

Ethnobotany of the Fort Yukon Region, Alaska¹

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Native plants of the Fort Yukon region, Alaska, were identified as to their medicinal, edible and material uses by the Gwich'in Athabaskan and Caucasian residents. Forty eight species or groups of native plants were identified as having some use predominantly as medicines (40%) and as food or beverage (56%). Their value in past and present Gwich'in culture is discussed.

Ethnobotanik in der Gegend von Fort Yukon, Alaska. Die medizinisch, geniessbar, und werkstoffliche Verwendungen der einheimischen Pflanzen in der Gegend von Fort Yukon, Alaska, bei den Gwich'in Athabaskan und Kaukasischen Einwohnern wurden identifiziert. Achtundvierzig von den identifizierten Arten und Gruppen der einheimischen Pflanzen hatten irgendeine Verwendung vorwiegend als Medizin (40%) und als Nahrung oder Getränk (56%). Ihr Wert in der vergangenen und gegenwärtigen Gwich'in Kultur wird erörtert.

The village of Fort Yukon is located at the confluence of the Yukon and Porcupine rivers in northeastern Alaska (Fig. 1). It was established in 1847 as a fur trading post of the Hudson's Bay Company and was the first English-speaking community in Alaska (U.S. Dept. of Interior 1974). Fort Yukon is located in a physiographic region called Yukon Flats, which is a broad, marshy, lake-dotted floodplain ranging in elevation from 91 to 275 m. The climate is continental subarctic with a maximum high temperature of 37.8°C and a low of -61°C in 40 yr of recordkeeping. The average annual temperature and precipitation are -6.7°C and 15.4 cm, respectively (Crowe 1978). The combination of low precipitation and high summer temperatures results in extreme forest-fire hazard throughout the region. Fires, in turn, contribute to a diverse vegetation mosaic. Forty different forest community types have been identified in the Porcupine River drainage (Yarie 1983). The immediate vicinity of Fort Yukon is dominated by young quaking aspens (*Populus tremuloides*) and alders (*Alnus incana* ssp. *tenuifolia*) thickets with a few scattered mature white spruces (*Picea glauca*). Low-lying areas are thickly covered with willows (*Salix* spp.) and shrub birches (*Betula glandulosa*).

At the time Fort Yukon was established, the region was occupied by nine bands or regional groups of Gwich'in (Kutchin) Athabaskans totaling about 500 individuals within a 43,860 sq km area (Shimkin 1951). The Yukon Flats Gwich'in frequented the area immediately surrounding Fort Yukon and called it Gwichyaa Zhee, meaning "house on the flats." The Gwich'in were a migratory people who hunted muskrats, beavers, ducks, geese, salmon, moose, caribou, hares, grouse, and whitefish. Their lifestyle followed the seasonal patterns of the wildlife: summers were spent fishing and gathering berries along the major rivers; in autumn, families joined together to hunt caribou and Dall sheep; winter was spent ice

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mented with commercially available supplies. In 1979, 42% of the native residents obtained at least half of their food from subsistence activities, but only 3% spent more than 6 mo engaged in these activities (Kruse 1979).

Since the first Caucasian entered this region, the lives of the Gwich'in have been irreversibly changed. Log cabins and frame houses replaced the moss-covered log winter houses and skin or birchbark summer houses; guns replaced traditional hunting spears and traps; and many traditional foods were abandoned for the more convenient home garden and grocery store produce. Knowledge of many customs has been lost out of disuse and supplantation by more modern techniques. The purpose of our project was to document traditional and modern uses of native plants growing in the Fort Yukon region, especially those no longer practiced, to provide a permanent record of Gwich'in ethnobotany.

