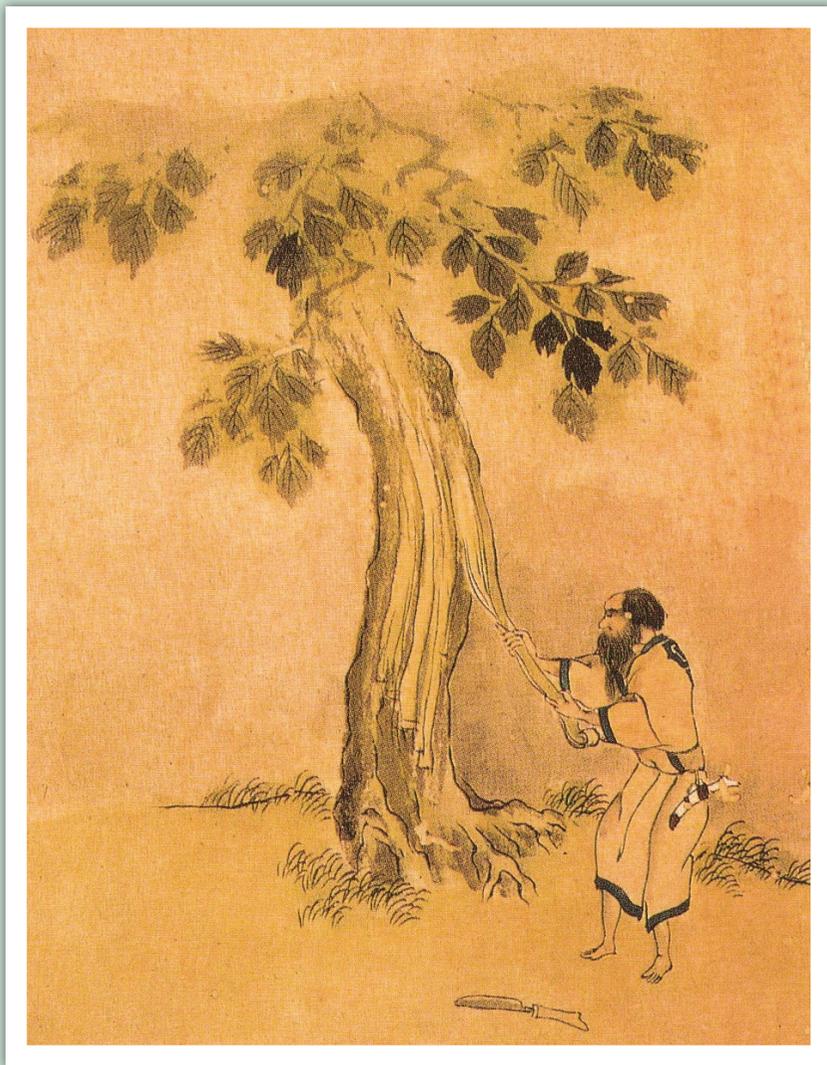




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Ainu Ethnobiology

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AINU ETHNOBIOLOGY

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Cover photo: An Ainu man debarking an elm, *Ulmus lacianata*. Note, lying on the ground, the knife with which the initial cut into the bark was made. Murakami 1799.

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Preface

This study aims to examine the use of native flora and fauna in the daily life of the Ainu in Hokkaido, Sakhalin, and the Kurils. It attempts to explain this use in terms of activities, rituals, and material culture. As the Ainu culture considered here no longer exists to any meaningful extent, this study is based largely on analysis of the work of researchers from the 18th, 19th, and early 20th centuries—many of whom had direct access to the Ainu.

The Ainu had no written language. However, their oral traditions were strong and fortunately, Japanese, Russian, and western ethnographers were able to record them. These records were an important resource for this study.

My interest in the Ainu extends back to my undergraduate courses in the 1960s, but it was not until I first went to Hokkaido in 1995 that I was spurred into initiating my own research. At that time, I met the acknowledged leader of the modern Ainu movement, Kayano Shigeru, who at that time was the only Ainu member of the Diet—the elected branch of the Japanese government. We met in Niputani, the village of his birth, where he had established a small museum based on what he had been able to collect since World War II. He was a prolific writer on the Ainu and one of his most important works, *Ainu no Mingu* (Ainu Tools) (Kayano 1978), addresses their material culture in detail. I drew upon it often.

At the time I met Kayano, I also discovered a book published in Japanese by Fukuoka Itoko called *Ainu Shokubutsu* (Ainu Flora) (Fukuoka 1995), and decided to translate it into English. This became one of the major sources of data contained within this study. Her book also contained an extensive bibliography and when I returned to the United States, I was fortunate, in the collection of the East Asian Library at the University of California at Berkeley, to have access to many of the sources she cited. Of these, the works of Chiri Mashihō and Matsuura Takeshiro were particularly important.

Between 2006 and 2010 I travelled to Hokkaido annually and met with other Ainu researchers including Takenaka Takeshi, Honda Yuko, and Anetai Masaki, all of whom generously shared their insights. I am particularly indebted to Takenaka Takeshi as he spent a great deal of time with me in the field familiarizing me with Hokkaido's ecology. His knowledge of flora and fauna was invaluable. He also edited much of the text on key plant materials.

Finally, my thanks go to Dr. Nancy J. Turner, Distinguished Professor and Hakai Professor of Ethnoecology at the School of Environmental Studies, University of Victoria, British Columbia, Canada, who has encouraged me in this research from the outset and, as well as being the primary editor, has provided me with valuable insights into both the characteristics and utilisation of flora. I am also greatly indebted to Cheryl Takahashi for her aid and care in editorial design.

Japanese names are given with the family name first. Ainu terms and spellings are presented as they were in the original texts from which I was working.

1. The History of the Ainu[†]

The Hokkaido Ainu

The Ainu were a hunting, fishing, and gathering society that, at various times, occupied territory in what are now known as Hokkaido, Sakhalin, and the Kuril Archipelago.

According to most historians, Ainu culture, per se, is relatively recent, having developed in Hokkaido since the 13th century. At a later date it expanded into southern Sakhalin and the Kurils. However, it shares many aspects with the cultures which immediately preceded it, i.e., the Satsumon (8th to 13th century) and the Okhotsk (7th to the 11th century). As the above dates suggest, these cultures were more or less contemporaneous although they occupied different, if overlapping, geographical areas. The Okhotsk was probably eventually absorbed by the Satsumon. The Satsumon culture was, in turn, derived from the Epi-Jomon (250 BC to 700 AD) and from the Jomon that itself dated back to around 10,000 BC and occupied both Hokkaido and the Japanese archipelago. The Okhotsk culture probably originated in the Lower Amur River basin on the Asian mainland and migrated through Sakhalin to Hokkaido.

The Jomon were a hunting and gathering society that occupied most of Japan, including Hokkaido, from the Holocene period onward. It moved into the Japanese archipelago from the Asian mainland after the retreat of the ice in order to exploit the resources of an environment that gradually evolved from a taiga to a broadleaf forest ecology. It utilized the forests for plants and game, fished the rivers and ocean littoral, and developed from a migratory to a more sedentary society occupying villages and producing pottery. While after 300 BC, the Japanese archipelago saw the rise of the Yayoi and Kofun cultures based on agriculture (particularly wet rice technology) and utilisation of iron tools, their influence was largely absent north of the Tsugaru Strait that separates Tohoku (northern Japan) from Hokkaido. Nonetheless, there appears to have been trade in iron and rice between the Yayoi and the Epi-Jomon groups in extreme southwestern Hokkaido. This probably occurred late in the Yayoi period in the 3rd century AD.

The Okhotsk culture first appeared in southern Sakhalin between 400 and 500 AD and in northern Hokkaido around 600 AD. While they fished the rivers, hunted land animals, and gathered plant materials, the Okhotsk was primarily a society that exploited ocean resources such as fish and marine mammals. Archaeological evidence from the sites of settlements, like Menashidomari near Esashi on the Okhotsk Sea coast and from the islands of Rebun and Rishiri off the northwest coast of Hokkaido, suggests that they practiced a form of ceremo-

[†] Sources for the introduction are multiple but chief among them are Belousov et al. 2009; Fitzhugh and Dubreuil 1999; Fukui 1976; Howell 2008; Ishida 1961; Stephan 1971, 1974; Takai et al. 1963.

nialism that involved hunting of the brown bear (*Ursos arctos yezoensis*) and, possibly, the rearing of cubs.

From Sakhalin, the Okhotsk migrated along the then largely unoccupied Okhotsk Sea coast of Hokkaido and eventually expanded into the Kurils. They were probably dissuaded or prevented from moving south along the coast of the Sea of Japan by the presence of Epi-Jomon or Satsumon settlements.

However, the Okhotsk was not an isolated economy, as there is archaeological evidence of trade in metals and glass objects with both Honshu, the major island of Japan, and the Amur River on what is now the Russia-China border.

The Satsumon culture developed in a similar time frame to the Okhotsk in Hokkaido—i.e., from between 700 and 800 AD—and primarily occupied territories in the centre and south of the island. However, as indicated above, there is evidence of trade between the two cultures. Most sources suggest that, eventually, the Satsumon absorbed most of the Okhotsk population. It is clear that those Okhotsk groups living in the Kurils, partly because of isolation, would have resisted absorption over a longer period. One important aspect of Satsumon culture is that, unlike the Okhotsk and Ainu, there is no known evidence of bear-sending ceremonialism. This may indicate the southern origins of the Satsumon and that the Ainu adopted some Okhotsk or other northern cultural traits.

As the Japanese extended their influence further north into northern Honshu (Tohoku) toward the end of the first millennium, contacts with the Satsumon increased and the expansionist policies practiced by the Japanese authorities either encouraged or forced Satsumon populations to cross to southern Hokkaido. These Satsumon immigrants introduced agriculture to Hokkaido in the form of cultivation of wheat and barnyard millet. Agriculture required metal tools to sustain it and for these and other products, like rice and ceramics, the Satsumon in Hokkaido exchanged animal hides, kelp (*Laminaria* spp.), and salmon (*Oncorhynchus* spp.) with either Japanese or Satsumon traders in Tohoku.

At the same time, trade with the Santan traders and with Sakhalin that had been initiated by the Okhotsk was continued by the Satsumon. It is likely that some of the trade goods were destined for the Japanese market through Satsumon intermediaries.

The demise of the Satsumon and the emergence of the Ainu culture are poorly understood and subject to different interpretations. This is mainly due to lack of archaeological or consistent historical evidence, but the transition seems to have occurred against a background of increasing trade between Hokkaido and Tohoku after 1000 AD. Around 1200 AD there appears to have been a major shift in Hokkaido, as the representative forms of Satsumon housing and ceramics disappeared. It is not a question of the Ainu culture replacing the Satsumon; rather it appears that characteristic aspects of the Satsumon culture declined in the face of Japanese influence, particularly between 1200 and 1300 AD, and the resulting culture was one even more focused on hunting and gathering than the Satsumon had been. This culture is now recognized as Ainu and is, in fact, probably a direct development from the Satsumon.

Recent studies of Ainu morphology and genetics suggest that they are descended, at least in part, from their Jomon, Satsumon, and Okhotsk predecessors (Fitzhugh and Dubreuil 1999; Omoto and Sato 1997; Shigematsu et al. 2004).

Based on his analysis of Ainu oral literature, Philippi posits a different set of relationships between the Okhotsk, Satsumon, and Japanese cultures in Hokkaido (1979). He maintains that, even before what he terms the “early Ainu period” that he claims began in the 6th or 7th centuries, the Ainu and Japanese already occupied parts of Hokkaido and coexisted with the Satsumon and Okhotsk. At this time, and as they were to be for several centuries, the Japanese were confined to southwest Hokkaido. During the early Ainu period, i.e., up until the 10th century, the Ainu subdued or absorbed both the Satsumon and Okhotsk cultures and a common language emerged. As their immediate neighbours, and possibly adversaries, the Satsumon were subjugated first. The Okhotsk continued to flourish as a separate culture in northern and eastern Hokkaido until the 10th century and many Ainu myths refer to conflicts with them. The lack of an equivalent reference to conflicts with the Satsumon, suggests that they were gradually and peacefully absorbed into Ainu society between the 6th and 10th centuries.

It was also in this period that pottery traditions in Hokkaido ceased and trade with the Japanese in iron and lacquerware was initiated. As the Ainu continued to trade with the Japanese, they came to rely, to a significant degree, on Japanese products other than lacquerware, iron tools, and weapons. These included ceramics and, to some extent, rice. Some trade items, like lacquer and swords, were eventually absorbed into Ainu society as symbols of wealth, status, and power.

The period between the 10th and 16th centuries was one in which, as Philippi phrases it, the Ainu “ethos” was established (1979). Ainu society evolved to be a “single homogenous cultural entity” and it was a time of optimism, cultural progress, ethnic self-confidence, and considerable social stratification—the latter based mainly on increased trade primarily under the control of the elite. While there seems to have been an identifiable Ainu culture, there was no political unification—a factor that later hampered Ainu efforts to stem the advance of Japanese influence in Hokkaido.

Instability in Ainu society and competition between regional elites, called *utar*, to control trade, led to internecine wars known as *topat-tumi*. Thus, it was at this time that defensive fortifications, known as *chashi*, were built. According to the oral literature, both trade and warfare were controlled by male elites, while commoners and “slaves” were responsible for hunting, gathering, and the production of food. Trading with the Japanese accrued metal and lacquerware to the elite and these became symbols of their hegemony.

Although Japanese merchants and fishermen moved into southwest Hokkaido in increasing numbers in the 14th and 15th centuries, the main point of contact at this period between Ainu and Japanese traders appears to have been the port of Tosaminato on the Japan Sea coast of Aomori in Tohoku. It was the Ainu traders who would cross the Tsugaru Strait in

ocean-going canoes to conduct business at the port. However, as the Japanese samurai trading families consolidated their influence in Tohoku and trade with the Ainu became more extensive and formalized, more Japanese settled in Oshima Peninsula in southwest Hokkaido and gradually assumed control of all major commerce.

The first beachheads in this consolidation of Japanese mercantile interest were at the ports of Matsumae and Hakodate. Early efforts were made primarily by the Kakizaki family that, in 1599, took the name of Matsumae and established a small domain around the small, fortified town of the same name. In 1604, this territory was incorporated into the Tokugawa state and the family was authorized to engage in trade and exploit the abundant resources of Hokkaido's rivers and littoral.

It is important to recognize that any homogeneity that might have existed previously in Ainu culture declined at this time. While most Ainu settlements practiced the traditional pursuits of hunters and gatherers, some well-positioned or advantaged communities were heavily engaged in trade and developed primitive agriculture and even animal husbandry. Dogs, for example, were important in hunting and fishing and were probably bred for these purposes.

Ainu culture continued to evolve in the 18th century primarily as a result of contacts with Japanese merchants and with the Matsumae officials put in place to regulate trade and provide governance.

For most of the period of their tenure in Hokkaido and the Kurils, the Matsumae governed the areas they controlled by setting the terms for dealing with the Ainu by Japanese traders and subcontractors engaged in such activities as fishing and fertilizer production. However, monitoring by Matsumae officials of trade and production was often not sufficient to protect Ainu labourers from abuse by their Japanese overseers and, as a result, particularly in the late 15th and early 16th centuries, tensions increased and numerous local conflicts ensued.

The Matsumae attempted to control trade and minimize conflict by exercising indirect rule through selected Ainu chieftans, but this shift created a new set of issues. Chosen chieftans and close members of their clans were presented with economic opportunities that, in many cases, permitted their households to supplant the community, or *utar*, as the primary unit of production. In addition, the chieftans in some regions grew in power relative to leaders in others and this, in turn, provoked further tensions.

Thus, in many areas, especially along the coasts and larger rivers, the traditional way of life was greatly altered by the new economic structures. Nevertheless, in terms of their material culture and especially in advantaged communities, the Ainu continued to produce many traditional goods, their oral literature flourished, and religious practices were further developed. Such rituals as *iyomante*, the elaborate ceremony to return the spirit of the brown bear cub, Blakiston's fish owl (*Bubo blakistoni*), or fox (*Vulpes vulpes schrenki* Kishida) to its ancestors, became firmly established in this period—probably as chieftans and wealthier members of communities sought to consolidate their power. An *iyomante* was a costly affair, as the



Figure 1. An Ainu chief as depicted by a Japanese artist at the end of the 18th century. He wears high status silk clothing acquired in trade. Matsuura 1972 [1859].

animal whose spirit was to be returned to the gods had to be fed and kept healthy over a long period. Anyone undertaking this expense would have used the occasion of the ritual itself to both entertain and to display their wealth and influence over other members of their clan or community. *Iyomante* in those days drew participants from a wide area and many villages.

Against this complex background of social and economic change, Ainu history became increasingly defined in terms of Japanese goals in Hokkaido, in particular, and to a lesser extent, in southern Sakhalin and the Kurils. For example, large numbers of young Ainu men and women were drawn or conscripted into the fishing operations operated by the Japanese on the coasts or at the mouths of rivers, and, during the season, virtually imprisoned at the fishing stations. Isabella Bird visited one of these in 1878 and described it as a ghostly grey, wooden barrack that would accommodate from 200 to 300 people when in operation (1885). The majority of the Ainu workers and their families were brutally exploited or exposed to disease for which they had no immunity and, as referenced above, the Matsumae made little or no effort to protect them. Sekiba Fujihiko, a Japanese doctor working among the Ainu in the late 19th century, estimated their population in western Hokkaido had declined by

almost 20% in 50 years; syphilis was one the most common diseases among his patients in the 1890s. The devastating effect of introduced diseases is further documented by a number of historians and researchers including Matsuura Takeshiro (Walker 1999). When, inevitably, resistance to exploitation developed, the Japanese carried out major retributions against those involved, often with the tacit approval of Ainu chieftains.

By the late 18th to early 19th centuries, the structure of most Ainu communities and of the traditional culture had been irretrievably altered. Young adults who had once maintained economic activities, especially hunting and fishing, were, if not permanently, then annually, removed from the village and many communities were abandoned. After the Kunashiri Menashi Revolt of 1789, the Japanese government stripped the Matsumae of its power and installed its own administrators in Hokkaido. However, according to early 19th century accounts by observers like Matsuura, Japanese officials continued to oppress and exploit the Ainu. By 1790 there were more than 50 trade stations established principally along the coasts of the Japan Sea and Pacific Ocean. All Ainu were required to conduct their commerce through these posts on extremely disadvantageous terms.

The final phase in the dismantling of the Ainu culture dates from the period of the Meiji Restoration (1868 to 1912), when the Japanese government set about exploiting Hokkaido for its lumber and agricultural potential and encouraged settlement of large areas of newly developed lands by Japanese immigrants. The Ainu settlements that remained did not disappear overnight but were inevitably absorbed into Hokkaido's new economy. For all intents and purposes, Ainu culture was largely suppressed in Hokkaido by the beginning of the 20th century. Only recently has there been any concerted effort at cultural renewal. Kayano Shigeru was a key figure in this movement until his death in 2006.

The Kuril Ainu

Recent archaeological research has revealed that the Ainu, unlike the Epi-Jomon and Okhotsk cultures that preceded it, left little trace of their occupation of the Kurils (T. W. Pietsch and J. B. Fitzhugh, pers. comm. c. 2008) and, given this lack of evidence, it is not surprising that there is little consensus on their history here. Thus, estimates of the period of time they occupied the islands vary. However, it is likely that small groups of Ainu exploited the resources of some of the islands for several centuries.

The first records of Ainu occupancy of the archipelago come from European explorers in the 17th century. They found pure populations of Ainu living on the islands of Kunashiri and Iturup in the south; Ainu groups shared the northern islands of Paramushir and Shumu with Kamchadal peoples who had migrated there from Kamchatka.

The Kuril Ainu culture was shaped in a number of ways by what was often a harsh environment. In general terms, except for the southernmost islands, the Ainu here did not

have access to the kind or range of flora resources available in Hokkaido and Sakhalin. They appear to have inherited from the preceding Okhotsk culture an economy based primarily on hunting sea mammals and fishing in both ocean and river waters. This subsistence was supplemented by trade of the pelts of sea otter (*Enhydra lutris*).

After the Russian entrepreneurs first discovered, and then depleted, the sea otter populations in the Aleutians and Kamchatka, they moved south into the Kurils where they first traded and then competed with the Ainu for these valuable pelts. The Kuril Ainu generally traded the pelts with Hokkaido Ainu.

The Sakhalin Ainu

The Sakhalin Ainu occupied the coasts in the south and subsisted by an economy based on hunting, gathering, fishing, and trade with other ethnic groups on the island, the Hokkaido Ainu, and directly with the Japanese. As with the Kuril Ainu, the earliest Western accounts of them date from the 17th century. The environment and climate of Sakhalin were demanding but natural resources, especially at sea, were plentiful. Despite long, hard winters and a lack of natural harbours, the Ainu culture thrived here until the late 19th century. Colonization and exploitation of Sakhalin by both the Russians and Japanese—as well as forced relocation of the Ainu—caused the rapid decline of their culture.

The traditional Ainu economy was centered on taking herring (*Clupea pallasii*), salmon and trout (*Salvelinus malma* and *S. leucomaenis*), harbour and northern fur seals (*Phoca vitualis* and *Callotaria ursina*), sea lions (*Eumetopias jubita*), marten (*Martes zibelinea brachy-*

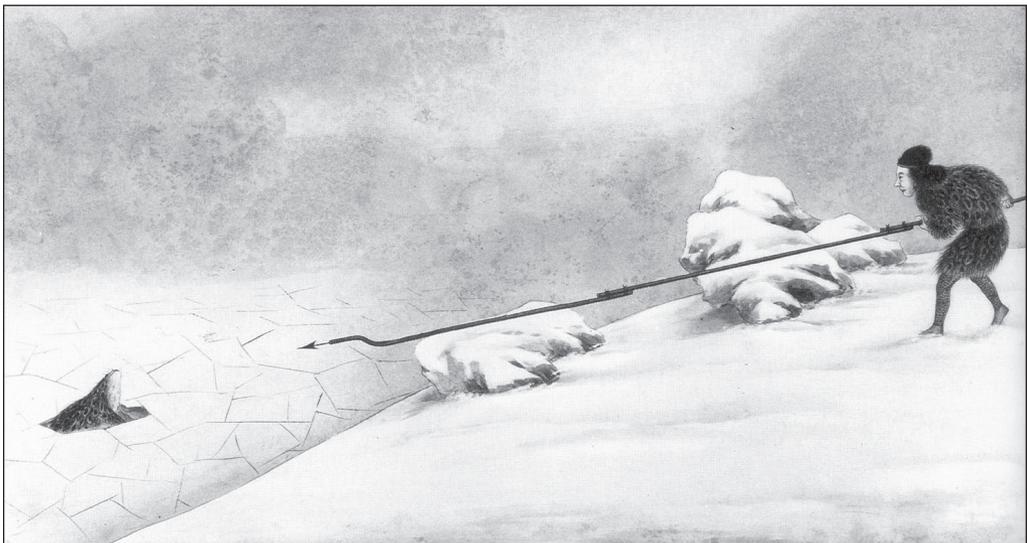


Figure 2. A Sakhalin Ainu hunting seals from the edge of an ice floe that form off the coast in winter. He wears sealskin clothing. Late 18th century. After Mamiya 1962 [1855].

ura), reindeer (*Rangifer tarandus sibiricus*), and musk deer (*Moschus moschiferus*), and on gathering a range of plant materials similar to those of northern Hokkaido. One of these, a nettle (*Urtica* spp.), was of particular importance in providing materials for clothing along with fishskin and sealskin. Skins were also used in the manufacture of footwear.

Of considerable importance to the economy of the Sakhalin Ainu was so-called Santan trade that extended to the Amur River on the border of Russia and China and involved both Chinese state-run trading posts and indigenous merchant middlemen. The Santan trade had a very long history, probably dating back to the Jomon period. For their part, the Sakhalin Ainu not only acquired goods for their own use, but acted as intermediaries between Santan merchants and the Hokkaido Ainu and the Japanese. Southward-flowing goods were dominated by silks; those moving in the opposite direction included animal and sea mammal pelts.

2. Geography and Climate

Introduction

It is important to recognize that Ainu culture was far from homogenous. Its proponents covered a vast territory of many ecological zones. At the zenith of the culture in the 18th century, these areas included the southern part Sakhalin—a large island off the coast of the Asian continent, the Kurils—a chain of small islands extending from Hokkaido north to the Kamchatka Peninsula, and the island of Hokkaido itself. The Ainu were, therefore, at least three different groups practicing widely differing economies and, over time, developing distinctive language and religious practices. Population density was universally low relative to the land available. It was higher in Hokkaido and Sakhalin than in the Kurils where resources were more dispersed.

The environment of Sakhalin was bifurcated with the economy of the inner, western coast centered on hunting, gathering, and fishing in the rivers; the outer, eastern coast was characterized by winter sea ice and access to marine mammals like whales, seals, and sea lions.

The Hokkaido Ainu had access to a wide array of natural resources, including those offered by the oceans and the mountains, but their culture and economy was dominated by the rivers and broadleaf forests. The forests provided, for example, the nuts and fruits of trees such as oaks (*Quercus* spp.) and the Amur cork tree (*Phellodendron amurense* Rupr. var. *sachalinense* Fr. Schm.), and the meat and skins of fauna like the brown bear and Sika deer (*Cervus nippon*) that occupied the forest. Even in historical accounts supplied by the Japanese, the rivers teemed with fish, primarily salmon (*Onchorhynchus* spp.), and for this reason it became the central pillar of the Ainu diet and the primary focus of trade between the Ainu and Japan.

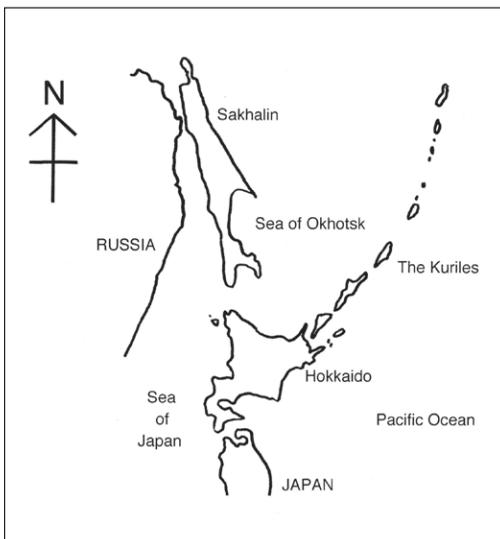


Figure 3. Hokkaido, Sakhalin, and the southern Kurils relative to northern Japan and the Siberian Russian coast. Map by Dai Williams.

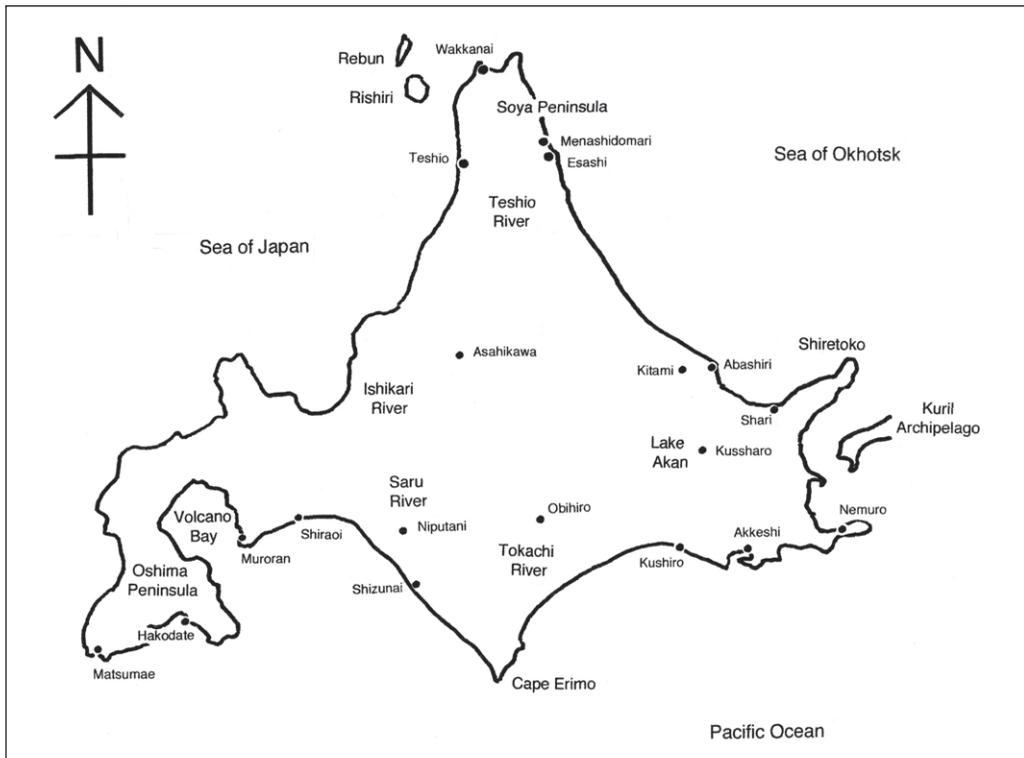


Figure 4. Key map of Hokkaido. Map by Dai Williams.

Physical Geography and General Ecology of Hokkaido, Sakhalin, and the Kurils

Hokkaido

In the most general terms, Hokkaido is divided in two by the central mountain masses that are aligned more or less from north to south and merge around the peak called Tokachidake. The southern arm is called the Hidaka Range and is characterized by strong relief on its eastern flanks and more gentle topography to its west; the northern arm encompasses the mountains called Asahidake and Teshiodake and, likewise, has steeper slopes to the east.

The mountain massives of southwestern and northeastern Hokkaido, including Shiretoko, are of lower elevation and more medial relief. The balance of Hokkaido's topography is characterized by low relief and, often, broad river basins.

There are four major river systems. The first includes the Shari, Abashiri, Tokoro, Yubetsu, Shotoku, and Tonbetsu rivers that flow to the Okhotsk Sea. The second is dominated by the



Figure 5. The mountains of Shiretoko in northeastern Hokkaido as seen from the Okhotsk Sea coast near Shari. In winter, this coast is locked by sea ice. Photo by Dai Williams.

Ishikari River that is the longest in Hokkaido and flows to the Japan Sea. Other important rivers flowing to the Japan Sea include the Teshio, Otakashibetsu, and Kotanbetsu.

The third system fronts the Pacific coast west of Cape Erimo. This includes the Saru, Mukawa, and Shizunai rivers. The fourth group of rivers flows to the Pacific, east of Cape Erimo, and is dominated by the Tokachi and its tributaries. However, other rivers flow to this coast and include the Akan, Kushiro, Shibetsu, and Nishibetsu.

There are very few natural lakes in Hokkaido. The largest, Lake Soroma, is, in fact, a former lagoon on the Okhotsk Sea coast. Lake Toya in southwestern Hokkaido formed in the caldera of a volcano.

Sakhalin

Sakhalin is an elongated island situated just off the eastern edge of the Asian continent. It is about 350 km in length and between 10 to 30 km wide. The Sakhalin Ainu occupied only the southern half of the island that is dominated by two mountain chains separated by the Poronai river valley. Most Ainu settlements were at or near river mouths on the eastern, western, or southern coasts. The landscape in which the Ainu lived and worked is characterised by steep rugged coasts; the interior valleys, in which they hunted and gathered plants, are dominated by mixed deciduous and coniferous forests.

Alluvial plains and terraces exhibit an overstory of alder (*Alnus* spp.), Ayan spruce (*Picea jezoensis* var. *microsperma* [Lindl.] W.C. Cheng & L.K. Fu), Sakhalin fir (*Abies sachalinensis* [F. Schmidt] Mast.), larch (*Larix* spp.), willow (*Salix* spp.), and poplar (*Populus* spp.) and an understory of butterbur (*Petasites japonicus* [Siebold & Zucc.] F. Schmidt), nettle (*Urtica platyphylla* Wedd.), ferns, cacalia (*Cacalia hastata* L. var. *orientalis*), and senecio (*Senecio cannabinifolius* Less. or *Senecio palmatus* Pall.); on upland slopes, maple (*Acer* spp.), ash (*Fraxinus mandschurica* Rupr.), Mongolian oak (*Quercus mongolica* var. *grosserrata* [Blume] Rehder & E. H. Wilson or var. *crispula* [Blume] H. Ohashi), Manchurian elm (*Ulmus laciniata* [Trautv] Mayr), and holly (*Ilex crenata* Thunb.) provide the overstory with a variety of berries including grape, (*Vitis thunbergii* Siebold & Zucc.), Labrador tea (*Rhododendron tomentosum*), sedges (*Carex* spp.), euonymus (*Euonymus macropterus* Rupr.), and schisandra (*Schisandra chinensis* [Turcz.] Baill.) beneath them.

Mountain slopes are characterised by Erman's birch (*Betula ermanii* Cham. var. *genuina* Regel) and Japanese white birch (*B. platyphylla*), Yezo spruce (*Picea jezoensis* [Siebold & Zucc.] Carriere) and Sakhalin fir; alpine and tundra locations are characterized by dwarf Siberian pine (*Pinus pumila* [Pall.] Regel), Erman's birch, bamboo grass (*Sasa kurilensis* [Rupr.] Makino. & Shibata), rhododendron (*Rhododendron camtschaticum* Pall.), and chrysanthemum (*Chrysanthemum* spp.). Where beaches or dunes exist, they support species like dunegrass (*Leymus mollis* [Trin.] Pilg.) and cotton grass (*Eriophorum* spp.).

The Kurils

The Kuril Archipelago consists of 22 major islands and many smaller ones. It extends in a northeast to southwest direction for the 1200 km between Kamchatka and northeastern Hokkaido. The chain of islands sits atop a very active seismic region and there are 40 active volcanoes. While they vary greatly in size, most of the islands are long and narrow. The largest are Kunashiri, Iturup, and Urup in the south and Paramushir in the north.

The ecology varies greatly from north to south and by exposure and altitude. There are zones of broadleaf and coniferous forest, open woodland, grassland, and tundra. Some islands are almost devoid of vegetation but those, like Kunashiri in the south, share many characteristics with Hokkaido, and the vegetation includes alder (*Alnus* spp.), Yezo spruce, yew (*Taxus cuspidata* Siebold & Zucc.), mountain mulberry (*Morus bombycis* Koidz.), and oak (*Quercus* spp.). On Urup, areas of milder climate display stands of bamboo grass (*S. kurilensis*).

Climate and the Seasons

The Ainu had no concept of the seasons or months as we record them but divided the year into parts based mainly on the weather, annual natural cycles, and their own economic activities. In the broadest terms, the year was segregated between winter, when outdoor activi-

ties were limited, and summer, when the Ainu laboured long and hard to put food on the table for the entire year.

According to Watanabe Hitoshi, in his comprehensive work, *The Ainu Ecosystem*, in the case of the Ainu in the upper Tokachi Basin, the year began in the season called *shunean-cup*, i.e., sometime in November (1972). The new year, as we recognize it, had no particular significance for the Ainu. The first of January was just another day in the middle of winter; it was a time when salmon (*Oncorhynchus* spp.) had ceased to run in the rivers and thus when the Ainu began to draw upon their supply of dried fish and contemplated whether it would last them through until spring.

The climates of the Kurils, of Sakhalin, and of Hokkaido are quite distinct from each other; even though Sakhalin is a relatively small and narrow island, the climate of the east coast is quite different than that of the west, especially in winter. The east coast climate in late winter is largely determined by the presence of sea ice. In contrast, the southern and western coasts have a climate strongly influenced by the relatively warm, north-flowing Japan Sea ocean current. The climate of the Kurils is dominated by the south-flowing ocean current of the same name. It results in cool, often foggy, conditions throughout much of the year. As Hokkaido is a relatively large island, it experiences a wide range of climatic conditions.

The eastern, Pacific zone of Hokkaido is influenced by the cold north-to-south Kuril Current and by the winter monsoon. The latter produces northwest winds that bring heavy snowfall and the mountains in Shiretoko, for example, receive up to 180 cm per annum. However, the snowfall in eastern Hokkaido is generally far less than that experienced in the west and in the central and Tokachi mountain ranges where 100 to 200 cm of snow falls each year.

Nonetheless, in the mountains' shadow, in the Tokachi Basin, for example, despite limited snowfall and extended winter sunshine, temperatures are the lowest recorded in Hokkaido and cold spells have been known to persist for up to two months. In practical terms, this restricted to a minimum the winter economic activities by the Ainu.

In terms of oceanic influences, Hokkaido can be divided into four zones; the west coast is under the sway of the warm Tsushima Current; the southern and southwestern Pacific coasts enjoy the warming influence of the Tsugaru Current. The southern coast near Cape Erimo is more directly affected by the cold Kuril Current that also dominates the eastern Pacific coast. The fourth zone encompasses the entire Okhotsk coast from Wakkanai to Shiretoko. It is influenced by the cold west to east Karafuto Current that brings sea ice to this entire littoral in late winter.

Even more influential than these ocean currents are the weather systems that develop over the continental land mass on the one hand, and over the Pacific Ocean on the other. In winter, both the Siberian high pressure and Aleutian low pressure system drive cold northwest winds ashore and dominate most of Hokkaido's weather; only the Oshima Peninsula, in the extreme southwest, escapes these subpolar conditions. From late September to late May, the Siberian airmass brings heavy snowfall to the Japan Sea coastal zone and the central

mountains. Wind gaps allow winter storms to penetrate as far as the Hidaka range in central Hokkaido.

Under these influences, temperatures remain below freezing for much of winter; they average between minus three or four degrees Celsius in the warmer years and between minus six to eight in the coldest. Temperatures are coldest in the interiors, especially in the Kitami area and the Tokachi river basin where the first frost can occur as early as October 8. The last frost occurs between mid-April and mid-May. Thus, winters are long.

Summers throughout Hokkaido are relatively cool and moist and the effect of summer monsoons is very limited. Most rainfall occurs in July and August. From May through early October, temperatures are fairly consistent throughout Hokkaido.

The cool moist air that develops atop the Kuril Current causes fog to develop along the eastern Pacific coast in summer; the fog regularly extends inland into the Tokachi River basin. However, this phenomenon has had minimal impact on the ecology of the area or, other than increasing the risks of offshore fishing and travel, on the livelihood of the Ainu.

3. Ainu Society

Ainu groups occupied an extensive area of Hokkaido, Sakhalin, and the Kurils. As indicated above, across these geographical zones there were widely variant climates and ecologies. In terms of daily economic activities, the Ainu living on the Pacific coast of southwestern Hokkaido shared little in common with those communities in the islands of the Kurils; the climate and economic activities of the west coast of Sakhalin, which fronted on the Japan Sea, were quite different than that of the east coast, which faced the Okhotsk Sea. Thus, in some respects it is not possible to talk in terms of a singular Ainu culture. Refsing claims, for example, that the Ainu languages spoken in Hokkaido and Sakhalin were not mutually intelligible (1986).

Most Ainu settlements in Hokkaido were dependent on Sika deer and migratory fish for sustenance; those in Sakhalin, and particularly those in the Kurils, where rivers were short and anadromous fish runs were limited or nonexistent, were far more ocean-oriented in their fishing activities.

On the northwest coast of southern Sakhalin, herring (*Clupea pallasii*) were more important to the Ainu diet than salmon (*Oncorhynchus* spp.); in the Kurils, the Ainu subsisted on a limited catch of salmonid (*Salvelinus* spp.) supplemented by ocean fish, seals (*Phoca vitulis* and *Callotaria ursina*), sea otter (*Enhydra lutris*), and bird eggs.

In addition, Ainu groups that might have originally developed from a common cultural stock were dispersed widely over the period of their history and lived in relative isolation of each other. These societies evolved in situ to take advantage of local resources to support their daily life. Ohnuki-Tierney, in describing the Ainu culture of the northwest coast of southern Sakhalin, states that kinship ties were so important in maintaining the way of life of settlements that there was little or no contact with Ainu groups outside these kinship boundaries, even where they lived in close proximity (1974, 1976).

In terms of overall settlement patterns, since the Hokkaido Ainu were predominantly focused on hunting and gathering and in fresh water fishing, their villages were most often located close to salmon spawning grounds (Watanabe 1972). In the Kurils, permanent settlements were primarily located either close to salmon spawning areas or at the mouth of a river or lake; summer was spent, by those members of the group who were active hunters and gatherers, in temporary camps as they collected resources across the interior of the islands or on adjacent islands.

In Sakhalin, too, there were both summer and winter residences; up until the 19th century, winter was spent in villages of semi-subterranean houses built into the sides of hills close to the men's winter hunting areas; summer homes were on the shore where they could best take advantage of ocean fishing and particularly, of herring runs.

Nonetheless, despite these significant regional differences, it is still possible to talk of an Ainu culture with some core characteristics and beliefs common to all groups. As an exam-

ple, in both southern Hokkaido and eastern Sakhalin, Ainu groups maintained and respected *iwor*—hunting territories owned by a village or group of villages. It was possible for groups living outside this territory to gain permission to hunt or fish in these areas but requests had to be made formally to the chief or chiefs involved. Such *iwor* might occupy a single river basin that, in the case of the Saru in southern Hokkaido, for example, would have been extensive. In other cases, the *iwor* was a single watershed or was focused on a spawning area and was characteristic of an essentially sedentary and stable society.

The Settlement

The most important factor in locating a settlement in most parts of Hokkaido was that it was near a river that had spawning areas for salmon (*Onchorynchus* spp.). The houses were built on a terrace outside the floodplain, as the threat of floods was real.

Forests were extensive, topography often difficult, and trails limited, so rivers were also important in providing routes for transportation or access to upstream hunting and gathering areas. As trade with the Japanese increased in the 18th and 19th centuries, rivers also provided access to the coast and trading posts. Each village would own several dugout canoes, and in wealthier or coastal villages, each family might own one. Other factors in locating a village were good sun exposure, protection from the wind, and ready access to a supply of firewood.

In most regions of Hokkaido, houses had a minimal wooden frame covered both on the roof and walls by Amur silver grass (*Miscanthus sacchariflorus* [Maxim.] Benth. & Hook. f. ex Franch) or reeds such as phragmites (*Phragmites australis* [Cav.] Trin. ex Steud.). Where these were not available, or in areas of greater snowfall, tree bark, especially that of the Amur cork tree (*Phellodendron amurense*), was used. In any event, Ainu houses were poorly insulated and it was imperative to maintain a fire in the hearth at all times, even in summer. Fire was central to the Ainu way of life. In Sakhalin and the Kurils where the climate was harsher, winter houses were often semi-subterranean and had wood and sod roofs.

The typical Ainu house was essentially a single room approached through a small vestibule that also functioned as a storage area. The main living space was dominated by the central hearth; around the edges of the room were slightly raised sleeping platforms; privacy was maintained by screens made of woven stems of Amur silver grass, sedge (*Carex* spp.), or reeds. The organization of space, both within the settlement and in the house, was strictly dictated by tradition based on religious beliefs. The house was oriented toward the mountains—the most sacred space in the Ainu world. Here lived the gods, chiefly represented by the brown bear (*Ursos arctos*).

The house wall facing the mountains contained a sacred window through which all killed game was passed by the hunter to his wife or family. Nobody was permitted to occupy the

space in front of the sacred window at other times. The wall to the right of the entrance as one entered the main space contained the profane window through which wastewater and trash were disposed. At meals and during social gatherings, the area between this window and the hearth was occupied by girls and young women who had the lowest status in Ainu society. Opposite them sat their parents or guests; boys and unmarried men sat in the space between the door and the hearth. In religious terms, the most important space was the corner to the left of the sacred window. Here there was an altar where resided sacred staffs called *inau* and treasures owned by the family. These were usually lacquer or metal goods, including swords obtained in trade with the Japanese or Santan.

The area outside the house was also strictly defined by religious principles. Close to the sacred window and readily visible from it, was another altar called *nusa-san*, where sacred staffs, or *inau*, were erected and ceremonies took place. Adjacent to the house were an elevated storage house, or *pu*, and a cage for keeping a bear cub or other animal, such as fox (*Vulpes vulpes*) or Blakiston's fish owl (*Bubo blakistoni*), used in the ceremony called *iyomante*. Beyond these was a pile of ash. Because of the importance of fire in daily life, both in terms of preparing food and heating the house, complex rituals evolved with regard to the hearth. One of these involved the disposal of ash that was accorded its own special resting place.

On the opposite side of the house at a prescribed distance, and often beyond the main pathway through the village, were a trash heap and men and women's latrines. The importance of the orientation of the house and the spaces beyond it largely dictated the organization of the village. Each house must, for example, have unencumbered connection to the sacred space of the mountains, and the location of other houses must not infringe on the placement of exterior structures and amenities. Consequently, in Ainu villages along rivers or lakes, houses were often widely dispersed, were up to 500 m apart, and distributed linearly along a terrace. Coastal villages were often more densely occupied and largely oriented to the shore.

While men and women enjoyed essentially equal status in Ainu society, tasks performed by them were usually strictly segregated. Because menstrual blood was considered impure, women were almost never allowed to participate in hunting in the mountains or fishing at sea. They were allowed to hunt and trap small mammals like rabbits (*Oryctolagus cuniculus*) in the areas close to the settlement and to fish in lakes. They might also participate in teams that fished in rivers at night with torches from the shore or from dugouts. In the oral literature, most shamans were women and, in the period between the 10th and 16th centuries when Ainu culture was at its apex, they were drawn exclusively from the ruling elite (Philippi 1979).

Older men often enjoyed higher social standing based on their age and experience, especially in hunting and fishing, in telling oral tales (*yukar*), and in maintenance of social harmony. However, elderly women also achieved higher status and often participated in the community decision-making process.



Figure 6. A coastal village in the late 19th century with ocean-going canoes pulled up on the beach in front of the houses. Source unknown (image on a late 19th century postcard, i.e., in public domain).

Active adult males and females bore the brunt of responsibility for subsistence and trade activities; grandparents and elder siblings cared for the young and remained in the settlement most of the time. However, even the elderly and the young participated in certain activities like gathering firewood, picking autumn berries, or smoking fish. Young males practiced their hunting and fishing skills until old enough to be of use to adult males; young women were taught domestic skills such as cooking, weaving, and sewing. Men were engaged almost exclusively in hunting and fishing, in organizing ceremonies, and in the production of sacred objects; women gathered plant materials used in cooking, medicine, and in the production of clothing, footwear, ropes, and matting.

The Ainu kept no pets, although a very young bear cub might be allowed some human contact. However, dogs were extremely important and a man's wealth or status was often measured by how many dogs he owned. They performed various roles, including guarding the house from predators, pulling sleds (in Sakhalin) and boats (in Hokkaido), and in fishing, at which they were trained to be adept (Hanasaki 1988; Ohnuki-Tierney 1976). Chiri lists around 30 Ainu words for dogs which suggests their importance; some names describe their physical characteristics, some their character, and some their function or place in society. *Apacampe*, for example, means "something near the door", as dogs were not allowed in the house; *pan-ikiri-kor-seta* means "lead dog" and *parampe-etukka-sito* means "dog with its tongue hanging out".



Figure 7. Ainu elders telling oral tales over a few drinks. The drinking vessels were imported from Japan and were symbols of power and status. By the 19th century, the drink of choice was Japanese sake acquired in trade. Ezo Kodai Fuzoku, anonymous, late 18th century.

Economy

Fishing

River Fishing in Hokkaido

In spring, the snow would first melt at the lower elevations where, even if there were still supplies of dried fish or vegetables in the elevated storehouse, the Ainu would begin to hunt, gather wild plants, and fish in the lower reaches of the rivers.

Early in the season with the ice melt, there would be a few fish in the rivers. These included dace (*Leuciscus ezoe*), bullhead (*Cottus gobio*), or Sakhalin taimen (*Hucho perrii*), the latter called **cirai** in Ainu. Dace were also fished through the remaining ice in rivers and ponds. In open waters, fish were taken with a spear where the water was clear or with basket traps or bag nets. Sakhalin taimen has little flavour but, as it was large and plentiful, it was a welcome

addition to the diet early in the year. On the Tokachi and Oropuke rivers, early fish like dace or Crucian carp (*Carassius auratus*) were accorded honours as the first catch of the year (Watanabe 1972).

Salmon was by far the most important fish to the Hokkaido Ainu and, for much of the year, constituted the major protein in their diet. For the single species of *Onchorhynchus keta* (dog salmon or chum salmon) alone, the Ainu had 40 names. One, *si-ipe* or *shipe*, meant “true food”, suggesting its importance in their diet. Others described the salmon’s status as a god while yet others focused on physical characteristics or on its movement from the sea to the river. Matsuura Takeshiro quotes a *kamuy yukar*, or “tale of the gods”, from the Saru River Basin, in which there were so many fish in the river that “their backs were bared to the sun” (Hanasaki 1988).

All three types of salmon (*Oncorhynchus* spp.) native to Hokkaido are anadromous and returned in consistent two or four year cycles. Dog or chum salmon always returned to the same river; pink salmon (*Oncorhynchus gorbusha*), on a two-year cycle, were not consistent in their choice of a spawning area.

In addition, there were other significant variations in migration or spawning patterns. On the Chitose and Bihoro rivers, there are large lakes in which the migrating fish would linger for several weeks on their journey (Takenaka Takeshi, pers. comm. c. 2008). As a result, spawning would be delayed. The local Ainu groups were fully aware of these patterns and, naturally, learned to take advantage of them. However, the fact that different villages controlled access to any given lake or riverfront sometimes created tension, especially in years where the numbers of fish were limited. Generally, fish runs were abundant enough that villagers were permitted to fish outside their territory, or *iwor*, by the villages that controlled other territories.

Fishing for salmon generally took place upstream close to spawning areas where the rivers were shallower and fish were easier to locate. Cherry, or *masu*, salmon (*Oncorhynchus masou*), often referred to as “trout” by the Ainu (Takenaka Takeshi, pers. comm. c. 2008), generally ran from early May to late August or early September, depending on location. They spawned in early September. The main catch was taken in August but the season might be locally extended. They were often taken in weirs made of twigs—usually willow (*Salix* spp.) or ash (*Fraxinus mandschurica*)—secured by hardwood poles driven into the riverbed. They were also fished from peep huts positioned over the river below spawning areas where the Ainu knew, from experience, that the fish would pause in their upstream migration. This method was most effective at first or last light when the fish began to stir or ceased activity. As they moved slowly, the fish were easier to spear. Most families maintained their own peep hut. Pink salmon was a smaller fish than either cherry or dog salmon but, as it was present in large numbers locally, it may well have been of equivalent importance as other species. Its run was from late June to late September.



Figure 8. An Ainu man carrying a spear, called *marek*, fishes from the riverbank at night. His companion carries a birchbark torch to light the surface of the water. Hirasawa c. 1872.

In addition to its names referenced above, dog or chum salmon was also known to the Ainu as *chikipe*, or “autumn food”. It migrated upstream through the three Ainu months of *urepok*, *shunean*, and *kuekai*, i.e., from September to late December and, occasionally, even into January. These autumn runs usually occurred in three stages; the first was in late August to early September; the second was in late September to early October, and the third in November to January. The last fish caught were those that had spawned, were close to death, and had very little fat. As such, they were ideal for smoking or drying.

Early dog or chum salmon runs penetrated further upstream and the fish were termed *kamuy-orun-omap-cep*, or “the fish that runs up to the gods”. The first salmon caught was taken back to the village to be presented to the chief. He, in turn, offered it to the *ape-fuchi*, “the goddess of the hearth”. It was cut up with a knife, normally reserved for carving sacred staffs, or *inau*, and distributed to villagers. The mandible was tied to a sacred staff that was kept and, at the end of the season, thrown into the river to ensure the salmon would return the following year. Salmon runs were usually bountiful but occasionally failed. There are a number of recorded cases in the 19th century of the hardship and even starvation that resulted.

The Ainu month of *shunean-cup* translates as “the time of torches”. The Ainu would fish at night for dog or chum salmon from shore or from canoes. They carried *marek*, a spear, and torches made of the bark of birch (*Betula* spp.) for this purpose. A typical canoe fishing party consisted of three people: one to manoeuvre the canoe, someone to hold the torch near the surface of the water, and the fisherman himself, spear at the ready. The torch-bearer was often a woman or child. Women were generally prohibited from hunting or fishing but were pressed into service when needed. In Figure 8, above, it is probably the son who holds the torch as his father seeks out fish from the riverbank.

The Ainu in Hokkaido and Sakhalin kept dogs. They were used chiefly for assisting in hunts for bear and Sika deer (*Cervus nippon*), and in pulling canoes or sleds, but they were also trained to fish. They were mainly employed in deeper water where they would dive to the bottom in search of their prey. They would take the fish by the head and swim to shore with it.

Coastal villagers formed cooperatives to make large seine nets made of the bast of nettle (*Urtica* spp.) and equipped with floats and sinkers made of pebbles, with which they would fish for dace and mullet at the river mouth.

River Fishing in Sakhalin

Early in June, smelt (*Hypomesus nipponensis*) would return to the rivers to spawn. On their upstream journey, they are white, fat, and oily. In this state they were of limited use to the Ainu as the excess fat makes it difficult to dry or smoke them. Most, therefore, were taken after spawning.

Smelt were taken either with small harpoons, called *cioreuex*, or in traps or weirs. As they concentrate to rest in deep waters at midday, the traps were built immediately downstream of these known locations. Traps were set at night. First, stakes made of the wood of a willow were driven into the riverbed to form a V-shaped fence. A small opening was left at the midpoint and from it was built a narrow tunnel, also made of stakes, and which lead into a narrow cone-shaped basket trap called a *toxta* (see Figure 46). The mouth of the trap was about 60 cm in diameter and the trap, about 2 m long. The narrow, downstream end of the trap was secured to the riverbed by stakes.

As the smelt were drawn toward the trap, fishermen would enter the water with willow beaters to drive them into it. Once the trap was full, it was emptied onto the bank and set again. The fish were immediately split lengthways and their internal organs removed. After washing, they were tied onto loops and dried on racks; if the catch was meagre, the fish were dried outside the houses on mats. After drying for several days, they were placed on the *tuna*, or shelf above the hearth, to be smoked and then stored in the elevated storehouse.

Salmon and White-Spotted Char

Anadromous fish began to enter the rivers of southern Sakhalin at the end of June (Ohnuki-Tierney 1974). The first to appear was cherry salmon (*O. masu*). In July, they were joined by pink salmon (*O. gorbuscha*). Cherry salmon ran for only about ten days and by late July they had disappeared. They were often taken in a combination of weirs and basket traps placed in narrows between sandbanks. Late July through mid-August was the peak season for pink salmon and white-spotted char (*Salvelinus leucomaenis*).

As in Hokkaido, dog or chum salmon was usually known as “autumn fish”, which, in Sakhalin dialect, is *cux-cex*. It began its run upstream to the spawning grounds when, in September, the days turned cold and the leaves of the birches began to turn colour.

Salmon were usually taken by harpoons called *cioreuex* or *marek*; limited fishing took place at the river mouth and even in the estuary. The fishermen then worked their way upstream following the fish. Salmon rest in deep water pools during the day and travel at night. As they were easier to locate in shallower waters, fishing was conducted at night with the aid of torches made of the bark of a birch (*Betula spp.*) and called *sune*. When fishing alone from the riverbank, a fisherman would set the torch in a split let into the end of a pole driven into the bank or river bed. Torchlight fishing was sometimes conducted from canoes but only in calm waters. When fishing from a canoe, the fisherman would often work alone or, as in Hokkaido, sometimes would employ a team of three. A woman would sit in the centre holding the torch near the surface of the water. Among the Sakhalin Ainu, her presence was believed to calm the fish. A man at the stern navigated the canoe and the harpooner stood at the prow. When fishing alone, the fisherman set the torch in a block of wood in the centre of the boat. As he fished he would say to the torch, “make it brighter”, as if someone were hold-



Figure 9. An AINU man fishing with a spear in shallow waters (after Chiri 1962).

ing it. Torchlight fishing was increasingly employed as the number of fish declined toward the end of the season.

Of the two types of spear employed in Sakhalin, the *marek* was more commonly used than *cioreuex*. Both types used a forward-facing iron hook attached to the shaft and secured by a nettle bast cord. Harpooning generally took place from the riverbank. The harpoon was aligned parallel to the surface of the water, and aim was taken at the belly of the fish. When the hook struck the fish, it detached and rotated, thus ensuring the fish could not escape.

As the fish was landed, it was immediately struck on the head with a wooden club, or *i-sapa-kiki-ni*, about 35 cm long and made of alder (*Alnus japonica* [Thunb.] Steud.) or willow. It was essential that a new club be made at the beginning of each season; to use an old club to kill the fish would show disrespect to it. According to AINU mythology, the gods would become angry at the use of an old club and would not allow the return of the fish the next season. Thus, an old club was retired and “returned to the gods” at the end of the season.

The AINU fished at night throughout autumn until they had landed enough to fill the storehouse. The fish were split, dried for several days, and in some cases smoked. Drying took place outside on racks erected for this purpose. Fish that was to be eaten dried but not

smoked was split and deboned before drying. Once it was dried, it was eaten as a snack or added to stews called *ohaurorox*. The head, tail, and bones were fed to the dogs.

Smoking took place in huts called *ima-cise*, erected on the bank near the river mouth. The huts were simple shacks with roofs often of tree bark; nonetheless, in addition to a hearth they might often include sleeping platforms in order that the fishermen and their families could live in them during the season. Above the hearth were shelves on which the fish were smoked. Before smoking, fish was grilled on skewers set in the ash of the hearth.

When fishing was over, the smoked fish was placed in bundles of 20, called *sinesoma*, and carried back to the village to be stored; dried or smoked fish would generally sustain each family throughout the winter. Chiri reports it was not unusual for a family to process a thousand fish.

During the fishing season, part of the day's catch was eaten fresh. In Sakhalin, dog or chum salmon was rarely dried; as with other salmon or trout, when eaten fresh, it was either roasted at the hearth or added to soups. Salt or seal oil were added to taste.

If salmon continued to run in very cold weather, any caught at that time were placed in a log enclosure covered with grass where they were allowed to freeze. While the temperature remained below freezing, they were well-preserved and thus would usually last until spring. When needed, they were removed and thawed prior to cooking. An alternate method was to place fish in the cold waters of a spring where they would remain fresh for several weeks.

Salmon roe was considered a delicacy; it was boiled and seal oil and the lees of the starch of the bulb of the cardiocrinum lily (*Cardiocrinum glehnii* Makino), added to it. In an alternate preparation, the roe was mashed in a special bowl, fresh or frozen berries added to it, and eaten as a snack when drinking.

Ice Fishing

On the east coast of southern Sakhalin as temperatures rose in early spring, the Ainu would move down from their semi-subterranean winter homes to the shore. The sea would usually remain covered with ice for several more weeks so they would move out on the floes to fish. Ice fishing was called *kankaj-peraj*, and for it they used a rod made of a branch of Japanese rowan or mountain ash (*Sorbus americana* var. *japonica* Maxim.), a line spun from nettle bast, and a metal or bone hook to which was attached a sinker and lure.

The line could be reeled in quickly by means of a notched board that the fisherman held in his other hand. The main catch was probably saffron cod (*Eleginus gracilis*) that spawned beneath the ice in shallow coastal waters. It was eaten both fresh and dried and stored for future use. In both Hokkaido and Sakhalin, Ainu would fish on lakes and ponds throughout the winter; this type of fishing supplemented dwindling supplies of dried fish and provided a fresh source of protein. For this purpose, fishermen often erected conical huts on the surface of the ice.



Figure 10. Pulling up nets through the ice at Kushiro. They are fishing for Kokanee salmon (*Oncorynchus nerka*), known as *kapachep* in Ainu. The fire on the ice is not intended to provide warmth nor to be used for cooking. Rather, it served to make holes in the ice. Matsuura 1997 [c. 1860].

In the above illustration by Matsuura Takeshiro, Ainu men are seen pulling up nets through holes in the ice. Other than this illustration and Matsuura's commentary, there is no record of this type of fishing.

Gathering at the Shore

Women were in charge of combing the beach and rocks. They collected various types of crabs as well as shellfish, scallops, and clams. All were boiled and eaten immediately and usually in soups. One clam, called *tohoj*, was used medicinally.

Kelp (*Laminaria* spp.), known as *sas* in Ainu, was collected from the shore and from boats. The type taken depended on location, water temperature, and depth, and included *Laminaria yezoensis* and *Laminaria sachalinensis*. It was prepared in various ways, added to soups, and dried as a source of salt in winter, especially when occupying residences inland. With the development of trade, Japanese kelp became a significant export commodity.

Offshore/Ocean Fishing

During the period of their history that they occupied the Kurils, the Ainu there were largely dependent on ocean fishing and on trade in sea otter, seal, and other sea mammal skins. There is no record of their fish catch, although future archaeology may provide some indication of this.

In certain areas along the Pacific coast, the Hokkaido Ainu groups were also proficient at ocean fishing and, in Funka Bay and around Kushiro, even took whales. Whales, such as orca (*Orcinus orca*) and minke (*Balaenoptera acutonostrata*), occupied similar waters to swordfish (*Xiphias gladius*, known in Ainu as **shirikap** or **soxkama**), and might be encountered during swordfish hunts. Whale meat was both consumed locally and traded to the Japanese. However, although their harpoon was capable of penetrating the whale's skin, the Ainu did not possess boats large, sturdy, or seaworthy enough to pursue whales at sea, and thus most of the whales taken had probably been stranded. Orcas would often force onshore other whales such as minke. Orcas, in turn, were sometimes trapped by the sea ice along the Okhotsk Sea coast. The capture of a whale of any size was a major event in a coastal village. An Ainu song expresses its significance.

