Le Clercq, 1910, p. 100). And in recently collected legend material from Cape Breton Island we find allusions to "long business wigwams" with

doors at each end (Parsons, 1925, pp. 72-73). From these two sources it would seem that an oblong-shaped structure with the poles coming together in the middle tipi-fashion would be virtually eliminated. The final clue, however, comes from Champlain—not from his textual accounts, but from his maps of the Acadian ports. These show first a tipi-like structure, and then a number of rectangular cabin-like structures with ridge-poles; furthermore, these maps carefully distinguish between these cabin-like dwellings and the long domed-over "wigwam" of the southern New England tribes (Champlain, 1922, Pl. LXIV-LXVI, LXIX, LXXII-LXXIV, LXXVII, LXXVIII). The illustrations given by Champlain closely resemble those given by Speck for more recent times (Speck, 1922, pp. 30-32, pl. VII, VIII; 1940, pp. 27-34), and show that, contrary to some statements (e.g., Flannery, 1939, pp. 63-64), this type of longhouse had an early and wide distribution in the Northeast.

We have no explicit statements concerning the arrangement of the various dwellings within the summer camp, except in the case of one fortified and possibly unusual village at the mouth of the Richibucto. Denys tells us that the Indian chief or SAKUMON here had,

...upon the border of the basin of this river a rather large fort of stakes, with two kinds of bastions; inside is his wigwam, and the other Indians are encamped around him... (Denys, 1908, p. 195).

Direct information is also lacking concerning the interior furnishings of the summer dwellings, but these were probably not too different from those of the hunting or winter shelters, which we will now consider.

The winter shelter of the Micmac described in the textual sources—and the one ordinarily used during hunting expeditions—was the well-known conical-shaped wigwam or WIGWOM, covered either with skins, mats, or birchbark, and decorated with "a thousand different pictures of birds, moose, otters and beavers, which the women sketch there themselves with their paints" (Le Clercq, 1910, p. 100; Biard, 1616; in JR., Vol. 3, p. 77; Denys, 1908, p. 405). All parts of the wigwam except the tent poles were transported from camp to camp, being either carried on the back, on toboggans, or in canoes by the women. The first step in setting up a new hunting camp was the selection of a new site. This was the responsibility of the male head of the family, or of the band.

...This is why, on the eve of departure, he goes in person to trace the road which is to be taken, and to choose a place suitable and ample for the encampment. From this place he removes all the useless wood, and cuts off the branches which could be in the way. He smooths and opens out a road to make it easy for the women to drag over the snow on their toboggans, the trifle of furniture and of luggage which comprises their house-

keeping outfit. He marks out, also all by himself, the plan of the wigwam, and throws out the snow with his snowshoes until he has reached the ground, which he flattens and chops out in pieces until he has removed all the frozen part, so that all the people who compose his family may lodge in the greatest comfort. This done, he then cuts as many poles as he considers suitable, and plants them in a circle around the border of the hollow which he has made in the earth and the snow—always in such a manner, however, that the upper ends come together in a point...When this is finished, he makes preparations for hunting, from which he does not return until the wigwam has been completely put in order by the women... (Le Clercq, 1910, p. 101).

The following day, after the old camp has been broken, the women and girls carry the "wigwam," the dishes, the bags, the skins, the robes, and everything else to the new site. There each does her particular duty: some collecting branches of fir, which the little girls carry back; others fitting the bark upon the poles; others gathering dry-wood for the fire; and still others carrying water for boiling in the kettle, in order to have supper ready when the men return from the hunt. The mistress of the family (i.e., the wife of the head of the family, or the wife who has borne the first boy) takes charge, and has everything necessary brought to her. She,

...selects the most tender and most slender of the branches of fir for the purpose of covering all the margin inside the wigwam, leaving the middle free to serve as a common meeting-place. She then fits and adjusts the larger and rougher of the branches to the height of the snow, and these form a kind of little wall. The effect is such that this little building seems much more like a camp made in the spring than one made in winter, because of the pleasing greenness which the fir keeps for a long time without withering. It is also her duty to assign his place to each one, according to the age and quality of the respective persons and the custom of the nation. The place of the head of the family is on the right. He yields it sometimes, as an honour and courtesy to strangers, whom he even invites to stop with him, and to repose upon certain skins of bears, of moose, of seal, or upon some fine robes of beaver, which these Indians use as if they were Turkey carpets. The women occupy always the first places near the door, in order to be all ready to obey, and to serve promptly when they are ordered... (Le Clercq, 1910, pp. 101-102).

According to a legend given by Leland (1884, pp. 303-307), the wife's seat in the wigwam of her husband was next to his, and next to the door.

From a late source, the Narrative of an Extraordinary
Escape out of the Hands of the Indians, in the Gulph of St.

Lawrence..., by Gamaliel Smethurst (1774, pp. 13-14), we
learn that other accoutrements of a "wigwam" interior included
fish and game in the process of being smoked, for he tells us:

...they preserve their fish, their geese, and their game,
in that manner without salt—they take the bones out,
and cut the flesh very thin; then dry it in the smok
for their winter's provisions... (Smethurst, 1905, p. 372).

these items being hung around the top of the "wigwam" from
the poles.

Besides the circular and conical "wigwam" used in hunting
and in winter residence, other more make-shift arrangements
included lean-tos, and shelters consisting merely of hollows
dug into the snow and covered with fir branches, except for
the area of the central fire (Le Clercq, 1910, p. 165).

Transportation

The three Micmac methods of transportation were: the
birchbark canoe, the back-pack and tumpline, and "toboggan"
and snowshoes. Of these the birchbark canoe was the most
important, and was used whenever possible, while the back-pack
and tumpline method was used only during portages or when the
rivers were frozen but there was not yet deep snow suitable

for "toboggans" and snowshoes. From Denys (1908, pp. 420-422) we learn that in order to make their large traveling canoe,

...they sought the largest Birch trees they could find. They removed the bark of the length of the canoe, which was of three to four fathoms and a half [in length]. The breadth was about two feet in the middle, and always diminished towards the two ends, falling away to nothing. The depth was such that for a man seated it came to his armpits. The lining inside for strengthening it was of slats, of the length of the canoe and some four inches broad, lessening towards the ends in order that they might match together. On the inside the canoe was lined with them completely, as well as all along it from one end to the other. These slats were made of Cedar, which is light, and which they split in as great lengths as they wished, and also as thin as they pleased. They also made from the same wood half-circles to form ribs, and gave them their form in the fire.

For sewing the canoe, they took roots of Fir of the thickness of the little finger, and even smaller; they were very long. They split these roots into three or four parts, that is the largest ones. These split more easily than the Osiers used in making baskets. They

made these into packages, which they placed in the water for fear lest they might dry up. There were also necessary two sticks of the length of the canoe, entirely round, and of the thickness of a large cane, and four shorter sticks of Beech. All these things being ready, they took their bark and bent and fixed it in the form the canoe should have; then they placed the two long pieces all along and sewed them to the rim inside with these roots.

To sew they pierced the bark with a punch of pointed bone and passed through the hole an end of the wicker, drawing and tightening the stick as closely as they could against the bark, and always enwrapping the stick with the wicker so that they were in contact with one another. The sticks being well sewed on all along, they placed also the smaller pieces of beech crosswise, one in the middle, entering at its two ends into holes made in the pieces with which the canoe is rimmed, and three others in front of it, distant a half fathom from one another, which lessened in length with the shape of the canoe. Three others also were placed backward at the same distances. All these pieces entered also at their ends into holes which were made in the pieces sewed all along the canoe, to which they were so firmly attached on both sides that the canoe could neither enlarge nor narrow.

Then are placed in position those big slats with which they lined all the interior of the canoe from top to bottom, and they were all made to touch one another. To hold them in place, they put over them those half-circles, the ends of which were brought to join on both below those pieces which were sewn all around on the top. They drove these in with force, and they lined all the canoe with them from one end to the other. This made the canoe stiff to such a degree that it did not yield at any point.

There were seams in it, for in order to narrow it at the two ends, they split the bark from above downwards; they then overlapped the two edges one over the other, and sewed them. But to prevent the seams from admitting water, the women and girls chewed the gum of the Fir every day until it became a salve which they applied by aid of fire all along the seams, and this tightened them better than pitch. All this being done, the canoe was finished, and it was so light that a single man could carry it on his head.

The paddles were of Beech, the blade of an arm's length and of the breadth of half a foot or thereabouts; the handle is a little longer than the blade, and both are in one piece. Three, four, and five persons, both men and women, rowed together, [so that] it went extremely

swiftly. They also went with a sail, which was formerly of bark but oftener of a well-dressed skin of a young Moose. Had they a favorable wind they went as swiftly as the throw of a stone. One canoe carried as many as eight or ten persons...

This description of the Micmac method of manufacturing a birchbark canoe differs in no important respect, as far as it goes, from that given some 300 years later for the Chippewa Indians by Ritzenthaler (1950)—a striking example of the standardization and persistence of an aboriginal complex.

Denys' description of the Micmac canoe is the most complete and explicit which we have from the historical and ethnographical literature on these people. For further information it is necessary to turn to the English-Micmac dictionary prepared by Silas Tertius Rand (1888a, pp. 49-51), where we find an abridged list of the Micmac terms relating to the building and use of the canoe. The descriptive translations given add considerably to our knowledge of Micmac canoe building, and confirm our statement that the methods and techniques were the same as those used by the Chippewa. We also learn with interest that the canoe was one of the few intimate possessions of an individual, since the Micmac word is one of the dependent nouns which can occur only in possessed form, consisting of the noun root and an inflectional prefix ('ETOOL—my canoe; OOTOOL—his canoe).

From published photographs of Micmac canoes we find that these had one peculiar feature known from only one other group in the Northeast—elevated gunwale centers, or "humpbacks," characteristic of Beothuk canoes. Otherwise the Micmac canoe resembles those of the other eastern Algonquian tribes, having a flat central keel, rounded prow and stern, and a "tumble-home" amidships (Speck, 1922, pp. 32-33). The use of the sail, mentioned by Denys, is usually considered to be nonaboriginal and borrowed from the Europeans, who, we must remember, had had contact with the Micmac for over a 100 years at the time Denys wrote his book.

The Micmac country was ideally suited to the use of the canoe, being interlaced with streams and dotted with lakes. The distances from the headwaters of one drainage system to those of another were usually short, and could be traversed by easy portages (ONIGENN). Thus the Micmac could travel by river routes from one side of Nova Scotia to the other, or could pass from the Bay of Fundy, or from the St. John river, to the Gulf of St. Lawrence. The most important of these routes of canoe transportation have been marked on figures 17-20 by dashed lines.

In Denys' time the birchbark canoe was employed only for interior travel upon the rivers, lakes, and lagoons of the country, having been replaced upon the open ocean by European fishing boats. These, we are told,

...they sometimes buy from the Captains who are about to leave after having completed their fishery; but the greater part they take from the places in which the Captains have had them hidden on the coast or in the ponds, in order to make use of them on another voyage. But when the proprietors, or others having a right to them, recognize them, they make no more ceremony of taking them back than the Indians do in making use of them... (Denys, 1908, pp. 196-197).

From scattered sources from the early historical period it seems that by the beginning of the 17th century the Algonquians of the Northeastern seaboard were quite competent sailors upon the open sea. In 1602, for example, the members of the Gosnold expedition encountered a Basque shallop with mast, sails, and oars, an iron grapple, and a kettle of copper, manned by eight Indians, of which seven wore only seal skins "tied fast like to Irish dimmie trowsers," and the eighth wore a "waistcoat of black work, a pair of breeches, cloth stockings, shoes, hat and band." Furthermore, these "with a piece of chalk described the coast thereabouts [i.e., in the neighborhood of Casco, Maine], and could name Placentia of the Newfoundland" (Archer, 1843, p. 73; Brereton, 1843, pp. 85-86). When Lescarbot made his landfall at Canse he was met with two longboats from the harbor, of which one was manned by Indians and had a moose painted on its sail (Lescarbot, 1911, p. 309). And, while discussing Souriquois warfare against the "Esquimaux" of the northern shore

of the St. Lawrence Gulf in 1659, the Rev. Father Hierosme Lallemand tells us that "it is wonderful how these Savage mariners navigate so far in little shallops, crossing vast seas without compass, and often without sight of the Sun, trusting to Instinct for their guidance" (Lallemand, 1660, p. 42; in JR., Vol. 45, p. 65).

Very little other information is available concerning Micmac use of European craft. The shallops mentioned by Archer, Brereton, and Lallemand were caravel-built, but the longboats which met Lescarbot were most likely of the clinker variety. The rigging employed was probably of the lateen or macaroni-lug type, these being most common on the small craft of the Newfoundland fleet of the time. We may speculate that the use of larger seagoing craft may have enabled the Micmac of the St. Lawrence Gulf to exploit to a greater extent the seal and walrus breeding and whelping grounds around the Magdalen Islands. Previously, these islands were probably reached only during the months of ice-pack conditions, namely, during the period January through March (Hydrographic Office, 1946, pp. 3-5, 27-29; Benjamin, 1884, p. 888; Le Moine, 1878, pp. 80-83).

Our early French sources are almost completely silent about Micmac methods of back-packing overland. We know that the canoe was carried upside-down over the head, but other travel details are lacking. A much later source, Dashwood's

Chiploquorgan (1871, pp. 42-43), gives us a description of a Micmac method of back-packing which may be aboriginal; unfortunately the account is garbled and difficult to interpret, but it seems to indicate the "blanket roll and tump line" system described by Jaeger (1950, p. 66), Dashwood's "strap" being used either across the chest or across the forehead, as was also the case with the Penobscot (Speck, 1940, p. 73). Speck gives illustrations of woven Micmac pack-straps in his Beothuk and Micmac (1922, Pl. XX).

Whenever the snow permitted the Micmac employed the "toboggan" and snowshoe, meaning the drag-sled and snowshoe. The nature of the Micmac "toboggan" requires explanation, and a linguistic digression. The first author to present us with a relevant native term is Le Clercq (1910, p. 101), who tells us that the natives used TABAGANNES; unfortunately he does not specify what this term referred to, but we may compare it to words used in the Algonquian languages in more recent times:

Micmac	TOBĀKŪN	"sled"	Rand (1888, p. 239)
	TOBĀKŪNĀSKOOL	"sleds with broad bottoms or 'toboggans'"	Rand (1894, p. 62)
Malecite	TAPA'KŪN	"large sled"	Chamberlain (1899, p. 31)
	TAPAKŪNŪS'SIS	"hand sled"	
	TAPANAS'KŪK	"flat hunting sled or 'toboggan'"	

Abnaki	UDĀBĀ'GĀN	"sled"	Hodge (1910, Vol. 2, p. 262)
Penobscot	SOHE'WIK	"sled"	
	TCIBA'GAN	"toboggan"	Speck (1940, pp. 72-73)
Cree	OTOBANASK	"sled"	Chamberlain (1902, p. 262)
	TĀBINASK	"sled"	Harmon (1820, p. 393)
Naskapi	TĀBASKĀN	"toboggan"	Turner (1894, p. 308)
Ojibway	ODĀBAN	"sled"	Chamberlain (1902, p. 262)

Hodge (1910, Vol. 2, p. 769) gives us the additional information that the Abnaki term UDĀBĀ'GĀN may be analysed into "(what is) used for dragging," coming from UDĀ'BE, "he drags with a cord." The various forms of the word may possibly be explained by postulating an early Proto-Eastern Algonquian term *(TABANASKUN), which underwent the following changes: to Delaware, *(TABANASKUN) > TABASKUN > TATASKUN > TĀTASK; to Micmac and Malecite, *(TABANASKUN) > TABASKUN > TABA'KUN; *(TABANASKUN) > OTABANASK, to Cree; and *(TABANASKUN) > OTABANASK > ODĀBAN, to Ojibway. A central syllable -ASK- seems required by its occurrence in both Delaware and Cree. But whether this hypothetical history is correct or not, it is apparent that the known forms of the word are related, and derive from some commonly held prototype; furthermore, an analysis of the different forms enables us to conclude that Le Clercq's TABAGANNES refers to a sled and not to a toboggan, although the latter does appear in Micmac legend.

We have only one adequate description of the Micmac sled or "toboggan"—deriving from a time some 200 years later than the period now under consideration. Except for the use of iron the pattern seems to be aboriginal, however.

A hunting toboggan is six feet long, composed of two side pieces of spruce, six inches wide, and one inch in thickness, rounded off in front, and square behind; these are placed parallel to each other, at the distance of two feet, and joined at the upper sides by wooden benches of maple or other hard wood. Strips of thin sheet iron, two inches wide, and turned up in front to serve as runners, are then nailed or screwed to the bottom of the side pieces; thin pieces of wood are placed over the benches, on the top of which the load is fastened by rope, or thongs of hide...In lieu of iron runners cedar may be used, turned up at the ends. Iron runners are better in a thaw, and wooden when the snow is dry. A rope, or better still, a "lugging strap," is made fast to each side of the foremost benches, the centre of the strap is then put across the chest, and placing your hands behind, you grasp it with a twist, which gives it additional purchase. In this manner a man can haul a couple of hundred weight... (Dashwood, 1871, p. 101).

Both Le Clercq (1910, p. 101) and Denys (1908, p. 405) agree that dragging and back-packing was women's work.

