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PART III

The Yukaghir and the Yukaghirized Tungus

BY

WALDEMAR JOCHELSON

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XVIII. — MATERIAL CULTURE. DWELLINGS.

The Dwellings of the Russianized Yukaghir. The Russianized Yukaghir of the lower part of the Kolyma River live at present in log cabins, the building of which they learned from the Russian settlers. On account of the absence in the polar regions of pine and fir trees, they use for building the East Siberian larch (*Larix dahurica*, Turcz.) which they raft down from the upper parts of the Omolon and Anui rivers. The wood of this tree is very solid; stripped of its bark and exposed to the hardening frosty winds, it lasts very long without rotting. I have seen many solid log cabins of East Siberian larch built a hundred years ago. The only tool the Yukaghir use in building their houses is the axe. Therefore the corners, mortises and seams of the log houses are very rudely hewn. On account of the absence of tow, they use dried moss for caulking the corners and seams. They do not make sloping roofs. They have no boards for that purpose as it would take much time and labor to prepare them with the axe only. The roofs are flat. The beams are laid over with roughly hewn blocks, covered with bark and overspread with earth or clay. During heavy rains the water soaks through such a roof into the dwelling.

The floor generally consists of rudely hewn planks; but often the earth floor is left unplanked. The door, made of planks joined by wooden pegs, turns on conical projections which fit into mortises of lintel and threshold. To keep out the cold air the doorway is made very low, so that one must stoop in entering. Owing to the scarcity and high price of glass the small windows are made of stretched fish skin, particularly eel skin, the guts of animals, or split mica. Such windows admit sufficient light, but they are not transparent. In winter the windows are covered with thick panes of river ice, frozen into the window frames by the application of wet snow to the edges of the blocks of ice. During the long winter the ice windows have to be renewed several times as they gradually melt from the warmth inside. In order to keep their houses warm, the Yukaghir cover the lower part of the walls with snow and coat the seams with moist snow. The outside of the doorway is covered with a reindeer skin.

Inside the habitations, along the walls opposite the door and on both sides, are wide permanent benches which serve as seats in the daytime and as beds at night. These benches are covered with reindeer skins. The one

opposite the entrance is regarded as a place of honor for guests of distinction. When there are no guests it is occupied by the master of the house and his wife. At night small sleeping tents are hung over the benches. Married couples and young girls have sleeping tents for themselves. Clothing and arms hang on the walls. On the entrance wall at both sides of the door are placed a few household articles, and on the other walls are hung the clothing and weapons of the various occupants. At the right of the entrance, in the corner, but not against the wall, is a kind of open hearth on which a fire is kept burning all day. The chimney reaches to the roof and ends in a funnel made of rods covered inside with clay. At night the top of the funnel on the roof is covered with a piece of skin or some other plug. The roof is reached by a ladder made of a notched log. The hearth serves for cooking and provides warmth as well as light in the dark winter days. Some houses have instead of a fireplace a Russian stove of beaten clay.

Plate XVII, Fig. 1 shows a building at the mouth of the Omolon River, such as we have described, but not built to live in. It was a kind of chapel in which the local Russian priest performed the ceremonies of the Church when he came for that purpose from the residence of Nishne-Kolymsk. The extension of the building on the right side surmounted by a wooden cross served as a sanctuary. Close to the chapel we see the grave of the well known traveller and palaeontologist, Chersky, who died on the Kolyma River while exploring its banks in 1893.

The Dwellings of the Upper Kolyma Yukaghir. The Upper Kolyma Yukaghir, who live on the banks of the Yassachnaya, Korkodon and Popova Rivers, reside during the winter months in log huts, built partly underground. But in general the earthen huts of the Upper Kolyma Yukaghir are much like the dwellings of thè Lower Kolyma Yukaghir and do not need to be separately described. Plate XVII, Fig. 2 shows a photograph of a Yukaghir winter dwelling on the Yassachnaya River. Ice squares cover the window holes, and to the left is a lower log hut which serves as a storehouse.

The log houses of the Korkodon Yukaghir are sunk deeper into the ground than those of the Yassachnaya Yukaghir and are covered with earth. They are half underground dwellings. Plate XVIII, Fig. 1 shows such a dwelling, — the building on the left side of the picture with an ice-window over the ground. At the right of the picture, erected on short posts is a log storehouse for clothing and food. Plate XVIII, Fig. 2 shows a storehouse of the Korkodon Yukaghir, supported by two high posts and called by the same name as the elevated graves, ku'rul or a'taxun-no'ineye ku'rul i. e. two legged storehouse.

Tents of the Upper Kolyma Yukaghir. While hunting wild reindeer and elk during the late winter months and in the spring from March to the middle or end of May, and also during the summer fishing season from May

Fig. 1. Log house of Russianized Yukaghir at the mouth of the Omolon River, used as a chapel.

Fig 2. Winter dwelling on the Yassachnaya River.

Fig. 1. HALF UNDERGROUND DWELLING OF THE KORKODON YUKAGHIR, WITH LOG STOREHOUSE.

Fig. 2. ELEVATED STOREHOUSE ON THE KORKODON RIVER.

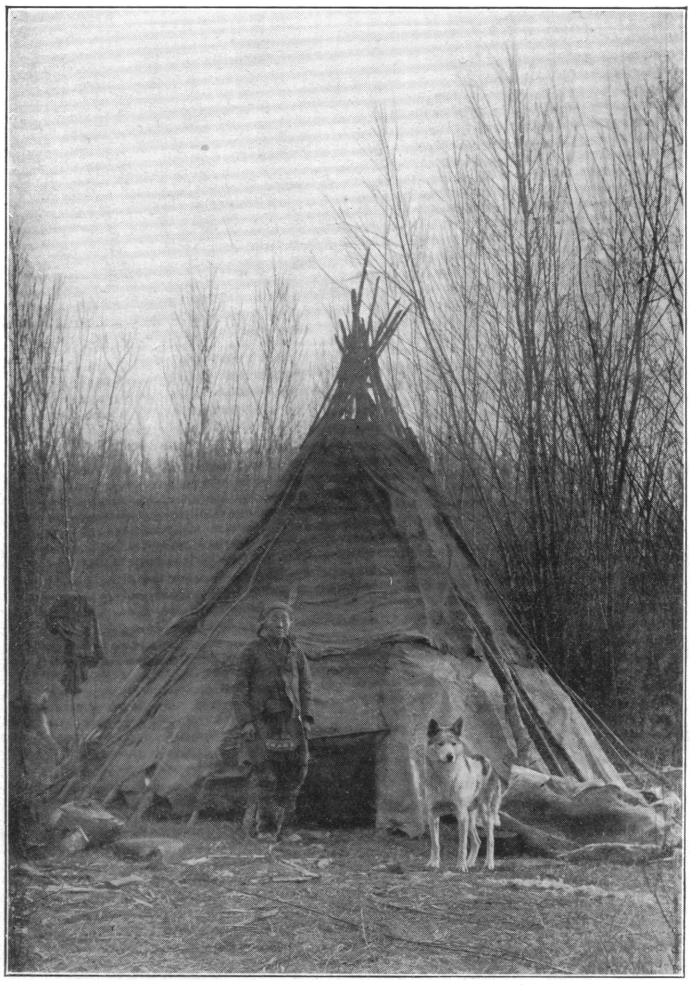

Fig. 1. Skin tent of the Upper Kolyma Yukaghir.

Fig. 2. Summer village on the Yassachnaya River.

Fig. 1. YUKAGHIR SUMMER VILLAGE ON THE KORKODON RIVER.

Fig. 2. FRAMEWORK OF THE COMPOUND TENT OF THE UPPER KOLYMA TUNGUS.

to September, the Upper Kolyma Yukaghir live in easily transported conical tents of circular ground plan, covered with smoked reindeer skins. These skins shed the rain water which flows down the sides of the tent. The framework is made of long, straight, thin rods of poplar, aspen or willow. The upper ends of the rods are bound together by a rope made of bast or by a ring of willow, while the lower ends are placed in a regular circle in the earth or snow. The skin cover of the conical tent is called by the Yukaghir kuti'ye. It is sewed of smoked reindeer skins and consists of three separate strips. These bands or strips are, of course, not of the same length, and each of them has a different name. The upper strip is called ti'mil and the two rods to which it is fastened by leather strings are called ti'min-cāl. The middle strip is called o'rǰolon, i. e., the middle one. The lower strip is called nu'med a'lgada, which means "the lower part of the house." The apex of the tent frame is left uncovered and serves as a vent. Through the same hole the sunlight may penetrate. The hide cover is also not wholly impermeable to the daylight. The size of the tent depends on the number of people who are to live in it. The angle at which the tent poles are put up is the same for large and small tents. The exterior of such a tent is shown in Plate XIX, Fig. 1.

In the center of the floor is a fireplace encircled with stones. Over the fireplace is set up a wooden tripod with hooks for hanging kettles and teapots. Under the slope of the tent all around are placed seats of soft willow twigs covered with reindeer skins. During the night these also serve as sleeping places and sleeping tents are hung over them for girls and married couples. The sleeping tents are sewed of dressed reindeer skins or cotton material. Single men, boys and old people have no sleeping tents. The lower strip of the tent cover does not go all around the tent; an entrance is left open between two poles. This entrance is covered by a flap of reindeer skin which serves as a door. Honored guests do not raise the entrance skin cover for themselves. This is done for them by boys and girls. The same sign of respect is due to old people. To look after and take care of the tent is the woman's duty. She sews the skins for the tent cover, puts up the frame, covers it, and arranges the fireplace and sleeping places. When the family moves the women take down the tent. They load all the parts of the tent on the sledge when the family is on the hunt or in boats when moving to the fishing places.

Plate XIX, Fig. 2 shows a summer village of conical tents of the Yassachnaya Yukaghir on the bank of the Yassachnaya River at the season when the salmon are ascending the river. Plate XX, Fig. 1 represents a Yukaghir summer village on the Korkodon River. The men are taking part in a shooting contest with bow and arrow, while the women and children look on.

The tent of the Tundra Yukaghir. The tent of the Tundra Yukaghir

also consists of a frame of poles and a skin cover, but the form of the tent is different. It consists of two parts, a lower cylindrical and an upper conical section. The height of the cylindrical part is about one meter and the top of the tent in the center is from 3.5 to 8 meters high. The frame of the cylindrical part is composed of short stakes tied in pairs with crossbars forming a wide circle. The conical part consists of poles, the lower ends of which are tied to the crossbars of the cylindrical part. The upper ends of the slanting poles are held together with thongs and are supported by a tripod of heavier poles, the lower ends of which are dug into the ground on three sides of the fireplace. This form of dwelling is in use all over Siberia, though the types vary. The tents of the Reindeer Chukchee and Koryak are similar in plan but the lower parts of their tents are heavier and clumsier and less regular in shape than those of the Tundra Yukaghir.[1] Furthermore, while the Chukchee and Koryak tents are covered in winter with heavy reindeer skins, those of the Tundra Yukaghir and the Tungus are always covered with dressed skins without the hair.

The inner arrangement of the compound tent is the same as that of the conical one. The compound tent differs, however, from the conical in being larger and higher, — high enough for a person to stand upright not only in the center of the dwelling but in other places as well. Plate XX, Fig. 2,[2] shows the frame of a compound tent half covered with skins, and Plate XXI, Fig. 1 a covered tent.

In the district of Okhotsk I saw Tungus compound tents in which the lower cylindrical parts were covered with rectangular pieces of birchbark sewed together with thongs. Such tents are shown on Plate XXI, Fig. 2 and Plate XXII, Fig. 1. It is very doubtful whether the Tundra Yukaghir used that type of dwelling before their meeting with the Tungus. We do not know whether the ancient Tundra Yukaghir were a nomadic reindeer tribe. The present Yukaghir reindeer belongs to the Tungus and not to the Chukchee race. In the chapter on reindeer breeding I shall consider the question whether in ancient times the Yukaghir were reindeer breeders. At present I wish to point out that remnants of ancient Yukaghir underground or half underground dwellings were found by Cossacks and scientists during the eighteenth century and later. Thus the Cossack Amosov reported that in 1724 he found earth-covered wooden huts on an island between the Alasseya and Chukchee Rivers. He considered them remnants of Yukaghir or Chukchee dwellings.[3] But it is more likely that they were Yukaghir, as only nomadic Chukchee and not maritime settlers reached the west of the Kolyma River.

