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THE NORTHERN LIMIT OF INDIAN AGRICULTURE IN NORTH AMERICA*

D. W. MOODIE AND BARRY KAYE

AT THE time of European contact the northern limit of Indian agriculture on the Great Plains of North America was probably in North Dakota, at the Knife River villages of the Hidatsa Indians, or about $47^{\circ}30' N.$ ¹ Agriculture in this area was practiced by the Mandan, Arikara, and Hidatsa tribes, who cultivated Indian corn, beans, squashes, pumpkins, sunflowers, and tobacco. The first European to describe the agricultural activities of these sedentary Indians of the Upper Missouri was the French explorer, La Vérendrye, who in 1738 accompanied a party of Assiniboin Indians on a trading expedition to their villages. There is little reason to believe that at this time native cultivation extended north of the Knife River.² The purpose of the present study is to elucidate a more northerly, and hitherto neglected, phase in the development of Indian agriculture that took place almost a century after the first Europeans had appeared on the plains. Although this northward extension was stimulated to some extent by the European presence, it was essentially Indian in character. It also seems to have been the most northerly development of aboriginal agriculture on the North American continent, some 200 miles north of the prehistoric aboriginal agricultural frontier in central North America.

One of the most notable aspects of this, the *Ultima Thule* of Indian agriculture on the continent, was that the traditional corn-bean-squash-pumpkin complex of North American Indian agriculture was carried almost to the poleward limit of aboriginal planting. This complex remained intact to Plantation Island, $49^{\circ}10' N.$ Beyond that point the acclimated dwarf Mandan

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¹ George F. Will: Indian Agriculture at Its Northern Limit in the Great Plains Region of the United States, *Proc. 20th Internatl. Congr. of Americanists*, Vol. 1, 1924, pp. 203-205; reference on p. 203.

² Richard A. Yarnell (Aboriginal Relationships between Culture and Plant Life in the Upper Great Lakes Region [Ann Arbor, Mich., 1964], p. 128) has "found no early historic reports of corn growing north of 47.5 degrees" north latitude. It should be noted that Waldo R. Wedel (Prehistoric Man on the Great Plains [Norman, Okla., 1961], p. 239) has speculated that in prehistoric time prairie-dwelling Indians north of the Knife River practiced some agriculture.

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varieties, which made this diffusion possible, were incapable of surviving as a complete complex.

The first part of the article documents the occurrence of Indian agriculture north of the Upper Missouri³ in the southern Manitoba Lowlands and



FIG. 1

in adjacent areas of Ontario and Minnesota (Fig. 1). An attempt is then made to explain the process of the diffusion of agriculture into these areas, and to describe its salient characteristics.

³ The discussion of agriculture in this paper is limited to food crops other than wild rice, which was occasionally sown by the Saulteaux Indians north of the Upper Missouri. It should be noted that the Blackfeet of southern Alberta were cultivating tobacco on the eve of European contact. This practice was in large part discontinued when better quality tobaccos became available through the fur trade (see John C. Ewers: *The Blackfeet: Raiders on the Northwestern Plains* [Norman, Okla., 1958], pp. 28 and 33-34).

INDIANS OF THE MANITOBA LOWLANDS

Some knowledge of the disposition of the various Indians in the southern Manitoba Lowlands is prerequisite to understanding the beginnings of aboriginal agriculture in this area and its subsequent diffusion elsewhere. During the first decade of the nineteenth century the lower Red River valley was occupied by four major bands of Saulteaux Indians and also by a small number of Ottawa Indians.⁴ The Saulteaux, more widely known as Chippewas or Ojibwas, took their name from the rapids at Sault Ste. Marie, where the proto-Chippewa first confederated under the name of Saulteur or Saulteaux.⁵ From Sault Ste. Marie the Saulteaux migrated westward along the northern and southern shores of Lake Superior in the period 1680–1850. The northern Saulteaux penetrated the area west of Sault Ste. Marie more rapidly and by about 1780 had reached the Manitoba Lowlands.

The Saulteaux who came to inhabit the lower Red River valley allied themselves with the Cree and the Assiniboin, who had hunted this area previously, and joined with them in their wars against the Sioux. One band of the Saulteaux, under the leadership of Peguis, hunted in the valley below The Forks—that is, below the junction of the Assiniboine and Red Rivers. Another, under the Premier, occupied the valley above The Forks toward Pembina. A band under the Black Man (l'Homme Noir) inhabited the Red Lake area in Minnesota, while Black Robe (Robe Noire) and his band frequented the lower Assiniboine valley and the country about Lake Manitoba.

The less numerous Ottawas, who had migrated from their home area around Michilimackinac, were more recent arrivals in the Red River valley. According to Henry, they arrived about 1792, “when the prospects of great beaver hunts allured them from their native country.”⁶ Initially, the Ottawas were widely scattered, but by 1808 the majority hunted in the lower Red River valley and adjacent areas and congregated each summer at the Netley Creek encampment. They were sometimes referred to by the fur traders as the Courtes Oreilles or the Pin Panché.⁷

⁴ Manuscript by Lord Selkirk relating to Red River, 1819 (Selkirk Papers [hereinafter S.P.], Vol. 47, pp. 12,664–12,665 [microfilm collection in the Public Archives of Manitoba, Winnipeg]).

⁵ Harold Hickerson: *The Southwestern Chippewa: An Ethnohistorical Study*, *Amer. Anthropologist*, *Memoir* 92 [Vol. 64, No. 3, Part 2], 1962, p. 88.

⁶ Alexander Henry: *The Manuscript Journals of Alexander Henry and of David Thompson, 1799–1814* (edited by Elliott Coues; 3 vols.; New York, 1897), Vol. 2, p. 448.