Our earliest and most important source relative to the Micmac snowshoe is Denys, who tells us that the making of these was largely men's work:

...The frame of their snow-shoes were of Beech, of the thickness of those used in playing tennis, but longer and thicker and of the same form without a handle. The length of each was as a rule the distance from the waist to the ground. They placed there two pieces of wood which ran across, at a distance from one another equal to the length of the foot. They were corded with Moose skin, dressed to parchment; this was cut into very long cords [which were] both thick and thin. The thick were placed in the middle of the snow-shoe, where the foot rests between the two sticks, while the thin were used at the two ends. Close against the stick in front there was left an opening in the middle of the snow-shoe to admit the end of the foot in walking. This was in order that the snow-shoe might not rise behind, and that it might do nothing but drag. It was usually the women who did the cording... (Denys, 1908, pp. 419-420).

For further information concerning Micmac snowshoes we must turn to Rand's list of terms relating to their parts and to their manufacture (Rand, 1888, pp. 242-243), and to the snow-

shoes illustrated by Speck in his Beothuk and Micmac (1922, Pl. XXIII). Since the Micmac snowshoes shown by Speck are almost identical to those discussed by Jaeger (1950, pp. 461-465), and since the parts and operations indicated by Denys and Rand agree perfectly with those described by this latter author, we may conclude that Jaeger's general description of the making of an eastern type snowshoe is applicable to the Micmac.

Annual Subsistence Cycle

From the economic viewpoint, the sea and its products were of primary importance for the Micmac, the sea providing them with possibly 90% of the food they consumed and keeping them adequately supplied for 10 of the 12 months of the year. From the Micmac point of view, however, fishing seems to have been a low prestige occupation--their attitude undoubtedly was that anybody could fish, but that only an individual with power and skill could be a hunter ('NTOOKSOOLN00). This attitude was strengthened by the fur trade, and was shared by the Europeans who wrote our ethnographies and travel accounts. The fact remains, however, that the aboriginal Micmac economy seems to have been based upon maritime resources--hunting activities requiring special weather conditions and being capable of supporting the population for only short periods of time. This point will be discussed further in the section of the "French Trade."

Fig. 7. Diagram of the Micmac
aboriginal annual subsistence
cycle, compiled from various
sources.

MONTH	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
LOCALITY	SEA COAST	INLAND	SEA COAST						SMALL RIVERS	INLAND	RIVERS	
SOCIAL GROUPS	BANDS	BAND AND FAMILY UNITS	VILLAGES						BANDS			
PRINCIPAL FOODS	<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>SMELT</p> <p>TOMCOD</p> <p>SEALS AND WALRUS</p> </div> <div style="width: 40%; text-align: center;"> <p>WINTER FLOUNDER</p> <p>SCALLOPS, MUSSELS, CLAMS, CRABS, SEA URCHINS, ETC.</p> <p>STURGEON AND SALMON</p> <p>HERRING</p> <p>BROOK TROUT</p> <p>ALEWIFE</p> <p>CODFISH</p> <p>CAPELIN</p> <p>SHAD</p> <p>MACKEREL</p> <p>SKATES, FLOUNDERS, HALIBUT, PLAICE, SQUID</p> <p>LOBSTERS</p> </div> <div style="width: 30%; text-align: right;"> <p>SMELT</p> <p>TOMCOD</p> <p>SEALS</p> <p>SALMON</p> <p>HERRING</p> <p>BROOK TROUT</p> <p>EELS</p> <p>TURTLES</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 30%;"> <p>BEAVER, MOOSE, BEAR, CARIBOU</p> </div> <div style="width: 40%; text-align: center;"> <p>SPRING BIRD MIGRATION</p> <p>STRAWBERRIES</p> <p>RASPBERRIES</p> <p>BLUEBERRIES</p> <p>CRANBERRIES</p> <p>GROUND NUTS</p> </div> <div style="width: 30%; text-align: right;"> <p>BEAVER, MOOSE, BEAR</p> <p>FALL BIRD MIGRATION</p> </div> </div>											

Our picture of the Micmac subsistence and economic cycle derives from three important types of sources. First and foremost, we must mention Biard (1616; in JR., Vol. 3, pp. 77-83), who gives us a complete outline of the annual cycle—one which is substantiated and confirmed by scattered references in our other sources (i.e., Lescarbot, 1914, pp. 172, 218-245; Denys, 1908, pp. 426-237; Le Clercq, 1910, pp. 109-112, 274-287; Dièreville, 1933, pp. 102-141), but is not duplicated in its entirety by any of these. Our second type of source consists of the scattered statements made by our early authors (i.e., Lescarbot, Denys, Le Clercq, and Dièreville) concerning the hunting and fishing methods employed by the natives. Our third category consists of the information available in the zoological literature concerning the ecology of the region in question, which we must employ to fill in the gaps left by the early writers and to round out our ecological reconstruction. In making this reconstruction it will be convenient for us to begin the annual cycle with the first spawning runs in the spring. The Micmac year, however, began with the Autumn season.

The Micmac fishing season began with the waning of the winter storms upon the Atlantic, the breaking-up of the shore and river ice, and the resultant warming of the waters. At this time the population moved to the sea coast, to the bays, estuaries, coves, and river mouths noted for their good runs, for,

...our said savages, who know the haunt of each [fish], and the time of their return, go and wait for them in true devotion to bid them return... (Lescarbot, 1914, p. 236).

Here, while waiting for the spawning runs to begin, the Indians repaired their fishing tackle, put their canoes in proper condition or built new ones, and replaced the weirs and fish-traps that had been carried away by the winter ice and storms. The latter were placed across the mouths of streams and along the banks of rivers and bays, and consisted of stakes driven side by side, "which they place almost erect, propped up by wooden bars, like buttresses," with "a space therein for the fish to pass, which find themselves caught at the fall of the tide in such numbers that the savages allow them to rot" (Lescarbot, 1914, pp. 236-237). These weirs were also sometimes made partly of stone, as was observed by the crew of the Marigold at the northern tip of Cape Breton Island in 1593 (Hakluyt, 1599-1600, Vol. 3, p. 192).

While preparing for the spawning runs the Micmac found a more than adequate subsistence fishing for the numerous shallow-water fish exposed by the melting ice. The most important of these was the winter flounder (ANAGWAACH), which occupies relatively cold shoal water from northern Labrador to Georgia, appearing in the southern part of its distribution only in winter. In the Gulf of St. Lawrence and along the coasts of the Maritimes the

winter flounder spawns in March and April; before this time it lives on mudflats in the low-tide zone, and in the mouths of rivers and estuaries, where it can be speared, caught on lines, or trapped in weirs (Bigelow and Welsh, 1925, pp. 501-507).

Our early sources give us the locations of a number of places noted for their abundance of flounders, namely: IPSIGIAG, Grand Paspebiac, or Paspebiac Harbor; the estuary of the LUSTEGOOCH or Restigouche river; the basin of the NEPIGIGOUIT or Nepisiguit river; the POGOMOTJG ("where holes are made for fishing") or Pokemouche river; the mouth of the LISTOGOTJITJG or Miramichi; ANAGOGATIG ("flounder place") or Isaac Harbor, below Canso on the east coast of Nova Scotia; PEPIGENISG ("passage") or Port La Tour; and Annapolis Basin (Denys, 1908, pp. 216, 212, 139; Dièreville, 1933, p. 114). Winter flounder probably occurred along the entire Gulf of St. Lawrence coast from Gaspé to Cape Breton, and in shallow water of the Atlantic coast of the Maritimes; in this latter area Dièreville mentions that the rivers were completely filled with them (Dièreville, 1933, p. 114). Denys (1908, p. 355) informs us that the flounder was harpooned with a shaft with "an iron pointed at the end, having a little tooth which keeps it from coming out when the fish is struck."

From the description given to us by Biard, the spawning runs of the Maritimes in precontact and early historical times must have been a most spectacular sight. We are told that:

...In the middle of March, fish begin to spawn, and to come up from the sea into certain streams, often so abundantly that everything swarms with them. Any one who has not seen it could scarcely believe it. You cannot put your hand into the water, without encountering them. Among these fish the smelt is the first; this smelt is two and three times as large as that in our rivers; after the smelt comes the herring at the end of April; and at the same time bustards, which are large ducks, double the size of ours, come from the South and eagerly make their nests upon the Islands. Two bustard eggs are fully equal to five hen's eggs. At the same time come the sturgeon, and salmon, and the great search through the Islets for eggs, as the waterfowl, which are there in great numbers, lay their eggs then, and often cover the Islets with their nests. From the month of May up to the middle of September, they are free from all anxiety about their food; for the cod are upon the coast, and all kinds of fish and shellfish; and the French ships with which they traffic, and you may be sure that they understand how to make themselves courted... (Biard, 1616; in JR., Vol. 3, pp. 79-80).

As stated by Biard, the smelt (*KĀKPASON'*) is the first fish to spawn in the Maritime Provinces. This fish lives pelagically in cold coastal waters during the summer months; during the first week in October they gather in harbors, bays, and estuaries;

and by the time of ice formation they are at the head of the tidewater, and can be caught through the ice throughout the winter. With the warming of the stream waters in the spring to a required 4° C., the smelt start their spawning run into freshwater—an event usually taking place in southern Nova Scotia and New Brunswick in the middle of March, and along the southern shores of the Gulf of St. Lawrence in June. The adult smelt return to the saltwater immediately after spawning, thus providing the natives at the river mouths with two opportunities to catch them (Ackerman, 1941, pp. 27-28; Bigelow and Welsh, 1925, pp. 143-147; Eddy, 1947, p. 93; La Gorce, 1923, p. 632; Rand, 1888, p. 241).

The smelt is followed by the alewife (Biard's "herring," the French-Canadian "Gaspereau," the Micmac SEGOONUMEKW), a cold water anadromous form which was exceedingly abundant in the early historical period, and about which one author wrote:

...Experience hath taught them at New Plymouth that in April there is a fish much like a herring that comes up into the small brooks to spawn, and when the water is not knee deep they will press up through your hands, yea thow you beat at them with cudgels, and in such abundance as is incredible... (La Gorce, 1923, p. 612).

Because of its temperature requirements the alewife does not run up streams in southern Nova Scotia until the middle of April, and up the streams of northern New Brunswick until May. The shad (UMSAMOO), a fish closely related to the alewife and

with similar habits, spawns somewhat later, running up the rivers of the Maritime Provinces and the Gulf of St. Lawrence around July (Ackerman, 1941, pp. 30, 34-38, 46; Bigelow and Welsh, 1925, pp. 107-110, 113, 124; Ekman, 1935, p. 121; Jespersen, 1936; 1944; La Gorce, 1923, pp. 607, 629; Rand, 1888, pp. 119, 231; Rostlund, 1952, pp. 254-255).

Following upon the heels of these smaller fish are such as the sturgeon (KOMKUDAMOO) and the salmon (PULAMOO). The first of these is a bottom feeder, spending the summer months along the shallow coast and in bays and estuaries. During the winter it migrates southward or into deeper water, but returns in the late spring to spawn in the rivers. The sturgeon may attain a length of 18 feet in old age; Denys implies that a more usual length for those of the Maritimes was between eight and twelve feet, while those which he describes as passing in and out of Nepisiguit Basin with the tide were "more than six feet in length" (Bigelow and Welsh, 1925, pp. 74-77; Denys, 1908, pp. 213, 353; La Gorce, 1923, pp. 607-609; Rostlund, 1952, pp. 248-249). The spring "run" of salmon mentioned by a number of early authors was not actually a spawning run at all, but merely a return to inshore and freshwater areas by the ocean-going salmon. The Atlantic salmon spawns in the upper reaches of the rivers of the Maritimes in October. The cold winter temperatures delay the hatching of the eggs until the following spring, and the fry or "parr" remain in freshwater from one to six years. Upon

reaching tidewater these lose their barred and spotted pattern and become silvery, then being known as "smolts." After remaining in the river mouths and estuaries for a considerable period of time the smolts disappear to sea and join the adult salmon population, which carries out seasonal migrations and occupies inshore regions during the spring in pursuit of the smaller spawning fish (Ackerman, 1941, pp. 29-30; Bigelow and Welsh, 1925, pp. 130-138; La Gorce, 1923, pp. 631-632; Rostlund, 1952, pp. 258-259).

In the Micmac territory the rivers with the largest drainage, and the largest salmon runs, were along the Gulf of St. Lawrence coast—the Restigouche, the Nepisiguit, the Miramichi, and the Richibucto. In Nova Scotia the most important salmon river was the Tusknet.

By late April and the beginning of May the cod (^UPEJOO) appeared off the coast, and with them the fishing fleets. Since these fish are not anadromous, but merely approach the coast when the water has warmed somewhat in pursuit of the smaller species, it is somewhat doubtful whether they ever played a major part in the native economy, although some were undoubtedly taken by weir, line, and harpoon. At about the same time that the cod appeared other fish also became available to the Micmac, such as the American plaice, the various skates (^UKEGUNALOOECH^U), brook trout (ADAGWAASOO), and striped bass (CHEGAOO). The skates inhabit levels from 20 to 50 fathoms during the winter, but move

up to shoalwater and tidelevel in May, to remain there during the summer, autumn, and early winter months. When in shallow water they can be taken in weirs, on hand lines, or by harpoon. The plaice has roughly similar habits, except that it prefers water below 10 fathoms and therefore must be taken by line. The brook trout is largely a freshwater fish, but certain individuals or populations have the habit of running downstream at the end of autumn and wintering in the coastal saltwater—passing upstream again in May. These "sea-trout" may weigh as much as three or four pounds, opposed to the usual half-pound of the freshwater representatives. The striped bass inhabits shallow water which may be either salt, brackish, or fresh. Along the southern coast of Nova Scotia and New Brunswick it enters brackish water to spawn in the month of May; within the Gulf of St. Lawrence this usually happens in June. It can be taken through the ice throughout the winter, however, and in certain places, such as Antigonish, constituted a major food resource (Bigelow and Welsh, 1925, pp. 58-63, 66-140, 251-256, 482-491; Frost, 1940, pp. 12-15; Rostlund, 1952, pp. 260-261).

Still later in the fishing season, during the latter part of May and the beginning of June, a number of other fish approach the coast, namely: the whiting or silver hake (NĀGĀBETŪLOW'), the white perch, the mackerel (AMĻAMEKKW'), and "elvers" or young eels (KATEL) returning to freshwater. None of these fish are anadromous; the eel, in fact, is catadromous, ordinarily living

living in freshwater, but running down to saltwater in the autumn to spawn in the open ocean in midwinter and to die there. The whiting and the sea perch live in shallow water during the summer months and can be taken by harpoon or line. The mackerel approaches the coast during the summer to feed upon smaller there; the St. Lawrence Iroquois whom Cartier met at Gaspé took it in nets and the Micmac may have obtained it in their weirs (Bigelow and Welsh, 1925, pp. 188-208, 78-83, 257-259, 386-396, 446-454; Townsend, 1923, p. 159).

The principal methods used by the Micmac for catching and securing for their own use some part of this enormous marine population were the weir, fish traps, the harpoon, and the hook and line. The nature and construction of the weir has already been given; this implement was used primarily to capture such ground fish as flounders, skates, sturgeons, cod, tomcod, white and squirrel hakes, sculpins, and plaice, as well as tidewater fish such as young salmon (smolts), brook trout, smelt, male eels, striped bass, and the sea perch. For the spawning runs the Micmac relied upon fish traps, about which we are told,

...at the narrowest place of the rivers, where there is the least water, they make a fence of wood clear across the river to hinder the passage of a fish. In the middle of it they leave an opening in which they place a bag-net

like those used in France, so arranged that it is inevitable the fish should run into them. These bag-nets, which are larger than ours, they raise two or three times a day, and they always find fish therein. It is in spring that the fish ascend, and in autumn they descend and return to the sea. At that time they placed the opening of their bag-net in the other direction... (Denys, 1908, p. 437).

For such large fish as the sturgeon and the salmon, as well as for the sea or brook trout and the striped bass, the Micmac seem to have preferred to use the harpoon. Denys tells us that,

...it [the sturgeon] is taken with a harpoon, which is made like a barbed rod, of eight to ten inches long, pointed at one end, and with a hole at the other in which is attached a line. Then it is fastened at the end of a pole, so that it may be used as a dart. The fishery is made at night. Two Indians place themselves in a canoe; the one in front is upright, with a harpoon in his hand, the other is behind to steer, and he holds a torch of birch bark, and allows the canoe to float with the current of the tide. When the Sturgeon perceives the fire, he comes and circles all around, turning from one side to the other. So soon as the harpooner sees his belly, he spears it below the scales. The fish, feeling himself struck, swims with great fury. The line is attached to the bow of the canoe, which he drags along with the speed

of an arrow. It is necessary that the one in the stern shall steer exactly as the Sturgeon goes, or otherwise it will overturn the canoe, as sometimes happens. It can swim well, but with all its strength it does not go with fury more than a hundred and fifty or two hundred paces. That being over, the line is drawn in, and it is brought dead against the side of the canoe. Then they pass a cord with a slip-knot over the tail, and they draw it thus to land, not being able to take it into the canoe because it is too heavy... (Denys, 1908, pp. 353-354).

This method of fishing with torches, known as ŠĀKSEGŪĀ', was also used for salmon and sea trout when these were in fresh-water ponds and lakes. Denys states that 150 to 200 salmon could be taken in a single night by this method. He also states that the Indians at Antigonish harpooned bass with lances fastened to a shaft some seven feet in length, "and in an hour they load a canoe with them, which means about two hundred of these fish" (Denys, 1908, pp. 436-437, 173).