METHODS

Plant specimens and photographs were collected in the vicinity of Fort Yukon throughout summer 1986. Linguistic and usage information was solicited from knowledgeable Fort Yukon residents who accompanied the authors on plant collecting trips or who studied dried herbarium specimens and photographic slides. Plant identification was made by the senior author according to Hultén (1974) and Miller (1978) and by associates of the University of Alaska Herbarium and the Agricultural and Forestry Experiment Station. Gwich'in plant names were obtained from the informants and from Peter (1979). Herbarium vouchers are housed at the School of Agriculture and Land Resources Management, University of Alaska Fairbanks, with duplicate sets at Millersville University of Pennsylvania (MVSC) and the University of Alaska, Fort Yukon.

USEFUL NATIVE PLANTS OF THE FORT YUKON REGION

The following list of plants is arranged alphabetically by family. The scientific name is followed by the English vernacular name used in the region, the Gwich'in name (in bold type), usage information, and voucher specimen number.

Agaricaceae

Lactarius deliciosus (Fr.) S. F. Gray (orange delight). Mushrooms are harvested in large quantities and eaten steamed or fried.

Apiaceae

Cnidium cnidifolium (Turcz.) Schischk. (wild-carrot). Fresh leaves are infrequently burned in a smudge to emit a pleasant aroma. (No. 836).

Asteraceae

Achillea borealis Bong. and *A. sibirica* Ledeb. (yarrow). At one time, flowers and leaves were boiled for tea. Flower clusters were rubbed in the hands and inserted into the nose to stop nosebleeds. (Nos. 813 and 856, respectively).

Arnica alpina (L.) Olin. (daisy). Flowers are harvested for ornamental flower arrangements. (Nos. 827, 833).

Artemisia frigida Willd. (ground-squirrel food; **thaa shii**, **tthah shii**). Stems and

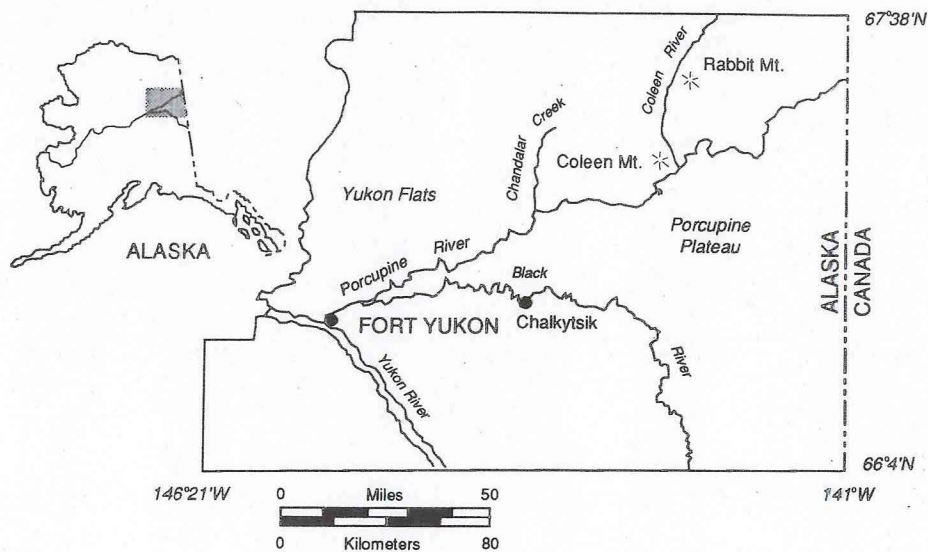


Fig. 1. Map of the Fort Yukon area, Alaska.

fishing and snaring game; and spring camp was set up along rivers to hunt muskrat, birds, and fishes (Christman et al. 1980). The establishment of Fort Yukon permanently changed the migratory lifestyle of the Gwich'in; the settlement became an important trading post for Indians from many regions who traded such items as furs, meat, snowshoes, sleds, and canoes for flour, tea, ammunition, weapons, and clothing. In 1847, 300 men from five Gwich'in bands traded at Fort Yukon (Krech 1978).