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[1] See Bogoras, The Chukchee, Vol. VII of this series, p. 169 and Plate XII; Jochelson, The Koryak, Vol. VI of this series, p. 449 and Plate XIX, Fig. 1.

[2] Plate XX, Fig. 2 shows a tent of an Upper Kolyma Tungus camp, but it does not differ from the tents of the Tundra Yukaghir.

[3] Müller, Sammlung Russischer Geschichte, Bd. III, St. Petersburg, 1758, p. 46.

The geodesist, Andreyev, found in 1763 on the third Bear Island, the remnants of huts belonging to ancient Yukaghir.[1]

Ferdinand von Wrangell reported having seen remnants of Yukaghir dwellings in the course of his polar travels.

"Remains," he says, "of forts formed by trunks of trees and tumuli, the latter especially near the Indighirka, both may be supposed to have belonged to these omoki,[2] who have now disappeared."[3]

"Near the east side of the island (i. e. of the third Bear Island) there was a kind of cellar dug in the ground and supported by posts, but we could not examine the interior, as it would have taken us too long to clear out the snow. We found on the beach a very old oar of the kind which the Yukaghir use in their vetkas;[4] we also saw some reindeer sinew, and some human bones, but could not find a skull."[5]

"As the Russian conquests advanced the omoki determined to move and left the banks of the Kolyma in two large divisions with their reindeer. My host[6] said that they went northwards, but he could not tell where; probably they turned to the west along the coast of the Arctic Sea, for there are now traces near the mouth of the Indighirka of numerous yurtas, although the oldest people do not know of any settlements ever having been in that part of the country. The place is still called Yurtowishtche."[7]

"When the present Russian settlers first arrived here, they found near all the rivers which join the Indighirka numerous ruined yurtas and mud huts with fireplaces. Stone hatchets and remains of weapons totally different from those now in use, are still occasionally picked up so that there can be no doubt of this district having been formerly inhabited by a population which has now disappeared."[8]

In the appendix to his book including the history of the discovery of the Siberian coast, Wrangell says: "On the Yana, Busa[9] built four new vessels, with which, on the return of the spring, he descended the river; and by one of its arms, running eastward, entered the River Tshendoma, where he found a sellement of Yukaghir, living in half subterranean huts, with whom he remained two years, exploring the country and levying a large yassak on this and several neighboring tribes. About the same time that Busa entered the Yana, the Indighirka was discovered by Ivanov,[10] surnamed Postnik or Observer of Fasts. He subdued the Yukaghir scattered along the banks and established a winter station."[11]

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[1] P. S. Pallas, Neue Nordische Beiträge, St. Petersburg and Leipzig, 1781, Bd. I, pp. 234, 235.
[2] Some clans of the Yukaghir were called omoki (see this volume, p. 19).
[3] See F. Wrangell, Narrative of an Expedition to the Polar Sea, London, 1844, p. 53.
[4] *Vetka* is the Russian name (in Siberia) for a light dugout boat.
[5] Ibid., p. 154.
[6] A Yukaghir chief, Kerkin, on the Anui River.
[7] See Wrangell, p. 181, *Omokskoye Yurtowishtche* means in Russian, the village site of the Omoki.
[8] Ibid., p. 228.
[9] A Cossack chief in 1638.
[10] Another Cossack chief.
[11] See Wrangell, p. 391.

From the references cited we can see that when the Russians first came to the tundra country of the Province of Yakutsk they found on the river banks and on some of the islands underground or half underground dwellings of living Yukaghir or remnants of such dwellings. Unfortunately, we do not know the exact form of the ancient Yukaghir earth hut. It is also regrettable that no excavations have been made as yet on the ancient Yukaghir village sites.

The first Russian travellers and officials do not tell us of Reindeer Yukaghir on the northern tundra. The reindeer of the present Tundra Yukaghir belong to the race introduced by the Tungus, and we do not know whether a division of the ancient Yukaghir had their own reindeer. Several Yukaghir traditions refer to struggles between the Chukchee and reindeer breeding Yukaghir of the tundra. On the other hand Chukchee traditions tell of a reindeer tribe the Ča′ačen, occupying the territory between the Yukaghir and the Chukchee. Mr. Bogoras regards Ča′ačen as a Chukchee pronunciation of the Russian Chuvantzy,[1] and as we have seen before (p. 17) the Chuvantzy must be regarded as a branch of the Yukaghir people.

[1] The Chukchee, p. 18.

XIX. — MATERIAL CULTURE. DOG BREEDING.

Only a small part of the Yukaghir, the so-called River Yukaghir of the Kolyma and Anadyr district,[1] use dogs for driving. The Russianized Yukaghir of the lower Kolyma and its tributaries, the Omolon and Anui, and of the Anadyr River, use dogs for driving in the same manner as the Russian settlers. They employ the harness which I have called "East Siberian,"[2] consisting of a long loop of skin, the ends of which are united by a little strap terminating in a toggle, which is inserted in one of the rings of the main line. The loop is made of a piece of horse, cow or elk skin, two or three fingers wide. The sides of the loop are united by means of one or two cross-straps of leather which go over the back of the dog. The dog is harnessed by passing its head through the opening between the top of the loop and the first cross-strip, if there are more than one. At one side of the loop is sewed a small strap which passes under the dog's belly and is fastened with a wooden or bone toggle to the other side of the loop. This type of dog harness is not very convenient, as the breast piece of the harness, despite the belly-band, slides upward so that it rests above the chest and the dog pulls with its neck, thus making breathing difficult. The same dog-harnees is used by the Yukaghir of the Upper Kolyma and of the Yassachnaya, Korkodon and Popova Rivers.

Method of attaching Dogs to the Sledge. The Yukaghir of the Lower Kolyma, like the Russian settlers, attach the dogs in pairs, on both sides of the main line. In this way many dogs can be harnassed to the sledge facilitating fast driving. The main line is a long stout strap made of ox, horse or elk hide, serving as a whiffle-tree and attached to the middle of the front bow of the sledge. The Yukaghir of the Upper Kolyma attach their driving dogs singly to the main line and alternately on the right and left of the trace. Only a few dogs are used, about six or seven. The Yukaghir of the Upper Kolyma do not keep many driving dogs, as they have insufficient food for them. Each household has from three to five dogs. Some have even less. While wandering from one place to another several families join their dogs, attaching them to one sledge in order to transport their tents,

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[1] For the number of Yukaghir dog-breeders, see Part I, p. 59.

[2] See The Koryak, pp. 505–507, where I distinguish five types of dog harness: the West-Siberian, the (modern) East-Siberian, the Eskimo, the Amur and the Kamchadal dog harness.

clothing and provisions. They make several trips from the old camp to the new to transfer their belongings. In the same way hunters, belonging to different families start for their hunting places with one sledge to which dogs of several households are attached. When a whole group of families travel at the same time women and girls harness themselves to the sledges to help the dogs draw them. Plate XXII, Fig. 2 shows such a travelling group. Besides freight, only little children, sick and very old people are carried on sledges. I saw old men and women left behind by travelling teams, walking along the road with their staffs, not wishing to increase the weight of the overloaded sledges.

Dog-Sledge. The Yukaghir dog-sledge is a little shorter and a little broader than the usual dog-sledge of northeastern Siberia. It has three or four pairs of stanchions. Fig. 27 shows a dog-sledge with three pairs of

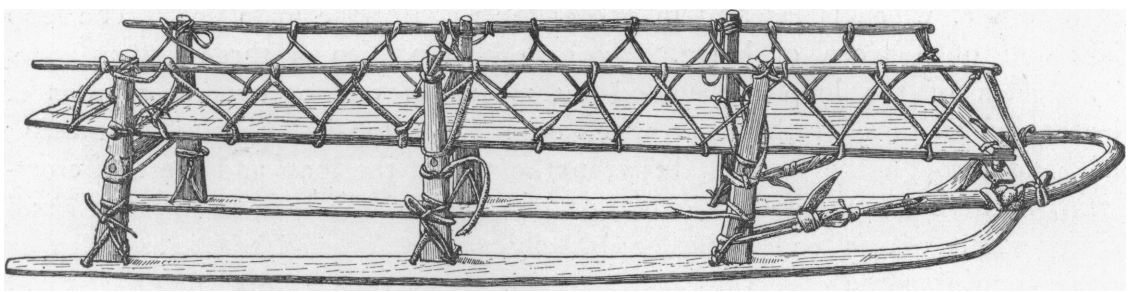

Fig. 27 ($\frac{7}{8}\frac{9}{1}\frac{}{6}$). Yukaghir dog-sledge.

stanchions. The lower ends of the stanchions are cut off square, except for a rough tenon which is left in the middle to be set into the runner. Each pair of stanchions is joined at half of its height by a round crossbar which is mortised into a circular hole in the stanchion. Three planks, fastened together rest on these sticks. Two rails are fastened to the upper ends of the stanchions and are lashed to the boards with thongs which form a kind of retaining net on each side of the sledge. The curved bar which joins both rails at the back of the sledges of other east Siberian dog-breeders is missing. Also missing is the vertical bow fastened to the foremost stanchions which the driver holds in his left hand for steering and preventing overturning. The runners are flat and their front ends are strongly curved and tied to a strong wooden bow, which is fastened to the foremost stanchions with strong lashings. The length of the runners is about 3 meters, breadth 9 cm., thickness 3 cm. The joints of the sledge are fastened with strong ingeniously twisted lashings. All parts, especially the runners, are made of birch wood, which abounds on the banks of the Kolyma River and its tributaries. The birch-runners are covered with a thin sheet of ice to make them run more smoothly. This is done by wetting the bottoms several times with a small piece of skin.

Method of driving Dogs. As has been stated before the Yukaghir

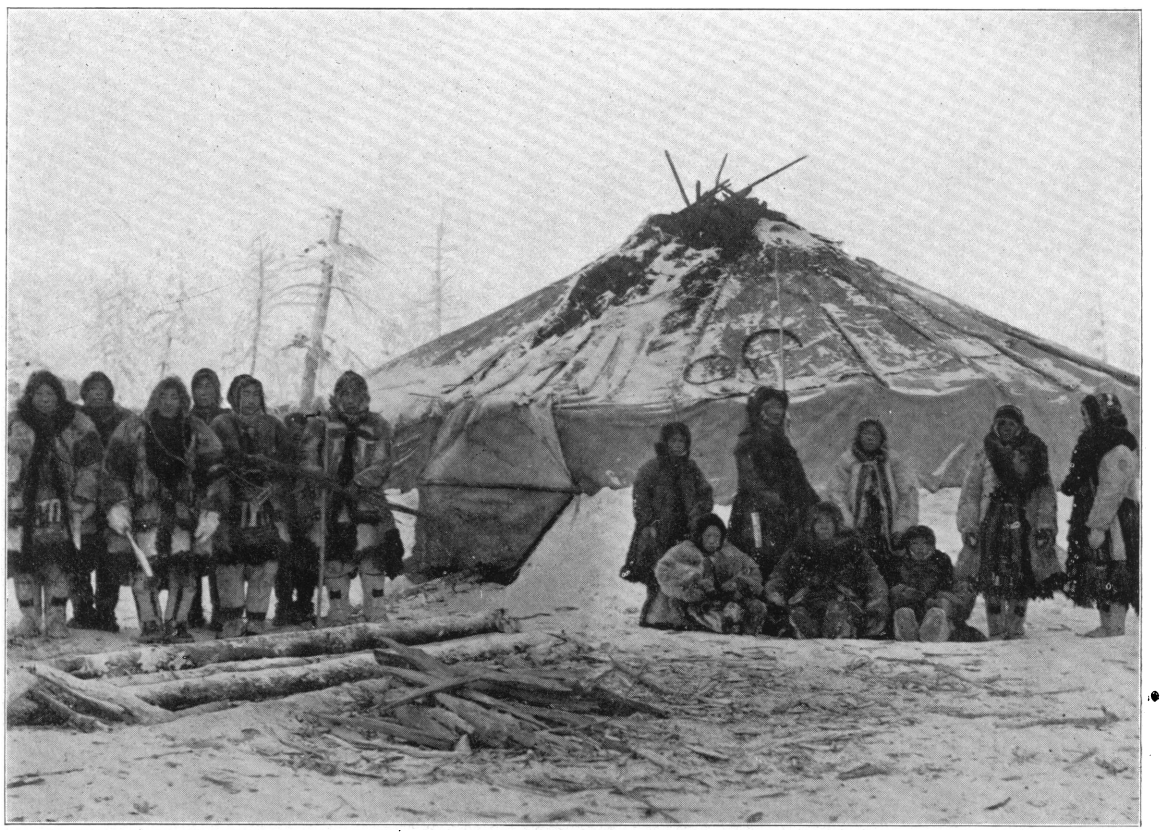

Fig. 1. Skin tent of Tundra Yukaghir.