We have only slight information concerning the Micmac use of the hook and line, but the little we have seems to indicate that this item was aboriginal among these people. Not only are fishhooks found in the archaeological sites of the area, but cognates for the native term are to be found in the other Algonquian languages (Micmac, ŪMKŪGŪN; Malecite, ŪMKĪKŪN;

Massachusetts HOQUAÛN or UHQÛH; Penobscot MEGI'KAN; Delaware, AMAN; Abnaki CHAWAPENIGAN or CHAWPENIGAN; and Cree QUASQUIPIT-CHEGUN—Rand, 1888, p. 133; Chamberlain, 1899, p. 31; Williams, 1936, p. 116; Speck, 1940, p. 86; Zeisberger, 1887, p. 96; Laurent, 1884, p. 48; Harmon, 1820, p. 390). The use of hooks and lines is mentioned only casually in the textual sources, in one reference Le Clercq seems to imply that the manufacture of these items was often a children's occupation (Le Clercq, 1910, p. 92).

Besides the bony fish just considered, the coming of spring and summer also enabled the Micmac to take advantage of many different kinds of invertebrates, including whelks, oysters (NUMTUMOO'), scallops (SAKSKALAAS), the quahog or hard clam (UPKWAASK or BOOGOONUMOWAAS), the soft clam (A'SUK), and the common squid (SEDAASOO'), as well as the American lobster (WOLUMKWECH') and the northern crab (NUMJINEGECH'). Aboriginal use of the whelk is known only from its occurrence in shellheaps at Cape Tormentine, on the mainland opposite Prince Edward Island (Goodwin, 1893). The use of the oyster has a split distribution since this animal has been absent (in recent times) from the cold waters of the Atlantic coast of Cape Breton and Nova Scotia, but is to be found along the southern shore of the Gulf of St. Lawrence, in the Bras D'Or Lakes of Cape Breton Island, in a few harbors of the coast of Maine, and southward from Cape Cod. In those areas where it was present it seems to have been of great importance. Denys for example, referring to a small cove

near TLAGATIG or Tracadie, informs us that,

...there are [there] ponds of salt water in which are found quantities of good Oysters which are very large, and of Mussels in yet greater abundance...Inside is an island which separates a large bay into two, into which fall two streams. Here is found also an abundance of Oysters and Mussels...Muddy sands are formed where are found quantities of shell-fish of all kinds good to eat. This forms the chief subsistence of the Indians during the spring...

(Denys, 1908, p. 171).

Since we know from other sources (e.g., Lescarbot, 1914, p. 172) that the Indians did not eat mussels, Denys' statement applies to the oysters.

The distribution of the clam is similar to that of the oyster, being found in the relatively warm water of the southern Gulf of St. Lawrence and in the Bras D'Or Lakes of Cape Breton, but not in the colder water of the Atlantic coast of Nova Scotia or New Brunswick. The aborigines seem to have used the fleshy parts for food, and the shell for making wampum and other shell objects.

An interesting fishing technique was used to obtain squid. Denys tells us that the Indians waited for a high tide at night, at which time they would build a fire at the water's edge. The squid would be attracted by the light and would approach, only

to be stranded on the shore when the tide ebbed. This method worked only with young squid, the adults keeping to deep water (Denys, 1908, p. 355). Lobsters were taken with the same kind of harpoon as used for flounders (Denys, 1908, p. 356).

For the Micmac, the spring and early summer was not only a time of spawning runs, but also of bird migrations, at which time the not-inconsiderable resident bird population was supplemented by great hordes of northward moving species. Within the Maritime Peninsula the resident bird population included gannets (Moris bassana), black ducks (Anas rubripes), red-breasted mergansers (Mergus serrator), ruffed grouse (Bonasa umbellus), the great black-backed gull (Laris marinus), the herring gull (Larus argentatus), common murrelets (Uria aalge), Atlantic puffins (Fractercula arctica), great horned owls (Bubo virginianus), and barred owls (Strix varia). The spring migration brought such forms as the common loon (Gavia immer), great blue herons (Ardea herodias), American bitterns (Botaurus lentiginosus), Canadian geese (Branta canadensis), common brants (Branta bernicla), white-winged scoters (Melanitta deglandi), ospreys (Pandion haliaetus), American woodcocks (Philohela minor), Wilson's snipes (Capella delicata), razor-billed auks (Alca torda), and guillemots (Uria lomvia), most of which also nested within the area. From the descriptions available to us the migrant bird population must have been staggering. Denys, for example, found that at nesting time in Halifax Harbor there was,

...so great an abundance of all the kinds I have named [Wild Geese, Brant, Ducks, Teal, white and gray Geese, large and small Snipe, Plover, Curlews] that all my crew and myself, having cut clubs for ourselves, killed so great a number, as well of young as of their fathers and mothers, which were very sluggish in rising from their nests, that we were unable to carry them all away. And aside from these the number of those which were spared and which rose into the air, made a cloud so thick that the rays of the sun could scarcely penetrate it... (Denys, 1908, pp. 156, 141-142);

while at Nepisiguit there were,

...so great a quantity of Wild Geese, Ducks, and Brant... that it is not believable, and they all make so great a noise at night that one has trouble to sleep... (Denys, 1908, p. 212).

Both Lescarbot (1914, p. 172) and Biard (1616; in JR., Vol. 3, p. 81) attest to the importance of bird eggs during the spring, and to the aborigines' habit of collecting them from the offshore islands. Le Clercq confirms this, telling us also with reference to the ruffed grouse that "the hunting of them is easy, especially in Spring, when they seek to lay their eggs; because then they make a noise, by beating their wings, and this reveals them to the hunter. And they are so little wild that one can drive them like chickens before him; and they

even allow themselves to be approached near enough to permit one to extend a noose attached to the end of a pole, through which they pass the head, and thus render easy this method of capture" (Le Clercq, 1910, p. 281).

Besides the use of the head snare just described by Le Clercq, we must also note bird-stalking and night-clubbing. Lescarbot (1914, pp. 230-231) presents us with information concerning the former, telling us that,

...they creep along the grass, and assail the outards, or wild geese, which in the spring-time and in summer graze along the meadows. Sometimes also they glide softly, and without noise, in their canoes and light vessels of bark, to the shores where the ducks and other water-fowl are, and there strike them down...

Denys implies that this manner of bird hunting was only for children, however (Denys, 1908, p. 434), and proceeds to the description of another (and presumably more important) method:

...In certain closed coves which are under cover from the wind, the Wild Geese, the Brant, and the Ducks go to sleep out upon the surface, for on land they would not be safe because of the Foxes. To those places the Indians went, two or three in a canoe, with torches which they made of Birch bark; these burn more brightly than torches of wax. Reaching the place where all these birds are,

they laid down in the canoe, which they allowed to drift without their being seen. The current carried them right into the midst of all these birds, which had no fear of them, supposing them to be logs of wood which the sea was carrying from one place to another, something that often happens, which makes them accustomed to it. When the Indians were in their midst they lighted their torches all at once. This surprised the birds and obliged them all at the same moment to rise into the air. The darkness of the night makes this light very conspicuous, so that they suppose it is the sun or other [such] thing. They all proceeded to wheel in confusion around the torches which an Indian held, always approaching the fire, and so close that the Indians, with sticks they held, knocked them down as they passed. Besides, by virtue of much wheeling about, these became dizzy, so that they fell as if dead; then the Indians took them and wrung their necks. As a result in a single night they filled their canoes... (Denys, 1908, pp. 435-436).

Besides fish, mollusks, and sea-birds, the sea also provided the Micmac with sea-mammals such as whales, dolphins, porpoises, walruses, and seals, although not all of these were pursued. Evidence exists that our Indians did hunt some of the smaller whales such as the white whale and the common blackfish, as well as the Atlantic walrus, the harbor seal, and the gray seal, and it is possible that other dolphins and porpoises and the harp and hooded seal may also have to be added to this list.

these mammals the harbor seal was probably the most common, and was probably the most used by the natives. We are told that they occurred along the entire coast, and that "in good weather they are found ashore on a sandy coast, or indeed upon the rocks, where they sleep in the sun...There are places where they land with two to three hundred in a band." At these places they were avidly pursued by the Indians, who found them good eating. Furthermore:

...An oil is obtained from them unlike that of the other Seals. This oil is to the Indians a relish at all the feasts they make among themselves. They use it also to grease their hair... (Denys, 1908, p. 349).

With the passing of summer and the beginning of autumn, the southward bird migrations began, presenting the Micmac with even more varieties than in the spring. The first birds to appear included the pied-billed grebe (Podilymbus podiceps), the semipalmated plover (Charadrius semipalmatus), the black-bellied plover (Squatarola squatarola), the Hudsonian curlew (Phaeopus hudsonicus), the Eskimo curlew (P. borealis), the willet (Catoptrophorus semipalmatus), the lesser yellow-legs (Totanus flavipes), and the knot (Calidrus canutus). These were followed in September by the common golden-eye (Glaucionette clangula), the passenger pigeon (Ectopistes migratorius), the yellow rail (Coturnicops noveboracensis), and the American

golden plover (Pluvialis squatarola). The month of October saw the appearance of the black-crowned night heron (Nycticorax nycticorax), the Canadian goose, the mallard (Anas platyrhynchos), the baldpate (Mareca americana), the green-winged teal (Nettion carolinense), the bufflehead (Charitonette albeola), the lesser scaup (Nyroca affinis), the American scoter (Oidemia americana), the mourning dove (Zenaidura macroura), and the dowitcher (Limodromus griseus). Of these, the Canadian goose, the common brant, the mallard, the green-winged teal, the passenger pigeon, the mourning dove, the plovers, the curlews, and the lesser yellow-legs were present in great enough numbers to be economically important.

With the passing of summer and the beginning of autumn the Micmac's way of life saw a reorientation towards the interior. As Biard tells us:

Now our savages in the middle of September withdraw from the sea, beyond the reach of the tide, to the little rivers, where the eels spawn [sic], of which they lay in a supply; they are good and fat. In October and November comes the second hunt for elks [sic-moose] and beavers; and then in December (wonderful providence of God) comes a fish called by them ponamo [tomcod], which spawns under the ice. Also then the turtles bear little ones, etc... (Biard, 1616; in JR., Vol. 3, p. 83).

At this same time, the adult salmon were returning downstream after having spawned, the autumn bird migrations were under way, the male moose were in rutting mood and could be "called," and the bears were fat in preparation for their winter hibernation.

Although our early historical sources mention the use of eels by the Micmac, we lack descriptions of the methods by which they were collected, and are forced to fall back upon more recent ethnographical and philological materials. Rand (1888) presents us with the following list of terms relating to eel-fishing:

KADABE, KADĀWAABE: an eel-pot.

TA'GĀLAKŪN: the jaws of an eel-pot.

KADAAGĀ: to fish for eels.

NADOOEI': to spear eels in the mud in winter.

ALGOOME: hunting for something in the water; to fish
for eels (spearing them);

from which we may conclude that the Micmac of Rand's time secured eels by eel-trap and harpoon. From an illustration given by Speck (1922, Pl. XXVIII) we learn that this harpoon was of the leister type.

After a supply of eels had been secured and preserved, the Micmac turned their attention to the moose. To hunt these at this time the hunters had to depend heavily upon stratagem

and surprise, for at this time the animals could not be run down as in the winter.

...The Indians knew approximately the places where they could be found. In those localities they beat the woods, going from one part to another to find their tracks. Having found one they followed it, and they knew by the track, and even from the dung, whether it was male or female, and whether it was old or young. By its track they knew also whether they were near the beast; then they considered whether there was any thicket or meadow near by where the beast would be likely to be, judging from the direction it was taking. They were rarely mistaken. They made a circle around the place where it was, in order to get below the wind so as not to be discovered by the Moose. They approached it very softly, fearful of making noise enough to reveal themselves to it. Having discovered it, if they were not near enough they approached closer until within arrow-shot, which is from forty-five to fifty paces. Then they launched their blow against the beast, which rarely fell to a single arrow. Then it was necessary to follow its track. Sometimes the beast would stop, hearing no more noise. Knowing this from its pace, they went slowly and tried to approach it yet again, and gave it still another arrow-shot. If this did not make it drop, they had again to follow it, even to evening, when they camped near the beast, and in the morning went again to take up

the track. The animal being sluggish in rising because of the blood it had lost, they gave it a third shot, and made it drop, [thus] accomplishing the killing. They then broke off some branches to mark the place, in order to send their wives to find it... (Denys, 1908, pp. 426-427).

Le Clercq states that the Indians also captured moose by the use of snares or nooses made from large leather thongs set in game-paths (Le Clercq, 1910, p. 276). The most successful method, however, was that of moose-calling, which could only be employed at this time.

...The hunters, knowing the place on the river where it [the moose] is accustomed to resort when in heat, embark at night in a canoe, and, approaching the meadow where it has its retreat, browses, and usually sleeps, one of them imitates the cry of the female, while the other at the same time takes up water in a bark dish, and lets it fall drop by drop, as if it were the female relieving herself of her water. The male approaches, and the Indians who are on the watch kill with shots from their guns. The same cunning and dexterity they also use with respect to the female, by counterfeiting the cry of the male... (Le Clercq, 1910, p. 276).

The Micmac used their own aboriginal breed of dog (LUNSUM) for moose hunting, particularly in winter, but also at other times.

These dogs were relatively small (compared to European dogs), having narrow heads, long noses, large teeth, and a howl instead of a bark. From the descriptions available, they seem to have been used chiefly to track down and to worry the game, and were very highly prized (Butler and Hadlock, 1949; Denys, 1908, pp. 428-431; Le Clercq, 1910, pp. 275-276; Lescarbot, 1914, p. 221).

In summer and autumn beavers were usually taken in traps, of which the deadfall was the most common. Another method, however, was to break the dams and to lower the water in the reservoir until the houses showed completely, at which point the beavers could be shot relatively easily with arrows. The demands of the fur trade were such that the Indians preferred to hunt the beavers in the winter—a much more difficult task, as we shall see. Before the contact period the Indians,

...never made an accumulation of skins of Moose, Beaver, Otter, or others, but only so far as they needed them for personal use...They killed animals only in proportion as they had need of them... (Denys, 1908, p. 426).

The Indians seem to have been amused by the French passion for beaver skins, for on one occasion one told Le Clercq:

...Tahoe messet kogouar pajo ne daoul dogouil mkobit.

"In truth, my brother, the Beaver does everything to perfection. He makes for us kettles, axes, swords, knives,

and gives us drink and food without the trouble of cultivating the ground."

The Micmac also felt that the beavers had sense and formed a separate nation, for they said that,

...they would cease to make war upon these animals if these would speak, howsoever little, in order that they might learn whether the Beavers are among their friends or their enemies... (Le Clercq, 1910, p. 277).

Besides moose and beaver, the Micmac also hunted bear, otter, muskrat, and caribou during the autumn months, although the hunt for the latter offered great difficulties in this season since the favorite localities of these animals, the swamp barrens, were very wet at this time and the animals remained in the shrubby margins where it was impossible to track them. Also, at this time the bears were very fat in preparation for their winter hibernation, and were a great treat. The Micmac hunted them at this time by tracking them down; our sources fail to mention whether or not dogs were used for this purpose (Denys, 1908, p. 433; Dashwood, 1871, pp. 99-100).

With the passing of December and the end of the tomcod harvest, many of the Micmac entered the most trying period of the year, during which it was necessary for them to subsist

almost entirely upon the products of the chase.

...In January they have the seal hunting; for this animal, although it is aquatic, nevertheless spawns upon certain Islands about this time. Its flesh is as good as veal; and furthermore they make of its fat an oil, which serves them as sauce throughout the year; they fill several moose-bladders with it, which are two or three times as large and strong as our big-bladders; and in these you see their reserve casks. Likewise in the month of February and until the middle of March, is the great hunt for Beavers, otters, moose, bears (which are very good), and for the caribou, an animal half ass and half deer. If the weather then is favorable, they live in great abundance, and are as haughty as Princes and Kings; but if it is against them, they are greatly to be pitied, and often die of starvation. The weather is against them if it rains a great deal, and does not freeze over, for then they cannot put their dogs upon the chase, because they sink down; the savages themselves do not do this, for they wear snowshoes on their feet which help them to stay on top; yet they cannot run as fast as would be necessary, the snow being too soft... (Blair, 1616; in J.R., Vol. 3, p. 79).

The most important seal hunting site of the Micmac country seems to have been at the Seal Islands off Cape Sable Island at

the southeastern tip of Nova Scotia, where, as Denys states, the seals came "for lying-in about the month of February; they climb out upon the rocks, and take positions around the islands where they give birth to their young." Ganong identifies the species concerned as the gray seal (harbor seal), but this seems to be an error since this animal whelps during the months of September, October, and November while that described by Biard and Denys whelped during the months of January and February. This whelping date points rather to the hooded and harp seals; at present these do not occur in this region but we have good reason to think that they did in the prehistoric and early historic (Bartlett, 1927, pp. 207-212; Cahalane, 1947, pp. 308-313, 316-318; Denys, 1908, pp. 130-131; Ganong, in Denys, 1908, p. 349, fn.; and Le Clercq, 1910, pp. 283-284).

With the end of the whelping season and the disappearance of the seal herds most of the Micmac were reduced to dependence upon land game, and upon whatever remained of their stores of dried and smoked eels and fish, and of ground nuts. As stated by Biard, the Micmac depended upon a fortunate combination of good luck and good weather; if these failed they were faced with the dread spectres of *OWOOLÂKÛMOOËJIT* and *CHËNÔO* (famine and cannibalism). With the establishment of French settlements and posts they often found it necessary to turn to them for aid in surviving the months of February and March.