In the early 1880s gold prospectors reached the Yukon Valley and introduced riverboat traffic to the Yukon River. Fort Yukon flourished as a freight station and provided a supply of chopped wood for steamboat fuel. This boom was short-lived, and by 1904 Fort Yukon consisted of ca. 100 semi-permanent residents whose major occupations were trapping, freight hauling, and wood chopping. The population, a diverse mixture of Gwich'in Indians and non-natives, grew steadily and reached ca. 350 individuals by 1940. Until World War II, Fort Yukon was Alaska's greatest clearing-house for furs. Indians continued to derive much of their living from the land, but a high demand for furs and labor enabled them to settle in one place. After 1940, mining activity in the area declined, railroad shipping routes supplanted much of the river travel, wildlife populations declined due to overhunting, and fur prices decreased. These factors combined to limit population growth and development in the Fort Yukon area (U.S. Dept. of Interior 1974). The major occupations continued to be fur trapping, wood chopping, and salmon fishing in summer (Melville 1949).

From the 1950s to the present, Fort Yukon grew to become a communication and transportation center for northeastern Alaska. It is the largest village on the Yukon River, having 678 permanent residents in 1985 (Alaska Dept. of Labor 1987), ca. 88% of whom are Gwich'in. Subsistence is a significant way of life, but hunting, fishing, trapping, and gathering of plant foods are nearly always supple-

foliage are boiled in water for bathing sore or painful feet. Steam is inhaled to relieve congestion, and steam baths are used to soothe varicose veins. Leaves are boiled in water to make a strong tea used for colds or mixed with spruce pitch and applied to wounds. (No. 805).

Artemisia tilesii Ledeb. (sagebrush). A clear, brown tea made from dried foliage boiled in water is taken for arthritis. Liquid from boiled leaves is also used as a skin wash to relieve sores, rashes, and insect bites and as a foot soak. Fresh leaves are put into the bottom of shoes to soothe sore feet. (Nos. 809, 847, 858).

Matricaria matricarioides (Less.) Porter (wild-chamomile, pineappleweed). Flower heads are infrequently harvested as a substitute for chamomile tea, one use of which is relief of hangovers. (No. 901).

Petasites frigidus (L.) French and *P. sagittatus* (Banks) Gray (coltsfoot). Leaves were dried, burned, and pulverized, and the powder used as a salt-like seasoning. (Nos. 791 and 876, respectively).

Taraxacum officinale Weber (dandelion). Leaves are infrequently eaten fresh in salads or boiled and eaten with butter. (No. 902).

Betulaceae

Alnus incana (L.) Moench ssp. *tenuifolia* (Nutt.) Breitung (alder, k'oh). Leafy branches are leaned against the outer walls of fish smokehouses to trap the smoke inside the house. Formerly, inner bark was boiled into a tea used for colds. (Nos. 786, 821, 839).

Betula papyrifera Marsh. ssp. *humilis* (Regel) Hult. (paper birch, aat'oo). Outer paper birch bark (k'ii) is peeled from trees and dried for tinder. Bark is collected, usually during the week of 10 June, and made into birchbark baskets (k'ii tyah). Formerly, these baskets were food storage containers, especially for meat and berries, but today they are mostly ornaments and sold to tourists. Food was placed in the basket which was sewn shut with a birchbark lid and spruce root ties, and stored in cold rooms dug into the soil.

Canoes (k'ii tr'ih) were formerly constructed of birchbark. Large rectangular sheets of bark (ca. 30–60 cm) were sewn together to form kneeling pads and cushions for the canoe. Birchbark sewn with spruce roots was used to make backpack-type baby carriers. Moose and bird calls were made from pieces of rolled birchbark, ca. 30–45 cm long.

Because of its strength and flexibility, birch wood was preferred for making spears, bows and arrows, snowshoes, sleds, and toboggans. It was also carved into large spoon-like ice-removal scoops used in trapping beaver. (No. 900).

Boraginaceae

Mertensia paniculata (Ait.) G. Don var. *alaskana* (Britt.) L. O. Williams (bluebell). Fresh flowers and nectar are occasionally eaten, mostly by children. (No. 807).