A large whale was stranded
 Oh, how joyful
 The god came down on a carriage.

Yanke-tomari was the term used for fishing in the estuary and using seine nets for small fish like grey mullet (*Mugil cephalus*) and dace; **repun-tomari** referred to fishing at sea for swordfish with lines and a harpoon with a detachable head, called **kite**. The fishermen would go out in midsummer in an **itaomacip**, a 3 to 4 m long modified dugout canoe where the freeboard was made of a number of overlapping strakes that were added to make it more seaworthy. This feature is well illustrated by Savage Landor's detailed sketches and descriptions of a beached canoe he examined on the Pacific coast in 1889 (Landor 1893).

As it was risky, there was considerable ritual associated with swordfish fishing and prayers were offered to **sotki-kor-kamuy**, god of the estuary. A swordfish caught at this time was treated with as much respect as a bear, and its head was placed on a special outdoor altar and decorated with sacred staffs, or **inau**, so that its spirit might return to the ocean.

Other fish taken at sea included tuna (*Thunnus* spp.), dolphin (species unknown but possibly Pacific white-sided dolphin, *Lagenorhynchus obliquidens*, which frequent Volcano Bay on the Pacific coast), and sunfish (*Mola mola*); the latter taken for the oil extracted from its liver that was used in cooking (Refsing 2000). In Sakhalin, turbot (species not known, but in the family *Pleuronectidae*; known in Ainu as **kapariu**) were taken with iron hooks attached to a whalebone "needle" and on a line made of nettle bast. Turbot were eaten fresh.

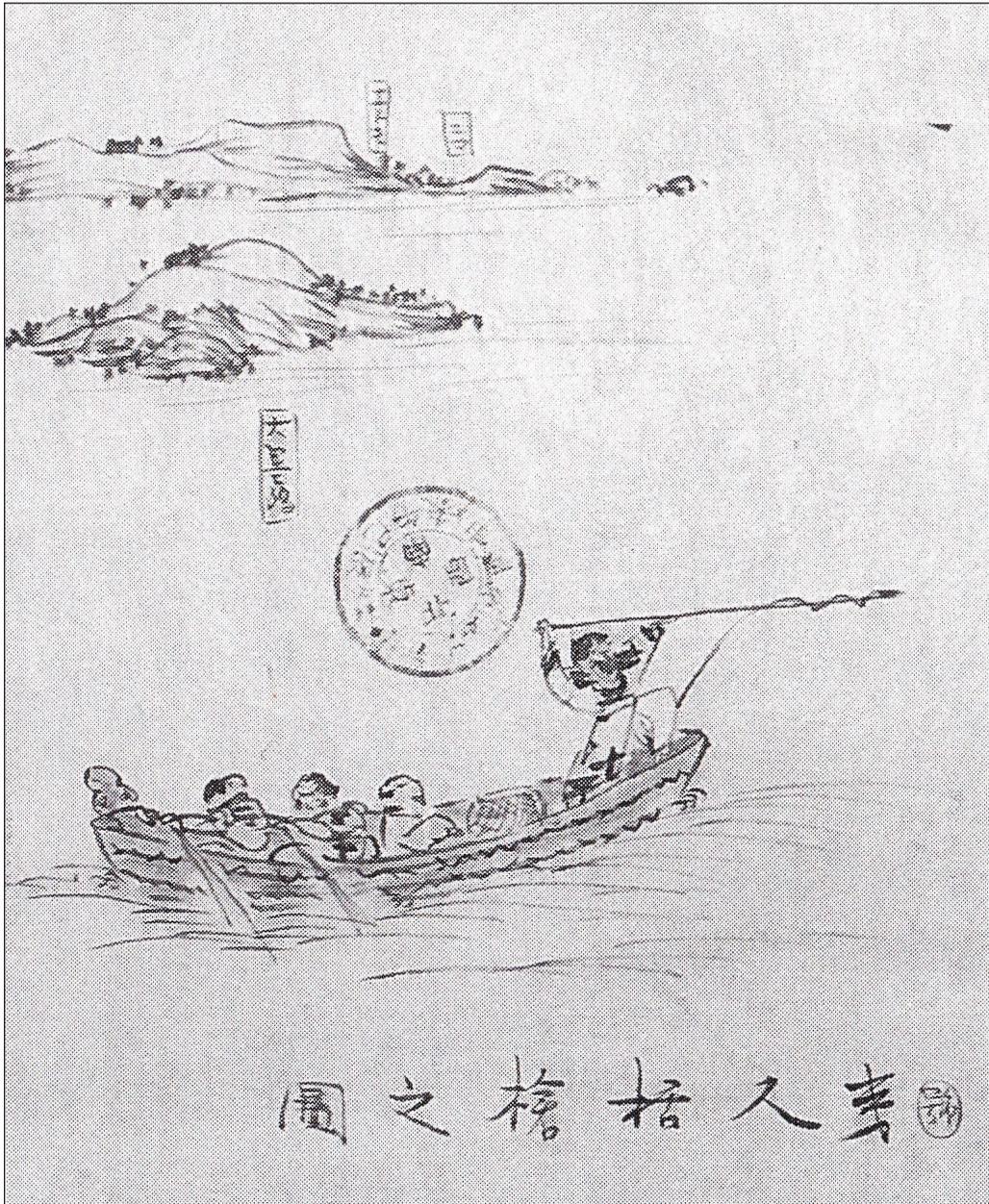


Figure 11. Fishing at sea from an *itaomacip*, a simple dugout canoe to which a freeboard was added to make it more seaworthy. The man in the bow uses a harpoon with a detachable head. Murakami 1799.

In the Okhotsk and Japan seas, both the Hokkaido and Sakhalin Ainu hunted fur seals and other marine mammals; in the case of the Okhotsk Sea, these were sometimes taken on the sea ice that occupies the littoral in the latter part of winter and early spring.

As indicated above, on the northwest coast of southern Sakhalin, herring were just as important to the Ainu diet as later runs of freshwater fish such as smelt and salmon. In

early May, it is often still quite cold and the spring snows were seen to auger the arrival of the herring (Ohnuki-Tierney 1974). The Ainu would move from their winter homes in the mountains to their villages on the shore. Herring, therefore, represented the first fresh food after a long winter of subsistence on dried or frozen meat and vegetables.

Hunting

Hunting remained an integral part of the Ainu economy until at least 1850–1860. Sika deer were taken as a major source of food and “bear, fox, otter [*Lutra lutra*], marten as trade commodities” (Wilkinson 2002:80).

While they sometimes hunted bear and Sika deer with spears equipped with iron points acquired in trade, the weapon of choice for most Ainu hunters was the bow and arrow. The hand bow (*chiani-ku*) was about 1.2 m long and made of yew (*Taxus cuspidata*) or, in some cases, ash, mountain mulberry (*Morus bombycis*), or holly (*Ilex radicans* Nakai). In the old days, bows were made of spindlewood (*Euonymus sieboldianus* Blume); the arrow was usually of bamboo grass (*Sasa* spp.) but occasionally of Amur silver grass (*Miscanthus sacchariflorus*) or hydrangea (*Hydrangea paniculata* Siebold) and, in Sakhalin, sometimes of holly (*Ilex* spp.). It was typically 30 to 40 cm long.

The shaft of the set bow (*amappo*) was made of euonymus (*Euonymus* spp.), cherry (*Prunus* spp.), Amur maackia (*Maackia amurensis* Rupr. & Maxim), or viburnum (*Viburnum furcatum* Blume ex Maxim.). Both types of arrow had a head, usually made of bamboo, into which a shallow depression was carved to accept poison. Only men handled bows, spears, and poison. Because their menstrual blood was considered polluting and offensive to the gods, women did not participate in the hunt, nor were they allowed to touch hunting tools.

Hunting in the Mountains in Sakhalin

After the dog or chum salmon fishing season was over in mid-September, men turned their attention to hunting. They erected new *inau*, or sacred staffs, at a special place in the mountains and prayed to the mountain god for good fortune in hunting.

The primary focus of hunting among the Sakhalin Ainu at this time was marten (*Martes melampus*), taken in early winter for their pelts, an important trade item (Ohnuki-Tierney 1974). In southern Sakhalin, the Ainu also hunted bear, whose cubs were captured for *iyomante* in late winter, reindeer (*Rangifer tarandus sibiricus*), and musk deer (*Moschus moschiferus*), whose meat supplemented fish in their diet. Fox, tree squirrel (*Sciuris vulgaris orientalis*), otter, rabbit, and lynx (*Lynx borealis*) were of lesser importance.

The hunters wore many layers of clothing, including dogskin jackets and insulated deer-skin or fishskin footwear. There were, however, limits to the temperatures they could withstand, and winter weather was sufficiently unpredictable to make long journeys dangerous. They abandoned hunting when the snow became too deep, the days too short, or the temperatures too low to allow outside activity.

Brown Bear (Ursos arctos yezoensis)

There are many Ainu words for the brown bear, but the word usually used was *kamuy*. It is a word that also means “god”, although originally it had the meaning of demon or evil god (Yamada 2001). Bears were formidable and dangerous prey, and there are several recorded examples of Ainu killed or maimed by them. One was a woman from Sanenkoro in Hokkaido who was killed while gathering *turep*, the bulbs of the cardiocrinum lily, in the mountains.

As the bear was the primary god in the Ainu pantheon, a great deal of mythology developed around hunting it. Often hunters would stay in mountain huts for days at a time to increase their chances of sighting one. If they heard the cry of the Ural owl (*Strix uralensis*) at night, they would note from what direction it came and follow it the next morning. By doing so, they believed they would find the den in that direction (Takenaka Takeshi, pers. comm. c. 2008).

Hunting bears required planning, cooperation, and, usually, the use of dogs. Sometimes bear would be taken in a fixed-bow or some other kind of trap but the safest, most effective method was to take a hibernating bear in its den or immediately after it had left the den and was relatively weak. All forms of hunt were designed to take advantage of the bear’s habits and to minimize risk to the hunter. Generations of observation meant that the Ainu well understood the habits and ecology of bears. When they emerged from hibernation in spring, bears would move into the plains and valleys in search of new growth, like that of the butterbur (*Petasites japonicus*) or cow parsnip (*Heracleum dulce* Fisch.); in summer, paradoxically a time of limited resources, they would seek out one of the few available angelica (*Angelica ursina* Maxim.) and scavenge for moths, grubs, or insects such as ants on rocky shores or along river banks (Takenaka Takeshi, pers. comm. c. 2008); in autumn, they would wait at the falls or pools in the rivers for the migrating salmon; later they would climb into mountain valleys in search of nuts, berries, and fruits, especially that of actinidia (*Actinidia arguta* Siebold & Zucc.).

This bear diet was fairly consistent throughout Hokkaido but there were minor regional variations. For example, in the Oshima Peninsula in southwestern Hokkaido, the spring intake included the nuts of beech (*Fagus crenata* Blume) and the acorns of Mongolian oak (*Quercus mongolica*) that had survived from the previous winter.

According to recent research conducted in Hokkaido and Sakhalin, the bear’s diet in spring was made up primarily of herbaceous material. Even during autumn, the period of the heaviest salmon runs, vegetation accounted for 80% of their intake and, on an annual basis, meat or fish accounted for only about 15%. In autumn, after the major fish migrations were complete, berries and nuts constituted almost half the food a bear would consume (Mano 1994).

As their gall bladder and skins became important components of trade with the Japanese, hunting of bears increased over time; prior to this time they would have been taken only so that the village could perform an annual ceremony, called *iyomante*, in which a one or two

year old cub, that had been captured in the den and raised by the villagers, was killed so that its spirit be allowed to return to the land of the gods. While its blood and meat were consumed with much ceremony during *iyomante*, bear meat was not an important part of the Ainu diet. It was only eaten, at most, two or three times a year and then, because it had to be shared with the entire community or gathered clan members, in small quantities.

Prior to trade with the Japanese, bearskins were never used, as it was considered taboo. Instead, they were buried in a designated location in the forest along with the bear's bones. Only the bear cub's skull was placed on the altar, or *nusa-san*. It was left in place to disintegrate and be replaced by other skulls.

Hunting at the Den

The most critical aspect of this kind of hunting was to identify active dens. In this regard, hunters would rely heavily on the experience of elders who were often no longer active in the hunt. The dens were preliminarily tagged before the first snow.

With the first snow, most bears would seek a place to hibernate. Depending on location and weather, this could occur anywhere between mid-November and mid-December. When the hunters considered it appropriate, they would return to the mountains to check which dens were in use. If they were interested in taking the cub, any attempt at rousing the mother



Figure 12. A *nusa-san*, or altar, displaying bear skulls at a site in the mountains near Chitose in southern Hokkaido. Photo courtesy of Takenaka Takeshi.

would be delayed until the cub had been suckled. Typically, this would be just prior to snow-melt in the mountains—that is anywhere between late March and late May.

A den usually had an air vent about 30 cm in diameter, the snow around it often stained yellow by the bear's breath. It was usually on this basis that hunters could establish the presence of a bear. However, the hibernation of a pregnant bear is not total, as she must be alert enough to protect, care for, and suckle the cub. Thus, hunters were sometimes able to confirm her presence by checking the airhole or entrance of a den for sounds of movement or breathing.

In preparation for the kill or capture of the cub, the hunters would fell suitable trees with which to barricade the entrance to the den. As bears are not capable of dismantling the barrier by pushing it outwards, they would approach it and attempt to part it with their powerful front legs and claws. At this time the hunters would fire poisoned arrows through the barrier and wait for the poison to take effect. If the arrow reached its mark at the bear's heart, this wait might be a matter of only a few minutes. Spears were occasionally used to hold an injured bear at bay or to finish it off.

An alternate method was to wake the bear and taunt it with branches or spears, thereby drawing it out of the cave where it could be safely killed. The cub was then “welcomed” and led back to the village to begin its stay at the home of the hunter, the chief, or an old woman designated to care for and feed it. The mother's carcass was dismembered *in situ* and, with the exception of some internal organs, carried back to the village for consumption. As with captured cubs, a bear killed in this way was accorded great respect and ceremony in the return of its spirit to its ancestors.

The narrative of the “Song of the Bear” describes the killing of an adult bear in the mountains. “A large crowd of people ... began to skin that bear. When they had finished [they] went down the mountain bearing the meat on their backs ... carried on his back the head of the bear with the skin still attached to it” (Philippi 1979:122–123).

Pursuing Brown Bears in the Mountains

By March, the snow was over 2 m deep with a hardpack developed on its surface. Having just emerged from hibernation, the bear would often be weak. Thus, this was the best season for hunting it. Wearing snowshoes, several hunters would set off in search for tracks. A good hunter could tell the age or size of the bear, when it had passed, and what its condition was. Thus, he could judge their chances of catching up to it. On sighting a bear, the hunters would slowly close within firing range of the bow and arrow. Once the bear was hit, it would usually become extremely dangerous, so dogs were often deployed to keep it at bay. Only when they were absolutely sure it was dead would hunters approach a fallen bear. When hunting in sufficient numbers, the hunters could skin, dismember, and carry home the pelt, the gallbladder, and all the meat, including the blood. If unable to carry everything, they would send to the village or another hunting party for help. If working alone, a hunter might have to return



Figure 13. Hunting a bear at the den in early spring. The hunters wear snowshoes, insulated boots and spats and are accompanied by dogs. Matsuura 1997 [c. 1860].

several times to retrieve his kill (Kayano 1996). In such a case, the hunter would construct a raised platform, called *niptani*, on which he could securely store the kill until his return (Batchelor 1905). The value of the carcass was such that it would have been unthinkable to not retrieve everything but a few inedible internal organs that were left to the crows and other forest inhabitants. Tamura notes the term *oruskur* to designate the skin with the head attached that was carried back to the village for a ritual sending off ceremony (1996).

Fixed Bow Traps

According to Ainu mythology, the chief of the bears inhabited the highest mountain in an area from which it would never move. However, each spring it would order all the other

bears to move down the mountain into the land of humans, *ainumosir*. With them, the bears would “carry” gifts of meat for the Ainu villages. As the bears left on their journey, the chief would, in each Ainu household, inform *ape-fuchi*, the goddess of fire or the hearth, that the bears were coming. She was the chief mediator between the gods and humans, while the messenger between the chief of the bears and the goddess was the snake, *riep-kamuy*, or “creeping god”, or the wren, *iso-itak-kamuy*, “the god who speaks for the bear”. In its exalted status as a god, the bear entered the Ainu house through the sacred window, and inside it was feted with gifts that it was to carry back to its master in the mountains.

In full knowledge of the bears’ annual journeys, the hunters employed fixed bow traps. From spring through autumn, the bears moved about their range following well-worn tracks, often along ridges, that were known to experienced hunters.

The fixed bow had to be sturdy and durable, so, usually, it was made of the very hard wood of the Amur maackia, known as *chikupe-ni* in Ainu. The bowstring was much stouter than that used in handbows. It was made of the bast of Japanese linden (*Tilia japonica* [Miq.] Simonk.) and the arrow shaft of a reed. It usually had no fletch. The point was made of bamboo grass (*Sasa* spp.) and was joined to the shaft by a whalebone or hardwood “sleeve”; they were bound together by a fine thread, probably made of the bast of a nettle. As with other hunting arrows, the tip was hollowed out at its base to provide a receptacle for a poison made of aconite (*Aconitum chinense* Siebold ex Paxton). As the poison might lie exposed for days or even weeks, it was important to seal it in place with resin derived from the dwarf Siberian pine (*Pinus pumila*), Sakhalin fir (*Abies sachalinensis*), or Yezo Spruce (*Picea jezoensis*). In addition, the arrow tip was protected by a sheath of the bark of Erman’s birch (*Betula ermanii*) or cherry (*Prunus* spp.) attached to the platform on which the arrow would rest.

The bow was either set on a conveniently placed stump or on a stand, usually made of Sakhalin fir; the latter was, in effect, a stake with a top that was Y-shaped. The bowstring was then placed in the notch and the arrow placed carefully on its platform. To the bowstring catch was attached a thin trip wire several metres long; this was tied off at a tree or post on the opposite side of the track. It had to be fairly loose to prevent accidental triggering of the bow. There was an ever-present danger of hunters falling victim to their own traps or those of others. Thus, an etiquette was developed to warn other hunters of the presence of a trap.

The bear, moving along its customary path, would trip the wire with its chest and the arrow would be released into his rib cage. The arrow was aligned to strike between the second and third ribs, a location closest to the heart. The poison would quickly flow to vital organs and the bear would be paralyzed in a matter of minutes.

Once the trap was set, the hunters would check it on a regular basis. As in other forms of hunting, cutting up the carcass and recovery of the skin, gallbladder, and meat had to be a cooperative effort. Isabella Bird reports seeing 50 traps stored in a single house so, even in the late 19th century, bear hunting remained an important activity in some Ainu communities (1885).

Poison

The major poison used by the Ainu was obtained from the root of an aconite (*Aconitum chinense*), that was known as *surku* or *suruk*. Sometimes other ingredients, like the dried and powdered remains of a fresh water insect called water boatman, or *worumpe*, were sometimes added to the aconite, but more often than not it was used alone. Mixing and testing the poison required skill and experience and each village might have a single man capable of it. Formula and methods were closely kept secrets. The potency of the final mix was tested in various ways, one of which was to place a minute amount of the paste on the tip of the tongue or on the back of a leaf.

The final product was black and stiff. It was applied to a groove in the bamboo arrow point and covered in resin taken from a dwarf Siberian pine, Yezo Spruce, or Sakhalin Fir. Once the resin had hardened sufficiently, the arrow was ready to use.

Raising Brown Bear Cubs for Iyomante

Cubs were captured from dens in spring and carried back to the village to be raised. They were fed honey or other sweet foods and, for a short time, were allowed to live in close proximity to humans. After a few days, the cub would have become domesticated.

The diet was then changed to gruel and the cub gained weight rapidly. When, after a few weeks the cub grew large enough to have become a danger to humans, it was transferred to a cage which was made of stout timbers, raised off the ground like the adjacent storehouse, and within a short distance of the house. From this point on, the cub's diet consisted mainly of what the Ainu themselves ate and included boiled fish, the roots of cow parsley (*Anthriscus nemorosa* [M. Bieb.] Spreng.; known in Ainu as *icarapo*), acorns, dried fruits of the Amur cork tree, and stems of hosta (*Hosta rectifolia* Nakai; called *ukurikina*). Other ingredients, such as animal bones, were added when available.

Up until the age of two years, while potentially dangerous, cubs are relatively docile, but as they mature beyond this age, they become increasingly aggressive. This factor, combined with the high cost of feeding a cub, meant they were usually dispatched before they reached three years of age and in many cases before they were two. A cub's food consumption was three times that of a human.

Rearing a cub was the responsibility of the hunter's or the chief's family or one designated by him. Sometimes, however, the entire village would share the responsibility of providing food. Rearing usually required a minimum of 10 or 11 months or, when other cubs were available for *iyomante* and the family or village could afford it, a year longer. Thus, cubs taken in February or March would be presented to the gods at *iyomante* in January or early February. However, there are recorded cases of the ceremony taking place as early as December.

Iyomante was attended by the entire extended clan and, by invitation, by other clans from nearby villages. If multiple ceremonies were to be performed within the group they were held



Figure 14. Its Ainu captors would socialize with a cub up to a certain age. Here an Ainu man appears to be engaged in a friendly wrestling match with a cub while his dog guardedly looks on. Matsuura 1859.

in strict rotation with the chief having precedence. *Iyomante* was, in fact, a primary means to consolidate his power and to maintain clan ties.

The period needed for *iyomante* might extend an entire month, and at the close of one period another ceremony might be immediately scheduled. Most of the bear meat and blood was consumed by special and senior guests at the initial banquet. However, some meat was always reserved for consumption by the hunter's family at the final ceremony.

In Kayano's account of *iyomante*, a young male mimics the dance of the bear cub and, like the cub, he too is taunted by the onlookers. This is a holdover from the times when *iyomante* was accompanied by dance dramas in which the shaman or another man put on the bear's head and skin and took the part of the bear. The performance would begin in the bear cage and recounted the bear emerging from hibernation, wandering through the mountains, and meeting the hunter who was to kill it. In other dances and *yukar*, oral tales, the god (bear) emerges from heaven bearing meat as a gift to the individual Ainu hunter. The god enters the hunter's home as his guest. The oral tales vary slightly from place to place or from clan to clan, but all contain the same basic elements. In one version, the mountain god takes the

bearskin from the frame on which it has been hung and wears it. In so doing, it becomes the bear.

Hunting Sika Deer (Cervus nippon)

“In olden times when the divine Aeoina came to Ainu land he hunted and killed deer and stretched their skins out to dry” (Batchelor 1924:29). As with bear, there were several methods of hunting Sika deer. When in dire need of venison, sometimes an entire village of up to 20 people and their dogs might be involved.

In one major form of hunting, the deer were slowly herded toward a cliff, river, lake, marsh, or trap set by the Ainu. Such traps were usually constructed of stakes, called *kuteki*, driven into the ground with sharpened points directed toward the stampeded animals that would be impaled on them. They were generally erected as a continuous fence a few hundred metres to several kilometres long and located in oak woodland, on level plains, in mixed woods by tributaries, or on broad hill slopes, usually within walking distance of the village.

Matsuura recorded such a fence and many fixed bows in place near an Ainu village during his 1857–1858 expedition to Akan. When stake fences were located deep in the forest or in the mountains, hunters would erect temporary huts and spend several days or weeks hunting in the area.

As indicated, such large scale construction would require the cooperation of a number of people and sometimes several families but, as the deer tended to use the same tracks each year, the fences would be left in place. Sometimes the fences would be augmented by fixed bow traps but these were normally hidden beside trails. Such traps were checked daily.

When hunting a single deer, a hunter working alone or with dogs would try to trap the deer at the edge of a lake or in a narrow canyon. Hunting on the hardpack wearing snowshoes often increased the chances of success, as deer move slowly through deep snow and fall through ice capable of bearing the weight of dogs or humans. In Hokkaido, deer were hunted in both spring and autumn—the latter season being more important because they had put on fat for the winter. The Ainu also considered that autumn meat tasted better.

Fences and traps were set or refurbished in October. Deer were available in spring and summer too but Ainu men were preoccupied with fishing, and women, with gathering.

Venison was far more important than bear meat that, as indicated above, was eaten only rarely. The deer hides were converted into clothing or footwear or traded to the Japanese. Venison was eaten fresh, usually within a stew, or dried for later use. However, any remaining supply of dried venison was discarded as soon as fresh meat became available in spring or autumn.

Hunting with bows and arrows took place primarily during the mating season in late September to October when doe calls were used to lure stags into an ambush in a marsh or thicket. When snow cover cut off the deer’s food supply in the lowlands, the herds would

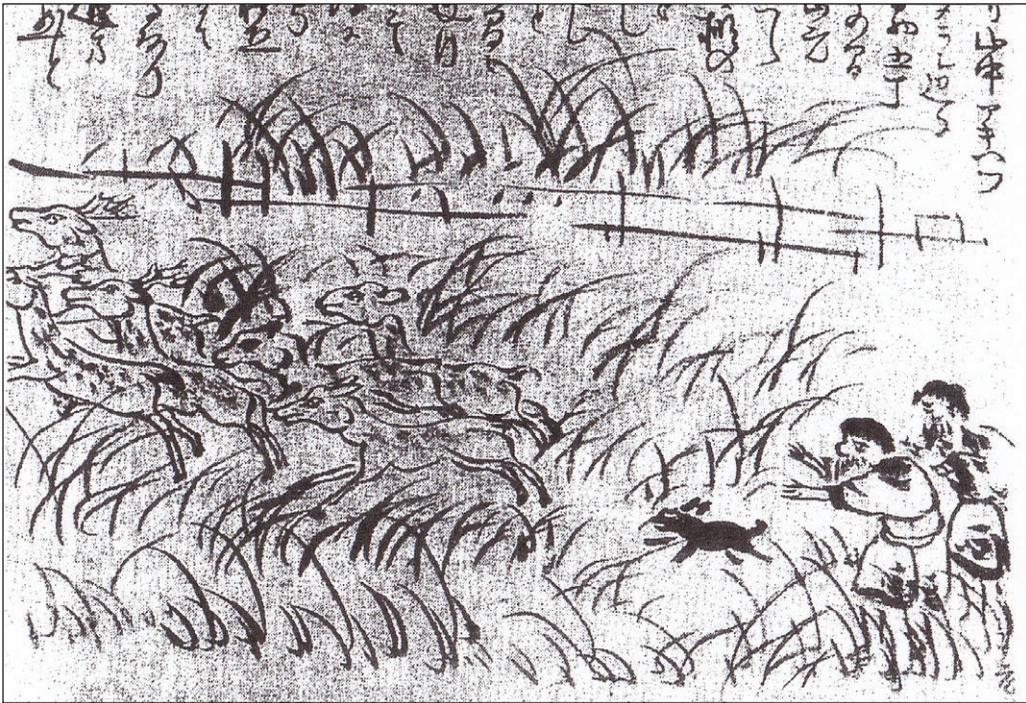


Figure 15. Mid-19th century sketch of AINU men hunting with dogs. Note the deer fence in the background. Matsuura 1997 [c. 1860].

move into the coniferous or mixed deciduous/coniferous forests. Here, snow accumulation was limited and the deer had access to their winter staple of bamboo grass (*Sasa* spp.).

Usually, enough venison would be taken in late autumn to obviate the need for winter hunts in the hills. However, when necessary, hunters would establish camps just below the snowline and would pursue the deer with bows and arrows and dogs. When the snow became too deep to negotiate in snowshoes, the hunters returned home.

Heavy snows would periodically bury the bamboo grass that typically was less than 2 m high. In such circumstances, there would be major die-offs of deer. In an AINU village dependent on the deer, this might cause major hardship or even starvation. There were cases of this as late as the 1880s.

The spring hunt began when the snow began to thaw by day and freeze by night. Repeated freezing and thawing or light rainfall created a hardpack on the surface of the snow that was sufficient to withstand the weight of hunters but not that of the deer. While the deer might be emaciated by the end of winter and thus the meat on them meager, these were ideal hunting conditions. Dogs were used to drive the deer into areas of heavy snow accumulation and, as they struggled to traverse the snow, the deer were easy targets for the hunters' arrows. Similarly, deer were herded onto frozen lakes and, if the ice would not support their weight, they became easy prey. Later in spring when deer began to feed on new growth, the AINU began to

set fixed bow traps along trails or waited in ambush with bows and arrows. Such ambushes were set along habitually used trails or at river crossings. Before the exploitation of deer by the Japanese in the mid- to late 19th century, there were usually abundant numbers of deer available to Ainu hunters.

4. Ainu Diet

Talking of the Ainu of the northwest coast of southern Sakhalin, Ohnuki-Tierney states that “they ate as much fish and vegetable food as they needed and as much meat as they could” (1976: 305). The meat of bear and the venison in autumn were considered to be the most delicious of all foods. However, in Sakhalin at least, bear meat was eaten only two or three times a year, even during the period in their history that *iyomante* were held on an annual basis. As indicated above, when a cub was captured at the den in spring, its mother would be killed and her meat carried back to the village where it was consumed with considerable ceremony. The bones of Sika deer (*Cervus nippon*) and brown bear (*Ursos arctos*) were considered sufficiently valuable that they were rendered to provide fat carefully stored and used in cooking and dressing other foods.

Fish was the major source of animal protein among all Ainu groups and was supplemented, where locally available, by fox (*Vulpes vulpes*), wolf (*Canis lupus lupus*, now extinct), marten (*Martes melampus*), otter (*Lutra lutra*, now extinct), mountain hare (*Lepus timidus*), and tree squirrel (*Pteromys volans orii*).

Most meals comprised a soup or stew made of boiled fish, meat, and wild vegetables. Bird reported that ingredients for stews included fish, both fresh and dried, seaweed, slugs, various vegetables that were locally available, wild roots and berries, fresh and dried venison, and bear meat. Soups were called *ohau* and stews, *rateskep*. Soups were sometimes thickened by adding diatomaceous clay. After cooking, the clay was allowed to settle out and the potable liquid was poured off (Bird 1885).

Except at ceremonial banquets, most dishes were served in bowls; however on the few occasions they had fresh fish, they were usually split down the back and roasted on skewers placed in the ash in the hearth. It was important that the wood chosen for skewers imparted no flavour to the fish. Chief among such types of wood were field bush clover (*Lespedeza bicolor* Turcz.), cacalia (*Cacalia hastata*), bridewort (*Spiraea salicifolia* L.), and Amur silver grass (*M. sacchariflorus*).

As indicated above, bear meat was very rarely eaten except at *iyomante* or when a female had been killed while capturing her cub. In these cases, the meat was usually roasted over an open fire of skewers made from willow (*Salix* spp.) and called *ipe-nit* (Kayano 1996).

In Sakhalin in winter, each meal would centre around a dish called *cikaripe*, a snack based on some vegetable root or stem, often that of giant knotweed, (*Polygonum weyrichii* F. Schmidt), or the stem or leaf of plants that had been dried in spring or summer and kept in the storehouse, or *pu*. To this dish were added dried or frozen fruit, such as the Amur cork tree (*Phellodendron amurense*), blueberries, or cranberries (*Vaccinium* spp.), and salmon roe. Diatomaceous clay was used to add bulk or to remove any astringency, and seaweed or kelp added to taste.

Certain occasions, such as socialising and drinking, especially by men, called for special foods. One was a fish dish called *ruipe*, where the fish was mashed to a pulp and to it were added salmon roe and berries (usually *Vaccinium*) that had either been frozen or preserved in oil. Another similar dish was made from salmon skin that had been sliced, soaked in salt water, and boiled to a mush; once again, to it were added *Vaccinium* berries (bush berries, e.g., bilberry, *Vaccinium uliginosum* L.). The mixture was placed in a bowl and left outside to freeze. Before serving, it was sliced. In Sakhalin, according to Ohnuki-Tierney, dried fish garnished with bear fat was standard fare for a lunch on the move (1974).

Plant gathering was undertaken almost exclusively by women and their selection of plants was determined primarily on the basis of what ingredients would best complement any animal protein they had in store. For example, the starchy root of codonopsis (*Codonopsis ussuriensis* [Rupr. & Maxim.] Hemsl.) was either boiled or roasted and eaten with a garnish of bear or deer fat, or it was mixed with the starch or lees of lilies, like the cardiocrinum lily (*Cardiocrinum glehnii*), and with fish roe.

Starchy roots or bulbs were particularly sought after. In addition to the cardiocrinum lily, whose bulb yielded both pure starch and equally nutritious lees, other sources of starch included hop (*Humulus lupulus* L.), cow parsley (*Anthriscus nemorosa*), dog's tooth violet (*Erythronium japonicum* Decne.), Solomon's seal (*Polygonatum odoratum* [Mill.] Druce var. *maximowiczii* Fr. Schm.), thistle (*Cirsium* spp.), yellow star of Jerusalem (*Gagea lutea* [L.] Ker Gawl.), marsh marigold (*Caltha palustris* L.), corydalis (*Corydalis ambigua* Cham. & Schltldl.), and cremastra (*Cremastra variabilis* [Blume]. Nakai).

Fresh leaves and stems were always key ingredients in soups and stews and they were most important in spring as stocks of dried vegetables became low or ran out. Chief sources of these were alpine leek (*Allium victorialis* L.), anemone (*Anemone flaccida* F. Schmidt), butterbur (*Petasites japonicus*), dandelion (*Taraxacum platycarpum* Dalhst.), hosta (*H. rectifolia*), symplocarpus (*Symplocarpus nipponicus* Makino), angelica (*Angelica ursina*), cow parsnip (*Heracleum dulce*), elsholtzia (*Elsholtzia patrini* [Lepech.] Garke), and cardamine (*Cardamine* spp.).

The buds of aralia (*Aralia elata* [Miq.] Seem.) were boiled and considered a delicacy; hog peanuts (*Falcata japonica* [Oliv.] Kom.) appeared early in spring and were boiled to be garnished with oil or fat and eaten with millet.

Snacks, mainly for children, were usually fruits such as mountain mulberry (*Morus bombycis*), raspberry (*Rubus* spp.), and vaccinium (*Vaccinium* spp.), but were sometimes made from flowers. The flower of the day lily (*Hemerocallis middendorffii* Trautv. & C.A. Mey.) was blanched and seasoned with salt or the sour sap of the wild grape (*Vitis* spp.). Maple (*Acer* spp.) and birch (*Betula* spp.) were both tapped in spring for their sap that was used to flavour stews.

Some young stems and leaves were eaten raw especially in spring. These included butterbur, cow parsley, hosta, and angelica. They were often seasoned with oil.

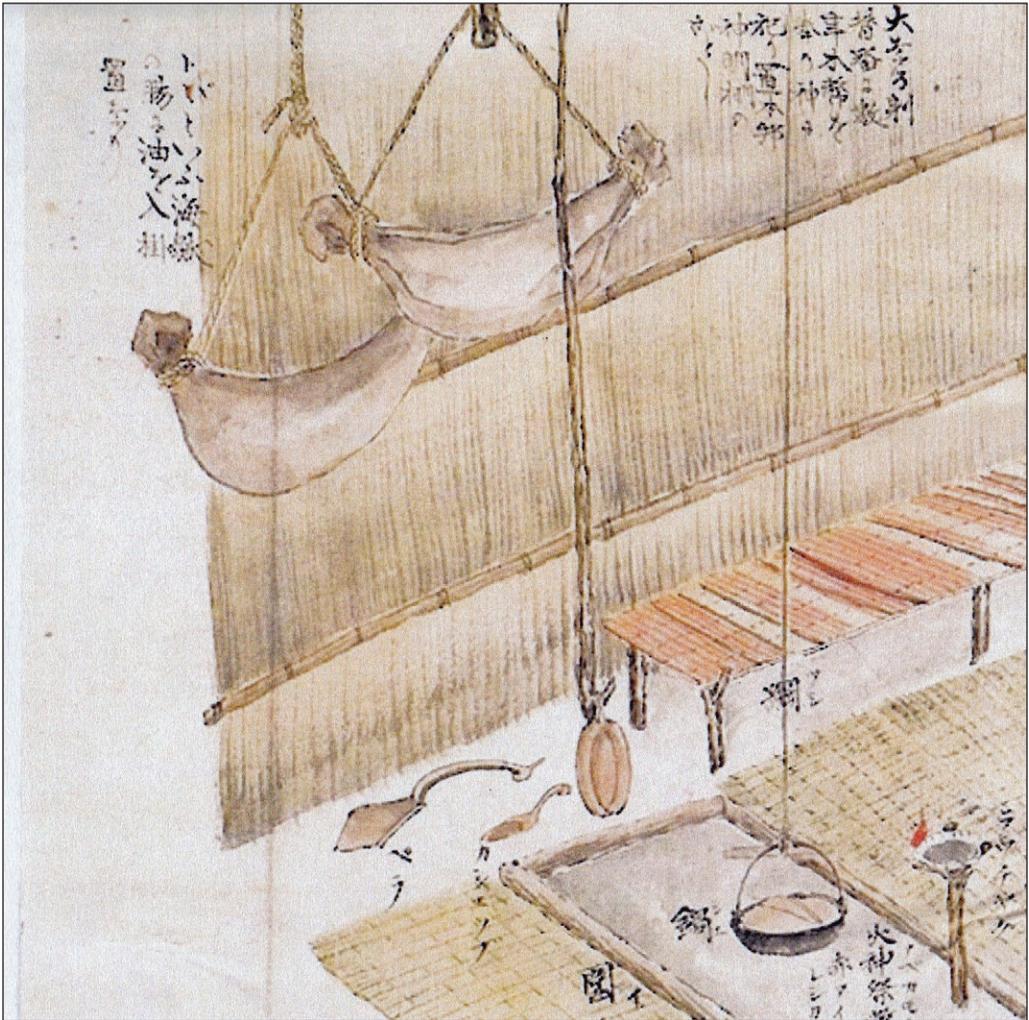


Figure 16. Containers made of the stomachs of seals were hung from the rafters and used to store liquids or semi-liquids such as animal fat or fish oil. Oil or fat were used in cooking and garnishing most dishes. Murakami 1799.

Fruits became available from July onwards. First to appear were the drupe-like fruits of the mountain mulberry. Most fruits, however, developed in autumn. They were occasionally eaten fresh but most were collected and dried or preserved in some other form. They were then important additions to meat or fish stews throughout winter. Chief among these were the Amur cork tree, grape (*Vitis coignetiae* Pulliat ex Planch.), blueberry (*Vaccinium praestans* Lamb.), mountain cranberry (*V. vitis-idaea* W.D.J. Koch), and sweetbriar (*Rosa rugosa* Thunb.).

Cooking almost always involved the use of some kind of oil, usually derived from fish or marine mammals. On the northwest coast of southern Sakhalin, the Ainu used that of the harbour seal, *Phoca vitulis*. Fat was removed from the flesh, sliced thinly, and melted

by heating it. Once in liquid form, it was cooled in wooden bowls and then transferred to containers made from the stomach of a seal. Many such containers were either hung from the rafters or kept in the storage house for later use (Ohnuki-Tierney 1969). Other sources of cooking oil included the bones of bear and deer and the liver of the sunfish (*Mola mola*).

5. Medicine

A considerable range of plants was used as materia medica. Much of the responsibility for treating illness rested with the shaman, who would use animal parts as well as plant remedies in his or her practice. The Ainu believed many diseases, especially those like smallpox that were introduced by the Japanese or other outsiders and whose origin they did not understand, emanated from evil gods or were carried to them on the wings of demon birds. Such gods and demons were repelled by strong or sweet smells and thus the pungent alpine leeks (*Allium victorialis* and *Allium* sect. *schoenoprasum* G. Don), fragrant magnolia (*Magnolia* spp.), or sweet woodruff (*Asperula odorata* L.) were important weapons against the diseases they introduced. In the same vein, the branches of juniper (*Juniperus conferta* Parl.), **utnani** in Ainu, were either hung from the rafters, steeped to produce an infusion, or burned to produce a purifying smoke (Ohnuki-Tierney 1981).

Everyday ailments, such as colds or stomachaches, diarrhea, poisoning, bites, cuts, and bruises, were treated at home with parts of plants that every adult Ainu knew. Chief among these were the cardiocrinum lily (*Cardiocrinum glehnii*), whose starch was used to treat stomach ailments; the mugwort (*Artemisia montana* [Nakai] Pamp.), whose dried or blanched leaf was used as plaster or compress; greater celandine (*Chelidonium majus* L.) and the root of Solomon's seal (*Polygonatum odoratum*) that were used to treat problems in the lower intestine. Other plants were used as deodorants or disinfectants, for treating frostbite and toothache. Some were consumed directly, some infused or pulped, some ground to a powder taken orally, inhaled, or applied directly to the skin.

Plants like alder (*Alnus japonica*) or elder (*Sambucus* spp.) were ascribed magic powers and thus were often made into talisman or protective amulets; some, like the root of milkweed (*Cynanchum caudatum* Vell.), were boiled and pulped, and the pulp spread on the interior or exterior of the house of a patient to expel disease or evil. Plants like aralia (*Aralia* spp.), raspberry (*Rubus* spp.), or sweetbriar (*Rosa rugosa*) that had thorns were similarly thought to be invested with supernatural power that drove off evil.

In folklore recorded by Batchelor, is the admonition that, should an Ainu fall ill, he or she was to pray before a tree to the god of trees, **Shirampa-kamui**. Each of the trees listed, like oak (*Quercus* spp.), katsura (*Cercidiphyllum japonicum* Siebold & Zucc.), or mountain mulberry (*Morus bombycis*), possessed its own god who was the child of **Shirampa-kamui** and who would hasten recovery (Batchelor 1924).

Many of the animals that the Ainu encountered were ascribed ritual power. Chief among these were the fox (*Vulpes vulpes*), marten (*Martes melampus*), and Laysan albatross (*Diomedea immutabilis*). Batchelor recorded the folktale about the white-tailed eagle (*Haliaeetus albicilla*) whose feathers were collected for trade to the Japanese and whose claws were kept, probably by shamans, to counteract snake bites (Batchelor 1924).

6. Clothing and Footwear

Depending on location and local climate, the Ainu employed a number of locally available natural resources in providing their everyday clothing.

Throughout Sakhalin, Hokkaido, and in the Kurils, except in exposed locations, summers were generally mild and clothing was kept to a minimum. Images and accounts of Ainu from the 18th and 19th centuries suggest that children were often naked and that, for most activities, everyone went barefoot. It is likely that the Ainu began to wear summer footwear only after the arrival of the Japanese and the techniques they introduced for making sandals.

While Ainu children were allowed to go naked (Broughton 1804 in Refsing 2000), adults, especially women, were probably strictly bound by convention that required they be appropriately clothed. Bird stresses that the Ainu she encountered in 1878 were “all thoroughly clothed” (Bird 1885:262). However, Broughton, recounting his encounter with Ainu in southwest Hokkaido in September 1796 and, probably referring only to men, says of them that, “their dress is worn only in cold weather, which they flip off and on as may be most convenient ... in the hot season they only wear a piece of linen round their waist” (Broughton 1804 in Refsing 2000:10). This loincloth was probably based on the Japanese *fundoshi*, and, if of cotton, undoubtedly imported. Landor’s descriptions and illustration of semi-naked Ainu women are likely to be spurious (1893).

Winters are long in northern Hokkaido, southern Sakhalin, and the Kurils and adequate clothing was necessary for both indoor and outdoor activities. Surface dwellings were poorly insulated and had to be heated by the hearth on a permanent basis.

In general, the Ainu employed the skins of seal and Sika deer (*Cervus nippon*) and the bast of Manchurian elm (*Ulmus laciniata*), nettle (*Urtica* spp.), and Japanese linden (*Tilia japonica*) in making clothing. After 1800, especially in Hokkaido, cotton cloth and thread gradually became available and replaced traditional materials. However, in a folktale called “The Old Man of Psychic Impulses”, told by a Sakhalin Ainu around the beginning of the 20th century, is the following description, “Thereupon there appeared at the lower end of the hearth a woman wearing a sealskin coat and smoking a long pipe”. Since it is an oral account, it is impossible to date it but it suggests that, in Sakhalin, traditional clothing might have persisted into the 19th century (Batchelor 1924).

In the Kurils, where there was a lack of a source of bast available for making thread and cloth, the Ainu imported clothing from Hokkaido, probably in trade for sea otter pelts. Landor observed Kuril Ainu still wearing clothing made from the skin and feathers of sea-birds late in the 19th century.

Sea otter (*Enhydra lutris*) and marten (*Martes melampus*) were hunted for their skins in Sakhalin and the Kurils but these were traded to Japan, China, and Russia rather than used locally. Dog skins were used for winter jackets and capes. The skin of brown bear (*Ursos arc-*

tos) was sacred and never worn by the Ainu. Late in their history, however, they traded them to the Japanese (Landor 1893).

The clothing of the Hokkaido Ainu was also extremely rudimentary. The main garment for both men and women resembled a Japanese work coat. It had sleeves and extended to the knee or below. Isabella Bird's illustration of two Ainu men, made in 1878, shows them both wearing coats made from tree or grass bast. One wears an untrimmed deerskin jacket. She records that, in winter, men wore "one or two coats of skin and rude moccasins for hunting" (Bird 1885:256). Broughton says of female clothing that, "some of them [were] formed of seal or deerskin skins adorned with pieces of blue cloth" (Broughton 1804 in Refsing 2000:10). In addition, in winter, Ainu men wore a cap, especially when hunting.

When traveling, especially in the mountains, men wore spats to protect their shins; these were commonly made of the bast of linden (*Tilia* spp.), of sedge (*Carex* spp.), or other local material. It seems likely that the Ainu adopted the habit of wearing spats from the Japanese.

Footwear was essential in winter and boots were made from deer or salmon skin insulated with the bast of willow (*Salix* and *Toisusu* spp.), reed bent grass (*Calamagrostis epigejos* [L.] Roth), or dunegrass (*Leymus mollis*). Landor illustrates both types and says of salmonskin boots that they were soaked in water prior to wearing in order that they conform to the shape



Figure 17. Two Sakhalin Ainu. The woman holding the fish, wears a garment made of elm or, more probably, of nettle bast, and boots made of deer or fish skin. The other wears leggings made of sealskin. Matsuura 1999 [1850].

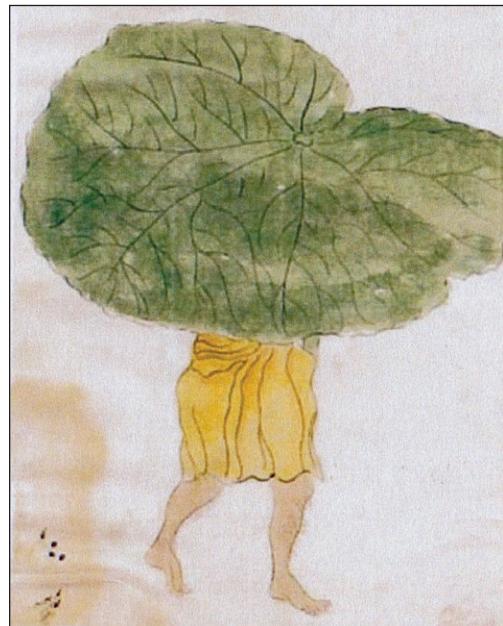


Figure 18. Using a butterbur leaf as a sunshade. Matsuura 1977 [c. 1850].

of the foot. They were then tied up with a cord, presumably around the ankle. In the Kurils, he observed Ainu wearing both sealskin and fishskin boots (Landor 1893).

Clothing was usually not dyed but dyes derived from crowberry (*Empetrum nigrum* L.), Japanese alder (*Alnus japonica*), or from mineral-rich muds were sometimes used, especially where the expression of status was an issue. In Sakhalin, clothing made of nettle bast, which was almost pure white, was considered to be of the highest status and, in some villages, was reserved for elders and the wealthier males. At one time, nettle bast was probably employed in making thread for weaving and making nets in parts of Hokkaido as well. The sometimes-enormous leaves of butterbur (*Petasites japonicus*) were employed as temporary umbrellas or sunshades, as the above image by Matsuura illustrates.

7. Other Uses of Plant Materials

One of the central pillars of Ainu culture was the ceremony called *iyomante*, in which the spirit of a brown bear (*Ursos arctos*) or fox cub, an owl, or other deified animal, was returned to the gods. In each case the animal was kept in captivity for some time and required care and feeding.

In the case of the cub of a bear, this was a major undertaking as it consumed three times as much food as the average human. The diet of the cub either consisted of what the Ainu themselves were eating or, if available, what it would have consumed in the wild, including the stems of angelica (*Angelica ursina*), butterbur (*Petasites japonicus*), and cow parsnip (*Heracleum dulce*), the leaf of hosta (*Hosta rectifolia*), and both the stem and leaf of the coelopleurum (*Coelopleurum gmelinii* [DC.] Ledeb.).

The Ainu did most of their cooking over an open hearth in iron pots traded from the Japanese; when cooking in the wild, they used temporary pots fashioned from the leaves of butterbur, the bark of Japanese white birch (*Betula platyphylla* Sukaczew var. *japonica* [Miq.] Hara), or the hollow stems of cacalia (*Cacalia hastata*). Sometimes cooking was done in hollows made in the soil and lined with the leaves of butterbur; heated stones were interspersed with the food, and the pit, covered with additional leaves.

Fire was essential to life both in the village and in temporary dwellings erected during hunts or gathering expeditions. Thus, every Ainu male carried a fire starter kit with him at all times. After contact with the Japanese, these kits included a metal flint, but in former times they consisted of a wooden fire drill, usually made of the dried root of the Japanese elm (*Ulmus davidiana* Planch.). Tinder was a powder ground from a bracket fungus (*Laricifomes officinalis* Fries.) and dried grasses.

Tools used by the Ainu were usually a combination of those made of locally available wood and imported metals. The types of wood used included maple (*Acer* spp.), Mongolian oak (*Quercus mongolica*), and bladder nut (*Staphylea bumalda* DC.). Certain hardwoods assumed specialised uses. Cherry (*Prunus* spp.), for example, was used for harpoon or spear shafts; Amur maackia (*Maackia amurensis*), because of its durability, was used for house pillars, fixed bow traps, and ladders to storehouses. Guelder rose (*Viburnum opulus* [Mill.] DC.) was extremely fire resistant and was used for fire tongs; crabapple (*Malus baccata* [L.] Borkh.) was dense and heavy and used for clubs. Mountain mulberry (*Morus bombycis*) was light and flexible, especially when heated, and was ideal for making snowshoes.

The hunt required, above all, a good bow and arrow, although staffs and spears were also used. The bow was usually made of yew (*Taxus cuspidata*) but sometimes of mountain mulberry, holly (*Ilex* spp.), or euonymus (*Euonymus* spp.); the arrow was usually made of holly, although bamboo grass (*Sasa* spp.) and even Amur silver grass (*Miscanthus sacchariflorus*) were also used. As indicated above, the weather-resistant wood of Amur maackia was used in

making the frame of a fixed bow trap; in addition the bow employed had to be more durable than a typical hand bow. Thus, the wood of viburnum (*Viburnum furcatum*) was used for this purpose.

The floor in traditional houses was of tamped earth; over this were laid mats made from bulrush (*Typha latifolia* L.). Often, more elaborate types of such mats were also used to create ceremonial enclosures for *iyomante*. Doors and windows were covered with screens made of Amur silver grass or sedge (*Carex* spp.). The same weaving technique (using a small vertical loom) and the same materials were used to make bundles for carrying possessions on the back and for funeral shrouds that were secured with pegs carved from field bush clover (*Lespedeza bicolor*). Baskets and storage bags were also woven on a vertical loom using the bast of the Manchurian elm (*Ulmus laciniata*) or Japanese linden (*Tilia japonica*).

8. Plants Collected by Season

Of the over 150 plant materials documented here as being used by the Ainu, about 40 were taken exclusively or primarily in spring. Of these, most Ainu scholars emphasize the importance of the seven plants that provided the Ainu with their first fresh greens of the year.

These were alpine leek (*Allium victorialis*), anemone (*Anemone flaccida*), butterbur (*Petasites japonicus*), aralia (*Aralia elata*), cardiocrinum lily (*Cardiocrinum glehnii*), mugwort (*Artemisia montana*), marsh marigold (*Caltha palustris*), and codonopsis (*Codonopsis ussuriensis*). Symplocarpus (*Symplocarpus nipponicus*), hog peanut (*Falcata japonica*), and giant knotweed (*Polygonum weyrichii*) were almost as important. Other species were important in spring for other reasons. The maple (*Acer mono* Maxim.) provided a sweet sap once it began to run; elm (*Ulmus* spp.) and linden (*Tilia* spp.) yielded bast for thread and cordage; the pheasant eye (*Adonis amurensis* Regel & Raddler) heralded the return of the first fish, Sakhalin taimen (*Hucho perrii*), to the rivers, while many plants were harvested as materia medica or as a source of poison.

Tree basts could be harvested at almost any time of the year, but spring was optimal because the surge in sap made separating the bark and bast much easier. The bast had to be fully dried and carefully stored until its use the following winter to prevent the development of mould.

Wood for construction or making tools, containers, and other necessities could also be taken at any season; maple, Japanese elm (*Ulmus davidiana*), Manchurian ash (*Fraxinus manschurica*), cherry (*Prunus* spp.), Japanese rowan (*Sorbus americana*), oak (*Quercus* spp.), Sakhalin fir (*Abies sachalinensis*), and many other types of timber were harvested when in demand or when the men had time to collect them.

The number of edible plants available in summer was far less than in spring but, since both fishing and hunting opportunities were also limited, the Ainu probably took the opportunity to harvest materials from trees or shrubs that could be taken at any time of the year. For example, magnolia, *Magnolia kobus* DC., whose aromatic twigs were burned to drive off evil spirits, and *Magnolia obovata* Thunb., whose wood was used to make tool handles, might well have been cut in summer. One of the several types of birch (*Betula* spp.) would have provided sap in spring, but the bark that functioned as a building material, as bandages, or as tinder could have been taken at any time the gatherers had access to it. The fine weather and long days of late spring or of summer would have made more practical expeditions to the highlands to fell timber or cut birch bark.

Some edible plants that were collected in spring continued to be available in summer but, as a general rule, as the stems and leaves developed, they became less edible. Angelica (*Angelica ursina*), however, was one of the exceptions and the stems were cut, stripped, and eaten in summer. The fruit of the sweetbriar (*Rosa rugosa*) was best collected in late autumn

after the first frosts had released its sugars. However, published accounts suggest the hips were also harvested much earlier. In this case, the fruit was crushed, the pit and irritating hairs removed, and the pulp added to stews as a flavouring or filler or dressed with fish oil and eaten as is.

Other plants, like white hellebore (*Veratrum grandiflorum* [Maxim. ex Baker] Loes.), whose leaf was used as a disinfectant, and the bulrush (*Typha latifolia*), whose stem was used for weaving, were gathered only in summer when they had fully developed. From spring through summer, other plants, like the bugbane (*Cimicifuga simplex* [DC.] Wormsk. Ex Turcz.), developed the roots used medicinally by the Ainu. Many other medicinal plants like white hellebore or goatsbeard (*Aruncus sylvestris* Kostel. Ex Maxim.) often grew in highlands not frequented by the Ainu so collecting them would have required long journeys or special effort.

Autumn was short and many activities had to be crowded into it. Chief among these were salmon fishing, deer hunts, and the gathering of berries and nuts. However, some of these activities could be combined. For example, in breaks from cleaning and processing salmon, women and children would climb into the hills and woods to pick berries and gather acorns and other nuts. Other plants that were more distant or at higher elevations would require extended journeys and even overnight camps.

In general, the most important of the autumn harvest were the acorns of the Mongolian oak (*Quercus mongolica*) and Daimyo oak (*Quercus dentata* Thunb.), and the fruits of the Amur cork tree (*Phellodendron amurense*). However, where these were not available or in limited supply, there might be a number of other options, including actinidia (*Actinidia* spp.) and grape (*Vitis coignetiae*).

Winter was long in Hokkaido, and in certain areas in the mountains could extend up to five months. However, in areas in the lowlands, especially those like the Pacific coastal plain and Tokachi basin which were in a snow shadow, outdoor activities were often possible. Nonetheless, temperatures were universally low from late November through mid-March.

Very few plant materials were collected in winter, although some, like bamboo grass (*Sasa* spp.), bittersweet (*Celastrus orbiculatus* Thunb.), and Sakhalin fir, were available. Short days, unpredictable weather, and snow accumulation would often limit access to these resources.

In times of hunger, frozen lakes would offer emergency food supplies like nuphar (*Nuphar japonica* DC.), whose roots were collected by breaking the ice. Mistletoe (*Viscum album* L. var. *coloratum* Ohwi), too, provided famine food.

When hunting in the uplands for brown bear (*Ursos arctos*) or Sika deer in early or late winter, Sakhalin fir was often a lifesaver for hunters. During bad weather or sudden storms, the tree itself, its stripped bark, or cut branches provided shelter against the elements.

Bittersweet was often harvested in winter and its partially processed bast left on the surface of the snow to bleach. The bast of nettles (*Urtica* spp.) harvested in late autumn was also bleached in this way.

A large number of plant materials, especially those used for medicinal purposes, could be collected as needed during their growing season. For example, the seeds, leaves, and flower of agrimony (*Agrimonia eupatoria* L.) were all used and were undoubtedly taken at different times. The wood of the bladdernut (*Staphylea bumalda*), used for making tools, could be cut at almost any time of the year but winter. It was taken as needed or when the opportunity to access it arose. Other plants, such as those that grew in upland or alpine or distant areas, might require a special expedition to find and collect them. In many cases, we do not know when the Ainu would harvest certain plants, but a review of their habitat and characteristics often suggests the optimum period for harvest. It is likely the Ainu would have been well aware of these opportunities.

The collection of timber and firewood would have been determined largely by demand. In the case of firewood, for example, while the greatest need was in winter, because fires were used for cooking at the hearth, it had to be supplied year round. It was men's work to fell trees and women and children's work to collect brush and branches used for tinder and kindling. In this latter case, it was probably virtually a daily activity.

Primary uses for timber were construction and manufacture of tools and religious objects. The type of tree and its location relative to the village would have determined when and how often it was harvested. Villages were, for example, often located near spawning areas along rivers that could be either close to the mouth or upstream. These were often quite different habitats and a willow (*Salix* spp.), for example, that grew in the riparian zone of a coastal village might be quite distinct from one that grew in the middle reaches of a river.

In general terms, Ainu villages probably enjoyed several choices as to which types of wood would be employed for construction or manufacture of tools. However, the rules regarding the use of wood for religious objects were often quite strict and, for example, finding the appropriate dogwood (*Cornus controversa* Hemsl.), Amur maackia (*Maackia amurensis*), or the Amur cork tree might involve a lengthy journey.

There follows a listing of the 163 most important plants used by the Ainu. They are organized by the season in which they were primarily collected. The first 35 plants were collected in spring, the following 37 in summer, the subsequent 37 in autumn, and the final 54 in winter or whenever needed. These represent only one third of the flora documented by Chiri as having Ainu names. Since they were named, the flora referenced by Chiri were probably utilized by the Ainu but he and other scholars do not always specify what the use was. Thus, in these cases, the plants have been removed from consideration here.

Plants are given their English and Latin names in the headings. Within each season they are in order of their Latin names. As none of the sources provides detailed data on mushrooms, they are identified only as fungi. The Ainu name is referenced within the text. All Ainu terms are set in bold-italics.

9. Flora Collected in Spring

Maple Family (Aceraceae) (Sapindaceae)

- *Acer japonicum* Thunb., full moon maple
- *Acer ginnala* Nakai, Amur maple
- *Acer miyabei* Maxim., Miyabei maple
- *Acer ukurunduense caudatum* Trautv. & C.A. Mey (Wall.) DeJong, Ukurundu maple
- *Acer mono* Maxim., mono maple
- *Acer palmatum* Thunb., Japanese maple
- *Acer sieboldianum* Miq., Siebold's maple
- *Acer cissifolium* (Siebold & Zucc.) K. Koch, vine-leafed maple

Of the several maples present in Hokkaido, *Acer mono* and *Acer japonicum* are by far the most common (Takenaka Takeshi, pers. comm. c. 2008). *A. mono* is found throughout Hokkaido, especially in the mountains, and in Sakhalin and the southern Kurils (Ohwi 1984). It is a fairly large, deciduous tree that grows to 15 m in height and can grow in partial shade or full sun. It requires moist soils. It has many Ainu names, the most common of which was **tope-ni**, or “milk tree”, a reference to the sap collected by the Ainu each spring. It was consumed fresh or fermented into an alcoholic drink (Chiri 1953; Mitsuhashi 1976).

Another name is **niste-ni**, meaning “hard wood”; another is **nukannit-kara-ni**, a corruption of **mukar-kar-ni**, or “tree that makes an ax handle” (Chiri 1953). The wood was also used for making handles for other tools, especially knives, and for pothooks (**su-at**), ash rakes (**ape-kiray**), combs (**kiray**), and libation sticks (**tuki-pasui**) (Chiri 1953; Kayano 1996).

Acer japonicum is also found in much of Hokkaido with the exception of the Soya Peninsula, the Okhotsk Sea coastal zone, and the Pacific coast east of Cape Erimo. Its typical habitat was woods or thickets (Ohwi 1984). It is known as **iwa-tope-ni**, mountain maple, or **nitat-topeni**, valley maple (Chiri 1953). Despite its broad distribution, there is no recorded use by the Ainu.