In winter the Micmac method of hunting was by snowshoe, with the hunters forcing the game to travel and fatigue itself in the deep snows while they moved relatively unhindered across its surface. This method worked best with moose, less well with caribou, and not at all with beaver.

As stated before, the necessary conditions for a successful hunt were heavy snow and a surface crust, for at this time the Indians and their dogs had no trouble in staying on the surface, while the moose found the going very difficult. The game was located by watching for places where the tender year-old twigs of alder, aspen, birch, striped maple, mountain ash, or shrubs, had been nibbled. The moose were usually not too far distant and were approached directly and openly. If there was only one, the Indians gave chase immediately, wearing it out and closing the gap between it and them until they were close enough to spear it with their moose-lance, which was armed with a large pointed bone. If there were several, the Indians took advantage of the mooses' habit of "yarding," that is, of following each in single file along a widely circular path. One Indian would chase the herd along the "yard," while the others would lie in ambush along it and spear one of the moose on each circuit—eventually killing all (Denys, 1908, pp. 428-429; Le Clercq, 1910, pp. 274-276; Lescarbot, 1914, pp. 221-222).

In contrast with the case with moose, the winter hunt for beaver was extremely difficult, although necessary since the

coats were at their best in this season. According to Le Clercq,

...the following is necessary; one must break the ice in more than forty or fifty places; must cut the dams; must shatter the houses; and must cause the waters to run off, in order to see and more easily discover the Beavers. These animals make sport of the hunter, scorn him, and very often escape his pursuit by slipping from their pond through a secret outlet, which they have the instinct to leave in their dam in communication with another neighbouring pond... (Le Clercq, 1910, p. 280).

Denys' description of the winter beaver hunt is so complete and brief that we can add little and delete less. We may therefore consider it here in its entirety.

As for that [hunting] of the Beavers, it also was done in winter with Dogs, but they were only used to find the houses in which they smelled the Beavers through the ice. Having found them, the Indians cut through the ice and made a hole large enough to let through a Beaver. Then they made another hole twenty-five or thirty paces away, on the open surface of the lake. In this place an Indian or two took their stand with a bow and an arrow which has a harpoon of bone at the end, made like a barbed rod, like that which was used in fishing the

Sturgeon, but smaller. It has also a cord to which it is attached at one end, and the Indian took hold of the other. Everything being ready, another Indian went to the other near the house of the Beavers. Lying down on his belly upon the ice, he placed his arm through the hole to find the Beavers' opening, that by which they place their tail in the water. There they are all arranged one against the other, that is to say, all those of one Beaver family. Having found them, the Indian passed his hand very gently along the back of one several times, and, approaching little by little to the tail, tried to seize it.

I have heard it said by the Indians that they have kept the arm so long in the water that the ice froze all around the arm. When they once seized the tail they drew the Beaver all at one swoop out from the water upon the ice, and at the same time gave it the axe upon the head. They killed it for fear lest the Beaver bite them, for wherever these set their teeth they take out the piece. Having thus drawn one out they tried to obtain another, which they did in the same way, rubbing them gently. That does not put them to flight, for they imagine they are touching one another. But nevertheless three or four of them having been removed, the remainder take to flight and throw themselves into the water. Not being able to remain long with breathing, the daylight which

shows over the hole out on the surface leads them to go there to get the air. The other Indians who are there in ambush, so soon as they appear, give them an arrow shot; the harpoon, which has teeth, holds in some part of the beaver from which it cannot be drawn out. The cord is then pulled and the Beaver is drawn out through the hole; then they raise it upon the ice and kill it. Some time after there comes another which is taken in the same way. Few in a house are saved; they would take all. The disposition of the Indians is not to spare the little ones any more than the big ones. They killed all of each kind of animal that there was when they could capture it. It is well to remark here that they were more fond of the young than of the grown of various species of animals, whatever these might be, to such a degree that often when they were chasing two Elks [moose], male and female, they quitted the male if they perceived that the female was pregnant, in order to obtain the young ones, for ordinarily they carry two, and it is for them a great dainty... (Denys, 1908, pp. 431-433).

Lescarbot and Dièreville both mention variations of this technique. According to the former, the Indians, after making the hole at the beavers' house, would go over the lake pounding upon the surface of the ice with sticks, frightening the beavers into returning to their houses, where they were caught

by the method previously described (Lescarbot, 1914, p. 224).

Dièreville tells us that the hunters smashed the beavers' house with their axes,

...& the Beavers are forced to abandon them, & escape to the borders of the Lake, where they conceal themselves between the ice & the bank, on which they lie upon their bellies; but in vain do they seek immunity from death in this way; the Hunters set their Dogs to search all around the Lake, & they have such good noses that they never fail to smell them, & indicate the place by stopping; then the ice is shattered with great strokes of the axe. It is rather surprising that the Beavers do not flee from the noise thus made as they would under other circumstances. When the holes are cut, the animals are uncovered, caught by their tails, dragged out, and their heads broken with blows from an axe... (Dièreville, 1933, p. 134).

It is doubtful whether this method is older than the use of iron axes of weight suitable for frequent and rapid ice-breaking.

The Micmac also used their dogs to locate bear dens, whose inmates were routed out, if necessary, and dispatched with spears and arrows. The smaller fur-bearing game, such as muskrats, otters, mink, martens, fishers, and lynxs, was taken by means of traps, usually of the "dead-fall" variety.

A few general remarks need to be made concerning the Micmac hunting complex. We are told by Lescarbot (1914, p. 220) that their most important food source was fish, that this was followed by moose and then by beaver. Fishing activities (including sea-mammal hunting) dominated the Micmac way of life during the late spring, summer, autumn, and early winter; hunting dominated their way of life only during the months of February and March. Within the hunting complex, the fact that moose and beaver were of primary importance has several interesting implications. Both of these animals are residents of the hydrosere and are comparatively non-migratory—thus contrasting sharply with the nomadic forest bison and caribou of the xerophytic central boreal forest. We find that the tribes of the eastern hydrophytic boreal forest were characterized by localized and areally limited family or band "hunting territories," within which each band practised a form of conservation. Among the Micmac these territories were reassigned each year, for Le Clercq (1910, p. 287) informs us that,

...It is the right of the head of the nation, according to the customs of the country, which serve as laws and regulations to the Gaspeians, to distribute the places of hunting to each individual. It is not permitted to any Indian to overstep the bounds and limits of the region which shall have been assigned him in the assemblies of the elders. These are held in autumn and spring

expressly to make this assignment...

Although we have no evidence to support us, we may expect that these assemblies were formal ceremonies in that they reassigned to extant bands and families those territories which they had traditionally used and were still using; their most important function, undoubtedly was the reapportionment of territory of defunct or extinct bands, and the granting of territory to new families or bands.

In the central and more xerophytic boreal forest hunting territories disappear—a fact which has caused an amazing amount of controversy and speculation among anthropologists. The latest and most definitive papers on this problem are those of Speck and Eiseley (1942) and of Cooper (1946, pp. 291-295).

Organization for Production

Our information concerning the ancient Micmac pattern of organization for the collection and conversion of foods and raw materials is exceedingly scanty. From scattered references appearing in the literature we conclude that the SAKUMON' or chief of each district was responsible for planning the seasonal movements of his people, for confirming and reassigning hunting territories, for delegating work to his immediate relatives, wives, children, slaves, and escort, and for providing these with hunting dogs, canoes, and provisions and reserves for bad

weather and expeditions. He also provided the young men of the band--the apprentice hunters--with food and provisions, taking their furs and game in return.

During the beginning of the historic period some of these functions--i.e., the assignment of hunting territories and decisions concerning the seasonal movements of the group--were also in the hands of the council of elders. From the available sources, the authority of this body seems to have declined much more rapidly during the contact period than that of the SAKUMOG or chiefs (Biard, 1616; in JR., Vol. 3, pp. 87-89; Le Clercq, 1910, pp. 234-235).

Within the different families the subsistence organization was strictly along sex lines, the men and boys engaging in hunting, fishing, and in the manufacture and repair of their equipment, while the women and girls transported the game back to camp, skinned it, cooked or preserved it, collected berries and herbs, as well as fire wood and water, dressed the skins, and made clothes, baskets, ornaments, wigwam coverings, and birchbark utensils (Le Clercq, 1910, pp. 419-424; Lescarbot, 1914, pp. 191-202).

Preparation and Preservation of Food

Among the Micmac preparation of food was usually the work of the women. The cooking methods were simple, involving boiling in birchbark vessels or in wooden containers (and

later in copper kettles), roasting over the fire or in the ashes, and baking under the coals. Before the advent of the French boiling was done in "little buckets or troughs of wood," or in large kettles burned and cut into the end of fallen trees. Denys tells us that these latter utensils were,

...made like a huge feeding-trough or stone watering-trough. To make it they took the butt of a huge tree which had fallen; they did not cut it down not having tools fitted for that, nor had they the means to transport; they had them ready-made in nearly all the places to which they went.

For making them, they employed stone axes, well-sharpened, and set into the end of a forked stick [where they were] well tied. With these axes they cut a little into the top of the wood at the length they wished the kettle. This done they placed fire on top and made the tree burn. When burnt about four inches in depth they removed the fire, and then with stones and huge pointed bones, as large as the thumb, they hollowed it out the best they could, removing all the burnt part. Then they replaced the fire, and when it was again burnt they removed it all from the interior and commenced again to separate the burnt part, continuing this until their kettle was big enough for their fancy, and that was oftener too big than too little... (Denys, 1908, pp. 401-402).

From a comment by Lescarbot (1914, p. 222) it would seem that some of these kettles were made in logs which were lying horizontally. Food was prepared in these vessels by the simple procedure of "stone boiling," which Denys (1908, p. 402), Le Clercq (1910, pp. 120-121), and Lescarbot (1914, Vol. 3, p. 222) all describe in considerable detail. Le Clercq adds that this was sufficient to prepare the food "for eating in the Indian manner, that is to say, half raw, as they eat it still to this day, and in a manner also wholly disgusting."

The introduction of copper kettles by the Europeans simplified cooking greatly for the Indians, but did not fundamentally change their recipes.

...Our Gaspeians never clean their kettles except the first time they use them, because, they say, they are afraid of the verdigris, which is in no danger of attaching itself to them, when they are well greased and burnt. Nor do they ever skim it off, because it seems to them that this is removing grease from the pot, and just so much good material is lost. This causes the meat to be all stuffed with a black and thick scum, like little meat balls which have nearly the appearance of curdled milk. They content themselves with removing simply the largest moose hairs, although the meat may have been dragged around the wigwam for five or six days, and the dogs also may have tasted it beforehand... (Le Clercq, 1910, p. 121).

This passage from Le Clercq implies that one great delicacy of the Micmac was oil or grease, and our other sources fully confirm this. Denys tells us explicitly that,

...there was formerly a much larger number of Indians than at present. They lived without care, and never ate either salt or spice. They drank only good soup, very fat. It was this which made them live long and multiply much...They often ate fish, especially Seals to obtain the oil, [which they used] as much for greasing themselves as for drinking; and [they ate] the Whale which frequently came ashore on the coast, and on the blubber of which they made good cheer. Their greatest liking is for grease; they eat it as one does bread, and drink it liquid... (Denys, 1908, p. 403).

One of the greatest of delicacies, however, was CACAMO. In order to make this the women,

...made the rocks red hot, placed them in and took them out of the kettle, collected all the bones of the Moose, pounded them with rocks upon another of larger, [and] reduced them to a powder; then they placed them in their kettle, and made them boil well. This brought out a grease which rose to the top of the water, and they collected it with a wooden spoon. They kept the bones boiling until they yielded nothing more, and with such

success that from the bones of one Moose, without counting the marrow, they obtained five to six pounds of grease as white as snow, and as firm as wax. It was this which they used as their entire provision for living when they went hunting. We call it Moose butter; and they Cacamo... (Denys, 1908, pp. 422-423).

A loaf of this CACAMO weighing some nine or ten pounds represented one of the finest gifts which a host could give to a guest. The residue or soup of the crushed bones "becomes as white as milk, and according to their idea, they believe it as good for the chest as a large glass of brandy, or as the best of our meat broths" (Le Clercq, 1910, p. 118).

To roast their meat, the Micmac cut it up into fillets, one for each member of the camp or family. These then took sticks, split them, placed the fillet within the split ends, and stuck the stick before the fire. As soon as part of the fillet was ready, it was eaten Eskimo-style; that is, it was bitten into, and the remainder cut off with a bone knife sharpened on stones or with an iron knife. The uncooked section was then returned to the fire, and as soon as all the meat from one stick was eaten another fillet was placed upon it--this being kept up all day (Denys, 1908, pp. 400-401).

Denys also informs us that,

...they had another method of roasting, with a cord of bark from trees, attached to a pole which extended across the top of their wigwam, or from one tree to another, or upon two forked sticks stuck in the earth. The meat was attached to the lower end of the cord, through which was thrust a stick with which it was twisted several turns. After it was let go, by this means the meat turned a long time first one side then the other to the fire. When it turned no longer, the cord was again twisted by means of the stick through its middle, and again allowed to go. The surface of the meat being cooked, they would bite the outside, and cut off the piece close to the mouth, continuing thus until the whole was eaten. They also roasted it upon coals... (Denys, 1908, p. 401).

A favorite delicacy prepared in this manner was the entire head of a young moose, called NIGAIQU or NEBEAJCO (Le Clercq, 1910, p. 120).

Fish were roasted upon split sticks made up in the form of a grill, or were placed upon the coals. Denys tells us that these had to be completely cooked before they were eaten (Denys, 1908, p. 401).

All these forms of roasted meat were, however, merely appetizers for the main course, which was always a soup or stew, as described earlier (Denys, 1908, p. 401).

On ordinary occasions each person in a wigwam did his own roasting, children included. The mistress of the wigwam took care of the kettle, although each helped himself—the men first, and the women and children later. For feasts, the cooking seems to have been done by the mistress of the wigwam and her subordinates, including slaves (Danys, 1908, p. 401).

The preservation of food was in the hands of the women, and particularly, in the hands of the mistress of the wigwam.

...She selects from the mass of intestines of this animal [moose] those which are the fattest; these she boils, after having washed them lightly, and she makes them finally into rolls, much like puddings and sausages. From these they make as a rule their most delicious desserts. She then cuts all the leanest and thinnest parts into slices, and preserves them by drying in the smoke, placing them upon poles which form a kind of little staging. This is in order to prevent the meat from spoiling and rotting. It is by this means that, without the use of salt, or any other spices,,they preserve it very readily for some time... (Le Clercq, 1910, p. 119).

The Micmac also smoked and preserved in this manner the meat of bears, eels, fish, and fowl (Smethurst, 1905, p. 372).

Although it does not seem that the Micmac practiced agriculture at the time of contact, they did use a number of

vegetable products. The most important of these was the ground nut (Apios tuberosa Moench. = A. americana Medic.), "a root which throws out a little green sprout, like the Veillée or Bindweed, which twines around that which it meets with but does not climb so high. Having met with it, if you dig at the foot you find the root, which has nuts as large as Chestnuts strung together like beads, the nuts being distant about half a foot from one another...They have the taste of Chestnuts when they are boiled, and they are called Chicamins" (Denys, 1908, pp. 397-398).

Both Lescarbot and Dièreville mention this plant; the former informing us that they were roasted and cooked in water (Lescarbot, 1914, p. 254). Such preparation was necessary, since the raw tubers "are somewhat tough, with a very viscid, milky juice, but of a pleasant sweetish, turnip-like taste. The young tubers may be eaten raw, but the viscid juice leaves an unpleasant rubber-like coating on the teeth and lips. This disagreeable quality is removed by roasting or by barboiling, with salt, and then roasting for a few minutes" (Fernald and Kinsey, 1943, p. 254). The Micmac also stored ground nuts for winter use, but we do not know how these were prepared (Parsons, 1925, p. 73; Beardsley, 1940).

The Indians also collected various kinds of berries in their season, but information upon this activity is almost completely lacking.

Although the Micmac usually drank liquids in the form of pure water or soup, they sometimes were able to enjoy maple sap. This they obtained,

...in the spring and autumn, when the tree is in sap, a gash is made about half a foot deep, a little hollowed in the middle to receive the water. This gash has a height of about a foot, and almost the same breadth. Below the gash, five or six inches, there is made a hole with a drill or gimlet which penetrates to the middle of the gash where the water collects. There is inserted a quill, or two end to end if one is not long enough, of which the lower extremity leads to some vessel to receive the water. In two or three hours it will yield three to four pots of the liquid. This is the drink of the Indians, and even of the French, who are fond of it... (Denys, 1908, pp. 380-381).

The boiling of maple sap to secure maple sugar does not seem to have been practiced in Acadia in Denys' time, although it is mentioned by both Le Clercq, writing in 1691, and Dièreville, writing from material collected in 1699 and 1700 (Le Clercq, 1910, pp. 122-123; Dièreville, 1933, pp. 117-118).

Biard tells us that the Micmac kept their smoked provisions, as well as roots, shelled acorns, and peas, beans, and prunes bought from the French, in tree-caches. These articles were placed in sacks, which were then tied up in large pieces of

bark, and these were suspended from "the interlacing branches of two or three trees, so that neither rats nor other animals, nor the dampness of the ground, can injure them" (Biard, 1616; in JR., Vol. 3, pp. 107-109). While it would thus seem that the Micmac could satisfactorily preserve food for use during the winter, a statement by Le Clercq seems to indicate that the amounts involved were not great, and not sufficient for any real emergency. Le Clercq tells us that,

...they are convinced that fifteen to twenty lumps of meat, or of fish dried or cured in the smoke, are more than enough to support them for the space of five to six months. Since, however, they are a people of good appetite, they consume their provisions very much sooner than they expect. This exposes them often to the danger of dying from hunger, through lack of the provision which they could easily possess in abundance if they would only take the trouble to gather it... (Le Clercq, 1910, p. 110).