Fig. 2. Tent of Okhotsk Tungus, of skin and bark.

Fig. 1. Skin and bark tent of the Okhotsk Tungus.

Fig. 2. Group of Kolyma Yukaghir travelling with dog sledge.

women of the Upper Kolyma harness themselves to the sledge and draw it, together with the dogs. When a man carries freight on a dog-sledge he does not ride on it. He walks behind keeping in his hand a long thong attached to the back of the sledge by which he controls the team. The walking driver does not urge the dogs to run very fast. He directs them by the following calls: "suta" meaning to the right; "nax," to the left; "pod" go ahead; "toy" or "to-oy" stop. With the exception of "nax," all the calls are of Russian origin. "Suta" is the Russian "syuda" (here); "pod" is the Russian "poidi" (go, go on); "toy" is the Russian "stoy" (stop) in which the "s" is omitted, as two consonants, according to the phonetics of the Yukaghir language, do not occur at the beginning of a word.

When the Yukaghir of the Upper Kolyma have to drive a Russian official, priest or scientist, they gather dogs from several households and attach them to one sledge. The driver runs along behind the sledge, urging the dogs by calls. The Yukaghir are good runners, but it is painful to see the heavily breathing driver when he stops. Therefore I myself rarely used Yukaghir dogs. For travelling over the Yukaghir country I always hired horses from the neighboring Yakut settlements.

In case of heavy snow the Yukaghir driver walks in front of the dog team, breaking a path with his snowshoes. While wandering in winter all the men walk on snowshoes in front of the teams.

The first dog of the team is the leader; he guides the team according to the driver's call. A clever and swift young dog is chosen for a leader and is trained for that purpose. Generally the driving dogs of the Yukaghir of the Upper Kolyma are not so well trained as those of other dog breeders, and they are poor leaders. It is, of course, not so important for the driver as he often draws the sledge along with the dogs.

XX. — MATERIAL CULTURE. REINDEER BREEDING.

General Remarks. Among the Yassachnaya and Korkodon Yukaghir, the dog is the sole domestic animal. However, these Yukaghir stated that formerly there lived on the upper course of the Kolyma River a large reindeer-breeding Yukaghir clan called Ye'ña. This clan, however, was exterminated by Tungus warriors. These Ye'ña people were constantly at war with the Tungus. Once, according to Samsonoff, an old Korkodon Yukaghir, the Tungus came to fight with the Yukaghir. At that time the Yukaghir lived in the river valley and from the mountains overlooking the river saw the Tungus arrive, and so prepared themselves for battle. The warriors strung their bows, prepared arrows, and sharpened their bone daggers and lances. Night came on, but no warrior went to sleep. The Tungus had an udaga'n, i. e. a woman shaman, who spent the night performing her shamanistic rites. During her performance the Yukaghir warriors began to break their weapons, so that not a single bow or lance was left in the morning. Then the Yukaghir warriors went to the Tungus and begged for mercy. "We are unarmed," they said, "have pity on us, and do not kill us." — "Well," said the Tungus, "we will not fight you, but as a reward, give us some of your girls." The Yukaghir returned to their tents, but all the girls had disappeared — they had run away. The Yukaghir returned to the Tungus and told them what had happened. Then the Tungus killed all the Yukaghir, only two young men escaped to the Omolon River Yukaghir. The Tungus searched for the young women and found them hidden in the mountains. There were sixty girls. The Tungus divided them equally among their clans, fifteen to each. The historical value of this story is questionable. Furthermore the earliest Russian travellers in the Upper Kolyma country do not mention reindeer-breeding Yukaghir. But Yukaghir tales tell of warriors driving away reindeer herds of vanquished Tungus and of Yukaghir families wandering with reindeer.

The Tundra Yukaghir and the Yukaghirized Tungus between the Kolyma and Alasseya Rivers are reindeer breeders, but they do not possess large herds. The largest herd, consisting of seventy head, belonged to the chief of one of the four tundra clans. Most families possess from eight to fifteen reindeer each. Even if these were for the most part driving reindeer, such a herd would not be sufficient for leading a nomadic existence. To move from place to place the owners of such small herds must join their herds and take turns in carrying their belongings from place to place.

The Tungusized Yukaghir of the Indighirka region are much richer than are those of the Kolyma tundra. One of the Indighirka elders had a herd of eight hundred head and we were told that another elder had about two thousand reindeer.

Farther to the west the Yakutized Yukaghir of the Yana-Omoloi regions are also poor in reindeer and most of them are herders for the Tungus and Yakut.

Reindeer Driving. The Tundra Yukaghir between the Kolyma and Yana Rivers, as well as the Yukaghirized Tungus, use driving sledges of the Chukchee-Koryak type. The driving sledges of the Yukaghir are not so carefully finished as are those of the Chukchee and Koyak and they are much clumsier and somewhat higher. But this does not prevent the Yukaghir from riding astride the sledge as do the Chukchee and Koryak. Fig. 28 shows a driving sledge of the Tundra Yukaghir. Instead of pairs of stanchions,

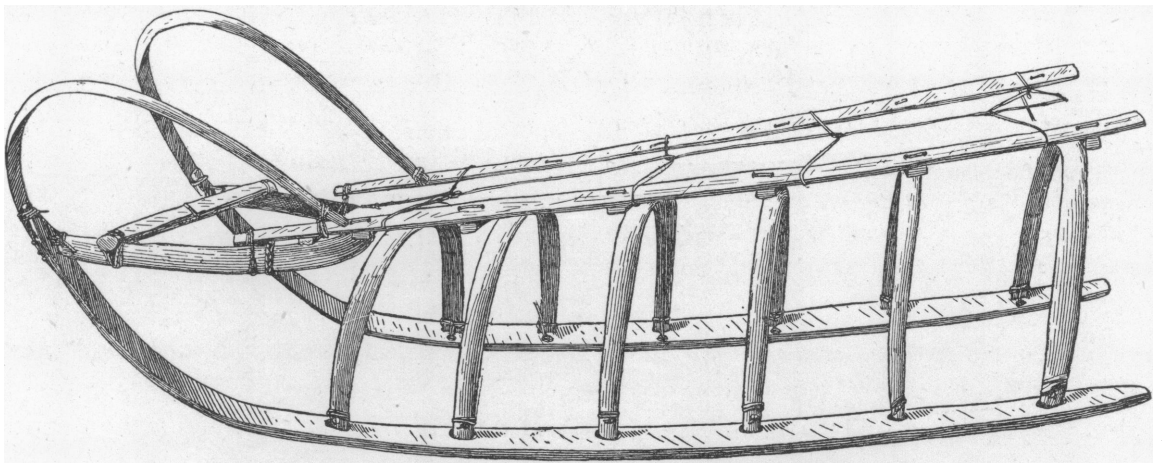

Fig. 28 ($\frac{70}{8401}$). Driving sledge of Tundra Yukaghir.

it has arches. The fore ends of the runners are joined to the upper rails, forming a curve, and in front a horizontal arch is fastened to the runners and the rails. The curves or ribs of the sledge are tied to the runners in shallow roughly worked slots. The line that fastens the rib to the runner passes through a hole drilled through the upper edge of the slot on the inner side of the runner. All joints are fastened, not with pegs or nails, but with thin pliant thongs, drawn very tight. The runners are of birch. As no birch occurs on the tundra, runners brought from the banks of the Omolon River become an article of trade and are valued at one reindeer skin each pair. All other parts of the driving sledge are of larch which is obtainable at the northern limits of arboreal vegetation near the southern edge of the tundra.

A man or woman riding a sledge usually sits astride of it, with feet hanging down or resting on the runners. Fig. 29 shows a small fur rug, 60 cm. long which served as a cushion for a man's driving sledge. It is ornamented on both sides with beads, sinew embroidery, and fur inserts of

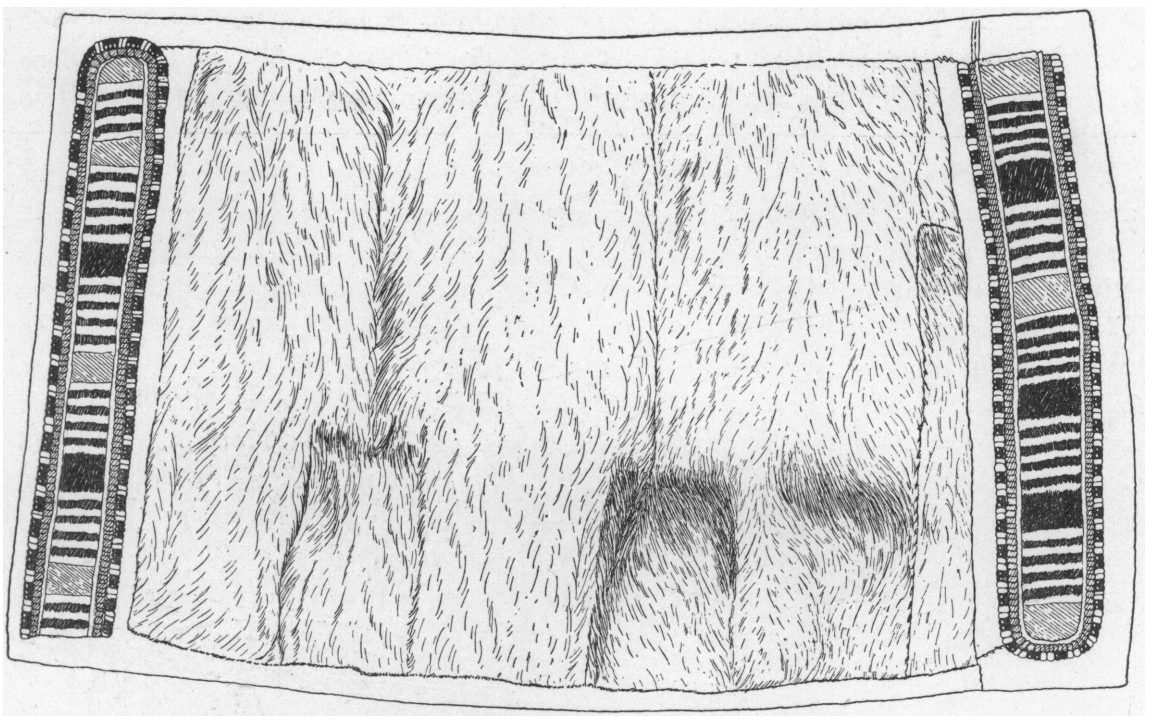

Fig. 29 ($\frac{70}{5255}$). Small fur rug for driving sledge.