Acer ukurunduense caudatum is found in high mountain, sub-alpine, and alpine habitats throughout Hokkaido, southern Sakhalin, and the southern Kurils. It grows anywhere from 3 to 8 m in height (Ohwi 1984). Its usual Ainu name is either **iha-tope-ni**, a corruption of **iwa-tope-ni**, or mountain maple, or, in Sakhalin, **niste-ni** (Chiri 1953). Kayano notes that in the Saru River basin it was called **i-papke-ni**, or whistle tree (1996). Here the wood was used to make a deer call.

Acer ginnala, Amur maple, is a large shrub or small tree that grows to between 6 and 10 m in swamps, stream sides, and meadows in Hokkaido and southern Sakhalin (Ohwi 1984). It does equally well in partial shade or full sun and it requires moist soils. It is distributed widely in the Chitose area and in eastern Hokkaido. Its Ainu name, **ota-tope-ni**, or beach or sand maple, is indicative of the habitat in which it would be found (Chiri 1953).

Acer miyabei, usually known in Ainu as **nitat-tope-ni**, or valley maple, is primarily found in the Chitose and Pacific coast region in western Hokkaido. It is generally rare in Hokkaido (Ohwi 1984). An alternate name is **yaywente-tope-ni**, or useless maple (Chiri 1953). Despite this disparaging name, Kayano reports that the sap was collected over the hardpack in early spring (1996).

Acer cissifolium, like *A. ukurundense caudatum*, is known as **iwa-tope-ni**, or mountain maple, and, as its name suggests, it has a mountain habitat. Distribution is limited to the mountains behind the Pacific coastal plain in southern Hokkaido. It grows to 15 m in height. There is no recorded use by the Ainu (Chiri 1953).

Acer palmatum var. *amoenum* (Carriere) Hara or var. *matsumurae* (Koidz.) Makino that is known as, either **iha-tope-ni** (**iwa-tope-ni**) or **retat-tope-ni**, white maple, grows in woods and thickets in a wide range of soils and exposures in eastern, southern, and southwestern Hokkaido (Ohwi 1984). It has no recorded use (Chiri 1953).

Acer sieboldianum shares the same Ainu names as *A. palmatum*. It is very rare in Hokkaido and occurs in only half a dozen locations. There is no recorded use by the Ainu.

Buttercup or Crowfoot Family (Ranunculaceae)

- *Adonis amurensis* Regel & Raddle, pheasant eye

Pheasant eye is a perennial that grows in moist soil in full sun or semi shade in the mountains of Hokkaido, along the Pacific coast, in the Tokachi River Basin, and southern Sakhalin (Ohwi 1984). The flower buds remain hidden under the snow awaiting the thaw. In late March when the snow begins to melt on south-facing slopes, they burst forth from the dark wet soil (Fukuoka 1995).

In general, in Ainu culture there is little reference to flowers, to their colour, or beauty. This attitude derives from the fact that few flowers were of economic importance or utility. However, the brilliant golden flower of the pheasant eye is an exception and it is given prominent mention in **yukar**, or folk tales, as follows.

“When I pull out my jeweled sword from its sheath its blade emanates the colour of the flower of the pheasant eye. The colour becomes the [golden] colour of the gods and it runs off”. The Ainu not only believed the colour was divine but it was like an eye that could see into a person’s character (Fukuoka 1995:75).

It also appears in a legend told in Samani, Hidaka.

The thunder god had many children but his favourite was his youngest daughter known as Kanaw, “Goddess of the Mist”. From the many gods her father chose as her husband the hard-working marten [*Martes melampus*], known in Ainu as **hoynu**. However she hated the way he ran around in the brush chasing mice, and rather than go against her father’s wishes and refuse to marry him, she decided to run away. Her disappearance caused a

great commotion in the land of the gods, and the marten searched desperately for her. He eventually found her shivering in the shadows. Furious he stamped the ground and said, “you turned against your father’s and husband’s commands. You are a stupid woman and for this you will be turned into a plant and never be allowed to return to the land of the gods”.

Thus Kanaw became a pheasant eye and, because the marten’s cohorts guarded her constantly, it seemed she would never be able to escape to see her father again. However, she waited until the moment at which the snow melted and when the marten were not alert to turn her golden face to the sky (Fukuoka 1995:75).

The flower was also important in that its appearance in March meant that Sakhalin taimen (*Hucho perrii*) would soon begin their run and that the Ainu must prepare for fishing. In Ainu, the taimen was known as *cirai*. Hence, pheasant eye was called *cirai-apapo*, or “taimen flower” (Chiri 1953). At this time of year, most Ainu villages would have either exhausted or run low on stocks of dried salmon and thus the appearance of the taimen was critical to their ability to survive. It is a large freshwater fish with pure white flesh that grows to a metre or more in length and occurred throughout Hokkaido, Sakhalin, and the Kurils. While it had a poor taste it was considered a delicacy. Fishermen would use small fry as bait. The taimen run only during the “snow flood” from late April to early May. Just after they spawn around May 10, most return to sea or to deep pools in the river (Takenaka Takeshi, pers. comm. c. 2008).

In Matsuura’s *Ishikari Nisshi* (Ishikari Journal), he records that on May 17, 1857, an Ainu from Kamikawa, named Kitakonippa Kuchinkoro, offered him a metre-long taimen that he had caught (Matsuura 1977 [1860] in Fukuoka 1995).

In Sakhalin, the pheasant eye is known as *tutut* or *tututex*, or “the grass the cuckoo eats”. The Ainu here believed the cuckoo’s calls in spring presaged the fish catches for the season ahead. In Shiraura, the dove’s call is rendered as *chepox*, *tutux*; *chepox*, *tutux* meaning “there will be many fish” (Chiri 1953).

Kinoshita Yoshihiro and Takemura Haruo, in their definitive study of Ainu medical practices, report that the roots and rhizomes were used to drive off evil spirits (1993).

Birch Family (Betulaceae)

- *Alnus japonica* (Thunb.) Steud., Japanese alder
- *Alnus maximowiczii* Callier ex C.K. Schneid.
- *Alnus glutinosa* (L.) Gaertn., black alder
- *Alnus pendula* Matsum., Japanese shrub alder
- *Alnus hirsuta* Turcz., Manchurian alder

In the story of two crows, one of the main protagonists, an unmarried girl, is visited by a suitor who had been stripping the bark of an alder near her house. He proposes to her by offering to cut firewood for her, but she spurns him and escapes his advances by floating down the river in a basket (Chiri 1953). The suitor probably intended to use the bark as a dyestuff or for its medical or magical properties.

Alnus japonica is a deciduous tree growing in moist soils in riparian areas in the lowlands of both Hokkaido and southern Sakhalin, and is often the dominant tree; it reaches around 18 m in height and grows quickly (Ohwi 1984). It has a weak wood that easily rots and thus the Ainu in Kamikawa said it has a bad spirit (Fukuoka 1995). Therefore, it was not used for construction of any kind; nor was it used for making *inau*, the sacred staff used in every Ainu ceremony. However, Philippi indicated that one of the burdens used in reciting the *yukar* is “*kenekumaka petuitui*”, which translates as “water drips down on the alder drying racks” (1979). What was being dried is not indicated but was probably either fish or meat. The choice of Japanese alder for this purpose suggests the wood imparted no flavour to whatever was dried on it.

Despite the prohibitions elsewhere, Chiri states that in Hobetsu it was an important wood in making *inau*, and elsewhere in Hokkaido it was used for teething rings and children’s toys. Among the Sakhalin Ainu, it was used for carving *oken*, a statue of a mythical figure carrying a sword (Ohnuki-Tierney 1981).

The Ainu word for Japanese alder is *kene-ni*, or blood tree (Chiri 1953). When the bark is soaked in water for a few days, it produces a red solution that was believed to fortify the blood. Thus, a woman who had lost blood during menstruation or parturition was given the solution to drink. In addition, “because menstrual and parturient blood are offensive to both deities and demons and thus have the power to expel them, alder is effective in exorcism” (Ohnuki-Tierney 1981:64–65).

When ill, an Ainu would offer prayers to the god of the alder in hopes that it would hasten recovery (Batchelor 1924). The god of the alder is, in fact, a male-female pair of *kami-hure-kur*, or “man with red flesh”, and *kami-hure-mat*, or “woman with red flesh”, who are transformed into *inau* with the power to protect humans from evil (Yamada 2001). The medical or magical significance of the bark is borne out by the fact that, after harvesting, it was carefully dried and kept on hand in the storehouse for future use (Chiri 1953).

The solution derived from the bark was also used as a dye in colouring thread derived from the bast of Manchurian elm. After being soaked in it for two or three days, the resultant colour of the fibre was a brownish red. In his account of dyeing in the *Teshio Journal*, Matsuura witnessed the use of the bark of Japanese alder or yew (*Taxus cuspidata*) for this purpose (Matsuura 1862 in Fukuoka 1995).

Another alder, *Alnus maximowiczii*, is a small tree or shrub growing in the mountains as high as the alpine zone (Ohwi 1984). It is known as *orokeu-ni* or *horkew-kene* in Ainu, which is a corruption of *poro-kewe-kene*, meaning it had power to drive away evil spirits. It was

also known as *kamuy-kene*, or “god alder”. The twigs were used for carving small amulets, *siniste-nipopo*, that were sewn into children’s clothes or erected at the altar, or *nusa-san*, in order to ward off evil; in addition, in both Sakhalin and northern Hokkaido, the wood was used in making *inau* used especially in hunting seals. These were carved at sea and released into the water (Chiri 1953).

Black alder, *Alnus glutinosa*, is found in marshland soils and bogs such as those in the Kushiro Mire. Its wood was also used for making talismans. Other alders represented in Hokkaido, southern Sakhalin, and the southern Kurils include *Alnus pendula* and *Alnus hirsuta*. There is no recorded use of them by the Ainu.

Amaryllis Family (Alliaceae)

- *Allium victorialis* L. *platyphyllum* Makino, alpine leek
- *Allium* sect. *schoenoprasum* G. Don

Along with *turep*, the cardiocrinum lily (*Cardiocrinum glehnii*), the alpine leek used to be one of the staples of the Ainu diet. It was the first plant to be harvested in spring. Not only was it a basic foodstuff, but it also had many medicinal uses.

There are several mythical tales that underline its importance to the Ainu. One concerns the younger sister of the god of creation, Okikurumi, who wept as she left *ainumosir*, the land of the Ainu, for the land of the gods. Her tears, or *nupe*, became the alpine leek (Chiri 1953).

It is a spring ephemeral that is found throughout Hokkaido, Sakhalin, and the Kurils, particularly on rocky or calcareous soils in deciduous woods and forests in the uplands above 600 m, and in the lowlands along the Pacific coast; it requires partial shade and moist soils. It is a perennial with a multilayered bulb 4 to 7 cm long (Ohwi 1984). The bulb is entirely consumed by the plant in the production of its aerial shoots and is dormant for the rest of the year (Kawano 2007).

Depending on location, the leaves were harvested by the Ainu from mid-April to late May or early June, which is spring at these latitudes. They could be eaten or used fresh, but most of the harvest was dried and stored in a *saranip* or *totta* (woven bags) in the *pu*, or elevated storehouse. Indeed, in Hidaka and Shiraoi, the alpine leek was called *pu-kusa*, “the plant kept in the storehouse”. When needed, the leaves were soaked overnight and added to soups. With the addition of rice and the fat of a brown bear (*Ursos arctos*), such soups were an essential part of the *iyomante*, the ceremony where the spirit of sacred animals was returned to the gods. While the bulb is quite small and extremely pungent as a source of starch, it was second in importance only to the cardiocrinum lily. Matsuura, in his account of his 1846 travels to Kunashiri (in the Kurils) and to Etorofu (Sakhalin), recounts a place in Sakhalin called Betobi where there were great clumps of leeks that he describes as “inde-scribably delicious”. He warned, however, that eating leeks made the body reek (Hanasaki 1988).

In both Hokkaido and Sakhalin, the leaves and stems were prepared for eating in a number of ways. In the most basic method they were boiled, sometimes in salt water, as a base for a soup; alternately, they were dressed with grease and eaten fresh. In Sakhalin, they were tied in rings, roasted, and then dressed with grease. In yet another method, the stems were cut into 6 cm lengths, seal grease was added, and the mixture cooked until it became sticky. Other plants, such as the bulb of corydalis (*Corydalis ambigua*), were often prepared with leeks (Chiri 1953).

Medicinally, the alpine leek was ascribed considerable power; an infusion was drunk to treat a wide range of diseases, such as pleurisy, beriberi, and diarrhea; the infusion was also used to wash burns, wounds, and frostbite and was included in compresses. In Shizunai, the infusion was drunk to treat a number of ailments, or it was reduced to an ointment and used on scratches.

In historical times, the most commonly used name for the alpine leek was *kito* or *kitobiro*, both names derived from the Japanese. However, it had other, presumably older, Ainu names including *hura-ruy-kina*, “grass with a strong smell”. This attribute convinced the Ainu of its efficacy in warding off the evil spirits of disease, and during epidemics, bundles of leeks were hung at doorways and windows to protect the inhabitants of the house. In Bihoro, the leaves were dried and stored for later use in trying to prevent the fogs, called *kamuy payekay kusu*, that rolled inland and were thought to carry epidemics. The Ainu would roast the alpine leek in order to generate a great stink that was hoped would deter the gods of pestilence from entering the village (Chiri 1953).

Ohnuki-Tierney reports that in Sakhalin, a shaman would mince and dry the alpine leek and use it in a number of ways to drive off evil spirits (1974). It was either burned in the fire—often along with the branches of Labrador tea (*Rhododendron tomentosum*), Yezo spruce (*Picea jezoensis*), or larch (*Larix* spp.)—or infused, and the infusion sprayed from the mouth. During such an exorcism ceremony, the shaman would also drink a solution made up of minced and dried alpine leeks, the branches of Yezo spruce, the leaf of Labrador tea, and dried kelp still covered with sea salt.

In Sakhalin, on the day of a birth, the parents cut up alpine leeks and threw them into the fire, as it was considered a favourite food of the gods (Majewicz 1998). In a number of locations around Hokkaido, for example, in Kamikawa and Tokachi, there are places called Kitoushi (*kito-us*), Pukusausnot, Pukusaustaktop, or Kitotausnai where alpine leeks must have been plentiful at one time (Chiri 1953).

Other leeks, such as *Allium japonicum* Regel and *Allium* sect. *schoenoprasum* G. Don (known as *sikitur*), were perhaps less important, but whose leaves and bulbs were gathered nonetheless. The tender leaf of *A. japonicum* was cut in spring and added to soups; its bulb was gathered in autumn and eaten raw as a seasoning to boiled fish. The Ainu name for *A. japonicum* is *mempiro*, and there is a place called Mempirotaus, “the place where we dig the leek”. *Allium sativum* L. (garlic) had been cultivated by some Hokkaido Ainu since the 19th century. In addition to being used in cooking, its bulb, like that of indigenous leeks, was

chewed by a shaman and the mash expectorated over the patient and/or the walls of the house (Chiri 1953).

Buttercup or Crowfoot Family (Ranunculaceae)

- *Anemone flaccida* F. Schmidt, anemone

This anemone, known as *pukusa-kina* or *ohaw-kina* in Ainu (Chiri 1953), is distributed widely in Hokkaido, the Kurils, and Sakhalin. It is a perennial herb with stout rhizomes and is found in moist, shaded places in woods along streams and ravines in the foothills (Ohwi 1984).

The name *ohaw-kina* is a reference to the use of young stems and leaves in making soups called *ohaw* (Chiri 1953). Soup was usually made with venison or fish with wild vegetables, like anemone, added. Soup made from bones was called *pone-ohaw*, and that from meat, *kam-ohaw* (Fukuoka 1995). Soup and stews characterised the Ainu diet.

In Shizunai, Hokkaido, stems and leaves of anemone were collected in large numbers in late April to late May and were either eaten fresh in a salad or were boiled, dried, and stored until needed. Before being added to a soup, they would be soaked in water. In Sakhalin, the anemone was particularly highly regarded. When the leaves are young, they are very similar to those of the highly poisonous aconite (*Aconitum chinense*). Thus, they are not gathered until after the plum-like, white flowers have emerged. The flowers are also edible.

Ohwi lists several other species as being present in Hokkaido, Sakhalin, and the Kurils. These include *Anemone raddeana* Regel, *Anemone debilis* Fisch. ex Turcz., *Anemone narcissiflora* L., and *Anemone yezoensis* Koidz. (1984). However, there is no reference by Chiri or others to their use by the Ainu.

Carrot or Parsley Family (Apiaceae)

- *Anthriscus nemorosa* (M. Bieb.) Spreng., cow parsley

This perennial has a thick taproot. It is common in the mountains of Hokkaido and is also found in Sakhalin and the Kurils (Ohwi 1984). The leaf was eaten raw, the young stem when roasted, and the root when boiled (Chiri 1953).

However, the Ainu used it mainly for medical purposes. Its most common Ainu name, *icarapo* or *ichari-kina*, refers to the absorbency of the dried leaf. It was mainly used by menstruating women (Chiri 1953).

Ohnuki-Tierney reports it was used in Sakhalin, along with mugwort (*Artemisia montana*) and sweetbriar (*Rosa rugosa*), as a deodorant (1974). The Ainu of Shiraura, southern Sakhalin, roasted the inner stem and ate it seasoned with oil (Chiri 1953).

Aralia Family (Araliaceae)

- *Aralia cordata* Thunb., sasparilla ginseng

The Ainu name *chi-ma-kina*, which simply means “we eat it”, suggests the importance of this herb to their diet. In fact, sasparilla ginseng was even cultivated by them. When taken from

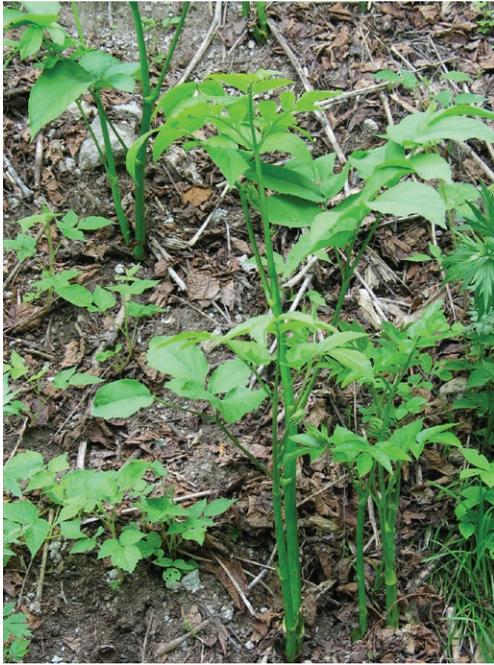


Figure 19. Young aralia (*Aralia cordata*) stems growing from disturbed soils at the edge of an alluvial terrace on the upper Sorachi River in central Hokkaido. Photo by Dai Williams.

Kurils, and Sakhalin (Ohwi 1984). In northern Hokkaido, there is a place called Chimakin-us-pira, or “the cliff with many sasparilla ginseng” (Chiri 1953).

As well as being a favourite foodstuff, it had many medicinal applications for the Ainu. A tincture of stems or roots was used as a skin emollient and disinfectant (Mitsuhashi 1976). In Shiraura, Sakhalin, an infusion of the roots was used to wash cuts and bruises and to treat arthritic joints, neuralgia, bruises, and wounds inflicted by bears. Chiri reports that in Ashoro, a bear wound was treated with slices of the root applied to it (1953). As a treatment for anal fissure, the root was sliced and inserted directly. As it contains tannin, it was probably effective in reducing inflammation (Kinoshita and Takemura 1993).

Aralia Family (Araliaceae)

- *Aralia elata* (Miq.) Seem., aralia, Japanese angelica tree

After a fire in the forest, the Japanese white birch (*Betula platyphylla*), willows (*Salix* spp.), and the Japanese angelica tree are among the first pioneers to establish themselves in the scorched soil. The Japanese angelica tree grows principally in thickets and woods in both the lowlands and hills of Hokkaido, southern Sakhalin, and the southern Kurils (Ohwi 1984). It is a deciduous shrub that can reach 2.5 m in height but needs sunlight to survive. Both the branches and stem have thorns that give it its Ainu name of *aiush-ni* or *ai-us-ni*,

the wild, it was gathered in late spring—from late May to late June, depending on location and elevation—and its shoots were either eaten raw, pickled, or cooked and dried, and then added to salads or soups, or eaten with herring (Chiri 1953).

When Matsuura arrived at Uruipto at the confluence of the Ishikari and Urui Rivers on May 23, 1857, he noted the stems of sasparilla ginseng and angelica (*Angelica ursina*) that had been stripped of their skins, drying on a bank (Hanasaki 1988).

Along with the shoots of bamboo grass (*Sasa* spp.) and the stems of butterbur (*Petasites japonicus*), sasparilla ginseng could be counted on during famine, a condition that many Ainu confronted during their exploitation by Japanese merchants in the 18th and 19th centuries.

It does best in thickets and open woods in both uplands and lowlands in Hokkaido, the

“tree that has thorns”. It buds from May to June. There are only three or four buds per plant. The Ainu considered the young buds and shoots a delicacy, and recent studies have indicated them to be a major source of vitamin B1. They were boiled and eaten as a vegetable (Fukuoka 1995).

Any thorn, such as those on a bramble, symbolized protection for the Ainu, but those on the Japanese angelica tree were regarded as particularly powerful. As they were believed to drive away evil during an epidemic, its branches were placed in the windows or doors of the house, around the well, at the entrance to the village, and at intersections of paths (Kinoshita and Takemura 1993). The thorn is also believed to be represented in the designs on *atus*, the Ainu coat, and other articles of clothing like spats; on an *atus*, the designs were embroidered into the cuffs, collar, and hem. Each Ainu woman would devise her own pattern that was intended to protect herself, her husband, children, or parents (Fukuoka 1995). Both root and stem were used medicinally. The root was boiled and used to treat stomach ailments, either on its own, or in combination with dried leaves of mugwort (Fukuoka 1995).

Aster, Daisy, or Sunflower Family (Asteraceae)

- *Artemisia montana* (Nakai) Pamp., mugwort or wormwood

There are several mugwort species native to Hokkaido, but by far the most important to the Ainu was *Artemisia montana* (Takenaka Takeshi, pers. comm. c. 2008). It is widely distributed in Hokkaido (Ohwi 1984) but it is most common in coastal areas and in upland woodland margins and meadows in the southwest. It is also present in southern Sakhalin and the southern Kurils. It was harvested from late April to mid-May (Takenaka Takeshi, pers. comm. c. 2008).

Many Ainu fables attest to the power of the mugwort and, in fact, it was of great ritual significance. The Ainu believed that no evil was a match for it and it was often called upon to expel demons or disease (Hilger 1971; Philippi 1979). It is generally known in Ainu as *noya*, but also by many other names, such as *mat-ne-noya* or *chi-kur-pe*. All three refer to its medicinal use in which it was rubbed on wounds. *Chi-kur-pe* means “we apply it”; *noya* means to press and *mat-ne-noya* (literally “female mugwort”) differentiates *A. montana* from *Artemisia japonica* Thunb., which was known as *pin-ne-noya*, or “male mugwort”—so-called because its leaf was harder (Yamada 2001). The leaf of *A. montana* has a paper-like quality that produced a moxa when pressed (Fukuoka 1995). Other names refer to its use by shamans in magic. *Nupun-noya*, for example, means “mugwort with occult power” (Chiri 1953).

An account of the power of mugwort is recounted in “The Song of the Fox”. The fox is the narrator:

There at the headwaters was I and I saw before my eyes the young Samaiekur and his younger brother, Okikurumi, setting out to sea. This caused me to smile.

There at the headwaters was I and I danced around and around, jumped up and down until a great wind blew up from me. The wind was so powerful that the waters from the lower depths rose to the surface; the trees that wanted to break were knocked down and those that didn't were uprooted.

I did this on purpose because I wanted to kill the gods.

Then I did my utmost to stir up trouble; I danced around and around, jumped up and down and the wind blew violently until I had destroyed both the land of the gods and the land of the Ainu. Then a wave as big as a house came rushing toward me. It killed Okikurumi, but Samiekur held onto one end of the boat as it was about to overturn. Clenching his teeth he said to me "what do think you are doing?" So saying he picked up a small bow and an arrow made of mugwort that he fired at me. Seeing this. I thought to myself that he was aiming at me but could not reach me. But I was wrong and I was hit. I could not understand. I could not believe it. So I died a terrible death. From that moment on it was clear that all foxes had evil hearts. "So said the fox" (Fukuoka 1995:45–46).

The importance of mugwort in the Ainu mythology and materia medica is expressed in many forms. It is, for instance, included in the seven most important plants of spring, each of which was a source of food or medicine (Honma and Hatakeyama 1988). It was also one of the four plants placed on earth by the god of creation, Okikurumi. In the west grew warabi (species unknown) and Japanese poplar (*Populus maximowiczii* A. Henry) and in the east, the Japanese elm (*Ulmus davidiana*) and mugwort. It was chosen by Okikurumi to look over the Ainu and anyone stabbed by a spear or sword made of mugwort could not be reborn as an evil spirit (Munro 1962). A mugwort staff was said to protect the carrier against evil spirits, especially when traversing a graveyard (Kayano 1996).

A protective or purifying bundle of mugwort leaves was called a *takusa* (Chiri 1953). In the *tuytak*, or oral tale, called "In the Belly of the Deer", two brothers castigate their sister who has rescued a baby from the belly of a dead deer. They are convinced it is possessed by *nitne-kamuy* (an evil god) so they order her to get rid of the child and not to return home until she has exorcised herself with a *takusa*. In some cases, the thorns of a raspberry (*Rubus* spp.) were added to the mugwort leaves to increase its efficacy. Such bundles were also used to purify the bear cub before it left earth on its journey to the gods. A patient suffering from nightmares, malaria, or epilepsy was beaten with a mugwort bundle to drive out the evil.

Bush pea (*Thermopsis fabacea* [Pall.] DC.) was used in a similar fashion. In some areas, such as Kussharo, effigies, or *imosh-kamuy*, were fashioned from mugwort branches or stems



Figure 20. Various types of *inau*, or sacred staffs, including one made of mugwort stems in human form. Matsuura 1859.

and placed on the beach, or in homes or villages, to expel or drive off evil spirits. These echo the figures made by Okikurumi to repel his enemies attacking from the sea.

Mugwort effigies were made by bundling stems and tying them off to represent the head, torso, and all four limbs. In some locations, the figure carried a spear; in others a stick of willow (*Salix* spp.) or pieces of charcoal from the hearth were added to represent the heart. Chiri speculates that the form of the effigy probably reflects the dress worn by shamans in the past (1953).

All parts of the mugwort are edible, and women would collect it in spring, dry it, and use it as flavouring in starch cakes or gruel. Given its power to ward off evil, the Ainu believed that consuming it would help obviously maintain a healthy mind and body.

Medicinally, mugwort was used in several ways. The leaf was steeped to make an infusion to treat coughs and intestinal parasites. To treat a cold, the infusion was either taken orally or the patient inhaled the vapours from the pot where it was simmered, thereby inducing a sweat. Mitsuhashi confirms the diaphoretic potential of mugwort leaves (1976).

The fresh leaf was rubbed and placed on a wound to stem bleeding, including that caused during tattooing (Honma and Hatakeyama 1988; Kodama 1999); to treat toothache, the leaf was rubbed with salt and the mixture applied to the tooth. Once the leaf was dried, it was rubbed between the hands for use in moxibustion. Rubbing the leaf releases an aroma that the Ainu believed protected them from evil. Thus, it was an important tool for the shaman.

Charcoal made from the wood of mugwort was seen as an extension of the body of the goddess of the hearth, *ape-kamuy*, and leaves were burned to please her. Pieces of charcoal were dropped into wine during a healing ritual; charcoal was also used for dye on funeral posts (Kayano 1978). The stems were burned as a mosquito repellent and woven into mats on which fish or meat was dried (Chiri 1953).

Many Ainu place names make reference to *noya*. In Kimofuri, Usu and in Shizunai there are places simply called Noya. In Nakagawa in Tokachi, is a place called Noyausi, or “there are a lot of mugwort here”; in Yuharo in Ishikari, there are places called Noyasarushi (“a field of mugwort”) and Noyasarupet (“river in a field of mugwort”).

Other artemisia species named by the Ainu include *Artemisia vulgaris* L., *Artemisia iwayomogi* Kitam., and *Artemisia arctica* Less. The last grows on gravelly soils at high altitude and is rare. However, Yamada notes that the Ainu named it *kamuy-noya*, or “mugwort deity”, suggesting that it, too, was of ritual significance to them (2001).

Aster, Daisy, or Sunflower Family (Asteraceae)

- *Cacalia hastata* L. var. *orientalis* (*Cacalia hastata* subsp. *orientalis* [Kitam.] Ohwi), *cacalia* The Ainu name *wakka-kuttar* means “water tube” and, indeed, the dried, hollow stem was used for storing or carrying water, mainly by children (Chiri 1953). The young leaf and stem are edible (Chiri 1953) and were collected between the end of April and the end of May.

Cacalia is a perennial which reaches about 2 m in height. It grows in moist soils in full or partial shade in woodlands in the highlands throughout Hokkaido, Sakhalin, and the southern Kurils (Ohwi 1984). It is common in western and central Hokkaido.

Like those of butterbur and giant knotweed (*Polygonum weyrichii*), the young stems are edible raw or cooked and like those of field bush clover (*Lespedeza bicolor*), the mature stems were fashioned into skewers called *cep-pa-ma-ni* used to dry or smoke split salmon (Chiri 1953).

The stems were also used for collecting and cooking the starch extracted from the bulbs of the cardiocrinum lily (Fukuoka 1995). The mashed bulbs were placed in a cotton bag, the starch squeezed out and collected in the stems of *cacalia*. These were then placed in the embers of a fire and slowly cooked.

Chiri lists other local names as *pet-kuttar*, “river tube”, *worun-kuttar*, “water tube”, *chirekte-kuttar*, “we blow through it, tube”, or *rek-kuttar*, “blow tube”, the latter names referring to its use by children as a whistle (1953).

Buttercup or Crowfoot Family (Ranunculaceae)

- *Caltha palustris* L. var. *barthei* (Hance), marsh marigold

This perennial grows along lowland watercourses or near springs in Hokkaido, Sakhalin, and the Kurils (Ohwi 1984). It appears in early spring. In most parts of Hokkaido, its Ainu name is *puy*, but in the Nayoro area it is called *suma-ka-oma-p*, or “something growing over the rocks”. It has a 50 cm long straight stem and lustrous leaves. There are two or three small golden flowers per stem and it blooms from late spring to early summer (Fukuoka 1995).

It was an important plant for the Ainu as the stem and leaf are edible raw from early spring (late April) to mid-June. However, the leaf is slightly toxic. Ainu women said of it, “when the snow had almost gone and the men went out hunting the bear the marsh marigold would appear”. The stems were boiled and eaten with bear meat or, as in Shizunai, added to soup called *ohaw* (Fukuoka 1995).

The root was also edible after it had been well cooked, thereby neutralizing the toxic glycoside it contained. It would be harvested in August or September using a special digging stick about 60 cm long (Chiri 1953). It was washed, dried, boiled, and eaten either alone or mixed with roe or fish or animal fat. In Sakhalin, it was boiled with fish, meat, or rice. After boiling, it could also be dried and stored for later use. Then it was boiled again and eaten with trout roe and seal grease (Chiri 1953). Although time-consuming, starch could be extracted from the root by pounding it. The starch powder was added to fish roe known in Ainu as *cipor* (Kayano 1978).

According to Chiri, the Ainu also believed in the medicinal properties of the root. It was either infused to treat cuts and burns, or slices were boiled and applied as a poultice directly to a wound, tied in place with a cloth, and changed regularly (Chiri 1953).

In Shiribeshi along the Furuu River is a place called Puytaushi, or “the place where we dig the marsh marigold”; in Shakotan on the Shushunai River is a place called Puytaushpet, or “the river where we dig many marsh marigold”.

In order to prevent acts that might anger the goddess of fire or other household gods, the Ainu of the Soya Straits had certain taboos regarding the hearth. The root of the marsh marigold, for example, must never be placed in the hearth to cook it because, when burned, the root gives off a strange smell that attracts evil spirits (Chiri 1953). In addition, the fumes would have been an irritant to the eyes (Nancy Turner, pers. comm. 2012).

Bindweed Family (Convolvulaceae)

- *Calystegia sepium* (L.) R. Br., bindweed

Known in Ainu as *ken*, *kites*, or *kittes* (Chiri 1953), the roots were dug in early spring, boiled, and eaten as is, or were dressed with a little oil. *Ken* means “root”. It was difficult to extract from the ground and had a long root whose direction was impossible to predict. Thus, it was essential that nobody stood on the root when pulling on the stem or it would not emerge intact from the soil (Chiri 1953).

The root was also used medicinally; it was dried and ground to a fine powder used in treating intestinal illness (Kinoshita and Takemura 1993). It is a perennial climber that is quite opportunistic, occupying waste ground, disturbed soils, and the edges of woods in Hokkaido. It requires moist soil and full or partial shade (Ohwi 1984). Another variety, *Calystegia soldanella* (L.) Roem & Schult., grows on the beach and thus was known as *pisun-kittes*. *Pisun* means “beach” or “coast”. Its roots are also edible.

Bellflower Family (Campanulaceae)

- *Codonopsis ussuriensis* (Rupr. & Maxim) Hemsl., codonopsis
- *Codonopsis lanceolata* (Siebold & Zucc.) Trautv.

Codonopsis ussuriensis is a perennial herb that grows in partial or full shade in upland woodlands and grassy meadows in the lowlands and requires moist soil (Makino 1961; Ohwi 1984). It was harvested in spring and was an important food source for the Ainu (Fukuoka 1995; Yamada 2001).

On May 27, 1857, Matsuura went from Asahikawa to the source of the Ishikari River with the Ainu chief, called Kuchinkoro, who controlled that area. In his *Ishikari Journal*, Matsuura reports that in Asakara, the Ainu served a meal made from the starch derived from the bulb of the cardiocrinum lily, codonopsis, and salmon roe (Matsuura 1977 [1860] in Fukuoka 1995).

Muk is the usual Ainu name for codonopsis (Chiri 1953) and the meal served to Matsuura consisted of cakes made from the starch of the bulb of the cardiocrinum lily cooked in a stew with the root of the codonopsis and dressed with roe. The cooked root is sweet and the roe, salty, so this was obviously a combination that appealed to Ainu taste.

Codonopsis lanceolata is a perennial climbing herb with thick fusiform tubers that grows in woodlands in the lowlands and in the foothills (Ohwi 1984). It is often seen twined around other grasses (Fukuoka 1995). When the stem is cut, a milky white juice is secreted and thus, for the Ainu, it was an important talisman for women who were dry (Chiri 1953). The entire root was baked and placed on a large platter and dressed with *inau-kike*, the shavings of a wood-like willow or dogwood. Then, an elder prayed to the gods to restore the mother’s milk. The woman later ate the lactogenic root, little by little, or drunk an infusion made from it (Fukuoka 1995; Mitsuhashi 1976). Its name is *tope-muk*, one that relates it to *muk*, *C. ussuriensis*, above. *Tope* is the Ainu word for milk (Chiri 1953).

Chiri indicates that the root was eaten raw, boiled, or roasted and seasoned with deer or bear fat (1953). Fukuoka records that it was peeled and boiled with half-cooked beans and then mashed and seasoned with bear or deer fat (1995).

Carrot or Parsley Family (Apiaceae)

- *Coelopleurum gmelinii* (DC.) Ledeb., coelopleurum
- *Coelopleurum lucidum* (L.) Fernald var. *gmellini* (DC.) H. Hara

Coelopleurum has several Ainu names. Both Batchelor and Chiri refer to it as *chikapa-siwkina* (Chiri 1953) or “sour grass that mimics angelica”, which is known as *siwkina*. The literal meaning of this is “bird sour grass”, but the real implication of this name is that it is inferior to angelica. Chiri gives the alternate name *hurak-kina*, or bad smelling grass (1953).

It is a perennial whose leaf and stem are edible but was not eaten by the Ainu (Chiri 1953). Rather, they fed it to an ill bear cub and used it as a calendar marker. If no trout had been caught by the time it bloomed in July or August, it was going to be a poor fishing season (Chiri 1953). It inhabits seaside meadows, riverbanks throughout Hokkaido, Sakhalin, and the southern Kurils (Ohwi 1984), and requires deep, fertile, moist soil and full or partial sun.

Carrot or Parsley Family (Apiaceae)

- *Conioselinum kamtschaticum* Rupr., hemlock parsley

Known as *umew-kina* or *hurawen-chipoko* in Ainu (Chiri 1953), this perennial herb grows in grassy areas near the coast in Hokkaido, Sakhalin, and the Kurils (Ohwi 1984).

According to Chiri and Kinoshita, the leaf or root was infused along with that of Labrador tea or leaves of a wild strawberry (*Fragaria iinumae* Makino) to treat colds and as a tonic before and after childbirth. The infusion was also used as a cleanser for cuts and bruises (Chiri 1953; Kinoshita and Takemura 1993).

Willow Herb Family (Onagraceae)

- *Epilobium angustifolium* L., fireweed

Known as *kinapoax*, or “grass uterus” in Ainu (Chiri 1953), this perennial grows in both Hokkaido and Sakhalin (Ohwi 1984). It prefers rocky or disturbed soils and woodland edges and requires full or partial sun. In Sakhalin, the leaf was dried and stored until needed. It was then infused, and the tea drunk to treat intestinal disorders and uterine infection (Chiri 1953).

Lily Family (Liliaceae)

- *Erythronium japonicum* Decne., dog’s tooth violet

Among the Hokkaido Ainu, it was generally called *eske-rimrim* (Chiri 1953). However, in Shizunai, it was called *aske-pon-turep*, or “little finger lily” (Fukuoka 1995), and in his *Tokachi Nisshi* (Tokachi Journal), Matsuura refers to it as *hure-epuy*, or “red flower” (Matsuura 1977 [1861] in Fukuoka 1995).

It is a perennial that grows in moist soils in woods in both the lowlands and uplands of Hokkaido (Ohwi 1984). It is a “representative member of the temperate forest floor” and is common in western, southern, and southwestern Hokkaido, and in parts of the Tokachi and Teshio basins (Batchelor and Miyabe 1893:326). It is rare in northern and northeastern Hokkaido and along the Okhotsk coast (Kawano 2007). It is also found in southern Sakhalin and in the southern Kurils, but is uncommon. It flowers only once sufficient nutrients have been

built up in the bulb (Kawano 2007). It might require seven to ten years to become sexually mature but can live 40 to 50 years.

While the elongated bulb is very small and often difficult to locate, in some Ainu communities, where alternate sources of starch were scarce, it was harvested in quantity (Chiri 1953). The bulbs were harvested from mid-April to mid-May. They were extracted with a digging stick, collected in a barrel, and pounded. The mash was then covered with water and left to sit. After the water was changed several times, a white starch, or *irup*, would be precipitated to the bottom. Like the starch from other lilies, it was removed from the barrel, drained, and used as a treatment for diarrhea. The fibrous lees were then formed into doughnut-shaped cakes called *shito*, that were strung on cords and hung over the hearth to dry (Fukuoka 1995). When needed, these were added to vegetable, fish, or meat stews to thicken them.

Matsuura, on his second visit to Sakhalin, witnessed the preparation of a banquet where the main course was a stew, known as either *chikaribe* or *chikaripe*—a dish made from the mashed bulbs of corydalis and a lily that was probably the dog-toothed violet. They were mixed with other ingredients, such as seal oil and trout, to thicken the stew.

Subsequently, on his 1858 journey to Akan in northeastern Hokkaido, he was served dumplings made of a mash of the bulbs of the orchid, *Gymnadenia conopsea* (L.) R. Br., of the Kamchatka lily (*Fritillaria camschatcensis* [L.] Ker-Gawl.), and dog-toothed violet (Fukuoka 1995).

Lily Family (Liliaceae)

- *Fritillaria camschatcensis* (L.) Ker-Gawl., Kamchatka lily

This lily is found mainly at sea level in open woods and meadows (Ohwi 1984). It used to be widely distributed from sea level to sub alpine zones, especially in central Hokkaido (Batchelor and Miyabe 1893), but was decimated by over harvesting (Takenaka Takeshi, pers. comm. c. 2008). It is also found in Sakhalin and the Kurils (Ohwi 1984). In Obihiro in the Tokachi region is a place called Anrakortausnai, or “the river where we often dig Kamchatka lilies”. Yamada Takako confirms that it was collected for its starch in Obihiro (2001). It is also present in rocky soils in alpine regions (Ohwi 1984).

It prefers moist soil and grows in full sun or partial shade. Its usual Ainu name, *an-rakor*, means “black leaf”, but it is, in fact, the flower that is purplish black. In the Akeshi area on the Pacific coast, where it is found in profusion, the flowers or leaves were a source of dye that, according to Chiri, was also used for tattooing (1953).

However, like other lilies, the most important use of the bulb was as a source of starch. The bulb is 1.5 to 3 cm in diameter, globose, and scaly. Where the cardiocrinum lily, *turep*, was not available, Kamchatka lily would be substituted. In Sakhalin, the exfoliating scales were pulled off the bulb to be dried individually. When dried, they were no bigger than a grain of rice. The dried bulbs were stored to be added to winter stews and gruels. These were usually cooked with a little diatomaceous earth, the starch of the cardiocrinum lily, and

the dried berries of blueberry or cranberry (*Vaccinium* spp.), and then dressed with oil or grease. The Sakhalin Ainu name for the Kamchatka lily is *hax*, a reference to the bulb (Chiri 1953).

In his *Teshio Nisshi* (Teshio Journal) of 1857, Matsuura documents a meal served to his party at Asakara on the Ishikari River by the family of a former guide. “They cooked up some *an-rakor* and *turep* and by adding diatomaceous earth made a paste. After we received it we left” (Matsuura 1862). This paste probably would have been used to thicken a meat or vegetable stew prepared in camp (Hanasaki 1988). In his *Ishikari Nisshi* (Ishikari Journal) (Matsuura 1977 [1860]), he records a visit to the home of two Ainu guides who had accompanied him from Ishikari to Chubetsu. The Ainu gave him a bag of the bulbs of *toma* (corydalis) and *an-rakor* to be eaten on his journey into the mountains. The bulbs were to be boiled and eaten with bear or deer fat. Taking these provisions, Matsuura travelled onto Uenbetsu (Hanasaki 1988).

Legume Family (Fabaceae)

- *Falcata japonica* (Oliv.) Kom. (*Amphicarpea edgeworthii* var. *japonica* Oliv.), hog peanut

In Horobetsu, Chitose, and Hobetsu, the Ainu name for hog peanut is generally *aha*, but in Tokachi, Oshamambe, Abuta, and other locations, it is *eha*. Chiri notes that in eastern Hokkaido it was sometimes called *numiokan*, or “it has small granules” (1953). It is an annual legume that grows throughout Hokkaido in moist soils in lowland woodlands in full or partial shade. Ohwi does not list it as native to Hokkaido, so it is likely to have been introduced (1984).

For many Ainu, the arrival of the hog peanut in the soil heralded spring (Fukuoka 1995). Even before the snow had melted and when food supplies were growing low, the Ainu women would gather it in large quantities with a digging stick, called *sittap* or *ehatap*, made of a forked branch or antler (Chiri 1953).

It could be harvested in autumn too, but was said to be sweeter in spring. The “nuts” grow both on the vine above ground and on the root (Anetai Masaki, pers. comm. c. 2008). As they collected, the women would sing, encouraging the nuts to appear. *En-ko-turse-turse*, “fly to me, fly to me!”. The gathered nuts were put into a small bag, or *ponsaranip*, tied at the waist, and when it was full, they were transferred to a large, freestanding basket (Chiri 1953).

Generally, the nuts were boiled, garnished with oil or grease, and eaten alone or mixed with rice or millet. Alternatively, they were eaten as snacks seasoned with salt or dried for use in winter (Chiri 1953; Fukuoka 1995). In Sorachi is the place name Ahatausnai, or “the river where we dig up the hog peanut” (Chiri 1953), and Batchelor notes the name Atsuta, which is derived from the Ainu words *aha-chita*, which mean “the place we dig up the hog peanut”. It is in present-day Yakumo in the Oshima Peninsula of southwest Hokkaido (Batchelor 1905).

Lily Family (Xanthorrhoeaceae)

- *Hemerocallis middendorffii* Trautv. & C.A. Mey., day lily

In summer, the day lily forms great clusters of orange flowers in damp meadows in the uplands and in forest margins or wetlands near sea level in Hokkaido, southern Sakhalin, and the southern Kurils (Batchelor and Miyabe 1893; Ohwi 1984). It is a perennial that does well in full sun or partial shade.

In Sakhalin, it was called *chiraimun*, or “taimen grass”, as it blooms when this fresh water fish first appears. However, Chiri speculates the name is a corruption of *axchiray-mun*, or “old woman grass”, because of the similarity of its leaves to *raymun*, or dunegrass (*Leymus mollis*) (1953).

In Akan, it was called *erokius-mun* or *erokius-apappo*, as it heralded the arrival of the herring (*erokius*), and in Oshamambe, it was *kakkok-mun*, or “cuckoo grass”, as it bloomed when the cuckoo began to sing (Chiri 1953). Among the Kamikawa Ainu, it was known as *chikapkina*, or “bird grass”, although Fukuoka says the origin of this meaning is obscure (1995).

It was harvested from mid-April to the end of May. Both the young shoots and flower are edible. The flower was lightly blanched and seasoned with the sour juice of the shoots of wild grape (*Vitis* spp.), or dipped in salt water, chopped up, and eaten with fish skin and roe seasoned with vinegar, in a kind of salad known as *chitatap* (Chiri 1953). The Sakhalin Ainu ate the seeds (Chiri 1953). Ohwi lists two other species. *Hemerocallis ezoensis* Hara. is found on seashores in Hokkaido; *Hemerocallis dumortieri* C. Morren. is also present in Hokkaido (1984).

Lily Family (Asparagaceae)

- *Hosta rectifolia* Nakai, hosta

This perennial herb, generally known as *ukurkina* or *ukurikina* in Ainu (Chiri 1953), grows in the open or in semi-shade in woodlands in stream valleys or terraces throughout Hokkaido, the southern Kurils, and southern Sakhalin. The Sakhalin Ainu name is *hunasko* (Chiri 1953). Where available in Hokkaido, it was an important spring plant. It was harvested from late April to early June.

The leaf is edible and was eaten in a number of ways. Fresh, the leaves were chopped up and added to rice or gruel; blanched and dried, they were dressed with soy sauce or sugar as a snack or stored for winter use in stews and soups. Chiri notes that, “In Sakhalin the finely chopped leaf was boiled and set aside to cool. The fermented sap of maple [*Acer mono*] or Japanese white birch was then added to make a milky wine” (1953:206). The young stems were fed to bear cubs.

Rose Family (Cannabaceae)

- *Humulus lupulus* L. var. *cordifolius* Maxim., hop

The hop, known as *kosa* or *kosar* in Ainu, is a multi-branched, climbing herb with prickly stems and petioles that grows in thickets in the uplands of Hokkaido (Ohwi 1984). In his book *Tokachi Nisshi* (Tokachi Journal), Matsuura describes what he saw in March at an Ainu village in Kamikawa.

“I watched the Ainu laying out raw salmon on the snow, boiling the *kosa* root and baking *ikema* [the root of milkweed (*Cynanchum caudatum*)], I was invited to an Ainu house that night for a feast” (Matsuura 1977 [1861] in Fukuoka 1995:182).

The root was sweetest when the hop was in bud. It was baked and given to the children as a snack (Fukuoka 1995). Chiri reports that the fruits were added to millet as it cooked and that the bast could be used for thread (1953).

Carrot or Parsley Family (Apiaceae)

- *Ligusticum hultenii* Fernald, Hulten’s liquorice root

Known in Ainu as *chipoko* (Chiri 1953), it is a perennial that grows on almost all the coasts of Hokkaido, in southern Sakhalin, and in the southern Kurils (Ohwi 1984). It requires full shade and well-drained soil. Chiri reports that the young sprouts were either eaten raw, or chopped up and cooked with rice; the buds were dried and stored for winter use in *chipoko-chikaripe*. An infusion of the leaf was said to be beneficial to women during childbirth (Chiri 1953).

Arum Family (Araceae)

- *Lysichiton camtschatcense* (L.) Schott, lysichiton

The most common Ainu name, *para-kina*, refers to the broad leaves of this plant. Its other names, *iso-kina* and *hokuyuk-kina*, refer to the consumption of its leaf or root by bears (Chiri 1953). It appears from the soil very early in spring, and when the female bear emerges from the den, she is said to eat the toxic leaf buds in order to expel the fats that have built up in her intestine during hibernation (Fukuoka 1995).

It is a glabrous perennial, with stout, erect rhizomes, that is common in swamps and bogs and along the edges of ponds and lakes throughout Hokkaido, southern Sakhalin, and the Kurils (Ohwi 1984). In Hokkaido, it is most common in the Soya and Nemuro peninsulas, in the Ishikari Basin, and in the west and southwest, including the Oshima Peninsula (Batchelor and Miyabe 1893). A cloth steeped in the leaves is placed directly over a wound, bruise, blis-



Figure 21. *Lysichiton* growing in a marshland on the Soya Peninsula in northwest Hokkaido. Photo by Dai Williams.

ter, or boil to reduce inflammation. In Sakhalin, the leaf was used to promote perspiration (Chiri 1953).

Iris Family (Iridaceae)

- *Iris nertschinskia* Lodd., iris
- *Iris sanguinea* var. *sanguinea*.

This perennial is known as *kampi-nuye-nonno*, *kunne-appapo*, and *cepeukote-kina*. The first two names refer to the flower; the latter name is a corruption of *cep-e-u-kote-kina*, or “grass related to fish”. An alternate name is *icaniw-appapo*, or “it blooms as the trout go upstream” (Chiri 1953). This appears to be the only way in which the Ainu used it, i.e., as a calendar marker. It is one of several spring plants that serve this function. It is found in mountain meadows throughout Hokkaido (Owhi 1984).

Aster, Daisy, and Sunflower Family (Asteraceae)

- *Petasites japonicus* (Siebold & Zucc.) F. Schmidt, butterbur or coltsfoot
- *Petasites amplus* Kitam.

Butterbur is perhaps the most characteristic plant of the upland valleys of Hokkaido. It is almost universal, and in some moister and well-protected areas, its leaves grow to be a metre wide and 1.8 m high. The stems can be over a metre long. It is a perennial whose leaves spring from the base. The stem, buds, and leaves are all edible and are a favourite food of the bear and, in late spring or early summer when other sources of food are scarce, it becomes the major food for them. The Ainu said that, when it awoke from its hibernation, the first plant the bear sought out was the butterbur (Takenaka Takeshi, pers. comm. c. 2008).



Figure 22. Butterbur in the alluvial plain of the upper Sorachi River in central Hokkaido. Photo by Dai Williams.

The butterbur was usually known as *kor* in Ainu, but had numerous other names, such as *ruwe-kina*, “fat grass”. In Maoka, Sakhalin, it was known as *etetarax*, “white headed thing”, a reference to its flower. Such a prominent and important plant is bound to figure in Ainu mythology and one version of the origin of the Ainu indicates that at one time a race of small stature occupied *ainumosir* and lived under the leaves of butterbur. They were known as *kor-pok-kur* or “the people who live under the leaves of the butterbur” (Kayano 1996:250).

The men were adept at hunting and the women at sewing and they lived in peace until a race of tall and wild men invaded their land. While the men were away hunting, the invaders raided their homes and took the women. The hunters returned to find their women missing and ran away in fear.

However, the invaders eventually realised their injustices to them and decided to mend their ways by adopting their lifestyle, including their way of hunting, of carving sacred staffs (*inau*), of tattooing, and their language.

In another *yukar*, or oral tale, a goddess was exiled into the damp lower regions, *tene-pokunano-mosir*, for laying waste to the land when she became over-excited. When she awoke to find herself in the underworld, she called out her parents’ names but they did not answer. After six winters and six summers of struggle, she managed to escape to the land of the Ainu where she became a butterbur (Fukuoka 1995).

Butterbur was one of the most commonly eaten wild vegetables and Fukuoka reports that in Chikabumi, Asahikawa, Ainu women would harvest it in June (1995). Earlier they would have gathered the leaves and bulbs of *kito*, alpine leek, and the leaves and stems of *pukusa-kina*, anemone. The young stems of butterbur could be eaten raw once the fibrous skin was peeled off; sometimes they were dipped in fish oil. They were also boiled and eaten in a soup and pickled for winter eating (Chiri 1953). Matsuura, in his *Teshio Journal* (1862), describes a meal served to him that comprised cakes made of the bulb of the cardiocrinum lily, the bulbs of Kamchatka lily, butterbur stems, diatomaceous clay, and trout roe.

The butterbur also had medicinal properties; if an Ainu were bitten by a snake or stung by a bee in the mountains, he would squeeze its sap onto the wound. When poisoned by the lacquer plant, he would dry the leaf over a fire for a few seconds and then place it on the infected area. The leaf stems could be chewed to a paste that was plastered on cuts and wounds when someone was injured in the mountains. For colds, the stem of the butterbur would be boiled with the root of wild peony, and the concoction taken orally (Chiri 1953).

The leaves could be fashioned into temporary shelters, umbrellas, cups, corks for water bottles, containers, or cooking pots (Hanasaki 1988). In the Teshio area, when working away from home, the Ainu would scoop out a depression in the soil, line it with butterbur leaves, fill the container with water, and heat it with stones taken from the fire. In another method, food was wrapped in several layers of leaves and this was placed in the embers of the campfire to bake. If a hunter found a Kamchatka lily bulb, he would first mash it and then cook it in this way (Chiri 1953).

Knotweed Family (Polygonaceae)

- *Polygonum cuspidatum* Siebold & Zucc., polygonum or knotweed
- *Polygonum sachalinense* F. Schmidt, giant knotweed
- *Polygonum weyrichii* F. Schmidt, giant knotweed
- *Polygonum aviculare* L.

Polygonum cuspidatum is a common plant in moist soils in both lowland grasslands and in sunny locations in woodlands throughout Hokkaido (Ohwi 1984). It appears early in spring from late April to late May. The Japanese used the rubbed and softened leaf to ease the pain of wounds, but there is no record of such use by the Ainu. However, as indicated below, some of the other several knotweeds native to Hokkaido and Sakhalin were used in this way.

Generally known as **kuttar**, or some variant in Ainu, a name meaning “tube”, it is a stout, dioecious herb with thick rhizomes whose stems can be as tall as 3 m (Ohwi 1984). When dried, the stems were used as wind and snow breaks, especially along the exposed parts of the Japan Sea coast. The triangular-shaped leaf was dried and used either as toilet paper or to wrap cigarettes (Chiri 1953). There are many places in Hokkaido whose names reference the knotweed, and the central district of the coastal city of Otaru is called Kuttaruushi, or “the place of many knotweed” (Fukuoka 1995).

Polygonum weyrichii, the giant knotweed, is also known as **kuttar** among Hokkaido Ainu but as **tuxkux** or **irurex** in Sakhalin (Chiri 1953). It is very similar in appearance and structure to *Polygonum cuspidatum* and grows in gravelly soils on the coast and on alpine slopes (Ohwi 1984). The young stems are edible raw and were added to a stew made of the crushed bulbs of Kamchatka lily seasoned with oil. The seed was ground and added as a filler to rice (Ohwi 1984); the root was boiled and used as treatment for diarrhea (Butler 1994).

Polygonum sachalinense, also known as giant knotweed, is found primarily along ravines and streams in the highlands of Sakhalin, but is also found in Hokkaido and the southern Kurils (Ohwi 1984). Its Ainu name is **ikokuta**, **ikokuy**, or **irurex**. The leaf was used as a disinfectant (Mitsuhashi 1976) and to prevent boils, and the young stem was skinned and eaten raw (Chiri 1953). Like *P. cuspidatum*, above, the stems were dried to make winter enclosures. The hollow stems were used by shamans to trap evil spirits after exorcism (Walker 2006). In Maoka, Sakhalin, the leaf of *Polygonum aviculare* was used as a poultice for bruises (Chiri 1953).

Other polygonum mentioned by Chiri include *Polygonum amphibium* L., *P. senticosum* (Meisn.) Franch. & Sav., *Polygonum perfoliatum* (L.) L., *Polygonum thunbergii* Siebold & Zucc., and *Polygonum filiforme* Thunb. They are all present in Hokkaido but not in Sakhalin or the Kurils (Ohwi 1984). Most of their Ainu names are a reference to their tendency to scratch, but others to the use of the hollow stem to store foods like hog peanuts. As its Latin name suggests, *P. amphibium* has a fresh water habitat (Ohwi 1984). In Ainu it was known as **pekampe-mun**, or “grass in the water” (Chiri 1953).

Lily Family (Smilacaceae)

- *Smilax riparia* A. DC. var. *ussurensis* (Regel), smilax

This multi-branched, herbaceous shrub is found mainly in western and southwestern Hokkaido. It grows in thickets, woodlands, and grassy slopes and prefers full or partial sun and moist soils (Ohwi 1984).

The meaning of its Ainu name, *shuwonte*, is not known but might have been adapted from the Japanese name, *shiode*. The only recorded use was of the fresh leaf to treat eye problems and boils (Mitsuhashi 1976). It was harvested in late May to mid-June.

Arum Family (Araceae)

- *Symplocarpus nipponicus* Makino, symplocarpus
- *Symplocarpus renifolius* Schott ex. Tzvelev

Ohwi lists *Symplocarpus nipponicus* as a large, stout perennial with stout, erect rhizomes that thrives in wet locations in Hokkaido (1984), and Watanabe confirms this (1972). Miyabe denotes its range as western and southwestern Hokkaido, the southern Kurils, and southern Sakhalin (Batchelor and Miyabe 1893).

The Ainu name, *skerep-kina*, is an allusion to the Amur cork tree (*Phellodendron amurense*), that is known as *skerep*, probably because they both provided important ingredients in making stews or soups. The Amur cork tree provided fruits in autumn. The young, tender leaves of the symplocarpus were picked in late May, immediately blanched, and either eaten fresh or dried in the sun. When needed for making a soup or stew, the leaves were rehydrated. The leaf has a pungent taste, so this had to be softened by the addition of ingredients such as beans, nuts, or the sweet sap of the Japanese white birch (Fukuoka 1995).

An alternate name was *eper-kina*, or “bear cub grass”, so called because the roots were boiled and fed to captive cubs (Fukuoka 1995). Because of its considerable appetite, feeding the cub was a major expense for the family or group involved.

Yet another name was *chi-turep-koya*, or “I imitate the cardiocrinum lily” (Fukuoka 1995), as the size and shape of the leaves were similar in both plants.

Symplocarpus renifolius is present in both Hokkaido and Sakhalin and occupies a very similar habitat to that of *S. nipponicus*.

Aster, Daisy, and Sunflower Family (Asteraceae)

- *Taraxacum platycarpum* Dahlst., dandelion

Usually known in Ainu as *kunaw*, meaning unknown (Chiri 1953), this dandelion is a perennial that grows in disturbed habitats along roads and at the peripheries of fields in Hokkaido, Sakhalin, and the Kurils (Ohwi 1984). It requires moist soil and partial to full sun.

The young leaf, which was collected from mid-April to late May, was boiled and added to soups; in addition, the whole plant was boiled and the decoction used to treat stomachache (Chiri 1953).

When split, the stem writhes like a shaman dancing in a trance, and thus it was used to pray for rain. *Honoyoyep*, one of its other names, describes this act of writhing. Chiri reports that, in Samani, in praying for rain, the shaman would go to a place in the mountains called Terkeusi, where he or she would place the stems on the rocks and chant, “*honoyoyep, honoyoyep, iritenka, iritenka, ruampe as, ruampe as*”, “oh! you who dance shaking your bottom, soften things up and let it rain”. *Iritenka* literally means “to soften it”, but here it has the connotation of a cure or restoration (Chiri 1953).

The alternate names, *epitche-kina* or *epitche-nonno*, refer to its “bald head” after losing its petals. Another, *ru-cha-us-appapo*, means “the flower that grows on the bank beside the track” (Chiri 1953).

Linden Family (Malvaceae)

- *Tilia japonica* (Miq.) Simonk., Japanese linden or basswood
- *Tilia maximowicziana* Shirasawa

Tilia japonica is a deciduous tree growing to 20 m in height in relatively damp soils in the uplands and highlands of Hokkaido (Ohwi 1984). The most common Ainu name for the tree is *nipes-ni*, meaning “the tree which we tear”, a reference to the fact that it was a major source of bast used in making ropes, cordage, and baskets. The bast has a high tensile strength, although it is not as strong as the bast from nettle or bittersweet (*Celastrus orbiculatus*) (Munro 1963).

The best quality linden bast came from saplings with a diameter of about 50 cm (Kayano 1978). In larger trees, the south-facing bast is the thickest and of the highest quality. Debarking usually took place in spring or early summer after a period of rain, and might continue into July or August. Near the base of the trunk, a cut was made with a hatchet. The cut had to penetrate the bark and the bast. These two layers were then eased up with the hatchet, and the fingers on both hands were used to pull the strip. Considerable force was needed to pull the strip upward, as it would usually extend high on the trunk and over the puller’s head. However, the higher the strip reached, the narrower it became and, eventually, it would separate from the trunk entirely.