It is not clear from this description whether this improvidence on the part of the Indians was an ancient trait, or one acquired by dependence upon the French settlers and fur traders.

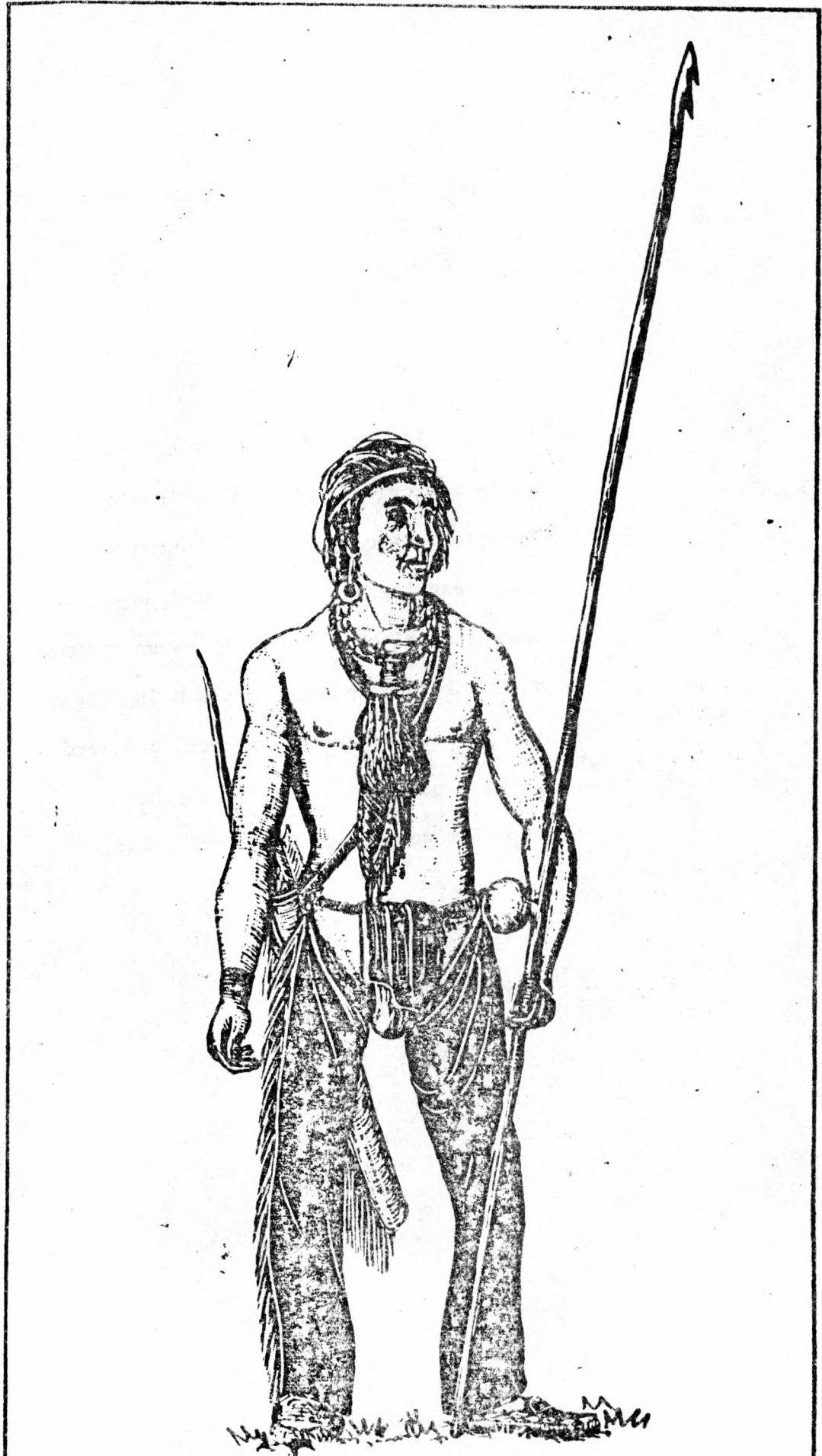
Dress and Ornament

For Micmac men of the early historic period the basic and minimum item of garb was the loin cloth—made of a "very supple and very thin skin" which was "tied in front to a leathern strap,

which passing between their buttocks joins at the back the other end of the said strap" (Denys, 1908, p. 412; Lescarbot, 1914, p. 131).

Besides this loin cloth the men also wore upon occasion cloaks made of the skins of moose, beaver, marten, bear, lynx, and seal, these being thrown over the shoulders and tied under the chin with strings of leather. This cloak arrangement was also worn passed over one shoulder and under the other, and, except during the severest part of the winter, taken off indoors. In addition to the loin cloth and cloak, Micmac men—and also the women—habitually wore buckskin leggings and moccasins. The leggings, which were worn for protection against the brush, thorns, and brambles of the forest, and also against the cold, were fastened to the belt and had no seat. They were made from a single piece of leather each, with the seam on the outside, and were fringed. The moccasins were of the woodland type, being made "of their old robes of Moose skin, which are greasy and better than new. Their moccasins are rounded in front, and the sewing redoubles on the end of the foot, and is puckered as finely as a chemise" (Denys, 1908, p. 412). The Micmac called these ~~MEZZIN~~ or 'MKUSŨN, whence probably derives the English term (Denys, 1908, pp. 411-412; Dièreville, 1933, pp. 166-167; Le Clercq, 1910, pp. 93-94; Lescarbot, 1914, pp. 131-133).

Fig. 8. Micmac male costume of the early historic period, reconstructed from contemporary sources. Shown are shell earrings and necklace; a dagger and personal bag (WIJEPODE), worn around the neck; loin cloth, buckskin leggings, and moccasins; arrows, quiver, bow, and club; a moose lance; and a leather bracelet worn about the right wrist.



The customary garment of the Micmac women seems to have been similar to that of the men, except that the skin cloak was worn in a somewhat different manner.

The women wear this robe in Bohemian fashion. The opening is on one side. They attach it with cords in two places, some distance apart, in such a way that the head can pass through the middle and the arms on the two sides. Then they double the two ends one above the other, and over it they place a girdle which they tie very tightly, in such a manner that it cannot fall off. In this manner they are entirely covered. They have sleeves of skin which are attached together behind. They have also leggings of skin, like stirrup stockings, without feet; the men wear these likewise (Denys, 1908, p. 412).

These garments were made of carefully dressed and tanned hides, usually of moose or caribou if the hair was to be removed.

To dress their skins, these are soaked and stretched in the sun, and are well-heated on the skin side for pulling out the hair. Then they stretch them and pull out the hair with bone instruments made on purpose, somewhat as do those who prepare a skin for conversion into parchment. Then they rub it with bird's liver and a little oil. Next, having rubbed it well between the hands, they dress it over a piece of polished wood made shelving on both sides just

as is done to dress the skins for making gloves upon an iron. They rub it until it becomes supple and manageable. Then they wash it and twist it with sticks many times, until it leaves the water clean. Then they spread it to dry.

For the skins dressed with the hair, these are only treated with the livers, with which they are well rubbed by hand; they are passed repeatedly over the sticks to dress them well. If they are not then soft enough, more of the livers is added and they are once more rubbed until they are pliable; then they are dried... (Denys, 1908, pp. 411-412).

In winter the covering of the men seems to have been somewhat more complete. Le Clercq (1910, p. 93) tells us that they wore coats that were "large and broad," by which possibly may have been meant the caribou-skin capote (QALI'BUA'ZI) known to have been used by the Micmac at a later date. These were also made of sealskin. In other regions they are known as "parkas," A-TIGE, or "dickies" (Speck, 1922, pp. 34-37). In any case, the early Micmac coats apparently had detachable sleeves, for Le Clercq tells us:

...the sleeves are not attached to the body, but are separate therefrom, and tied together by two thongs, separated into equal parts by an opening which serves for the passing of the head. One of these sleeves falls

in front, and covers only half of the arm; the other falls behind, and clothes the entire shoulders... (Le Clercq, 1910, pp. 93-94).

We have already given Denys' comment upon these separate sleeves in our quote dealing with women's wear.

This distinctive cultural trait—sleeves separate and distinct from the garment—has been described by Wissler (1915, pp. 71-82) as being characteristic of a wide intermediate zone between the area of "true sleeves" and that in which they are entirely lacking. This area includes the Plains Cree, the Ojibway, the Blackfoot, the Assiniboin, the Eastern Dakota, the Naskapi, the Pawnee, the Cheyenne, and the Iroquois. We must obviously add the Micmac to this distribution.

For such occasions as weddings and feasts the Micmac wore garments of the type just described, but made with skins prepared and decorated with greater care. Denys informs us that,

...for all these festivities of weddings and feasts they adorn themselves with their most beautiful clothes. In summer the men have robes of Moose skin, well dressed, white, ornamented with embroidery two fingers' breadth wide from top to bottom, both close and open work. Others have three rows at the bottom, some lengthwise, and others

across, others in broken chevrons, or studded with figures of animals, according to the fancy of the workman.

They work all these fashions in colours of red, violet, and blue, applied on the skin with some isinglass. They had bones fashioned in different ways which they passed quite hot over the colours, in a manner somewhat like that in which one gilds the covers of books. When these colours are once applied, they do not come off with water... (Denys, 1908, p. 411).

According to Le Clercq these decorations were put on in only four kinds of colors: red, white, black, and yellow. The red and yellow were probably derived from ochres; the white from powdered or burned shell; and the black either from bog manganese or charcoal. Another very vivid red used only in staining porcupine quills may possibly have been derived from the roots of bedstraw (Galium tinctorium Linn.)(Le Clercq, 1910, pp. 95-96).

Le Clercq also informs us that the ceremonial regalia of the Micmac, and the special items worn on formal occasions—such as certain collars, belts, and braaelets—were decorated "in a very simple manner with bead-sork and with quills of porcupine, which they colour in red or in yellow, according to their taste and fancy" (Le Clercq, 1910, p. 95). Dièreville (1933, p. 167) tells us that moccasins were decorated with dye and "an edging of red & white Porcupine quills; but these are only for sale to

those who wish to procure them for display in their Land." In other words, the Micmac were already creating items for sale to tourists.

From a legend collected in the 19th century, but apparently referring to the 17th century, it would seem that European trade items played an important part of the costume of some Micmac warriors. The legend deals with a war between the Micmac and the "Canibas" or Indians of Kennebec, and tells us that after the peace had been concluded the Micmac and the Canibas engaged in games and in gambling, in the course of which the latter lost heavily:

After the games were ended, the Kenebek chief gives the word: Hoogoo elnumook! ("Now pay the stakes!") A large blanket is spread out to receive them, and the Kenebeks strip themselves of their ornaments, and cast them in; the following articles were enumerated by the historian: 'mchoowāle (epaulets), pūgalāk (breastplates), niskūmūl (brooches), nasaboodākūn (nose-rings), nasogwadākūnūl (finger-rings), nasūmīgūnūl (a sort of large collar loaded with ornaments, more like a jacket than a collar), epelākūnūl (hair-binders), egatepesoon (garters, sometimes made of silver, as in the present case), ahgwēsūmabel (hat-bands). These articles were piled in, and the blanket filled so full that they could scarcely tie it; then another was put down, and filled as full... (Rand, 1894, pp. 181-182).

Lescarbot tells us that none of the Micmac wore hats of their own make, and that those that they had were derived from the French. In place of hats they decorated the hair itself:

To distinguish the men and the women from the boys and the girls by their ornaments; the first have the hair cut below the ears. The boys wear theirs of full length; they tie it in tufts on the two sides with cords of leather. The dainty ones have theirs ornamented with coloured Porcupine quills. The girls wear theirs also full length, but tie it behind with the same cords. But the belles, who wish to appear pretty, and who know how to do good work, make ornamental pieces of the size of a foot or eight inches square, all embroidered with Porcupine quills of all colours. It is made on a frame, of which the warp is threads of leather from unborn Moose, a very delicate sort; the quills of Porcupine form the woof which they pass through these threads, just as one makes tapestry, and it is very well made. All around they make a fringe of the same threads, which are also encircled with these Porcupine quills in a medley of colours. In this fringe they place wampum, white and violet. They make of it also pendants for the ears, which they have pierced in two or three places....Such is the ornamentation of the girls. As soon as they are married, the mother in delivering them to their husbands, cuts their hair. This is the symbol of marriage, as it is also for the husband... (Denys, 1908,

pp. 414-415).

In Lescarbot's description of Micmac hairstyle, which apparently also applies to the married adults, we are told that "both men and women wear their hair loose upon their shoulders, unbound and untied, save that the men tie a knot of them upon the crown of the head, some four fingers long, with a leather lace, which they let hang down behind" (Lescarbot, 1914, pp. 133-134).

Le Clercq's account essentially parallels that given previously, but presents us with some interesting additional information. We are told that, "our Indians also, very often, make for themselves a kind of crown from the two wings of the birds which they have killed in their hunting; but they never make use of hats or caps until the French had given them the use thereof. They allow their hair to hang down. Sometimes they tie it up behind; or else they make tresses of it, which they tie suitably, and which they ornament with little strings of beadwork or of wampum" (Le Clercq, 1910, p. 98). Dièreville gives us still a different account:

They bind their Hair with Rassade, a variety of small Beads, which are black & white, & it is made into a large knot, which barely reaches below the Ear. This adornment is as common among Men as it is among Women, & the former have no more beard than the latter. Their hair never turns white, & it is always very straight;

they use so much animal fat & Fish oil, especially on their faces, that they are almost invariably dripping with it, & this is their usual perfume (Dièreville, 1933, p. 168).

Other authors, such as Denys (1908, p. 413), Le Clercq (1910, p. 98), and Lescarbot, (1914, p. 139), abundantly confirm this latter statement concerning Micmac use of grease and oil upon the body and hair. According to Lescarbot this provided some protection against the numerous mosquitoes. Le Clercq informs us that a shiny or greasy appearance was the height of fashion, and was called for on public occasions.

The Micmac women pierced their ears in several places for the purpose of wearing pendants of wampum, shell, or quill-work, as well as little bells, solz-marquez, and deniers which they obtained from the French (Denys, 1908, p. 414; Le Clercq, 1910, pp. 98-99; Lescarbot, 1914, p. 157). Nose ornaments were apparently not used, although they were known to the Micmac—being worn by the "Nez-peroez" or AMIKOUAS ("Beaver") tribe of the Algonkins, situated on the northern shore of Georgian Bay (Le Clercq, 1910, p. 99; JR., Vol. 10, p. 322).

Besides hair and ear ornaments, the Micmac women also wore MATACHIAS "about their necks, bodies, arms, and legs," meaning that they decorated arm and leg bracelets, as well as their girdles, with shell, wampum, quill-work, and beads, and also

wore necklaces of these items (Lescarbot, 1914, p. 157).

Supplementing such ornaments, and their painted skin robes, the Micmac used considerable quantities of face paint, but do not seem to have used body paint.

When, now, we say that the Indians paint themselves, that is equivalent to saying that they daub their faces, which is done sometimes with black and sometimes with red, just as it pleases them. The most capricious make a mixture of these two colours. Some paint themselves with a single colour, or with several; others daub all the forehead with red, and the remainder of the face with black. Others again, still more fanciful than the first, draw a line wholly of black from the middle of the forehead clear to the end of the nose, while the two cheeks will be all mottled and streaked with white, yellow, black, and red. This painting is precisely that of which they make use on the days of their feasts, and of their leading diversions. They use it also even in mourning, for, in order to mark their sorrow and affliction when they hear of the death of some one of their kinsmen, they paint the whole face in black. But when they go to war, then they make use of red, in order, say they, that neither their enemies nor yet their own companions may be able to detect the different expressions of countenance which fear very often causes to appear in even the most intrepid and the bravest persons.

(Le Clercq, 1910, pp. 96-97).

Father Maillard has left us an even more detailed description of the Micmac manner of applying war paint:

After this [tearing a captured beast into pieces and eating it raw] they bring out Oorakins, (bowls of bark) full of that coarse vermillion which is found along the coast of Chibucto, and on the west-side of Acadia (Nova Scotia) which they moisten with the blood of the animal if any remains, and add water to complet the dilution. Then the old, as well as the young, smear their faces, belly and back with this curious paint; after which they trim their hair shorter, some of one side of the head, some of the other; some leave only a small tuft on the crown of their head; others cut their hair entirely off on the left or right side of it; some again leave nothing on it but a lock, just on the top of their forehead, and of the breadth of it, that falls back on the nape of the neck. Some of them bore their ears, and pass through the holes thus made in them, the finest fibril-roots of the fir, which they call Toobee, and commonly use for thread; but on this occasion serve to string certain small shells... (Maillard, 1758, pp. 21-22).

Tattooing is described for the Micmac by both Dièreville and Maillard, while Champlain, Lescarbot, Denys, and Le Clercq make no mention of it. Dièreville's account is so circumstantial

that we are led to believe that he actually saw the custom practised:

Let us speak of another thing which they regard as an adornment. They have themselves marked under the skin in various parts of the body & even on the face; but they must fortify themselves with great patience & great courage; it takes a long time to do, & they must suffer much pain in submitting to it...They [the marks] are made with Vermillion & gunpowder, which are never mixed together. These ingredients are reduced to powder separately & they are applied with a needle.