⁷ Pin Panché, or Sha-gwaw-koo-sink, was one of the leading men of the Ottawa Netley Creek band. See the manuscript by Lord Selkirk relating to Red River, 1819 [see footnote 4 above] and John Tanner: *A Narrative of the Captivity and Adventures of John Tanner during Thirty Years Residence among the Indians in the Interior of North America* (Minneapolis, Minn., 1956), pp. 171 and 201.

OCCURRENCES OF INDIAN AGRICULTURE

The first mention of Indian agriculture north of the Upper Missouri appears to be Alexander Henry's reference⁸ to the cultivation of Indian corn and potatoes at Netley Creek, near the mouth of the Red River, at 50°18' N. According to Henry, the Netley Creek Indians first planted corn in 1805, when only a small amount of land was put under cultivation. Between 1805 and the founding of the Selkirk Settlement in 1812, the Netley Creek site⁹ seems to have been cultivated almost annually. In 1806 Henry noted that the Indians were "sowing corn and potatoes at Dead river [Netley Creek]."¹⁰ The following year a Hudson's Bay Company employee with the brigade from Osnaburgh House observed: "passed Netley Creek . . . we found a number of natives who has gardens, they gave me some potatoes."¹¹ In 1808 Henry again visited Netley Creek and reported that the Indians had "extended their fields, and hope in a few years to make corn a regular article of traffic with us."¹² John Tanner, a white man who was raised from childhood by the Indians and who was living with them at Netley Creek about this time, recalled cultivating and harvesting corn on two separate occasions before the establishment of the Selkirk Settlement.¹³

Lord Selkirk in his instructions in 1811 to Miles Macdonell, the first governor of the Selkirk colony, indicated that seed for the settlers could be obtained from two sources, the Hudson's Bay Company posts and the Netley Creek Indians: "The Cos. establishments at Brandon House, etc., will . . . supply you with seed potatoes and perhaps some seed grain . . . Perhaps, however, a greater supply at least of Indian corn may be obtained from the Ottawa & Bungee Indians at Dead River near the mouth of Red River."¹⁴ In an account of the Red River valley before colonization, Selkirk mentioned native corn culture at two places: Netley Creek and a site described only as

⁸ Henry, *loc. cit.* [see footnote 6 above].

⁹ Netley Creek had long been an important summer encampment for the Red River valley Indians. See William W. Warren: *History of the Ojibway Nation* (Minneapolis, Minn., 1957), pp. 140 and 261. The sturgeon fisheries of the creek, the whitefish of neighboring Lake Winnipeg, and the muskrats of the delta marshes made it an attractive location.

¹⁰ Henry, *op. cit.* [see footnote 6 above], Vol. 1, pp. 280-281.

¹¹ Brandon House post journal, Sept. 3, 1807 (Hudson's Bay Company [hereinafter H.B.C.], Film 1M16, B22/a/15, p. 3 [microfilm collection in the Public Archives of Canada in Ottawa]).

¹² Henry, *op. cit.* [see footnote 6 above], Vol. 2, p. 448.

¹³ Tanner, *op. cit.* [see footnote 7 above], pp. 168 and 171. It is impossible to assign precise dates to Tanner's narrative, but there is little doubt that agriculture was well established at Netley Creek before 1812.

¹⁴ Lord Selkirk's instructions to Miles Macdonell, 1811 (S. P. [see footnote 4 above], Vol. 1, pp. 176-177).

“a little ground on Red River.”¹⁵ Frequent reference to Indian gardening at Netley Creek is related to its location on the main river route to the south-eastern Canadian plains. However, although Netley Creek seems to have been the main center of Indian agricultural activity before 1812, the possibility of native gardening at places other than those documented cannot be ruled out.

After 1812 agriculture became more widespread among the Indians. West of the Netley Creek and Red River valley sites a small Indian garden village was established in 1815 on the Assiniboine River at a place called the Half Way Bank, midway between Brandon House and Portage la Prairie.¹⁶ Indian gardens were reported in 1820 in the vicinity of Big Point House. Peter Fidler, then at Big Point House, observed that “some of the Indians have gardens at White Mud River a few miles distant.”¹⁷ Fidler obtained seed from the Indians and pointed out that the soil they cultivated was much better than that at the Fort. The Reverend John West, who traversed the area between Lakes Manitoba and Winnipeg in 1822, noted that a band of Indians—possibly the same Indians mentioned by Fidler in 1820—was raising potatoes and pumpkins on the shores of Lake Manitoba.¹⁸

The most significant agricultural expansion, however, was from the parkland into the forest and lake country to the east. In 1812 corn was raised by the Indians to the east of the Red River at Roseau Lake. At Pembina, Miles Macdonell wrote in his journal: “a Court driel [Courtes Oreilles] Indian brought an old file and axe to have made to a Sturgeon spear & hoe which I ordered the Blacksmith to make to a model he brot. These people grow a great deal of Indian Corn at Lac dux Roseaux—they formerly used to raise that grain in abundance at Riveire au Mort [Netley Creek].”¹⁹ The following year Macdonell gave seed to the Courtes Oreilles Indians, which they planted in the Lake of the Woods area. “Two Court Oreill Indians . . . brot furs from Lac Disbois where . . . they raised a quantity of Indian Corn last summer from seed I gave. . . .”²⁰

Daniel Harmon, who passed through the Lake of the Woods, probably in

¹⁵ Manuscript by Lord Selkirk relating to Red River, 1819 [see footnote 4 above], p. 12,665.

¹⁶ Brandon House post journal, Apr. 24, 1816 (H.B.C. [see footnote 11 above], Film 1M17, B22/a/19, p. 29).

¹⁷ Report of the Manitoba District by Peter Fidler, 1821 (H.B.C. [see footnote 11 above], Film 1M777, B51/e/2, p. 3).

¹⁸ John West: *The Substance of a Journal during a Residence at the Red River Colony* (London, 1824), p. 97.