After debarking, the bark was separated from the bast. The hatchet was inserted between the bark and bast to begin the process of separation. Then the bast was held in the right hand and the bark in the left, and the two layers eased apart. After a while, the middle finger of the right hand could be inserted between the layers and pushed downward to separate them entirely. The bark was discarded immediately and the bast soaked briefly in water to remove some of the sticky sap before it was wrapped in a mat made of the leaves of bulrush (*Typha latifolia*) to be carried home on the back. Depending on the size of the tree and its orientation, the bast was between 0.5 to 1 cm thick.

Debarking was men’s work but it was usually women’s work to process the bast and to make it into thread and cordage. When making cordage, the bast was often used without

further processing. The strips taken from the tree were simply split into finer strands, and five or six of these were combined into cords about 7 mm in diameter. Such cordage was vital in lashing together the posts and beams, for example, during the construction of a house or storage building. The cords were soaked in water prior to use to make them more pliable. As they dried, they would shrink and tighten the lashings.

When making rectangular, free-standing baskets, called *rashisaranip*, the bast was allowed to dry in the sun for one or two days until it was leather hard (Kayano 1978). It was then reduced to flat strips about 1.5 cm wide which were woven together in a simple pattern. Both weft and warp were the same size. The strips were soaked for an hour or so before weaving began to make them pliable. Weaving began from the base; once it was complete, the strips were turned up to create the sides. When the basket was deep enough, the weaver created the rim, or *kimiha*, through which the carrying and closure cords would pass. The rim was formed by combining several warps into a braid, which was turned at 90 degrees, to be interwoven with braids formed by the other sets warps. The basket was light and sturdy and could be made to any size that might be needed. It was used in the fields when harvesting grain. Once it was full, the grain was transferred to backpacks in which the grain was carried home. These, too, were often made of linden bast. However, their construction was quite different from that of *rashisaranip*.

When making finer cordage, fishing line, or thread for clothing, the bast underwent considerably more processing. One method involved first placing strips taken from the tree in the mud of a fresh water pond or swamp and allowing it to ferment for seven to ten days; another required boiling the bast for a day in a lye solution. The first method resulted in a thin, dark brown sheet of bast which, after a thorough rinsing, could be split by hand into fine strands; the second method produced *chi-popte-nipes*, which was light brown in colour and where the bast had been reduced to even finer strands (Kayano 1996). While the colour and increased softness might have been considered more desirable for making clothing, the boiling process removed all the pectins and gums and thereby reduced its strength.

Isabella Bird witnessed the preparation of thread in her journey through Hokkaido in the 1870s.

All Aino women understand the making of bark cloth. The men bring strips, five feet long, having removed the outer coating. The inner bark is easily separated into several thin layers, which are split into very narrow strips by the older women, very neatly knotted, and wound into balls (Bird 1885:271).

She also recorded the dyeing process for thread in which it was steeped in “a decoction of bark”, which, though she does not reference it, was probably that of alder (*Alnus* spp.). On a simple backstrap loom that Bird describes in some detail, she estimated a weaver could produce a foot of finished cloth per day (1885).

Kayano lists many products made of linden bast, including cords for snowshoes, deer calls, harpoons, fish traps, and cradles; finer cordage was used to make baskets, gaiters, drying mats, and tumplines (1978). Keira states that more than 70 m of cordage was required to make a *saranip*, the universally used carrying basket (Keira and Keira 1999), and more than 300 m of linden bast thread was required to weave a tumpline, known as *tar* in Ainu.

In the highlands along the Teshio River area, the Ainu made large quantities of linden bast rope to trade for marine products. When fishing for swordfish along the Pacific coasts of Hokkaido, the Ainu would use a boat made of linden wood so that the “sword” could not penetrate it (Chiri 1953).

Broughton observed the coastal Ainu in 1796 in and around Volcano Bay. He states that, “their nets were made of the twisted bark of the lime tree dyed with oak bark” (Broughton 1804 in Refsing 2000:10). As linden bast is softened and weakened by exposure to water, such dyeing may have been intended to prolong its useful life. However, alternatively, it may have been intended to make the nets less visible to fish.

Tilia maximowicziana is a much rarer tree, although it occupies a similar niche as *T. japonica* (Ohwi 1984). Its utility to the Ainu is expressed in its name, *yai-nipes*, or “ordinary

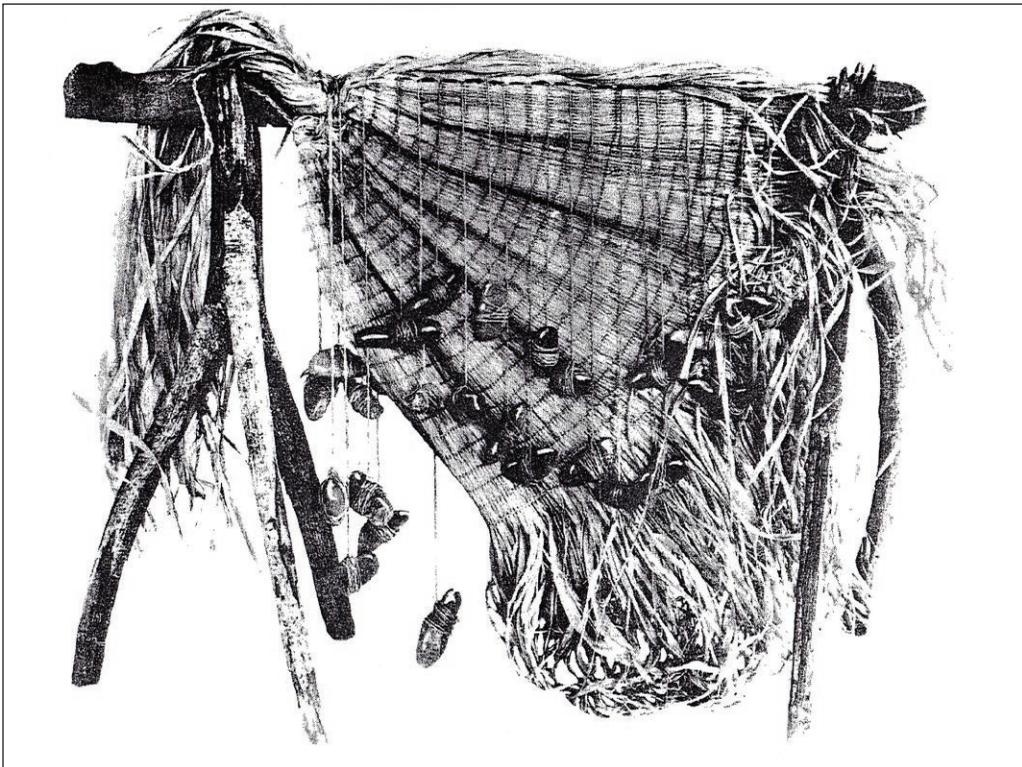


Figure 23. A *saranip*, or basket, being woven on a vertical loom. The raw materials were usually the bast of elm or linden. Photo courtesy of The Foundation for Research and Promotion of Ainu Culture (FRPAC), Sapporo, Japan.

linden” (Chiri 1953). Like *T. japonica*, its bast was used to make cordage but it was of somewhat lesser quality.

Elm Family (Ulmaceae)

- *Ulmus davidiana* Planch. var. *japonica* (Rehder) Nakai, Japanese elm

While this elm was considerably less important than Manchurian elm (*Ulmus laciniata*), it served an important role in Ainu daily life. This is indicated by its name, *chikisani*, that means “fire drill tree”. An alternate name, *kar-ni*, also refers to its use as a fire drill. As the god of fire is a female deity, so, by association, is the god of the Japanese elm. She was also the mother of the Ainu hero, Ainu-rak-kur, and produced the deities of fishing and hunting. The bear, itself a god, was created from the black cinders rubbed from the elm as it was being used as a drill (Chiri 1953).

There are a number of versions of how the wood of the Japanese elm came to be chosen for this purpose. When the creator god made the Ainu, the first plants with which he endowed them were the warabi (species unknown) and Japanese poplar in the west, and the mugwort and Japanese elm in the east. When the Ainu first tried to make fire, they rubbed the wood of the poplar, but because it was too soft, it produced only smoke. To make matters worse, the smoke and embers were transformed into an evil god of pestilence (Chiri 1953).

Thus, the Ainu turned to the wood of the Japanese elm, and with a drill made from it, they were able to make the fire that was essential to their survival in their often cold and harsh environment.

The myth concerning the origin of the first Ainu shaman, Samaikur, tells of his being raised at the base of a mountain or of a tree. In Sakhalin, the tree was the Manchurian ash (*Fraxinus mandschurica*), but in Hokkaido it was the Japanese elm. The story symbolizes the role of the shaman as mediator between the spirit world and humans (Wada 1999).

The Japanese elm is deciduous, tall, and resistant to low temperatures. Thus, it does well in the uplands of Hokkaido (Ohwi 1984); it requires moist, fertile soil and is found most often in alluvial zones (Sato 2002). It is quite slow growing but can exceed 30 m in height with a girth of 1 to 1.5 m.

The wood is hard, dense, resistant to splitting, and difficult to work; fire drills were often made of seasoned roots. Kayano indicates that the wood was also used for mallets, log splitting wedges, needles used in thatching, posts for fish traps, and various other tools. Philippi’s description of the god, Aeoina-kamui, says of him that “he had a mattock handle of elm” (Philippi 1979:203).

In Kayano’s illustration of a fire drill, both drill and base are of Japanese elm. Other researchers suggest the base was of a softer wood, like that of the Japanese linden.

Like the Manchurian elm, it also produces bast, although it was considered weaker and inferior. Thus, thread from it was used only as the weft in weaving cloth; however, it was



Figure 24. An Ainu man using the dried root of a Japanese elm as a fire drill; the woman behind him uses a hollow-stemmed plant to blow on the tinder to ignite a flame. Matsuura 1977 [c. 1850].

widely used in producing cordage used in making baskets and bags. By chewing the bast, it became soft and flexible enough to be used in providing insulation for salmon skin boots (Chiri 1953).

A variety known as *Ulmus davidiana* Planch var. *japonica* f. *kijimae* (Makino) is present in both southern Sakhalin and the southern Kurils (Ohwi 1984). However, there is no record of use by the Ainu in these locales.

Elm Family (Ulmaceae)

- *Ulmus laciniata* (Trautv.) Mayr., Manchurian elm

In the early 19th century, Matsuura Takeshiro was dispatched to Hokkaido by the Japanese government to survey the island with a view to its development. After a few years of observation of the extreme exploitation of the Ainu by their Japanese overseers, Matsuura developed a different agenda and became the first advocate for Ainu human rights.

Below is an example of his eyewitness account of daily Ainu life. It is recorded in his *Teshio Journal* (Matsuura 1862) and took place near present day Nayoro. On June 13th (August 2nd by the modern calendar), Matsuura's party was in the upper reaches of the Nayorogawa, a tributary of the Teshio River, and put up at a small village. That night there was a moon, and he observed women and children debarking what were probably Manchurian elms. He questioned them about the time required for each step of the process of preparing thread for weaving. They replied that debarking could be done in a day; removing the bast from the bark required another day; it took five days to convert the bast to thread, two days to warp the loom, and six days to weave a bolt of cloth sufficient to make a single garment. If taken to a Japanese trading post, one bolt of cloth was traded for 3.5 sho (about 5 l) of brown rice, or 2 to 2.5 bundles of tobacco, or three bowls of sake. Thus, 15 days of work making the cloth yielded enough rice to feed a family for, at most, two days.

There are two elms native to Hokkaido; Manchurian elm is usually called *at-ni* in Ainu. *At* means bark or bast; *ni* means tree (Chiri 1953). It is a deciduous tree that grows mainly in forests in upland zones (Ohwi 1984). In deep, moist soils it can reach 25 m in height and a metre in girth. It is also present in southern Sakhalin.

Collection of the bast of the Manchurian elm assumed a very important position among the activities undertaken by the Ainu. About the time the snow began to melt, when they judged that the sap had begun to run, men would go to the mountains in search of suitable trees (Chiri 1953). This was men's work because, in general, the forests and mountains were no place for a woman to be. The selected tree must have thick bark, and before a tree was debarked, the men would make offerings to it and carve *inau*, ritual staffs, that were placed at the roots. As with linden, above, using a small hatchet or ax, a small horizontal cut was made into the base of the trunk on the side facing south where the bark was thickest. A small piece of bast was removed and checked by chewing it. If the bast was suitable, the bark and bast were pried away from the trunk until the strip could be held in both hands (see cover image). Then, with a sharp tug, the strip was pulled upwards until it tapered off or broke away from the trunk. This was usually repeated until no more than 50% of the circumference of the trunk was debarked.

The bark splits well vertically (Takenaka Takeshi, pers. comm. c. 2008). It was usually taken on the south or southwest side where it was thickest. The bast was separated from the the bark, which was discarded, and was folded into 40 cm long sections, bundled up, and carried home on the back. A few strands of the coarse bast that adhered to the trunk after debarking were removed and plied as is into cordage used in making sandals (Chiri 1953).

In Hokkaido, the bast was retted by soaking it in a swamp or hot spring; in Sakhalin it was retted in sea water. Generally, it was left to soak in hot springs for three or four days and, in ambient temperature water, for ten days (Chiri 1953); in Ainu, this process was called *onka*, to ripen or ferment. If left in water any longer than necessary, the natural gums

and pectins would all be dissolved, and the fibres would become too weak (Fukuoka 1995; Kayano 1996).

The resultant thin sheets of bast were removed from the water, washed in fresh water, and hung up to dry in the shade on horizontal poles. The sheets were then torn repeatedly into ever-finer strands before being plied into thread (Chiri 1953).

To make clothing, the best bast was needed; this generally came from the middle layers; the outer layers produced bast that was coarser. This was used for making cordage used in making baskets, called *saranip*, and for the warp of *citarpe* or *ochiterape*, mats made from the leaves of bulrush. The bast from the inner layers was usually too weak to use.

After it had dried and just prior to plying, the raw bast was moistened slightly and torn into 0.2 to 0.3 cm wide strands. These were then rubbed slightly and drawn across the lips to again moisten them. The end of one strand was then placed against the end of another and the two ends plied together between the thumb and forefinger. This was repeated many times to produce a continuous thread that was 0.1 cm wide. The thread was wound into a ball. When ready to weave, two women would warp the loom with it. To make a traditional garment, called *atus*, required a bolt of cloth 7.6 m long; to weave this much cloth required 750 mg of thread (Fukuoka 1995).

Most *atus* were woven in the natural brown colour of the bast; that retted in hot springs, was of a paler colour. In March 1858, Matsuura witnessed many finished garments soaking in a hot spring at Lake Akan. The spring was used by Ainu from Abashiri who told Matsuura that soaking softened the fibres and resulted in a superior product.

Not all cloth was plain, as some weavers introduced a design of narrow subtle stripes into it. In Sakhalin, the bast was soaked in lakes with iron-rich sediments until it turned a dark red (Ohnuki-Tierney 1969). In both Sakhalin (Ohnuki-Tierney 1974) and Hokkaido, it was dyed with the bark of alder (species unknown) to achieve red, with the skins of walnuts or certain berries to achieve dark blue, and with the bark of Japanese white

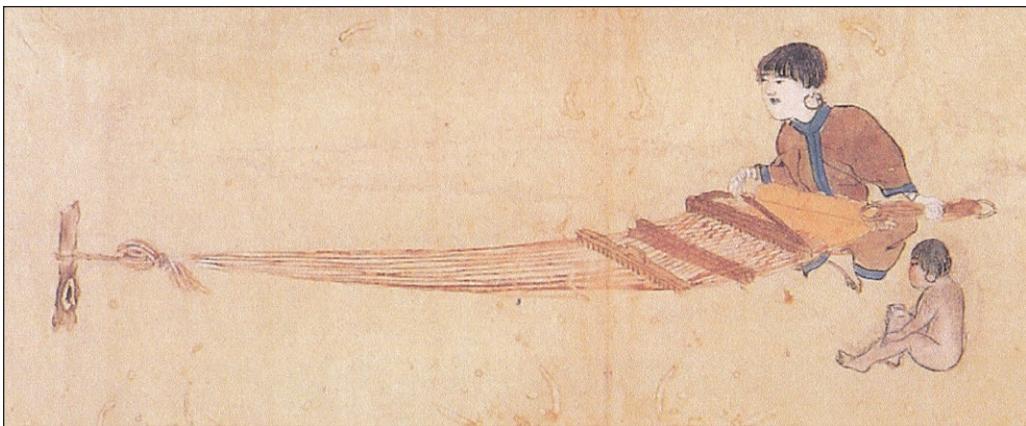


Figure 25. An Ainu woman weaving on a backstrap loom. The thread used in weaving cloth was usually made of elm bast but was sometimes of nettle or linden. Murakami 1799.

birch, sometimes in combination with the skins of walnuts, to achieve black (Fukuoka 1995).

The few early (late 18th and early 19th century) *atus* that remain were woven entirely of the bast of elm, linden, or nettle and had none of the complex designs in cotton cloth and thread that characterised later examples (National Museum of Anthropology 1993). However, later, as cotton cloth and thread became available and affordable to the Ainu, it replaced bast in almost all areas of Hokkaido. However, Pilsudski reported from Sakhalin, as late as at the beginning of the 20th century, on festival garments made of elm bast and trimmed with dark blue cotton and embroidered with cotton thread (Majewicz 1998).

On April 1, 1858, Matsuura met an Ainu in Bihoro in northern Hokkaido who showed him a raincape made from elm bast. This was the first occasion that Matsuura learned of the Ainu using raincapes, but his informant claimed that they had done so for some time. Nonetheless, it is likely that both concept and technique were introduced by the Japanese.

According to oral tradition, when the god, called Okikurumi Kamuy, descended from the land of the gods to *ainumosir*, the Ainu homeland, flames emerged from the tip of his scabbard. As the flames flew off, the Ainu caught a glimpse of an *atus* in them. Thus, the previously naked Ainu learned from him how to process the bast of the elm into clothing just as he had taught them all the other skills by which they needed to live.

The Manchurian elm is rapidly attaining endangered status in Hokkaido, and around Niputani—it is now illegal to debark the few that remain (Kayano Shigeru, pers. comm. 1995). Although this argument is challenged by Honda Yuko, it was once generally thought that the Ainu would never completely debark any bast-producing tree, as this would kill it (Honda Yuko, pers. comm. c. 2008). Rather, they would remove the bast from one side and leave the rest to supply the tree with nutrients. Eventually, the debarked section would heal and yield bast to later generations.

In fact, the demise of the Manchurian elm was brought about not by the use of its bast for Ainu clothing, but by development of once deciduous or mixed forests for agriculture or silviculture in the 19th and 20th centuries. In untouched riparian zones within protected forests, elms continued to flourish until recently.

On the hill above the downtown area of Abashiri, an important port on the Okhotsk Sea coast, and now occupied by a courthouse and tax offices, there was once a large pond called Iworoto, or “the pond in which we soak”. Abashiri was once a major population centre and the pond was used by the Ainu to process the bast that they had gathered in spring (Chiri 1953).

The elms, along with other major deciduous trees, such as oaks and linden, play an important part in the ecology of riparian areas and if, for example, a mature tree develops any cavity it may often host a nest of Blakiston’s fish owl (*Bubo blakistoni*) (Takenaka Takeshi, pers. comm. c. 2008).

Lily Family (Melanthiaceae)

- *Veratrum grandiflorum* (Maxim. ex Baker) Loes., white hellebore

This member of the lily family appears early in spring in wet meadows or bogs in the uplands throughout Hokkaido (Ohwi 1984), in southern Sakhalin, and, possibly, in Shikotan in the southern Kurils (Batchelor and Miyabe 1893). It has large, brilliant green leaves, grows rapidly, and can attain 1.5 m in height by early June. The entire plant is toxic and the root is particularly so.

Its normal Ainu name is *shikup-kina*, a reference to its fast growth rate. In Horobetsu, infants who were slow to grow were encouraged by hitting them on the rump with the stems of white hellebore accompanied by the exhortation, *shikup-shikup*, “grow! grow!”

One of its alternate names is *hoskiteyne*, noting the propensity of its leaf to become slippery when it wilts, causing many an Ainu deer hunter to slip and fall. Chiri quotes Sarashina Genzo in his work *Kotan Sebutsuki*, that the typical response of hunters to this was to berate the plant with an Ainu expletive, *poysi*, “you little ...” (Sarashina 1942 in Chiri 1953:212–213).

Viola Family (Violaceae)

- *Viola kamtschadorum* W. Becker et Hult., dog violet

This is one of the largest of several violets in Hokkaido. It is a perennial with either a glabrous or slightly pilose leaf (Ohwi 1984). It sometimes has a single stem but can be multi-stemmed. It grows in damp, grassy areas of Hokkaido, southern Sakhalin, and the southern Kurils. Its Ainu name is *nitekkarakina*, or, in Sakhalin, *nitexkarakina*, meaning unknown (Chiri 1953).

The young stems, leaf, and flower bud are edible but the Ainu used the leaf only for medicinal purposes. It was harvested from early June to late August, heated and rubbed on the stomach to relieve aches and vomiting, or placed on cuts as a plaster. It was also crushed to yield a juice used to wash the extremities during childbirth and applied to boils and blemishes (Chiri 1953). In Sakhalin, the leaf and stem were dried in the shade and stored until needed. They were then infused to treat uterine infection (Chiri 1953).

Viola mandschurica W. Becker has three names in Ainu but there is no recorded use. It is present in both Hokkaido and the southern Kurils.

Viola sacchalinensis H. Boissieu is present in Hokkaido, southern Sakhalin, and the southern Kurils (Ohwi 1984), but there is no recorded use by the Ainu.

10. Flora Collected in Summer

Carnation Family (Caryophyllaceae)

- *Ammodenia major* A. Heller, ammodenia
- *Ammodenia oblongifolia* (Torr. & A. Gray) Rydb.

These glabrous, perennial herbs grow on gravelly slopes on the seashore of Hokkaido, Sakhalin, and the Kurils (Ohwi 1984).

The Ainu name of *Ammodenia major* is **oyaw-kina**, or “snake grass”, and that of *Ammodenia oblongifolia* is **kennex-kina**, “baby plant”, or **otorunkina**, a corruption of **ota-un-kina**, or “beach grass” (Chiri 1953). The leaf of *A. oblongifolia* was rubbed and used to treat eye ailments, neuralgia, or arthritis (Chiri 1953).

Aster, Daisy, and Sunflower Family (Asteraceae)

- *Anaphalis yedoensis* Maxim. or *A. margaritacea* (L.) Benth. et Hook. f. var. *yedoensis*, anaphalis

Known as **sirus-noya** in Ainu, it grows in sunny locations in clumps on riverbanks and in meadows in Hokkaido (Ohwi 1984). The name **sirus-noya** is derived from **sir-us-noya**, or “the mugwort that is on the bank” (Chiri 1953). The leaf was eaten by the Ainu.

Carrot or Parsley Family (Apiaceae)

- *Angelica ursina* Maxim., angelica

Along with butterbur (*Petasites japonicus*) and cow parsley (*Anthriscus nemorosa*), this type of angelica was a favourite food of female brown bears (*Ursos arctos*) in early summer (Takenaka Takeshi, pers. comm. c. 2008). Its usual Ainu name, **siw-kina**, means bitter grass but it was also known as **poro-kutu**, or “big tube stem”. It is a large, perennial herb that appears in May, mainly along the coastal hills. Its stems are 2 to 3 m high with a large flower head with many branches. It can have as many as 30 to 40 flowers (Ohwi 1984).

It grows throughout Hokkaido but is far more common in the west than in the east. Major concentrations are along the Japan Sea coast. In his 1857 journal, Matsuura noted angelica growing along both the Ishikari and Tobetsu rivers (Fukuoka 1995).

When eaten raw, it is rather bitter, so the Ainu would usually strip the skin from the stems or season it with fish oil to reduce the astringency. The stems were then soaked and added to soups. The boiled stems were rubbed against the stomach to relieve aches, and the dried roots and rhizomes were used as a stimulant and flavouring for soups (Mitsuhashi 1976). In Shiraura, Sakhalin, the Ainu believed that if no trout appeared before the angelica bloomed, there would be poor catches all season long (Chiri 1953). In Tokachi, the dried hollow stems were used to collect groundnuts (Fukuoka 1995).

Another angelica, *Angelica edulis* Miyabe ex Y. Yabe., is closely related to *siw-kina* and was used by the Ainu in similar ways. For example, after harvesting in early summer, it was stripped of its skin and eaten raw, or dried for use in soups and stews in winter. Adding fish oil or cooked beans would reduce any lingering bitterness. Its distribution in Hokkaido is more limited than *Angelica ursina*, with major concentrations on the Pacific and Japan Sea coasts in the southwest. In Ainu, it was known as *chi-sui-e* or *ci-hu-e*, or “something we eat raw”. In summer when fish oil began to turn rancid, it was cooked with the stems of angelica to freshen it (Chiri 1953).

The stems and roots of other angelica, including *Angelica refracta* Schmidt and *Angelica genuflexa* Nutt., had a number of medicinal applications. *A. refracta* was usually known as *mo-siw-kina*, or “small bitter grass”, but, significantly, was also called *pawchi-kina*, or “demoness grass”, suggesting its use by shamans. The leaf was boiled in water and the solution applied to treat stomach pains (Butler 1994). The root of *A. genuflexa* was made into a medicinal tea (Kinoshita and Takemura 1993). It is present along mountain streams in Hokkaido, southern Sakhalin, and the southern Kurils (Ohwi 1984).

Aster, Daisy, and Sunflower Family (Asteraceae)

- *Arctium lappa* L., burdock

In Hokkaido, burdock grows in calcareous soils in either meadows or woodlands. It prefers some shade, grows to be 1.5 m tall, and has a purple flower. Its most used Ainu name is *seta-kina*, although it is also known as *seta-korkoni* or *i-pa-kokari-p*, the latter referring to the burr (Chiri 1953). Its literal meaning is “something that sticks all over me”. The burrs were attached to the supporting timbers of elevated storehouses to discourage rodents (Chiri 1953).

The leaf is edible but the petiole is not (Yamada 2001). The roots were harvested in summer and often dried to be later added to soups (Chiri 1953). Cooked with the starchy bulbs of cardiocrinum lily (*Cardiocrinum glehnii*) and the stems of alpine leek (*Allium victorialis*), they were eaten as a post childbirth treatment.

Chiri records that the leaf was pounded and made into cakes or dumplings (1953). Kinoshita notes that the leaf was chewed and applied to cuts or wounds after an infusion of the root of sasparilla ginseng (*Aralia cordata*) was used to clean them (Kinoshita and Takemura 1993). The leaf was also rubbed and applied as a poultice to boils to draw out pus (Chiri 1953; Mitsuhashi 1976).

Rose Family (Rosacea)

- *Aruncus sylvester* Kostel. ex Maxim. or *A. dioicus* var. *tenuifolius* (Nakai ex H. Hara) H. Hara, goatsbeard

This woodland perennial is called *osoma-kutu* in Ainu and Chiri reports that the dried or withered stems were carbonized and rubbed into the lower abdomen, probably to treat stom-

ach pain (1953). It grows in the uplands in Hokkaido, Sakhalin, and the Kurils and prefers shade and moist soils. The young shoots appear in late April to late May.

Asparagus Family (Asparagaceae)

- *Asparagus schoberioides* Kunth., asparagus

Asparagus has many names in Ainu but was generally known as *chikap-muk* or *ikkew-kar-mun* (Chiri 1953). It is perennial herb that is found throughout Hokkaido and Sakhalin (Ohwi 1984). It grows in woodland and grassland, requires full or partial sun, and moist but well drained soils.

Yamada reports that it was also called *chikap-oterke*, or “bird trampled”, and was used to treat ringworm. Chiri believes that the name *chikap-mun*, or “bird grass”, derives from the use of its tubers to drive off epidemics that the Ainu believed arrived on the wings of birds (1953).

Juice extracted from the tubers was used in compresses, for back pain, and to treat scalp fungus (Mitsuhashi 1976); the stems and leaves were also made into a compress. This use gives rise to the name *ikkew-kar-kina*, or “the grass that cures backache”. In Ashoro, the stems and leaves were woven into headdresses, presumably to protect the wearer from disease (Chiri 1953).

Coffee Family (Rubiaceae)

- *Asperula odorata* L. (*Galium odoratum* L.), sweet woodruff

Known as *hus-kina*, *yus-kina*, or *yus-kara-kina* in Ainu, sweet woodruff displays white fragrant flowers that were believed to ward off disease. It is likely the names refer to this characteristic, as *hus* or *hussa* was the sound a shaman made when driving out evil (Chiri 1953).

It is a perennial that grows in full or partial shade in woodlands. It is widespread and common in Hokkaido and is present in Sakhalin and the southern Kurils (Ohwi 1984).

An infusion was made from the leaf and was added as flavouring to stews (Chiri 1953).

In Sakhalin, normally, it was picked to be dried and stored for later use (Chiri 1953).

Birch Family (Betulaceae)

- *Betula platyphylla* Sukaczew var. *japonica* (Miq.) Hara, Japanese white birch
- *Betula ermanii* Cham. var. *genuina* Regel, Erman’s birch
- *Betula maximowicziana* Regel, monarch birch

There are three main types of birch in Hokkaido, all of which are found in upland locations (Ohwi 1984). In each case, the bark was used by the Ainu. Japanese white birch occupies the lowest elevations. It is a fast growing tree that attains 20 m in height but doesn’t usually develop much girth. It is not shade tolerant but often grows in dense, pure stands (Takenaka Takeshi, pers. comm. c. 2008).

There were many Ainu names for it, and Chiri notes 15 of them (1953:183), the most common being *retattat-ni* or *retat-ni*, “white tree”. It was important to the Ainu as a source of bark that was used to make temporary pots or scoops used by hunters in the mountains, but was chiefly used as material for torches and tinder (Chiri 1953). Hence, another Ainu name, *kitat* or *tat-ni*, that refers to its ability to “glitter”. Like elder (*Sambucus* spp.), the wood was used to make talismans and sacred staffs, the latter dedicated to the Goddess of the hearth, *ape-fuchi*, and other female deities (Ohnuki-Tierney 1981). However, the wood itself was not suitable for firewood and in one of the oral tales, the earth deities rubbed the sticks of Japanese white birch to make fire but got nothing but smoke (Yamada 2001:151).

River fishing was practiced in a number of ways; one involved setting up nets between dugouts; another required building elaborate weirs; yet another was done at night, either from a dugout or from the bank, and employed torches made from birch bark (Chiri 1953). When fishing from a canoe, at least three people were necessary; one to manoeuvre the boat, one to hold the torch near the surface of the water, and the third to thrust the spear, or *marek*, into the fish.

Matsuura Takeshiro, in his *Teshio Journal*, recounts that when his party camped overnight at Haruushnai on the Ishikari River at one end of the gorge called Kamuykotan, his Ainu guides went fishing for trout and dace carrying birch bark torches (Matsuura 1862 in Hanasaki 1988). The bark had the remarkable quality of burning even when wet and thus was collected in large quantities and carried by all hunters and fishermen in their fire starter pouch. Munro describes how,

a slip of dried birch bark touches the glowing tinder, the *karapash* (a powder made from a bracket fungus, *Laricifomes officinalis*) and its flame is transferred to large pieces, to straw or other combustible material (1964:16).

The sap of the Japanese white birch, known as *tatni-wakka*, was potable and a cut in the bark would yield enough liquid to slake the thirst. It was also nutritious, containing sugars, organic and amino acids, protein, and minerals (Anetai et al. 2000). The sap was also added, during cooking, to an acrid ingredient, like the leaf of the symplocarpus (*Symplocarpus nipponicus*), to make it more palatable (Chiri 1953).

The ash from the bark was used to produce dye used in making the tattoos around the lips of Ainu women that marked their passage into womanhood. The bark was burned on a fire beneath a large pot containing water; once enough soot had accumulated on the bottom of the pot, the water was carefully poured off and the soot scraped off. Small pricks or incisions were made into the skin with the tip of a knife and the soot rubbed in (Kayano 1996).

Erman’s birch grows in the highlands and mountains of Hokkaido, Sakhalin, and the Kurils (Ohwi 1984). It reaches 15 m in height and typically occupies a zone between Yezo spruce

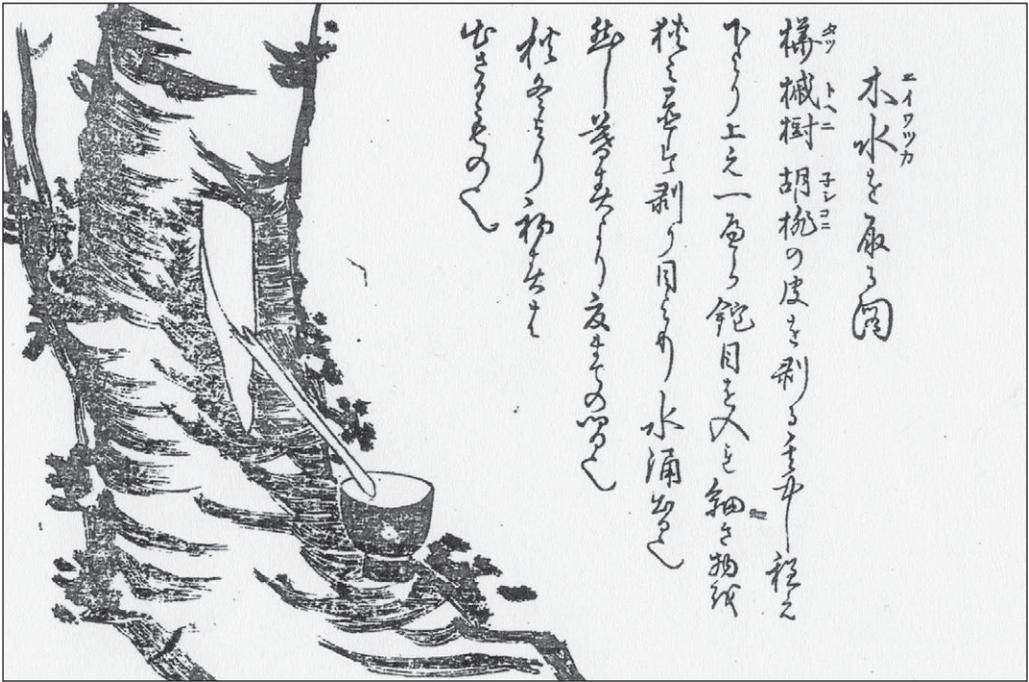


Figure 26. A birch tapped for its sap. Matsuura 1977 [1861].

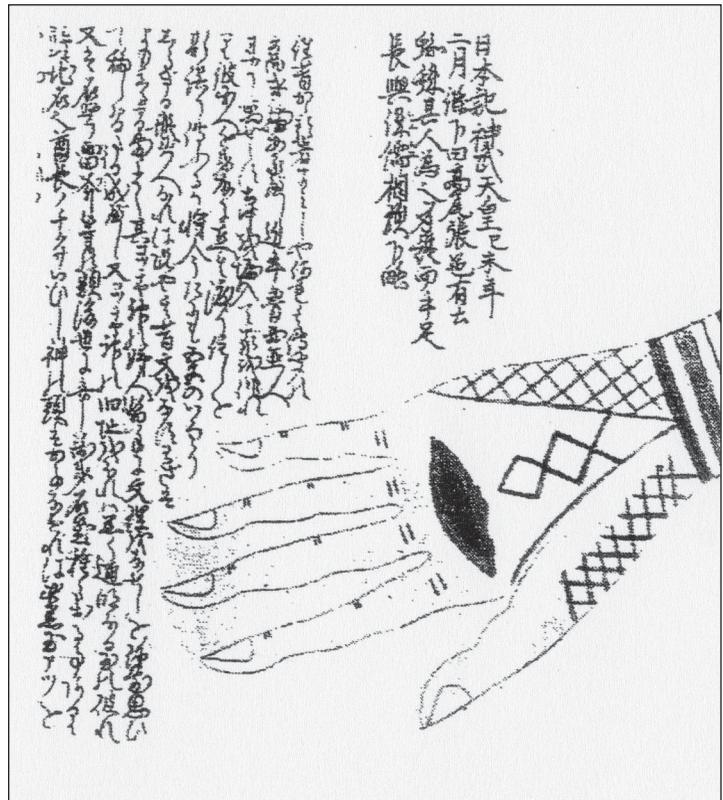


Figure 27. Tattoos on the back of an adult woman's hands and wrists. The dye was obtained from burnt birch bark. Prunner 1993:Plate 5.

(*Picea jezoensis*) and dwarf Siberian pine (*Pinus pumila*). It typically appears above 1500 m altitude (Ohwi 1984).

It has a greater girth than Japanese white birch. It needs sunlight and moist soils to do well.

Its Ainu name is *tat-ni*, *metat*, or *kamuy-tat*; *me* means cold, and suggests its highland habitat. Its bark could be separated into paper-thin sheets that were used as plasters (Mitsuhashi 1976) or to wrap meat. Like Japanese white birch, it made excellent tinder and torches, and was used to make temporary containers or water dippers (Chiri 1953). The arrowhead of a *kuari*, or fixed bow trap, was encased in a tube made of the bark of Japanese white birch or bird or mountain cherry (*Prunus padus* L.) to protect the aconite (*Aconitum chinense*) poison at the tip from the elements (Kayano 1978).

The wood was used for making sleds in Sakhalin (Ohnuki-Tierney 1974). Pilsudski reports that shamans in Sakhalin recommended a talisman against smallpox in the 1897 epidemic that consisted of the trunk of a Japanese white birch dug into the ground with its roots upward. Attached to the root were various other smaller talisman. In another case recorded by Pilsudski in 1904, Sakhalin Ainu erected *inau* made of Japanese white birch wood to pray for the recovery of an ailing bear cub (Majewicz 1998).

Batchelor reports that in the Saru Basin, the Ainu ascribed the birch healing powers. An Ainu, if ill, would pray to the god of the tree and ask it to hasten recovery. Erman's birch was one of several trees ascribed this ability. Others included oaks, Japanese linden, and magnolia (*Magnolia* spp.) (Batchelor 1924). The Sakhalin Ainu also made large talismans, called *oken*, from Japanese white birch, elder, or alder (*Alnus* spp.) (Ohnuki-Tierney 1969, 1981).

The Ainu name of Monarch birch is either *shi-tat*, true bark, *ironne-tat*, thick bark, or *karimpa-tat*, meaning “bird cherry bark”. Unlike the other birches described above, it had very thick bark that could be used as roofing for temporary huts, called *kucha*, and for containers, water buckets, and pots that could be placed over an open fire long enough to boil water, cook vegetables, or simmer a broth (Fukuoka 1995). Before the advent of iron articles imported from Japan, such birch bark containers were undoubtedly widely used. Birch bark pots continued to be used by hunters when living in temporary huts in the forests or mountains. As Munro comments, “suspended from the apex [of the hut] or from a tripod erected inside the tent over a fire, there was little danger of burning the pan” (Ohlsen 1994:17–18).

Monarch birch grows in heavy wet soils in the mountains in Hokkaido and the southern Kurils (Ohwi 1984) and could reach 30 m in height; it is hardy and is shade tolerant (Takenaka Takeshi, pers. comm. c. 2008).

It had yet another Ainu name, i.e., *chi-noye-tat*, or “the bark we twist”. This name refers to its use as a lamp inside homes (Chiri 1953). The bark was cut into thin strips that were heated over a flame to soften them. These were then twisted into spirals that were placed in slots cut into a wooden post. The post was thrust into the ash at the edge of the hearth and the birch bark lit to provide light (Kayano 1978).

When making torches for travel or fishing at night, or when hunting bears in their dens, several strips were slotted into the end of a pole carried over the head. To rejuvenate a fire that had died down in the hearth by morning, a strip of bark was dipped in sulphur powder and placed in the embers (Chiri 1953). Fire was central to Ainu life in this often harsh northern climate, so this use of birch bark was particularly critical. If the fire were to go out in the hearth, a member of the family would have to carry an unlit birch bark torch to a neighbour's house and request a light. Such a request would have been generally considered demeaning.

Bark was collected in large quantities in May and June (late spring), when the sap was running, at which time it was easiest to debark the Japanese white birch. Depending on location and access to a source of bark, a Japanese white birch tree might have been completely debarked, thereby killing it, or partially debarked to ensure its survival. In this latter case, bark was usually taken from the south side of the tree where it was thickest and easiest to debark. It was then stacked in the forest and covered with bamboo grass (*Sasa* spp.) and dry wood. When needed, it was collected and carried to the village.

Other birches, such as *Betula davurica* Pall. and *Betula tauschii* Koidz., were variously available, and their bark had similar utility as containers or torches. In Sakhalin, *B. tauschii* was used to make talismans, sleds, baskets, and child carriers (Ohnuki-Tierney 1974). Broughton, reporting in 1796 on the Ainu of southwestern Hokkaido, notes that along with kelp, birch bark was “an article of commerce” with the Japanese (Broughton 1804 in Refsing 2000:10).

Aster, Daisy, and Sunflower Family (Asteraceae)

- *Bidens radiata* Thuill., bidens

Known in Ainu as *ischikara-kina*, or “the plant which heals joints”, the leaf was used in Maoka, Sakhalin as a plaster precisely for this purpose (Chiri 1953). It is an annual that is found in wet locations mainly in northeast Hokkaido (Ohwi 1984), but also in southern Sakhalin and the southern Kurils.

Broomrape Family (Orobanchaceae)

- *Boschniakia rossica* (Cham. & Schltdl.) Standl., northern groundcone

This plant is a parasite living on the root of the alder (*Alnus japonica*). Its Ainu name is *eha* or *aha* (Chiri 1953). In a footnote about Matsuura Takeshiro, in their work *Karafuto Nikki* (Sakhalin Diary), Suzuki Shigehisu indicates that the Ainu call it *eba* (Suzuki and Matsuura 1860).

In Shiraura on the east coast of Sakhalin, it was ground and applied to bruises, cuts, and wounds (Mitsubishi 1976). However, in Maoka, also in Sakhalin, the Ainu regarded it as the food of the gods and avoided contact with it (Chiri 1953).

Cabbage Family (Brassicaceae)

- *Cardamine flexuosa* With., cardamine or bittercress
- *Cardamine yezoensis* Maxim.

Cardamine flexuosa is known as **sipe-kina**, or “salmon grass” in Ainu, a reference with obscure meaning. It is an annual or perennial that grows on riverbanks in semi-shade. It is distributed primarily in southern and southwestern Hokkaido but is also found along the Teshio and Ishikari Rivers (Kawano 2007). It is also present in Sakhalin (Ohwi 1984). In Nayoro, the Bittercress was pickled (Chiri 1953).

Cardamine yezoensis is known as **charkarpe**, **nissesseri**, **fusube**, etc. **Charkarpe** means “to stimulate the mouth” and refers to the tartness of the root.

Lily Family (Lilaceae)

- *Cardiocrinum glehnii* Makino, cardiocrinum lily

Along with aconite, whose root was used as a poison in hunting, this lily was a central pillar of the Ainu culture; the starch extracted from its bulb was an important dietary counterpoint to the usually abundant protein derived from fish and venison. In Ainu, it was called **turep**, a name derived from the phrase **i-rure-p**, or “something that dissolves”. The starch derived from the bulb was called **haru-ikkew**, or “the backbone of our food” (Fukuoka 1995).

In the “Song of the Younger Sister of Okikurumi” is the following description.

Groups of women going out to dig up cardiocrinum lily bulbs, threw down, here and there, their small baskets and raced with each other to fill the big baskets. In the woods by the river the groups of young women rushed about busily here and there to dig up the cardiocrinum lily bulbs (Philippi 1979:233).

Collecting the bulbs, like most gathering activities, was women’s work. The small baskets tied to their waist might hold several dozen bulbs. These were then transferred to larger baskets that were carried home on the back. The cardiocrinum lily grows in the shade in riparian woodlands throughout Hokkaido but especially in the south and southwest. Miyabe lists it as common in the Ishikari and Tokachi basins and in Kushiro in the east (Batchelor and Miyabe 1893). It also grows in southern Sakhalin and the southern Kurils (Kawano 2007; Ohwi 1984).

The plant starts to extend its aerial shoots in mid- to late April, quickly followed by the leaves. It buds in June, and in late June and in early July, the pale, cream flowers can be seen everywhere in the upland valleys. It sets flowers once the stem has developed. The stem may be as high as 1.5 m when it blooms.

It takes up to seven or eight years to bloom, at which time the leaves wither and the plant dies. Generally, in Hokkaido the optimum time to harvest the bulb that, by then, can have

grown to the size of a fist, is in May. Beyond this date, development of the stem and flowers consume most of the bulb's energy so that, by June, little starch remains (Takenaka Takeshi, pers. comm. c. 2008). However, the date of harvesting depends on location and altitude and, in the Saru Basin, it is between late June and early July (Chiri 1953).

The method of extraction of the starch varied slightly from place to place. Here is the method used by the Ainu of the Pacific coast. It is derived from accounts by Neil Gordon Munro, who observed it in the Saru Basin in the late 19th and early 20th centuries (1963), by Kayano Shigeru, who lived on the Saru River in Niptani, and by Fukuoka Itoko, who conducted research throughout Hokkaido (Fukuoka 1995).

To remove the bulb from the soil, the Ainu women would pull from the base of the stem, or, if the leaves had already wilted, they would dig it up with a stick called *turep-ta-ni*. The stick was often cut and fashioned in place (Kayano 1996).

The bulbs were carried home in a basket called a *saranip*; there they were carefully washed and mashed. The bulb has a scaly surface so washing had to be thorough. The mash was then placed in a barrel and covered with water. As the mash soaked, the skins of the bulbs, called *akam*, floated to the surface and the starch collected at the bottom of the barrel. The water was drained after five or six days, and the fine starch that settled out was placed in a cotton bag to be squeezed dry. The finest starch was used as a stomach medicine and as a cure for headaches. It was carefully dried and stored away.

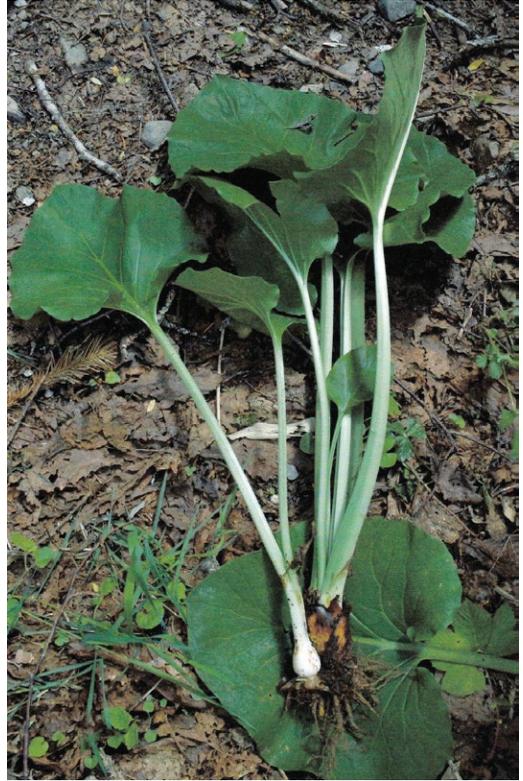


Figure 28. *Cardiocrinum* lily bulbs collected in Shiretoko, Northeastern Hokkaido. Photo by Dai Williams.

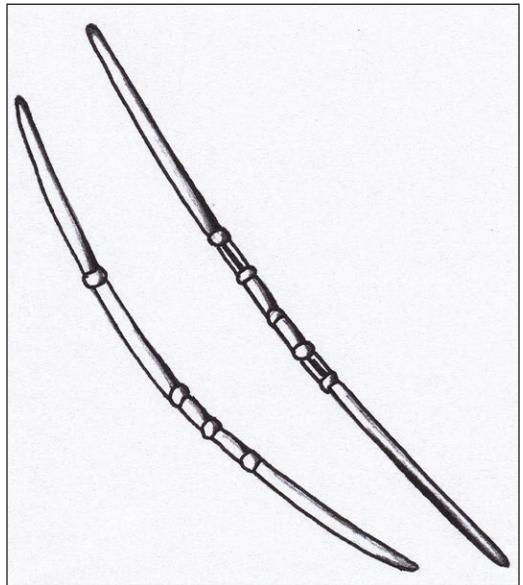


Figure 29. Digging sticks, Shiraoi, southwestern Hokkaido. Illustration by Dai Williams.

The *akam* was wrapped in, or covered by, the leaves of butterbur, chrysanthemum (*Chrysanthemum* spp.), magnolia, or mugwort (*Artemisia montana*), and left to ferment in a well ventilated place in the shade for a week or two. Then it was formed into doughnut-shaped cakes, called *shito* or *shto*, that were dried in the sun and stored in the house or storehouse until winter.

The starch powder and *akam* are comparable to potatoes in terms of calories or sugars but contain more protein. The *akam* is also high in fibre and inorganic materials (Anetai Masaki, pers. comm. c. 2008).

Typically, cakes made of the bulb of the cardiocrinum lily were cut or broken up, soaked in water, and added to a kind of gruel made of beans and rice or millet, that was a staple of the Ainu diet. It was called *onturepsayo*, or “fermented lily gruel”. To increase the flavour, bear fat was added to it. In every Ainu home, bear or seal fat hung from the rafters in containers made of a seal’s stomach.

In Sakhalin, the washed and chopped bulbs were wrapped in a small mat woven from the stems of dunegrass (*Leymus mollis*) and placed under the eaves to ferment for two weeks. Then the mash was reduced to a paste in a mortar and formed into discs with five holes in them to speed up the drying process. On sunny days they were placed outside; on rainy days they were placed on the shelf over the hearth. The dried cakes were called *erapas-akam* or *kiw-taxpe*, “lily lumps”, which, in winter, would form the basis of a dish called *erapas-chikaripe*.

Erepas is the Ainu word for any kind of imbricated bulb; *chi-kari-pe* literally means “the thing we make” and, in this case, was a kind of gruel. To make it, the cakes were first soaked in water and, when soft, they were cooked with a small amount of rice (which was precious) and fish or animal grease. It was allowed to cool and then dressed with a little more grease.



Figure 30. *Shito* or starch cakes made from the bulbs of the Cardiocrinum Lily. Photo courtesy of Anetai Muraki.

While the starch powder, *yuup* or *irup* (Kayano 1996), was primarily used as medicine, it was also used to thicken soups, called *irup-sayo*, or to make cakes for special occasions. In Bihoro, the starch was made into balls that were roasted in the embers in the leaves of butterbur, knotweed (*Polygonum* spp.), or magnolia and eaten as is.

Fukuoka learned a slightly different method of extraction from Ainu women in Asahikawa (1995). There, the bulbs contained the maximum amount of starch around July 10. They were dug up, broken down into their sections, and carefully washed in stream water. Then the bulbs were pounded with an improvised pestle made of the bark of linden (*Tilia japonica*). The resultant sticky paste was placed in a cotton bag and the starchy liquid squeezed out. It was collected in the hollow stems of cacalia (*Cacalia hastata*). The narrower end of the stem was stopped with a leaf of bamboo grass (*Sasa* spp.), and the other end, cut at an angle and sealed with another leaf. The stem was then placed in the embers of the fire to be cooked. When ready, the stem was broken open and the starch eaten. It was important to cook the cacalia stem slowly, because if it became too hot it would explode. As elsewhere, the fibrous dregs remaining in the bag were set aside and formed into cakes about 1 to 1.5 cm thick and 7 to 10 cm in diameter.

If a hunter found a mature cardiocrinum lily when working in the mountains, he would dig up the bulb and mash it with the blade of his hatchet, and either wrap it in a leaf or stuff it into the hollow stem of a knotweed (*Polygonum* spp.). This was then placed in the fire to bake.

There are many place names in Hokkaido that make reference to the cardiocrinum lily. On the Upper Osarape River is a place now called Ionkaushibetsu, a name derived from the Ainu *i-onka-us-pet*, or “the river where we ferment them”. Processing required considerable amounts of water so, in some areas, women would work at the river rather than in the village.

Like the aconite, katsura (*Cercidiphyllum japonicum*), yew (*Taxus cuspidata*), and oak, all of which provide the Ainu with important resources, the lily is a female deity (Yamada 2001). The aconite yields the poison with which the Ainu tipped their arrows, the yew was transformed into a bow, and the oak provided the acorns that guaranteed against hunger during a long, hard winter. The cardiocrinum lily was a symbol of nature’s constant generosity and could be counted upon to provide the comfort of a full stomach on a daily basis. It was also used as a gift to the gods. Garlands of cardiocrinum lily bulb cakes were hung at the altar during *iyomante*, the ceremony to return the spirit of the bear to the land of the gods. They would provide the bear with sustenance on his journey.

Matsuura Takeshiro came to be a man much respected and, perhaps, even loved by the Ainu with whom he dealt. In his *Teshio Journal* (Matsuura 1862), he describes his journey up the Ishikari River in 1857. He parted from his Ainu guides at Chubestsufuto where they exchanged gifts. Matsuura was given a number of traditional Ainu items, including a garland of cardiocrinum lily bulb cakes (Hanasaki 1988). When leaving on a journey, the Ainu would carry a string of cakes across their shoulders, and thus here it seems that his Ainu guides were

expressing their affection and concern for Matsuura through a gift that would provide him sustenance.

The cardiocrinum lily has developed a unique strategy to ensure its survival. As the bulb develops in spring, and its energy is absorbed by the stem pushing upward to set the flowers, other smaller, so-called “daughter” bulbs are released from the roots into the surrounding soil (Takenaka Takeshi, pers. comm. c. 2008). These are the new generation of the lily, although it is also propagated by seed. Over the course of the summer, these bulbs develop leaves and thus announce their presence to the Ainu. In a year of poor hunting or fishing, the Ainu would sometimes be forced to harvest these bulbs, although they were small and contained little starch. While they were a source of “famine food”, the Ainu were well aware that overexploitation of these bulbs would result in decreasing numbers of mature lilies in subsequent years. Such drastic measures were probably repeated in many Ainu villages in the 18th and 19th centuries as able-bodied men were transported by the Japanese to their herring and sardine fishing stations on the coasts. Only women, children, and the elderly were left in the villages. As they were neither able to hunt nor fish successfully, many eventually died of disease or starvation.

Ultimately, the survivors were absorbed into the Japanese population of Hokkaido, and many traditions, like the harvesting of lilies and the extraction of starch, were abandoned. There are several other lilies, like *Lilium medeoloides* A. Gray and *Lilium lancifolium* Thunb., present in Hokkaido, southern Sakhalin, and the southern Kurils, but while there is no record of their use by the Ainu, it seems likely that, locally, they were a valuable source of starch.

Birch Family (Betulaceae)

- *Carpinus cordata* Blume, heartleaf hornbeam

Heartleaf hornbeam is a deciduous tree that grows in forests in Hokkaido above an altitude of 200 m (Ohwi 1984). It grows slowly and attains 15 m in height. It requires moist soil and can grow in full sun or semi shade. Its usual Ainu name is *pese-ni*, that translates as “bark tree”, but it was sometimes known as *yar-kapar*, meaning “bark stripped off thin” (Chiri 1953). Thus, both names seem to refer to the use of the bark to make an infusion drunk as a tonic (Kinoshita and Takemura 1993). In an oral tale, or *yukar*, concerning the thunder god who married the Japanese crane, the god cuts a branch off the heartleaf hornbeam and fashions it into a finger to comfort the crane’s soul (Chiri 1953; Shiratori et al. 1990).

Poppy Family (Papaveraceae)

- *Chelidonium majus* L. var. *asiaticum* Ohwi, greater celandine

Chiri records that Ainu elders reported that greater celandine was given its Ainu name of *otum-puy-kina*, or “anal pore grass”, because the broken stem exudes a yellow sap that was used to treat ailments of the lower digestive tract (1953). Further, the leaves or stems were inserted into the anus to treat haemorrhoids (Mitsuhashi 1976) and an infusion of the stem

was drunk to counteract constipation. Kinoshita notes that the leaves were rubbed to soften them before insertion (Kinoshita and Takemura 1993).

It is a biennial herb with the flowers and buds appearing in alternate years (Ohwi 1984). It grows in moist soils in meadows and thickets in the lowlands of Hokkaido. It can grow in full sun to deep shade. It was harvested as it bloomed in late May to early July. The leaves and stems were most effective when fresh, but were also dried for later use. The leaf, either fresh or dried, was also used as a plaster or was steeped to produce a bitter drink or a wash for wounds (Chiri 1953). Kinoshita speculates that, as the leaf contains several alkaloids, it was probably effective in this last application, especially if the treatment was of sufficient duration (Kinoshita and Takemura 1993).

Chloranthus Family (Chloranthaceae)

- *Chloranthus japonicus* Siebold, chloranthus

The Ainu name for chloranthus, *ine-ham*, means “four leaves” and, in fact, the fine, thread-like, white flowers bloom amid them in mid-May. It is distributed throughout western and central Hokkaido and does best in shaded, moist forest soils and alongside streams in the uplands. It is also found in the southern Kurils and Sakhalin. It is a glabrous perennial (Ohwi 1984).

The only known use by the Ainu was of the stems and leaves to make a medicinal tea that was considered to be a stimulant (Kinoshita and Takemura 1993). Like other plants used to make such teas, chloranthus gives off a strong odour that the Ainu believed had the power to ward off evil spirits (Fukuoka 1995).

Buttercup or Crowfoot Family (Ranunculaceae)

- *Cimicifuga simplex* (DC.) Wormsk. ex Turcz., bugbane

This erect, perennial herb grows in partial shade and moist soils in woodland meadows and alpine meadows throughout Hokkaido, southern Sakhalin, and the Kurils (Ohwi 1984). Its Ainu name is *munepa*, whose meaning is unknown (Chiri 1953). The only reported use of the plant by the Ainu was of the root as a heart tonic (Mitsuhashi 1976).

Aster, Daisy, and Sunflower Family (Asteraceae)

- *Cirsium* spp., Thistle

There are about ten species of thistle that grow in Hokkaido, Sakhalin, and the Kurils (Ohwi 1984). They occupy various ecological niches from grassy lowlands to alpine sites, such as that on Mount Apoi on the Pacific coast of Hokkaido. They have names like *yayan*, *hamican-kina*, *ayus-kuttar*, *anchami*, and *umma-anchami*, all of which suggest traditional use by the Ainu (Chiri 1953).

The young leaf of some thistle varieties is edible. Chiri reports that, in Horobetsu, the leaf of *Cirsium yezoense* (Maxim.) Makino was blanched and added to soups (1953). and was

infused and used as a treatment for post childbirth problems and vitamin D deficiency. The root is also edible once it has been peeled and steamed (Chiri 1953).

Poppy Family (Papaveraceae)

- *Corydalis ambigua* Cham & Schldtl., corydalis or fumewort

This perennial is known as *toma*, *tomara*, or *itopenra*, the latter name meaning “sweet leaf” (Chiri 1953), and, indeed, when sucked the leaf tastes sweet. The spherical tuber contains toxic alkaloids but, when properly prepared, is edible (Fukuoka 1995); it was soaked in water for two or three days and then pounded with a mortar to release the starch which was used to make dumplings (Chiri 1953). It was used by all Ainu groups, was collected in great quantities, and was highly regarded. It was harvested when the leaves wilted in June or July.

As it is common in Hokkaido, it was probably readily and locally available to most villages. However, Fukuoka reports that women would sometimes travel upstream considerable distances from the village in search of it. As the roots are deeply seated in the ground, digging them was labour-intensive. Such long journeys and hard work often required building and staying in temporary huts for several days.

In Sakhalin, the tubers were roasted or boiled and eaten dressed with oil. To preserve the starch for later use, the tubers were boiled, pounded, and formed into small balls strung on a cord, and then dried (Chiri 1953). When needed, the balls were soaked in water, then added to other ingredients, such as lard, and cooked into a stew (Fukuoka 1995).

The corydalis grows in moist soils in semi-shaded areas in woodlands in the uplands (Ohwi 1984) often in association with the Kamchatka lily (*Fritillaria camschatcensis*) (Takenaka Takeshi, pers. comm. c. 2008). It is widely distributed in Hokkaido and is also found in Sakhalin and in the Kurils.

There are at least two places that reference the presence of corydalis at one time. On the Osarape River near Asahikawa is a place called Tomatausnai, or “the river where we dig corydalis”; on The Shari River is Tomausnay, or “the river of many corydalis” (Chiri 1953).

Like other important plants, corydalis has the basic unadorned Ainu name of *toma* (Chiri 1953). The edible bulb of yellow star of Jerusalem (*Gagea lutea*), in contrast, was of inferior quality and was not eaten universally. It was given the name *chikap-toma*, or “bird’s *toma*”, which has a slightly negative connotation.

Orchid Family (Orchidaceae)

- *Cremastra variabilis* (Blume) Nakai, cremastra

The Ainu name, *mimakukotouk*, means “sticks to the tooth”. When the root is eaten, it is both sweet and sticky. It could be eaten raw but was usually boiled or baked and eaten with fish oil or crushed salmon or trout roe (Chiri 1953).

Cremastra is a common herb that grows best in moist soils in both lowland and upland woodlands throughout Hokkaido, and is also represented in Odomari in southern Sakhalin (Batchelor and Miyabe 1893) and the southern Kurils (Ohwi 1984).

It also had medicinal uses. Chiri reported that the root was dried and, when needed, chewed to produce a paste applied to the stomach to ease pain; additionally, the dried roots were powdered and made into a paste that was mixed with warm water to treat frostbite, chapped skin, or cuts (1953). The crushed bark of the Amur cork tree (*Phellodendron amurense*) was sometimes added to the paste. Sekiba Fujihiko, in his book on Ainu medical practices, noted that the Ainu treated a toothache by biting on the raw root.