Between the skin and flesh, Ouf! I believe
The pain is mine! 'Tis gently thrust, yet
Must it in any case cause keen distress;
With much dexterity they then insert
A portion of the powder in the mark
So made, the colours used alternately.

The colours are thus differentiated under the skin, & all kinds of Devices are reproduced, Crosses, Names of Jesus, Flowers; anything in fact that may be desired, & these marks never come off... (Dièreville, 1938, pp. 169-170).

Maillard informs us that during courtship a maiden imprinted on various parts of her suitor's body "curious devices and

flourishes, all relative to their love, which she pricks in and rubs over with a composition that renders the impression uncancellable" (Maillard, 1758, p. 55). From these various references it would seem safe to conclude that the Micmac practised tattooing during the late French period, and that they may have practised it earlier, since the method of applying the powder to the body seems aboriginal.

Manufactures and Division of Labor

In previous sections we have already touched upon some aspects of division of labor among the Micmac. We will now discuss this matter more concretely by describing some of the manufactures of the Micmac, and the modes of behavior related to them.

With the exception of slaves, the tasks of the individuals within the Micmac tribe were determined by sex. According to Denys, the men did the hunting and made the bows, arrows, lances, shields, fishtraps and weirs, made the frames for the snowshoes and canoes, and also manufactured the cradle-boards and all other articles of wood, and the tobacco pipes. The women carried game back to camp and transported all the camp equipment, prepared and preserved the food, and made birchbark dishes, plaited bags of flattened rushes and made robes of goose feathers, dressed the skins and made the robes, the sleeves, the stockings, and the moccasins, corded the snowshoes, moved and set up the

wigwam, fetched the water, took care of their children, and made souvenir items for sale to the French fishermen in their spare time (Denys, 1908, pp. 407, 419-425, 447-448).

Lescarbot adds the information that the making of warclubs was men's work, but that arrow quivers were made by the women. He also tells us that rush mats were made:

As to their smaller exercises; when winter approaches, they prepare whatever is necessary to face this rigorous adversary, and make mats of rushes, wherewith they garnish their cabins, with others to sit upon, and all very skillfully; they also colour their rushes, and therewith make square patterns in their work, as our gardeners do in their garden knots, with such symmetry that nothing is found amiss therein. And because the body must also be clothed, they scrub and make supple the skins of beavers, moose, and others, as well as can be done here. If these are small they sew a number together, and make cloaks, sleeves, stockings, and shoes, all of which they ornament with very good grace. They also make baskets of rushes and roots, to hold their provisions of corn, beans, peas, flesh, fish, and other things. They also make purses of leather, upon which they work designs worthy of admiration with the quills of porcupines coloured with red, black, white, and blue, which are the colours they use, so vivid that ours seem not to approach them. They also busy themselves in

making dishes of bark to drink out of, and to put their meats in, which are very fine considering the material used. The scarfs too, and necklaces and bracelets worn by them and the men, which they call manachias, are of their making. When in the springtime, or in summer, the trees must be stripped to cover their houses with the bark, it is they who do the work; as likewise they labour in the making of canoes and small boats, when those are to be made, and at tilling the ground, among the tribes where this is carried on; at which they work harder than the men, who play the gentlemen, and care only for hunting or for war... (Lescarbot, 1914, p. 201).

The Micmac bows were made from an unsplit piece of maple, and were first roughly shaped with the use of an axe and knife. For the finer finish and polish, however, shells, such as those of oysters, were used; with these the bows were polished as can "be done with glass." The arrows were made from cedar, which has the advantage of splitting straight, and were about half a fathom in length. When iron was not obtainable they were tipped with bone; the feathers being those from an eagle's tail, "because these are firm and make them carry well in the air; and when they lack them they will give a heaver's tail, or even two, for one of those tails" (Denys, 1908, p. 119; Lescarbot, 1914, p. 191).

The lances were made of beech, "at the end of which they fixed a large pointed bone," or, in later times, a sword. The shaft length was seven to eight feet. "These they use in winter, when there is snow, to spear the Moose, or for fishing Salmon, Trout, and Beaver" (Denys, 1908, pp. 420, 443).

The cradles were smooth boards with a umpline strap fastened to the two upper corners, so that when this strap was placed on the forehead the board hung behind the shoulders, thus:

...the mother has not her arms encumbered and is not prevented either from working or going to the woods, whilst the child cannot be hurt by the branches along the paths... (Lescarbot, 1914, p. 97; Denys, 1908, pp. 403-404).

Denys provides us with a rather detailed description of the manner of pipe-making practised by the men.

They made also their pipes for holding their tobacco. They made them of wood, with a claw of Lobster, which is properly a Sea-crayfish. They made them also of a certain green stone, and of another which is red, with the stem, the whole in one piece.

To hollow and pierce the stem, they made use of their bone, of which the point was a little flattened and sharpened; by dint of turning back and forth they

hollowed the stone and pierced the stem. In the same way, and by virtue of time, they came to the end of it. All of their work was never pressing, and all that they did of this sort was only for their amusement.

As to their other kinds of pipes, they were of two pieces. The stems were made of a certain wood which our sailors call pipe [calumet] wood. They made the stems of them of a foot or a foot and half in length. In order to pierce them they made a ring at an inch from one end, from which they removed the wood all around as far as the middle, which they left as large as the wick of a candle; this seems like the pith, but it has none of it, or so little that it seems like none. They took this wick in their teeth which they shut tightly, and [took] all the rest of the stick in their hands, which they turned little by little and very carefully. This wick twisted so well that it detached itself inside the stick, being loosened from one end to the other of its proper thickness. It was then drawn out very carefully with a constant turning of the stick which in this manner became pierced. Then they polished it, and reduced it to the thickness necessary to make it enter the hole of the pipe. This was sometimes of hard wood, sometimes of moose bone, or the claw of Lobster, or Sea-crayfish, and of other material according to the fancy of him who took it upon himself to make it... (Denys, 1908, p. 425).

Denys' "certain wood" was known to the Micmac as PAGUNUTKWEEMOSE ("pipestem wood"), to us as round-leaved dogwood (Cornus rugosa Lamb.), and to the French-Canadians as "bois de calumet" (Rand, 1888, p. 197; Fernald, 1950).

Although our historical sources give us no clue regarding the actual shape of the Micmac pipes, archaeological collections reveal that this was relatively unique in form.

The Micmac Pipe usually has an inverted acorn-shaped bowl attached to a base by a narrow neck, or separated from it by a deep encircling groove. The base is either cylindrical, round, square or keel-shaped in form, often terraced and subject to many modifications. Its base frequently has one or more perforations to which were probably attached ornaments or thongs by which it could be tied to the stem, thus preventing possible loss...The groove around the bowl was probably often used for the same purpose. A loop of cord or sinew was often attached to the groove, in order that the pipe could be held comfortably when hot, from being smoked... (West, 1934, Pt. 1, p. 227).

This "Micmac Pipe" was apparently the sole variety used by the Micmac Indians. Its distribution extended far beyond the bounds of the Micmac tribe, however, covering all of New England and the Maritime Provinces, the drainage of the St. Lawrence, the

drainage of the Ohio, the upper drainage of the Mississippi, the middle drainage of the Missouri, the Middle Atlantic coast states north of Virginia, Newfoundland, and the southern part of Labrador (West, 1934, Pt. 1, Map 13). West has illustrated many varieties of Micmac Pipes occurring within this broad region (West, 1934, Pt. 2, Pl. 169-172).

As has already been mentioned in past sections, it was the duty of the women to carry the prizes of the hunters back to camp. Denys tells us that,

...the man will tell only the distance of the road, the woods that must be passed, the mountains, rivers, brooks, and meadows, if there are any on the route, and will specify the spot where the animal will be, and where he will have broken off three or four branches of trees to mark the place. This is enough to enable them to find it, to such a degree that they never fail, and they bring it back. Sometimes they camp where the animal is. They make broiled steaks and return next day... (Denys, 1908, pp. 404-405).

Our author also informs us that the girls were always accompanied by some old women well versed in woodlore who acted as their guide and leader in finding the game.

Once the game had been brought back to camp it was the duty of the women to skin it, to select the parts to be cooked immediately, to dry and smoke the surplus meat and to make sausages from the intestines, as described previously, and to

save the sinews, bones, and skins to be used later.

Besides these activities, the women also made the decorated leather purses (Lescarbot—peschipotys; Rand—WIJEPODE), bark dishes, and moccasins which were traded to the French fishermen. They may also have made the pottery attributed to the tribe in ancient times by Lescarbot, who tells us that,

...our Souriquois formerly did the same [make earthen pots, in the shape of a nightcap], and tilled the ground; but since the French bring them kettles, beans, peas, biscuit, and other food, they are become slothful, and make no more account of those exercises... (Lescarbot, 1914, pp. 194-195).

This statement concerning the former use of pottery has been confirmed by archaeological investigation.

The "French Trade" and Micmac Population

One of the most important factors in Micmac ecology, from the standpoint of economics, dietetics, hygiene, and morals, was what we may call the "French trade." By this term we designate the trading activities associated with the French fishing fleet which congregated in Nova Scotian waters from April to September, and whose importance in the contact situation has rarely been sufficiently stressed and emphasized.

For a description of the "French trade" and its effects upon the natives we must turn again to Denys; because of the compact and definitive nature of his account we will present it in full.

...But at present, and since they have frequented the fishing vessels, they drink in quite another fashion. They no longer have any regard for wine, and wish nothing but brandy. They do not call it drinking unless they become drunk, and do not think they have been drinking unless they fight and are hurt. However when they set about drinking, their wives remove from their wigwams the guns, axes, the mounted swords [spears], the bows, the arrows, and even their knives, which the Indians carry hung from the neck. They leave nothing with which they can kill one another. They permit that without saying a word, if it is before they commence to drink: otherwise the women dare not enter the wigwams. Immediately after taking everything with which they can injure themselves, the women carry it into the woods, afar off, where they go to hide with all their children. After that they have a fine time, beating, injuring, and killing one another. Their wives do not return until the next day, when they are sober. At that time the fighting can be done only with the poles of their wigwams, which they pull to pieces to allow this use. Afterwards their poor

wives must go to fetch other poles, and other pieces of bark to repair their lodging. And they must not grumble, otherwise they would be beaten.

If it is found that any one among them is hurt, he who will have done it asks his pardon, saying that he was drunk; and he is pardoned for that. But if some one has been killed, it is necessary that the murderer, aside from the confession of his drunkenness and the pardon he asks, should make to the widow some present to which all the others condemn him. And to make the peace complete, he must pay for another drinking bout. If he has not the skins, it is as if one were to say "I have not the money." To buy the brandy it was then necessary that he sell his gun, his blanket, or other thing in order to get it. This will cost them five to six skins; they will give this to the fishermen for a bottle or two of brandy. Then they commence again to drink. If the brandy they have is not sufficient to make them drunk they will give everything they possess to obtain more. That is only a way of saying they will not cease so long as they possess anything. Thus the fishermen are ruining them entirely.

For as to the [trading] establishments, no one will ever give them so much that they are able to drink to the point of killing one another, and one sells to them dearer than do the ships. It is the captains and sailors who

supply it to them, to whom it costs no more than the original price. Through this they do not fail to make great gain. For all the expenses and charges of the ship, these are upon the owner, besides which the crew trades or bargains with the Indians using biscuit, lead, quite new lines, sails, and many other things at the expense of the said owners. This allows them to give the Indians two or three times more than they are given at the establishments, where there is nothing on which the freight of carriage alone does not cost sixty livres a ton, aside from purchase price and leakage. And aside from this there is given the Indians every time they come to the establishments a drink of brandy, a bit of bread and of tobacco as they enter, however many they may be, both men and women. As for the children they are given only bread. They are given as much when they go away. And in addition it is necessary to keep up a crew under wages aside from their keep. All of these attentions have been introduced in the past to attract the Indians to the establishments in order to be able more easily to instruct them in the Christian faith and religion. This has already been done for a very large number, through the labours of the Reverend Jesuit Fathers, who have retired thence seeing that there was nothing more to be done with these people, whom the frequentation of the ships kept in perpetual drunkenness.

At the present time, so soon as the Indians come out of the woods in spring, they hide all their best skins, bringing a few to the establishments in order to obtain their right to something to drink, eat, and smoke. They pay a part of that which was lent them in the autumn to support them, without which they would perish of hunger. They insist that this is all their hunting for the winter has produced. As soon as they have departed, they go to recover the skins which they have hidden in the woods, and go to the routes of the fishing ships and keep watch. If they see any vessels, they make great smokes to let it be known that they are there. At the same time the ship nears the land, and the Indians take some skins and embark in their canoes to go to the ship, where they are well received. They are given as much as they want to drink and to eat to start them going. They are then asked if they have many skins, and if there are not other Indians, in addition to themselves, in the woods. If they say that there are, and that they have skins, presently a cannon-shot is fired from the largest piece, to let them know that they are to come. This they do not fail to do as soon as they hear the cannon, and they bring their skins. During this time the ship shortens sail, and passes a day or two moving back and forth awaiting the Indians who bring them one or two skins; they are received with the same cheer as the first, who have also a part in the good reception tendered

the later comers, and they drink again together afresh.

It is well to remark that when skins [peaux] are mentioned, simply without any addition, it is the same as saying skins of Moose, from which are made the best Buffalo skins [buffles].

The evening being come they return on shore with some casks of brandy, and fall to drinking, but little for fear of getting drunk. They send again only their wives to the ship, who carry a skin and bring back brandy; and they send their wives again in the same manner from time to time in order to obtain their bottles of brandy. But if you wish to know why they do not take all they want to drink at one time, it is because their wives do not make trips to the ships without bringing back twenty-five or thirty sea-biscuits as a present, which each one makes them in return for some bark dishes and peschipotys. I think I have already said that these peschipotys are purses of leather ornamented for holding tobacco; they are the work of the women, and rather nicely made.

A peschipoty is anything which is closed by a string or secured like a purse, provided that the whole does not surpass in size a bag for holding prayer-books. They are made of Marten, of Squirrel, of Muskrat, or other little animals; others are of Moose skin, or of Sealskin; these are of the breadth of the hand and a little longer. One

side is turned over the other with a little latchet which makes several turns to close it, in the fashion of our leather paper-holders. Those made of skins have strings like the purses, and all those peschipotys serve to hold tobacco or lead for hunting. The Indian women fix the price to the fishermen according to the kind of skin and its fantastic ornamentation, which they call matachiez; it is made from Porcupine quills, white, red, and violet, and sometimes with their wampum, of which I have already spoken. With these they obtain many things from the sailors. There is no one of these who is not willing to obtain the peschipoty at the expense of the corbillon, that is to say, ship's biscuit and drink. They bring Martens and Squirrels for cravats, or other bagatells which the women make. It is not that they sell at each voyage all they bring, [for] they know well how to manage their part, but [it is] only to show the goods and inculcate a desire for them. They promise things first to one then to another, but give nothing. During all the trading, they are promised much if they will go and find [the sailors] at the place where they are going to anchor to make their fishery, and this the women make them hope [they will do]. After that each sailor gives, secretly from one another, some ship's biscuit; these they always take, assuring them they will go and meet them. But they do not go there at once, but remain still on shore, waiting for other ships

to come past. Not one passes without their obtaining by the same methods two or three hundredweight of biscuit, and some good casks of brandy in return for two or three skins which they give. And there is this much certain, that as long as they are able to visit the ships, they never get drunk; for they would not then be able to preserve the judgment which is necessary for making dupes of the sailors and captains, and for securing their bread. And besides so long as they can keep sober they drink without it costing them anything, both men and women. And they manage, moreover, so well that in the end they become drunk at the expense of the other party before having touched the brandy which they had obtained by trade. So much are they devoted to their own interest, and their pleasure, and so clever in deceiving those who trust them.

The ships having left them, they commence to drink in earnest on land. If there remain with them some women who like to drink, although they are certain of being well beaten, they do not give themselves any concern provided that they may get drunk. Those who do not wish to drink at so dear a price retire with their children into the woods, and do not return until all the drunken orgie is passed; this will last sometimes two or three days without cessation. After that it is found that heads, arms, and legs are badly bruised, and much hair is pulled out.

Thus there is no apology to be made; each one is scored and cares only to think of himself. Their greatest remedy is the gum of the Fir, which is sovereign as balsam for wounds, in case there is no broken bone. If there are any of the latter, they know how to mend them and restore them to their proper condition. All this being finished, it is necessary to return where the fishermen are. There they commence again the same life so far as they have anything to drink, and they strip themselves totally naked. That is to say, they sell everything and drink everything, saving only the biscuit for the winter. Thus they pass all the summer and part of the autumn, so long as there are ships on the coast; and never does a year pass that there are not some six, seven, or eight Indians killed along this coast by drunkenness.

The women and the older girls also drink much by stealth, and they go to hide themselves in the woods for that purpose. The sailors know well the rendezvous. It is those who furnish the brandy, and they bring them into so favourable a condition that they can do with them everything they will. All these frequentations of the ships have entirely ruined them, and they care no longer for Religion. They blaspheme the name of God, are thieves and cheats, and have no longer their former purity, neither women nor girls, at least those who drink. It is no longer a crime for a girl to bear children; indeed she is earlier

married thereby, because there is assurance that she is not sterile. He who marries her takes the children. They do not divorce their wives now as they did formerly, and they have not so many, not being good hunters. This is because of their drunkenness, and because the animals are not so abundant. In addition to all the wickedness of which I have spoken, the fishermen have taught them to take vengeance upon one another... (Denys, 1908, pp. 444-450).