¹⁹ Miles Macdonell's journal, Mar. 9, 1813 (S. P. [see footnote 4 above], Vol. 62, p. 16, 802).

²⁰ *Ibid.*, Jan. 23, 1814 (Vol. 63, p. 16, 876).

1816, remarked that "the Sauteurs, who remain about Lake of the Woods, now begin to plant Indian corn and potatoes, which grow well."²¹ By 1818 there is evidence that the Ottawas had established a considerable agricultural complex on one of the islands in Lake of the Woods.²² A good description of this island, variously referred to as Plantation, Cornfield, and Garden Island, was written in the autumn of 1819 by the Hudson's Bay Company factor at Fort Lac la Pluie. "I visited their tents which were pitched alongside of the piece of ground which they [had] under cultivation which from the regular manner in which it was laid out would have done credit to many . . . farmers, excellent Potatoes, Indian Corn, Pumpkins, Onions & Carrots. The women on whom it is a duty do all the laborous work, were busily employed gathering . . ."²³

In 1821 Father S. J. N. Dumoulin, the Roman Catholic missionary at Pembina, reported that the Indians in his charge were planting at four different localities, of which the main one was on the Roseau River.²⁴ Although the Pembina mission was south of the 49th parallel, the Roseau site was probably in British territory, perhaps the same site mentioned by Macdonell in 1812, but it is likely that one or more of the three unspecified localities lay south of the international boundary. If so, it represents the earliest occurrence of aboriginal agriculture in northern Minnesota. Not until 1828, however, is there conclusive evidence of Indian agriculture in northern Minnesota. In February, 1829, the American Fur Company traders at Rainy Lake purchased corn grown by the Indians at Red Lake.²⁵ In 1832 Henry Schoolcraft learned from traders at Cass Lake that the Red Lake Indians were raising considerable quantities of corn.²⁶

However, travel accounts of the Upper Mississippi region, southeast of

²¹ Daniel Williams Harmon: *Sixteen Years in the Indian Country: [His] Journal, 1800-1816* (edited by W. Kaye Lamb; Toronto, 1957), p. 211.

²² Numerous references in the Fort Lac la Pluie post journal, Autumn, 1818 (H.B.C. [see footnote 11 above], Film 1M67, B105/a/6, pp. 6 ff.).

²³ Fort Lac la Pluie post journal, Sept. 10, 1819 (H.B.C. [see footnote 11 above], Film 1M67, B105/a/7, p. 30).

²⁴ Father Dumoulin to Archbishop J. O. Plessis, Aug. 16, 1821, in *Documents Relating to Northwest Missions, 1815-1827* (edited by Grace Lee Nute; St. Paul, Minn., 1942), p. 324.

²⁵ Fort Lac la Pluie post journal, Feb. 28, 1829 (H.B.C. [see footnote 11 above], Film 1M67, B105/a/13, p. 6). Red Lake was probably one of the unnamed localities mentioned by Father Dumoulin in 1821. Father Dumoulin, who encouraged the Indians to plant, would have had frequent contact with the large Red Lake band.

²⁶ Henry Rowe Schoolcraft: *Expedition to Lake Itasca* (edited by Philip P. Mason; East Lansing, Mich., 1958), pp. 21 and 191.

Red Lake, make no mention of Indian agriculture before 1832.²⁷ In that year Schoolcraft visited garden sites on Star Island in Cass Lake and along the shores of Leech Lake.²⁸ Although he had not observed Indian agriculture in these areas during a trip he made in 1820, it was well established by 1832.

DIFFUSION OF INDIAN AGRICULTURE

The Netley Creek Ottawas, who were the first to cultivate north of the Knife River, played the crucial role in disseminating agriculture among the neighboring Saulteaux. According to Lord Selkirk:

The Indians who inhabit the country from Lake Superior to Red R. are mostly of the Chippeway Nation, who have never been in the habit [of] cultivating the ground. The Ottawas, who speak the same language & reside near Lakes Huron & Michigan have long been accustomed to plant Indian Corn, & some other vegetables tho' on a small scale. A band of these Indians, prompted by the growing scarcity of game in their own country, determined to migrate to Red River where they continued the practice of cultivating the ground.²⁹

Although some agriculture had traditionally been part of the predominantly hunting-fishing-gathering economy of the Ottawas, those who migrated to the lower Red River abandoned cultivation for a number of years. By Henry's account, about thirteen years elapsed before they recommenced the small-scale agriculture that had been their custom. It was only when Henry gave them seed in 1805 that they began to plant in their new environment.³⁰ It would seem, therefore, that the provision of seed to an isolated band of immigrant Ottawas, who had some previous knowledge of agriculture, resulted in the anomalous development of a small pocket of Indian agriculture well beyond its traditional northern limits.

Before the establishment of the Selkirk Settlement in 1812, the Ottawas abandoned the Netley Creek site. Selkirk says "because their corn being

²⁷ For example, none of the following accounts mention Indian agriculture: Z. M. Pike: *An Account of Expeditions to the Sources of the Mississippi . . .* (Philadelphia, 1810); Henry Rowe Schoolcraft: *Narrative Journal of Travels . . . to the Sources of the Mississippi River, in the Year 1820* (edited by Mentor L. Williams; East Lansing, Mich., 1953); Ralph H. Brown, edit.: *With Cass in the Northwest in 1820, Minnesota History*, Vol. 23, 1942, pp. 126-148, 233-252, and 328-348; and J. C. Beltrami: *A Pilgrimage in Europe and America, Leading to the Discovery of the Sources of the Mississippi and Bloody River* (2 vols.; London, 1828).

²⁸ Schoolcraft, *Expedition to Lake Itasca* [see footnote 26 above], pp. 20-21, 209, 260, 328, 333, and 335.