In his *Shiretoko Journal*, Matsuura reports that the paste was also used as a glue in making lacquer bowls (Matsuura 1977 [1858a] in Fukuoka 1995). High quality lacquer was imported from the Japanese, but everyday ware was often made locally by the Ainu.

Milkweed Family (Apocynaceae)

- *Cynanchum caudatum* (Miq.) Maxim., milkweed

Milkweed is a perennial climbing vine that grows in shady locations in the uplands of Hokkaido and the southern Kurils (Makino 1961; Ohwi 1984). As it matures, the root thickens and develops a toxin to which the Ainu ascribed considerable power (Chiri 1953). The root could reach 50 cm in length and 5 cm wide. However, the Ainu name *penup*, refers not to the root but to the milky juice that is excreted from the stems and leaves. These were collected from late May to mid-June (Chiri 1953).

Although the root was poisonous, and, when cut, malodorous, it was edible and was used as famine food by the Ainu (Chiri 1953). Fukuoka reports that in Chikabumi, Asahahikawa, it was either steamed or boiled (1995). However, it could be eaten only in small quantities, or it would cause illness and even death. The only known method to counteract poisoning was to induce vomiting.

Because of its smell, it was thought to expel evil (Mitsubishi 1976), and there were a number of ways in which it was employed; when an Ainu fell ill, someone would sit at the head of the patient's bed and chew the root and immediately spit it out over the patient's body, or spread the pulp and juice over both the interior and exterior of the house. As they did this with one hand, they would hold a knife or sword in the other as if they were trying to cut the ties between the patient and the evil forces afflicting him. During an epidemic, the root was hung at the door to prevent disease from entering, and when Ainu went into battle, they carried a piece of the dried root with them to ensure their well being. In a similar vein, at a critical moment in a bear or deer hunt, the Ainu would bite into the dried root they always carried with them (Chiri 1953). It had other uses and, in his book titled *Toh-yuu-ki* and referenced by Fukuoka Hirachi, Hezutsu describes the following,

In June and July even in Hokkaido it is hot yet in Saru and Akkeshi fine weather is rare. Here in spring and summer it is often cloudy or foggy When they go fishing they bite into the milkweed root to ensure that the weather will be fine They believe that milkweed changes the mood of the god of the wind (Hezutsu 1943 [1784] in Fukuoka 1995:167).

In Maoka in Sakhalin, the Ainu believed that if they chewed the root in the presence of an angry man it would calm his spirit. At one time the detoxified root was used by Ainu shamans, probably for the same or similar purpose (Chiri 1953).

The Ainu word *hussa* has two meanings with an obvious relationship between them; the first is a magic spell and the second is the verb to spit out the chewed root of the milkweed. In order to cure an ill person, an Ainu shaman would blow strongly on them. Such deep exhalations were accompanied by “hussa”, a sound that the spirits of sickness abhorred; when combined with the use of the root of milkweed, the Ainu believed that efficacy was increased (Chiri 1953).

In other medicinal applications, the shredded root was placed on the eyelids before sleeping to cure eye problems, and ingestion of small amounts of the untreated root was thought to cure stomachaches, diarrhea, and parasites. In Chikabumi, Asahikawa, Fukuoka reports that chewing the root and immediately spitting it out would stop a bad dream (1995). To cure a headache, the root was baked and a piece of it placed in a headband. An infusion was used to prevent infection of wounds, to counteract blowfish poisoning, and cure a hangover (Chiri 1953). Such multiple applications of the milkweed suggest it was one of the most important plants in the Ainu pharmacopia.

Mint Family (Lamiaceae)

- *Elsholtzia patrini* (Lepech.) Garcke (*Elsholtzia ciliata* [Thunb.] Hyl.), elsholtzia

Elsholtzia is an erect, branched annual that is found widely in southern, southwestern, and eastern Hokkaido and in the southern Kurils (Ohwi 1984). Its preferred habitat is the moist, disturbed soil of old fields or verges and full sun. Its Ainu names are *ento*, *seta-ento*, or *ento-usey*, the latter a reference to its use in treating hangovers (Mitsubishi 1976).

The stems and leaves were burned to drive off evil spirits; the root was used to make an infusion for treating colds or upset stomach. The leaf is edible and was collected in large quantities to add to stews and to make tea. It was obviously of sufficient importance to some Ainu groups that they cultivated it. Matsuura notes this in his *Yubari Journal* (Matsuura 1977 [1857]).

When travelling in the mountains, hunters would cork their water bottle with the aromatic leaf to ward off the demons of pestilence (Chiri 1953).

Rose Family (Rosaceae)

- *Filipendula camtschatica* (Pall.) Maxim., filipendula

Known as *ishime-kina*, *isime-kut*, or *isime-kuttar* in Ainu, filipendula is a perennial that grows in partial or full sun and moist soils in the uplands of Hokkaido, especially in stream valleys (Ohwi 1984). Its alternate names are *sipe-kuttar*, *yuk-kuttar*, and, in Odamari, Sakhalin, *kamuhoraxtex* (Chiri 1953).

For hives or nettle rash, the leaf was infused and the infusion used to wash the affected area. It was also given to bear cubs with diarrhea (Chiri 1953).

Fungi Kingdom (mushrooms)

Ainu ethnomycological information is scant and inconsistent. Some sources suggest the Ainu did not eat mushrooms at all; others describe the delight of Ainu women in finding them (Fukuoka 1995). There is even a folktale on how the Ainu might have developed a taste for them. In it, a man is instructed by the god of snakes how to eat and to preserve for winter, *cikisani-karus*, the mushroom that grows on the Japanese elm (*Ulmus davidiana*). As a result, his spirits were lifted and he was able to hunt every day (Association for Ainu Folklore 1983).

In reality, it is more likely that the Ainu came to use the mushroom in their cooking and trade after the arrival of the Japanese. The women who delighted in finding them were probably thinking not of the taste or nutritional value of the mushroom, but in terms of what they could trade for them.



Figure 31. Mushrooms growing at the base of a dead elm. Ponpet, Shiretoko, northeastern Hokkaido. Photo by Dai Williams.

In Kayano Shigeru's *Ainu-Japanese Dictionary* is a reference to mushrooms, alluding to their importance to modern Ainu in the Saru Basin. "I'm going to let you in on a secret. There are *maitake* mushrooms growing at the base of a big oak [species unknown] near the source of the Okenusshi River" (Kayano 1996:151).

The general name for mushrooms was *karush*, but this was often qualified according to which tree they were associated. Thus, *fup-karush* grew under the fir and *pero-karush*, under the deciduous oak, *Quercus mongolica*. In Kamikawa, the most common mushroom grew in association with the Daimyo oak, *Quercus dentata*, known in Ainu as *komu-ni*. It was eaten fresh or dried and used in winter soups (Kayano 1996). According to Fukuoka, the other major mushroom, known as *yuk-karush*, was considered a delicacy among the Ainu. It was used mainly in soups.

Other mushrooms were associated with alder (*Alnus* spp.), elms (*Ulmus* spp.), chestnut (*Castanea crenata* Siebold & Zucc.), Japanese white birch, and Manchurian lilac (*Syringia reticulata* Blume H. Hara) (Fukuoka 1995). Batchelor references the place name, Atsukarushi, that is derived from the Ainu words *at-karush-i*, or "place of the Manchurian elm mushrooms". However, like many Ainu-named places, this has been lost (Batchelor 1929).

Lily Family (Lilaceae)

- *Gagea lutea* (L.) Ker-Gawl., yellow star of Bethlehem

This perennial grows in damp habitats in several parts of Hokkaido (Ohwi 1984). There are major concentrations in the central Tokachi Basin, the Chitose-Otaru-Sapporo area, the upper Ishikari Basin, the Pacific coastal plain west of Cape Erimo, and the Oshima and Nemuro peninsulas (Batchelor and Miyabe 1893; Kawano 2007).

It is a representative spring ephemeral of northern temperate forests and is also present in Sakhalin and the Kurils. It is very early to bloom in spring (right after snowmelt), along with pheasant eye (*Adonis amurensis*) and corydalis. In early to mid-April it begins to appear and often grows in great density (Kawano 2007).

Its egg-shaped bulb is edible once boiled or baked in the coals of the wood fire. It was inferior in taste to true *toma*, corydalis, and thus was called *chikap-toma*, or "bird's *toma*" (Chiri 1953). It was collected from mid-April to mid-May. In Nemuro and Horobetsu, the leaf was added to soups (Chiri 1953).

Carrot or Parsley Family (Apiaceae)

- *Heracleum dulce* Fisch., cow parsnip

Along with those of butterbur, the stems of cow parsnip are a favourite food of female bears in late spring or early summer (Takenaka Takeshi, pers. comm. c. 2008). Despite their pungent smell, they were also an important plant to the Ainu diet at a time of the year when other food resources might be in short supply. Thus, in collecting them, the Ainu had to be aware

of the potentially dangerous competition from bears. Such caution also had to be taken in collecting butterbur, mushrooms, and autumn berries and nuts.

Cow parsnip does well on the grassy high mountain slopes in Hokkaido, Sakhalin, and the Kurils. Thus, collecting it might have required a considerable journey. It is a perennial with hollow stems 1 to 2 m long (Ohwi 1984). In Ainu it is known as *pittok*, a rather obscure reference to its use in binding or healing wounds (Fukuoka 1995). The Ainu would cut it at the root and separate the young stems from the leaves. The leaves were dried and stored for winter use. The young stems could be eaten raw but were usually peeled, split, washed, and bundled, and they, too, stored until winter. When needed, they were soaked in lukewarm water and boiled with beans to make a winter stew called *pittok-rateskep*. In some areas, lard was added to make a gruel. Mixed with herring roe, a little seal fat, and diatomaceous earth (added to counteract the pungency), it was given to a mother whose milk supply had ceased (Chiri 1953).

Matsuura recorded his second visit to Sakhalin in 1857 in *Karafuto Nikkhi* (Sakhalin Diary). In it, he describes a banquet he received from the Ainu at Shiraura (Suzuki and Matsuura 1860 in Hanasaki 1988). The main dish consisted of the bulbs of corydalis and the Kamchatka lily that had been boiled and mashed, and to which were added the dried stems of butterbur and cow parsnip that had been previously soaked in water. To this mixture was added seal oil, the flesh and oil of trout, and a small amount of diatomaceous earth.

The leaves were chewed along with those of Solomon's seal (*Polygonatum odoratum*) and inserted into the anus to treat a fissure. This treatment was probably effective as the plant contains an analgesic. Kinoshita and Takemura (1993) report that, in Mihoro, the leaves were used to treat baby rash, and to act as a cleansing agent and compress for wounds. An infusion of the roots was thought to be effective as a stomachic or in treating diarrhea (Chiri 1953).

Cow parsnip had many different names depending on location and local use. As noted above, generally, it was known as *pittok*, but in parts of Sakhalin it was called *chi-kisa-kina*, or "the plant from which we strip the skin", and in other parts it was called *chi-pere-kina*, or "the plant we split". In Sakhalin, pacifiers were made of the hollow stem, known as *har*, that was filled with the juices of a dish called *siturkina-chikaripe*. To make this dish, first a cow parsnip leaf was soaked in lukewarm water to soften it. Fish roe was then finely chopped, boiled, removed from the water, and placed in a wooden bowl. A small amount of seal oil was added and the mixture pounded. To this was added diatomaceous earth that would remove some of the strong flavour of the leaf. Some of the juices were poured off into the hollow stem from which a child would suck through a hole (Chiri 1953).

Heather Family (Ericaceae)

- *Rhododendron tomentosum* Harmaja, Labrador tea, or wild rosemary

This small, evergreen shrub, 0.5 to 1 m tall, grows in moist soils and prefers the shade. It is found on upland moors and wetlands throughout Hokkaido, Sakhalin, and the southern

Kurils (Ohwi 1984). Its usual Ainu name is *haspa*, which is a corruption of *has-ka-map*, or “snow on its branches”. It is also known as *tomamas* and *nuhca* (Chiri 1953).

The dried leaves were infused to make a tea served with dried fish or used in treating colds, menstrual pain (Mitsuhashi 1976), and upset stomach. The leaf is slightly narcotic and was smoked in Bihoro. It was sometimes used medicinally in combination with angelica (Kinoshita and Takemura 1993).

Along with other aromatic plants, like the dried shredded leaves of wild leeks and the branches of Yezo spruce or larch (*Larix* spp.), it was also used by shamans to ward off evil. The shaman would either burn them to release the aromatic oils, or infuse them and spray the infusion from the mouth (Ohnuki-Tierney 1974).

Legume Family (Fabaceae)

- *Lespedeza bicolor* Turcz. var. *japonica* T. Nakai, field bush clover

The Ainu calendar was based on close observation of natural phenomena. For example, in Ashoro, they believed that when the field bush clover bloomed, the trout began to appear and when blossoms fell, the salmon would come up river (Fukuoka 1995). For a society so dependent on fishing, these were obviously important markers.

The field bush clover is a deciduous shrub that can grow as high as 2 m; it is usually found in Hokkaido along paths, at forest margins, in meadows in the uplands, and in mountains up to 1000 m; it grows in shade or semi-shade and blooms in autumn (Makino 1961; Sato 2002).

Its usual Ainu name is *nup-us-sinkep*, or “the field bush clover on the meadow” (Chiri 1953). However, it has other names that refer to its uses. One is *cep-maka-ni*, or “fish open tree”, a reference to the use of its stems in making splints used in drying salmon (Chiri 1953). The stem is odorless and thus was ideal for this purpose. The stem was also used to roast the salmon; during the summer and autumn when the Ainu built temporary shelters along the rivers, in which they roasted trout or dace, they would cut 30 cm long sections of the branch

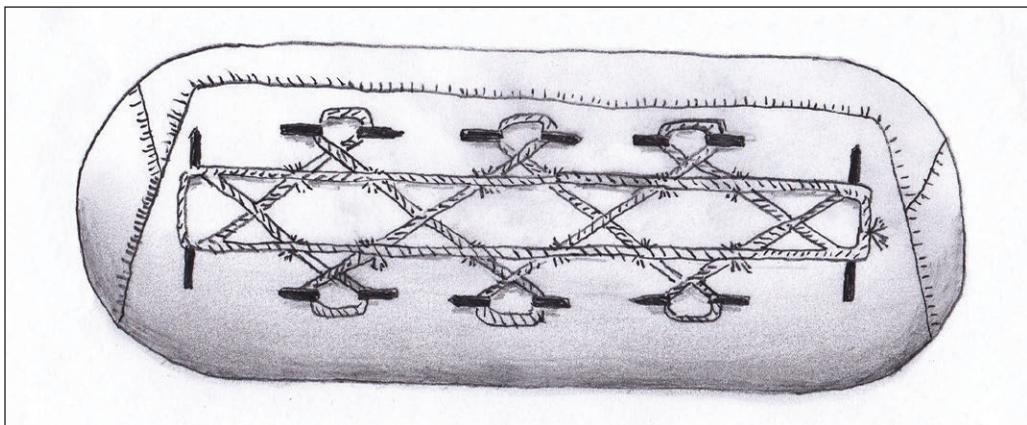


Figure 32. Funerary bundle made of woven cattail cloth and tied with rope secured by pins made of the wood of field bush clover (after Chiri 1953). Illustration by Dai Williams.

of the field bush clover to act as a spit. These were called *i-ma-ni*, “roast it tree”, or *chi-yasa-i-ma-ni*, or “we tear it, roast it tree” (Kayano 1978, 1996).

The wood was often used for making pegs, including those for securing mats to the dirt floors of a house and for securing funeral shrouds about a corpse (Chiri 1953). Watanabe notes its traditional use in construction of *kutu*, a basket-type fish trap (Munro 1963; Watanabe 1972).

Asparagus family (Asparagaceae)

- *Maianthemum dilatatum* (Alph. Wood) A. Nelson & J.F. Macbr., wild lily of the valley
It is known as *kisar-peot* or *hukakam* in Ainu. According to Matsuura Takeshiro, in his *Tokachi Nisshi* (Tokachi Journal) (1977 [1861]), the leaf was soaked in saliva and applied to boils in order to draw out the pus. The same method was used in Shiraura, Sakhalin (Chiri 1953).

It is a perennial that grows throughout Hokkaido on shaded, moist soils, often in dense coniferous or deciduous forests; it is also represented in southern Sakhalin and the southern Kurils (Ohhwi 1984).

Royal Fern Family (Osmundaceae)

- *Osmunda japonica* Houtt., fiddlehead fern
- *Osmunda cinnamomea* L.

Variouly known in Ainu as *ayrapkina*, or “arrow fletch grass”, *sorma*, or *kamuy-sorma*, these ferns were used in the construction of temporary mountain huts, both for roofing and flooring (Chiri 1953).

Osmunda japonica is not edible, but Sarashina noted that the young leaf stems of *Osmundia cinnomomea* were edible. *O. japonica* is common in Hokkaido but also present in Sakhalin (Ohwi 1984). *O. cinnamomea* is also common in Hokkaido and present in Sakhalin and the southern Kurils (Ohwi 1984).

Plantain Family (Plantaginaceae)

- *Plantago asiatica* L., plantago

When Sarashina Genzo, the early 20th century Japanese anthropologist, was walking with his Ainu guide in the Asahikawa area, his guide picked the leaves of a plantago, roasted them over an open fire, and applied them to his forehead to reduce a headache (Fukuoka 1995). In fact, the Ainu believed that the leaf would relieve any body ache and reduce inflammation.

In Sakhalin, the Ainu used a hot compress of the leaf to treat boils (Chiri 1953); the compress was changed frequently. The stem was inserted into the urinary tract to promote urination, and an infusion of the leaf was used to cleanse the skin when treating haemorrhoids, anal prolapse (Kinoshita and Takemura 1993; Mitsunashi 1976), and ringworm. In Mukawa, an infusion of the leaf was drunk to counteract diarrhea.

The most common Ainu name, *erum-kina*, means “mouse grass”, so-called because the long flower stalks emerge from between the leaves to resemble a mouse’s tail (Chiri 1953). *Plantago* grows along roadsides, in other disturbed soils, and in sunny places in meadows throughout Hokkaido and southern Sakhalin and the Kurils (Ohwi 1984). Another species, *P. major* L., is found in moist soils near the coast in Hokkaido, and yet another, *P. camtschatica* Link, is present in Sakhalin and the Kurils.

Asparagus Family (Asparagaceae)

- *Polygonatum officinale* var. *maximowiczii* F. Schmidt, Solomon’s seal

Solomon’s seal is a shrub that grows in lowland woodlands and meadows in moist or well-drained soils throughout Hokkaido (Ohwi 1984). Miyabe, however, notes it only in the Oshima Peninsula in the extreme southwest (Batchelor and Miyabe 1893). Its roots are elongate and 4 to 7 cm in diameter, and it was collected from late April to early July.

Its Ainu name, *etoruratkup*, refers to the bell-shaped flowers that hang showily from the curved stems. However, the Ainu had no interest in the beauty of the flowers; they were focused on the qualities of its large, starchy, edible root. This was either baked fresh in the embers or dried, to be boiled at some later date.

It was also used medicinally. Slices of the root were chewed with the leaf of *pittok*, cow parsnip, and the two inserted directly into the anus to treat haemorrhoids. The root was also used as a mouthwash, and the fruit was ingested as a stomach medicine (Chiri 1953). As it was considered shameful to present a skinny bear cub at *iyomante*, the cub would be fattened up on the roots of Solomon’s seal.

Polygonatum maximowiczii F. Schmidt shared the same name, or was alternatively known, as *torarakex*. It is present in Hokkaido, southern Sakhalin, and the southern Kurils (Ohwi 1984). Freshly dug roots were placed in the hot embers to bake; raw roots were dried and, when needed, boiled and eaten. As with *P. odoratum* above, the root was also inserted into the anus to treat hemorrhoids and the fruits eaten for stomach ailments (Chiri 1953).

Rose Family (Rosaceae)

- *Prunus padus* L., bird or mountain cherry
- *Prunus ssiori* F. Schmidt, Japanese bird cherry
- *Prunus sargentii* Rehder, Hokkaido mountain cherry

All three types of cherry have names in Ainu that allude to either their characteristics or their use.

Prunus ssiori grows in partial shade or full sunlight in woods in the uplands in Hokkaido, southern Sakhalin, and the southern Kurils; it requires moist soils and can reach 23 m in height (Ohwi 1984); It was known as *siuri* or *siw-ri* in Ainu, possibly a reference to the bark which was used as an infusion.

Prunus padus grows by streams in moist soils of open woods and can reach 15 to 20 m in height in Hokkaido and southern Sakhalin (Ohwi 1984); it was known as either *kikin-ni* (Batchelor 1905), or *karimpa-ni*, the latter, a reference to its bark that had several uses.

Prunus sargentii grows in both lowland and upland zones in both Hokkaido and southern Sakhalin, reaches up to 15 m in height, and also requires moist soils (Ohwi 1984; Sato 2002). It was known as *karimpa-ni*.

The primary utility of each of these trees appears to have been the use of its bark to reinforce bows and other wooden tools (Chiri 1953). The glossy outer bark could be removed at almost any time of the year without injuring the tree. It was cut into 5 to 10 mm wide strips that were dressed with a blade to remove any imperfections. The bark was wrapped around bows made of yew, around sheaths, oars, bentwood boxes, and the shafts of spears or harpoons. The name *karimpa-ni* is derived from the verb, *kari*, “to go around” (Chiri 1953).

The glue used to attach the bark was derived from chewing salmon skin. The bark was soaked before application to make it more flexible. As it dried, it would shrink, thereby achieving a very tight fit. Such bindings immeasurably increased the lifespan of tools. The bark was also strong enough to be used as cordage to lash together the boards of an *itaomacip*, a dugout whose sides were extended upwards by use of boards. By doing so, a simple dugout could be made capable of travel on the rough waters of a large lake or at sea. The waterproof characteristics of the bark were employed in making a cover for the poison at the tip of an arrow positioned in a fixed bow trap (Chiri 1953).

In Shiraura, Sakhalin, the wood was used to make a talisman, called *seniste-inau*, that was either hung over the bed of an ill person or sewn into children’s clothing. Chiri gives an alternate name for *P. padus* as *kiki-ni*, that has the meaning of “the tree that becomes a decoy” or, in other words, something that would ward off evil. In Horobetsu, the bark was placed in a bag with *ipew*, seseli (*Seseli libanotis* [L.] W.D.J. Koch) roots, for this same purpose.

The original function of an *inau* was, in fact, not as it evolved, as a form of supplication to the gods but, rather, to protect the maker or user. Mitsunashi reports that branches or twigs of cherry were placed at doors or windows or in buckets during an epidemic (1976).

The bark also had medicinal uses. Dried bark was infused and drunk to cure colds, stomachache, and mushroom poisoning. The infusion could also be drunk as a tea (Chiri 1953; Kinoshita and Takemura 1993). The bast was soaked in water and used as an eyewash. Twigs were boiled and cloth placed over the pan; the patient put his head under the cloth to inhale the vapours and to try to induce a sweat. The treatment was called *yay-su-maw-kare*, or “to subject yourself to steam” (Chiri 1953).

When ill, an Ainu would pray to the god of *P. ssiori* in order to speed up recovery. The prayer ended with “hasten to heal this man. Before him who stands upon this earth make haste and heal this man” (Batchelor 1924:13). The wood of cherry was used as the shaft of a harpoon.

It was never burned in the hearth because the Ainu believed that, if you did so, your back would become bent (Chiri 1953).

Heather Family (Ericaceae)

- *Rhododendron* spp., rhododendron

There are several varieties of rhododendron native to the Kurils, Sakhalin, and Hokkaido (Ohwi 1984). Some, like *Rhododendron japonicum* and *Rhododendron kaempferi* Planch., are common and gregarious; some, like *Rhododendron camtschaticum*, are confined to alpine areas.

Significantly, few rhododendrons were given Ainu names, which strongly suggests they were not often used by them. Consequently, Chiri gives only passing mention of them (1953). However, while the flowers and leaves are toxic, there are records of their use in making medicinal teas and other medical applications (Fukuoka 1995).

Yet, perhaps the most important function of any rhododendron was of *R. kaempferi*, mountain azalea, as a calendar marker. The Ainu knew that when it bloomed in late June that it was the optimum time to dig up the bulb of the cardiocrinum lily that was a staple of both their diet and materia medica (Takenaka Takeshi, pers. comm. c. 2008). The mountain azalea had the Ainu name of *erareppo*. It is a shrub 1 to 3 m in height and grows on sunny slopes in the hills and mountains (Ohwi 1984).

Rose Family (Rosaceae)

- *Rosa rugosa* Thunb., beach rose or sweetbriar

A Dutch entrepreneur, Maarten De Vries, who landed in Hokkaido in the 17th century, wrote of the Ainu he met that “the food and nutrition source for them were fish, whale blubber, fish oil, wild plants and rose hips that are abundant” (De Graf and Naarden 2007:216). The group he encountered was from Akkeshi, a settlement on the Pacific coast.

The sweetbriar, from which the Ainu gathered those hips, grows almost exclusively on dunes throughout Hokkaido. However, a variety also grows in sandy soils in a few interior valleys and is found in parts of southern Sakhalin and the southern Kurils (Ohwi 1984).

In Hokkaido Ainu dialects, the sweetbriar is known either as *mau-ni* or *iso-mau-ni*, a reference to its fruit or hip; in Sakhalin it was called *otaru*, a reference to its beach habitat. Kindaichi records the name *masar-orumpe*, or “thing growing on the beach meadow” (Chiri 1953).

It is a large shrub between 0.5 and 1.5 m in height that grows in clumps. It has an extensive root system that allows it to flourish in droughty soils. The stems have a dense concentration of thorns. The yellowish-red fruit is 2 to 3 cm in diameter (Ohwi 1984); when ripe in late autumn, the fruit is delicious and a major source of vitamin C (Anetai Masaki, pers. comm. c. 2008). The hips were gathered in large quantities, cut open, and the seeds removed.

Ripe fruits were eaten as is or dried for use during the long winter (Chiri 1953). Unripe fruits that were often harvested earlier were boiled and eaten dressed with fish oil. In another

recipe used in Shiraura, Sakhalin, the fruit was simmered with the bulbs of the Kamchatka lily and ground with a pestle to a sticky paste which was, again, dressed with fish or seal oil (Chiri 1953).

In Shari at the time of *iyomante*, the flesh was boiled, pounded to a thick paste, and spread in the sacred area where the bear cub would lie in state (Chiri 1953).

Kinoshita reports that, like other thorny plants, the rose possessed great ritual significance for the Ainu in the struggle to ward off evil and illness. The branches, along with the pungent leaves of Alpine leek and the roots of the milkweed, were placed at doorways to prevent evil spirits from entering (Chiri 1953; Kinoshita and Takemura 1993). The fruit and shreadings from the stem were used to treat eye infections. The root was used as a dyestuff in tattooing (Chiri 1953).

In a story of two crows, some young Ainu men steal a beautiful girl whom one of the crows had intended as his bride. He had hidden her in a basket in a treetop but the searching Ainu men discover her. When the crow returns to retrieve her, he reaches into the basket and is severely scratched by sweetbriar branches left as a trap by the Ainu searchers. In another story recorded by Chiri, a woman, on leaving dinner at a neighbour's home, wraps some leftover



Figure 33. Sweetbriar, *Rosa rugosa*, growing behind the dunes on the Okhotsk Sea coast at Shari, north-eastern Hokkaido. Photo by Dai Williams.

fish in the hem of her fishskin garment. However, on the way home the hem becomes entangled in the branches of a sweetbriar. She reads this to mean that the sweetbriar is hungry, so leaves it the fish (Chiri 1953).

Rosa acicularis Lindl. was called **chikap-mau-ni** or **kimun-mau-ni**, names that suggest its smaller size and mountain habitat (Ohwi 1984). It is distributed throughout Hokkaido and Sakhalin. There is no record of its use by the Ainu.

Buttercup or Crowfoot Family (Ranunculaceae)

- *Thalictrum aquilegifolium* L., columbine or meadow rue
- *Thalictrum thunbergii* DC. (*T. minus* var. *hypoleucum* Siebold & Zucc.) (Miq.)
- *Thalictrum sachalinense* Lecoyer

Thalictrum aquilegifolium is a glabrous, perennial herb that grows in grassy places in highland and alpine meadows in Hokkaido (Ohwi 1984). Its Ainu name is **arikko** (Chiri 1953).

For an upset stomach, the root was eaten raw or roasted. An infusion of the root was drunk to treat intestinal catarrh (Mitsuhashi 1976). The root was also chewed to produce a fomentation applied directly to cuts and bruises (Chiri 1953).

Thalictrum thunbergii is also called **arikko** but its alternate name of **iram-rayke-kina**, or “the grass that kills the soul”, suggests a medicinal use similar to that of milkweed that was chewed in hopes of calming anger (Chiri 1953). It is present in Hokkaido, Sakhalin, and the southern Kurils (Ohwi 1984).

Thalictrum sachalinense is also present in Hokkaido but there is no record of its use by the Ainu.

Lily Family (Melanthiaceae)

- *Trillium kamtschaticum* Pall. Ex Pursh, trillium
- *Trillium smallii* Maxim.

Both of these trilliums are generally known as **emawri**, **emaury**, or **kina-emawri**, a reference to the globuse fruit that the Ainu collected and ate in late summer and early autumn. The Ainu differentiated them by calling one, *Trillium kamtschaticum*, male, and the other, *Trillium smallii*, female (Chiri 1953). *T. kamtschaticum* was also called **retar-kinaemawri**, or “white berry”, and *T. smallii* was **kunne-kinaemawri**, or “black berry”. **Emawri** usually referred to the berries of the *Rubus* species, like blackberries, that are bushes; thus trillium became known as **kina-emawri**, or “grass berry” (Chiri 1953). It was also known as **kenas-oro-ma-p**, or “something that appears in the forest” (Chiri 1953).

The trillium is a perennial that is widely distributed in Hokkaido (Kawano 2007; Ohwi 1984). It is a representative spring plant of the northern temperate deciduous forests where it often covers the ground in profusion (Kawano 2007).

T. kamtschaticum also grows in Sakhalin and the Kurils, in deciduous woodlands and meadows in the foothills, and in stony well-drained soils near the coast; it requires moist

soils and prefers shade or semi shade. It takes 10 years to reach sexual maturity and from the appearance of the first bud to the first flower requires 15 years. However, it might live for 40 to 50 years. The flowers are three-petaled and are pollinated by various insects, including ants (Takenaka Takeshi, pers. comm. c. 2008). *T. kamtschaticum* has a white flower; that of *T. smallii* is dark purple. In August the leaves wither before it fruits.

Cattail Family (Typhaceae)

- *Typha latifolia* L., bulrush or cattail

The Ainu name for bulrush is *shikina*, or “true grass” (Chiri 1953). It receives this honorific name because it was the most important of the “grasses” used by the Ainu (Fukuoka 1995). The stems or leaves were chiefly used for making matting, but also for room partitions, screens over windows and doors, for pillows, bags, and bundles, including those for the possessions of the dead (Kayano 1978).

Bulrush is a perennial that grows in swamps, at the edges of lakes, ponds, and in still water along riverbanks in Hokkaido (Ohwi 1984). It has a single stem 1 to 2 m high which, depending on the weather, was harvested between mid-August and mid-September (Fukuoka 1995).

As it is an important crop, it was vital to make offerings to the god of the swamp, pond, or river before beginning work. The harvest season was called *kinacha*, a corruption of *kina-kar*, meaning “grass harvest”. At this time the stem is both thick and flexible. If harvested earlier, the stem is likely to be too soft. Kayano points out that, in the Saru region, early harvest was thought to bring premature cold weather called *kina-me* (Kayano 1978).

The stems were cut close to the root, rinsed in water, and dried so that the base spread like a fan. They were left to dry in the shade for two to three weeks. Prior to weaving, the stems were presoaked to prevent them from breaking when bent.

The products made from bulrush included mats for both daily and ceremonial use. Mats were either called *toma* or *kina*, the latter a clear reference that they were almost always made of bulrush. Those used for ceremonial purposes were patterned and were called *inau-so*. Often strips of the dyed bast of Manchurian elm (*Ulmus laciniata*) were interwoven with the bulrush stems to create patterns.

Mats were woven on a simple frame called *itese-ni* (Kayano 1978, 1996). The strips of bulrush formed the wefts, while the bast of Japanese linden (*Tilia japonica*) typically formed the warp. The ordinary mat measured about 1 x 3 m. When weaving was complete, the warps were gathered together in the centre and braided into a rope by which the mat could be tied after it was rolled up. The ceremonial mat came in several sizes depending on its intended use. The checkered pattern might extend over $\frac{1}{3}$ or $\frac{2}{3}$ of the surface. *Inau-so* refers to the use of mats in conjunction with ceremonial wooden staffs, called *inau*.

Large bundles made from bulrush by the same method would most commonly be used for carrying personal possessions or provisions when moving to a new home, or travelling to a hunting or fishing hut at some distance from the village. The bundle used for the dead in-

cluded the possessions the deceased might need in the afterlife and was called *raykur-karop* (Kayano 1996). The corpse itself was also wrapped in a bundle, called *chi-shina-ot*, that was secured with cords and pegs (Kayano 1978, 1996).

The bulrush has many medicinal uses, but the only such use by the Ainu is of the carbonized heads and tassels which, when mixed with animal grease, were used to treat cuts and scrapes (Kinoshita and Takemura 1993).

It was also highly regarded as a source of food in a famine. In one of the several instances of how the Ainu managed their “wild” resources, they would save the bulrush seeds and occasionally reseed the swamps to ensure a good harvest for generations to come. As they tossed the seeds over their shoulder, they would recite this incantation, “Because I have no descendants I’m going to sow bulrush seeds” (Kayano 1978:40).

11. Flora Collected in Autumn

Aralia Family (Araliaceae)

- *Acanthopanax divaricatus* (Siebold & Zucc.) Seem., acanthopanax
- *Acanthopanax sciadophylloides* Franch. et Sav.

The usual Ainu name for acanthopanax is *horka-ai-us-ni*; this means “tree whose thorns grow upside down” (Chiri 1953). It is, indeed, a rather rare, prickly shrub that grows in the hills and mountains of southwestern and central Hokkaido and, in some places, along the Pacific coast (Ohwi 1984). Its alternate names are *enenki-ni*, or “thorny tree”, and *nitat-sikerpe*, or “valley or wetland fruit” (Chiri 1953). The fruit and stems were infused to treat numbness in Ashoro (Chiri 1953).

Acanthopanax sciadophylloides is known as either, *kotor-us-ni*, *kotoro-ush-ni* (Batchelor 1924), or *pirkka-ni*—the last, a reference to the use of its wood in making geta, wooden footwear (Chiri 1953). Although geta were not traditional Ainu footwear, the fact that they were given an Ainu name suggests their use after contact with the Japanese and absorption of the Ainu into Japanese society. The wood was also used for making spatulas and rice paddles (Chiri 1953). *A. sciadophylloides* is one of a number of trees to which the Ainu ascribed power in healing sickness. The ill person prayed to the god of the tree and exhorted its intervention (Batchelor 1924).

Buttercup or Crowfoot Family (Ranunculaceae)

- *Aconitum chinense* Siebold ex Paxton, aconite

Both Watanabe (1972) and Utagawa (1992) consider the role of aconite as a poison used in hunting as one of the keys elements of what Watanabe refers to as the “Ainu cultural complex”. This is borne out by the fact that the only time an Ainu group would leave their immediate territory or go deep into the mountains would be to hunt or to collect either the bast of the Manchurian elm (*Ulmus laciniata*), essential for making clothing, or the roots of aconite, that were processed into poison (Mitsuhashi 1976). They would travel great distances in search of effective aconite.

Munro observed Ainu cultivation of aconite near the village but concluded that most was collected from well known, established locations in the wild (Ohlsen 1994). In the Saru Basin, the most potent aconite grew on a mountain in Piratur (Biratori) that was home to the aconite god. The chief of Piratur village controlled the collection of aconite growing there and his permission was required to harvest it. Collection of such a precious resource also required the placing of sacred staffs, or *inau*, and the offering of prayers to the gods of aconite, of the hunt, *hash-inau-uk-kamuy*, and of vegetation, *sir-ampa-kamuy*.

Aconite is a hardy perennial that reaches around a metre in height (Makino 1961); it grows in woodlands in semi- or complete shade and requires moist soil (Ohwi 1984). There

are several species present in the areas once occupied by the Ainu. *Aconitum sachalinense* F. Schmidt is found throughout Hokkaido and Sakhalin. *A. japonicum* Thunb. is present only in southwest Hokkaido. Ohwi does not regard *A. chinense* as an endemic, but Anetai believes it produced the most potent poison, and was, thus, sought out by Ainu groups from much of southern Hokkaido (Anetai Maski, pers. comm. c. 2008).

In every case, the entire plant is highly toxic but the root is its most potent part. The root is spindle-shaped, is pale-coloured when young, and dark brown when mature. The Ainu would employ the new roots that developed from the main root each year.

The main poison is a compound of aconitine that acts by paralyzing the central nervous system. The lethal dose for a human is 3 to 4 mg and the dosage used for brown bears (*Ursos arctos*) would fell it within 30 m and kill it in about an hour. A wounded bear was extremely dangerous while the poison took effect, and hunting dogs were often necessary to keep it at bay.

The most commonly used Ainu name is *surku*, meaning “arrow poison”, although there are also many different variations or qualifiers employed. For example, *ietunaska-surku* means poison that works very quickly, and *imoyre-p* means “it slows the prey down” (Chiri 1953).

In prayer, the aconite was called *monorus-kamuy*, or “god of silence”, *iso-uk-kamuy*, “god of the hunt”, or *kamuy-pase-kur*, or “potent person” (Batchelor 1905).

Depending on location, the best season to gather aconite is around mid-September to October when the leaves wilt and the root thickens. The Ainu believed plants that grew in the shade developed fatter roots (Fukuoka 1995). To harvest the root, they employed a digging stick, called *ita-ni*, that was usually fashioned from a tree branch in situ (Chiri 1953). The harvested roots were wrapped in willow (*Salix* spp.) shavings, or *inau-kike*, and then in the leaves of mugwort (*Artemisia montana*). These bundles were hung up to dry in the eaves well out of reach of children. After several months, the dried roots were washed and pounded in a mortar, a process called *surku-kik*, “to strike the aconite” (Chiri 1953). If too dry to crush, they were first wrapped in the



Figure 34. Aconite, *Aconitum chinense*. Photo by Dai Williams of a specimen in Anetai Masaki’s collection.

fresh leaves of pachysandra (*Pachysandra terminalis* Siebold & Zucc.) or placed in warm ashes overnight. Spittle was often used to soften the roots to a paste.

The methods of making poison from the root varied widely from village to village, region to region and, as hunting was such an important economic and social activity, the method was often a well-kept secret.

Matsuura states in his work, *Higashi Ezo Nisshi* (Eastern Hokkaido Journal), that the Ainu were reluctant to reveal their secret formula, even to him (Matsuura 1984 [1856–1858] in Fukuoka 1995). However, based on observation, he had learned that, in addition to aconite, they used nicotine, spiders, and an insect called water boatman (*corixa*). All these ingredients were placed into a small bag to ferment. If the mixture was so powerful that it made the meat of the bear or deer inedible, it had to be modified. When hunting bears that had killed humans, the meat was never consumed and thus a potent dosage would have been in order.

Munro reported on augmentation of aconite by *rau-rau* (Jack-in-the-Pulpit, *Arisaema thunbergii* Blume var. *urashima* [Hara] Makino), Sichuan pepper (*Zanthoxylum piperitum* DC.), and Siberian lupin (*Thermopsis fabacea*) (Ohlsen 1994). In addition, the Ainu had such implicit confidence in the power of milkweed (*Cynanchum caudatum*) that, when suspicious of evil spirits that might vitiate their aim or anul the lethal effect of aconite, they added its ground up root to the aconite paste.

Siberian lupin was also regarded as a virulent poison, hence its name *iramraike*, “to kill the soul”. Its berries and leaves were boiled down to a paste that was added to the aconite on the arrowhead. Chiri also reports on the use of the bile of a fox (*Vulpes vulpes*) and the toxic seeds of lonicera (*Lonicera morrowii* A. Gray), known in Ainu as *kinne-ni* (Chiri 1953).

Fox bile probably didn't increase the efficacy of the poison in any way but the Ainu believed the fox god would deceive the prey in some way; this falls into line with the Ainu belief that aconite did not poison the prey, per se, but merely intoxicated it and caused it to stumble and fall.

To test the strength of a freshly made poison admixture, it was smeared on the back of a leaf of bamboo grass (*Sasa* spp.) and tasted on the tip of the tongue from the opposite side of the leaf (Fukuoka 1995). The amount of a tingling sensation it produced gave the experienced maker an indication of its potency. Testing required care and concentration and was often done at night, when everyone else was asleep, or alone in the forest (Chiri 1953). In any event, it was important that preparation be done in a place out of sight of women who were considered unclean. Any adjustment was also made in secret. Chiri has a detailed description of other methods employed to judge the potency of aconite itself, for example, when the root is first cut it shows white; it thens turns red and if it remains so it is considered of low quality; if it turns black it is certain to be powerful.

Another testing method was to place a drop of poison in the mouth of a spider that, if the poison was potent enough, would immediately cause its legs to disintegrate (Chiri 1953).

The arrow used in hunting was usually made of bamboo grass (*Sasa kurilensis*) (Fukuoka 1995); just below the tip was carved a shallow 6 cm long indentation, into which the 5 mm diameter pellet of poison paste was placed. Stronger, slow-acting poison was put at the base; faster-acting poison was spread over it. The resin of dwarf Siberian pine (*Pinus pumila*), Yezo Spruce (*Picea jezoensis*), or Sakhalin Fir (*Abies sachalinensis*), that was known as *un-ko-tuk*, was heated and then poured over the indentation. As it congealed, it secured the poison in place. Resin and aconite were both deified in recognition of their role in sustaining the Ainu hunting economy (Yamada 2001). Bird reported that the Ainu group she encountered in the 1880s used soil and animal fat to secure the poison in place on the arrowhead (1885).

When hunting a bear, the Ainu would observe its breathing so they could locate the ribs protecting the heart and aim the arrow between them (Fukuoka 1995). If the flesh immediately around the point of impact was quickly removed, the rest of the meat could be safely eaten.

Aconite is celebrated in Ainu myth as two beautiful maidens, called *kerep-noye* (“touch and twist”, as in agony) and *kerep-tuse* (“touch and collapse”, as in death), who appear as a dream or hallucination (Fukuoka 1995). One wears a red headband, the other a black one, the colours denoting the colour of the root. Both were capable of killing a man or a bear. Batchelor, in a folktale from the Saru river “about the origin of aconite poisons”, indicates that there, *kerupe-turse* was male and *kerep-noye* was female but their respective potency was the same as that recorded by Fukuoka, above (1924:65–68).

Aconite was also used in other ways and, in one example, Ohnuki-Tierney describes how it was employed by shamans in Sakhalin.

A more common type of [shamanic] miracle performance is the consumption of aconite roots, whose alkaloid poison can be lethal. It is explained that it is the spirit helper, who likes aconite roots, rather than the shaman that consumes the root, and hence the shaman is unharmed. Whether in legends or in actuality, these miracle performances serve to reinforce the belief in shamanistic power (Ohnuki-Tierney 1974:110–112).

A shaman who regularly used various plant materials in his or her practice would have been obviously well versed in the potency and use of aconite, and would have known what dosage would be safe to consume.

The use of aconite was particularly important in the hunting of bears. Sika deer and other prey could be taken by other methods, including traps and the use of dogs. Bears were far more formidable opponents and hunting them required considerable planning, skill, and courage. In fact, the Ainu doubted their ability to capture or kill a bear without the intervention of the gods. They believed, for example, that the bear lived by the grace of the god of aconite, and that, in dispatching an arrow into its heart, they were merely carrying out their

part in some divine plan. The god of the aconite rendered the bear still by intoxicating it, a temporary state in the bear's journey to the land of the gods. Yamada claims that both the goddess of the resin of the dwarf Siberian pine and the goddess of the aconite are messengers of the fire goddess who lures the bear god back to *ainumosir*, the land of the Ainu (2001). Thus, the purpose of killing the bear is to ensure its return to earth, thereby providing the Ainu with the resources that they need in order to prosper (Majewicz 1998).

Chinese Gooseberry Family (Actinidiaceae)

- *Actinidia arguta* (Siebold & Zucc.) Planch. Ex Miq., actinidia
- *Actinidia polygama* (Siebold & Zucc.) Maxim.

The fruits of both actinidia ripen in autumn but, like wild grape (*Vitis* spp.), harvesting them could be a risky business for the Ainu, as they were also a favourite of the bear (Fukuoka 1995).

They are known in Ainu as *kuch* and *matatampu*. The fruits of *kuch* are reported to have the better taste, but both can be rather tart, and thus were used mainly for medicinal purposes. They have a high vitamin C content. The young shoots are also edible and were collected from late April to late May.

Both species are woody perennial vines that grow in upland thickets and forests throughout Hokkaido and in Sakhalin and the southern Kurils (Ohwi 1984). They require full or partial sun and moist soils. They are rather common between elevations of 700 and 3600 m.

There were a number of medicinal applications for actinidia. In the first, the well-ripened fruit was mashed and placed under the tongue to counteract heart disease. The fruit is a proven heart tonic. In a similar application, raw fruit was pureed and placed in a bottle and administered to someone who turned pale. The boiled fruit was placed in a towel and applied to the skin to treat rheumatism (Fukuoka 1995). The sap, collected in early spring, was used as an expectorant and to treat neuralgia (Mitsubishi 1976).

The vine itself is extremely strong and, when first cut, very pliable. It was formed into snowshoes (*chinru*) and into a hook suspended over the hearth that held pots over the fire (Chiri 1953).

Kinoshita reports that the bark was burned and the smoke inhaled through a reed to treat tonsillitis or other throat conditions (Kinoshita and Takemura 1993). Batchelor records a similar use, as recorded in the folktales of the Saru river area. Initially, the vine is formed into an *inau*, or sacred staff, to which the family of the patient pray. It is then shredded, boiled in water, and the infusion given to the patient to swallow (Batchelor 1924).

The character of *matatampu* is recounted in “The Bear God’s Daughter’s Tale”:

I am the daughter of the god that reigned in these mountains. I was forbidden to leave the den but I disobeyed and killed and ate a human child. The fire god ordered me to give her back her life. If I didn't she would banish me

to hell. I refused and so my father threw me off a cliff. Down I fell but was able to grab onto the branch of an actinidia vine and hang on. My brother taunted me, saying “whenever the wind blows you will swing on it. The vine will engulf you and its fruits will grow all over your body. Then the migrating birds from northern lands will come to eat the fruit and will defecate on you. You will smell awful. All this is because you committed evil. The fruit will be eaten by humans and gods too.”

With this he left and, as he predicted I could not die even if I had wanted to.

So, bear women, take care not to have an evil heart like mine (Fukuoka 1995:76).

Because of its inferior taste, *matatampu* is sometimes known as *chikap-kuch*, or “bird’s actinidia” (Chiri 1953).

Bellflower Family (Campanulaceae)

- *Adenophora triphylla* (Thunb.) A. DC. var. *japonica* (Regel) H. Hara, adenophora
- *Adenophora verticillata* Fisch.
- *Adenophora thunbergiana* Kudo

A common perennial herb that reaches a metre in height, adenophora grows in grassy areas in both lowlands and highlands, and at the periphery of woodland. It requires moist soil (Ohwi 1984).

The Ainu dug the long root early in autumn and, after carefully washing and drying it, either baked or boiled it. Its name, *mukekashi*, or “grandfather”, refers to the fact it is bigger than ordinary *muk*. However, it was inferior in taste. The young leaf, collected from early to late May, was also edible when boiled (Chiri 1953).

Adenophora was also used medicinally. Matsuura, in his *Tokachi Nisshi* (Tokachi Journal), reports that Ainu fed the root to women in childbirth to stimulate the blood (Matsuura 1977 [1861] in Fukuoka 1995). It is a proven cardiotoxic. It was also used to stop coughing and reduce phlegm and, when made into an infusion, to cleanse private parts (Chiri 1953).

The two other adenophora varieties were also known as *mukekashi*. However, they had at least one other alternate name, i.e., *moskarpe*, a name that referred to the leaf stem rather than the root.

Moskar is derived from the words *mose kar*, or “to cut grass”, and refers to the use of the cut stems of adenophora, knotweed (*Polygonum* spp.), or mugwort as impromptu mats on which fish or deer meat was laid (Chiri 1953).

Horse Chestnut Family (Sapindaceae)

- *Aesculus turbinata* Blume, horse chestnut

Horse chestnut is common in the mountain valleys and ravines in Hokkaido (Ohwi 1984). It is deciduous and attains 20 to 25 m in height, although in some zones, it is very shrubby. It does well on moist slopes in semi-shade or full sun and likes moist soils (Ohwi 1984).

The nuts are edible but require considerable processing and, consequently, the Ainu did not eat them. In most areas, the Ainu relied on acorns instead. However, horse chestnuts were used medicinally. They were dried and stored, a process that would remove some of their toxins. When needed, they were sliced and infused to make a wash for eye problems and cuts (Chiri 1953).

The only other recorded use by the Ainu was of the wood, used to make mortars and pestles (Mitsuhashi 1976). The Ainu term for horse chestnut, *tochi-ni*, appears to be a modification of the Japanese name, *tochi* (Chiri 1953).

Arum Family (Araceae)

- *Arisaema thunbergii* Blume var. *urashima* (Hara) Makino, Jack-in-the-pulpit
- *Arisaema peninsulae* Nakai



Figure 35. Sketch by Matsuura Takeshiro (1999 [1850]) of two horse chestnuts growing together.

Most Ainu names for plants refer directly to the part they utilised but the exception proves the rule. *Raurau* or *rawraw*, the name for Jack-in-the-pulpit, describes the stem, yet it was the root that was employed. It was harvested in autumn, cut up, and either baked in hot ashes or steamed before eating (Chiri 1953). The yellow interior of the root contains a highly toxic alkaloid, so this was removed. The root was considered a delicacy by the Ainu, and thus they were prepared to take the risk of paralysis, or even death, that might occur. The toxic part of the root was sometimes set aside and mixed with aconite paste for use as poison on arrows (Fukuoka 1995).

Jack-in-the-pulpit is a perennial herb reaching around a metre in height and has a depressed globular tuber 15 to 50 mm in diameter (Ohwi 1984). *Arisaema thunbergii* grows in moist soils in, or at the edge of, woodlands and in wetlands in the Oshima and Hidaka regions (Batchelor and Miyabe 1893), while *Arisaema peninsulae* is widely distributed in Hokkaido and the Kurils (Batchelor and Miyabe 1893; Ohwi 1984). In addition to being toxic, the root is anaesthetic and vulnerary and was used by the Ainu to treat malaria, headache, or fever. For this purpose, it was baked, ground up, and placed in a cloth bound to the arch of the foot or to the forehead. To expel worms, small quantities of the toxic part were ingested.

Other parts of the plant also had medicinal qualities. According to Mitsuhashi, both the dried fruits and seeds were used to treat stomachache, and the fruits were used to drive off evil spirits (1976).

The Ainu believed the juice of the wild grape (*Vitis* spp.) to be an effective antidote for poisoning caused by ingestion of the root, and there is a story that explains the essential differences in their character.

Long ago there was a battle between the grape and Jack-in-the-pulpit. Because the grape was victorious he became very full of himself and climbed up a tree. The Jack-in-the pulpit, feeling disgraced and wanting to hide itself, dug into the ground. If you look at the surface of the tuber you'll still see the scars of battle. Thus, when you collect them in the forest they must never be carried in the same bag (Chiri 1953:215).

True Grass Family (Poaceae)

- *Calamagrostis epigejos* (L.) Roth, reed bent grass

Once the blossoms of the field bush clover (*Lespedeza bicolor*) had fallen, the salmon began to migrate upriver. At this time of year, the salmon's skin is at its thickest and it is, therefore, at its best for making *cep-keri*, salmon skin boots, which the Ainu wore throughout winter (Fukuoka 1995).

Each boot required two skins yet, once they were complete, the sole seemed terribly insubstantial, as only a thin fish skin separated the wearer from the often frozen ground. Insulation

was essential, and this was supplied by either the bast of the Manchurian elm or the stems of reed bent grass that grows in fields, in meadows in the mountains (Ohwi 1984), and on the coast (Makino 1961).

The Ainu name is *keromun*, or “grass spread in boots”. It was harvested in autumn after the first frost when the stems and tassels had wilted and dried and were ready to use. Lining the sole of the boot, it would also act as a cushion and absorb sweat. It was also used to stuff pillows and bedding (Fukuoka 1995).

Reed bent grass grows on grassy slopes in the mountains of Hokkaido, and Matsuura records seeing it growing in the the mountains of Uryu (Fukuoka 1995; Ohwi 1984). *Calamagrostis canadensis* var. *langsdo.rfii* (Link) Inman is found in wet locations in forests in Hokkaido, Sakhalin, and the Kurils, while others, such as *Calamagrostis sachalinensis* F. Schmidt, grow in coniferous forests, and yet others, in alpine zones (Fukuoka 1995).

In northern Hokkaido is a place with the name of Keromononisha, that means “to put reed bent grass in the hollow of a tree”. The name refers to a temporary storage place for the grass that would be used to line boots in cold weather (Chiri 1953).

Beech Family (Fagaceae)

- *Castanea crenata* Siebold & Zucc. (*Castanea pubinervis* C.K. Schneid.), chestnut

The chestnut grows in upland meadows in full or partial sun and reaches 15 to 20 m in height. It is generally known in Ainu as *yam*, *yam-sey* (Chiri 1953) or *yam-ni* (Batchelor 1924).

It became an important source of food for the Ainu in areas where it grew in southwest Hokkaido (Ohwi 1984). The modern village of Kurisawa derives its name from the Ainu *kotan*, Yamonai or “river with many chestnuts”.

Alternate names for the chestnut are *rayta-na-na*, meaning “remove the burr” (Chiri 1953), and *nup-ka-us-mat*, or “woman living in the meadow” (Philippi 1979; Yamada 2001). In Chitose, there is an ancient chestnut called *yamni unarupe*, or “chestnut goddess”, probably a reference to the bounty of its harvest (Fukuoka 1995).

There is archaeological evidence that the Jomon ancestors of the Ainu “cultivated” the chestnut, in the sense that they may have imported it from the Japanese mainland and planted it near their villages. This is also suggested by a sacred song sung in Horobetsu about the wife of the god of Ayoro who fed her son a diet exclusively of chestnuts and exhorted him to cultivate them. He was to become the god of Poroshiri Mountain, the highest peak in the Hidaka Mountains (Chiri 1953). In a similar story, called “Song of the Woman of Shinutapka”, is a reference as follows, “... feeding me nothing but delicious cooked chestnuts ... where could she have gotten them?” (Philippi 1979:261).

While it is rich in starch, both texture and taste are poor. Nonetheless, because of the large number of nuts it provides, the Ainu sometimes called the tree *kamuy-rataskep*, or “food of the gods” (Fukuoka 1995), and where available, the Ainu gathered them in large numbers. They were either eaten fresh, usually by roasting them (Chiri 1953), or boiled, ground, dried,

and stored for use throughout winter. In places, whole nuts were stored in the ground and would last till spring.

Carrot or Parsley Family (Apiaceae)

- *Cicuta virosa* L., cowbane or water hemlock

In the Ainu language, most plants are named for an important characteristic, but a few, like cowbane, are described in terms of habitat or location. Thus, cowbane is called *to-ka-oma-p*, or “thing at the exit of a marsh or lake” (Chiri 1953). As its Ainu name suggests, its primary habitat was marshland and bogs. It is a large, glabrous, perennial herb with thick rhizomes (Ohwi 1984).

The entire plant, and especially the root (Batchelor and Miyabe 1893), are extremely toxic and as such were used as a component in arrow poison (Chiri 1953). However, the root was also used by the Ainu as a medication for backache (Kinoshita and Takemura 1993). It is known to be analgesic and was used as a skin irritant (Mitsuhashi 1976).

Kinoshita reports that, because the roots were known to be toxic, they were employed to ward off evil spirits. During an epidemic, they were chopped up and placed in a bag that served as a protective amulet; to reduce fever, the bag was rubbed on the patient’s body. When carbonized, the root was used as an ingredient in ointments (Kinoshita and Takemura 1993).

Legume Family (Fabaceae)

- *Desmodium oxyphyllum* DC., desmodium

Known as *sinkep* in Ainu, this perennial herb is found in woods and thickets in lowlands (Ohwi 1984); it prefers moist soil and full sun. Its only known use by the Ainu was of the seeds to ward off evil spirits (Kinoshita and Takemura 1993). Because they had burrs, were difficult to remove, and thus were bothersome, the Ainu believed they had a similar effect on demons. In northern Hokkaido is the place name Sinkeppiporo, “*sinkep* crowded together” (Chiri 1953). However, since the word *sinkep* is also applied to field bush clover and bride-wort (*Spiraea salcifolia*), it is uncertain the name refers to desmodium.

Oleaster Family (Elaeagnaceae)

- *Elaeagnus umbellata* Thunb., silverberry
- *Elaeagnus multiflora* Thunb., autumn olive

Autumn olive is known as *sus-mau-ni* or *sus-maw* (Chiri 1953). This deciduous shrub grows in thickets and open woods in southwestern Hokkaido (Ohwi 1984). It cannot tolerate heavy shade.

The fruit is edible when fully ripe and was eaten by the Ainu. The branch was infused as a treatment for catarh and dysentery. In addition, the twigs were infused and drunk for unspecified reasons (Chiri 1953).

Silverberry has no recorded Ainu name but there is a record of the fruit being eaten by the Ainu in Usu (Watanabe et al. 1989). The skin was removed and the fruit boiled to remove the tartness. It was then coated with sugar and eaten as a sweet. With access to sugar, it seems that modern Ainu found a use for a fruit that, to former generations, was so bitter as to be inedible. Like autumn olive, it is a shrub that is common in thickets and woods in both the lowlands and hills in southwestern Hokkaido. The red fruit of autumn olive is 6 to 8 mm long; that of silverberry is almost twice the size (Ohwi 1984).

In Horobetsu, the skin of the nut (*yam-su*) was boiled and the resultant steam used to treat anal prolapse. The wood of the chestnut was used for boatbuilding and house construction (Chiri 1953). Batchelor records that, in the Saru Basin, the Ainu believed that prayers to the god of the tree would hasten recovery from illness (1924).

Crowberry Family (Ericaceae)

- *Empetrum nigrum* L., crowberry

The crowberry is a low evergreen bush that grows in sunny and rocky habitats throughout Hokkaido (Ohwi 1984). It is particularly common on the coastal cliffs of northern and eastern Hokkaido, and is also a component of the low forest ecology of the highlands that is dominated by dwarf Siberian pine (Takenaka Takeshi, pers. comm. c. 2008). It grows no higher than 25 cm and forms a dark green carpet.

The 5 to 6 mm diameter, round, purple-red fruit ripens in late summer and early autumn (Ohwi 1984). It is often rather sour but edible. Matsuura reported it to have a sweet taste so he might have eaten it after a frost. In Horobetsu, where it grows in profusion, the Ainu would claim that eating the fruit would keep one healthy (Fukuoka 1995). It was eaten here in large quantities and is a good source of vitamin C (Kinoshita and Takemura 1993). One of the several Ainu names for the crowberry is *fura* or *furanno*, meaning “black thing”, a reference to the colour of its fruit (Chiri 1953).

The fruit yields a purple dye. Matsuura, in his *Eastern Hokkaido Journal*, reports that, in the village of Tonkeshi in Tokachi, the women placed both nettle (*Urtica* spp.) bast and crowberry fruits in their mouth at the same time to impart the dye to the thread (Matsuura 1984 [1856–1858] in Fukuoka 1995). The colour of the dye ranged from purple to almost black, and can be seen in the subtle stripes of early examples of Ainu *atus*, or robes. The name of the dye is *isiki* or *ichiki*, meaning “we squeeze it”, and alternate names for crowberry were *ichiki-maimai* (Chiri 1953) or *enchiki-maimai* (Batchelor and Miyabe 1893). This same method of releasing the dye was used by the Sakhalin Ainu (Chiri 1953).

Horsetail Family (Equisitaceae)

- *Equisetum hyemale* L., scouring rush

Scouring rush is a perennial growing in damp locations and usually along streams in the uplands in Hokkaido, Sakhalin, and the southern Kurils. It can reach 60 cm in height and

5 to 6 mm in diameter. Its name derives from the silicic acid contained within the stem that renders the surface hard and abrasive (Makino 1961). The Ainu name is *shipship*, an alliterative reference to the use of dried stems as an abrasive in finishing tools or other items carved from wood or bone. The Ainu used these raw materials extensively to create the essentials of their daily life such as plates, bowls, spatulas, and scoops. Scouring rush was harvested from early to late May. It grew well in a place called Shipshipsara in Chitose, and Ainu from inland communities would come there to buy it (Fukuoka 1995). In the Koshi area along the Furenai River is a place called Shipshipushi (*shipship-usi*) that means “there are scouring rush here”.

Rose Family (Rosaceae)

- *Fragaria iinumae* Makino, wild strawberry
- *Fragaria yezoensis* Hara

While Chiri notes the presence of these species of wild strawberry in both Hokkaido and Sakhalin, he does not discuss their use, probably because he didn't consider them to be a significant part of the Ainu diet.