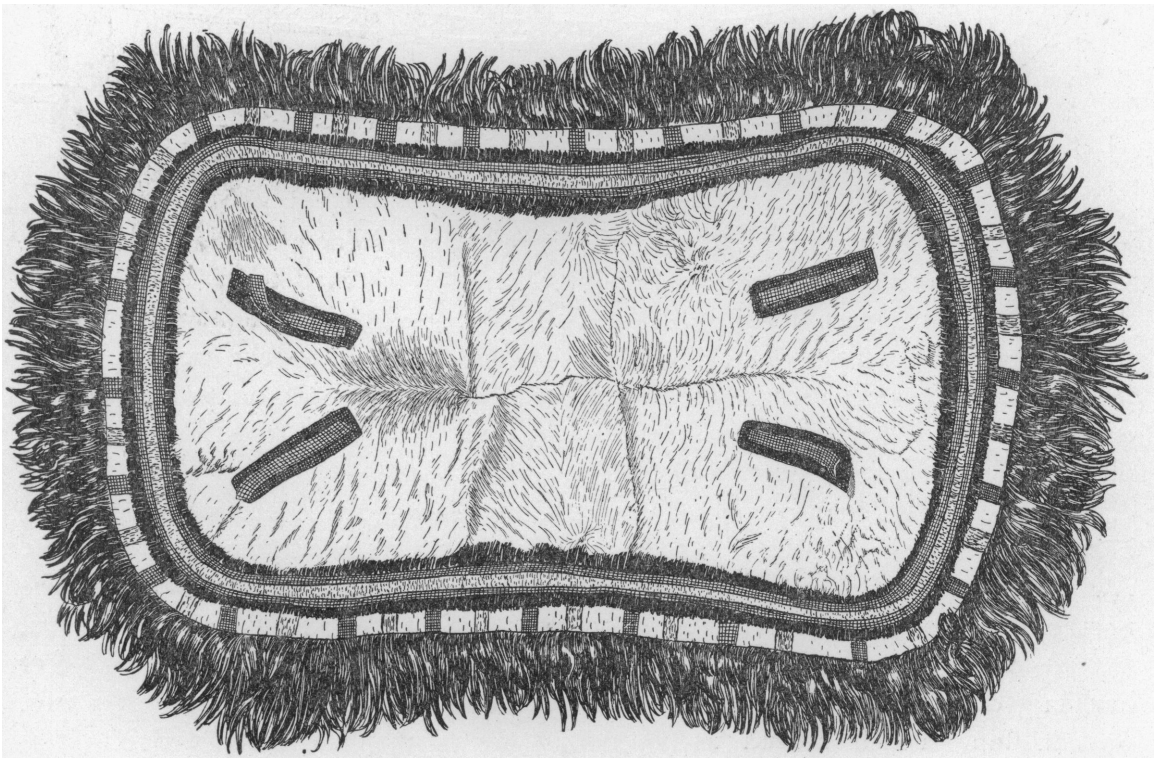

Fig. 30 ($\frac{70}{8343}$). Woman's fur rug elaborately embroidered.

various colors. Another rug, used by women is 86 cm. long and, as shown in Fig. 30, is more elaborately made and ornamented.

The pack sledges, which are wider and of ruder manufacture than those for driving, are also made of larch. There are several kinds of pack sledges, those for family freight and those for carrying tent covers and tent poles. These are of the types illustrated in Bogoras' work on the Chukchee.[1]

Clothing not in every day use, such as summer clothing in winter or winter clothing in summer, festive and ceremonial dress, is not stored within the tent, but outside on freight sledges, covered with a bag shaped blanket of reindeer skins. In Fig. 31 may be seen the inner side of such a bag-blanket. The tent is usually surrounded by covered freight sledges loaded with clothing, material for clothing and other household belongings. Plate XXIII, Fig. 1 shows a Tundra Yukaghir tent in winter, surrounded by freight sledges covered with bag shaped blankets, under which clothing is stored.

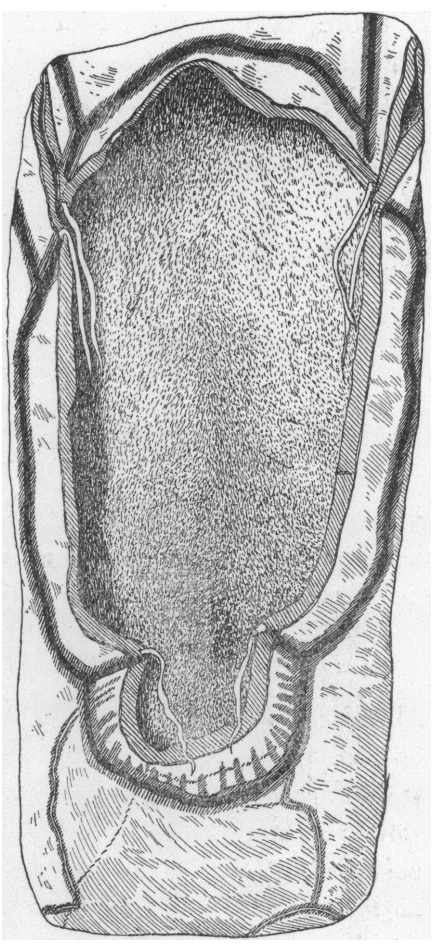

Fig. 31 ($\frac{70}{8343}$). Bag for storing clothing on sledges.

The trace of the reindeer is attached to a crosspiece fastened to the horizontal arch which forms the front of the sledge. If two reindeer are used, their harnesses are joined by a large strap of hide which is simply slung across the crossbar. If both reindeer should not pull with equal force, the traces of the negligent one would become shorter and it would have to pull harder and its hind legs would be struck by the sledge. Therefore two reindeer harnessed to a sledge should be of equal strength and zeal. However, the Tundra Yukaghir rarely have enough reindeer to harness two to one sledge. If two reindeer are harnessed to one sledge, this is done in the northern Tungus and Yakut fashion and not by the Koryak-Chukchee method.

In the Koryak-Chukchee team both reindeer have a collar or bight passing under the right foreleg both animals pull with the left shoulder. Among the Yukaghir the right hand reindeer is placed with its head and left foreleg in the bight so that it pulls with the chest and right shoulder. The left hand reindeer has the head and right foreleg in the collar so that it pulls with the chest and left shoulder. This

[1] Volume VII, of this series pp. 90, 92.

method of harnessing makes for greater endurance since the reindeer can be changed from right to left and vice versa. Formerly the Kamchadal used the same method of harnessing for dogs.

During the summer, all the reindeer breeders of the tundra between the Kolyma and the Lena rivers (the Yukaghir, Tungus and Yakut) use their reindeer for riding. The reindeer, with its furcated hoofs does not sink readily into the tundra marshes. In summer the reindeer is also used for riding when crossing the Alasseya mountain ridge and the mountains between the Indighirka and Yana, and the Yana and Lena rivers. The saddles used are the same as those used by the Siberian natives who use the reindeer exclusively as a riding animal.

Fig. 32 shows a man's saddle covered with a piece of reindeer skin and

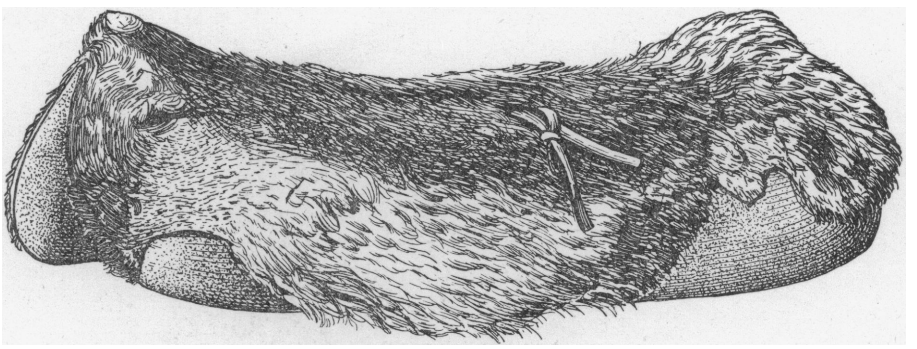

Fig. 32 ($\frac{7}{5}\frac{0}{1}\frac{}{4}\frac{}{0}$). Man's reindeer saddle.

fastened by means of a leather saddle girth. It is laid on the reindeer above the forelegs; otherwise a heavy rider might break the reindeer's back.[1] A

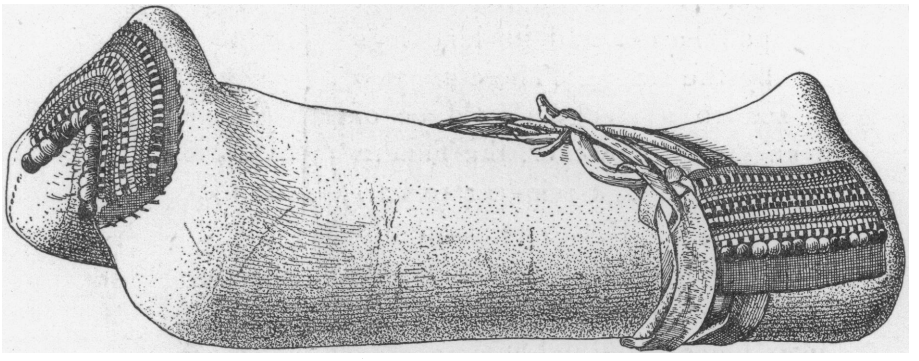

Fig. 33 ($\frac{7}{5}\frac{0}{2}\frac{}{0}\frac{}{7}$). Woman's reindeer saddle.

reindeer saddle has no stirrups and the rider must balance himself or must use a long staff to lean on in critical moments.

Fig. 33 shows a woman's reindeer saddle, ornamented with beads of three colors, white, blue and red, and a saddle girth. The length of the

[1] I was told, however, that the Soyot of the Sayan Mountains ride on the reindeer's back.

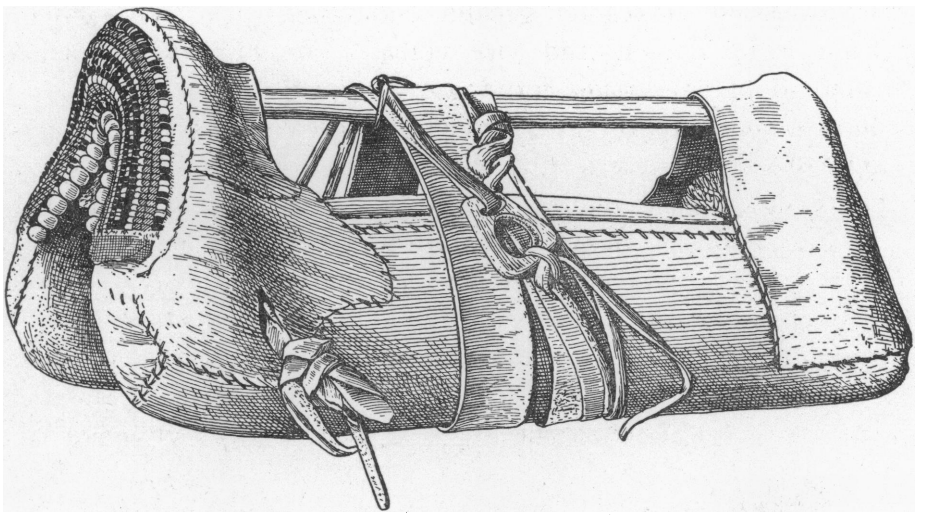

Fig. 34 ($\frac{70}{6189}$). Pack saddle.

Fig. 35 ($\frac{70}{5261}$). Double bag for pack saddle.

saddle is 40 cm. The wooden frame of the saddle is covered with soft reindeer skin and filled with reindeer hair.

A pack saddle is shown in Fig. 34. This is somewhat larger than a riding saddle. Its length is 42 cm. The girth is tied in the middle; on the riding saddle the girth is placed on the hind part, leaving the front for a seat. The ends of tent poles are tied to both sides of such a pack saddle, while the opposite ends are allowed to drag on the ground. Fig. 35 shows a double bag for a pack saddle. It is ornamented with beads, leather tassels and strips of light colored cloth.

A child's saddle is shown in Fig. 36. Boards are tied to both sides of

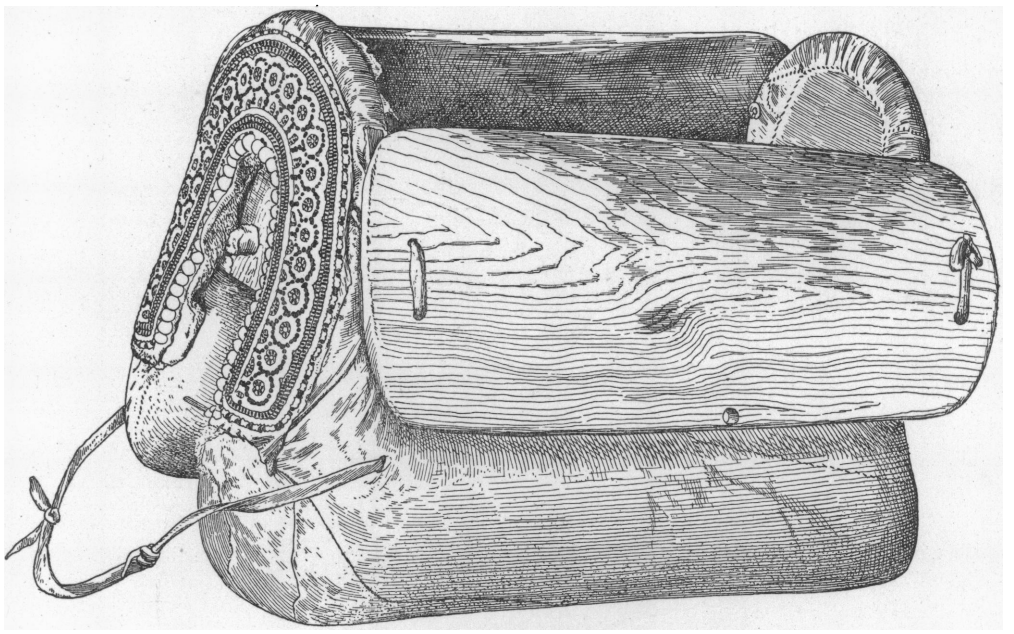

Fig. 36 ($\frac{10}{12}$). Child's saddle.

the saddle to prevent the child from falling off. His legs slip through between the boards and the saddle. Plate XXIII, Fig. 2 shows two children in their saddles. Very young children are carried in ornamented cradles which hang on both sides of the saddle like double saddle bags; usually the cradle is hung on one side of the saddle and this is balanced on the other by a pack bag of the same weight. Figures 37 and 38 show the side and back of a cradle ornamented with beads and embroidery.