²⁹ Manuscript by Lord Selkirk relating to Red River, 1819 [see footnote 4 above], Vol. 47, p. 12,836.

³⁰ "The first corn and potatoes they [the Ottawas] planted here was a small quantity which I gave them in the spring of 1805" (Henry, *op. cit.* [see footnote 6 above], Vol. 2, p. 448).

frequently pillaged by other Indians in the neighbourhood they thought it advisable to retire to an island in the Lake of the Woods . . .”³¹ He implies that the pilfering was encouraged by the North-West Company, who, in his opinion, were loath to see the development of Indian agriculture in the valley. Tanner relates that the band moved directly from Netley Creek to an island in Lake of the Woods.³² Certainly, the Ottawas were cultivating corn in the Lake of the Woods in 1813 and, if Tanner is correct about the direct move to Lake of the Woods, the migration took place in 1812. However, it has also been established that Ottawa Indians from Netley Creek were cultivating corn at Roseau Lake in 1812. Probably they moved from Netley Creek to Lake of the Woods via the Roseau Valley, which was part of the War Road, one of the two main routes between the open plains and Lake of the Woods. It is reasonable to suppose that part or all of the Netley Creek band may have cultivated at Roseau Lake while they were negotiating for land. When the Ottawas obtained the consent of the Indians in that quarter to occupy Plantation Island in Lake of the Woods they moved there. More secluded from other Indians, they were no longer disturbed and, according to Selkirk, were able to extend their cultivation considerably.

Although the Ottawas left Netley Creek in 1811 or 1812, agriculture was continued, albeit only occasionally, by some of the Saulteaux, or Bungees. Members of the Peguis band, some of whom probably planted alongside the Ottawas at Netley as early as 1808,³³ continued to cultivate corn and potatoes on the site.³⁴ According to Tanner, it was Sha-gwaw-koo-sink, an old Ottawa, who first taught the Red River Saulteaux to plant corn.³⁵ In Selkirk’s view, the example of the Ottawas—and later the settlers—“operated with some of the Indians of Pegeois’ band to try the same experiment . . .”³⁶ Perhaps for similar reasons agriculture appeared among other Saulteaux bands.

As we have already noted, Indian agriculture was found at the Half Way Bank and along the western shores of Lake Manitoba before 1823. That at the Half Way Bank seems to have been a relatively short-lived development, but

³¹ Manuscript by Lord Selkirk relating to Red River, 1819 [see footnote 4 above], Vol. 47, p. 12,665.

³² Tanner, *op. cit.* [see footnote 7 above], p. 190.

³³ Henry, *op. cit.* [see footnote 6 above], Vol. 2, p. 448.

³⁴ Colin Robertson’s journal, Aug. 18, 1815 (S. P. [see footnote 4 above], Vol. 65, p. 17,380); Nicholas Garry: Diary of Nicholas Garry, *Trans. Royal Soc. of Canada*, Vol. 6, Sect. 2, 1900, pp. 73–204, reference on p. 135; and Alex. Macdonell to Andrew Colville, Sept. 13, 1821 (S. P. [see footnote 4 above], Vol. 23, p. 7418).

³⁵ Tanner, *op. cit.* [see footnote 7 above], p. 171.

³⁶ Manuscript by Lord Selkirk relating to Red River, 1819 [see footnote 4 above], Vol. 47, p. 12,665.

cultivation continued, perhaps sporadically, among the Indians in the vicinity of Lake Manitoba. In 1843 the Reverend Abraham Cowley recorded an instance of Indian cultivation in the vicinity of the Narrows of Lake Manitoba.³⁷ The Reverend James Settee observed potato fields in 1855 and 1856 on what he called the Potatoe Island, that is, the present Garden Island at the north end of Lake Manitoba.³⁸ Members of the Assiniboine and Saskatchewan Exploring Expedition of 1858 noted Indian potato culture on Sugar Island in Lake St. Martin in the same general area.³⁹ They also observed "several places on the Dauphin River [the present Mossy River] where the Indians grow potatoes, Indian corn and melons," which appears to have been the northernmost instance of Indian corn cultivation on the continent.⁴⁰

At Plantation Island the corn culture was largely commercial. From the outset, part of the crop was sold to the fur traders of the Rainy Lake-Lake of the Woods area. As early as 1808 the Ottawas had expressed a desire to trade agricultural produce, and commercial opportunities at Lake of the Woods may well have influenced their decision to locate there. The Ottawas had a long tradition as traders and middlemen in the Michilimackinac area and elsewhere and had raised corn commercially near parts of Lake Michigan and the southern shore of Lake Superior to supply the fur trade. The "chief part" of Sha-gwaw-koo-sink's first crop at Plantation Island was sold to the North-West Company traders,⁴¹ and by 1817 it was widely known that corn could be purchased from the Ottawas in Lake of the Woods.⁴²

Commercial corn production in this area was initiated because of the great demand for provisions. By this time the country between Lake Superior and Lake of the Woods had been virtually depleted of the larger food animals, and a meager subsistence, not always reliable, was derived by the fur traders from fish, rabbits, and wild rice. Corn was purchased, not only to assist in the maintenance of the trading posts, but also to supply the transport brigades with voyaging provisions. Plantation Island was strategically

³⁷ Journal of the Reverend Abraham Cowley, Feb. 13, 1843 (Church Missionary Society Records, Film A86 [microfilm collection in Public Archives of Manitoba, Winnipeg]).

³⁸ Journal of the Reverend James Settee, Oct. 13, 1855, and Oct. 6, 1856 (*ibid.*, Film A95).

³⁹ Henry Youle Hind: North-West Territory: Reports of Progress Together with a Preliminary and General Report on the Assiniboine and Saskatchewan Exploring Expedition (Toronto, 1859), p. 91.