We may, from various sources, determine which sectors of the Micmac coastline were mainly involved in this "French trade." These were as follows: the coast of the Gaspé Peninsula from Gaspé Bay (GESPEG) to Port-Daniel (EPSEGENEG); the coast around Miscou, from the Caraquet (GALAGET) river to the Tracadie (TLAGATIG); the northern coast of Prince Edward Island; the entire coastline of Nova Scotia from Antigonish (NALGITGONIETJG) to Cap de Sable (GESPOGOITG), especially the "Skin Dressers' Country" (ESGIGEOAGIG) around Canso; and the northeastern coast of Cape Breton island between North Ingonish and Mira Bay. More distant regions were also affected indirectly, for we hear that the natives of the St. John river traveled to the shores of the Gulf of St. Lawrence in order to trade their furs to the fishermen.

The consequences of the "French trade" did not go unobserved by the Micmac chiefs, who often complained to the French on this account. Biard, in fact, gives us several examples of this:

in one Membertou is quoted as having assured the French that,

...in his youth he has seen chimonutz, that is to say, Savages, as thickly planted there as the hairs upon his head. It is maintained that they have thus diminished since the French have begun to frequent their country; for, since then they do nothing all summer but eat; and the result is that, adopting an entirely different custom and thus breeding new diseases, they pay for their indulgence during the autumn and winter by pleurisy, quinsy and dysentery, which kill them off. During this year alone sixty have died at Cape de la Hève, which is the greater part of those who lived there... (Biard, 1611b; in JR., Vol. 1, p. 177).

while in another the anxieties of the tribal members as a whole are reported:

They are astonished and often complain that, since the French mingle with and carry on trade with them, they are dying fast, and the population is thinning out. For they assert that, before this association and intercourse, all their countries were very populous, and they tell how one by one the different coasts, according as they have begun to traffic with us, have been more reduced by disease; adding, that the reason why the Armouchiquois do not diminish in population is because they are not at all care-

less. Thereupon they often puzzle their brains, and sometimes think that the French poison...Others complain that the merchandise is often counterfeited and adulterated, and that peas, beans, prunes, bread, and other things that are spoiled are sold to them; and that it is that which corrupts the body and gives rise to the dysentery and other diseases which always attack them in Autumn. This theory likewise is not offered without citing instances, for which they have often been upon the point of breaking with us, and making war upon us... (Biard, 1616; in JR., Vol. 3, pp. 105-107).

These accounts enable us to arrive at a number of important conclusions. The first of these is that by the year 1611 the population of the Micmac country had already reached its minimal value under the impact of European diseases, and thereafter gradually increased. This follows from Biard's quotes, given above, and from his figures for the Micmac population. The population estimates available to us for the early Micmac are the following:

YEAR	POPULATION	SOURCE
1611	3000-3500	Biard, in JR., Vol. 3, p. 111.
1760	c.3000	A "priest," given by Elder, 1871, p. 1.
1884	4,037	Canadian census, given by Swanton, 1952, p. 581.

From these figures Swanton (1952, p. 581) drew the unfortunate conclusion that the Micmacs were unique in having suffered no permanent population reduction as a result of European contact. This is specifically contradicted, as we have seen, by the statements made by the Micmacs and quoted by Biard, and is contradicted implicitly by Denys (1908, p. 403). From our knowledge of Micmac history, and of the effects of European diseases upon the peoples of the New World, we may suspect that the Micmac population underwent drastic reduction between about 1520 and 1600, and that this process of decline had largely ceased by the beginning of the 17th century. From what we know of the effects of Old World diseases upon New World groups in other areas, a pre-contact population of about 6000 for the Micmac would not be out of the question.

The fact that the population described by Lescarbot, Biard, and Denys was one that had recently undergone considerable reduction has some interesting ecological implications. The problem may be briefly stated as follows.

- (a) We may assume that the precontact population of the Micmacs was larger than that of the 17th century, and that this precontact population was in equilibrium with its environment.
- (b) If so, this population existed under the conditions imposed by Liebig's "law of the minimum"; namely,

A biological reaction at any level is controlled not by the factors which are present in excess, but by that essential factor which is present in minimal quantity.

In the case in point, the "minimal factor" would seem to be the food resources of the winter months, particularly those of the months of February and March (see Fig. 9).

- (c) If the ecological relations between the Micmac and their environment were the same during the pre-contact period as during the 17th century, it is difficult to see how this larger population could have been maintained.
- (d) Therefore we must consider the possibility that the subsistence pattern of the Micmac in pre-contact times was considerably different from that of the 17th century.

Our reason for making statement (c) is that the French sources seem to indicate a considerable maladjustment between the Micmac and their environment during the 1600's. Biard, Denys, and Le Clercq all emphasize the hardships of the Indians during the winters; both Biard and Denys describe the importance of French tradegoods—dried peas, prunes, raisins, etc.—in maintaining the natives through the season; and Le Clercq tells us that in some winters the death of large numbers of Indians was only averted by the aid of the French colonists, who supplied them with food

(Biard, 1616; in JR., Vol. 3, pp. 105, 107; Denys, 1908, p. 446; Le Clercq, 1910, pp. 110-112). Although it may be argued that these winters may have been of unusual severity, the frequent references in our sources would rather seem to indicate that the Micmac of the period were not in a state of adjustment with their winter food supply—despite the fact that the population concerned had been considerably reduced from a previous high level.

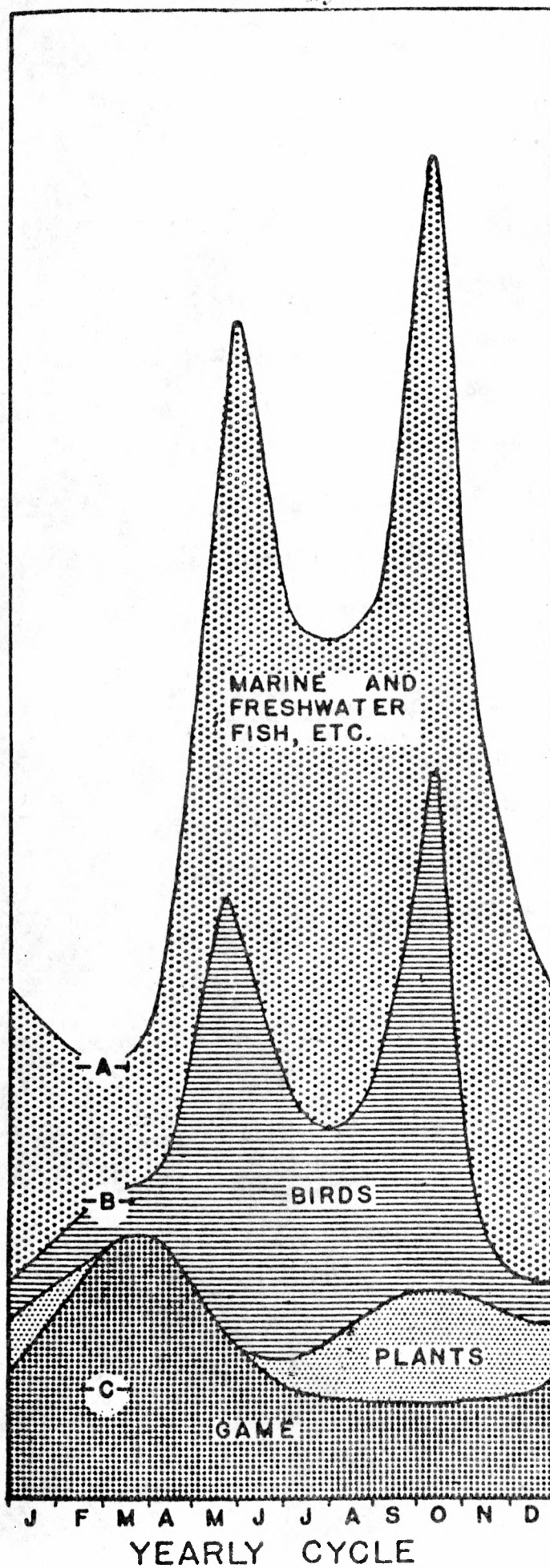
A number of solutions may be suggested to this seeming impasse:

- (a) The effects of half a century and more of fur trade had reduced the faunal resources of the area to such an extent that it could no longer support the human population—even though this latter element had also been reduced. Denys supports this assertion in three places in his work: first, when he tells us that by around 1650 the Indians had practically exterminated the moose on Cape Breton Island; second, when he describes the caribou of Prince Edward Island as not being able to increase because of the Indians; and third, when he explicitly states that the Indians were having trouble in their hunting because the animals were not so abundant as formerly (Denys, 1908, pp. 187, 209, 450).

- (b) The fur trade with the fishing fleet and with other French establishments had distracted the Micmac from their summer fishery and from laying in an adequate supply of provisions for the winter months. Denys gives us some basis for this statement.
- (c) The pre-contact winter subsistence economy of the Micmac was established upon a much broader base than that of the 17th century, and much more efficient use was made of the total food resources of the area. This loss of efficiency was the result of the fur trade, which reoriented the Micmac economy, increasingly forcing the Micmac into a pattern of winter hunting. From the description given by Denys it would seem that the Acadian coast presented a considerable variety of food resources even during the winter—including tomcod, "smolts," brook trout, smelt, striped bass, sea perch, sculpins, winter flounder, and shellfish (the latter being obtainable through the ice through the use of long poles with a pincer arrangement (Denys, 1908, pp. 359-360)). With the rise of the fur trade, however, the Micmac found it more and more necessary to obtain furs for use in barter, and to obtain these when the coats were at their best—i.e., during the winter. The most favorable time for winter hunting was, as we have seen, during the period of heavy snow-

Fig. 9. Diagram showing the nature of the seasonal fluctuations in the available food resources of the Micmac country. No absolute units are to be assigned to the values of the ordinates, these being derived from modern knowledge concerning migrations and life cycles, and not from statistics applicable to the early historical period. Note that for a coastal group utilizing all its resources the minimal and limiting value of the food resources falls at (A) and occurs during the months of February and March. For a group engaging in inland winter hunting the limiting value falls lower, in the neighborhood of (B). In the case of inadequate snowfall and failure of hunting, the limiting value would be still lower, in the neighborhood of (C).

— AVAILABLE — FOOD — SUPPLY —



fall; it was therefore necessary for the Micmac to leave the favored coastal regions previous to the period of snowfall in their winter hunting grounds, and to trust to fortune that this snowfall would arrive and be sufficient. We thus here postulate that the pre-contact heavy population of the Micmac country was not primarily dependent upon hunting during the winter period, and that the hunting pattern developed largely under the influence of the fur trade.

In our present state of knowledge it is difficult for us to decide the relative importance of these possibilities. A careful archaeological study of the late pre-contact sites in the region should go far in clearing up the question.

Intoxicants and Stimulants

The description of the "French trade" given by Denys presents us with a vivid picture of the effects of alcholic intoxicants upon the Micmac, especially after the introduction of brandy sometime after 1550. Previously wine had been a stock in trade, as both Biard and Denys inform us.

Besides the intoxicants imported by the French traders, the Micmac also used during historic times a type of beer made from the tips of fir trees; this beverage was probably invented, how-

ever, by the French Habitants. Dièreville gives us the recipe for this concoction:

...Beer, made from the tips of Fir trees is brewed there; a strong decoction is put into a Cask with Yeast & Molasses, which is a kind of Sugar Syrup the colour of Raisine. All this ferments together for two or three days; when the fermentation is over the substance settles, & the light coloured Liquor, which is not unpleasant, is drunk... (Dièreville, 1933, p. 91).

In aboriginal times, however, the most important stimulant of the Micmac was tobacco, which was used by both men, women, and children.

...They consider, esteem, and regard it as a kind of manna which has come to them from Heaven, since Papkoot-parout gave the first use thereof to the Gaspesian people, as we have noted in the chapter on their belief concerning the immortality of the soul. In fact tobacco, which they call tamahoe, seems to them absolutely essential to enable them to endure the misfortunes of human life. It diverts them in their voyages, gives them wisdom in their councils, decides upon peace and war; it satisfies their hunger, serving both for drink and food; and when any one is dangerously ill, they still hope to see the sick person again in his original health provided that he can still smoke tobacco, while the contrary is a sure indication

that he will die (Le Clercq, 1910, pp. 298-299).

Lescarbot informs us that the Micmac planted "great store of tobacco"—a most important piece of information, since this is our best evidence that the Micmac practised cultivation in any form whatever. Lescarbot also tells us that after having gathered this herb, the natives dried it in shade, and:

...have certain small leather bags, hanging about their necks, or at their girdles, wherein they always have some, with a calumet or tobacco-pipe, which is a little horn with a hole at one side, and within the hole they fit a long quill or pipe, out of which they suck the smoke of the tobacco, which is within the said horn, after lighting it with a coal which they lay upon it. They will sometimes endure hunger for five or six days with the aid of that smoke... (Lescarbot, 1914, p. 252).

At a later date the Micmac apparently obtained much of their tobacco from the French, who imported it from Brazil.

Domestication

Although the Micmac were not what might be called a "food producing" group, they did practice domestication of plants and animals to a limited extent. We have just finished discussing their domestication of tobacco; we need now to consider only their domestication of the dog, their keeping of captive birds,

and the possibility of their former cultivation of corn.

Among the Micmac, dogs constituted a major symbol of wealth and were an Indian's pride and joy. Considerable attention was therefore given to them, and they figured in a number of social and religious rites. Denys informs us that puppies who could not be nourished by their mother were given to the women, who suckled them; as soon as these were a little older they were given soup. Once a dog was of the age to hunt, however, he had to subsist entirely upon the offal of the game which was killed.

The relations between the game killed and their dogs seems to have been the object of considerable concern to the Indians, who imposed many restrictions and taboos upon the latter:

...As to the bones, they are not given any, for fear of damaging their teeth, not even those of the Beaver. If they should eat of that, it would keep the Indians from killing any, and the same if one were to burn them (Denys, 1908, p. 430).

A statement by Le Clercq reveals the rationale behind these taboos:

...they never burned, further, the bones of the fawn of the moose, nor the carcass of martens; and they also take much precaution against giving the same to the dogs;

for they would not be able any longer to capture any of these animals in hunting if the spirits of the martens and of the fawns of the moose were to inform their own kind of the bad treatment they had received among the Indians... (Le Clercq, 1910, p. 226).

Since a hunter's dogs were his most precious possession, the greatest token which a man could give to a friend or visitor of the esteem in which he held him was to present him with his most valued dog to eat in a feast. This custom is described briefly by Denys (1908, p. 430), and in much greater detail by Maillard (1758, pp. 5-6). We will return again to this latter account during our discussion of Micmac feasts.

Although Lescarbot tells us that the Indians had no domesticated birds, and therefore lost "much good game," he also informs us that they kept captive eagles:

...The savages at Canso had six of them [eagles] perched near their cabins, at our coming thither, but we refused to buy them because they had pulled off their tails to feather their arrows... (Lescarbot, 1914, pp. 230, 232).

Both Lescarbot and Le Clercq present us with statements to the effect that the Micmac once had practised the cultivation of corn; in all cases the source of their information seems to be Indian legend. One of the references has already

been considered with relation to the peschipotys manufactured by the Indian women for the "French trade," namely:

...our Souriquois formerly did the same [make earthen pots, in the shape of a nightcap], and tilled the ground; but since the French bring them kettles, beans, peas, biscuit, and other food, they are become slothful, and make no more account of these exercises... (Lescarbot, 1914, pp. 194-195).

Le Clercq tells us that after Papkootparout gave corn to the Micmac, "they cultivated with success the Indian corn and the tobacco for the space of several years. But the negligence of their ancestors, say they, deprives them to-day of all these conveniences so useful and so essential to the nation as a whole" (Le Clercq, 1910, pp. 212-213).

From a climatic standpoint Indian cultivation of corn may have been possible in southern Nova Scotia and southern New Brunswick, and in fact we know that the Indians cultivated corn at Meductic on the St. John during the French period (Webster, 1938, p. 79). We do not yet, however, have any archaeological evidence of Micmac cultivation; we must therefore consider the assertion of Lescarbot as possible but unproved.

Calendars, Mnemonics, and Writing

As is common among many other peoples, the Micmac distinguished relatively short periods by the ecological changes

taking place in the environment around them. The major ecological cycle was the year; this was broken up into "nights," "moons," and seasons. From the information presented by Denys (1908, p. 400) and by Le Clercq (1910, p. 137), we may conclude that the calendar was lunar in character, that each lunar phase was considered as a unit, and that an extra "bastard moon" was added every 30 moons to correct the count to the solar year. Le Clercq informs us that,

...they count the years by the winters, the months by the moons, the days by the nights, the hours of the morning in proportion as the sun advances into its meridian, and the hours of the afternoon according as it declines and approaches its setting. They give thirty days to all the moons, and regulate the year by certain natural observations which they make upon the course of the sun and the seasons. They say that the spring has come when the leaves begin to sprout, when the wild geese appear, when the fawns of moose attain to a certain size in the bellies of their mothers, and when the seals bear their young. They recognize that it is summer when the salmon run up the rivers, and when the wild geese shed their plumage. They recognize that it is the season of autumn when the waterfowl return from the north to the south. As for the winter, they mark its approach by the time when the cold becomes intense, when the snows are abundant upon

the ground, and when the bears retire into the hollows of the trees, from which they do not come forth until the spring, according to an account which we shall give thereof later.