Plate XXIV, Fig. 1 shows a wandering camp of Tungus riding on reindeer. Plate XXIV, Fig. 2 shows Omoloi Yukaghir crossing a river on riding reindeer. Plate XXIV, Fig. 3 shows a Tundra Yukaghir riding a sledge to which one reindeer is harnessed.

Before describing the present state of reindeer breeding among the Yukaghir and Yukaghirized Tungus, I wish to review the recent speculations by Laufer,

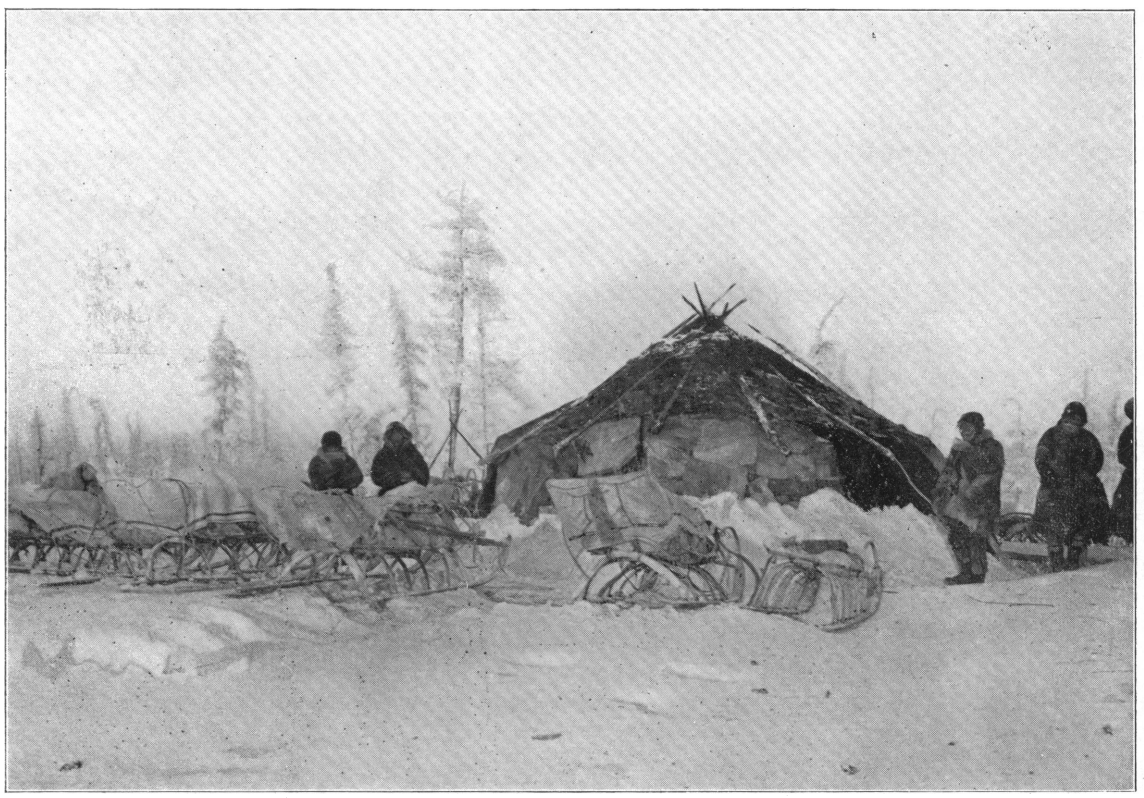

Fig. 1. TUNDRA TENT SURROUNDED BY LOADED FREIGHT SLEDGES.

Fig. 2. TUNDRA CHILDREN RIDING IN SPECIALLY CONSTRUCTED SADDLES.

The Yukaghir.

Fig. 1. Camp of Tungus mounted on reindeer.

Fig. 2. Omolon Yukaghir fording a stream on reindeer.

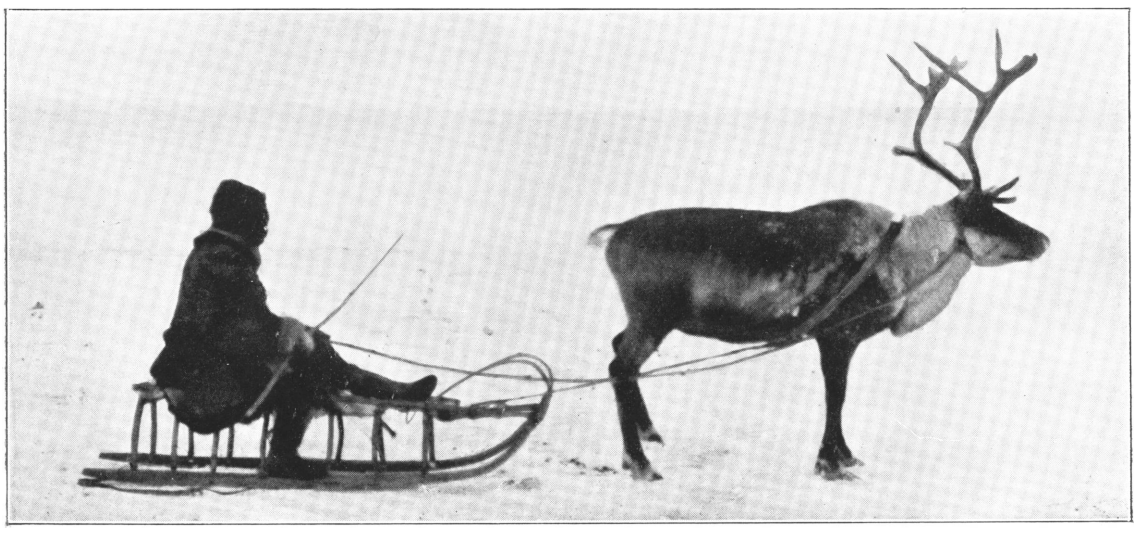

Fig. 3. Tuadra Yukaghir driving sledge with one reindeer.

The Yukaghir.

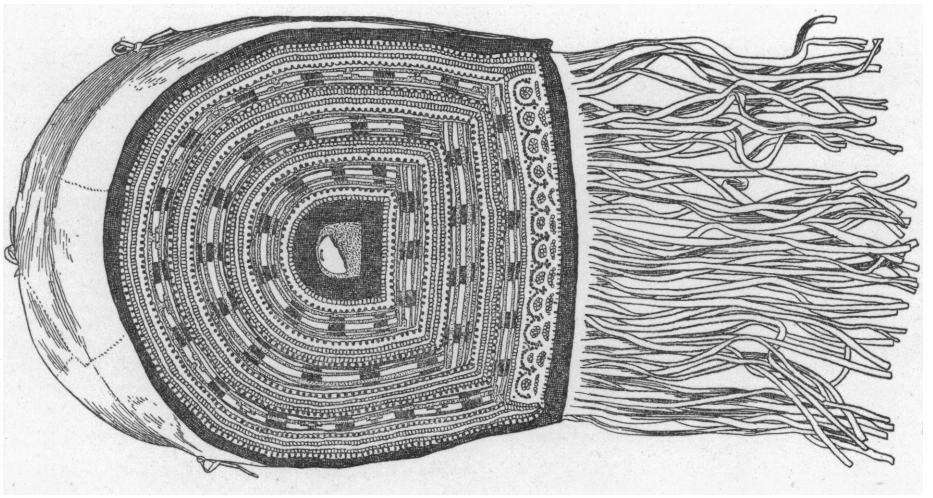

Fig. 38 ($\frac{7}{10}$). Cradle Fig. 37. Back view showing decoration of embroidery and beads.

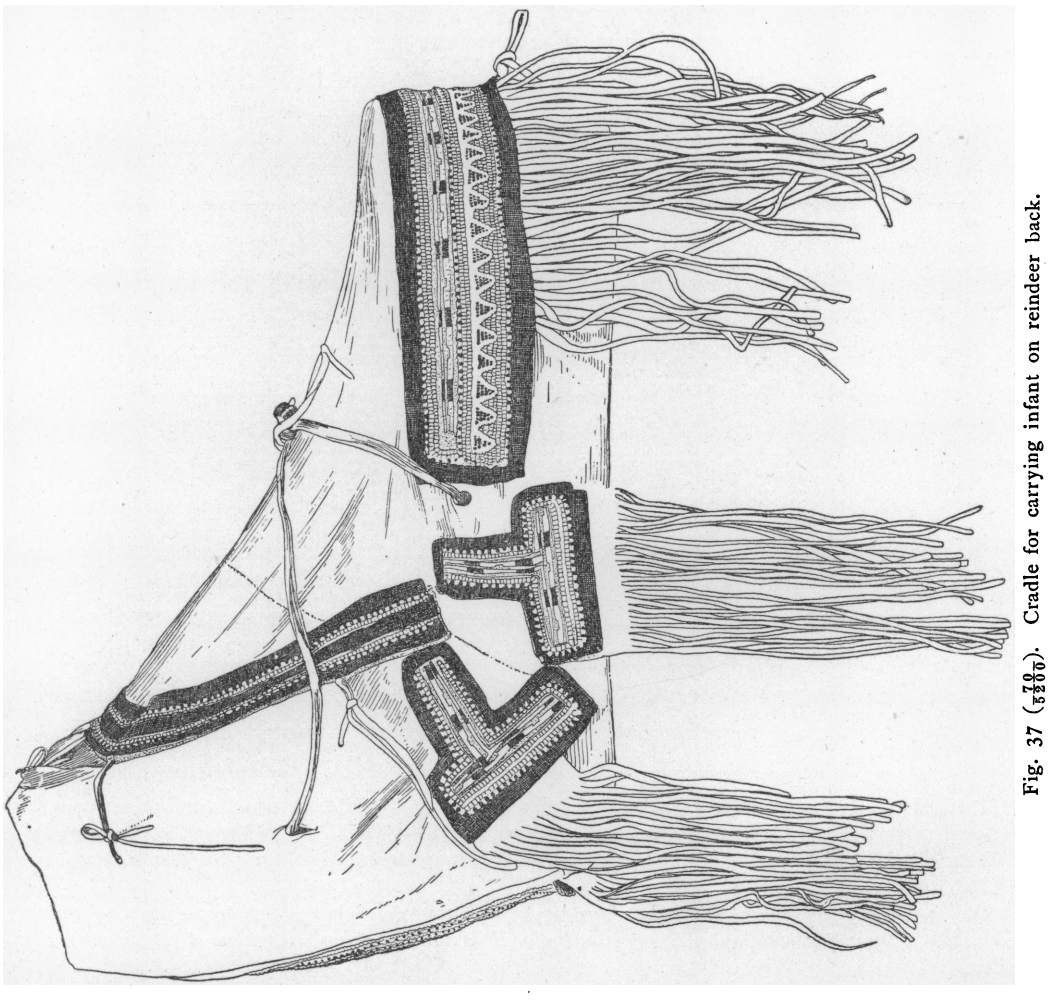

Fig. 37 ($\frac{7}{10}$). Cradle for carrying infant on reindeer back.

Hatt and Sirelius[1] on the origins of reindeer nomadism, and to present a few interpretative and comparative notes on the subject, based on personal experience in the region between the Lena River and the Pacific. Some data concerning reindeer breeding to the west of the Lena River, based on investigation of the subject by Russian specialists, will also be added.