⁴⁰ S. J. Dawson: Report on the Exploration of the Country between Lake Superior and the Red River Settlement, and between the Latter Place and the Assiniboine and Saskatchewan (Toronto, 1859), p. 7.

⁴¹ Miles Macdonell's journal, Jan. 23, 1814 (S.P. [see footnote 4 above], Vol. 63, p. 16,876).

⁴² Miles Macdonell to Lord Selkirk, Aug. 3, 1817 (S. P. [see footnote 4 above], Vol. 12, p. 3900).

located in this respect; for it lay astride the main canoe route connecting the lake head with the western interior. The Indian gardens afforded the traders a small, but dependable, supply of corn. The traders of the North-West Company and the Hudson's Bay Company vied with one another for the corn supply to ensure greater mobility in the competition for furs. Although the amounts traded annually to the two companies during the period of competition are not known, the chief factor at Fort Lac la Pluie reported in the autumn of 1819 that the Hudson's Bay Company's trade at Plantation Island had "been more successful than could have [been] imagined."⁴³ The post journal indicates that not all of the corn purchased had been transported directly to the company's headquarters at Fort Lac la Pluie; seventy-nine bags of corn and one bag of rice had been cached somewhere between the island and Rainy Lake.⁴⁴

After the union of the two companies in 1821, corn production at Lake of the Woods declined, largely as a result of a drop in price brought on by the cessation of competition. The chief factor at Fort Lac la Pluie reported in 1822-1823 that during the period of competition the Indians "would never give more than 2 bushels for a three point blanket, which traders, some from competition & some from necessity were obliged to give; as soon as the junction was affected the exorbitant price was reduced to a pint of powder for a bushel. On this the Indians in great parts discontinued their cultivation."⁴⁵ However, in 1824 the Hudson's Bay Company "succeeded in trading a tolerable stock of Indian corn" at Plantation Island,⁴⁶ a total of 76 bushels.⁴⁷ In 1825 the total amount traded was 140 bushels.⁴⁸

Although the union of the companies precipitated a falling off in corn production, the decline was both short-lived and limited in effect. The Nor'Westers were immediately supplanted by the Americans, and the old rivalry was replaced by an equally intense Anglo-American rivalry. Corn regained its previous importance in the trade, and the strategic position of Plantation Island along the international boundary was fully appreciated by the traders on both sides. In the Lac la Pluie Report on District for 1825-1826,

⁴³ Lac la Pluie post journal, Oct. 5, 1819 [see footnote 23 above], p. 39.

⁴⁴ *Ibid.* The Indian bags, or fans, were about seven-tenths of a bushel. The bags were made of fawn skins, taken off nearly whole, and consequently they varied with the size of the animal.

⁴⁵ Lac la Pluie Report on District, 1822-1823 (H.B.C. [see footnote 11 above], Film 1M778, B105/e/2, p. 3).

⁴⁶ Lac la Pluie Report on District, 1824-1825 (H.B.C. [see footnote 11 above], Film 1M778, B105/e/4, p. 1).

⁴⁷ Lac la Pluie post journal, Oct. 16, 1824 (H.B.C. [see footnote 11 above], Film 1M68, B105/a/10, p. 5).

⁴⁸ Lac la Pluie Report on District, 1825-1826 (H.B.C. [see footnote 11 above], Film 1M778, B105/e/6, p. 11).

it was noted that the island would "prove a most valuable acquisition to the Traders, to whose government the Island will be awarded."⁴⁹

References to corn cultivation at Plantation Island can be traced in the Lac la Pluie post journal until the early 1830's. The journal contains few entries after 1833 and ends in 1838. From travelers' accounts, however, it is known that Indian agriculture continued at Lake of the Woods at least until the late 1850's. In 1849, the geologist J. J. Bigsby saw a quarter-acre plot of land under potatoes and beans on Plantation Island.⁵⁰ A more detailed description of the island is contained in the reports of the Red River Exploring Expedition, which visited the island in 1857.

Garden Island is about a mile and a half long and a mile broad at its widest part. Its western half is thickly wooded, the greater portion of the eastern half cleared and cultivated. A field containing about 5 acres was planted with Indian corn, then nearly ripe. The corn was cultivated in hills, and kept very free from weeds. . . . Near the space devoted to Indian corn, were several small patches of potatoes, pumpkins, and squashes. An air of great neatness prevailed over the whole of the cultivated portion of the Island.⁵¹

The expedition provided the first reliable indication of Indian cultivation on islands other than Plantation Island,⁵² and a map produced by the expedition shows that cultivation had spread to a number of sites along the lake shore.⁵³ The number of Indians cultivating in the Lake of the Woods area is not known, but in 1854 it was estimated that "about two hundred Indians reside . . . [at Plantation Island] in summer, & raise on it large quantities of potatoes, Indian corn & pumpkins."⁵⁴

The gardens on Plantation Island were the harbingers of a dispersed Indian agriculture that developed in the forest country east of the prairie margin. Agriculture was introduced by the Ottawas and spread to the more numerous Saukteaux. It first diffused among the Lake of the Woods Saukteaux

⁴⁹ *Ibid.*, p. 2. Although the international boundary in this area was delimited in 1818, the political status of Plantation Island remained uncertain among the fur traders. The mistaken belief that the island lay in British territory was strengthened when David Thompson, who was engaged in surveying the boundary for Great Britain, informed the Hudson's Bay Company traders in 1824 that the island lay on the British side of the line. "This year . . . Mr. Thomson gave a kind of semi official paper in his own handwriting ascertaining that the new line must pass to the Southward of Plantation Island" (Lac la Pluie post journal, Sept. 24, 1824 [see footnote 47 above], p. 3).

⁵⁰ J. J. Bigsby: *The Shoe and Canoe or Pictures of Travel in the Canadas* (2 vols.; London, 1850), Vol. 2, p. 298.