Caprifoliaceae

Viburnum edule (Michx.) Raf. (highbush-cranberry; trahkyaa, trahchyaa, traakia). Berries are frequently harvested and processed into jelly, sauce, and jam. (No. 890).

Chenopodiaceae

Chenopodium album L. (lambsquarters; **gwi 'tsun** [this word also means "weed"]). Young leaves and stems are infrequently cooked as greens. Leaves are also boiled in water and applied as a poultice on skin sores. The entire plant is boiled and the resulting infusion is used to dye wool a gold color. (No. 849).

Chenopodium capitatum (L.) Aschers. (strawberry blite). Bright red fleshy fruit was formerly the source of a dye for coloring porcupine quills sewn as decoration on clothing. (No. 834).

Elaeagnaceae

Elaeagnus commutata Bernh. (silverberry; **dunveh, dunvii**). Formerly, the outer silvery covering of the fruit was peeled and the greenish-yellow "stones" were dried to a light brown. Children strung these together as beads for necklaces. (Nos. 806, 885).

Shepherdia canadensis (L.) Nutt. (soapberry). Berries are seldom eaten, although one informant indicated their effectiveness against colds when eaten fresh. Berries are sometimes whipped into a frothy dessert. (No. 780).

Empetraceae

Empetrum nigrum L. ssp. *hermaphroditum* (Lange) Böcher (blackberry, crowberry, **deenich' uh**). Berries are eaten fresh or processed into jam. They are considered good thirst quenchers when traveling in the woods. Formerly, leaves were boiled in water and made into a poultice to soothe pain. They were also boiled into a tea used for chest congestion and sour stomach. (No. 783).

Ericaceae

Arctostaphylos rubra (Rehd. & Wilson) Fern. (red alpine bearberry). Berries are eaten infrequently and sometimes processed into jam. Fresh berries are infrequently eaten for colds. (No. 810).

Arctostaphylos uva-ursi (L.) Spreng. (stoneberry, bearberry, kinnikinnick; **dandaih**). Berries add a sweet flavor to fish (especially whitefish) intestines, liver, or eggs when cooked with plenty of grease. Formerly, they were used to make Indian hash, a mixture of pounded dry meat, grease (fat from bear, caribou, or ducks, or vegetable shortening), and berries. Bone marrow also was used either fresh, in which case the hash was highly perishable, or boiled from crushed bones, then combined with meat and berries. (Nos. 779, 797).

Ledum palustre L. ssp. *groenlandicum* (Oeder) Hult. (la dee musket; labrador-tea). A tea made from boiled leaves and stems is infrequently used for colds and hangovers. Leaves are also mixed with commercially available tea to improve the flavor. (No. 782).

Vaccinium uliginosum L. (blueberry, **jak ch'ahlt'oo, jak, jaktun**). Blueberries are the most popular wild fruit collected in this region. Formerly, they were packed in barrels or birchbark baskets and layered alternately with sugar as a preservative. Today they are eaten fresh, frozen, or processed into jams, jellies, and other types of preserves and sauces. (No. 843).

Vaccinium vitis-idaea L. ssp. *minus* (Lodd.) Hult. (lowbush cranberry, lingon-

berry, *natl'at*). Second only to blueberry in popularity, lingonberries are collected in large quantities. Formerly, they were collected and stored in birchbark baskets or old flour sacks without additional preservatives. Today they are stored dry at cool temperatures, frozen, or processed into gravy (sauce), jams, and jellies. A favorite recipe reported by one informant includes lingonberries cooked together with shavings of dried moose fat. (No. 903).

Fabaceae

Hedysarum alpinum L. ssp. *americanum* (Michx.) Fedtsch. (Indian-potato, sweetroots, old-fashioned-potatoes, *trih*). Formerly, roots were collected in autumn just before the ground froze and eaten fresh like celery or cooked like potatoes. Large quantities were harvested from mouse caches in autumn and spring. (No. 828).