Three cardinal questions are put by Dr. Laufer: 1. When did the domestication originate? 2. Where was its center? 3. What was the process that brought about the domestication?

The answer given by Dr. Laufer to the first question is that "the incipient stage may belong to the beginning of our era" (114). The following reasons are given for this conjecture:

1. The reindeer is still not perfectly domesticated.
2. The domesticated reindeer is entirely absent in aboriginal America.
3. Classical authors refer only to hunting the reindeer.
4. A Chinese writer alludes to the domestic reindeer in the fifth century A.D., the earliest account in existence.

I agree with Dr. Hatt (p. 128) that "the fact that the reindeer is not perfectly domesticated has nothing to do with the age of reindeer nomadism," but I do not agree with his doubt (p. 129) "whether this animal will ever become very much more domesticated than it is now." The reindeer is not perfectly domesticated where large herds are kept since a careful tending of all the reindeer is impossible with a few herders. The same is true of large herds of horses. Nomadic horse breeders like the Kirghis, Kalmuck and many of the Yakut who possess large herds have to break in their horses before they can use them for driving or riding. Not all the animals tamed are domestic animals, but some domestic animals have to be tamed in order to be used. I myself had some bad experiences with Yakut horses. Most of the northern Yakut set their horses free during the summer, because they cannot use them on the swampy tundra. In the beginning of winter, they must be caught with lassoes when they approach fenced-in hayricks, and then it is not easy to saddle or harness them. They become quite wild during their summer freedom. In spite of the fact that the horse was domesticated by man in the neolithic period,[2] it soon reverts to the wild state when left to itself and when it is able to find food without the help of man. Some examples of this may be cited from Siberia and some from America.[3] This may be true of the reindeer. Even though it is not found tame in large

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[1] B. Laufer, The Reindeer and its Domestication (Memoirs of the American Anthropological Association, vol. IV, 1917, pp. 71—147); G. Hatt, Notes on Reindeer Nomadism (ibid., vol. VI, 1919, pp. 75—232); U. T. Sirelius, Ueber die Art und Zeit der Zähmung des Renntiers (Journal de la Société Finno-Ougrien, Helsingfors, 1916),

[2] H. F. Osborn, Men of the Old Stone Age, (New York, 1916) p. 498.

[3] The author knows cases in Siberia when herds of domesticated horses left to themselves became quite wild and were hunted like wild animals by the natives. Similar accounts are given of horses on the prairies of America.

herds, its domestication may have begun at a very early period. When after the recession of the last glaciation the reindeer migrated to the north, it was followed by the hunter who may have taken the fawn of slain does and domesticated them. From this kind of occasional taming might spring the domestication of reindeer.

On the other hand, there is in Siberia, as well as in the northern parts of European Russia, a kind of reindeer breeding called "Izbennoye olenevodstwo" which means "house or farm reindeer breeding," where scores of reindeer or lesser numbers are kept near the dwellings. These "house reindeer" are thorougly domesticated and tame as are the horses kept in stables. This subject will be treated more fully later on.

The fact that domesticated reindeer were absent in aboriginal America has nothing to do with the age of reindeer nomadism. We know that the Americans have borrowed certain cultural traits from the Old World, as for instance, the composite bow. It is equally true that some of their cultural characteristics are quite independent of those in the Old World, for example, the gold and copper work of the Inca. If the absence of reindeer breeding in the New World could be regarded as proof of the recency of Old World reindeer breeding, then the fact that only a certain part of the Siberian tribes are herders and that some tribes, like the Kamchadal, never did learn the art of reindeer breeding, might also be interpreted as an argument for the recent origin of the domestication of the reindeer. Actually this is not so. The Kamchadal and the coastal Chukchee and Koryak have a sufficient food supply from the rivers and the sea, making it unnecessary to have recourse to the heavy work of the herder. But they do hunt wild reindeer as a supplementary means of securing food and to add variety to their diet. According to Bogoras, the Eskimo of the Chukchee Peninsula did not begin to acquire reindeer from the Chukchee until recent years when the sea animals were being exterminated by white whalers.[1] For similar reasons the Siberian reindeer has been imported into Alaska by the American Goverment. "The wholesale destruction of land game," says Maj.-Gen. Greely, "the practical extermination of sea game and the displacement of natives in many places by the influx of miners and prospectors, wrought such disturbances in the economy of native life that the extermination of thousands by starvation was iminent. Among other methods suggested to improve permanently the condition of the natives, especially of the Bering Sea region, was the importation of Siberian reindeer."[2]

From the fact that the classical and Chinese writers did not mention reindeer breeding before the beginning of our era, cannot be drawn the conclusion that before that time the reindeer was not domesticated. It may be

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[1] W. Bogoras, New Problems of Russian Ethnography in the Polar Regions (in Russian, Publications of of the North Scientific-Trade Expedition of the Department of National Economy, part 9, Petrograd, 1921) p. 9.

[2] A. W. Greely, Handbook of Alaska, (New York, 1909) p. 200.

that the Greek and Chinese writers had no opportunity to mention it or did not know of it.

I am not able at present to consult the old Russian chronicles but I may refer here to a Russian tradition concerning "unknown peoples of the eastern country" taken by Prof. Anuchin from old Russian annals of the fifteenth to eighteenth centuries,[1] in which fabulous tales are told of the eastern country of darkness, of speechless inhabitants who die during the winter, of beastlike men, of cannibals, of headless people with mouths between their shoulders and eyes on their chests, and so forth. "It may be said," says Anuchin, "that in the middle of the XIV and the beginning of the XV centuries the Russians had no positive knowledge of the countries of Northwestern Asia, in spite of the fact that individual traders already had penetrated far to the east of the Ural Mountains." If the ancient Russian chroniclers were ignorant of what was going on in the life of the Siberian tribes of the XV century, so might also have been the early Chinese writers. As to classical writers, we know that their notions of distant Asiatic, or even European countries do not surpass in accuracy the Russian annals of Siberia. Not only Homer but also Herodotus, "the father of history," tells us of Amazons, centaurs, Cyclops and other fabulous and monstrous beings.

I wish also to give here a quotation from Prof. W. Barthold, member of the Russian Academy of Sciences, caracterizing the early Chinese annals. "Im I Jahrhundert v. Chr. wissen die chinesischen Quellen nur über die Wege bis zur Grenze des Partherreiches gut Bescheid; was westlicher lag, davon hatten sie nur unklare Vorstellungen. Die Chinesen bis zum VII Jahrhundert kannten nur den asiatischen Teil des römischen Reiches unter den Namen To-Tsin und hielten Antiochia, das sie An-tu nannten, für dessen Hauptstadt.[2]

In considering the question of the center of reindeer domestication it should be pointed out that contemporary ethnologists when discussing certain elements of culture are more inclined to attribute parallel cultural phenomena to diffusion than to convergence. This is the point of view of Dr. Laufer with regard to the origin of reindeer breeding. But this still remains to be proved, since the problem of reindeer breeding has not until very recently been studied scientifically. We know superficially that there are several varieties of wild reindeer and several domesticated races, but our knowledge of the anatomical and biological differences is meager.

The Yakut of the tundra between the Yana and Lena Rivers distinguish three varieties of wild reindeer. One of these they call aya'n-kıl, i. e., the migratory wild reindeer. In the summer it moves from the tundra to the

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[1] See D. N. Anuchin, History of the Acquaintance of the Russians with Siberia before Yermak (Memoirs of the Imperial Moscow Archaeological Society, vol. XIII, part 1, Moscow, 1889, p. 225).

[2] W. Barthold, Die geographische und historische Erforschung des Orients mit besonderer Berücksichtigung der russischen Arbeiten, (Leipzig 1913) p. 9. This is a German translation of the original Russian work.

islands at the mouth of the Lena River and to others in the Arctic. Another variety is called tura′t-kıl, i. e., the non-migratory wild reindeer, which remains on the tundra the year round, only moving into the nearby mountains to escape the summer mosquitoes. The third variety is called mass-kıl, i. e., the forest wild reindeer, which lives the year round in the forests and escapes the mosquitoes by taking to the water of the rivers or lakes or by running along the rivers against the wind.

The Kolyma Yukaghir also distinguish three kinds of wild reindeer. The migratory reindeer is called me′lle and is regarded by the Yukaghir as the smallest in size and darkest in color, while the mountain reindeer is the largest and lightest in color.

Of domesticated reindeer in the region between the Lena River and the Pacific, I distinguish three races, the Chukchee-Koryak, Tungus and Yakut. The Chukchee-Koryak reindeer is the smallest of the three domesticated races; its legs are shorter, the body is shorter and heavier, the head is shorter, and it is darker in color than the Tungus reindeer. In general, there is a certain likeness between these domesticated reindeer and the wild variety called me′lle.

The Tungus reindeer is taller, its legs are longer, it is grey in color, the antlers are lighter in weight than are those of the Chukchee-Koryak animal, and it bears a stronger resemblance to the mountain wild reindeer.

The best domesticated reindeer found in the region indicated above are the Yakut reindeer. The northern Yakut have only recently become reindeer breeders, but they applied to their reindeer herds the method of conscious selection with which they were famíliar as horse and cattle breeders. The Yakut acquired their reindeer from the Tungus and endeavored to get the best does and strongest bucks. These reindeer are better than those of the Tungus in every way; they are larger, stronger and tamer. The results of selection are also apparent in the color of the hair; there are many spotted animals, the skins of which are the most highly valued, and white or dark brown reindeer. The Yakut reindeer are trained both for riding and driving.

Leaving out of consideration the Yakut reindeer as a selective breed obtained from the Tungus reindeer, we see that the two main domesticated races, the Tungus and Chukchee-Koryak, correspond to two wild varieties, that of the tundra and that of the mountains. This might indicated the respective origins of the two East-Siberian breeds.[1]

To solve these problems it is necessary first of all to subject the question of reindeer breeding to minute and detailed ethnological, biological and

[1] In the oldest neolithic depostits of western Europe have been found remains of two varieties of the domesticated horse (the forest and the plateau horse) and of domesticated cattle (the Celtic short-horn, *Bos longifrons*, and the long-horn, *Bos taurus*) which show resemblances to corresponding wild ancestors. At that time the reindeer had disappeared from Western Europe, migrating to the north. (See Osborn, Men of the Old Stone Age, p. 498). There its domestication may have taken place in an earlier age, producing two or more varieties in conformity with the races of their wild ancestors.

archaeological investigations, which have not been made up to the present time. The types of sledges, harness, and riding gear, methods of guarding the herd, breaking and killing must be thoroughly investigated. A comparative anatomical and biological study of all present domesticated races and of wild varieties of reindeer ought to be undertaken by zoologists, anatomists and veterinary surgeons. Finally, and what is most important, extensive excavations of ancient sites in the arctic and subarctic regions and even further south should be made to search for remains of the domesticated reindeer.

Some information as to the present state of reindeer breeding in Russia will clear up some points touched on by Doctors Laufer and Hatt. Russia appears to be the greatest and almost the only reindeer breeding country. It is true that there are domesticated reindeer in Sweden, Norway and Alaska (recently introduced), but reindeer breeding never played an important part in the economic life of Sweden and Norway. American reindeer breeding, with its enterprising swing, may become an economic factor in the future, but at present it is still comparatively insignificant. In Russia, reindeer breeding extends from the Baltic to the Pacific, occupying vast territories stretching from the arctic shore, over the tundra to the forests, and even south to the frontiers of China and Mongolia. According to the report of the Veterinary Department for 1912, there were in Russia about 1,675,000 head of reindeer. Of this number the province of Arkhangelsk had 462,000 reindeer, the province of Vologodsk, 2,000, the province of Tobolsk, 285,000, the province of Yenisseisk, 62,000, the province of Irkutsk, 3,700, the province of Yakutsk, 166,000 and the province of Kamchatka, 692,000.[1] Dr. Khudadov justly remarks that the figures are far below the real numbers. I know, from my own experience, that the reindeer breeder does not like to be questioned as to the size of his herd, either on superstitious grounds, or because he fears that new taxes will be imposed. On the other hand, many breeders count their herds by females only, not taking into account the males and fawns. This was the case with the Tungus of the Gishiga-Okhotsk country, among whom the author made a census of reindeer. On an average there are in a herd of 1000 reindeer, about 500 breeding does, 20 breeding bucks, 150 geldings for driving, riding and killing, and from 250 to 300 fawns.