⁵¹ "Report on the Exploration of the Country between Lake Superior and the Red River Settlement" (Legislative Assembly of Canada; Toronto, 1858), p. 137 (para. 134).

⁵² "The islands in the Lake of the Woods offer some spots available for cultivation, many of which are now occupied by Indians, who cultivate Indian corn, potatoes, squashes, and pumpkins" (*ibid.*, Introduction, p. 2).

⁵³ *Ibid.*, map following Introduction.

⁵⁴ Journal of the Reverend Robert M. McDonald, Feb. 17, 1854 (Church Missionary Society Records, Film A93).

and from there to neighboring woodland bands. In 1825 at least one Indian family was attempting agriculture to the east of Lake of the Woods, probably in the vicinity of Rainy Lake.⁵⁵ Although entries in the Lac la Pluie post journal of the late 1820's and early 1830's imply that there was some gardening among the Rainy Lake Indians, no information is given on its extent or location. Later evidence demonstrates that Indian agriculture did, in fact, diffuse in this direction. In 1857 the Red River Exploring Expedition observed a "neglected" and "partially fenced" Indian garden at the second rapids of the Rainy River, midway between Lake of the Woods and Rainy Lake.⁵⁶

By this time agriculture had also appeared among the Saulteaux to the north and west of Lake of the Woods. The chief trader of the Hudson's Bay Company at Fort Alexander informed the Hind party in 1857 "that Indian corn succeeded well, in many parts of the south-eastern rim of the lake [Lake Winnipeg] . . . ; it is cultivated by the Indians."⁵⁷ In the same year the Reverend E. A. Watkins observed Indian corn culture somewhere between Lac Seul and Fort Alexander, probably along the lower English River.⁵⁸

By the late 1820's or early 1830's, a similar type of agriculture had appeared among the Saulteaux in northern Minnesota. Indian agriculture there was also stimulated to some extent by the demands of the fur trade. For the American fur traders not only competed for corn at Plantation Island, they also carried on a substantial trade with the Saulteaux at Red, Leech, Rice, and Cass Lakes. Schoolcraft relates that the Red Lake band was supplying corn "to the posts on the Upper Mississippi, and even as far east as Fond du Lac."⁵⁹ The Saulteaux of Rice and Leech Lakes also traded their corn to the British at Lac la Pluie.⁶⁰

MANDAN ORIGINS

The establishment of Indian agriculture at Netley Creek was part of a general northward expansion of native cultivation in North America, based primarily on the poleward migration of Indian corn (Fig. 2). Corn is among the most adaptive of all domesticated plants to differences in climate; from

⁵⁵ Fort Lac la Pluie post journal, Oct. 16, 1825 (H.B.C. [see footnote 11 above], Film 1M68, B105/a/11, p. 12).

⁵⁶ Report on the Exploration of the Country between Lake Superior and the Red River Settlement [see footnote 51 above], p. 134 (para. 121).

⁵⁷ *Ibid.*, p. 151 (para. 155).

⁵⁸ Journal of the Reverend E. A. Watkins, Sept. 27, 1857 (Church Missionary Society Records, Film A98).

⁵⁹ Schoolcraft, Expedition to Lake Itasca [see footnote 26 above], p. 21.

⁶⁰ Lac la Pluie post journal, Oct. 26, 1832 (H.B.C. [see footnote 11 above], Film 1M68, B105/a/17, p. 6).