Our Gaspesians, then, divide the year into four seasons, by different periods. The Spring is called Paniah, the Summer Nibk, the Autumn Taouak, and the Winter Kesic. They count only five moons of Summer and five of Winter for the entire year...They confound one moon of the Spring with those of the Summer, and one of the Autumn with those of the Winter, since in fact it can truly be said, that there is little of Spring and of Autumn in Gaspesia, inasmuch as the passage is imperceptible there from cold to heat and from heat to cold, which is very rigorous. They have no regular weeks; if they make any such division it is by the first and the second quarter, the full and the wane of the moon. All their months have very expressive names. They begin the year with the Autumn, which they call Tkours; this expresses that the rivers begin to freeze, and is properly the month of November. Bonodemeguiche, which is that of December, signifies that the Tomcod ascends into the rivers; they catch this fish with the line, making a hole in the ice. And it is the same way with the other months, each of which has its particular designation... (Le Clercq, 1910, pp. 137-139).

The statements made in this account are subject to a number of checks. For example, Rand (1888a) gives us the following information concerning the names of the seasons:

Le Clercq	Rand	Season
	SIKW	"Spring"
Paniah	BANEAK'	"Spring opens"
Nibk	NIPK	"Summer"
Taouak	TOGWAAK	"Autumn"
Kesic	KESIK	"Winter"

For the names of the months we have comparative information available from the Malecite (Chamberlain, 1899) and the Micmac (Rand, 1888a). Le Clercq's month of Tkours seems to correspond to the Micmac SKOOLS (November), particularly when we remember that the Micmac L was (and is) often recorded as R by Europeans, and that furthermore that the Micmac have no consonant sound R. Le Clercq's Bonodemeguiche seems to be a misprint for BOONAMOOEE-GOOS. We note that while Le Clercq gives this as the name of December, Rand gives it for January. In Malecite we find that December is known both as the "long moon" and as the "tomcod moon," so that it is possible that both Le Clercq and Rand are correct in some way (see figure 10).

Taking into account all ancient and recent information, it is possible to reconstruct the Micmac calendar. This we show

Fig. 10. Comparative list of Malecite and Micmac terms for the months. The list here starts with the first month of the Malecite year (December) instead of with the first month of the Micmac year (November).

MALECITE			MIGMAC		
Moon	Native term	Translation	Native term	Translation	Month
1	K'TCHI'KI'SOS PONAM'WI KI'SOS NIPA'YUMMIHALKE'WI KI'SOS	The long moon Frost-fish moon Christmas moon	UKCHEGOO'S	The great month	Dec.
2	AKLO'SULWES'IT		BOONAMOOEEGOOS	Frost-fish moon	Jan.
3	APIA'TUKUN	When spruce tips fall	ABUGUNAJIT	The snow blinder (?)	Feb.
4	TUKWASKWU'NI KI'SOS	First spring moon	SEGOWGOOS	Spawning moon	Mar.
5	PUNATUM'UT KI'SOS	Egg-laying moon	PUNADUMOOEGOO'S	Egg-laying moon	April
6	SI'KWUNIME'KWI KI'SOS	Gaspereaux moon	AGESEGOOS'		May
7	NI'PUNI KI'SOS	Summer moon	NIBUNEGOO'S'	Summer moon	Je.
8	UPSKWI' KI'SOS	Feather-shedding moon	PSKOOEGOO'S'	Feathering-shedding moon	Jy.
9	KEPWA'TCHI KI'SOS	Moon in which the leaves begin to fall	KESAGAWEGOO'S		Aug.
10	MAT'SIUTU'HI	Moose calling moon	MAJOWHTOOGWEEGOOS'		Sept.
11	WIKE'WI KI'SOS	Salmon spawning moon	WEGOWEGOO'S		Oct.
12	KUA'KWUNIKE'WI KI'SOS	Harvest moon	SKOOLS	River-freezing moon	Nov.
13	POKWUT'NANSOWI KI'SOS	Bastard moon			

in the following table.

THE MICMAC LUNAR CALENDAR

Season	English Month	Micmac Month
TOGWAAK	October /	WEGOWEGOO'S
KESIK	November	SKOOLS
	December	UKCHEGOO'S
	January	BOONAMOOEGOOS
	February	ABUGUNAJIT
	March	SEGOWGOOS
SIKW	April	PUNADUNOOEGOO'S
NIPK	May	AGESEGOOS'
	June	NIBUNEGOOS'
	July	PSKOOEGOOS'
	August	KESAGAWEGOO'S
	September	MAJOWETOOGWEEGOOS'

According to this interpretation the Micmac year began with SKOOLS (November), the first moon of winter. Le Clercq, thinking in terms of the European season count, considered SKOOLS to be an Autumn month, and therefore stated that "they confound...one [moon] of the Autumn with those of the winter." Similarly, the moon of AGESEGOOS' (May) was considered by Le Clercq to fall properly within the Spring, but it constituted the first moon of the Micmac summer.

Like the Malecite lunar calendar, the Micmac calendar requires the addition, in some manner, of an extra "bastard month" for every regular lunar months. No direct evidence concerning such a unit is forthcoming from the Micmac materials, however.

Little of the Micmac philosophy concerning the seasons, climate, and the weather, has come down to us through the historical sources. Rather, to obtain a glimpse of this aspect of Micmac culture we must turn to recently collected legendary materials and study the picture presented by these sources. Fortunately, our task is lightened considerably by a work already published (Hagar, 1897), and upon which we will lean heavily for this discussion.

Although the Micmac legends often recounts Glooscap's battles with frost, which he always wins, the actual controller of the seasons was Coolpujet.

...It is said that Glooscap, when he departed, first went west, then turned southward, and kept travelling on and on until finally, far to the south, he came to the home of Coolpujet, an old man who dwells in solitude broken only by occasional visitors. His name, as Dr. Rand has shown, is translated "rolled over with handspikes." He is without bones, and his corpulence is so great that he lies upon the ground in one position, unable to move. Twice a year, in spring and autumn, he is turned over by visitors armed with handspikes, hence his name. And tradition has it that whomever performs this kindly office he gratefully grants any request, however difficult of attainment. When he lies facing the north, his warm breath produces those balmy southern zephyrs which bring with them the song of birds, the perfume

of flowers, and the wealth of summer vegetation. When he is turned towards the south, the birds and flowers follow, and the icy northern winds resume their sway... (Hagar, 1897, p. 101).

On one occasion, one of the individuals who turned Coolpujet over gave as his wish, "I would like to live with you always, to bring your water and tend your fire for you." Coolpujet thereupon turned him into part of a cedar tree.

...Every spring, as soon as he is turned to face the tree, Coolpujet looks at it and raises his hand. Immediately the fresh green foliage springs forth into full bloom. When autumn comes, before he turns his back upon the tree, he looks at it again and lowers his hand. Again the tree obeys his will, and its foliage withers and falls off and is renewed until with returning spring the lord of the seasons again commands it to bud forth... (Hagar, 1897, p. 102)

Hagar makes the general observation that the tree seems to appear in Micmac mythology as the symbol of time or the seasons (Hagar, 1897, p. 104).

Micmac legends concerning the weather are of particular interest because of their use in weather magic, the nature of which is outlined by Hagar.

Piorret/Cleméau, a famous Micmac story-teller, asserts that his tribe has always been able to control its weather supply by the appropriate use of certain legends. His directions are as follows: To bring rain or warm weather, talk of whales, or relate a legend describing the migrations of birds and the alternations of the seasons. Such is the curious confusion of cause and effect. Several other legends will produce a like result, and in general any discussion of old times has a tendency to cause wet weather. To bring cold or dry weather, amongst several legends that of Until, or Fair Weather, is especially efficacious. This personage was a strong and handsome chief who dwelt with his two sisters. He was a great hunter, and often remained away from his wigwam for days at a time. Sometimes, when he returned, his sisters used to hang up his moccasins just outside the camp, and whenever they did so a frost was certain to occur. As long as he remained at home the weather would be calm and beautiful whatever the season, but as soon as he left the storms would return. This legend was first related to me by Newell Glode, who said that he had heard it, when a child, from the lips of a very old squaw. It suggests another, in which the rainbow is called Glooscap's carrying strap. When he is at home he hangs it upon the sky, that men may know that all is well. This is especially interesting because it identifies Glooscap with the Invisible Boy of Dr. Rand's legends, who, in turn, represents the moose or sky god...

As for Micmac weather proverbs, I have learned but three: If the stars appear closer together than usual, there will be a storm. If partridge feathers grew long, there will be a severe winter. When fireflies first appear, birch bark will peel well... (Hagar, 1897, pp. 104-105).

Besides their weather lore, the Micmac also possessed elaborate tales explaining other natural phenomena, and again little of this lore comes down to us through the historical sources. Le Clercq informs us only that the Indians had,

...some knowledge of the Great and the Little Bears, which they call, the first Mouhinne, and the second Mouhinchiche, which mean exactly in our language the Great and the Little Bears. They say that the three guards of the North Star is a canoe in which three Indians are embarked to overtake this bear, but that unfortunately they have not yet been able to catch it... (Le Clercq, 1910, pp. 135-136).

Hagar presents us with more complete information, telling us that the Micmac made the following identification of the stars and constellations.

The Bear	MOOTW	$\alpha, \beta, \gamma, \delta$, Ursae Majoris
The Hunters	HTÓOKSOOINOOK	
The Robin	QUIPCHOWWÉCH	ϵ Ursae Majoris
The Chickadee	CHÜGEGÉSS	ζ Ursae Majoris

The Moose Bird	MIKCHĀGŌGWĒCH	η Ursae Majoris
The Pigeon	PŪLÉS	γ Boötis
The Blue Jay	WŌLŌWĒCH	ε Boötis
The Owl	KOOKOOGWĒSS	Arcturus
The Saw-whet	KŌPKĒCH	η Boötis
The Pot	WO	Alcor
The Den	MSKEŌWŌM	μ, δ, Boötis
		α, β, γ, δ, ε, ζ, θ,
		κ, λ, ρ, Coronae Borealis

These stars and constellations are so arranged in the sky that the Bear,

...is represented by the four stars in the bowl of what we call the Dipper. Behind are seven hunters who are pursuing her. Close beside the second hunter is a little star. It is the pot which he is carrying, so that, when the bear is killed, he may cook the meat therein. Just above these hunters a group of smaller stars form a pocket-like figure—the den when the bear has issued... (Hagar, 1900, p. 93).

The activities of these celestial characters were integrated by the Micmac in a legend which not only explained their relative positions in the sky, but also contained the motif of annual death and resurrection. In this case the celestial bear emerges from her den in the spring of each year, to be spotted and chased by the seven (the Micmac magic number) hunters. The chase goes

on throughout the summer, and finally, in mid-autumn, the hunters who remain overtake their prey and kill her. Robin, becomes covered with her blood in the process and attempts to shake it off, which he does except for a spot on his breast. The blood which he shakes off, however,

...spatters far and wide over the forests of earth below, and hence we see each autumn the blood-red tints on the foliage; it is reddest on the maples, because trees on earth follow the appearance of the trees in the sky, and the sky maple received most of the blood. The sky is just the same as the earth, only up above, and older... (Hagar, 1900, p. 94).

After dancing around the fire and offering their thanks to the "Universal Spirit," the chickadee, the moose bird, and the robin feasted on their catch.

But this does not end the story of the bear, though one might think so. Through the winter her skeleton lies upon its back in the sky, but her life-spirit has entered another bear who also lies upon her back in the den, invisible, and sleeping the winter sleep. When the spring comes around again, this bear will again issue forth from the den to be again pursued by the hunters, to be again slain, but again to send to the den her life-spirit, to issue forth yet again, when the sun once more awakens the sleeping earth.

And so the drama keeps on eternally. And so it is, the Micmacs say, that when a bear lies on her back within her den she is invisible even to those who might enter that den. Only a hunter gifted with great magic power could perceive her then.

[The Micmac]...say that they know the Celestial Bear never dies, because she is always in sight, and that is why her earthly descendants never die of natural causes, but only fall asleep each autumn and come to life again in spring. For all earthly animals are the descendants of the ancestor animal in the sky, and their appearance and habits are but reflection of hers. In all things as it was and is in the sky, so it is on earth... (Hagar, 1900, pp. 94-95).

The Micmac seem to have used a number of mnemonic devices, including maps, necklaces of little sticks, and sign writing. Concerning the first of these, Le Clercq tells us that,

...they have much ingenuity in drawing upon bark a kind of map which marks exactly all the rivers and streams of a country of which they wish to make a representation. They mark all the places thereon exactly and so well that they make use of them successfully, and an Indian who possesses one makes long voyages without going astray... (Le Clercq, 1910, p. 136).

A passage in the Micmac legend materials also describes the use of such maps (Rand, 1894, p. 171).

Dièreville describes necklaces or little sticks, telling us that "they make themselves understood by means of little pieces of wood arranged in different ways. They make Necklaces of these little sticks, which serve to declare war or to sue for peace." Curiously enough, our author carefully refrains from calling this wampum, although this latter name must surely have been known to him (Dièreville, 1933, p. 171).

The Micmac sign writing which Le Clercq saw in use among some children at play inspired him to develop the so-called "Micmac hieroglyphics," which remained in use among these people (with some modifications) until the 20th century. Le Clercq informs us that,

...our Lord inspired me with the idea of them the second year of my mission, when, being much embarrassed as to the method by which I should teach the Indians to pray to God, I noticed that some children were making marks with charcoal upon birch-bark, and were counting these with the finger very accurately at each word of prayers which they pronounced. This made me believe that by giving them some formulary, which would aid their memory by definite characters, I should advance much more quickly than by teaching them through the method of making them repeat a number of times that which I said to them. I was charmed to find that I was not

Fig. 11. Micmac or Recollect hieroglyphics,
reproduced from Kauder (1921, pp. 400-401).

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

Kyrie.

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

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Dies Irae.

Messe des Morts - Mass for the Dead

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

Introit.

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

ⲉⲩⲉⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ ⲛⲓⲛⲓⲛ

mistaken, and that these characters which I had formed upon produced all the effect that I could wish...In fact, I should find no more difficulty in teaching them to read than to pray to God by means of my papers, in which each arbitrary letter signifies a particular word and sometimes even two together. They have so much readiness in understanding this kind of writing that they learn in a single day what they would never have been able to grasp in an entire week without the aid of these leaflets, which they call Kignamotinoer, ou Kateguenne. They preserve these instructive papers with so much care, and they have for them so particular an esteem, that they keep them very neatly in little cases of birchbark bedecked with wampum, with beadwork, and with porcupine quills... (Le Clercq, 1910, pp. 131, 126).

This system of hieroglyphic writing underwent some revision at the hands of l'Abbe Maillard during the middle of the 18th century. After this the history of the system is difficult to trace, but a number of manuscripts exist which seem to date from the latter part of the century. During the 19th century, however, a number of books were printed in these characters, and we here reproduce a page from one of these (figure 11).

The Micmac hieroglyphics have never been adequately studied from a linguistic point of view, and the basis of their symbolization is therefore largely unknown. A number of authors, Shea



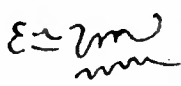

(1861) in particular, state that the characters are symbolic, not phonetic. Shea gives the following examples:

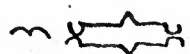
2	I or we,
3	thou,
ε	he,
εε	they,
2 □	we are,
εε □	they are,
☩	our Father.


We may suspect, although we have no real proof, that the success of the hieroglyphic system in Micmac is due to a peculiar feature of the Algonquian languages—namely, that word roots tend to express abstract ideas (activities of space, abstract relationship, condition, volition, or affection), and that these abstract concepts are specified and rendered concrete by suffixes and context. The hieroglyphics would, therefore, represent abstract concepts, or classes of abstract concepts, and specific meanings would be determined by the environment.

As an example of the use of Micmac hieroglyphics we may consider the following short prayer preserved by Shea (1861).

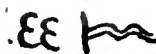
The Our Father

			
<u>Nutshinen</u>	<u>wasok</u>	<u>ebin</u>	<u>tschituk</u>
Our Father	light	thou art sitting	may


deluisin
as thou art named


mekidemek,
honored,


wasok
heaven


n'telidamen
that we go



tschiptuk
may



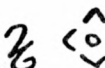
igenemuiek
us give



ula
there



nemulek
we see thee



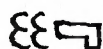
uledessenem,
we will be happy



nadel
there



wasok
heaven



eikik
they are



deli skedask,
as they obey thee,



tschiptuk
may



elp
also




ninen
we



deli skedulek,
so we obey thee,



magamiek
earth



eimek
we are



delamugubenikel
the same food



ossemiekol,
us thou hast



apseh
given,



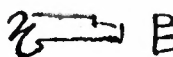
nigetsch
again now




kiskuk
to-day



delamuketsch
the same food



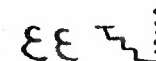
peneguemuin
to let us come



nilunal
for our nourishment



deli abiksiktaksik
as we pardon



wegaiuinamedenik
who have been angry with us,



elp
also



kil
thou



Wiskam
Great Spirit



deli abiksiktuin
thou us pardon



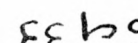
olueutiek,
sinners,



melkenin
us strengthen



metsch
never again



winsudil
bad things



mu
not



k'tigalinen,
we are brought,

EE n C

kesinukwamkél
evils

E ^ r

winsohikel
bad

3 E E

kekvel
of every kind

E r 77

tuachtuin
remove from us

77

n'deliatsch.
that is true.