I do not know what influence the Soviet regime is exerting on the fate of reindeer breeding, but a year ago I heard that in the province of Arkhangelsk, communistic tendencies struck a heavy blow at the reindeer breeding industry. The local soviets nationalized the private herds and divided them among the natives equally. The new masters of small herds which they received without any trouble to themselves killed their reindeer for food and barter without any consideration.

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[1] See W. Khudadov, Report to the District Assembly on Animal Breeding, Moscow, 1919, p. 9.

Dr. S. W. Kertzelly, a veterinary surgeon, tried to give a classification of the different types of reindeer breeding.[1] He divides it into two chief types, the nomadic reindeer breeding and the izbenoye[2] i. e., house or farm reindeer breeding. The first type he further subdivides into three categories: 1. natural-primitive reindeer breeding; 2. industrial reindeer breeding, which in its turn may be divided into technical-industrial and trade-industrial; 3. secondary (or subsidiary) reindeer breeding.

The natural primitive reindeer breeding we find among the tundra natives, the Chukchee to the east and the Samoyed to the west. The annual killing of reindeer is limited by the personal needs for clothing, bedding, footwear and food. Only a small part of the products go to the merchants in exchange for imported goods like tea, sugar, flour, articles of clothing, etc.

Industrial reindeer breeding plays an important part in the general economic life of the country. The first subdivision of this type, the technical-industrial, we find chiefly among the reindeer breeders of the province of Arkhangelsk, particularly among the Zyryan, among whom it was first developed. It is based on the production of chamois and the export of frozen meat. The number of reindeer to be killed is regulated by the owner of the herd. The chief killing takes place in the autumn when fawns, which furnish chamois of the best quality, are killed. Of the adult reindeer, only the old and sick are killed. The owner of the herd receives money for the skins and meat. Only a part of the money is required to cover the expense of purchasing imported goods; the rest may guarantee him the acquisition of a new herd in case of loss through epidemic. Thus, this type of reindeer breeding is connected with the general economic life of the country.

The second category of the industrial type is the trading or commercial industrial. The chief use of reindeer belonging to this category is to transport merchants and freight to and from the tundra. The freight may belong to the reindeer breeder himself or to merchants who hire the reindeer and drivers from him. The composition of a herd of this category is somewhat different from that of other herds. As its chief use is for transportation, it must contain more gelded males than other herds. In such herds females are also used for driving and carrying packs. This type or reindeer breeding is not so widely distributed as the first. It is met with in the lower part of the Pechora River and at the mouth of the Lena River, chiefly among Russian reindeer breeders.[3]

The last type of nomadic reindeer breeding is the accessory or subsidiary

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[1] S. W. Kertzelly, Materials for the Study of Reindeer Breeding, Petrograd, 1921 (in Russian).

[2] From *izba*, peasant's house, log house.

[3] This is according to Kertzelly, but it should be added that the rich reindeer breeders of the mouth of the Lena are chiefly Yakut and not Russians. Some of the Russian merchants living on the Yana River have such herds. Occasionally, their trading reindeer teams, managed by Tungus, visit the Yakut village Bulun, on the Lena River.

type. The herds of such reindeer breeders are not large, consisting of from twenty to fifty, and never more than 150 head, and they are used chiefly to carry the owner and his family on their hunting and fishing journeys. The products of reindeer breeding of this type do not reach the market, but serve only to satisfy household needs. The chief importance of this type of reindeer breeding rests with the reindeer as a means of transportation to hunting or fishing places. This type of reindeer breeding is met with among the wandering hunters of the Tungus, Karagas; also among the Lapps, Samoyed, and others. In Siberia it reaches as far south as the Sayan mountains.

The settled or farm reindeer breeding also includes several forms of households, but these are not so well known as the subdivisions of the nomadic reindeer breeders. However, two types may be distinguished. The first type of settled reindeer breeding is met among the northern Yakut, the Ostyak on the Ob River and with some Russian peasants of the provinces of Arkhangelsk and Vologda. They keep near their houses thirty to fifty head. The reindeer are used for transportation and for hunting. Every autumn the owners also have meat and skins for themselves and for barter.

The second type in found in certain districts of the northeastern part of the Province of Vologda and partly in the Kem and Aleksandrova districts of the province of Arkhangelsk. According to Kertzelly reindeer owners of this kind keep from three to five head in stables.[1] I myself have seen such reindeer households in the northern part of the province of Yakutsk between the Lena and Kolyma Rivers among the settled Yakut.

Concerning the feeding of reindeer, Dr. Kertzelly points out that in the summer it is rather indifferent to lichens, its ordinary winter food. It feeds willingly on grasses, including also the bog-sedges. It also readily eats the shoots of birches and willows, mushrooms, and leaves of berry shrubs. It is also fond of animal food. The reindeer catches lemmings, hunts eggs of wild birds, eats bones, fish and meat, including reindeer meat. During the winter the reindeer feeds mostly on different species of lichens and also on the bearded (*Usnea barbata*) and other lichens which grow on trees. But even then the reindeer may eat hay made of young soft grass. Dr. Kertzelly knew some households where the reindeer dispensed with lichens altogether.[2] The "settled" reindeer is usually kept in an enclosure, in sheds and stalls, and often it is kept in the open, as the settled reindeer does not leave the human dwelling. Besides hay some reindeer owners gather lichens during the summer for winter use. These are mixed with hay. The reindeer are also sometimes fed on dried raw fish.

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[1] See Kertzelly, Material for the Study of Reindeer Breeding, pp. 8, 9, 14; and Kertzelly, The "Settled" Reindeer Breeding and its Importance in Rural Economy, Petrograd 1919.

[2] I was told in 1914 by the keeper of the Zoological Garden in Petrograd that the reindeer there are fed with soft hay and are exceedingly fond of bread.

Fig. 1. YAKUT REINDEER HERD ENTERING A LONG SHED FOR PROTECTION FROM THE SUN.

Fig. 2. FISH GATE IN THE NELEMNAYA RIVER.

The Yukaghir.

Although the reindeer is not as intelligent as the horse, it nevertheless seems to appreciate the protection and care of man. It protects itself from the sun in sheds and stalls. In Plate XXV, Fig. 1, is shown a small Yakut reindeer herd of about fifty head on the Lena River, entering a long shed. In the morning and at dusk, when the mosquitoes are especially fierce, the reindeer crowd about the smoke pits which must be fenced off lest the animals step into the fire and burn their hoofs producing fatal inflammation of the legs. I observed on the tundra many instances of domesticated reindeer pursued by a wolf running to the master's tent as if seeking protection.

We see that the concept of the reindeer as inherently a migratory animal that could never thrive in an enclosure[1] may be radically changed after observation of the "settled" reindeer household. On the other hand, it is worth noting that according to Dr. Kertzelly, the efforts of the Ostyak on the Ob River to turn the nomadic reindeer into "settled" herds have failed so far as is known.[2] It appears that training of successive generations is necessary before complete domestication of the reindeer can be achieved. So-called "settled" reindeer breeding is as yet little known and has not been sufficiently studied, but has spread wherever man is willing to live a sedentary life.

As to the question of the beginning of reindeer breeding, Kertzelly is inclined to think that there was more than one place of origin, and possibly more than two. According to his classification, there are two types, a western and an eastern one. The Yenissei River may be regarded as the dividing line.[3] To the west of the Yenissei the breeder employs the shepherd dog, while to the east the dog is not used. The hunting or driving dog of the eastern reindeer breeders is hostile to the reindeer whether wild or domesticated. In a reindeer breeding camp the dogs are kept tied up and the herd is managed by the herders alone. The attitude of the dog and the mode of managing the herd are so profoundly different in the west and east that they must always have been so, and, says Kertzelly, there must have been two original centers of reindeer domestication.[4] On the other hand, the western as well as the eastern type of reindeer breeding may be divided into two subtypes each. The western form has two types: that of the Lapp and that of the Samoyed.[5] In both types the dog is used as a herder. The dog keeps the herd together, drives it from one pasture to another, and helps the breeder catch reindeer for driving or killing. However, some differences in the use of the reindeer exist. The Lapps harness the reindeer to a kind of dugout canoe, for which they use only one reindeer. It is only recently

[1] See Laufer, p. 140; Hatt, pp. 98, 107.

[2] See S. Kertzelly and W. Khudadov, Reindeer Breeding, Petrograd 1917, p. 7.

[3] The author should regard rather the Khatanga River as a dividing line.

[4] Kertzelly, Materials for the Study of Reindeer Breeding, p. 6.

[5] The Ostyak reindeer breeding does not differ from the Samoyed, says Kertzelly, while the Zyryans and Russians in recent times adopted the reindeer and mode of breeding from the Samoyed.

that they have adopted the use of the sledge from the Samoyed. Besides, the Lapps also use the reindeer as a beast of burden. The Samoyed, on the other hand, never use the reindeer as a pack animal and harness several reindeer to a sledge, usually from two to five in line. These differences, says Kertzelly, are so fundamental, particularly in the use of the boat and sledge, and apparently so ancient, that it must be assumed that the Samoyed reindeer breeding and that of the Lapps originated independently.

Kertzelly holds the same opinion concerning the two eastern modes of reindeer breeding, those of the Chukchee-Koryak and the Tungus-Lamut. The Chukchee-Koryak harness the reindeer to sledges and do not milk the does, while the Tungus-Lamut use the reindeer as a pack and riding animal and milk the females.

To these conclusions of Kertzelly should be added that the varieties of the Chukchee-Koryak and Tungus-Lamut reindeer are so different that their separate origin is quite evident. The short Chukchee reindeer is unfit for riding. The Chukchee of the Indighirka tundra acquire from the Tungus reindeer for that purpose.

Sirelius[1] maintains that the reindeer was already used as a pack and driving animal during the stone age in Finland.

Besides Sirelius, Dr. Hatt refers also to Wiklund's article, "Om Renskotselns Uppkomst,"[2] in which he analyses different forms of reindeer breeding and advances the opinion that reindeer domestication arose independently in several areas such as the Chukchee-Koryak, Tungus, Soyot and Ostyak-Samoyed districts. Wiklund considers it improbable that any historical connection ever existed between the reindeer breeding of the Lapps and any Siberian form of domestication.

Unfortunately the present writer was unable to see Wiklund's article but we see that his statements are in accord with the opinions of the Russian authors cited above.

I wish also to refer here to the opinion of my friend Dr. W. G. Bogoras on this subject, which at my request he communicated to me in a recent letter written from Leningrad. He says, "In regard to the question of reindeer domestication, I consider the writings both of Laufer and Hatt as quite unconvincing. I consider the northern reindeer domestication as very ancient, originating shortly after the ice age, when the reindeer followed by the hunter moved to the north, domestication taking place under the influence of that migration. Thus the Tungus breeding of riding reindeer for hunting may be regarded as the most ancient form of reindeer domestication. Not without reason do the Chukchee and Koryak call the Tungus "Reindeer People."

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[1] U. T. Sirelius, Ueber die Art und Zeit der Zähmung des Renntiers. (Journal de la Société Finno-Ougrienne; Helsingfors, 1916).

[2] Ymer, Tidskrift utgiven av Svenska Sällskapet for Antropologi och Geografi (Arg. 1918 H. 3).

As one of the localities where reindeer domestication originated I regard the Altai and the Sayan mountains. Here is found at present a strong and large race of domestic reindeer on which the rider sits on the middle of the back and not on the shoulders. I have seen photographs of these animals. Through that region lay the route of migration of the Samoyed from the south to the north. It is possible that the breeding of reindeer for sledge driving which is generally associated with the maintenance of large herds for slaughter, is no less ancient than the domestication of riding reindeer. However, the reindeer sledge may be traced to various origins. The Lapp's sledge is derived from a boat, the Samoyed reindeer sledge from a dog sledge; the Chukchee-Koryak sledge also from a dog sledge of the ancient Kamchadal type. The Yakut-Tungus is derived from a dog sledge of the East Siberian type.

"The dividing line, with reference to the method of guarding the herd, with or without the dog, is formed by the Khatanga River and the Yenissei Lake. To the west of this line the Lapps, Samoyed and Zyryan have herding dogs, while to the east the Yakut, Tungus, Chukchee and Koryak do not use the dog. This dividing line extends southward and corresponds to the boundary line of the ancient continent of Asia in the quarternary period. This line has had a zoological and historical significance. Ethnographically it divides the Americanoid tribes (Palæasiatics) from the Finnoid and Turcoid peoples.