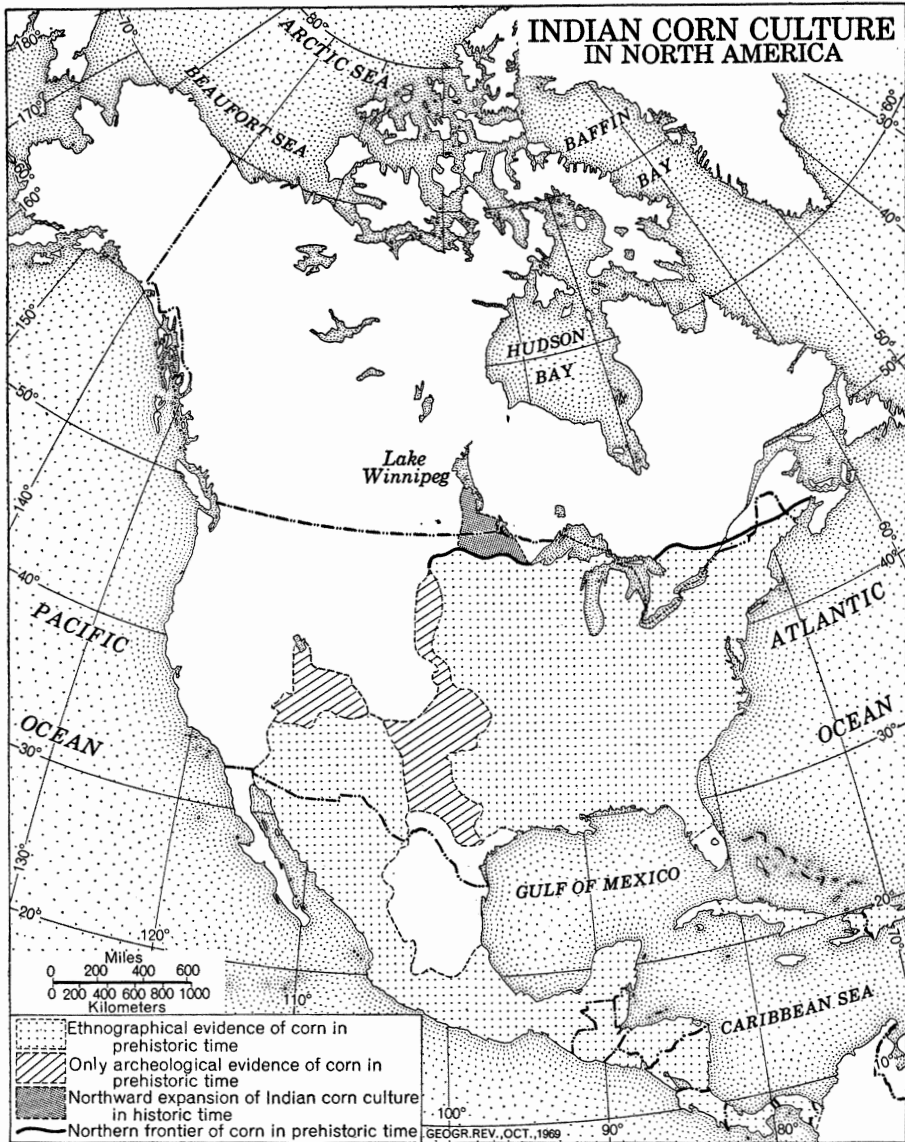


FIG. 2

its probable hearth of domestication in Mexico, it spread poleward, in the process changing from a tall, long-season plant to a short, hardy one with some resistance to frost. The flint corns of the Mandans were the hardest and earliest of the northern flints. Continual selection and adaptation by the Mandans produced a short-season variety that matured even to the north of their villages. The Hidatsas successfully carried the cultivation of Mandan varieties up the Missouri to the Knife River. Mandan corn, however, was

capable of penetrating still higher latitudes, though it would produce a crop only under the most favorable local conditions. Not only corn, but the other elements of the Mandan crop complex, with the exception of sunflowers and tobacco, were capable of a similar northward extension.

The Mandan crops cultivated by the Ottawas and Saulteaux were supplemented by potatoes, and occasionally by carrots, onions, and even barley. The potato was undoubtedly introduced by Europeans; for it did not appear among the Mandans until the early 1830's.⁶¹ It rivaled corn in importance, but other crops of European origin were tried only infrequently.

From their exhaustive study of Indian corn varieties, Will and Hyde conclude that the corn cultivated by the Red Lake Saulteaux "closely resembles that of the Mandans in appearance and habit of growth, so much so indeed to make it seem probable that this corn is of Mandan origin."⁶² Documentary evidence suggests that the Indian corn, not only at Red Lake but in all the areas discussed, can be traced to the Mandans.

When corn was first planted at Netley Creek, seed was available from a number of sources. The fur trading posts that had frequent contact with the Indian agriculturists on the Upper Missouri, and for which records have survived, possessed gardens in which Mandan crops were included. Indian corn was planted at Brandon House as early as 1796,⁶³ and Henry grew Indian corn and squash in his Pembina gardens before 1805.⁶⁴ Traders from these posts, and from others at the Souris mouth and along the Assiniboine, traded in furs, horses, and Indian corn at the Missouri villages. This commerce had been established by 1785.⁶⁵ A trade in corn, moreover, had been conducted between the Missouri and Canadian Indians, particularly the Assiniboin, since at least the days of La Vérendrye. Thus, in view of the availability of Mandan corn in the Red River valley, the seed that Henry gave to the Ottawas probably originated on the Upper Missouri. Corn of eastern origin may also have been available; for corn was used by the Nor'Westers to provision their canoe brigades to the western plains. However, the long-season eastern varieties with which the brigades were supplied at Detroit

⁶¹ George F. Will and George E. Hyde: *Corn among the Indians of the Upper Missouri* (St. Louis, 1917), p. 65.

⁶² *Ibid.*, p. 297.

⁶³ "The Indian corn is in full perfection, but cannot be kept from the Indians pilfering it" (Brandon House post journal, Sept. 27, 1796 [H.B.C. [see footnote 11 above], Film 1M16, B22/a/3, p. 14]).

⁶⁴ Henry, *op. cit.* [see footnote 6 above], Vol. 1, pp. 242, 243, and 252.

⁶⁵ "Here upon the Branches of the Missury live the Maundieus, who bring to our Factory at Fort Epinett on the Assinipoil River Indian Corn for Sale. Our People go to them with loaded Horses in twelve Days" (notation on copy of Peter Pond's 1785 map of the northern interior of North America [Public Archives of Canada, V/700]).

and Michilimackinac were not likely to have succeeded in Henry's gardens or at the Netley Creek site.

In the first year of settlement, the Selkirk colonists planted Mandan seed varieties. In the spring of 1813, Peter Fidler supplied the colony with Indian corn, bean, pumpkin, and tobacco seed, which he had brought up from the Missouri via Brandon House.⁶⁶ In that same year Governor Miles Macdonell gave the Ottawas the first corn they planted at Lake of the Woods, and this was almost certainly part of the Missouri seed. There can be little doubt that the Netley Creek and Plantation Island corn was Mandan in origin.

Will and Hyde's conclusions point to the same source for the seed used at the Minnesota lakes, a view reinforced by a statement of the Reverend William T. Boutwell, missionary to the southern Saulteaux, that the Indian corn planted at Cass Lake "was first obtained from Red River."⁶⁷ It is relevant to note that the corn planted at the Selkirk Settlement was Missouri corn.⁶⁸ Although the data are not conclusive, the first corn planted at the Minnesota lakes seems to have been a short-season Mandan variety, which was introduced either from the west via the Red River valley to Red Lake, and hence to the Upper Mississippi, or from the north via Plantation Island. The possibility that seed was also derived from agricultural Sioux of the Fort Snelling area, with whom the southern Saulteaux had frequent contact, cannot be discounted. The Sioux began to plant corn before 1800 on the Mississippi below the mouth of the Minnesota River, where they raised flour corns as well as some varieties of Mandan flints.