In addition, as many varieties of strawberry grew mainly in upland habitats, they were not readily available to most of the Ainu population (Takenaka Takeshi, pers. comm. c. 2008). However, where present in sufficient numbers, they were probably eaten locally by the Ainu, especially by children. The fruit in each case is small and short-lived.

The Ainu name in each case is *furep* or *hurep*, “red thing” (Chiri 1953). Strawberries are perennials that require sun and moist soil. All the above are found in many parts of Hokkaido, including mountain, alpine, and sub-alpine habitats. *Fragaria yezoensis* is found in eastern Hokkaido, the southern Kurils, and Sakhalin (Ohwi 1984). *Fragaria iinumae* is found primarily in the west and southwest and in Sakhalin (Ohwi 1984).

Orchid Family (Orchidaceae)

- *Gastrodia elata* Blume, gastrodia

In Ainu, gastrodia is known as *u-nin-te-p*, “it wilts and disappears”, because once the stem has withered, it is very difficult to find (Fukuoka 1995). However, the Ainu developed a unique strategy to locate it. They would first seek out the mushroom, from whose spores it gets all its nutrition (Fukuoka 1995).

It is a perennial that reaches about a metre in height and grows in full or semi-shade in woodlands throughout Hokkaido (Batchelor and Miabe 1893; Ohwi 1984). In moist soil it develops a tuber 10 to 18 cm long that was eaten raw, boiled, baked, or roasted. The Ainu would harvest it in autumn, when the tuber was fully developed. A tuber left in the ground too long would rot.

Matsuura mentions gastrodia several times in his journeys along the Teshio and Ishikari rivers. He was once given the baked tuber to eat by the Ainu and found it to be delicious (Hanasaki 1988). While it was an important plant in Chinese and Japanese traditional medicine,

there is no record of the Ainu using it for medical purposes. Along the Osarape River is a tributary called Unintepusnai or “the river where there are gastrodia” (Fukuoka 1995).

Walnut Family (*Juglandaceae*)

- *Juglans mandschurica* Maxim. var. *sieboldiana* (Maxim.), walnut

One day I went down to the river to play and there I met a beautiful child. He wore black clothes and carried a small bow and arrows made of walnut. When he saw me he said, ‘let’s play together and try to catch fish’. He let fly an arrow whose point was dipped in walnut juice.

Poisoned water began to flow from the spring and the salmon were stunned and floated to the surface. They cried out and tried to swim away to escape the poison. The evil boy just smiled. I was angry and shot a silver arrow into the water that then turned blue again. The salmon soon recovered.

We played on and approached the spring. When he saw the water was clear the evil boy grew angry saying, ‘since you have done that I’ll destroy the deer’. So saying he shot his arrow into the air. The walnut wind blew and carried both the male and female deer into the sky. The evil boy smiled at what he had done. Again I became angry and shot a silver arrow into the air. A clear silver wind descended from heaven and the deer returned to the field. Once again the evil boy was angry and said, ‘let’s fight!’. He took off his clothes; so did I and we wrestled. I was surprised by his strength and it took all my power to hold him and to beat him against the rocks of the mountain till he was dead. I sent him to hell. Peace returned to the world and I walked the river where I heard the salmon laughing and playing. In the mountains I saw the deer eating and playing. I was at ease and returned home (Fukuoka 1995:112).

Thus spoke the hero in the Ainu chronicle called Shinyoshu.

Ainu children would tip their arrows with the outer ligneous case of the walnut and use it to stun small fish. In the “Song of Aeoina-Kamui”, it says, “She erected a fish trap made of stakes of walnut... walnut-tainted water went flowing downstream. The fish were unable to drink the water. As a result, a famine has broken out” (Philippi 1979:196).

The walnut grows in the riparian areas and in the fertile soils of the plains throughout Hokkaido. It is resistant to the cold and in some areas it grows only at higher elevations; it does best in sunny locations, reaching 25 m in height, and the trunk can measure up to 80 cm in diameter (Makino 1961; Ohwi 1984; Sato 2002). It is tall and erect with relatively

few branches. In Ainu, it is called *nekkō*, *nesko*, or *ninum-ni*, the last meaning “nut tree” (Chiri 1953).

The nuts were gathered in great quantities in autumn and families would travel to the mountains and spend two or three days harvesting them (Chiri 1953). They were dried in their shells in the sun, placed in a large basket called a *totta*, and stored for consumption in winter; when needed, they were lined up along the edge of the hearth, split open with a knife, and given to children as a nutritious snack (Fukuoka 1995).

In many locations, the nuts were also an important offering at *iyomante*, the ceremony to send off the spirit of the bear. They were used to indicate to the gods the generosity the Ainu had extended toward the bear cub. During *iyomante*, the bear’s spirit was released from its body at the moment it was throttled between two massive logs. The body then lay in an enclosure before the altar enclosure, or *nusa-san*. Young people would climb into the enclosure to scatter walnuts and dried fish before the body, and the crowd would shout in order to raise the envy of the gods saying, “even in winter look at the riches we have to eat. Won’t you return to our world with the flesh and skin of animals? Return to this world that you created, god” (Fukuoka 1995:198).

In Teshio, Kitami, and Kushiro, however, they were scattered to ward off demons (Chiri 1953). In Bihoro, *inau*, made of the wood of walnut, were offered to snakes and, in Ashoro, to wolves. In Nayoro, they drank the sap (Chiri 1953).

The bark and skin were boiled to produce a black dye used with an iron mordant to colour the bast threads derived from Manchurian elm, Japanese linden (*Tilia japonica*), and nettle (*Urtica* spp.), and the leaves of the bulrush (*Typha latifolia*) that were woven into matting (Chiri 1953). The shell was infused to make an extract used to treat foot fungus (Mitsuhashi 1976). The wood was used to make handles for hatchets and other tools, as well as boxes and chests, thread winders, spatulas, and a press for bear gall bladder (Kayano 1978).

Aster, Daisy, and Sunflower Family (Asteraceae)

- *Lactuca repens* (L.) Benth. ex Maxim., wild lettuce
- *Lactuca indica* var. *lacionata* H. Hara

Lactuca repens is known in Ainu as *ota-tesma*. *Ota* refers to a beach, which suggests it was its habitat. Ohwi describes the typical habitat as “grassy places in lowlands” (1984). *Tesma* is probably a corruption of *teshpa*, which means runner or creeper.

Its stems were used for bundling fish (Chiri 1953).

Lactuca indica var. *lacionata* was known as *ainu-muk*; its leaf was used as a plaster.

Lily Family (Liliaceae)

- *Lilium dauricum* Ker-Gawl. (*Lilium maculatum* var. *dauricum* [Ker Gawl.] Ohwi), candlestick lily
- *Lilium medeoloides* A. Gray

Lilium dauricum, the candlestick lily, grows in damp meadows, at the forest edge in sandy, moist soils, and in rocky, sandy meadows at the seashore throughout Hokkaido, in southern Sakhalin, and the southern Kurils (Batchelor and Miyabe 1893; Ohwi 1984). It is intolerant of shade.

Its Ainu names are *enonkay*, *imiki-para*, and *masaraorumpe*, the latter suggesting a habitat close to shore (Chiri 1953). The edible bulb was dug in autumn, and the exfoliating layers and the inedible core removed. The layers were carefully washed and cooked with rice, and the mixture crushed with a spatula (Chiri 1953).

Lilium medeoloides has a similar habitat, range, and characteristics. Its most common Ainu name is *imakiane*, but it is also known as *ninookay*, *parara*, *numahapuru*, *sumari-enonkay*, and *sumari-hax*. The bulb has finer layers than *L. dauricum* but was used in the same way (Chiri 1953). *Imakiane* and *parara* refer to the characteristic exfoliation of the bulb.

Honeysuckle Family (Caprifoliaceae)

- *Lonicera sachalinensis* (F. Schmidt) Nakai, honeysuckle
- *Lonicera caerulea* L.
- *Lonicera alpigena* L.
- *Lonicera chrysantha* Turcz. ex Ledeb.
- *Lonicera morrowii* A. Gray

There are several honeysuckle species native to Hokkaido (Ohwi 1984). Most have edible fruit and are of several different colours, with red predominating. The berries of *Lonicera sachalinensis* are red; it is a shrub with glabrous branches that grows throughout Hokkaido, Sakhalin, and the Kurils (Ohwi 1984). It had three Ainu names, *ayna-ni*, *pone-chi*, and *enomitanne*—the former two referring to the use of the wood for the linkage between the tip and shaft of a spear or arrow (Chiri 1953), and the latter probably referring to its elongated fruits, of which there is no recorded use.

Lonicera caerulea is called *enumitanne* or *haskap* in Ainu (Chiri 1953). The latter name refers to its swamp habitat. It is found mainly in areas of southern and eastern Hokkaido with major concentrations in the Chitose, Akkeshi, and the Nemuro Peninsula (Takenaka Takeshi, pers. comm. c. 2008). It is also found in Sakhalin and the southern Kurils (Ohwi 1984). It requires moist soil and full sun. Its blue/black berries are edible and were prized by the Ainu for their sweet, tart flavour. They were also believed to be the secret of longevity.

Lonicera alpigena is known as *ayna-ni* (*ayna-ne-ni*), or “the tree that becomes the linkage between the tip and the shaft of the spear or arrow”. It has a similar form and habitat to the other types above, with a range including Hokkaido, Sakhalin, and the southern Kurils.

Lonicera morrowii was known as *kinne-ni* or *chikappeppu* in Ainu (Chiri 1953). *Kinne-ni* is a corruption of *kin-ne-ni* and, as with the other varieties of *Lonicera* above, it refers to the use of its wood for linkage on the shaft of a spear or arrow. The latter name suggests the Ainu

knew that its red berries were eaten by birds. It is vine-like and grows in upland moor areas (Sato 2002). Ohwi claims it is a cultivar.

Rose Family (Rosaceae)

- *Malus baccata* var. *mandschurica* (Maxim.) C.K. Schneid., crabapple (Manchurian or Siberian)

The crabapple is a deciduous tree attaining between 2 and 10 m in height that grows in fairly moist soils in mountains and high meadows of Hokkaido, Sakhalin, and the southern Kurils (Ohwi 1984). It can grow in semi-shade or full sun. Its usual Ainu name was *seta-ni*, a corruption of *setar-ni*, a reference to its fruit (Chiri 1953).

It has thorny twigs and dense, hard wood that was valuable for making a makeshift club fashioned in the mountains. This use is expressed in a song as follows “... cut the long thorns short, cut the short thorns long to quickly make a club”. Disputes over rights to a bear’s den, for example, might be settled by the parties taking up clubs and fighting it out (Chiri 1953).

The flowering of the tree in spring heralded the arrival of the first salmon. The fruit is edible, especially after the frost has promoted the production of sugars. However, there is no record of the fruit being used by the Ainu (Chiri 1953).

Chiri records the name of one river entering Lake Tofutsu (Toput) in northern Hokkaido between Abashiri and Shari as Ukarushpet, or “the river where we always settle duels with clubs”. Nearby is Settaniushi, or “the place where many crabapples grow” (Chiri 1953).

Mulberry family (Moraceae)

- *Morus bombycis* Koidz., mountain mulberry

This mulberry grows in upland zones in full sunlight or light shade. It requires moist soils. It occurs throughout Hokkaido (Ohwi 1984) but is best represented in the west and southwest. It also occurs in Sakhalin and the southern Kurils. Its Ainu name is usually *tesma-ni*, but it is also known as *turep-ni* (Batchelor 1924) or *topempe*, a term derived from *tope-un-pe* or “sweet thing” (Chiri 1953).

When the Ainu hunted in winter, they would wear *shipkeri*, salmonskin boots stuffed with some form of insulation, and snowshoes. “Ezofuzoku Junigetsu” is a late 1800s depiction by Hirasawa Byozan of a winter deer hunt in progress. Three Ainu men wearing winter head-dress and snowshoes are working with dogs in the snow. In another drawing of a bear hunt, there are six Ainu men wearing the horseshoe-shaped snowshoes, called *tesma*, that were used for long distances and were made from the branches of mountain mulberry.

Snowshoes worn in spring on the hardpack were gourd-shaped and called *chinru*. They were generally made of splints of the wood of maple (*Acer* spp.) or the vines of actinidia (*Actinidia* spp.).

Branches used in making snowshoes were harvested in autumn when there was less sap, and thus the wood was stronger. The wood was first boiled to make it more flexible and

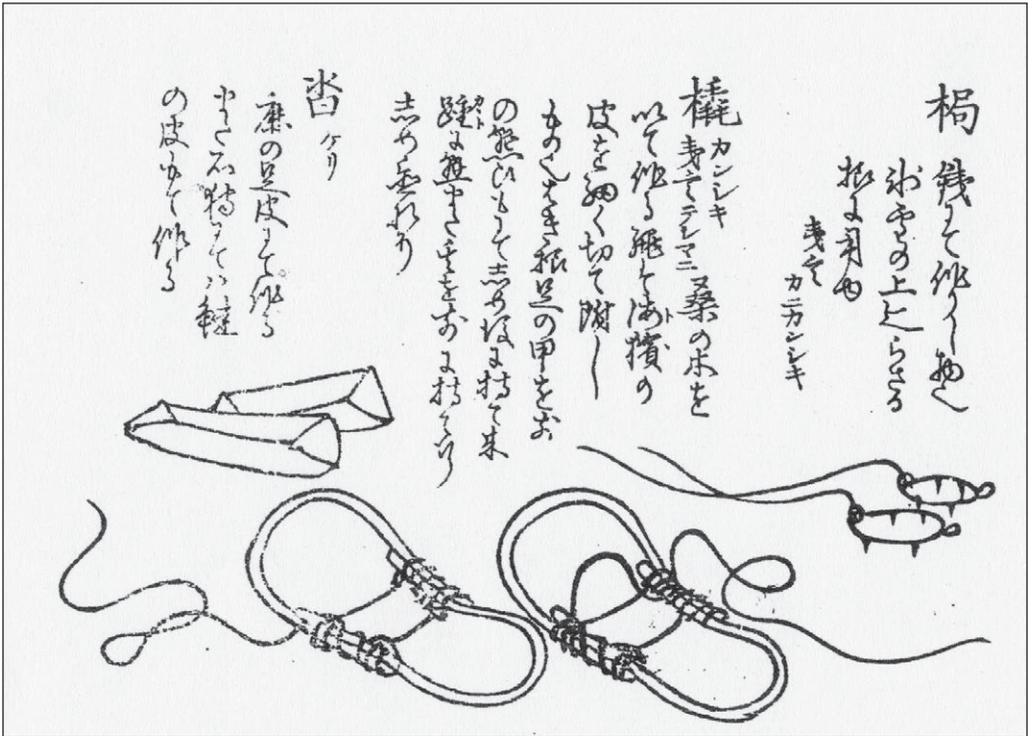


Figure 36. Snowshoes were made of a variety of woods including maple, actinidia, Amur cork tree, and mountain mulberry. Matsuura 1859.

then bent into shape. The ends were then bound together with either leather or cords made of the bast of Japanese linden. These same materials were used to form the web across the instep.

Torii Ryuzo speculated that the use of snowshoes was adopted from the Tsungus, an Altaic tribe living in eastern Siberia and northeast China. The Tsungic word for snowshoe is also *tesma* (Torii 1894 in Fukuoka 1995). The mountain mulberry had many other uses; for example, its wood was used in making bows (Fukuoka 1995).

The berries were an important local food source. Often ripening as early as late June, they are the first available fruit in Hokkaido (Takenaka Takeshi, pers. comm. c. 2008). The dye from the bark was used for tattoos. In tattooing, if swelling or pain persisted, the juice of a mountain mulberry was rubbed into the incisions (Chiri 1953). The leaves were steamed for use as a poultice in childbirth. The young twigs of the mountain mulberry and leaves of the *iharemun*, or chickweed (*Stellaria media* [L.] Vill.), were infused and used in steam baths to treat neuralgia or rheumatism (Kinoshita and Takemura 1993). The infusion was also drunk (Chiri 1953).

In the Saru Basin, the Ainu placed the mountain mulberry alongside other *pirika chikuni*, or “good” trees, which had powers to effect healing. The ill person would say a prayer before the tree and ask to have health restored (Batchelor 1924).



Figure 37. Mountain mulberries picked in late July in Otaru, western Hokkaido. Photo by Dai Williams.

Rue or Citrus Family (Rutaceae)

- *Phellodendron amurense* Rupr. var. *sachalinense* F. Schmidt., Amur cork tree

The most characteristic of all Ainu foods was called *ratiskep* or *koshiratiskep*, “slimey boiled dish”, a stew made with the starch of the cardiocrinum lily (*Cardiocrinum glehnii*), beans, onions, or other roots and fruits added. One of the favourite fruits for this purpose was that of the Amur cork tree. It was known as *skerep* or *sikerpe* in Ainu.

The Amur cork tree is a tall, deciduous forest tree that grows to 25 m high (Ohwi 1984; Sato 2002). It requires sunlight and moist soil and is often found in oak woodlands in southern and western Hokkaido. It is less common in the highlands and in eastern zones (Ohwi 1984).

The abundant fruits were picked in late autumn (Chiri 1953). The following is the account of an Ainu in Asahikawa in central Hokkaido.

We collect the fruit once the leaves have fallen. Most parts are still green but some are dark and ripe. If we leave them until they are ripe the fruits will fall. Therefore we usually went to pick them before the first frost. They are dried to preserve them and are an important food and medicine throughout the year. The fruit grows in a bunch of about 30, like the wild grape

[*Vitis* spp.], and it is about the size of a soybean. They are usually high up in the tree so we had to climb to reach them or use a long pole to knock them down (Fukuoka 1995:189).

The pole or hook was called *nawkep* in Hokkaido and *tapa* in Sakhalin.

The bunches of fruit were strung on a cord made of the bast of Japanese linden and were dried in the shade for two or three days. When completely dry, they turned black. When needed, they were picked from the bunch one by one and soaked in water overnight. They usually had a tart taste, although some could be sweet. They were primarily used as flavouring (Fukuoka 1995).

As a result of contact with the Japanese, one recipe for *ratiskep* was to boil pumpkin or beans with the fruit of the Amur cork tree until they were soft, and then add the starch of the cardiocrinum lily as a thickener and sugar to taste. When the mixture had been reduced and the beans or pumpkin were soft, the stew was removed from the fire. As it cooled, it was seasoned again and, if needed, more dissolved starch stirred in. At this point it was quite sweet and, in the old days, some people would add salt, bear grease, or fish oil (Fukuoka 1995).

While it was an everyday meal, *ratiskep* was also an indispensable treat at special ceremonies. The fruits of the Amur cork tree imparted a rather strange bitter taste to the stew but most Ainu found it to be delicious (Fukuoka 1995).

Chiri reports that in Kussharo, Hokkaido, the dried fruits were soaked for half a day and then pounded; the pulp was added to frozen salmon roe and the mixture allowed to cool. Frozen salmon meat was then chopped up and placed in salted boiling water to thaw. Once thawed, it was scooped from the water, the pieces were dipped in a mash of the fruit of the Amur cork tree and a relish made of roe, and eaten (Chiri 1953). The berries were chewed to a paste and used as an expectorant and applied to sore muscles.

The fruit of the Amur cork tree had many medicinal uses and was prepared in many forms. Raw, it was eaten to cure a stomachache or worms (Chiri 1953). To make a cough syrup, the fruits were soaked and starch powder, sugar, or honey added to them. This mixture was then boiled slowly for many hours and the seeds removed before use. When infused, the fruits were used as a tonic (Chiri 1953).

The thick, yellow, pulpy bast was pounded to a mush and used to treat blistered feet when walking in the forests or mountains; when dried to a powder and made into a paste, it was used to treat burns, bruises, and sprains. After cleansing the skin with an infusion made from Aleutian ragwort (*Senecio cannabifolius* or *Senecio palmatus*), a powder made from the bark of the Amur cork tree was used to treat syphilitic sores.

Kinoshita, in his work on traditional Ainu medicine, notes that the bast was probably an effective antibiotic and anti-inflammatory. It is a good source of the alkaloids berberine, palmatine, and magnoflorine. For laryngitis, throat pain, or inflammation, the dried and

powdered bast was blown into the throat by means of a hollow reed. The bark is a proven antibiotic, antiseptic, and anti-inflammatory. Kinoshita speculates that, while it would have been bitter to the taste, it was probably effective in repeated applications (Kinoshita and Takemura 1993). The bast was soaked to produce a yellow dye (Chiri 1953).

Chiri gives an alternate name for the Amur cork tree, *tesma-kara-ni*, or “the tree from which we make snowshoes”. The wood is hard, strong, and close-grained. The Ainu considered the wood to be of the highest ritual value, i.e., golden, whereas that of the dogwood (*Cornus controversa*) was silver and that of the alder (*Alnus japonica*), bronze. Along the Teshio River, the *inau*, or sacred staffs used at *iyomante*, were always made of the wood of the Amur cork tree.

Certain gods demanded the appropriate wood be used (Takenaka Takeshi, pers. comm. c. 2008). At Shintokikawa in the Ishikari Basin, the wood of the Amur cork tree was used for making *inau* for the *iyomante* for Blakiston’s fish owl (*Bubo blakistoni*); dogwood was used for *inau* for the bear whose *iyomante* here preceded that of the owl (Takenaka Takeshi, pers. comm. c. 2008). Akino reports that, in certain locations in Hokkaido up until the mid-19th century, the spirit of deer was returned to the gods in a ceremony called *opunire*. The skull of the deer was placed in the fork of a branch of an Amur cork tree cut specifically for the purpose (Fujimura 1977).

The wood of the Amur cork tree was also used throughout Hokkaido in carving the captive cub’s feeding dish, *pewrep oipepi* (Chiri 1953), and in making handles for tools. Matsuura noted in his travels that the bark was often used in inland villages as the material for building houses. On March 25, 1858, he recorded that he came to a small village near Akan, in northern eastern Hokkaido, and the Ainu there used the bark for the roof, walls, and mattresses. He was appalled by the poverty this represented. The bark was also used to make temporary canoes, called *yar-cip*, or “bark boat”.

Along the Saru River is a place called Skerep. As an indication of the importance of the fruit of the Amur cork tree in the Ainu diet, a woman who had a

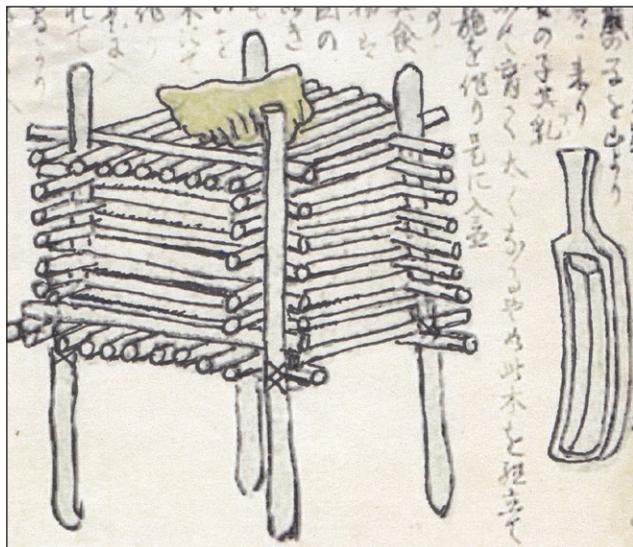


Figure 38. An elevated wooden cage for keeping a bear cub in captivity and, at right, the dish used for feeding it through the bars. The dish was often made of the wood of the Amur cork tree. Matsuura 1972 [1859].

large amount of it drying on racks outside her house was accorded a great deal of respect (Fukuoka 1995).

Fungi Kingdom (Polypore Family) (Fomitopsidaceae)

- *Laricifomes officinalis* (Vill.) Kotl. & Pouzar, bracket fungus

This fungus usually grows on the trunk of a larch (*Larix* spp.), that is now not present in Hokkaido but is common in the southern Kurils, or on Sakhalin fir (Batchelor and Miyabe 1893). Its Ainu names were *siwkarus*, “bitter mushroom”, or *epuruku* (Chiri 1953). According to Matsuura, in Etorofu it was known as *eburiko*. He was presented with some by his guides there (Hanasaki 1988).

The fruit body was removed from the tree, peeled, dried, and ingested as a painkiller (Mitsuhashi 1976). Miyabe indicated it was extremely bitter. Siebold reported to the Japanese authorities that it was an effective cure for stomachache and horse saddle sores. Sekiba Fujihiko reported that, when chewed, it was possible to make a plaster for cuts and burns. When dried and placed in the hearth, the fungus will glow red. It is then allowed to cool in the ash and becomes excellent, long-lasting tinder or charcoal.

Legume Family (Fabaceae)

- *Pueraria hirsuta* Kurz., kudzu

This twining, coarse herb is common in thickets in Hokkaido. The Ainu name is *oykar* whose meaning is unknown (Chiri 1953). The root was mashed to a paste that was used as a fomen-



Figure 39. A bracket fungus growing on a downed Sakhalin fir. Pirikapet, Shiretoko, northeastern Hokkaido. Photo by Dai Williams.

tation on bruises (Mitsubishi 1976). There is a place in northern Hokkaido called Oikarusi, “there are kudzu here” (Chiri 1953).

Beech Family (Fagaceae)

- *Quercus dentata* Thunb., Daimyo oak

One of the several types of Ainu oral narrative is called *oyna*. The following example is by the wife of the bear god quoted by Fukuoka (1995:199).

Tamba shitokere, kai, kai
 I can see the shadow of my stomach
 everywhere.
 I can see the shadow of my big stomach everywhere
 I approached old woman birch
 will you put me up for six months or a year?
 when I asked her this
 old woman birch got angry and said to me
 I can't put you up because you eat too much
 she said angrily
 so I went down
 to old woman oak and asked
 will you put me up for six months or a year?
 I can see the shadow of my big stomach
 I asked old woman oak and she said
 my dear
 you can stay here
 forever
 I can see the shadow of my big stomach
 the old woman oak said so.

The Daimyo oak's generosity stems from its bountiful harvest of acorns that are an important part of the bear's autumn diet. The acorn is rich in starch. The birch, on the other hand, produces almost nothing that would sustain the bear.

The Ainu name for this oak is *kom-ni* or *konmu-ni*, or “tree of nuts” (Chiri 1953). As it is an important source of food to the Ainu, as well as the bear, it is considered a female deity. It is sometimes referred to as *komni-huchi*, or “grandmother oak”, or *sir-kor-kamuy*, “god who owns the mountains”. The Ainu revered ancient Daimyo oaks and when they came across them in the mountains, they placed *inau*, sacred staffs, at their roots; hunters, if unsuccessful, would petition oaks for help (Chiri 1953).

There are still pure oak forests in parts of Hokkaido, although the Daimyo oak is far less prevalent than the Mongolian oak (*Quercus mongolica*). It does well on river terraces, for example, in the Ishikari, Tokachi, and Chitose watersheds, as well as in the hills and plains of coastal regions (Takenaka Takeshi, pers. comm. c. 2008). It is found in both lowland and highland locations. It is also present in the southern Kurils. It is tolerant of high winds but not of maritime exposure. It requires full or partial sun and can tolerate dry soils (Ohwi 1984). It is the climax vegetation of regions of volcanic ash and coastal areas (Takenaka Takeshi, pers. comm. c. 2008).

The Daimyo oak is deciduous and can reach 18 to 20 m in height although those in exposed locations rarely reach 10 m in height. The trunk can be up to 60 to 90 cm in diameter. The Ainu would gather large quantities of acorns in late autumn and these were carried home to be processed. First, the bitter tannins had to be leached out by boiling the acorns in an ash lye solution for several hours; next, they were ground to a powder and either formed into cakes, sometimes mixed with salmon or trout roe, or boiled with beans and fish oil to make *nisew-rataskep*, or “acorn stew” (Chiri 1953).

In his *Teshio Journal*, Matsuura describes a meeting with a “destitute *ekashi* (old man)” whose family had been forced to survive on the “nuts of the trees” (Matsuura 1862 in Hanasaki 1988:163). These might have been either acorns or horse chestnuts.

A decoction of the bast of the oak was used to make a black dye (Chiri 1953) that rendered fishing nets less visible in the water and also prevented rot (Ohlsen 1994; Broughton 1804 in Refsing 2000).

The only recorded medicinal use is in the case of a woman having trouble lactating. The dried acorns were ground, dissolved in water, and fed to the child in lieu of milk. This was of somewhat doubtful efficacy (Chiri 1953).

Beech Family (Fagaceae)

- *Quercus mongolica* var. *grosserrata* (Blume) Rehder & E.H. Wilson or *Q. mongolica* var. *crispula* (Blume) H. Ohashi, Mongolian oak

When Western explorers first sighted the southern coast of Hokkaido in the 16th and 17th centuries, they reported that forests of oak extended unbroken from the coast inland as far the eye could see. What they saw, in particular, was the Mongolian oak, a deciduous tree that often attains 20 to 30 m in height with a trunk up to a metre in diameter, but which can be much smaller in exposed locations and poor soils. It grows in full or partial sun, and requires moist soil. It is distributed throughout Hokkaido in both the highlands and coastal areas, and in Sakhalin and the southern Kurils (Ohwi 1984). It can tolerate strong winds but not salt air.

As it produces both acorns and wood that are strong and fine-grained, the Ainu thought the Mongolian oak to be a tree of exemplary character. Individual trees that grew in a trident form were considered to belong to the mountain god and under no circumstances were they

to be cut or burned. The Ainu name, *pero-ni*, simply means “oak tree” (Chiri 1953). Like the Daimyo oak, it produces edible acorns that were gathered, processed, and consumed in large numbers by the Ainu (Chiri 1953). The wood was used for making mortars and pestles, wedges used in lumbering, tool handles, chopping blocks, and oars (Batchelor 1924).

When there was an epidemic, the Ainu in Mukawa in southern Hokkaido would ply a rope from bast and rice straw and tie it around the trunk of the Daimyo oak, asking it to intervene. Batchelor makes a similar reference to the tree’s powers based on the folklore of the Saru Basin. Both Mongolian and Daimyo oak were among about 20 trees known to the Ainu as *pirika chikuni*, or “good” trees. In this capacity, the god of the oak would listen to the prayers of an ill person and hasten his or her recovery (Batchelor 1924).

Mature and senescent trees in the alluvial plains develop cavities that often become nests for Blakiston’s fish owl. The loss of large trees, such as the oaks, linden (*Tilia* spp.), and the Amur cork tree, and their replacement by commercial coniferous species has been, in some part, responsible for the decline in habitat for these owls that were once one of the Ainu’s most revered gods (Takenaka Takeshi, pers. comm. c. 2008).

Currant Family (Grossulariaceae)

- *Ribes latifolium* Jancz., red currant
- *Ribes sachalinense* Nakai, Sakhalin red currant
- *Ribes rubrum* L. (*Ribes sativum* [Rchb.] Syme.), red currant
- *Ribes triste* Pall., American red currant

There are several red currants native to Hokkaido and others, like *Ribes rubrum*, that were introduced. *Ribes latifolium* is known as *kenasikunni* or *ukenasipuste*. The latter name is derived from *u-kenasi-pa-us-te-p*, or “the thing growing in profusion beyond the swamp”. It is present in Hokkaido, Sakhalin, and the southern Kurils. However, there is no record of use by the Ainu (Chiri 1953).

Ribes sachalinense is called variously *aneka*, *ukenasipuste*, *sumoroni*, or *yuk-punkar* (Chiri 1953). It is found in both Hokkaido and Sakhalin. A wet compress was made from the bast to treat palsy (Chiri 1953).

Ribes triste, too, is known as *yuk-punkar* and, once again, there is no recorded use. The prefix *yuk* may suggest it was part of the bear’s diet. In autumn, bears are known to consume large numbers of berries, wild grapes, and other fruit.

Red currants are deciduous shrubs; all species reach about a metre in height. They grow in moist soils in riparian forests and require sun (Ohwi 1984).

Rose Family (Rosaceae)

- *Rubus crataegifolius* Bunge, Korean raspberry
- *Rubus idaeus* L. var. *aculeatissimus* Regel & Tiling., American raspberry
- *Rubus strigosus* Michx., American red raspberry

- *Rubus mesogaeus* Focke, blackberry
- *Rubus chamaemorus* (Hill) Focke, cloudberry
- *Rubus arcticus* L., arctic bramble
- *Rubus phoenicolasius* Maxim.
- *Rubus parvifolius* L.

There are about six species of *Rubus* native to Hokkaido, Sakhalin, and the Kurils (Ohwi 1984). They are variously known as American raspberry, Korean raspberry, blackberry, arctic bramble, blackberry, and cloudberry. All produced edible fruit although, other than the fact that they were given Ainu names, there is no direct evidence that any were eaten by the Ainu. In fact, in some cases the thorny branches might have been considered more important than the fruits, as they were used in dispelling evil and disease. In addition, there is some researchers' reference of the use of the fruits of some *Rubus* varieties for medicinal purposes.

Usually, such edible fruits were referred to as **ema**uri. The name of a particular berry was sometimes given a prefix to distinguish it from others. *Rubus crataegifolius*, that grew in clearings in the mountains (Ohwi 1984), was usually known as **ema**uri but also as **hure-ayus-ni**, “red thorn tree”, **kamuy-furep** or **yuk-ema**uri, “bear berry”, and **hoku-yuk-ema**uri, “male bear’s berry”. These latter names suggest the Ainu had to share the berries with other consumers. However, *R. crataegifolius* was also known as **een-ni**, “thorny tree”, or **een-ni-furep**, or “thorny tree berry”. *Rubus mesogaeus*, called **kunne-ema**uri, or “black berry”, was just that. *Rubus chamaemorus*, cloudberry, was known as **etankay** or **retara-etankay**, suggesting a white or pale fruit. *Rubus arcticus*, arctic bramble, on the other hand, was known as **hure-etankay** or **hure-hure**, alluding to its red berry.

Locally, many of these names were used interchangeably, so it is often impossible to say with certainty which variety is being referred to. Other names suggest the habitat. **Kina-ka-oma-p**, or “thing in the grass”, describes the often low-growing and poor-tasting *Rubus parvifolius*. *Rubus strigosus* was known as **kimurep**, probably a corruption of **kimun-furep** or “berry growing in the mountains”. The Ainu name of *R. pedatus*, **aye-nokan**, describes the tiny thorn (Chiri 1953). The thorny branches of *Rubus phoenicolasius* were employed to ward off demons (Kinoshita and Takemura 1993).

The fruit was rarely eaten raw, except by children; berries carried home would be given to children as snacks, added to stews as flavouring, or dried for winter use. Both the fruit and twigs were infused to treat conditions like dysentery or infused to make medicinal tea (Kinoshita and Takemura 1993).

Most of the berries had a mountain or upland habitat and this is sometimes noted in their Ainu name. *R. strigosus*, for example, was called **kimourep**, or “fruit in the mountains”. This might account for their limited use by the Ainu. Some, like *R. parvifolius* and *Rubus ideaus*, were widely distributed throughout Hokkaido; *R. chamaemorus* extended its range into southern Sakhalin and the southern Kurils; others had a very narrow range (Ohwi 1984).

Lily Family (Asparagaceae)

- *Smilacina japonica* A. Gray, smilacina

Known as *pepero*, or some variation in Ainu, *Smilacina* is a perennial that grows profusely in wetlands and woodlands, especially in south and southwest Hokkaido (Ohwi 1984); it is more poorly represented in eastern or northern areas.

The Ainu name of *pepero* refers to the root (Fukuoka 1995) that, in areas like Shizunai, Horobetsu, and along the Ishikari River, was dug in autumn, boiled, and either eaten immediately, or dried and stored for winter use. When needed, the roots were winnowed or rubbed between the hands to remove the chaff and hairs, pounded in a mortar, and sometimes seasoned with salt. They were then cooked with rice, beans, and wild onion. The resultant stew was seasoned with animal or fish oil (Chiri 1953). The young shoots are also edible and were collected from mid-April until late May.

In his work, *Ezo Place Names*, Nagata Hosei (1984) notes that there is a place on the Shokotsu River called Peperonai, a name that means “*Smilacina* creek or marsh” (Chiri 1953). In all probability, it was in locations like this that the Ainu collected the roots after the flowers had wilted and the starch accumulation was greatest. The small, red, globuse berries, that appear in clumps at the end of summer, are also edible. They have a good, sweet taste and were used fresh in salads (Fukuoka 1995).

Schisandra Family (Schisandraceae)

- *Schisandra chinensis* (Turcz.) Baill., schisandra

Schisandra is a scandent, dioecious, deciduous, woody shrub found in mixed forest in the mountains of both Hokkaido and Sakhalin (Ohwi 1984). It likes moist soils and is often found at woodland or river margins, especially on sandy soils. It does well in both full and partial shade. In Hokkaido, it was widely distributed in upland areas.

The commonly used Ainu name is *repni-hat*, that Yamada claims is a corruption of the original name, *hurep-ni-hat* or *hurep-ne-hat*, or “the fruit that becomes red” (Yamada 2001). However, while Chiri concurs in this origin of the name, he also notes that the wood was used to make *repni*, a stick used to mark time during songs or oral tales, and thus speculates its more modern name may be derived from this use (Chiri 1953).

The Sakhalin Ainu ate the globuse berry that was usually harvested after the first frost when the sugars had been concentrated. The fruit is edible raw, but the Ainu often dried it for later use.

The branches and fruits were steeped to produce an infusion to treat wind, eye ailments, sore throat, fever, seasickness, and colds (Chiri 1953).

Chiri offers alternate names of *hure-hat*, “red berry”, and *tesma-kar-punkar*, or “the vine that becomes a snowshoe”, and among the Sakhalin Ainu, the flexible, durable wood was used to make snowshoes (Chiri 1953).

Schisandra repanda (Sieb. & Zucc.) Radlk. and *Schisandra nigra* Maxim. are also found in Hokkaido and both have edible fruit.

Hyacinth Family (Asparagaceae)

- *Scilla scilloides* (Lindl.) Druce, squill

This perennial herb once grew in profusion along streams in the hills and lowlands throughout Hokkaido (Ohwi 1984). Miyabe notes its presence in the Oshima Peninsula in the extreme southwest, in Hidaka on the Pacific coast, and in the Ishikari Basin (Batchelor and Miyabe 1893). The bulbs, that are 8 to 10 mm long, are edible but they were difficult to find once the leaves had wilted. The Ainu name for squill is *shita-toma* or *seta-toma* (“dog’s *toma*”), suggesting its bulb was inferior in taste to true *toma*, corydalis (*Corydalis ambigua*). However, Matsuura speculated that the marsh called Harutausnai, “the river where we collect food”, referred to squill and that, at one time, many were gathered there.

Rose Family (Rosaceae)

- *Spiraea salicifolia* L., bridewort

This shrub grows in mire, wet, or boggy areas in the hills and mountains of Hokkaido and Sakhalin (Ohwi 1984). It reaches about 1.8 m in height and grows in full or partial sun.

In Ainu, it is generally known as *nitat-sinkep*, that means “valley or swamp bush clover” (Chiri 1953). It resembles field bush clover, but there is no taxonomic relationship to it. Alternate names are *supankuriki*, *itosinni*, and *nitat-as*, the latter probably a corruption of *nitat-has*, or “swamp or valley twig” (Chiri 1953).

The Ainu made the connection between bridewort and field bush clover, known as *sinkep*, because the wood and small branches of both were used for making pegs for securing the funeral shroud, for brooms, and for skewers used in drying split salmon. In the last case, it was important to use a wood that did not impart any flavour to the fish (Kayano 1978).

Legume Family (Fabaceae)

- *Thermopsis fabacea* (Pall.) DC., bush pea or false lupin

This erect perennial shrub is common in sand dunes along the coasts of Hokkaido, the Kurils, and Sakhalin (Ohwi 1984). Its most common Ainu name is *iranraike-kina*, but it was also known as *raykewkina*, *eranraykina*, or variations of these names. All refer to its use in purification and exorcism (Chiri 1953). A bundle of the plants was used to strike the body of somebody who was ill. While doing so, the Ainu would shout at the evil spirits occupying the patient’s body, saying *e-ramu-an rayke*, “I have killed your heart” (Chiri 1953). Mugwort was used in the same way.

The berries and leaves were boiled and reduced to a thick, glutinous paste that was used as reinforcement to aconite poison on the arrowhead (Chiri 1953).

Trapaceae

- *Trapa natans* L., water chestnut

Where available, water chestnuts were an important food source but, according to Fukuoka, generally, they were regarded primarily as a gift from the gods in times of famine (1995). They ripen in August and were harvested in September, and thus might have been available when food stocks were low. Summer was a critical period for the Ainu, as spring plants had long been exhausted, Sika deer were not available, and there were few fish yet in the rivers.

In Ainu, the water chestnut was called *pekam-pe*, or “floating thing” (Chiri 1953). It grows in lakes or swamps such as Lake Toro in the Kushiro Marsh. The fruits float on the surface beneath the triangular leaves. Harvesting them was usually women’s work and involved working from a canoe with a long stick to which was attached a hook. The fruit and leaf would be pulled toward the canoe and the leaf turned over to check if the fruit was ripe. If it was black, it was already overripe; they would harvest only those that were brown or red.

Chiri cites a harvesting song, or *i-uk-upopo*, sung by the Ainu women as they harvested at Lake Toro. “Where is that little hut? A boat is coming. Where is it coming from? Over there is a hut. Did you try picking over there? (Over there) they are red” (1953:71–72).



Figure 40. An early 19th century depiction of lilies and, at lower left, of water chestnuts. Matsuura 1972 [1859].

The fruits were either boiled fresh, dried in the sun or over the hearth, and stored with the skin left on. In the latter case, they would be soaked in water, the skin peeled off, and they were added to a gruel, *pekampe-sayo*, or to a stew called *ratiskep* (Chiri 1953). As was usually the case, such dishes were then flavoured with bear fat. In Bihoro, the Ainu would add the starch of the cardiocrinum lily and the chopped leaves of the alpine leek (*Allium victorialis*) to *pekampe-sayo* (Fukuoka 1995). Dried water chestnuts were an important ingredient in feasts at *iyomante* that usually took place in December.

In Abashiri, a town on the Okhotsk Sea coast, is a place called Iukruesani that translates as “the path we took to gather something”. Chiri states that, in this case the Ainu were referring to the path they followed to Lake Ponto where they gathered water chestnuts (1954).

Nettle Family (Urticaceae)

- *Urtica platyphylla* Wedd. (Urtica Takedana Ohwi), nettle
- *Laportea bulbifera* (Siebold & Zucc.) Wedd.
- *Pilea viridissima* Makino

To date, almost all researchers of Hokkaido Ainu culture have associated Ainu clothing with the bast derived from the Manchurian elm (*Ulmus laciniata*). However, Honda Yuko, in her research of the history of Ainu clothing, suggests that the use of the bast of elm (*Ulmus* spp.) might be a relatively modern phenomenon, and that nettle (*Urtica* spp.) was the bast of choice for most Ainu communities up until the 17th century (2002). In fact, among the Sakhalin Ainu, nettle was used in making clothing well into the 20th century, and Honda believes this may have been also true of some Ainu communities in northwestern Hokkaido. While much of Landor’s account of his late 19th century journey through Hokkaido and the southern Kurils is barely credible, he was a careful observer and fine artist. There are several depictions of clothing in his account, and one is of an Ainu woman in Piratori (Biratori) wearing what could well be a nettle fibre garment. However, Landor does not reference the use of nettle in his description (1893).

Unlike clothing made from elm bast, that made from nettle is often pure white; in addition, as a fibre derived from an herbaceous plant, rather than a tree, nettle bast is softer to the touch and provides more comfort, insulation, and flexibility. Such clothing was differentiated from that made of the bast of Manchurian elm, which was called *atus*, by the name *retara-pe*, or “white thing” (Ohnuki-Tierney 1974). *Atus* by contrast were usually light brown in colour.

The Ainu word for *Urtica platyphylla* is *mose* (Chiri 1953); *Urtica takedana*, a smaller nettle common in Sakhalin, was also used for making thread and was called *ipisisip* or *iririp*, names that mean “stinging thing” (Chiri 1953). Ohwi states it is synonymous with *U. platyphylla* (1984).

Nettles are perennials that grow in moist soils in the shade in the uplands throughout Hokkaido and Sakhalin (Ohwi 1984). *U. platyphylla* grows to 1.8 m in height. The serrated

leaves of all stinging nettles have hairs causing irritation to the skin, and are long enough to penetrate clothing. Thus, the Ainu would harvest them after the first or second frost, which was usually in October, by which time the leaves had withered (Ohnuki-Tierney 1974). The harvesting of nettles might have adversely impacted their ecology, as suggested by Munro's observations of Niputani in the 1930s that *U. platyphylla* were becoming scarce (Ohlsen 1994).

There were two main methods of processing; in the first, a method always used with *mose*, the stems were cut at the base and the pithy core was removed in situ. The long strips of bark (or outer skin) and bast were bundled up and carried home. A woman could harvest enough bast in a day to make 6 to 10 m of thread. The strips were soaked overnight or for a few days, and then laid on a board to be stripped of the outer skin by running the edge of a freshwater clam shell, called *pipa*, along them. This process was called *kere* or *haikere*. The bast was collected into bundles that were dried in the sun and then bleached on the surface of the snow for 10 to 20 days (Chiri 1953). It was then torn between the fingers into thin strands that were plied together to form continuous threads. A woman would moisten the bast by placing it on her lips and join the ends of two pieces, either by a series of "Z" and "S" twists, or by knotting.

In the second method used for shorter, thinner nettles, the cut stems were carried home and dried for two or three days. When fully dry, they were beaten with a fulling mallet or twisted to remove the pith. The outer skin was separated from the bast by hand and the bast retrieved (Chiri 1953). As above, the bast was then plied or knotted into continuous thread. The finished thread was called *ka* or *itese-ka*, and balls of thread were called *tak* (Kayano 1978). Cloth was woven by women on a simple, modified, back tension loom, which was probably originally introduced by the Japanese. A married woman could weave two bolts in a winter; an unmarried woman with fewer household responsibilities could probably produce double this amount of production. Thus, depending on the size of their family, a mother and daughter might be able to clothe an entire family for the year ahead.

The young shoots of nettle which appear in April or May are edible, although there is no record of their use, other than in Shizunai (Anetai Masaki, pers. comm. c 2008). However, they were probably eaten by Ainu throughout Hokkaido. The need or desire to harvest them would have depended on the availability of other spring greens.



Figure 41. A traditional Ainu garment made of cloth woven from nettle bast. It was known as *detarape* or *retarape*. Asahikawa Museum, catalogue # IV, 1999.

Nettle bast thread has considerable tensile strength that is almost double that of cotton. As such, it made durable cord, belts, bowstrings, rope, fishing line, and nets (Latyshev and Inoue 2002). Unlike bast derived from linden (*Tilia* spp.), cordage nettle maintained its strength when wet.

In the “Song of the Swordfish” is the following description, “the harpoon tip is made of bone ... the shank is made of hydrangea wood ... the shaft is made of bird cherry [*Prunus padus*] ... [and] the line is made of nettle fibers” (Philippi 1979:172).

Other uses referenced in the literature include, the cord holding the trigger release for a fixed bow trap and the leash for a bear cub (Kayano 1978), thread for sewing up clothing or shoes made from the skin of seals, sea lions, and salmon, a tumpline, and a *raunkut*, a girdle worn by married women indicative of membership to her lineage (Fukuoka 1995). In Sakhalin, the bast was woven into belts for men (Latyshev and Inoue 2002).

As nettle requires considerably more time to process than other basts, in some areas of Sakhalin, everyday use of clothing made from it was reserved for men of stature or for the elderly; others might own *retarape*, but wore them only on special occasions (Ohnuki-Tierney 1974). One example of the social value of nettle is that, after giving birth, a Sakhalin Ainu woman would take the child to visit her relatives, at which time her parents would give her a bolt of nettle cloth from which she would make a *retarape*.

In Bihoro, northern Hokkaido, is a place called Iriripushi, a name that is a corruption of *iririp-us*, “there are nettles” (Chiri 1953); on both the Tokachi River and near Abashiri are villages called Moseushnai (*mose-us-nai*), “the river where there are nettles” (Chiri 1953), and on the Osarabetsu River (Osarapet) are several locations named Haiushpet (Chiri 1953). *Hai* is an alternate name for nettle.

There are several other nettle species native to Hokkaido and Sakhalin. *Laportea bulbifera* is called *pon-ipsisip*. *Pon* is the Ainu word for small, and this nettle is, indeed, shorter than *U. platyphylla*. It was also of a darker colour. Still, it was equally strong and useful. Its primary use was for making thick cloth and cordage. In 1903, Bronislaw Pilsudski, the Polish ethnographer, visited the large Ainu village of Shiraoi in southwestern Hokkaido and commented on the huge nettles growing there. These were probably *L. bulbifera*. Mitsuhashi indicates that the leaves were dried and used as a vulnerary (1976).

Chiri mentions a further member of the nettle family, *Pilea viridissima*, that Ohwi states is also known as *P. mongolica* Wedd. (Ohwi 1984). Usually known as *minchi* or *ninchi* in Ainu, its (young) leaf was added to soups, its root was chewed to ease stomach pain, and the leaf and stem were pounded in a mortar to make a viscous paste, eaten with cooked grain (Chiri 1953).

Stinging nettles were well respected by the Ainu for their ability to inflict pain, but they were also recognized for their positive medicinal qualities. The leaves of *U. take-dana* were rubbed between the hands to produce a lotion applied to rashes and insect bites.

Heather Family (Ericaceae)

- *Vaccinium smallii* A. Gray. var. *glabrum* Koidz. (The Plant List 2013)
- *Vaccinium chamissonis* Bong., huckleberry
- *Vaccinium ovalifolium* Sm., black huckleberry
- *Vaccinium oxycoccus* L. (*V. oxycoccus quadripetalus* Gilibert), cranberry
- *Vaccinium praestans* Lamb., Kamchatka bilberry
- *Vaccinium uliginosum* L., bog bilberry
- *Vaccinium vitis-idaea* L., lingonberry or mountain cranberry

Vaccinium smallii is a multi-branched, erect shrub that grows about a metre high and is found in thickets, woodlands, and sunny places in the mountains throughout Hokkaido, Sakhalin, and the southern Kurils (Ohwi 1984).

While it bears a purple, edible berry 6 mm in diameter, there is no recorded use by the Ainu. Its Ainu name is *aye-karip*, whose meaning is unclear (Chiri 1953). Among the Sakhalin Ainu, it may have also shared the name with other vaccinium of *satureh*, *sax-turex*, or *sak-turep*, all of which probably meant “summer fruit”.

Vaccinium chamissonis and *Vaccinium ovalifolium* were both known as *ekoton* or *sax-turex*. Both are found in alpine habitats and, although edible, were probably not used extensively by Ainu groups. There is no record of their use.

Vaccinium praestans, a blueberry, was known in Ainu as *echiyuchi-yari*, *uchi-yuri-yari*, *echara*, and various other similar names (Chiri 1953). It is a dwarf shrub that grows in coniferous forests in Hokkaido, Sakhalin, and the Kurils (Ohwi 1984). According to Chitoku Taroji, it was one of the most important fruits to the Sakhalin Ainu. It is edible raw or cooked.

Vaccinium vitis-idaea, mountain cranberry or lingonberry, was simply known as *furep*, or “berry” in Ainu. As with other plants, such a concise and unqualified title suggests it was probably of particular importance to the Ainu. It has a rather limited distribution in the uplands and in coniferous woodlands in Hokkaido, and in Sakhalin and the Kurils. In Sakhalin, it was called *enunkanni* or *enonkani* (Chiri 1953). It is a dwarf, evergreen subshrub with red, globose fruits that grows in coniferous woods and on alpine slopes (Ohwi 1984). It is typically less than 10 cm high (Sato 2002).

Matsuura, in his *Teshio Journal*, recounts a journey by boat up the Ishikari River and his overnight stop at Asakara. Here, his Ainu hosts made him a dish consisting of the bulbs of the cardiocrinum lily cooked with diatomaceous clay that was garnished with seal oil and to which vaccinium berries were added (Matsuura 1862 in Hanasaki 1988). As the date of his record was late July by the modern calendar, and since the vaccinium berries do not ripen until late August or September, the berries in this case must have been dried or otherwise preserved. The berry was also used as a dyestuff.

Vaccinium oxycoccus, a cranberry, grows in sphagnum bogs throughout Hokkaido (Ohwi 1984) but mainly along the Pacific coast east of Cape Erimo, along parts of the Okhotsk Sea coast, and in the Soya Peninsula. It is also present in Sakhalin and the Kurils. Flowing to the

Okhotsk Sea through Shari is a river called Katamsarkaomanay, or “the river above the bog where the cranberry grow”. The usual Ainu name for this cranberry is *katam*, although it was also known as *katamka-furep*, “fruit seen above the marsh” or, in Sakhalin, as *hu-turep*, or “raw fruit”. The berries were often eaten raw, but in Shiraura in Sakhalin, they were added to a trout stew (*sumusmim-chikaripe*) or to roe paste (*upustrex-chikaripe*) that was dressed with bear or deer grease or fish oil. This recipe seems to represent a strategy found in the cuisine of all Ainu groups—that is, to a basic, somewhat insipid, stew was added animal fat or oil to give the dish more body. Then sweet fruit, such as that of the Amur cork tree or cranberries, was added to taste.

Vaccinium uliginosum, bog bilberry (northern bilberry or bog whortleberry), is found in alpine regions of central and eastern Hokkaido, as well as in Sakhalin and the southern Kurils. It is a branched, deciduous shrub 30 to 70 cm high (Ohwi 1984). Its large, greyish-blue fruit is wax-coated and edible raw. It had several names in Ainu including, in Sakhalin, *chux-turex*, or “autumn fruit”, *kunne-turex* or *kunne-furep*, “black fruit”, and *sar-katam*, “wetland

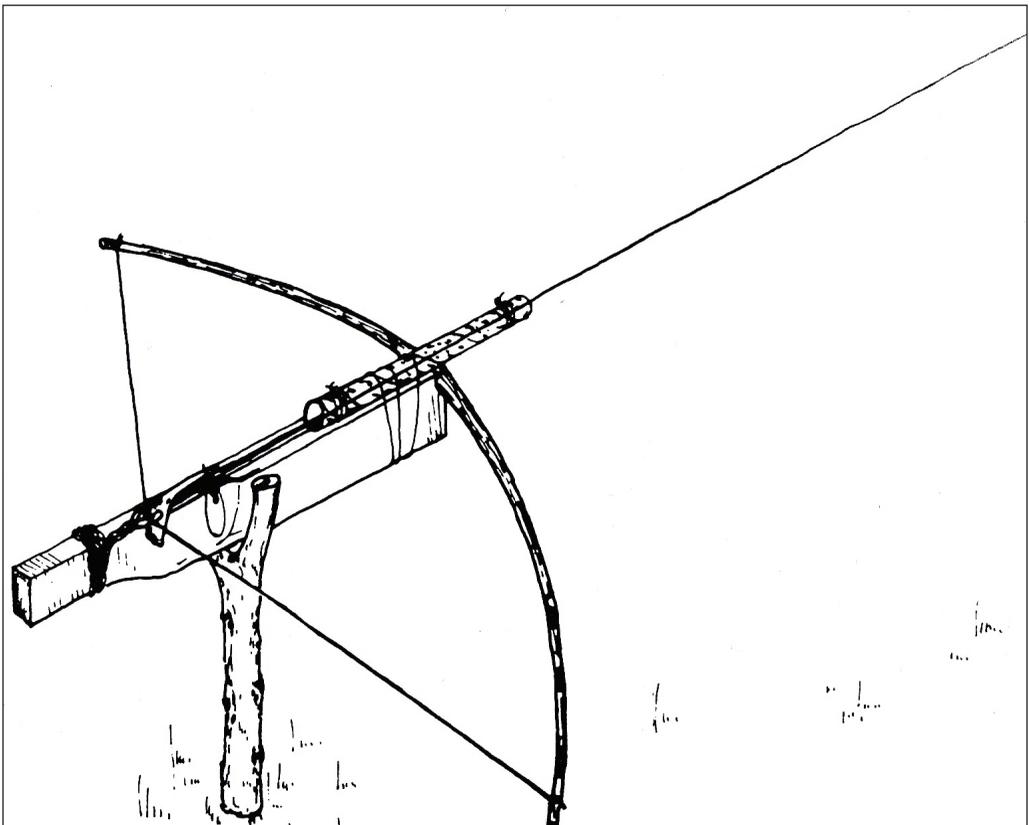


Figure 42. A fixed bow trap which was usually made of a durable wood like viburnum. Such traps were used against a variety of prey including bear. In this case a fox is at risk. Note the bark tube protecting the arrow and nettle bast bowstring. Murakami 1799.

fruit” (Chiri 1953). Despite the fact that the fruit has all three names, there is no record of its use by the Ainu. As an alpine plant, it was largely inaccessible. Chiri notes that on the Bihoro River in northern Hokkaido is a place called Hurepukparakot, or “the valley we pick berries” (1953). He speculates that this probably referred to vaccinium.

Honeysuckle Family (Adoxaceae)

- *Viburnum opulus* L. var. *calvescens* (Rehder) Hara, guelder rose
- *Viburnum furcatum* Blume ex Maxim.
- *Viburnum wrightii* Miq.
- *Viburnum japonicum* (Thunb.) C.K. Spreng.

Viburnum opulus, guelder rose, is a deciduous shrub that grows to 5 m in height in the uplands of Hokkaido, Sakhalin, and the southern Kurils (Ohwi 1984). It can grow in partial shade or full sun and thus it is found in open woodland and woodland edge; it requires moist soil.

Its usual Ainu name is *yarape-ni*, which simply means “shrub”, but it was also known as *paskur-e-p*, or “what the crows eat” (Chiri 1953), presumably referring to the bright red fruit. The Ainu also ate the berries as a stomachic or squeezed the juice for use as eyedrops. The wood is durable and was used to make fire tongs (Chiri 1953).

Viburnum furcatum, *Viburnum japonicum*, and *Viburnum wrightii* are all somewhat smaller than the guelder rose but have a similar open woodland habitat. *V. furcatum* is present in the mountains of Hokkaido, Sakhalin, and the southern Kurils and was known as *riten-ni*, *hapetun-ni* or *hametun-ni* in Hokkaido and as *hapis-ni* in Sakhalin. *Riten* means flexible and in Maoka, Sakhalin, the wood was used to make fixed bow traps and snowshoes (Chiri 1953). Batchelor notes a song in Kinmon, Hokkaido that describes how a young jay alights on a supple viburnum branch. As the jay shook its tail, the branch first dipped down and then sprang up.

Batchelor also reports that in the Saru Basin the Ainu ascribed it power to cure sickness. An ill person would offer prayers to the god of the viburnum and hope these would hasten recovery (Batchelor 1924).

Viburnum japonicum was also known as *riten-ni* but had no recorded use.

Viburnum wrightii was known as *kiray-ni* or *kawat-ni* (*kawax-ni*), whose meaning is not known (Chiri 1953). It is present in the mountains of Hokkaido and Sakhalin.

Grape Family (Vitaceae)

- *Vitis coignetiae* Pulliat ex Planch., wild grape
- *Vitis thunbergii* Siebold & Zucc., wild grape

These are two of several wild grapes native to Hokkaido and southern Sakhalin. *Vitis coignetiae* is a deciduous, tendril-bearing vine that grows in thickets (Ohwi 1984) or winds itself around the trunk and branches of any tree in its path (Fukuoka 1995). Thus, while its com-

mon name in Ainu is *hat*, it was sometimes called *nikaop*, or “the thing that grows on trees” (Chiri 1953). The autumn fruit is edible but tart, and thus the Ainu usually used it by adding it as flavouring to stews, as they did with the fruits of Amur cork tree and other plants. When harvesting grapes in the mountains, they had to be aware that the fruit was also a favourite of birds and the bear (Fukuoka 1995).

The bast of the vine was used to make a number of important items for use in daily life, such as *shitukap-saranip*, a knitted basket, brushes, cords to lash together the structure of a house, and a fishing net (Fukuoka 1995). In addition, they used it to make *shitukeri* or *sutker*, sandals worn in summer (Kayano 1978).

The optimum time to harvest the vine was after a period of rain when the sap was running. The Ainu would look for a vine without twists or joints and, with a hatchet, cut into the bark. The bark (with the bast attached) was then stripped from the woody core of the vine. The bark was immediately torn off and the bast rolled up in large coils to be carried home on the back (Fukuoka 1995).

The raw strips could be anywhere from 6 to 25 cm in width and perhaps 3 to 5 m long. To make footwear, these strips were beaten with a mallet to soften the fibres. The strips were then torn into 5 mm wide strands that would be knitted together to form the sandals. When removed from the vine, the bast is quite flexible but quickly dries out. Thus, it must be soaked before knitting began.

Cords for tying the sandals could also be made of grapevine bast but the bast of linden (*Tilia* spp.), nettle (*Urtica* spp.), or bittersweet (*Celastrus orbiculatus*) was preferable because it was less chafing. Willow (*Salix* spp.) bast was also used for making footwear (Fukuoka 1995).



Figure 43. Sandals made of wild grapevine bast. Worn by the Ainu for negotiating rocky or stony ground. In summer Ainu normally were barefooted. Asahikawa Museum collection, photo by Dai Williams.