Hylocomiaceae

Hylocomium splendens (Hedw.) B.S.G. (moss). This moss is a common chinking material for log structures. It is either used alone or covered with mud. Formerly, it was an absorbent material for menstrual pads, toilet paper, and flannel or animal-skin diapers. (No. 904).

Liliaceae

Allium schoenoprasum L. var. *sibiricum* (L.) Hartm. (wild chives, wild onions). Leaves are chopped and cooked with potatoes, used as a flavoring in soups, or eaten fresh, especially with cheese. Juice is extracted from the leaves and used as a cold remedy.

Lycoperdaceae

Lycoperdon perlatum Pers. (puffball). Mushrooms are collected in large quantities and eaten cooked.

Onagraceae

Epilobium angustifolium L. ssp. *angustifolium* (fireweed). Jelly is infrequently made from the petals boiled in a water and sugar solution. Young shoots are sometimes harvested for salads. (No. 89).

Pinaceae

Picea glauca (Moench) Voss (white spruce, *ts'ivii* or *ts'iiivii*). Clear yellow or white spruce pitch is obtained by scoring the tree or collecting the partially-hardened resin from natural wounds. It is heated gently then poured onto cloth, caribou skin, or adhesive bandages to prevent infection in cuts and sores. Pitch is sometimes mixed with leaves of *Artemisia frigida* to make a poultice for cuts. Formerly, pitch melted onto a large cloth and placed on the legs was used to soothe arthritis. It was spread on the chest for a week or more to relieve pain.

Formerly, fresh, watery sap was put into the eye over night to soothe sore eyes, bloodshot eyes, and "white cloud over the eyes." Lumps of orange, red, or pink

pitch were chewed like gum. If chewed regularly, they were said to prevent toothaches and headaches.

Spruce needles (**ah gat**) or small branches with needles (**ah**) are sometimes boiled in water to make a refreshing tea. Formerly, they were boiled and the steam inhaled to soothe congestion and colds.

Spruce cones (**ts'ivii daadzal**, **ts'iivii daadzal**, **ts'iivii deedzal**) are spray painted and hung upside down as Christmas tree ornaments. Some informants burn spruce cones to smoke moose hides; others indicated that cones burn too rapidly to be used for this purpose. Much preferred for smoking moosehide is the rotten spruce wood collected from the ground, which results in a golden brown hide.

Rope is made from long, thin, straight, and uniform-diameter roots (**ts'ivii ghaii**, **ts'iivii ghaii**, **ts'ivii khaii**), one purpose of which is to bind the tops of birch bark baskets.

Many building projects contain spruce poles, including house and shed frames, tent supports, frames for fish smokehouses, storage caches, outbuildings, and frameworks for fishwheels. Spruce log homes are quite numerous in Fort Yukon as is hand-made spruce furniture. Small twigs are whittled into toothpicks. Spruce wood is sometimes used as fuel. Spruce wood was formerly used to construct wolverine deadfalls and canoe paddles. (No. 910).

Poaceae

No particular species of grass was identified (grasses, **tl'oo**, **ts'uy**). Species collected included *Hordeum jubatum* L. (No. 829), *Beckmannia erucaeformis* (L.) Host ssp. *baicalensis* (Kuzn.) Hult. (No. 851), *Calamagrostis neglecta* (Ehrh.) Gaertn., Mey., & Schreb. (No. 870), *Elymus innovatus* Beal (No. 883), *Bromus inermis* Leyss. (No. 832), and *Deschampsia caespitosa* (L.) Beauv. (No. 899). Dried grasses are collected for dog bedding. Grasses are stuffed into hunters' backpacks to absorb blood from field-killed animals. Formerly, storage bags were made of fish skins or animal (especially caribou) skin scraps. Wet skins were scraped, then sewn together into drawstring bags. Bags were shaped by stuffing with grasses until they dried. Upon removal of the grasses they were used to store dry meat or fish.