Before emigrating from Sault Ste. Marie, the Saulteaux had practiced gardening. North of Lake Superior, however, the extreme climate precluded agriculture by the bands migrating west. Not for several generations, until they reached the Red River valley where Mandan seed was available, and the Algonkian-speaking Ottawas taught them to plant, did some of the northern Saulteaux again take to gardening. South of the lake conditions were somewhat different. There the Saulteaux were able to carry their agriculture along the Superior littoral as far west as Fond du Lac. At this point the Saulteaux crop varieties appear to have reached their ecological limit. Beyond it, the frost-free period diminishes rapidly from 120 days to about 100 days, and the Indians who pushed west of the lake perforce lost their agriculture. Farther west, however, in the Red Lake–Upper Mississippi country, the

⁶⁶ Miles Macdonell's journal, Mar. 18, 1813 [see footnote 19 above], Vol. 62, p. 16,808.

⁶⁷ Schoolcraft, Expedition to Lake Itasca [see footnote 26 above], p. 328.

⁶⁸ Report on the Exploration of the Country between Lake Superior and the Red River Settlement [see footnote 51 above], pp. 188 (para. 232) and 190–191 (paras. 242–243).

climate ameliorates. There the southern Saulteaux encountered the fast-maturing Mandan varieties and were able to resume their small-scale agriculture. The area between the lake head and the Upper Mississippi, however, remained impregnable to Indian agriculture.

GARDEN SITES

In a single locality, the maturation period of corn grown from identical seed can vary by as much as ten days, depending on the type of soil; the earliest harvest is on sandy soil, and the latest on heavy loam.⁶⁹ Local differences of this sort were critical for successful corn cultivation in these northern areas. With the exception of the soils developed on levee, beach, aeolian sand, or delta deposits, heavy clay loams predominate in the Red River valley. The Ottawas at Netley Creek raised their corn on a levee amidst an area of delta marsh on the southern edge of Lake Winnipeg. This site was well chosen; for the thermal effects of the lake and surrounding marshes ensured a longer frost-free period than in the adjacent Red River valley to the south. Warm, well-drained levee soils are among the quickest producers of corn, and they were particularly satisfactory at the Netley site, where subsurface moisture is available in what otherwise would be a droughty soil. Elsewhere in the lower Red River valley corn was an uncertain crop. The Selkirk settlers, for example, were successful with Mandan varieties only on the natural levees along the main rivers.⁷⁰

Similar site factors were operative at Lake of the Woods and in northern Minnesota. Without exception, the Indian gardens occupied lakeside or island sites where the moderating effects of large bodies of water extended the growing season. The chief factor at Lac la Pluie linked the success of corn cultivation on Plantation Island to its situation in a large body of water. In this connection, he noted that "summer frosts are never so frequent in large open lakes as in rivers. . ."⁷¹ The factor spoke from experience; for attempts by the traders to cultivate corn along the nearby Rainy River were invariably foiled by autumn frosts. But only one instance has been found where the corn crop at Plantation Island was adversely affected by frosts.⁷² No mention of crop failures is made in the Lac la Pluie post journal, and S. J. Dawson of the

⁶⁹ George F. Will: *Corn for the Northwest* (St. Paul, Minn., 1930), p. 38.

⁷⁰ Report on the Exploration of the Country between Lake Superior and the Red River Settlement [see footnote 51 above], p. 191 (para. 242).

⁷¹ Lac la Pluie Report on District, 1825-1826 [see footnote 48 above], p. 2.

⁷² D. McPherson to Lord Selkirk, Oct. 13, 1817 (S.P. [see footnote 4 above], Vol. 12, p. 4128).

Red River Exploring Expedition was informed by the Plantation Island Indians that they had never experienced a crop failure.⁷³

The Indian gardens were generally located on light soils. With reference to the Leech Lake band, Douglass Houghton, a member of the Schoolcraft Expedition, observed that “their village was upon a sandy soil (nearly the same as most of this country) but a field of corn & potatoes planted by the indians were [*sic*] in a flourishing state.”⁷⁴ Sandy soils were also more easily worked by Indians equipped with primitive implements. The Indians at Plantation Island, for example, were poorly supplied with agricultural tools, despite frequent contact with the traders over two decades. In 1825 it was noted that “the want of horses, ploughs, harrows, hoes & spades [*made*] cultivation extremely laborious . . .” for the Plantation Island Indians.⁷⁵ The Mandan flint corns, however, were capable of producing a crop with a minimum of husbandry⁷⁶ and were therefore especially suitable for Indians, such as the Saulteaux, who possessed only the most rudimentary of agricultural skills.

Agricultural produce formed only a small component of the total food supply of the woodland Saulteaux who had taken to gardening. From lakeside or insular summer encampments the Saulteaux practiced a riparian hunting and gathering economy. At such locations they were able to procure harvests of wild rice, fish, water fowl, and eggs, which were, along with maple sugar, the basic dietary elements. The Indians at Cass Lake, according to Schoolcraft, “rely, in the main, on hunting for a subsistence, deriving considerable aid, as the season shifts, from fishing, the gathering of wild rice, and the products of small fields of corn and potatoes, cultivated by the women.”⁷⁷ These relatively favorable conditions allowed large numbers of Indians to congregate throughout the summer at one location, while the semisedentary nature of their activities was conducive to the establishment of gardens and facilitated tending of the crops.

⁷³ Report on the Exploration of the Country between Lake Superior and the Red River Settlement [see footnote 51 above], p. 63.

⁷⁴ Schoolcraft, Expedition to Lake Itasca [see footnote 26 above], p. 260.

⁷⁵ Lac la Pluie Report on District, 1825–1826 [see footnote 71 above].

⁷⁶ Will and Hyde, *op. cit.* [see footnote 61 above], p. 284.

⁷⁷ Schoolcraft, Expedition to Lake Itasca [see footnote 26 above], p. 21.