The sandals were versatile. They became softer with wear and, because of their open construction, were cool in the summer heat. They were used primarily for negotiating slippery stones or abrasive sands when working in rivers and for climbing in the mountains. For normal activities around the house or in the immediate vicinity of the village, the Ainu would go barefoot. Mogami Tokunai, writing at the turn of the 19th century, implies that the use of footwear among the Ainu was a recent development (Fukuoka 1995). However, the discovery of grapevine bast sandals at a Satsumon site in Sapporo suggests their use was much older (Takenaka Takeshi, pers. comm. c. 2008).

The grape bast was also incorporated into the ceremonial headwear of elders called *sapa-un-pe*, “something on the head”. The headpiece was primarily made of willow shavings knitted together, but many museum examples exhibit an inner core of woven grape bast (Kayano 1978). At the front of the headdress, there was often an emblem of the wearer’s lineage. It might be a bear or some other animal carved in wood or the skull of a bird.

Other uses of the vine included an impromptu club (made of the woody core) and a tether for the bear cub during *iyomante* (Chiri 1953). Kinoshita, in his study of illness among the Ainu, records that the bark was shredded and burned, and the smoke inhaled by the patient to treat tonsillitis. He notes that this treatment was of doubtful efficacy and was probably contraindicative (Kinoshita and Takemura 1993).

Batchelor records a folktale from the Saru River that describes the origin and utility of the vine. In the beginning of *ainumosir*, the land of men, the gods forgot to plant the vines of grape (*Vitis* spp.) and actinidia, so returned to the land of the gods to collect them. Subsequently, the Ainu learned to shred the vines, boil them in water, and give the infusion to the ill (Batchelor 1924).

12. Flora Collected in Winter, or as Needed

Pine Family (Pinaceae)

- *Abies sachalinensis* (F. Schmidt) Mast., Sakhalin fir

“A peculiarity of the Ainu of the upper Tokachi River is that they frequently cover their dwellings and storehouses with the bark of trees, instead of with reeds . . .” (Landor 1893:58).

The Sakhalin fir is a major component of upland forests throughout Hokkaido, in the southern Kurils, and Sakhalin. In the mountains, it sometimes appears in pure stands or mixed with Yezo spruce (*Picea jezoensis*) or hardwoods. Sometimes it can be also seen at sea level (Ohwi 1984; Sato 2002).

It is known as *fup*, *hup-chikuni* (Batchelor 1924), or *yayu*, in Ainu. There are many references to it in Ainu place names that would seem to indicate it was long important to them. Representative names include Fupruyka, or “Sakhalin fir bridge”, Fupusnai, “place of many Sakhalin fir”, and Fupusnot, “Sakhalin fir cape” (Chiri 1953).

A coniferous, monoecious tree with nearly smooth, greyish bark, it can grow to a height of 25 to 30 m with a trunk up to 80 cm in diameter (Ohwi 1984). The branches grow horizontally or slightly sloping upwards and the Ainu would describe them as arms reaching to heaven (Chiri 1953).

In Kushiro, there is a dance celebrating the Sakhalin fir in which the female dancers make their hair swirl around their heads to symbolize the power and energy of fir branches in the winter wind (Chiri 1953).

Any Ainu who was caught in a snowstorm could seek shelter under the protective branches of the Sakhalin fir (Chiri 1953). Matsuura reported that he witnessed some Ainu making an overnight shelter of its bark at the village of Kikinnai, during his journeys to Bihoro in northern Hokkaido at the end of March 1858 (Fukuoka 1995). He noted that it was relatively easy to debark sections 5 to 6 ft long in spring, but this was more difficult in winter when the sap was frozen.

The branches and needles were used to make temporary shelters, called *fup-cise* or *fup-kar-cise*. The branches were lashed together to form a frame; smaller branches were interwoven with them to form the walls; other small branches were spread on the floor and needles placed over these to form places to sit or sleep. In the centre of the hut, they spread some soil and on it they built a fire (Fukuoka 1995).

As the structure of the Sakhalin fir is such that little snow penetrates to the ground, in most years, bamboo grass (*Sasa* spp.) was available to Sika deer in its stands throughout the winter (Watanabe 1972).

The branches also had ritual significance and, in Sakhalin, when a sick person visited another’s home, he had to purify himself by gently striking himself with the branch of a



Figure 44. Yezo spruce, Sakhalin fir, and various birches are prominent elements of upland forest in north-eastern Hokkaido. Understory is primarily bamboo grass. Photo by Dai Williams.

Sakhalin fir. The branch must then be placed in the crotch of a tree facing in the direction of the sunset. Branches were also used by older women during exorcism ceremonies (Ohnuki-Tierney 1974). Batchelor records that, in the Saru Basin, Ainu believed it had more general healing properties. An ill person would offer prayers to the god of the Sakhalin fir in the hope or expectation that it would hasten recovery.

The wood was used to make a sheath for a hatchet; the resin, along with that of the dwarf Siberian pine (*Pinus pumila*) and Yezo spruce (*Picea jezoensis*), was used to secure poison to arrowheads (Philippi 1979). Well-dried wood was used as part of a fire drill in conjunction with the root of Japanese elm (*Ulmus davidiana*). In March 1858 in Chimikep in northern Hokkaido, Matsuura observed the Ainu making fire with it (Fukuoka 1995). In addition to its use in making temporary shelters, the bark was, as also recorded by Landor, employed as shingles and to face small structures (Yamada 2001).

Arum Family (Acoraceae)

- *Acorus calamus* L., sweet flag

Sweet flag is relatively rare in Hokkaido but has significant concentrations in the southwest, in Iburi, the Ishikari Basin, and in Kushiro (Batchelor and Miyabe 1893). It grows in shallow river water and has rhizomes 8 to 12 mm in diameter (Ohwi 1984).

Known as *surku kusuri*, or “aconite medicine” in Ainu, the rhizome is edible raw and had a number of medicinal applications—among them, as the name suggests, as an antidote to poison made from the root of aconite (*Aconitum chinense*) (Chiri 1953).

Chiri reports that the roots, which were harvested in early spring or late autumn, were peeled, dried, and infused to treat stomach pain, indigestion, food poisoning, and the common cold. Large doses of the root are known to be an effective emetic (Mitsubishi 1976).

The infusion was also used to wash bruises and to bathe a newborn; the mother drank the infusion after childbirth (Chiri 1953; Kinoshita and Takemura 1993). The slightly toxic root and the leaf were used by shamans to drive off evil spirits. Sweet flag was also planted outside homes to ward off snakes (Chiri 1953).

Polypod Fern Family (Pteridaceae)

- *Adiantum pedatum* L., maidenhair fern

This fern is quite common in woods in the uplands throughout Hokkaido; it is also present in the southern Kurils and southern Sakhalin (Ohwi 1984). Its Ainu name is either *etukemnumun* or *kotorusmun*. The former name is a reference to bleeding and one of the known uses of the plant was of the fronds to stem nose bleeds (Mitsubishi 1976). It is known to have haemostatic qualities. It was also used with heated stones to treat backache and infused to treat blood in spittal (Chiri 1953).

Rose Family (Rosaceae)

- *Agrimonia eupatoria* L., agrimony

This hirsute, perennial shrub grows in meadows and alongside roads in both the lowlands and uplands throughout Hokkaido (Ohwi 1984). It appears from early April to early May. Its Ainu names are *kina-rayta*, *ipakokarip*, and *seta-haymosi* (Chiri 1953).

Kinoshita reports that the seeds were used to ward off evil spirits. The leaf is applied to cuts and the flowers and dried leaf are used to make an infusion for treating intestinal catarrh (Mitsubishi 1976).

Sedge Family (Cyperaceae)

- *Carex dispalata* Boott. ex A. Gray, sedge
- *Carex rhynchophysa* C. A. Mey.
- *Carex laevirostris* (Blytt ex Fr.) Andersson

Chiri recorded six types of sedge growing in Hokkaido (1953) but there are, in fact, many times that number, and Ohwi references over 40 (1984).

Carex dispalata grows in lowland ponds and by rivers throughout Hokkaido, the southern Kurils, and Sakhalin (Ohwi 1984). It is a perennial that does best in moist or wet soil. It prefers full sun or partial shade. It is known as *pehsamus* in Hokkaido and *pexsamusi* in

Sakhalin (Chiri 1953). In Sakhalin, it was used to weave matting and sacking used in the storage of winter food supplies.

Carex rhynchophysa is known as **poke-mun**, or “warm grass” in Ainu (Ohwi 1984). It is found in Hokkaido, Sakhalin, and the Kurils. Like the bast of Manchurian elm (*Ulmus laciniata*) and reed bent grass (*Calamagrostis epigejos*), known as **keromun** in Ainu, it was used to stuff boots for comfort and warmth.

In Sakhalin, bundles of sedge were used as talismans to ward off evil. In an oral tale titled, “Man-eating Demons”, the hero Yayresupo describes the following,

as the man-eaters came up the road, the puppy skulls barked loudly; the sedge bundles [**pehsamus tantuka**] swayed their bodies and danced; the [alder, species unknown] charm statues [**oken**] danced [a war dance] with their swords and all tried hard [to chase away the demons] (Ohnuki-Tierney 1969:68).

The demons ran away at the sight of the talismans and made their escape by boat (Ohnuki-Tierney 1969, 1974).

Carex laevirostris (that Ohwi lists as synonymous with *C. rhynchophysa*) was usually known as **orikon**, but other local names referred the sharp edges of the leaf or its habitat in swamps (Ohwi 1984). The dried leaf was used for making matting, belts, and bags, and for stuffing fish or deerskin boots worn in winter (Chiri 1953).

Bittersweet Family (Celastraceae)

- *Celastrus orbiculatus* Thunb., bittersweet

The god said, I was naked and swung my body from the branch of a tree. From my body emanated a strong wind that felled the trees and grasses. At this the villagers were both surprised and angry. I was delighted to have angered them and thus swung harder and harder. One poor wretch came to me carrying a bow and an arrow made of mugwort [*Artemisia montana*]. Being wary I kept a close eye on him. He stood there and shouted, listen to me! I was asked by the god of fire to do something. He started to circle me with an arrow ready on the string of his bow. I continued to stare at him but, suddenly, he let loose an arrow that struck me in the eye. He shot another which also hit me in the eye and I lost consciousness. I fell to the ground but later revived. The old wretch said to me, you did a terrible thing by destroying the village where the gods live. They want you know what you have done.

Realising what I had done I confessed that, while I was also a god, I had an evil mind. Fearing that I would die in terrible pain I asked the old man to turn me into bittersweet so that, instead, I might be useful (Fukuoka 1995:156).

The bittersweet, indeed, proved to be useful to the Ainu. One of its names, *paskur-e-p*, means, something eaten by the crows (referring to its red berries), but among its other names are *hay-punkar* or *punkar-hai*, or “vine bast” (Chiri 1953). It is, in fact, not a vine but a low deciduous tree, or “climber”. The branches are gathered anywhere from December to March, the bark is split vertically, and the inner wood core removed and discarded (Fukuoka 1995). The bast layer is then carefully separated from the bark, bundled, and soaked in hot water for a few minutes, which causes the surface to turn deep green. It is next bleached on the surface of the snow for two weeks, by which time it turns pure white. If there is no snow, it is hung from a horizontal pole for about a month (Fukuoka 1995). The resulting white fibre is called *retahai*, *reta* meaning white (Chiri 1953). As it is extremely strong, the Ainu learned it was an ideal material for making their tumplines, or *okae-tara*, for cords, rope, nets, bow strings, sword straps, and a belt called *ra-un-kut* (Kayano 1978). The *ra-un-kut* is 3.6 m long; each warp is made up of eight extremely finely spun threads. The wefts could also be of bittersweet, or of nettle (*Urtica* spp.) bast, or even cotton. It was woven by her mother or maternal grandmother and given to a menstruating girl as a confirmation of her matrilineage, with woven designs representing this. The Ainu believed that, without the belt, a woman would not be able to find her place in the afterlife. It was worn beneath her clothes under the bosom. Once her mother had placed the belt, nobody but the young woman or her husband was allowed to touch it (Kayano 1996).

Since it is derived from a “grass”, the bast of nettle is finer than that derived from the bittersweet. However, bittersweet bast is stronger and was even used to make armour. Munro reported that, in Sakhalin, bittersweet bast was still used in weaving early in the 20th century (1963). This deciduous climber grows both in the uplands and lowlands, at the forest and meadow margins in Hokkaido, southern Sakhalin, and the southern Kurils (Ohwi 1984); the stems are long and wind to the left around anything in their way (Sato 2002).

Dogwood Family (Cornaceae)

- *Cornus controversa* Hemsl., dogwood

The Ainu name for dogwood is *inau-ni*, or the tree from which *inau*, sacred staffs, are made. However, as noted below, it is not the only tree used for this purpose. Nonetheless, because the bark of the dogwood is pale and considered beautiful by the Ainu, the tree is thought to be of good character, and thus is ideal for making sacred objects. When the staffs reach the land of the gods, they turn to silver and please the gods with their beauty. In Horobetsu, the club, or *i-sapa-kik-ni*, used for killing a salmon after it was landed, was once made of

the wood of dogwood—a sign of the reverence in which the local Ainu held salmon. Upon its death, the salmon’s soul would be released and returned to the land of the gods. As it did so, it danced and swung the dogwood club. The club was regarded as a kind of *inau* (Chiri 1953).

Thus, the dogwood is second in importance only to the Amur cork tree (*Phellodendron amurense*), whose wood turns gold, and is more prestigious than alder (*Alnus japonica*), whose wood turns to bronze. Willow (*Salix* spp.), the wood most often used for making *inau*, is generally, but not always, of lesser stature.

Kayano states that in Niputani, dogwood and willow were the woods most often used for *inau* (1978). The choice of wood would depend on local availability and importance of the ceremony or of the god or gods being supplicated. Since most ceremonies—including *iyomante*, the return of the spirit of the brown bear (*Ursos arctos*), Blakiston’s fish owl (*Bubo blakistoni*), or other sacred animals to the land of the gods—took place before the sacred altar, or *nusa-san*, many gods would be honoured with newly made staffs. Chief among these were the guardian of the village or the altar itself, but other gods might, at times, be equally or



Figure 45. An Ainu man supplicating the gods by praying before sacred staffs called *inau*. Matsuura 1977 [c. 1850].

more important. These might include the goddess of fire or hunting, the god of fishing, water, the mountains, or fighting spirit.

Inau were also placed in a specially designated position on the prow of a canoe to ensure a safe journey or success at fishing. To mark the end of the salmon fishing season, any salmon caught after December was honoured by placing an *inau* upon it. Such salmon were called *inau-ko-cep*.

Before hunting in the mountains or cutting timber, Ainu men would carve *inau* from any available wood, for example, ash (*Fraxinus mandschurica*), and place them at the foot of a selected tree in order to solicit the permission of the god of the hunt, *isowan-kamuy*, or of the mountains, *kimun-kamuy*. When ill, an Ainu would pray to the god of a tree, like the dogwood, for a speedy recovery (Batchelor 1924).

The dogwood grows in uplands throughout Hokkaido but is best represented in southern, western, and southwestern areas. It is deciduous and can reach between 15 and 20 m in height (Makino 1961; Ohwi 1984).

When a religious event requiring staffs approached, Ainu men would travel into the hills to select trees from which they would carve them. Generally, they would select a branch or trunk 3 to 4 cm in diameter and preferably without knots. Seventy centimetre lengths of wood would be brought back to the village where they were first debarked and then placed in the shade to dry. If it had to be dried inside the house, the wood was passed indoors by the *rorunpuyar*, or sacred window. When neither too green nor too dry, the wood was ready to carve. Men would gather at a place outside the village far from the eyes of any women, who were considered impure. Here, they would carve the staffs using a knife called a *makiri* (Fukuoka 1995).

There were often many gods to be recognized at any given ceremony. In general, *inau* consisted of a length of wood on which were carved multiple slivers, called *inau-kike*, that, because they were thin, tended to curl up around its circumference. The importance of *inau* to the Ainu is suggested by its many forms and types. Some were relatively simple but others were in the form of human or god-like figures.

Another equally important use of dogwood is in the creation of a headdress worn by elders or men of importance during ceremonies; the Ainu believed such headdresses augmented the power of their words in conversations with the gods. The headdress consisted of a core made of the bast of linden (*Tilia* spp.) or wild grape vine (*Vitis* spp.), an outer band made of *inau-kike*, which is bound to the core, and a frontpiece, usually representing an animal associated with the wearer's clan or family. This might be, for example, a carved image of a bear or wolf or an actual bird or animal skull. Aside from noting affiliation, this image was also thought to expel evil.

Rose Family (Rosaceae)

- *Crataegus maximowiczii* C.K. Schneid., hawthorn
- *Crataegus chlorosarca* Maxim.

The hawthorn is a small, deciduous tree or large shrub that reaches between 4.5 and 7 m in height and that usually grows in rather moist soils and full or partial sun in meadows, alluvial plains, and forest margins. However, it can be drought- and wind-tolerant, and therefore is also found on dry mountain slopes. In general, however, it is very rare in Hokkaido and even more so in Sakhalin (Ohwi 1984).

The usual Ainu name is *ape-ni*, or “fire tree”, probably a reference to the colour of the branches (Takenaka Takeshi, pers. comm. c. 2008). They are also known as *kamiure-ni*, literally “red wood tree”, as *unpi-ni*, a name whose meaning is unknown, and *unci-ni*, that means “fire tree” (Chiri 1953).

Chiri records that the wood was carbonized, dissolved, and applied to red rashes like measles, or used to treat fevers (1953). An infusion of the wood was drunk to counteract stomach pain. Sato noted that the fruit is edible and the wood suitable for carving (Sato 2002). However, there is no recorded such use by the Ainu.

(Daphniphyllaceae)

- *Daphniphyllum macropodum* var. *humile* (Maxim. ex Franch. & Sav.) K. Rosenthal, *daphniphyllum*

Daphniphyllum macropodum is an evergreen, dioecious shrub that grows in full or partial shade in woodlands in western Hokkaido, in Shiretoko, and on the Nemuro Peninsula (Ohwi 1984). It requires snow cover to protect it in winter; it prefers moist soil and is often found in riparian zones (Takenaka Takeshi, pers. comm. c. 2008). The Ainu name is *rya-ham-u* or *riya-ham-us*, or “the leaf survives the winter” (Chiri 1953). The leaf was heated and the oily film that formed was used as a glue (Kayano 1996).

Leptosporangiate Fern Family (Dryopteridaceae)

- *Dryopteris crassirhizoma* Nakai, wood fern

This woodland fern thrives in partial shade and moist soils, mainly near riverbanks. It is locally common on wooded slopes throughout Hokkaido and is also found in the southern Kurils and southern Sakhalin (Ohwi 1984). Its Ainu name is either *kuaysorma*, a reference to the arrowhead shape of the fronds, as *yuk-sorma*, or *kamuy-sorma*, both references to bear. The only known use by the Ainu was of the dried rhizomes and stipes to treat intestinal problems and ease bruising (Chiri 1953).

Bittersweet Family (Celastraceae)

- *Euonymus oxyphyllus* Miq., euonymus
- *Euonymus macropterus* Rupr.
- *Euonymus sachalinensis* (F. Schmidt) Maxim.
- *Euonymus alatus* (Thunb.) Siebold
- *Euonymus radicans* (Miq.) Siebold ex Miq.

- *Euonymus sieboldianus* Blume, spindlewood

Euonymus oxyphyllus is a glabrous, deciduous shrub that grows in woods and thickets in the mountains throughout Hokkaido, but which is most common in the southwest. It is also found in the southern Kurils.

Euonymus macropterus and *Euonymus sachalinensis* are found in Hokkaido and southern Sakhalin (Ohwi 1984). The most common Ainu name for *E. oxyphyllus* and *E. macropterus* is **konke-ni**, or “bending wood”, an obvious reference to its flexibility. In the past, the Ainu used the wood for making bows. More recently they have used yew (*Taxus cuspidata*). The alternate name for *E. oxyphyllus* is **kunit**, meaning “bow handle”. *Euonymus alatus* is known as **imakkini**, a corruption of **imak-kai-ni**, or “the tree that heals the tooth”. The wood was used to make chopsticks that were believed to prevent tooth decay (Chiri 1953). It is present in thickets and woods in low mountains in Hokkaido, southern Sakhalin, and the southern Kurils (Ohwi 1984).

The Ainu name for spindlewood, *Euonymus sieboldianus*, is **kasup-ni**, a name that derives from the fact that, along with magnolia (*Magnolia* spp.), it was primarily used for making scoops or ladles (**kasup**) with which soups or stews were transferred from cooking pot to plate or bowl (Kayano 1996).

When ill, an Ainu would pray to the god of the spindlewood for a rapid recovery (Batchelor 1924). It is a small, deciduous tree that attains between 4 and 5 m in height (Ohwi 1984); it grows in upland and mountain zones throughout Hokkaido, although it is most common in the west and southwest. It is also present in southern Sakhalin and the southern Kurils (Ohwi 1984). The wood is strong, flexible, and fine-grained and was also used to make chopsticks, libation sticks, sword sheaths, ceremonial arrows, and the shaft of fixed bows (Chiri 1953).

Olive Family (Oleaceae)

- *Fraxinus mandschurica* Rupr., Manchurian ash

The Manchurian ash is a large, deciduous tree that likes its feet wet and thrives even in swamps; it grows in flatlands and intermountain valleys throughout Hokkaido and southern Sakhalin (Makino 1961; Ohwi 1984). The trunk grows straight to 30 m in height and can reach a diameter of a metre (Takenaka Takeshi, pers. comm. c. 2008). Given this considerable girth, it was one of the candidates for the construction of dugouts, and, in Chikabumi near Asahikawa, the Ainu fishermen believed it would guarantee a large catch (Fukuoka 1995).

The Ainu name for Manchurian ash is **pin-ni**. Prior to felling a tree, from which a canoe was to be made, the Ainu would place **inau** at the base of the trunk and offer a prayer saying, “keep the hard stem back and bring forward the soft stem”. This prayer is derived from a legend about the god of the ash.

Ponokikurumi, the young walnut, is a very simple god. However, he was in the habit of cursing others. Pon is the brother of the god called Samaeikur, maker of the Ainu land. Pon approached the god of the ash stamping the withered branches. He had plenty of tools for cutting wood. The ash god thought to himself “he seems to want to make a dugout from me. He has offered prayers to ensure my wood remains soft but he has also said terrible things about me”. So the ash became angry and hardened his wood so that Pon could not cut him.

Next Samaeikur came in search of wood to build a dugout. He prayed to the ash god as he should and promised to return with gifts. “I was impressed by what he said and kept my wood soft. He felled me, made his dugout and, as promised, returned with gifts of wine and *inau*”.

Samaeikur prayed again to the god of the ash saying “thanks to you I was successful in my trading”. The ash god, in turn, thanked Samaeikur for his gifts and said, “as a result I was elevated to a higher rank of the gods” (Fu-kuoka 1995:117–118).

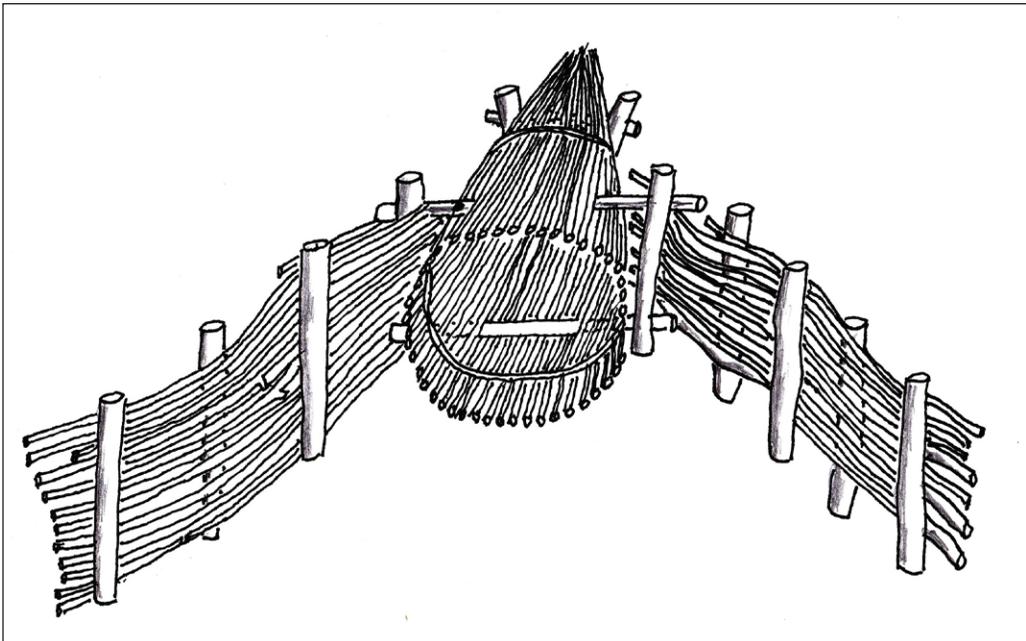


Figure 46. A cherry salmon trap and weir made of ash branches lashed together with nettle or linden bast and secured to the river bed by Japanese elm or willow posts. This type was oriented downstream; it was modified when facing upstream to take migrating salmon. Similar traps were used in Sakhalin to catch smelt. Illustration by Dai Williams after Watanabe et al. 1989.

Thus, in the Ainu belief system, by offering its wood for use by the Ainu, the Manchurian ash fulfills its destiny and earns the right to return to the land of the gods.

In another Sakhalin Ainu myth concerning the childhood of the original shaman, Sanaikur, he is raised, in some versions, by an eagle at the base of a mountain or of an ash. This circumstance symbolizes the shaman's role as mediator between humans and the spirit world. In a parallel story among the Hokkaido Ainu, the tree in question is the Japanese elm but the symbolism is identical (Wada 1999).

In addition to dugouts, the Ainu used the wood to make structures like elevated storehouses, weirs, and oars (Chiri 1953; Kayano 1978). The wood of Manchurian ash also splits relatively easily and makes excellent firewood (Chiri 1953).

Another ash, *Fraxinus sieboldiana* Blume or *Fraxinus lanuginosa* Koidz., is a small, deciduous tree that grows in the mountains and, as such, it was known in Ainu as *iwa-ni*, mountain tree. It rarely exceeds 10 m in height. Like the larger, lowland Manchurian ash, it made long-burning firewood but was perhaps as important as a source of dye. The bark was boiled to produce a dark blue dye that, along with the soot from the bark of the Japanese white birch (*Betula platyphylla*), was used to create the tattoos above and below the lips and on the wrists of Ainu women. Small incisions were made into the skin and the dye and soot rubbed in. After a week, any scabs would fall off and the tattoos remained (Chiri 1953).

The trunk of a Manchurian ash was fashioned into spears driven into the ground to impale deer during hunts where dogs were used (Kayano 1978), and its flexible branches were used to make bird and animal traps, temporary sleds, and the stretchers for deer hides known as *chin-kuwa*. A conical fish trap, as shown in Figure 46, was made of ash branches lashed together with cord made of a bast, and was placed in the centre of a weir and secured to the river bed by stakes.

Coffee Family (Rubiaceae)

- *Galium verum* L. var. *asiaticum* Nakai, lady's bedstraw
- *Galium trifloriforme* Kom.
- *Galium triflorum* Michx.

Known in Ainu as *manchiw-kina* (Chiri 1953), this perennial occupies disturbed soils alongside roads, most often in a coastal zone. It is found on all of Hokkaido's coasts and is also present in the Tokachi and Ishikari valleys. *Gallium trifloriforme* and *Gallium triflorum* are represented in Hokkaido, southern Sakhalin, and the southern Kurils (Ohwi 1984).

The leaf of *Galium verum* is edible but, apparently, was not eaten by the Ainu. In Sakhalin, the leaf of one kind of galium was used medicinally. It was placed in boiling water and the water was added to a bath to treat neuralgia or arthritis. In addition, the infusion was reduced to a sticky paste that was applied to bruises (Chiri 1953).

Geranium Family (Geraniaceae)

- *Geranium erianthum* DC., geranium
- *Geranium nepalense* Sweet
- *Geranium sibiricum* L.

Geranium erianthum is known as *manchiw-kina* or, in Sakhalin, as *aushipetkina*. In Shiraura, Sakhalin, an infusion was used to treat black vomit, a symptom of yellow fever (Chiri 1953). It is a perennial that is most common in coastal meadows, in partial or full sun, and requires moist soil (Ohwi 1984). It is also present in the southern Kurils.

Geranium nepalense is called *ponrayta*, “small burr”, or *kinra-punkar*, “madness vine”. The leaf was infused to treat abdominal pain and diarrhea. In view of its name, it may have been used to treat nervous disorders (Chiri 1953). It has a mountain habitat and requires full sun and moist soil and is present both in Hokkaido and Sakhalin.

Geranium sibiricum was known as *ausikarakina*. It also requires full sun and moist soil and is present in Hokkaido, southern Sakhalin, and the southern Kurils (Ohwi 1984). In Shiraura, Sakhalin, the leaf was infused to treat neuralgia (Chiri 1953).

Rose Family (Rosaceae)

- *Geum japonicum* Thunb., geum

Known in Ainu as *pon-rayta*, *seta-rayta*, or *seta-ipakokarip*, the latter meaning “the burr that sticks to the dog’s head” (Chiri 1953), it was used medicinally in several ways. In Bihoro, for treating diarrhea, the root was boiled and the infusion drunk. To treat neuralgia, it was gathered before the seedheads developed and the entire plant bundled and dried. When needed it was added to bath water (Chiri 1953). It is a perennial that grows in woods and thickets and needs sun and moist soil. It is represented only in Hokkaido.

Hydrangea Family (Hydrangeaceae)

- *Hydrangea paniculata* Siebold, hydrangea

In Ainu, hydrangea is usually called *rasupa-ni*, a name that refers to its use as the shank or section of a harpoon, or *kite*, that holds the point and connects to the shaft. In more recent history, the point of a harpoon was made of metal and the shaft of the wood of bird or mountain cherry (*Prunus padus*). Originally, hydrangea was called *ki-ne-ni*, or “the tree that becomes a pipe”, and in Sakhalin it was called *kiseri-ni*, or “pipe tree” (Chiri 1953). The wood is heavy and strong and the stem hollow—characteristics that lent it to making pipes, as well as harpoon shanks and small containers, for example, for needles.

Hydrangea is an erect, spreading, deciduous shrub that does well in sunny conditions or open woods in the uplands of Hokkaido. It is usually between 2 and 3 m, but can reach 5 m in height. It is also present in Sakhalin and the southern Kurils (Ohwi 1984).

To make a needle case, the Ainu chose a hydrangea that was three to five years old because, by that age, the hollow core of its trunk would be large enough to serve as a container. It was

cut into 10 or 15 cm long sections, the bark shaved off, and the resulting surface carved in a design of the owner's choice. The hollow core was reamed out with the head of a nail and a red cotton cloth passed through it. At one end of the container, the cloth was passed through the hole in a five yen Japanese coin and returned through the case to the opposite end where it was sewn together with coloured threads. Needles were stuck into the cloth that was then drawn back into the cavity (Kayano 1978).

For an Ainu woman charged with weaving and embroidering all her family's clothes, needles, especially those of metal, were a precious commodity. To break or lose a needle was a serious problem. One of Fukuoka's informants told her that a new needle had the same value as a bearskin and three fox pelts (1995). Thus, the needle case, or *chispo*, was usually worn around her neck for safety. Ainu women used to say that you could always hear the approach of a wealthy woman because her needle cases would make a characteristic sound as they banged together at her neck.

Hydrangea wood was also used for making fire tongs, ash combs, walking sticks, needles for making and mending nets, and sticks, on which records of gifts of bear meat during *iyomante* were kept (Chiri 1953). The branches of hydrangea were also employed in *iyomante* to help in sending off the spirit of the bear (Fukuoka 1995).

The bark of a sapling is as thin as a sheet of paper and could be stripped with the fingertips. This would expose the greenish-white layer of bast that was scraped off with the back of a knife and wrapped in a cloth that was dipped in hot water. This would cause the bast to froth and produce a foam that was used as a shampoo (Chiri 1953).

Holly Family (Aquifoliaceae)

- *Ilex crenata* Thunb., Holly
- *Ilex rugosa* F. Schmidt
- *Ilex radicans* Nakai
- *Ilex sugerokii* Maxim.

There are many species of holly in Hokkaido.

Ilex crenata is an evergreen shrub that grows to about 5 m high in thickets and wet places, in both the lowlands and western highlands (Ohwi 1984). It does well in full sun or partial shade. Its Ainu name is *ai-ka-sup-ni*, which is probably a reference to its use in making arrows.

Ilex rugosa is a dwarf creeping shrub that has a similar geographical range to *I. crenata* but a completely different habitat (Ohwi 1984), including Sakhalin and the southern Kurils. It is found in the understory of coniferous forest in the highlands. The only known Ainu name is one given to it by Batchelor, *tammi-rehe*. However, the meaning is unknown and is probably based on a misunderstanding between Batchelor and the Ainu he was interviewing. The fruit is edible and was used to treat toothache (Chiri 1953).



Figure 47. An AINU man checking the trueness of an arrow he has made. Matsuura Takeshiro. Hanasaki 1988.

branches only when the tree is young (Takenaka Takeshi, pers. comm. c. 2008).

It grows in light woodland and prefers moist soils. It is widely distributed and common in the uplands of Hokkaido, Sakhalin, and the southern Kurils (Ohwi 1984). The AINU used its wood in a number of ways, the most important of which was in making dugout canoes. Other products were bowls, winnows, mortars, and pestles (Chiri 1953).

Katsura Tree Family (Cercidiphyllaceae)

- *Cercidiphyllum japonicum* Siebold & Zucc., katsura

The wood of the katsura was much used by the AINU because it was lightweight, fine grained, flexible, and easy to carve (Fukuoka 1995). It was utilized, for example, to make *menokoita*, a cutting board that was used in serving food to guests. It was also used to make dugouts (Chiri 1953). As the finished canoe was light, it was easy to steer (Kayano 1978, 1996).

Its common AINU name is *ranko*, but in Biratori it was called *yara* (Chiri 1953). It is deciduous and grows to 20 to 25 m in height in riparian zones and moist slopes in the uplands (Ohwi 1984; Sato 2002). It prefers sunny locations and grows rapidly. It is easy to recognize in the forest by its small, dark green, oval leaves, by its sweet fragrance, and its tendency to sprout from the stump (Takenaka Takeshi, pers. comm. c. 2008). As its trunk would often attain 2 m in diameter, it was an ideal candidate for the construction of dugouts.

Ilex sugerokii is known as *kotooshi-ni*, probably meaning “old tree”. It is an evergreen shrub growing high in the mountains of Hokkaido and is locally abundant (Ohwi 1984). Despite having an AINU name, there is no recorded use by them.

Ilex radicans is known as *aykanni*, that is probably derived from *ai-kar-ni*, or “the tree from which we make arrows”. It was also used to make bows (Chiri 1953). Ohwi lists it as a variety of *I. crenata*. It is distributed in mires or swamps in Hokkaido, southern Sakhalin, and the southern Kurils (1984).

Aralia Family (Araliaceae)

- *Kalopanax pictus* (Thunb.) Nakai, kalopanax or tree aralia

Known in AINU as *ayusni*, or “tree with thorns” (Chiri 1953), kalopanax is a deciduous tree reaching 25 m in height. The thorns are present on the trunk and

It has a wide root, and because of this, the Ainu believed it would protect them from the evil that lurked in the forest. The katsura assumed mythic characteristics as described in the following story.

Once upon a time there was a very successful bear hunter. One day he killed a large bear in the mountains and, later, when it grew dark he sought the shelter of a large katsura. He lit a fire and turned in for the night. A god stood at his pillow and said, "I am the god of the Katsura. Today you enjoyed success in your hunt but tomorrow you'll meet a fearful bear. Since you have chosen to spend the night here I'll try as best I can to protect you but you must take care walking in the mountains."

When he awoke the hunter made offerings to the god and asked for his help. Still, he was subdued that day and when he crossed the second mountain he was confronted by six huge mountain men who were several times taller than him. Their bodies were covered with hair and they looked truly evil. They ran like a storm through the woods and caught bears and deer as if they were mere fleas.

The hunter remembered the katsura god's warning and shouting for his help he was able to easily defeat the mountain men. After the fight the hunter fell asleep and began to dream. In his dream the mountain men came to him and said "you were always a wise hunter but because you believed in the katsura god and are full of religious spirit you acquired the power to defeat us with ease."

The hunter returned home to his family and told them his story advising them, too, to believe in the gods (Fukuoka 1995:116).

In the Saru region, too, the katsura was believed to have had the power to protect against misfortune and to cure illness. Prayers to the god of the tree would hasten recovery from illness (Batchelor 1924).

The katsura was deified, especially as the source of wood in making tools. Thus, its name was modified to *ranko-kamuy*. Like the yew (whose wood was used for bows), the aconite (whose root provided poison), and the dwarf Siberian pine (whose resin secured the poison on the arrow tip), the katsura was a female god (Yamada 2001).

The landscape of Hokkaido today is largely characterized by extensive farmland and sprawling cities, so it is difficult to imagine what landscape confronted the Ainu in the 16th or 17th century. Early European explorers talk of unbroken forests of oaks (*Quercus* spp.) extending to



Figure 48. Katsura at the edge of the river at Pirikapet, northeastern Hokkaido. Note the understory of butterbur. Photo by Dai Williams.

the shore along the southern coasts. The numbers of Ainu were never very high, and they lived in small communities along the rivers or close to the coast. The mountains and forests inland were largely uninhabited and represented, to the Ainu, the land of the gods. To venture into the forest, even in well-armed and well-organized groups, was a dangerous proposition. Bears ruled the forest, and while most were wary of humans, the Ainu knew of, and feared them as potential man-eaters. They were probably the origin of the mountain men in the above story. Thus, the promise of comfort and protection offered by the katsura was not to be taken lightly.

The Ainu dugout was a relatively simple design and was ideal for negotiating rivers. For fishing, in often windy lakes and in the ocean, the dugout was modified by shaping the prow and stern and adding a superstructure of boards. An ordinary canoe was called *cip*; a modified version was called *ita-oma-cip*, “a boat with boards”, or *ara-ita-omap*, “side boards container”. The boards were lashed to the base with linden bast cords and the gaps caulked with moss. Batchelor, writing in 1926, speaks of sails made of fish skin. Kayano describes them as being made of the bast of Manchurian elm or of reeds (1978).

The bark of katsura contains a high proportion of tannin and, when boiled and fixed with an iron mordant, produces a black dye used in dyeing the bast of Manchurian elm or nettle (*Urtica* spp.) prior to weaving.

Pine Family (Pinaceae)

- *Larix gmelinii* var. *japonica* (Maxim. ex Regel) Pilg, dahurian larch
- *Larix gmelinii* Rupr.
- *Larix kurilensis* Mayr.

The dahurian larch is a deciduous, monoecious conifer that reaches 30 m in height (Ohwi 1984). It is known as *gui* or *kuy*, in Ainu (Chiri 1953). It is native to the Kurils and Sakhalin where it is found both at the coast and in the mountains.

According to Ohnuki-Tierney, the Sakhalin Ainu would throw the branches of larch (*Larix* spp.) or of Yezo spruce into the fire to drive off evil spirits (1974). The wood was used in making hunting tools (Chiri 1953).

Kuy-karus or *siw-karus*, *Laricifomes officinalis*, a fungus that grows on the bark of the larch, was used medicinally (Walker 1999) and as tinder for a fire drill made of the dried wood or root of a Japanese elm (Kayano 1978).

Heather Family (Ericaceae)

- *Leucothoe grayana* Maxim. (*Leucothoe chlorantha* Gray var. *oblongifolia* Miq.), leucothoe

Leucothoe is a deciduous, erect, glabrous shrub that grows on sunny slopes in the uplands and highlands throughout Hokkaido (Ohwi 1984). It is usually found in partial shade of light woodlands and in moist soils.

Its Ainu name is *ay-paske-ni* or *ay-ne-ni*, the latter name meaning “the tree that becomes an arrow”. Indeed, in Hobetsu and Oshamambe, the wood was used to make arrows; another

name, *kasup-ni*, refers to its use in carving spatulas (Chiri 1953). An infusion of the shavings was used to treat colds and chest pains. In Nayoro, in the Teshio Basin, the sawdust was used to supplement other arrow poisons (Chiri 1953). The wood probably has parasiticide qualities, and the fruit is poisonous.

Grass Family (Poaceae)

- *Leymus mollis* (Trin.) Pilg., dunegrass

Known as *murit*, *murux*, *morochi-kina*, or *raymun* in Ainu (Chiri 1953), this common dune grass was extremely important to the Ainu of the Kurils who had far more limited resources than the Hokkaido Ainu for making baskets, cordage, hats, and matting. Like the Aleuts, the Kuril Ainu made coiled baskets, known as *tenki* in Ainu (Chiri 1953). Their chief raw material was this dune grass. It was also widely used for basketmaking in Sakhalin where it was known as *macahci* (Ohnuki-Tierney 1974). The name *ray-mun* means “death grass”, a reference to the use of cords made from dunegrass in wrapping the corpse bundle at funerals. In Hokkaido, it is found in almost all coastal areas where dunes have developed (Takenaka Takeshi, pers. comm. c. 2008).

Chiri refers to its use in making matting used in fermenting lily bulbs; the mashed bulbs were placed on the mats and then set on shelves under the eaves to ferment for 14 days (Chiri 1953). Pilsudski has an illustration of a bag woven from dunegrass. It was called a *ponteki* and was 17.6 cm wide with a cord attached (Latyshev and Inoue 2002). The grass was also woven into window and door covers and room dividers. In Horobetsu, an infusion of the roots was drunk to counteract food poisoning and to treat colds.

Carrot and Parsley Family (Apiaceae)

- *Ligustrum obtusifolium* Siebold & Zucc., ligustrum
- *Ligustrum yezoense* Nakai (*Ligustrum tschonoskii* Decne.)

Ligustrum obtusifolium is known as *epotan-ni* in Ainu, a name that refers to its magical powers. *Potar* is the Ainu verb to banish demons, and in Chitose, ligustrum was used for this purpose (Chiri 1953). Kayano lists the word *potara* as meaning, a magic spell or talisman (1978, 1996).

Chiri reports that when someone was poked in the eye, the leaf was rubbed between the hands, and the juice thereby released was then mixed with mother’s milk to make eye drops (Chiri 1953; Kinoshita and Takemura 1993). Batchelor reports that the Ainu in the Saru area believed that chopsticks made of the wood of ligustrum would prevent tooth decay (Mitsuhashi 1976).

Borage Family (Boraginaceae)

- *Lithospermum erythrorhizon* Siebold et Zucc., lithospermum

This perennial is known in Ainu as *pewre* (Chiri 1953), a term derived from *pe-hure*, or “red broth”, a reference to the purple dyestuff it produces. However, there is no record of the Ainu having used this dye. It grows on grassy slopes in both uplands and lowlands in Hokkaido (Ohwi 1984). It requires moist soil and full to partial sun.

In his *Tokachi Journal*, Matsuura reported that an infusion of the plant was used to treat eye disorders (1977 [1861]). In another medical application, the root was dried and stored and, when needed, chewed to a paste and mixed with the fat of a dog, bear, or horse as a salve for burns. For a sore throat, the root was chewed and the juice ingested.

Fungi kingdom, agaric family (Agaricaceae)

- *Lycoperdon perlatum* Pers., gemmed puffball

The Ainu names for this fungus are *supuyanup*, “thing that has smoke”, a reference to the spores, or *papussep*, meaning “puffed up thing” (Chiri 1953). It is edible when young (Takenaka Takeshi, pers. comm. c. 2008), but there is no reference to its consumption by the Ainu. As it matures, it expands and, when touched, emits spores. The only known use by the Ainu is of the spores as a protective dusting for grazed or burned skin and to stem bleeding (Chiri 1953; Mitsunashi 1976).

Legume Family (Fabaceae)

- *Maackia amurensis* Rupr., Amur maackia

Depending on location and access to raw materials, the Ainu would employ the wood of a number of different trees to make sacred staffs, or *inau* (Yamada 2001). The most commonly and universally used tree was the willow, although Japanese alder, Amur cork tree, dogwood, and Amur maackia were also widely used. The Amur maackia is a small, deciduous tree common in Hokkaido; it grows up to 15 m in height with a trunk 30 cm in diameter (Ohwi 1984; Sato 2002). Its Ainu name is *chikupeni*.

Kayano states that, “in the *yukar* and other folktales the most courageous and eloquent god found in the mountains is that of the Amur maackia tree” (1996:303). This is perhaps why it was often used to ward off evil. In some villages during an epidemic, the branches were used to make stick *inau* that were erected wherever a path forked or led to another village; elsewhere, women would stand holding a branch at the entry of the village. The Ainu believed illness came on the wind and hoped the strong smell of the Amur maackia would turn it back (Chiri 1953).

Inau were also placed in doorways and windows. In addition, the bark and, according to Kinoshita and Takemura, twigs were burned to produce a smoke that would also drive off evil spirits (1993). In Bihoro, when someone fell ill, a thin branch was boiled in water and the patient was made to drink the infusion (Fukuoka 1995). The bark was used as a fomentation for bruises (Mitsunashi 1976).

The wood is hard and durable, and the grain is very handsome, so it was often used for house construction and for carving the image of the god who protected the house. The Ainu believed that no evil would enter the house where the Amur maackia stands.

However, if the wood had come from a tree that was wound with vines, or if it had many knots, it was not used.

The durable wood was also ideal for the notched ladder leading into the elevated storehouse, its supporting pillars, and for funeral posts.

The deceased were measured and a post made of exactly the same height. The post was seen as a pointer or walking stick for the journey to the land of the gods. Generally, the post for a man had a triangular-shaped top to represent a spear; that for a woman was in the shape of a pestle. The dead were buried with their head facing northeast; the marker is left to rot in place and is never replaced (Fukuoka 1995).

As the Ainu were absorbed into the Japanese population, such funeral posts fell out of style. In the graveyard in Niputani, where Kayano Shigeru, the late Ainu leader, is buried, there is only one traditional grave marker. Even Kayano's grave is marked with an ostentatious marble tombstone.

The wood is strong and flexible enough to make the bows used in fixed-bow traps; it was also used for mortars and pestles and the bark was ground up and used as a poultice applied to bruises (Mitsuhashi 1976).

Magnolia Family (Magnoliaceae)

- *Magnolia kobus* DC. var. *borealis* Sarg., magnolia
- *Magnolia obovata* Thunb.

The Ainu have two names for *Magnolia kobus*—the meaning of one, the exact opposite of the other. This contradiction probably reflects the drastic changes that occurred in Ainu culture after the Japanese began to systematically exploit Hokkaido at the end of the 18th century. While there are no written records to substantiate it, the original Ainu name for this magnolia was probably *opke-ni*, or “fart tree”; its modern name is *o-maw-kus-ni*, or “the tree with a good smell is passing” (Chiri 1953). What accounts for this change in perception?

When the Japanese moved into Hokkaido, they first established trading posts and then fisheries, at which Ainu men and women were conscripted into forced labour. Their overseers, managers, and guards were all Japanese who basically enslaved them; while cruelty

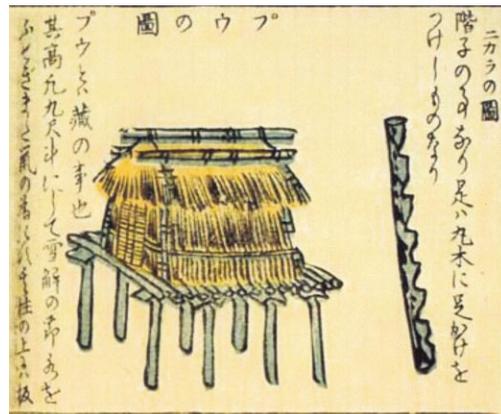


Figure 49. An elevated storehouse or *pu* with, to the right, a ladder which provided access to it. The ladder was made of a durable wood like Amur maackia. Matsuura 1972 [1859].

and greed were rife, the Japanese introduced an even more damaging scourge in the form of smallpox, syphilis, and other epidemic disease.

The Ainu could not understand the source of these epidemics and came to believe they were brought on the wind or on the wings of evil birds (Ohnuki-Tierney 1981). Like other elements beyond their ken, disease assumed the status of a god that had always to be treated with respect and suspicion.

As the flowers of the magnolia or the stripped bark gave off a pleasant perfume, some Ainu feared that it would attract evil spirits. Thus, they gave the magnolia its disparaging name of *opke-ni* in order to confuse these malevolent forces (Chiri 1953); to consolidate this tactic, they burned the bark and twigs to produce smoke that they hoped would dissuade the gods of disease from entering their village or home.

The modern interpretation of *o-maw-us-ni* refers to the tree's fragrance. However, it is unlikely that this was the original meaning, as the Ainu rarely made reference to an attribute of any plant that was not of utility to them. Chiri points out that the original meaning of *maw* was not fragrance, but wind or breath (1953). For example, *omawkus* had the same meaning as *opke*, or "wind passing through the anus". No plant used by the Ainu was celebrated for fragrance but many names were associated with malodour.

Magnolia obovata was known as *pus-ni* or *push-ni* in Ainu, a name that means jumping wood (Chiri 1953). Burning its wood sent off sparks in all directions. It was also called *ikayop-ni*, or "quiver tree", as the wood was used to make quivers and other tools such as paddles, spear shafts, and sheaths for knives (Chiri 1953). As it was lightweight and could be carved to be very thin, it was also used to make bowls (Kayano 1978). In addition, the twigs, bark, and fruit were infused to make a tea used to treat colds (Mitsuhashi 1976). When ill, an Ainu would offer prayers to the god of either magnolia in hopes that it would ensure recovery (Batchelor 1924). *Magnolia kobus* occupies a zone in the hills and low mountains in Hokkaido; *M. obovata* is found at higher elevations.

Borage Family (Boraginaceae)

- *Mertensia maritima* (L.) Gray (*M. maritima* var. *asiatica* (Takeda) S.L. Welsh), lungwort or oyster plant

The Ainu names for lungwort are *eraibapushi*, *ota-kina*, *ota-tesma*, and *pise-nonno*, the latter names referring to its seashore habitat. It is a perennial herb that grows on sandy soils throughout Hokkaido, Sakhalin, and the southern Kurils (Ohwi 1984). The root was eaten in Maoka, Sakhalin, and an extract of it was used to treat a stomachache (Chiri 1953).

Grass Family (Poaceae)

- *Miscanthus sacchariflorus* (Maxim.) Benth. & Hook. f. ex Franch, Amur silver grass

This grass or rush-like herb, with linear leaves that are closed at the base, grows on riverbanks and floodplains throughout Hokkaido (Takenaka Takeshi, pers. comm. c. 2008). It requires

moist soil and prefers full or partial sun. Its usual Ainu name is *shiki*, or “true grass”, but is also known as *nupki* or *supeneki*, “the grass that becomes an arrow shaft”. It is also called *ki*, which is normally the name for reed bent grass (Chiri 1953). The Ainu names for reeds and Amur silver grass appear to have been often interchangeable.

In many Ainu areas, Amur silver grass was a vital building material. It was used for both the thatch and walls of traditional houses (Takenaka Takeshi, pers. comm. c. 2008); it was also used for making draining mats, sails, torches used in late autumn salmon fishing, and for the mats placed under bedding (Watanabe 1972).

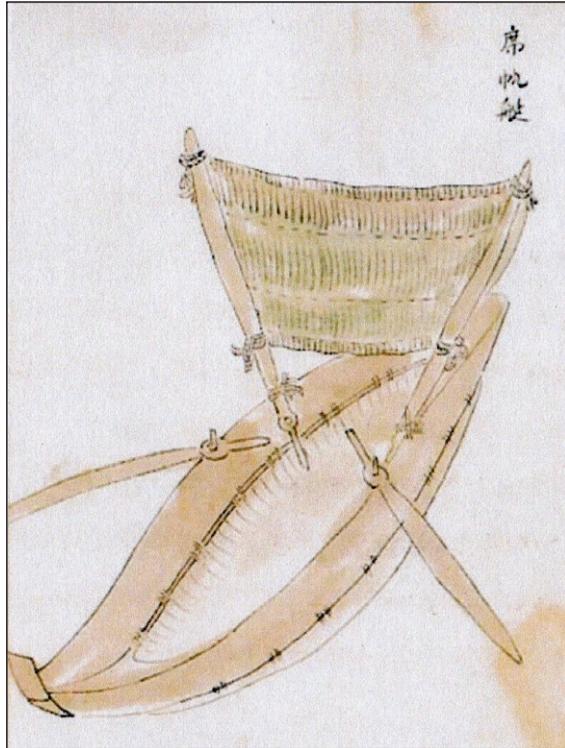


Figure 50. An ocean-going boat known as *itaomacip* with a sail that was probably woven from miscanthus. Matsuura 1972 [1859].

Water Lily Family (Nymphaeaceae)

- *Nuphar japonica* DC., nuphar

This rhizomatous plant grows in ponds, lakes, and shallow streams in southwest Hokkaido (Ohwi 1984) and, according to Nagata Hosei (1984), especially in the area between Osanai and Uraishpetsu.

The rhizomes that grow in the mud are stout and creeping and can reach 3 to 4.5 m in length. They were harvested from ponds and swamps in winter by breaking the ice and “fishing” for them with a hook at the end of a long pole, called *nawkep* in Ainu (Chiri 1953). They were then well washed, thinly sliced, and soaked in water overnight or boiled in an ash solution to remove the bitterness. They were boiled for immediate consumption or dried for later use. They were used principally in soups or eaten with finely chopped groundnuts dressed with animal fat or fish oil (Fukuoka 1995).

The ovoid starchy fruit, called *kapato* in Ainu, is also edible. It was harvested in autumn. Below is an account of harvesting them recorded by Fukuoka in the Chitose area.

We’d carry our boats up to the swamp and put them in the water. We’d pick the fruits from the boat and fill our *saranip* and carry them home. They were boiled until they had almost completely disintegrated. Then they were soaked in water and the seeds removed. The water was poured off and they

were dried. When we were ready to eat them the fruits were again soaked in water and simmered with rice. It was called *kapato-epui-kayu* (Fukuoka 1995:94).

Nuphar pumila (Timm) DC. is found in ponds and shallow lakes in eastern Hokkaido. There is no record of its use by the Ainu.

Birch Family (Betulaceae)

- *Ostrya japonica* Sarg., hornbeam

Hornbeam is a deciduous tree with a scaly, scabrous bark that makes it difficult to climb (Takenaka Takeshi, pers. comm. c. 2008). It grows in parts of southern and central Hokkaido (Ohwi 1984). Its usual Ainu name is *sey-kapar*, which means “weak bark”, an obvious reference to its scaly appearance. Its alternate name is *kepokapara-ni*, that probably has a similar meaning (Chiri 1953). The Ainu used the heavy wood for making pestles and clubs (Kayano 1978, 1996).

Boxwood Family (Buxaceae)

- *Pachysandra terminalis* Siebold & Zucc., pachysandra or Japanese spurge

The Ainu name for pachysandra, *yuk-topa-kina*, means “grass to which deer crowd” (Mitsuhashi 1976)—perhaps a reference to the fact it was winter forage for Sika deer (Chiri 1953).

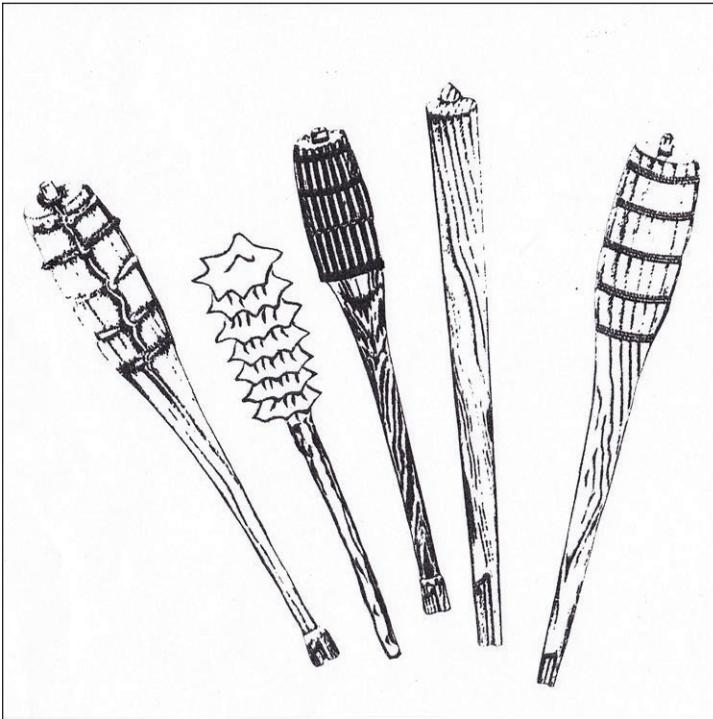


Figure 51. Ainu war clubs. Various woods were used including crabapple and hornbeam. Illustration by Dai Williams.

It is a perennial, evergreen rhizome that survives even in mid-winter. Its primary habitat is moist deciduous woods in valleys and uplands up to 2000 m in Hokkaido (Ohwi 1984). On July 10, 1857, Matsuura commented on the profusion of pachysandra growing in the mountains along the Yubari River in central western Hokkaido (Fukuoka 1995).

It was known to the Ainu as an effective purgative and tonic (Fukuoka 1995). According to Mitsuhashi, the stems and leaves were infused to make a tea used in treating stomachache and constipation (Mitsuhashi 1976). When inhaled, the infusion was said to cure a cold (Fukuoka 1995) and ease the pain of childbirth. In order to drain a boil, the leaf was heated and applied directly to the affected skin. In a similar use, a warm compress was made to encourage urination or as a treatment for venereal disease (Chiri 1953). The fruits were crushed and used as lip balm (Chiri 1953).

Peony Family (Paeoniaceae)

- *Paeonia obovata* Maxim., peony

Peony is a perennial shrub that grows in woods and thickets in Hokkaido and Sakhalin (Ohwi 1984). Its Ainu names are *orap*, *horap*, *korkomap*, and in Sakhalin, *otakuru* and *homesu*.

It was used medicinally in numerous applications. To treat colds, fevers, and stomachache, the roots were infused, either alone or in conjunction with the leaf of the butterbur (*Petasites japonicus*), the root of kudzu (*Pueraria hirsuta*), and seseli (*Seseli libanotis*). The chewed root was applied directly to sore joints (Batchelor and Miyabe 1893; Chiri 1953); the dried root was pulverised and either mixed with cold water to make a poultice or sprinkled directly on bruises, burns, and cuts. Dog grease, then was applied to the affected area and it was wrapped in a bandage made from the bark of Erman's birch (*Betula ermanii*) (Chiri 1953).

In order to treat eye ailments, seeds were pulverised and the powder applied directly (Mitsuhashi 1976). Dried roots and seeds were mixed with tobacco in the bowl of a pipe, the contents were lit, and the smoke blown into the ear to treat infections (Batchelor and Miyabe 1893; Chiri 1953). The roots were roasted and, while still hot, they were wrapped in a cloth to act as a compress (Chiri 1953).

Grass Family (Gramineae)

- *Phragmites australis* (Cav) Trin. Ex Steud., phragmites or common reed

Depending on location, there were several Ainu words for phragmites, including *sarki* in Tokachi, Hokkaido, *saromax* or *suxki* in Sakhalin, and *supki* in Oshamambe, also in Hokkaido. The term for a field or bed of phragmites is *saru*; this is found in many place names throughout Hokkaido, and a river that flows into the Okhotsk Sea in northern Hokkaido is named Sarupet. A river of the same name flows into the Pacific on the southern coast of Hokkaido. This river basin had a major concentration of *kotan*, Ainu settlements.

The Japanese Crane is called, in Ainu, *sarurun kamui*, or “god of the phragmites beds”. Chiri and Nagata note that phragmites was widely used for arrow shafts, to weave drying mats

and window coverings, and to construct and thatch traditional houses. It was harvested by women in autumn who, as they cut, sang a song which went, “the long winding road toward the small hut set in the bed of phragmites” (Chiri 1953; Nagata 1984).

Carrot or Parsley Family (Apiaceae)

- *Pleurospermum camtschaticum* Hoffm., pleurospermum

Chiri reports that the original Ainu name for pleurospermum was *tun-u-ka-oma-p*, or “thing with two people standing on top of each other”, a reference to its height (Chiri 1953). It reaches 1.5 m tall and grows in the highland zones of Hokkaido, Sakhalin, and the southern Kurils (Ohwi 1984). This name has been corrupted to *tunikaomap*. Other names for it include *ekasa-kor-kutu*, or “tube-like stem with a hat on its head”, and *oroma-kutu*, or “the tube enters in the middle”. Despite all this apparent attention to it, and the fact that its root is edible, the Ainu did not appear to use it.

Pine Family (Pinaceae)

- *Picea jezoensis* (Sieb. & Zucc.) Carriere, Yezo spruce

Yezo spruce is found throughout northern Hokkaido, southern Sakhalin, and the southern Kurils, especially the island of Iturup. It occupies a wide range of ecologies and is often found in association with Sakhalin fir.

It is a coniferous tree that can grow up to 40 m in height, with a trunk as much as 1.5 m in diameter (Ohwi 1984; Sato 2002). While it is present in western Hokkaido, it is more prevalent in the mountains of eastern and northern Hokkaido. It is also a major component of upland forests throughout Hokkaido, Sakhalin, and the southern Kurils (Takenaka Takeshi, pers. comm. c. 2008). In Ainu, it is known as *sunku*, *carpi-shungu*, or *sunku-to-noma*, the last meaning “gentlewoman spruce”, probably a reference to the shelter it provides in bad weather (Batchelor 1924; Kayano 1996).