Polygonaceae

Polygonum alaskanum (Small) Wight (wild-rhubarb, **ts'iigyuu**). Young shoots, ca. 15–30 cm tall, are collected in spring and eaten fresh like celery, used as greens like spinach, or made into pies or gravy (sauce). Wild rhubarb is also the primary ingredient in Indian pudding in which young stems and leaves are peeled, boiled together with a thickener such as white flour, and sweetened with sugar to taste.

Polyporaceae

Fomitopsis pinicola (Swartz ex Fr.) Karst. (pocket fungus). Formerly, pieces of the fungus were burned, then the glowing coals were placed onto a layer of cool ashes in a birchbark basket and carried to the next camp for use as tinder. (No. 906).

Primulaceae

Dodecatheon frigidum Cham. & Schlecht. (shooting-star). Flowers are occasionally eaten, mostly by children. (No. 787).

Ranunculaceae

Anemone parviflora Michx. (pepperplant). Formerly, leaves were ground, then boiled in water to make a peppery-tasting tea used for tuberculosis. (Nos. 835, 875).

Pulsatilla patens (L.) Mill. ssp. *multifida* (Pritz.) Zamels (wild-crocus, pasqueflower, mayflower, **kii choodaii**). Fresh or dried leaves are burned in a smudge as an effective mosquito repellent. Petals are occasionally processed into jam by boiling in a water and sugar solution until the color fades, then adding a commercial source of pectin. (Nos. 781, 779).

Rosaceae

Fragaria virginiana Duchesne ssp. *glauca* (S.Wats.) Staudt. (wild strawberry). Fruit is infrequently harvested and eaten fresh or processed into jam.

Rosa acicularis Lindl. (wild or prickly rose, **khoh kak ch'at'an**, **khoh t'an**). Jelly and jam are processed from rose hips or petals. Hips are also eaten fresh, mostly by children. Formerly, children made miniature toy smoking pipes of the green hips by removing the blossom end and scooping out the seeds. Pieces of dried willow were inserted into the hollow hip and burned. (No. 893).

Rubus chamaemorus L. (salmonberry, cloudberry). Berries are infrequently harvested and processed into sauce, jam, and jelly. (No. 907).

Rubus idaeus L. ssp. *melanolasius* (Dieck) Focke (wild raspberry). Berries are infrequently harvested and processed into jam and jelly. (No. 908).

Rubiaceae

Galium boreale L. (baby's-breath, bedstraw). Formerly, a poultice made from green shoots was used for general aches and pains. Tea from boiled shoots was a cold remedy. (Nos. 796, 831, 881).

Salicaceae

Populus balsamifera L. ssp. *balsamifera* (cottonwood, balsam poplar, **t'aa**). Buds are boiled in water to make a tea; small amounts are ingested for flu, headaches, hangovers, stomach aches and colds. Occasionally, spruce pitch is added to strengthen the medicine. Buds may also be boiled in grease. When cooled, this mixture is a good ointment for sores and infection. Formerly, ashes from burned branches were mixed with grease until thickened and used as soap.

Cottonwood is the preferred fuel for smoking fish because it provides a long-smoldering fire. The dry rotten wood may also be used to smoke skins, but it is not as useful as spruce wood for this purpose. Wood is also burned for fuel, and the shavings are used as tinder. (Nos. 802, 886).

Populus tremuloides Michx. (aspens). Occasionally wood is used as fuel, and branches are made into switches to brush away mosquitoes. (No. 803).

Salix spp. No particular species was identified except as noted. Species collected included *Salix glauca* L. (No. 823), *S. interior* Rowlee (Nos. 799, 891), and *S. alaxensis* (Anderss.) Cov. (Nos. 798, 884) (willow, k'aii, jaak'aii). Willow leaves are chewed, then placed onto mosquito bites or bee stings to soothe the pain. Willow branches (especially of *S. interior*) become ground covers upon which to clean fish and to eat. Branches are made into switches to brush away mosquitoes. Large, leafy branches are used in the same manner as alder branches to trap smoke in fish smokehouses. Fishes are tied with flexible willow branches to willow sticks for cooking over a fire.

Green willow whips at least 1 m long are stripped of their leaves, and both ends are stuck in the ground, making a semi-circle. The semi-circles are repeated, overlapping each other in a row, thus creating a short home garden fence.

Many construction projects that require flexible wood have willow branches as the main component, including muskrat traps, fish traps (especially for whitefish), spring traps for hares, and ribs of birchbark canoes.

Small peeled willow sticks are constructed into miniatures of cabins, dog sleds, and fishwheels that are sold to tourists or used as children's toys. Formerly, small peeled willow branches were used to make a children's game. Three willow branches were bent into circles and tied together to make a hollow sphere ca. 15–20 cm diameter. Another stick, ca. 30 cm long, was made into a spear with a hook at one end and a string attached to the other. The sphere was thrown into the water; then children would throw out the hook and try to capture the sphere.

Formerly, willow branches ca. 60 cm long and 2.5–4 cm wide were bent into two-handled tongs used to carry hot rocks as they were removed from a fire and placed in pots for cooking meat and fish. Willow branches were used in blood letting, particularly to relieve headaches. A small willow branch was cut longitudinally through the center for ca. 3–5 cm. A small piece of skin at the temple was inserted into the slit to pinch it and numb the flesh. The pinched skin would then be cut to release blood.

Willow bark is occasionally chewed for refreshment and is a survival food in winter and spring. Strips of willow bark are made into rope, one use of which is to reinforce the tops of birchbark baskets.

One informant responded that willow branches ward off rain. The bark is peeled to the base of the branch, then wrapped around the base. The branch is stuck in the ground and pointed away from the person and toward the clouds to prevent the rain cloud from coming overhead.

Willow wood is mixed with rotten spruce wood to provide a steady, even fire for smoking moosehides.

Saxifragaceae

Ribes hudsonianum Richards. (black currant, devilberry, nee'yuu). Berries are cooked into a jelly. The fruit is usually mixed with commercially available fruit such as apples to weaken the astringent flavor. (No. 819).

Typhaceae

Typha latifolia L. (cattail). Foliage and flower spikes are infrequently dried and used as ornament.

Usneaceae

Usnea sp. (Grandma's-hair). A common lichen collected from spruce trees is dried and occasionally used as tinder. (No. 911).

DISCUSSION

We identified 48 species or groups of native plants as having some use by the residents of the Fort Yukon region, predominantly as medicines (40%) and as food or beverage (56%). Most of the medicinal plants are seldom used today, and knowledge about their preparation is scarce. For instance, informants knew that *Populus balsamifera* buds could be processed into a strong medicinal tea and ointment, but most relied on one individual to prepare the medicines. This individual was not a traditional native healer but was widely known for his information regarding this one plant. There was little evidence of this knowledge being transmitted to succeeding generations except to specific individuals interested in preserving Gwich'in traditions. *Artemisia tilesii* has been used extensively for medicinal purposes by indigenous peoples in Alaska for many years (Ager and Ager 1980; Lantis 1959; Oswalt 1957; Overfield et al. 1980; Uhl and Uhl 1977) and Canada (Ball 1983). Some Fort Yukon residents knew of its medicinal properties, but few had used it in recent years. Knowledge of medicinal plants probably will continue to dwindle because of the availability of local health care facilities and modern medicines.

Probably the most widely accepted medicine in the Fort Yukon area is spruce (*Picea glauca*) pitch. Several informants claimed that its antiseptic properties are superior to any modern medicines, particularly for lacerations received while cutting fish. Knowledge of its use is common among Fort Yukon residents, as it has been for many years among indigenous people in many parts of Alaska (Andrews 1975; Carlo 1983; Cruikshank 1979; Heller 1981; Lantis 1959; Nelson 1983; Toghothele Corporation 1983; Viereck 1987). However, its true antiseptic properties have been questioned (Viereck 1987).