Fukuoka references an oral tale, or *yukar*, recorded by Kayano Shigeru, in which a goddess helps a woman, who had been killed by a bear, find happiness in her afterlife. At one point, the goddess says to the woman, “this [pitch] is medicine from the gods; spread on your wounds and you’ll soon recover” (Fukuoka 1995:226).

This story reflects the use of the sap, resin, or pitch by the Ainu in treating wounds. The resin was also used to secure arrowheads to the shaft of the arrow and to caulk canoes (Chiri 1953; Philippi 1979). Along with that from the Sakhalin fir, the bark of Yezo spruce was used for roofs and walls of traditional houses in some areas like the upper Tokachi River (Yamada 2001).

As the trunk often grows straight and reaches an impressive girth, it was sometimes used for making dugout canoes (Chiri 1953). The roots were used for binding boards to dugouts and in making bentwood boxes. As with Sakhalin fir, its branches were tossed into the fire in the hearth to drive off evil. They were also made into ritual staffs used to purify sled dogs

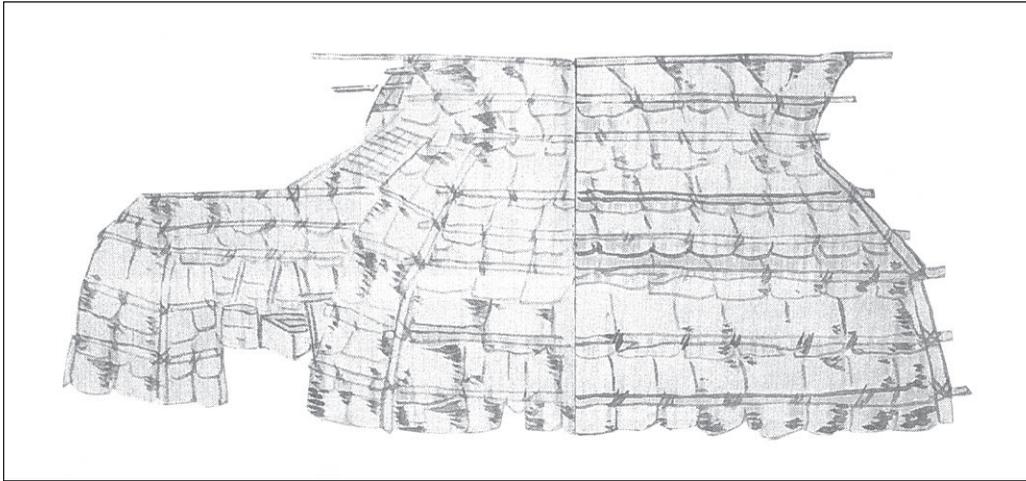


Figure 52. A traditional Ainu house with roof and walls of the bark of Sakhalin Fir or Yezo spruce. Matsuura 1999 [1850].

(Ohnuki-Tierney 1974). In Tokachi, the needles were infused, a cloth dipped in the infusion, and the cloth placed over the head to cure influenza (Fukuoka 1995).

Batchelor records that an Ainu who was ill would offer prayers to the god of the Yezo spruce in order to hasten recovery. The Ainu considered it as one of the *pirika chikuni*, or “good trees”. It shared this distinction with about 20 others, including Daimyo oak (*Quercus dentata*), mountain mulberry (*Morus bombycis*), and magnolia (Batchelor 1924).

Other species of spruce found in northern Hokkaido, southern Sakhalin, and the southern Kurils include Ayan spruce (*Picea jezoensis* var. *microsperma*) (according to Ohwi, synonymous with *P. jezoensis*), *Picea glehnii* (F. Schmidt) Mast., *Picea koraiensis* Nakai, and *Picea obovata* (Ledeb.). In Hokkaido, *P. glehnii* is found in volcanic or saturated soils such as in bogs (Ohwi 1984) or near the timberline. Ayan spruce is common in southern Sakhalin in zones from sea level to 1500 or 2000 m, and is often in association with other spruces, with Sakhalin fir, and, near the timberline, with Erman’s birch. However, there is no recorded use by the Ainu of any of these species of spruce.

Quassia Family (Simaroubaceae)

- *Picrasma quassioides* (D. Don) Benn., quassia

This deciduous tree grows in woodlands in both mountains and lowlands (Ohwi 1984). It does well in full sun or partial shade and requires moist soils. Height ranges from 10 to 15 m. It is found throughout Hokkaido, although its major concentration is in the southwest.

The Ainu names are, either *yuk-rayke-ni*, “deer or bear killing tree”, or *siw-ni*, “bitter tree” (Chiri 1953). As to be expected, these names describe its two primary uses by the Ainu. In Teshio, the bark was stripped off the roots and the exposed sap was collected for use as an

arrow poison (Chiri 1953; Mitsuhashi 1976). However, it was probably of limited efficacy when used alone.

According to both Chiri (1953) and Kayano (1978, 1996), the bark was infused to make a stomachic or parasiticide. Clothes infected with lice or fleas were soaked in the infusion (Mitsuhashi 1976). In a similar vein, Sato (2002) and Chiri (1953) report use of the leaf to treat ringworm and head lice. The hard, close-grained wood was used to make eating or drinking vessels, utensils, and steering poles for dugout canoes (Kayano 1978). The fruit is edible, but there is no record of its use by the Ainu.

Pine Family (Pinaceae)

- *Pinus pumila* (Pall.) Regel., Dwarf Siberian pine

This is the most representative flora of the alpine zone (1500 m and above) of Hokkaido; it is only 1 m high, at most, but has lateral branches up to 10 m long (Ohwi 1984). It is also found in exposed or alpine areas of Sakhalin and the Kurils.

The most common Ainu name is *totonup*, but it is also known as *pakushini*, *todotsupu*, *numani*, or *nomani*, in Hokkaido, and *henetsukere* in the Kurils. *Numani* and *nomani* are derived from *numa-ni*, whose meaning is “seed tree”. Chiri states that the seeds are edible, and in Sakhalin, the round fruits were steeped to make an infusion for treating scurvy (1953). Kinoshita and Takemura note that the Hokkaido Ainu used its wood shavings to make tea and that, in the Kurils, the needles were used as a treatment for dropsy or edema (1993).

Bird (1885) and Yamada (2001) refer to the use of pine resin or pitch to secure aconite poison to an arrowhead. However, given its alpine habitat and consequent inaccessibility to the Ainu, it may be that the resin of other more local conifers, like Yezo spruce or Sakhalin fir, was used for this purpose. Philippi (1979) notes this. However, both Yezo spruce and Sakhalin fir also had an upland habitat and limited distribution. This raises the possibility that either hunters gathered the resin during reconnaissance or hunts, or that there was trade in it between Ainu groups.

Willow Family (Salicaceae)

- *Populus sieboldii* Miq., Japanese aspen
- *Populus maximowiczii* A. Henry, Japanese poplar

When the gods created *ainumosir*, the land of the Ainu, in the east, they planted Japanese elm and mugwort, and in the west they planted warabi and Japanese poplar. Despite this ancient and aristocratic pedigree, some Ainu groups, such as those in the Saru Basin, regarded the Japanese poplar as having an evil spirit (Yamada 2001). Thus, one of their names for it was *kur-ni*, or “phantom tree” (Chiri 1953). In one of the oral tales is a story that explains how it gained this reputation:

The god who made the land first raised the [Japanese] poplar in the soil. People tried to make fire by rubbing two pieces of [Japanese] poplar wood together but this produced only smoke and no fire. In trying to make fire in this way that created waste wood from which the horrible god of chicken pox appeared while the fire drill became a ghostly strange bird (Fukuoka 1995:134).

Another legend noted by Yamada indicates that from the cinders of the (Japanese) poplar was born the albatross, while those of the Japanese elm produced the bear. Both albatross and bear are regarded as deities (Yamada 2001).

The aspen is almost as poorly regarded and the Ainu call it *yai-ni*, ordinary tree (Chiri 1953). However, its bark and bast contain salicin, a glucoside that is anodyne, anti-inflammatory, and febrifuge. Thus, it was used to bandage cuts and wounds (Chiri 1953; Mitsuhashi 1976).

Both aspen and Japanese poplar grow in alluvial plains in highland zones of Hokkaido (Ohwi 1984); they are deciduous and grow rapidly where the soil is moist and there is sufficient light; neither is shade tolerant (Ohwi 1984). The poplar is a large tree; the aspen grows at higher elevations and is considerably smaller (Sato 2002). The Japanese poplar's trunk is straight, a metre in diameter, and extends up to 30 m (Takenaka Takeshi, pers. comm. c. 2008). Given these characteristics, and the fact that the wood is light and easy to carve, it was commonly used to make dugout canoes both in Hokkaido and Sakhalin. Chiri gives the alternate name of *cis-ni*, or boat tree (1953). Dugouts made of it were highly manoeuvrable.

Buckthorn Family (Rhamnaceae)

- *Rhamnus japonica* Maxim., Cascara or Glossy Buckthorn

Cascara is a glabrous deciduous shrub, 3 to 7 m high, which is found both in western, and parts of eastern, Hokkaido (Ohwi 1984). It occurs in moist soils in mountain woodland in partial shade and open meadows in full sun.

Its most common Ainu name is *yuk-numa*, or “deer hair”, so-called because the bast resembled it (Chiri 1953). Kinoshita and Takemura (1993) report the bast was used by the Ainu as a compress for bruises. Its other name, *kiski-ni*, means “wood of the beast hair”, a similar reference. The fruits were used to treat constipation (Chiri 1953).

Sumac Family (Anacardiaceae)

- *Rhus trichocarpa* Miq., Lacquer
- *Rhus ambigua* Lavall. ex Dippel

Rhus ambigua is very widely distributed in the uplands of Hokkaido, especially in the south and west, in Sakhalin, and the southern Kurils; *Rhus trichocarpa* is somewhat less common but occupies the same general zones (Ohwi 1984).

Lacquer is either a deciduous or dioecious tree growing to about 5 m in height, or a woody vine. Both prefer full or partial shade and moist soils. The Ainu names are *ushi-ni* or *ussipunkar*, meaning “lacquer tree or vine”. An alternate name given by Chiri as *usi-acha*, or “uncle lacquer”, is probably a term of respect for its utility or its poisonous qualities (1953). The only recorded use by the Ainu is of the saplings as crossbeams in the roof of a traditional house, or *cise* (Kayano 1978).

Knotweed Family (Polygonaceae)

- *Rumex japonicus* Houtt., Dock or Sorrel
- *Rumex domesticus* Hartm. (*Rumex longifolius* DC.)
- *Rumex acetosa* L.
- *Rumex gmelinii* Turcz. ex Ledeb.

Rumex japonicus is a perennial herb that is common in wet meadows, riverbanks, and ditches in lowland Hokkaido and Sakhalin. *Rumex domesticus* has a similar habitat but is confined to Hokkaido. *Rumex acetosa* is found in meadows in Hokkaido, and *Rumex gmelinii* is found in wet soils in the mountains facing the Okhotsk Sea in Hokkaido, Sakhalin, and the southern Kurils (Ohwi 1984). The most common Ainu name for sorrel was *sunapa*, or some dialect version of this name. Other names include *makaro*, *naychaus*, *naruxka*, and *umma-sukka-kep* (Chiri 1953). *Nay-cha-us* refers to a riverbank habitat.

Both the young leaf of *R. acetosa* and the seeds of *R. domesticus* are edible (Chiri 1953). Matsuura, in his *Nosappu Journal* (1977 [1858b]), reported that he was fed a stew containing the seeds of *R. japonicus* and those of giant knotweed (*Polygonum* spp.). As he commented on how delicious it tasted, his Ainu hosts presented him with bowls of the seeds as a parting gift.

The roots were ground up and applied to the skin affected by ringworm or scabies; an infusion of the root was drunk as a diuretic or to treat sexually transmitted diseases (Chiri 1953).

Honeysuckle Family (Adoxaceae)

- *Sambucus sieboldiana* (Miq.) Blume ex Schwer., Japanese red elder
- *Sambucus racemosa* var. *sieboldiana* Hara
- *Sambucus buergeriana* (Nakai) Blume ex Nakai

These small trees or large shrubs derive their Ainu name, *soko-ni*, or “droppings tree”, from the fact that when the stems or leaves are touched they give off a foul smell that was likened to that of feces. Because the smell was thought to expel evil, the wood was used to make *inau* or *takusa*, both forms of ritual staff (Kayano 1996; Ohnuki-Tierney 1981). In Horobetsu, the Ainu believed that once evil had been sent packing with an *inau* made of the wood of elder, it would never return (Chiri 1953). As a female deity, it was paired with Manchurian lilac (*Syringia reticulata*), or *punkau*, a male deity, to form *shutu-inau-kamuy*, an even more powerful deity that protected humans from evil (Yamada 2001). However,

Kayano reports that, in the Saru River basin, there was a taboo on using elder wood for making sacred images (1996). In Teshio and Toro, the wood was used to make male grave posts (Chiri 1953).

In Sakhalin, the wood was used to make talismans that were inserted into the collar or belt of children's clothing in order to protect them from illness. These were called *seniste-nipopo*, literally “the child of the tree becomes sturdy”, or *sokoni-nankorpe*, “person with the face of the wood of the elder”. Elder was also used by the Sakhalin Ainu to make statues called *oken* that drove off evil spirits (Chiri 1953). In the oral tale called “Man-eating Demons”, the hero Yayresupo recounts how he made, and placed by the path to his village, statues made of elder, Japanese white birch, and Japanese alder. These, along with swaying bundles of sedge and the skulls of puppies, successfully drove off the demons (Ohnuki-Tierney 1981).

Sambucus sieboldiana is deciduous and is found throughout Hokkaido with the exception of high mountain zones (Ohwi 1984). It is a very opportunistic plant and is often seen along roads with other low bushes (Fukuoka 1995). It grows to be about 3 to 4 m in height and blooms in early summer with a small white flower. The red or yellow fruit that first appears in August is a favourite of crows (Chiri 1953).

Since the wood was used as pegs in a funeral shroud, it was taboo to burn it. The smoke produced is very sooty and would coat everything inside the house. However, when needed, it was called upon to dispense with evil spirits (Ohnuki-Tierney 1981).

Branches taken to sea were said to improve fishing. Dried branches were boiled in water and the solution used to treat rashes, and liver and kidney illness. Shavings of the wood were infused to produce an eyewash or shampoo; they were also wrapped around heated pebbles and applied to bruises, or used to treat colic or post childbirth problems. In Bihoro, the fruits were crushed and applied to scabs or mange. Kinoshita and Takemura record that the bast was used as a plaster for fractures (1993).

Ohwi regards *S. sieboldiana*, *Sambucus racemosa*, and *Sambucus buergeriana* as synonymous (1984).

Willow Family (Salicaceae)

- *Salix bakko* Kimura, willow
- *Salix sachalinensis* F. Schmidt
- *Salix integra* Thunb.
- *Salix hultenii* Flod. var. *augustifolia*
- *Salix jessoensis* Seemen.
- *Salix petsusu* Kimura
- *Salix rorida* Lacksch.
- *Toisusu cardiophylla* (Trautvetter & Meyer) Kimura

There are around 20 types of willows native to Hokkaido, southern Sakhalin, and the southern Kurils, some growing in fluvial locations and others in upland and even alpine zones.

Some can grow to be large trees while others are little more than shrubs (Ohwi 1984; Sato 2002).

Salix bakko is confined to the mountains of western Hokkaido, grows in dry, well-lit locations, and is between 5 and 15 m in height. *Salix sachalinensis* is widely distributed throughout Hokkaido, especially the western part, and is most common in wetlands and riverbanks in mountain valleys (Ohwi 1984). It grows to be 10 to 15 m high; *Salix jessoensis* reaches 15 to 20 m in height and is found only in Hokkaido; *Toisusu cardiophylla* and *Salix petsusua* are generally confined to central Hokkaido and in the Tokachi River basin (Ohwi 1984). *T. cardiophylla* is one the dominants in upper terraces of riparian zones (Ohwi 1984). Chiri gives alternate Ainu names for *T. cardiophylla* as **chup-ni** or **chis-ni**, both suggesting its use in boat building (1953); *Salix integra* grows both in upland and lowland locations in Hokkaido and the southern Kurils and especially near wetlands or streams. It reaches 6 m in height (Ohwi 1984). Pure stands of *T. cardiophylla* in the riparian forests of northern Kunashiri in the southern Kurils include trees 20 to 30 m in height, and with trunks more than a metre in diameter.

In Ainu, willows are generally called **susu**, but sometimes **inau-ni-susu**, “the **inau** willow”. As indicated by Kayano, willow was often used in the Saru River basin to carve ritual staffs (1978). **Inau** came in many forms and Pilsudski, writing around the end of the 19th century, describes one called **kimun-inau**, which was carved before hunting in the mountains (Latyshev and Inoue 2002). It was a rather crudely carved willow branch, 36 cm long with the bark retained toward its base. At the top was a small **inau** with **inau-kike**.

Willow is extremely important in Ainu mythology, for when the god of creation made the land, he used it to form the human spine (Yamada 2001). Batchelor suggests it thus was seen by the Ainu as representative of life itself (1901). It is also one of the trees to which an Ainu, who was ill, would pray to ensure recovery (Batchelor 1924).

The wood of larger fluvial willows, such as *T. cardiophylla* and *S. bakko*, is straight, unjointed, and pure white, and debarking is straightforward (Fukuoka 1995). These characteristics made willow the preferred material for making **eper-ai**, or the ritual arrows used to taunt the bear cub during **iyomante**. **Eper** is the Ainu word for bear cub and **ai** means arrow. Once the cub was killed, the same arrows were placed with other offerings intended as gifts that would be carried back to the gods with the spirit of the bear. Fukuoka reports that in Chikabumi, Asahikawa, only elders were permitted to prepare the 30 arrows required for the ceremony (1995). Like other aspects of **iyomante**, the task of making arrows is probably the most important that an Ainu man would be called upon to perform.

Willow is also important in construction of the ritual male headgear called **sapa-un-pe**, literally “thing on the head”. The core is formed of a relatively stiff material, such as the bark or bast of wild grape or linden, to which **kike-chinuye**, or shavings made from willow or dogwood, are attached. To this construction was added a family or clan emblem, usually carved of wood. Besides indicating rank or affiliation, such a headdress was considered vital in the

wearer's ability to communicate with the gods. *Sapa-un-pe* were passed down from father to son and occasionally more shavings were added to them. In one of the most recurrent oral tales, Blakiston's fish owl (*Bubo blakistoni*) and the wren are called upon to save the Ainu from starvation. As *kotan-koro-kamuy*, the god who protects the village, the fish owl has primary responsibility in facilitating communications between the Ainu and the gods. However, the fish owl solicits the help of the wren because it is so garrulous. The wren succeeds in talking with the gods who indicated that the famine was caused by the Ainu showing insufficient respect to the deer and the salmon once they had caught them (Takenaka Takeshi, pers. comm. c. 2008). Specifically, in the case of the salmon, the Ainu had employed an old club to strike the head of the fish once it had been landed.

The gods reminded the Ainu that each season they must make new gleaming clubs of willow with which to return the spirit of the salmon to the gods. This message was transmitted to the Ainu by the wren and the fish owl, and the gods subsequently sent down plentiful numbers of deer and salmon. The club carried by Ainu fishermen was called *isapa-kik-ni*, or "head striking wood". It was usually made of willow, although at one time in some locations, it was made of dogwood (Kayano 1996).

The bast of several types of willow, including *S. integra*, was soaked in hot water and applied to wounds and cuts as a compress (Mitsuhashi 1976). The bast of *Salix rorida*, a small willow found in both Hokkaido and Sakhalin, was used by the Sakhalin Ainu to make footwear. In some regions, the bast of *Salix hultenii*, known in Ainu as *susu-at*, was used in making rope, dugout canoes, and summer footwear. *Susu-at* means "willow thread or cord".

Honda Yuko's research suggests that willows, such as *T. cardiophylla*, were used for constructing canoes at least as frequently as any other wood (Honda Yuko, pers. comm.

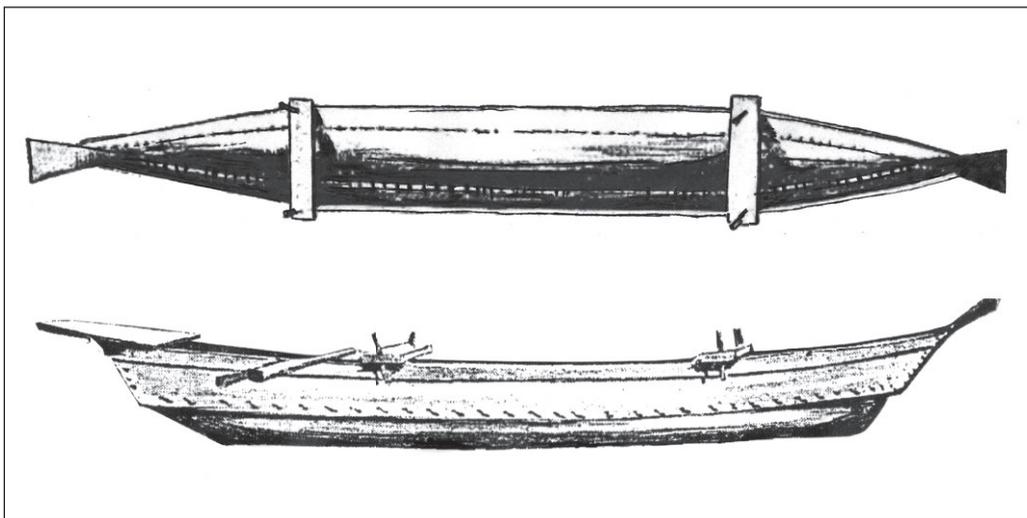


Figure 53. Two examples of *itaomacip*, a dugout canoe with added strakes to make it more seaworthy. Made of various woods such as katsura, ash, poplar, and willow. Illustrations adopted from Landor (1893).

c. 2008). Chiri reports that in Shirahama, Sakhalin, one kind of willow, which was probably *S. hultenii*, was debarked in May, the bast dried and stored, ready for making into ropes used to carry fish from the smokehouse to the village. *S. integra* was known as **uray-susu** or **si-tus-kor** in Ainu, both of which are references to its use in constructing fish weirs (**uray**) made primarily from ash branches and stakes bound together with cordage made of willow bast (Chiri 1953).

Chiri speculates that **toy-susu**, the Ainu name for *T. cardiophylla*, derives from the word for grave, i.e., **toy** (1953). While it was not a particularly strong or durable wood, its ready availability might have made it a logical choice for making grave markers.

Grass Family (Poaceae)

- *Sasa senanensis* (Fr. & Sav.) Rehder., bamboo grass
- *Sasa paniculata* Makino & Shibata
- *Sasa kurilensis* (Rupr.) Makino & Shibata
- *Sasa nipponica* var. *depauperata* Takeda

Hokkaido bamboos are low growing and therefore they are usually referred to as bamboo grass. Generally, the height and distribution of each species is determined by local snow depth. Thus, on the Pacific coastal plain west of Cape Erimo, in the Tokachi Basin, and in the northeast lowlands, including the Nemuro Peninsula, where there is less accumulation of snow than in western Hokkaido, *Sasa nipponica*, which grows 0.3 to 1.0 m high, is dominant.

Sasa kurilensis occupies the Japan Sea coast and upland and mountain areas, like Mt. Tai-setsu and its hinterland. It occurs generally in areas that have an annual accumulation of snow exceeding 100 cm. It grows to between 1.5 and 3 m in height and has a stem 1 to 2 cm in diameter.

Sasa senanensis is widely distributed throughout Hokkaido. It is found in both lowlands and uplands in areas where annual snow accumulation is between 50 and 100 cm. It reaches 1 to 2 m in height with a stem 0.5 cm in diameter (Takenaka Takeshi, pers. comm. c. 2008).

All three bamboo grasses are evergreen and grow rapidly. They are one of the primary components of Hokkaido's flora and are most often found in open areas or as the understory of deciduous or mixed forest. Requiring sunlight, they do not do well in pure coniferous stands. They also need well-drained or relatively dry soils.

While all three bamboo grasses were used by the Ainu in their daily life, perhaps the greatest economic benefit they provided was as winter sustenance to the Sika deer whose meat was so important to the Ainu diet (Takenaka Takeshi, pers. comm. c. 2008).

Sasa senanensis is the most widely distributed of all the Hokkaido bamboo grasses and was known as **yayan-top**, **huru**, **uras**, or **huras**. **Yayan** means ordinary and **huru** refers to its propensity to grow on slopes. It has multiple stems and is shorter than *S. kurilensis* (Takenaka Takeshi, pers. comm. c. 2008).

Among the Hokkaido Ainu, the charred stem and leaf were used as an antidote to fish poisoning (Mitsuhashi 1976). However, its primary use was to make roofing and walls of traditional Ainu houses, called *uras-chise*, and other buildings. It was women's work to gather the leaf and stem. They would look for leaves that had withstood two or three winters, by which time they had begun to wither. They would cut the stems and bundle them, a process called *i-muye uras*.

There were 70 to 80 stems in a bundle that was loaded on each woman's back, suspended by a tumpline. These were carried back to the village where the leaves were pressed between boards. When making a roof, a frame made of grapevines was laid out on the ground, and the bamboo leaves arranged on it starting from the lower edge.

About three leaves were taken from the bundle and held in the left hand with the leaves pointing downward. With the right hand, the stems were twisted around the supporting frame and tied off with cordage made of linden bast. The cord was pulled through the centre of the bundle and held in tension while the leaves were beaten. This caused the cord to tighten around the bundle. In addition, the cordage was used damp, so that, when it dried, it would shrink and tighten. The next bundle was laid in and tied off with the leaves overlapping the previous row. Tight ties and generous overlaps ensured the roof would be watertight. Making a roof, like other stages of building a house, was a community effort.

Sasa kurilensis, which has a very long single stem, is most widely distributed on the Japan Sea side of Hokkaido, although it also occurs in higher elevations throughout the island, including Taisetsu, Akan, Hidaka, and Shiretoko. It was known as *opne-top*, *ayus-top*, and *rumne-top*, all referring to its use as an arrowhead. *Ay* means arrow and *rum* refers to the indentation in the arrowhead that carried poison. The wood is light and hard and it could also be used as a spear by simply cutting the narrower end off at an angle.

In addition to its use as arrows and spears, bamboo grass was fashioned into a mouth harp called *mukuru* or *mukkuri*. Kusahara Seho, writing in *Igen Zokuwa* (Tales of Ezo Customs) (1969 [1792]) describes the mouth harp thus.



Figure 54. *Sasa senensis* in Mukawa, southern Hokkaido. Photo by Dai Williams.

They put a string on the little finger of their left hand and below it was another string held between the index finger and thumb of the right hand. Pulling and releasing the strings while holding the harp near the mouth produces a sound (Kusahara 1969 [1792] in Fukuoka 1995:72).

Matsuura reported that the Ainu of Satsutekubetsu (Nayoro) would all stamp their feet and dance while they played the harp. As to its construction, he stated that, “they slice the bamboo thinly, hollow out the inside and create a vibrating reed which is like a tongue. A string is attached to the base” (Matsuura 1858 in Fukuoka 1995:72).

The harp was made by men but played by women. As a man went off to hunt, the women might say, “I remember the harp you made for me”, and she would play for him. On a rainy day, they would imitate the rain, and when the hunting dogs howled at the bear, they would imitate this sound (Fukuoka 1995).

While it had a long, thin stem with leaves only at the tip that made it far from ideal for this purpose, where *S. senanensis* was not available, *S. kurilensis* might have been used in construction of roofs and walls (Takenaka Takeshi, pers. comm. c. 2008).

The young shoots are edible but were eaten only by the Sakhalin Ainu. Like *S. senanensis*, the leaf and stalk were charred and used to counteract fish poisoning (Butler 1994; Mitsuhashi 1976), and in Horobetsu, the seed was cooked and eaten.

There is no known use by the Ainu of *S. nipponica* that is distributed in areas of low snow-fall. However, like other bamboo grasses, it was important as winter fodder for Sika deer.

Aster, Daisy, and Sunflower Family (Asteraceae)

- *Senecio cannabifolius* Less., Aleutian ragwort
- *Senecio pseudoarnica* Less., seaside ragwort

Senecio cannabifolius, Aleutian ragwort, is a perennial herb that has an erect stem and creeping rhizomes. It is quite common in mountains throughout Hokkaido, Sakhalin, and the southern Kurils (Ohwi 1984). Young shoots were collected from early to late May.

Its usual Ainu name is *ionkuttar*, probably a reference to its showy efflorescence, but it was also known as *oromun*, *oremu*, *oroma-kuttar*, *yuk-kuttar*, *yuk-kutu*, *pekampe-kutu*, and *urayni-kina* (Chiri 1953). The prefix *oro* refers to the use of the leaf as a wrapping that promotes fermentation of starch. In Teshio, the lees of the cardiocrinum lily (*Cardiocrinum glehnii*) were placed in the leaves of Aleutian ragwort to ferment, or the leaves were added to the lees (Chiri 1953). *Yuk* is a corruption of *i-uk*, meaning “to extract”. This is probably a reference to use of the root to treat skin ailments (Chiri 1953).

It was an important resource for the Ainu and had multiple applications. The young buds were boiled and added to soups; the leaf was roasted and rubbed on rashes and eczema; mixed with dog fat, the leaf was used as a salve for ringworm; the roots were infused to produce a gargle and a skin cleanser in treatment of arthritis, neuralgia, sexually transmitted

diseases, uterine infection, boils, and blisters. After the leaf was used to cleanse syphilitic sores, they were then treated with powder derived from the dried bast of the Amur cork tree (Chiri 1953). Kinoshita and Takemura report that the roots were carbonized and used as an ingredient in ointment (1993).

Senecio pseudoarnica, or seaside ragwort (false arnica), is known in Ainu as *koykarakina*, *poriyakina*, or *purakina*. It is a perennial herb that grows in coastal locations throughout Hokkaido (Ohwi 1984). According to Chiri, in Sakhalin, the leaf was well rubbed and applied to cuts as a plaster (1953). An infusion of the leaf was used to cleanse the skin in treatment of palsy, neuralgia, and arthritis, the root was carbonized and mixed with animal fat as a balm, and the outer bark was shaved off with a knife and applied to boils to draw out the pus (Chiri 1953).

Carrot or Parsley Family (Apiaceae)

- *Seseli libanotis* (L.) W.D.J. Koch, seseli

Seseli is a pubescent, perennial herb with a thick rhizome that is generally found in the coastal plains of Hokkaido, but is not widely distributed (Ohwi 1984). It is also present in the southern Kurils. It grows in meadows in either dry or moist soils and in full sun. Its Ainu names are *umew* or *upew* (Chiri 1953).

Because it has a strong odour, the Ainu believed it had the power to expel disease. The dried rhizomes were made into amulets to be worn around the neck or suspended from the rafters. They were also chewed to provide protection (Batchelor and Miyabe 1893).

An infusion of the root was used to treat colds (Batchelor and Miyabe 1893), intestinal problems, hangovers, and to flavour soups. The fresh leaf was used as a stimulant and flavouring agent (Chiri 1953; Mitsuhashi 1976).

Rose Family (Rosaceae)

- *Sorbus americana* var. *japonica* Maxim., Japanese rowan
- *S. commixta* Hedl.

Japanese rowan is widely distributed in the uplands of Hokkaido; only in alpine zones and along the Okhotsk Sea and Pacific coasts is it not present. It is intolerant of marine exposure. It is also found in Sakhalin and the Kurils. It is a deciduous tree that blooms from May to July and has a red fruit in autumn (Ohwi 1984). It can attain a height of 10 to 15 m and requires full sun or partial shade and moist soils.

It has many Ainu names, of which *pase-ni* means “sacred tree”, *kikinni* or *iwakiki-ni* means “tree from the mountains that expels evil”, and *inau-ni*, “tree from which *inau* are made”. It shares this last name with dogwood (Chiri 1953).

In fact, *inau* were far more often made of other woods, such as willow or dogwood, but when hunting for bear in the mountains in spring, the Ainu would choose whatever wood was available (Chiri 1953). As a tree common in the mountains, Japanese rowan would be

one of the trees most often used in these circumstances. The Sakhalin Ainu, for example, used it to carve *inau* that were used to honour a bear taken in the hunt.

However, in Hokkaido at least, as the cut wood of Japanese rowan had a strong pleasant smell, it was also used to make a form of *inau*, called *situ-inau*, that would drive off the malevolent gods that might bring ill fortune or disaster (Fukuoka 1995). Thus, one further name for it is *hura-at-inau-ni*, or “the tree that makes fragrant *inau*”. Generally, while fragrant smells are pleasing to humans, they were thought to be intolerable to evil spirits. Some Ainu groups, however, believed quite the opposite as is seen in the case of magnolia, above.

On both Ishikari and Saru Rivers, a *yukar* conveys how the smallpox god was deflected by other gods. They boiled the berries of the Japanese rowan, the cabbage (*Cardamine* spp.) and took the extracted sap to ward off the evil spirit (Kubodera 1977).

Yet another alternate name for the Japanese rowan is *repun-kur-inau-ni*, a reference to its use for *inau* used for making solicitation to the god of the sea (Chiri 1953).

Although rather weak, the wood was hard and slow burning and was suited, therefore, to making charcoal or lining the bottom of the hearth or a fire made on top of the snow (Chiri 1953). It was also used to make eating vessels, turned into handles for tools such as hammers, and its branches bent into snowshoes (Fukuoka 1995). Talking of the Sakhalin Ainu, Chiri states,

the woman and girls are released from their winter seclusion and carry baskets made of the bark of Japanese white birch and simple hoes or digging sticks made of [Japanese] rowan called *ipekikuwa* that were used in collecting plants (Chiri 1953:188).

Such digging sticks were employed in extracting the roots of plants like the marsh marigold (*Caltha palustris*) (Chiri 1953).

In Sakhalin, the wood was also used to make poles for ice fishing (where the line was of nettle bast) and a boat-shaped bowl called *nipapo*, or “little boat”, in which was served fish soup or wine (Chiri 1953).

Wood shavings with the bark still attached were infused to treat eye ailments; the bast was used to wipe the hands during ritual purification of the face or body (Chiri 1953) and, in Shizunai, the fruit was added to *rateskep*, a stew made of vegetables

Finally, the Japanese rowan was also known as *chikap-ipe*, or “bird’s food”. The fruits are edible but were not used by the Hokkaido Ainu. As this name suggests, they were left to the birds instead. Generally, the prefix “*chikap*” signifies something of inferior quality. In autumn, the Ainu would have access to many types of berries that they would utilize in preparation of stews and gruels. Apparently, the red fruit of the rowan was not one of them.

Sorbus alnifolia (Siebold & Zucc.) C. Koch., mountain or Korean ash, is a deciduous tree found in both lowland and upland locations throughout Hokkaido and Sakhalin (Ohwi

1984). It can grow from 10 to 20 m in height and does best on moist soils in semi-shade or full sun. It is tolerant of wind and will grow on disturbed stony soils. Its Ainu names, *chikap-seta* or *chikap-seta-ni*, are references to its fruit and wood but there is no recorded use of either by the Ainu.

Bladdernut Family (Staphyleaceae)

- *Staphylea bumalda* DC., bladdernut

A small, deciduous tree or large shrub that grows primarily along the Pacific coast and in some of the interior lowlands of Hokkaido, it reaches 1.8 m in height (Ohwi 1984); it requires full sun or partial shade and moist soils.

Its usual Ainu name is *esorokanni*, a corruption of *esoro-kar-ni*, that translates as “with it we make a plane”, or *kin-ne-ni*, that probably means “tree with pith” (Chiri 1953). According to Chiri, the bast was infused and the infusion used in a compress. The wood is fire-resistant and was used by the Ainu to make fire tongs (Kayano 1978). It was also used for the handles of tools. One of its alternate names, *nomi-nit*, refers to this use (Chiri 1953).

Sweetleaf Family (Symplocaceae)

- *Symplocos chinensis* (Lour.) Druce fo. *pilosa*, Asiatic sweetleaf

This large, deciduous shrub is common in the uplands of western Hokkaido (Ohwi 1984). It reaches around 4 m in height and requires full or partial sun and moist soils.

While the dark blue fruit is edible, there is no recorded use by the Ainu, and Chiri does not mention the shrub at all. However, Kayano reports that the hollowed out trunk was used for making containers. Thus, its Ainu name is *nimaka-ni*, or “the tree from which we make vessels” (Kayano 1996). The pale wood is quite hard and close-grained.

Olive family (Oleaceae)

- *Syringa reticulata* (Blume) H. Hara, Manchurian lilac
- *Syringa amurensis* Rupr.

The Manchurian lilac is a small, deciduous tree, known as *punkaw*, *pungau*, or *pus-ni* in Ainu (Batchelor 1924; Chiri 1953), that grows mainly in the uplands and at the base of the mountains of Hokkaido (Ohwi 1984). Ohwi regards them as synonymous but notes that *Syringa reticulata* is somewhat taller than *Syringa amurensis* and has a broader crown. The Manchurian lilac prefers moist soils and is often found in alluvial and marshy zones. It is the typical understory tree in elm (*Ulmus* spp.) or Manchurian ash woodland (Takenaka Takeshi, pers. comm. c. 2008) and branches upward from the base to attain a height of 7 to 10 m. The trunk can reach 25 to 30 cm in diameter (Makino 1961). After 30 years of growth the wood becomes extremely hard and durable and thus was favoured by the Ainu for pillars in house construction and for grave markers (Kayano 1978, 1996). It was also used to make digging sticks and ceremonial arrows and, in the Saru region, to carve the image of *cise-kor-kamuy*, the god

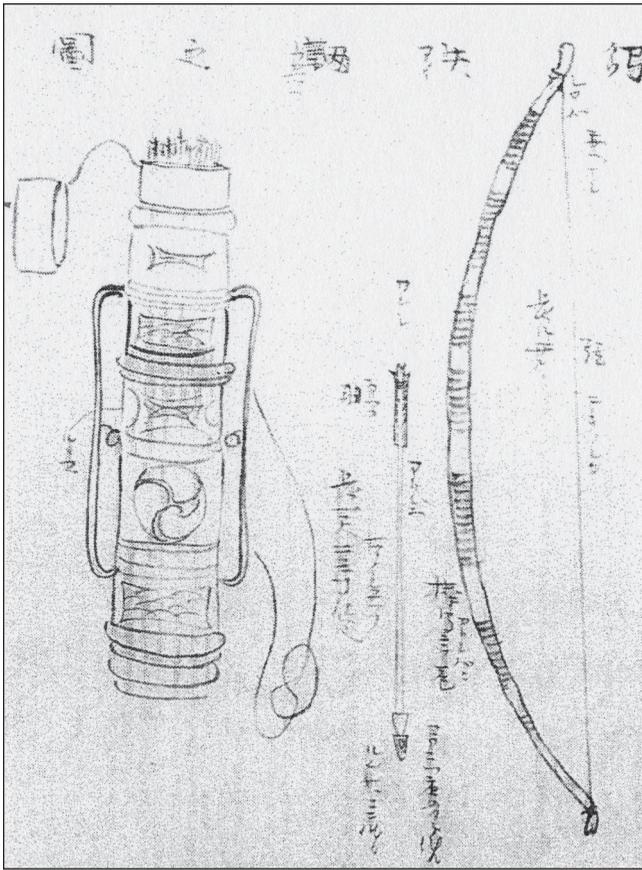


Figure 55. An Ainu bow and quiver. The quiver was usually made of the wood of magnolia and the bow, of yew, reinforced with thin strips of cherry bark. Matsuura 1999 [1850].

who protects the house (Chiri 1953). The lilac is a male god and, when used for making sacred staffs, or *inau*, it was paired with the elderberry, *soko-ni*, which is female. Together they formed *shutu-inau-kamuy*, or “the god which protects the Ainu from evil” (Yamada 2001).

In this same regard, Manchurian lilac was used to make an exorcism bundle brandished about the house or village during an epidemic in the hope of driving off evil. Members of the village would form a line with an elder at its head carrying the branches of the tree. They would stamp their feet and march around the village chanting as the elder waved the bundle back and forth.

When ill, an Ainu would offer prayers to the god of the Manchurian lilac in order to hasten recovery. Along with other trees like katsura, Daimyo oak, or Japanese alder, it was considered to be *pirika chikuni*, a “good tree” (Batchelor 1924).

Plum-Yew Family (Cephalotaxaceae)

- *Taxus cuspidata* Siebold & Zucc., yew

Yew has several names in Ainu dialects, but it is generally called *ku-ne-ni*, meaning “the tree that becomes a bow” (Chiri 1953). As its berries are edible, and because its bark produces

a red dye, the Ainu consider it to be a female deity. Thus, it has another name, *raramani* (Batchelor 1924), which is a reference to this goddess, *raramani-kamuy* (Yamada 2001). Both bows and arrows were made of yew as the Ainu believed the goddess would act as a mediator between humans and the gods. Thus, when a bear was killed by an arrow made of yew, the goddess would guide its spirit to the land of the gods and, more importantly, ensure its return to *ainimosir*, the land of the Ainu.

Another indication of its importance is in one account of the origin of the Ainu that recounts that the earliest resources available to them were the Japanese elm, Japanese poplar, mugwort, and the yew. The Japanese elm, *chi-kisa-ni*, provided the Ainu with fire; the mugwort protected them from evil and the yew empowered them in the hunt. When ill, an Ainu would make supplications to the god of the yew in hopes the tree could hasten recovery (Batchelor 1924).

Yew grows best in colder parts of Hokkaido. Chiri references the place name of *Rarmaniushnupuri*, or “the mountain where there are yews”, suggesting its highland habitat.

The yew is an evergreen that reaches 18 m in height. However, it is often low to the ground and found in relatively dark forests, sometimes in pure stands (Sato 2002). It is resistant to shade, grows slowly, but has great longevity. The bark is dark brown and the leaves deep green. The fruit is egg-shaped, 0.5 cm long, sweet, and edible, but the seed is poisonous.

The most important use of the wood is in making bows (Kayano 1996; Yamada 2001), and, in northern Hokkaido, there is a river called Kukarusnai or “the river where we always cut wood for bows”.

The Ainu bow is made of a single piece of well-seasoned wood. While the wood of the yew is extremely strong and pliable, the bow was reinforced by binding it with the bark of bird or mountain cherry, known as *karin-ba-ni*. The bark was soaked before application and, when it dried around the yew, it formed an extremely tight bond. The bowstring was made from the bast of either nettle or bittersweet.

Chiri reports the wood of the yew was also used to make house pillars, the handles of knives, the hoop of the herring dipping net (1953), and *tuki-pasui*, the libation stick.

When Matsuura researched the Teshio River, he came across a woman weaving cloth for a garment called an *atus* in Ainu. The cloth was made from the bast fibre of the Manchurian elm (*Ulmus lacianata*) known as *at*, and the design was of vertical stripes of several colours. Matsuura asked her the source of the red dye, and she indicated that she obtained it by boiling the elm bast with the bark of the yew (Matsuura 1862 in Fukuoka 1995).

In autumn, the yew produces a gelatinous fruit that was used by the Ainu for ailments of the heart and lung, as a diuretic, and to counteract beriberi (Fukuoka 1995).

Figwort Family (Plantaginaceae)

- *Veronicastrum sibiricum* (L.) Pennell, veronica
- *Veronica americana* Schwein. ex Benth.

Ohwi regards them as virtually synonymous, but to the Ainu, *Veronicastrum sibiricum* was known as *mosospe-kut*, and *Veronica americana*, as *kamuy-kew-kina* or *hura-yuxke-kina*, the latter meaning “the plant with the strong-smelling leaf”. In Sakhalin, the Ainu used *V. americana* to chase off demons. It also was known as *peru-kina*, or “marsh grass”, a name that indicated its preferred habitat (Chiri 1953). It also grows in moist soils, shallow water, and rills (Ohwi 1984). Its leaf is edible but there is no record of such use by the Ainu. *V. sibiricum* grows in drier conditions in meadows in both uplands and lowlands in Hokkaido and Sakhalin, although it still requires moist soils. It prefers full or partial sun. There is no recorded use by the Ainu.

Mistletoe Family (Santalaceae)

- *Viscum album* L. var. *coloratum* Ohwi, mistletoe

The Ainu called mistletoe *ni-haru* (“tree’s lunch”), or some variation—names which suggested they believed that the tree gained sustenance from it. It is, in fact, a parasitic, deciduous shrub. It grows throughout Hokkaido (Chiri 1953; Ohwi 1984).

Because the mistletoe remains green and vibrant throughout winter, the Ainu associated it with fertility. Thus, a solution fermented from the finely chopped stems and leaves was used to soak grain seeds prior to sowing. This process was called *tane-pen-ne-ka*, or “dissolving the seed”, and was believed to ensure a good harvest (Chiri 1953).

The leaf and stem are edible and Kayano said of it, “long, long ago during a famine the Ainu would eat frogs and mistletoe” (1996:346), and there are reports that, in the harsh winters of 1884 and 1885, many in the Tokachi region were forced to eat it. The leaf was infused to treat a number of ailments (Mitsuhashi 1976).

Appendix 1: Fauna of Hokkaido

Fauna of Hokkaido, southern Sakhalin, and the southern Kurils with Ainu names (from Chiri 1962, IKIP 1994, and personal knowledge).

1. Bat (35 species including *Amylytus*, *Myotis*, *Nyctalus* and *Pipistellus*), **Kapap**, **kapak**.
2. Brown Bear, *Ursos arctos yezoensis*, **kamuy**, **kamuy-cikoyap**, etc.
3. Chipmunk, *Eutamias asiaticus lineatus*, **kasilkirkus**, **kasekurkur**, etc.
4. (Ainu) Dog, *Canis lupus familiaris*, **seta**, **sita**, etc.
5. Dolphin spp., **tannu**, **terke cironnup**.
6. Flying squirrel, *Sciuropterus russicus*, **at**, **hat**, **ax**.
7. Fox (red), *Vulpes vulpes schrenki* Kishida, **cironnup**.
8. Glutton, *Gulo gulo*, **kuciri**.
9. Harbour seal, *Phoca vitualis* L., **tukar**, **atuykunkamuy**, etc.
10. Hare, *Lepus timidus ainu* Barret-Hamilton, **isepo**, **isopo**, **osukeh**, **fu**.
11. Killer whale (Orca, grampus) *Orcinus orca*, **repunkamuy**, **reptakamuy**, etc.
12. Lynx, *Lynx borealis*, **tuxci**, **tukci**.
13. Marten, *Martes zibellina brachyura*, **hoynu**, **hofnu**, etc.
14. Musk deer (Sakhalin only), *Moschus moschiferus*, **opokay**.
15. Northern fur seal, *Callotaria ursina*, **onne-kamuy**, **onnep**.
16. Otter, *Lutra lutra*, **esaman**.
17. Pika, *Ochotona hypoborea*, (Ainu name not known).
18. Rabbit, *Oryctolagus cuniculus*, **isepo**, **isopo**, **Isorpo**, **kaikuma**.
19. Raccoon dog, *Nyctereutes albus* Beard, **moyuk**, **suke-moyuk**.
20. Rat, *Rattus rattus*, *Rattus norvegicus*, **erum**, **enum**, **erem**, etc.
21. Reindeer (Sakhalin only), *Rangifer tarandus sibiricus*, **tunakay**, etc.
22. Sea lion, *Eumetopias jubita*, **etaspe**, **kamuy**, etc.
23. Sea otter, *Enhydra lutris*, **etuy-esaman**, **rakko**, **raxku**.
24. Shrew, **etucikerep**.
25. Sika deer, *Cervus nippon*, **yuk**, **apka**, etc.
26. Stoat (ermine), *Mustela erminea kanei*, **upas-cironnup**, **saciri**.
27. Tree squirrel, *Sciurus vulgaris orientis*, **ruop**, **ruwop**, **tusnike**, **tusuninke**, **niueo**.
28. Vole, *Microtus fortis*, etc., (Ainu name not known).
29. Walrus, *Odobenus obesus*, **sox**.
30. Whale, **humpe**, **oxka-humpe**, **rika**, etc.

Appendix 2: Birds of Hokkaido

Hokkaido bird species with Ainu names (after Kawai et al. 2003).

1. Blakiston's Fish Owl, *Bubo blakistoni*, **kotan koro kamuy** ("god that protects the village"), **kamuy chikap** ("god bird").
2. Scops Owl, *Otus scops*, **tokito kamuy** (meaning unknown).
3. Ural Owl, *Strix uralensis*, **kunnereku kamuy** ("god that flies at night").
4. Brown Hawk Owl, *Ninox scutulata*, **ahunrasanpe** ("ghost living in that world").
5. Jungle nightjar, *Caprimulgus indicus*, **oraun kuru kamuy** ("god that appears from the underground world". So-called because of its ability to camouflage both against the bark and on the ground).
6. White-tailed eagle, *Haliaeetus albicilla*, **onneu** ("old, ageing thing").
7. Stellar's Sea Eagle, *Haliaeetus pelagicus*, **kappachira kamuy** ("eagle god").
8. Osprey, *Pandion haliaeetus*, **achiyuie chikap** ("bird that captures other birds").
9. Peregrine Falcon, *Falco peregrinus*, **chikap koikichiri** (meaning unknown).
10. Cuckoo, *Cuculus canorus*, **kakko chikap** ("bird that cries kakko").
11. Japanese Green Pigeon, *Treron sieboldii*, **waou** (name mimics its call).
12. Oriental turtle dove, *Streptopelia orientalis*, **toitachiri** ("bird that flies up from slash and burn fields").
13. Hazel Grouse, *Tetrastes bonasia*, **humirui** ("great noise", "fluttering").
14. Kingfisher, *Alcedo atthis*, **sokai kamuy** (meaning unknown).
15. Greater Pied Kingfisher, *Ceryle lugubris*, **ainuchiri kamuy** ("human bird god"?).
16. Great Spotted Woodpecker, *Dendrocopos major*, **esokusoki** ("head tapper").
17. Lesser Spotted Woodpecker, *Dendrocopos minor*, **esokusoki** ("head tapper").
18. Japanese Pygmy Woodpecker, *Dendrocopos kizuki*, **enikokarusep** ("person going around over there").
19. Grey-headed Woodpecker, *Picus canus*, **nikororuse** ("bird chirping in a tree?").
20. White-backed Woodpecker, *Dendrocopos leucotos*, **esokusoki** ("head tapper").
21. Black Woodpecker, *Dendrocopos martius*, **chiputachikap kamuy** ("bird god that carves canoes").
22. Sand Martin, *Riparia riparia*, **toitomunchikaha** ("bird in the earth").
23. House Martin, *Delichon urbica*, **peshitoriyanka** (meaning unknown).
24. White-rumped Swift, *Apus caffer*, **ruanpe chikap** ("rain bird").
25. White wagtail, *Motacilla alba*, **ochiuchiri** ("the bird in intercourse").
26. Brown Dipper, *Cinclus pallasi*, **kakken** (meaning unknown).
27. Bush Warbler, *Cettia diphone*, **opakekiyo, hohachiri** ("chirping bird").
28. Gray's Grasshopper Warbler, *Locustella fasciolata*, **tutpichiri** (song sounds like "tutpit").

29. Wren, *Troglodytes troglodytes*, **toshiribokun kamuy** (“god that enters holes in riverbank”), **cakcak kamuy** (“chattering god”).
30. Grey Thrush, *Turdus cardis*, **itakachya** (probably “chattering bird”).
31. Great Tit, *Parus major*, **pakekunne** (“black head”), **ponchittoikoru** (“little thing under the bush”).
32. Long-tailed tit, *Aegithalos caudatus*, **upashichiri** (“snow bird”).
33. Jungle Crow, *Corvus macrorhynchos*, **shipashikuru** (“dung crow”).
34. Carrion Crow, *Corvus corone*, **shirarikokari** (“person living near the seashore”).
35. Raven, *Corvus corax*, **onnepashikuru** (“old crow”).
36. Little Grebe, *Tachybaptus ruficollis*, **raripe chikapa** (“bird that hides and eats in the water”).
37. Nuthatch, *Sitta europea*, **shie chikap** (“bird that eats feces”).
38. Cormorant, *Phalacrocorax capillatus*, **uriri, furiri** (meaning unknown; from the Japanese).
39. Grey Heron, *Ardea cinera*, **pechaewaku** (“living by the river”).
40. Japanese Crane, *Grus japonensis*, **saru un kamuy** (“god living in the reeds”).
41. Rufous-necked Stint, *Calidris ruficollis*, **kuikui** (meaning unknown).
42. Latham’s Snipe, *Gallinago hardwickii*, **chipyaku** (name mimics the cry of the snipe).
43. Woodcock, *Scolopax rusticola*, **turep ta chiri** (“the bird that digs for the cardiocrinum lily”). In fact, it is looking for insects at the base of the lily.
44. Solitary Snipe, *Gallinago solitaria*, **riyaeorushi** (“something in the water throughout winter”).
45. Laysan Albatross, *Diomedea immutabilis*, **rebakamuy** (“god of the sea”), **oshikanpe, shiratsuki kamuy** (“divination god”), **onnechikap** (“old bird”).
46. Spectacled Guillemot, *Cephus cardo*, **kemafure** (“red legged”).
47. Rhinoceros Auklet, *Cerorhinca monocerata*, **peurechikap** (“young bird”).
48. Tufted Puffin, *Lunda cirrhata*, **etopirika** (“beautiful beak”).
49. Chestnut cheeked Starling, *Sturnus philippensis*, **shikerepeechiri** (“bird that eats the fruits of the Amur cork tree”).
50. Grey Starling, *Sturnus cineraceus*, **skerepeechiri** (“bird that eats the fruits of the Amur cork tree”).
51. Tree Sparrow, *Passer montanus*, **amamechiri kamuy** (“god that eats millet seeds”).
52. Eurasian Jay, *Garrulus glandarius*, **parukeuchikap kamuy** (meaning unknown).
53. Eastern Nutcracker, *Nucifraga caryocatactes*, **metoseyami** (“jay that lives deep in the mountains”).
54. Red Breasted Merganser, *Mergus serrator*, **shichiri** (meaning unknown).
55. Common Merganser, *Mergus merganser*, **komechiri** (meaning unknown).
56. Black-faced bunting, *Emberiza spodocephala*, **mururunchikap** (“bird in the dune grass”).

Appendix 3: Hokkaido Place Names

Hokkaido place names referring to flora or fauna (from Chiri 1953:250–333).

Chepsaketumpi = part of Etobi River with no fish.

Chepsakuparanai = part of Uparanai River with no fish.

Chepunmem = spring that fish enter.

Chepunnai = river that fish enter.

Chepunonnenai = main river that fish enter.

Chepunwattar = pool that fish enter.

Chimakinaushpira = cliff with many aralia.

Chiraiunnai = river that taimen enter.

Chirayyokouspet = river where we fish for taimen.

Eshemekushnai = river where the dogs always bark at the bear.

Etaspe-watara = sealion rock.

Furechiusi = place of many lugworms.

Hanrakorushnai = river with Kamchatka lilies.

Hoynu-ka = marten trap.

Humpeomanai = river that whales enter.

Humpeomapet = river that whales enter.

Huppakusnay = river that flows above the place of Sakhalin firs.

Hupryuka = Sakhalin fir log bridge.

Hupusi = place of many Sakhalin firs.

Hupusnai = river with Sakhalin firs.

Hurepukparakot = swamp where we pick vaccinium.

Huttom = hill with a fir wood.

Huttutanup = Tutanup River (literally “thing touching the Sakhalin firs”).

Ichan = place where salmon spawn.

Ichanpaomanai = river above where fish spawn.

Ichanuni = place where fish dig spawning holes.

Imaipeusi = place where we always smoke fish.

Iriripushi = place of many nettles.

Iworoto = pond in which we soak elm bast.

Karamayokousi = place where we stalk salmon shark.

Katamkoto = swamp where vaccinium grow.

Kamuypet = river of many bears.

Kamuyteushi = a place of many bear dens.

Keromononisha = hole in tree for storing reed bent grass for use in winter.

Kikin-onnenai = bird cherry river (main branch).
Kitoionkeshkushnai = river flowing below a bed of Amur silver grass.
Korkoniusnay = river with many butterbur.
Kikiropet = river with many insects.
Kikirunto = lake with insects.
Kinachausnai = river where we cut grass.
Kinausi = place where many grasses grow.
Kitotaushnai = river where we dig for alpine leek.
Kon-oroomapet = river where the salmon or trout dig their spawning holes.
Kupitai = fir wood.
Kutuneusi = place of many giant knotweed.
Mempirotausi = place we always dig for alpine leek.
Moseushnai = river with nettles.
Moseusi = place of many nettles.
Nikurpake = cliff above the woods.
Nikusunpet = in yonder wood there is a river.
Niyomem = spring with trees.
Numusnay = river of many walnuts.
Ochikapewaki = place where the birds (white-tailed eagles) live.
Ochinnai = river where we stretch hides.
Oikarushi = place of many arrowroot.
Okenetampe = alder wood at mouth of the river.
Okitcheusi = place with many birds.
Okuruniusi = place of many aspen.
Onnechep = old fish (a salmon that had finished spawning).
Oputsaknay = river with no spawning holes.
Osarkannai = river with reed beds.
Osarkiusi = place of many reeds.
Osarunpet = river with reed beds.
Osunkuusi = place where many yews grow.
Opsatausi = place we always cut hydrangea wood.
Opsausi = place where many hydrangea grow.
Parakiomanai = there are ticks on this river.
Parakiotnai = tick river.
Pekampeusto = lake with water chestnuts.
Pesankot = damp muddy place where, in the heat of summer, the deer gather.
Peurepunnai = river that the bear cubs enter.
Ponsupununi = small place where dace come.
Pukusatapkop = small mountain with alpine leeks.

- Pukusausnot = cape with alpine leek.
 Putusarunnai = river mouth with reed beds.
 Rarmaniusnay = river with many yews.
 Rarmaniusnupuri = mountain with yews.
 Ramoi = brown bear.
 Rikaseushnai = river where we always carry the whale blubber.
 Riatniushpira = cliff with tall Manchurian elms.
 Sachirinay = river of the crested kingfisher.
 Sakuisar = river that once had reed beds.
 Samenai = shark river.
 Sarkiusnay = river of many reeds.
 Sarkiushporu = cave with many reeds.
 Sartomusnay = river among the reed beds.
 Sarpaomanai = river above the reed beds.
 Sarumaomanai = river above the reed beds.
 Sarunpet = river with reed beds.
 Setanniushi = place of many crabapples.
 Shineniushi = place with a single tree.
 Shinkepiporo = part of Bihoro River (Piporonai) where there are many field bush clover.
 Shinritonai = river of many milkweed.
 Shishuyei = killer whale (?)
 Shumkushiyukushto = lake in which we gather water chestnuts.
 Shurkutaushnai = river where we dig aconite.
 Sinoomanyukoromanay = place where deer enter the river.
 Supunpet = river of dace.
 Supunnai = river of dace.
 Tatniushpira = cliff with many Erman's birches.
 Tukushishotpe = place we catch a lot of trout/white-spotted char.
 Tukusismoy = trout/white-spotted char bay.
 Tukusisunnai = river that the trout/white-spotted char enter.
 Tomausnay = river with many corydalis.
 Tanneniushi = place where tall trees grow.
 Tunayeushi = place where we pull in many whales (?)
 Tunnipok = below the oak forest.
 Tureptaushnai = river where we dig for cardiocrinum lilies.
 Turikarushnai = river where we cut trees.
 Ununkoisarkaomanai = river above the reed beds in the gorge.
 Upusnot = Sakhalin fir cape.
 Urashushnai = river with many bamboo grasses.

Uriroreuushi = cormorants always stop on this (rock).

Uuyniusi = place of many burnt trees.

Wauwonuketoi = place where green pigeons have a mudbath.

Wempiro-us-i = place of many alpine leeks.

Yampet = Chestnut River.

Yarkarushnai = river where we strip the bark.

Yokouspet = river where we stalk fish.

Yuketoiunpe = the deer that eat the clay.

Yukosannai = river from which the deer emerge.

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AINU ETHNOBIOLOGY

In the last 20 years there has been an increasing focus on study of Ainu culture in Japan, the United States, and in Europe. This has resulted in a number of major exhibitions and publications such as “Ainu, Spirit of a Northern People” published in 1999 by the Smithsonian and the University of Washington Press. While such efforts have greatly enhanced our general knowledge of the Ainu, they did not allow for a full understanding of the way in which the Ainu regarded and used plants and animals in their daily life. This study aims at expanding our knowledge of ethnobiology as a central component of Ainu culture. It is based in large part on an analysis of the work of Ainu, Japanese, and Western researchers working in the 19th, 20th, and 21st centuries.

Dai Williams was born in Lincoln, England in 1941. He received a BA in Geography and Anthropology from Oxford University in 1964 and a MA in Landscape Architecture from the University of Pennsylvania in 1969. He spent the majority of his career in city and regional planning. His cultural research began through museum involvement in the San Francisco Bay Area. Based in Kyoto from 1989, he began research on the production and use of textiles in 19th century rural Japan. His research on the Ainu began in 1997 but primarily took place in Hokkaido between 2005 and 2009. Fieldwork focused on several areas of Hokkaido, like the Saru River Basin and the Shiretoko Peninsula, which the Ainu once occupied. In addition, Williams met with and worked with a number of Japanese researchers who focus on Ainu culture and ethnobiology.

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