Wild fruits and mushrooms comprise the greatest proportion of edible plants, and this trend is consistent with reports for villages in the entire upper Yukon-Porcupine river region. A subsistence survey conducted in 1973 reported that *Vaccinium vitis-idaea* accounted for 90% of the berries, and mushrooms accounted for 70% of the wild vegetables harvested in that region. A similar survey conducted over several years in seven villages in the Yukon-Porcupine region, identified *V. vitis-idaea* as the berry harvested in largest quantities followed by *V. uliginosum*, *Empetrum nigrum*, *Rubus idaeus*, and *Fragaria virginiana* (U.S. Dept. of Interior 1974). While berries still are very popular in the Fort Yukon region, those in greatest demand, *Vaccinium uliginosum* and *V. vitis-idaea*, are not located in sufficient quantities nearby. Residents routinely travel 30–45 km on the Yukon River to their favorite berry-picking locations. The most common fruits harvested in the vicinity of Fort Yukon are *Viburnum edule* and *Rosa acicularis*.

Both traditional and modern recipes are used for preparation of wild berries. Traditional recipes such as *Vaccinium vitis-idaea* berries cooked with moose fat, and *Arctostaphylos uva-ursi* berries cooked with fish eggs, are still popular, but many traditional methods are no longer practiced. For instance, several methods of preparing Indian hash using *A. uva-ursi* berries were described, and informants

recollected its former popularity with children, who relished it like candy. However, no one has prepared it in recent years. Most informants rely on information from modern cookbooks and local extension publications for wild berry recipes especially in the processing of jams, jellies, and sauces.

Other edible plants that were not found near Fort Yukon included *Allium schoenoprasum*, *Polygonum alaskanum*, *Fragaria virginiana*, *Rubus chamaemorus*, and *R. idaeus*. *Allium* and *Polygonum* are common along the Black and Porcupine rivers northeast of Fort Yukon, and both plants are collected when residents travel in that region. Few individuals plan special collecting trips for those plants, and consequently their use is limited.

Aside from fruits and mushrooms, few native plants are harvested regularly for food. Many traditional foods were known by the informants, but they had not been harvested for years. For instance, *Hedysarum alpinum* roots had been harvested in large quantities many years ago, but they have since been supplanted by cultivated crops such as the white potato. Some of the informants who knew of its usefulness, failed to identify the plant and distinguish it from the apparently poisonous, *H. mackenzii* (Heller 1981). Both species grow together throughout the Fort Yukon area.

Since this study was conducted, interest in native plants has increased in part because of a strong desire by local residents to preserve knowledge about the Gwich'in heritage. In addition, a program designed to encourage villagers to forage for profit was begun in 1986. A regional cooperative was organized to act as a broker for locally manufactured and harvested goods. Products such as birchbark (*Betula papyrifera*) baskets, spruce (*Picea glauca*) cones, labrador-tea (*Ledum palustre*) leaves, cinquefoil (*Potentilla fruticosa*) flower petals, and wild berries are purchased from residents and either processed in Alaska into such products as Christmas wreaths, potpourris, teas, and wild berry jellies, or exported as raw products to other States (Walsh 1986). This program has renewed local interest in native plants and also promoted the use of introduced weeds such as *Matricaria matricarioides* for which there is no record of traditional use.

Despite this renewed interest there is a significant reduction in the use of native plants and information on processing or preparation techniques by Fort Yukon residents. Of the 48 species or groups of plants identified as having some use, 21% have no value today. These plants are mostly medicinal and edible wild vegetables for which a suitable substitute has been found. In spite of this reduction, residents of the Fort Yukon region continue to utilize heavily their local resources, especially wood products such as *Picea glauca*, *Salix* spp., and *Populus balsamifera*, for which there is no commercially available, economical substitute. Caulfield (1983) estimated that 50–90% of all food consumed by Upper Yukon and Porcupine Gwich'in is locally harvested. The greatest proportion of this food is wild fish and game; however, locally harvested berries and mushrooms will continue to play an important role in the subsistence lifestyle of the Fort Yukon region.

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