"To regard the reindeer domestication as having originated in historic times in imitation of southern horse and cattle breeding is quite inadmissible, and is at variance with all similar data from other places. In the history of culture we know of many adaptations and only a few cases of imitation. In all parts of America the Indians adopted from the whites cattle, sheep and horse breeding, and nobody thought of imitating white cow-boys by domesticating the indigenous bison and tapir."

We see that Bogoras is also inclined to admit an independent origin of reindeer domestication in different places.

In concluding this chapter, I wish again to point out that the question of reindeer domestication has been very little studied as yet, both historically and economically, and that the statements made by Dr. Hatt and particularly by Dr. Laufer should be regarded as premature and lacking in firm foundation.

XXI. — MATERIAL CULTURE. FISHING, HUNTING AND WAR.

Fishing. Fish constitutes the principle food, not only of the dog-breeding Yukaghir, but also of the reindeer Yukaghir of the tundra. Most of the Tundra Yukaghir have very few reindeer and have to rely largely on fish for their food.

Species of Migrating Fish. The Yukaghir fishermen subsist mainly on *Coregonus*, a genus of the family *Salmonidae*, which ascends the rivers from the Arctic Ocean in the spring and summer and descends again from the upper courses to the mouths of the rivers or to the sea late in the autumn or in the beginning of winter. Thus there are in the Arctic region two seasons for river fishing. In my work on the Koryak [1] I pointed out that *Oncorhynchus*, another genus of the family *Salmonidae*, which enters the rivers from the Pacific Ocean and the Okhotsk Sea does not return to the sea. It continues to ascend the rivers until completely exhausted and dies after spawning.

In the Arctic Rivers there are two kinds of fish called by the natives "passing-by" or migrating fish and "permanently living" (in the rivers). But the latter category also migrate from the lower to the upper parts of the rivers and back.

The migrating category comprises the following species of *Coregonus*: the nelma (*Coregonus leucichtys*), Yukaghir čo'modani, which means "great fish;" the omul (*Coregonus omul*) Yukaghir, a'nya; muksun (*Coregonus muksun*) and the seldyatka or kondievka (*Coregonus clupeodes*). By some travellers the last-named is erroneously called herring and is regarded as a kind of *Clupea harengus*.[2] The small adipose dorsal fin near the tail of the seldyatka shows that it is a salmon and not a herring. The genuine herring is found in none of the rivers of the Polar region. It may be found in the sea but the Yukaghir as well as other inhabitants near the coast do not fish in the Arctic Sea. Some Yakut fishermen catch the *Coregonus clupeodes* in the shallow sea near the mouth of the Omoloi River and, according to them, there are no herrings. At the mouth of the Lena River, the Yakut fishermen have told me that sometimes their nets bring up flounders, of which they have a superstitious

[1] See W. Jochelson, The Koryak, Vol. VI of this series.

[2] See, for instance, Sieroshevsky, The Yakut (in Russian) p. 129 and Sauer, An Account of a Geographical and Astronomical Expedition to the Northern Parts of Russia, 1802, p. 85. Wrangell (Narrative of an Expedition to the Polar Sea, London, 1844, p. 67) also incorrectly calls the seldyatka a herring.

fear, and which they throw back into the sea. As the flounder is found together with herring near the Norwegian coast, it does not seem unlikely that the herring is also found in the Arctic Sea.

The migrations of the *Coregonus*, according to my observations, occur as follows. The nelma begin to ascend the rivers just after the ice breaks up, which takes place in the lower parts of the rivers in the beginning of June. According to the information obtained from fishermen, many of the nelma do not go all the way down to the sea but stay during the winter season in ditches along the lower courses of the rivers. These nelma are called ya'mnaya which means "of the ditches." The first to ascend are the nelma "of the ditches" and eight to ten days later the sea nelma. The sea nelma are recognized by a certain kind of parasite found in the gills. At the mouth of the Omolon river I was told that the nelma run lasts from the opening of the river until the end of June, i.e., for about three weeks. The nelma has the fastest run among the migrating fish. The first nelma appears in the mouth of the Yassachnaya River at the end of June, so that it makes about 1,000 verst (660 miles) in three weeks. It must be added that migrating fish while ascending stop to rest in deep calm places. The nelma ascends the Kolyma river very far, some of them reach the Korkodon River and even higher, about 1500–1600 verst (990–1056 miles) from the mouth of the Kolyma. The greater number, however, go into the Yassachnaya River (the mouth of which is 1100 verst, or 720 miles, from the mouth of the Kolyma river) and spawn in its left tributary, the Nelemnaya River, 80 verst from the mouth of the Yassachnaya. The nelma spawns in September. It does not migrate in shoals but singly or in small groups. In the Lena River the nelma ascends still farther to the south than in the Kolyma. Generally it prefers the great rivers like the Lena, Kolyma and Indighirka. It ascends the Chukchee, Alaseya, Yana and Omoloi Rivers and others in small numbers only.

The average weight of an adult nelma is from 20 to 40 Russian pounds (18 to 36 English pounds), but there are nelma of 72 to 90 English pounds and even heavier. In summer small nelma of 6–7 pounds weight are found. These are called by the Russians *vakhra* and by the Yakut tutcha'kh, and are the youngest individuals of the ascending fish.

The omul (*Coregonus omul*), Yukaghir, a'nya, begins to ascend the rivers soon after the nelma, about the beginning of July. In the Kolyma River the omul ascends farther south than any other migrating fish. Almost all the omul from the Kolyma River enter the Yassachnaya and ascend its tributary, the Omulevka, a boisterous little mountain river which enters the Yassachnaya about 50 miles south of the Nelemnaya. In some years, as if by agreement, the omul changes its route with the nelma. The omul ascends the Nelemnaya River and the nelma the Yassachnaya. The omul migrates in shoals. It

reaches the Yassachnaya River in August. It spawns at the end of August or beginning of September and in the middle of September descends to the sea. In the middle and lower course of the Kolyma the omul continues to descend under the ice of the frozen river.

The omul, like the nelma, prefers the large rivers. In the Chukchee river, according to the Tundra-Yukaghir, the omul is not found in summer 150 miles from the mouth, where these Yukaghir fish. But the omul might be in the mouth of the river, they said. And so it is with other small Arctic rivers, like the Shadron and Omoloi. Very few omul ascend the Alaseya and Yana. In the Anabar the omul does not come up farther than 45 miles from the mouth. The weight of the omul is from 3 to 8 pounds.

The muksun (*Coregonus muksun*) ascends the rivers much later than the nelma and omul. It moves slowly and in the Kolyma river it does not reach the mouth of the Yassachnaya. In the Lena River it ascends farther south. In the smaller rivers like the Chukchee, Alaseya, Yana and Omoloi it enters in small numbers, keeping near the mouth. Its weight is from 4 to 8 pounds.

To the migrating fish coming from the sea belong also the sturgeon (*Acipenser sturio*), Yukaghir i'če, which means "point" or "spearhead," and the starlet (*Acipenser ruthenus*) Yukaghir i'čediye, i.e., "small sturgeon." They do not come in great numbers, but they ascend the Kolyma river as far as the Yassachnaya, entering also the latter. They are found in greater numbers in the Lena River, particularly not far from the mouth.

Fish living exclusively in the polar rivers are the following: the grayling (*Thymalus vulgaris*), Yukaghir, ugu'rciye, and lenok (*Salmo coregonoides*), Yukaghir ara'iye. They also migrate. They like the clear waters of the mountain rivulets but in the autumn they descend to the mouths of the tributaries of the Kolyma and in the spring ascend again to spawn.

To the fish which constantly live in the rivers and lakes of the Yukaghir country, or which migrate from the lakes to the rivers for spawning, belong the following species: the chir (*Coregonus nasutus*), Yukaghir mo'xen; stchokur (*Coregonus lavaretus*); pike (*Esox lucius*), Yukaghir umu'yeñ; quab (*Lota vulgaris*), Yukaghir ne'ťnumuya or ko'tleñ; and the perch (*Perca fluviatilis*), Yukaghir oki'lla, evidently from the Russian *o'kun*.

Concerning the *Coregonus nasutus*, the natives could not tell me whether there is a river species in addition to the lake species. They know only that at low water very few chirs are in the rivers, while at high water when the great rivers are connected with lakes, the chir may be caught during the whole summer. It ascends the Kolyma river as far as do the nelma and omul and descends in October under the ice.

In the numerous tundra lakes we find the following species of fish: *Coregonus nasutus*, *Lota vulgaris*, *Esox lucius*, *Coregonus lavaretus* and *Coregonus pelet*. The last is called in Yukaghir, le'xmañ. Some of the lakes

are rich in chirs; particularly two tundra lakes, the Great and Small Alarskoye, are famous for their tasty chirs weighing from 4 to 25 pounds. Generally the fish of the tundra lakes are larger, fatter and more tasty than those of the lakes of the forest region. Even the tundra pike is much better than the river pike. In the lakes of the forest region we find the *Carassius vulgaris* and a small species of fish called by the natives munda (*Phoxinus perenurus*?).

Fishing Seasons. For the migrating fish the fishing seasons depend on the time of migration, and the seasons are different in the lower and upper courses of the rivers. Thus, for instance, the catch of the nelma near the mouth of the Kolyma begins at the end of May or beginning of June, while in the Yassachnaya River the nelma fishing begins in July. It is the same with the omul. Fishing is resumed when the migrating fish descend the rivers.

Fishing Implements. The ancient Yukaghir did not use either nets or seines made of nettle fibre, as the Koryak and Kamchadal did, nor of twine such as they now use. They did not fish during the winter through ice-holes. They had only one fishing season, from the time of breaking to the time of freezing of the rivers, i. e., during the months from June to September. They fished with a kind of seine made of willow or they barred the rivers with weirs and put up willow traps. Fishing with willow seines was done in the

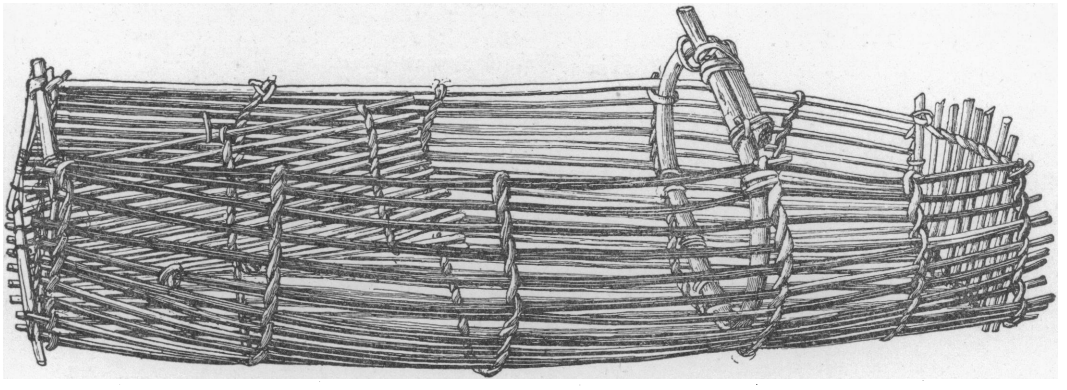

Fig. 39 ($\frac{70}{8\,8\,2\,8}$). Ancient Yukaghir fish trap.

following manner. They placed a willow fence in the river. One end of this fence was fastened to the river bank and the free end drawn in towards the bank. Fig. 39, shows an ancient fish trap which was fastened to passages in a fish gate.

At present, the Yukaghir fish with nets or seines made of imported twine and with fish gates to the openings of which large trammed nets or willow traps are attached. Plate XXV, Fig. 2, shows a fish gate on the Nelemnaya River with a trammed net, and Plate XXVI Fig. 1, shows a fish weir with willow traps. Fig. 40 represents a part of a twine fish net, called in Yukaghir yo′uye. Nets are from 10 to 14 meters in length and from .9 to 1.5 meters

in width. The meshes measure from 3 to 7 fingers in width. The sinkers are made of willow rings to which stones are attached and floats made of birchbark are twisted around the rope. The net ropes are made of twisted willow. The willow ropes are very solid. A piece of such a rope is shown in Fig. 136. Nets are cast into the river from canoes or tied to poles driven

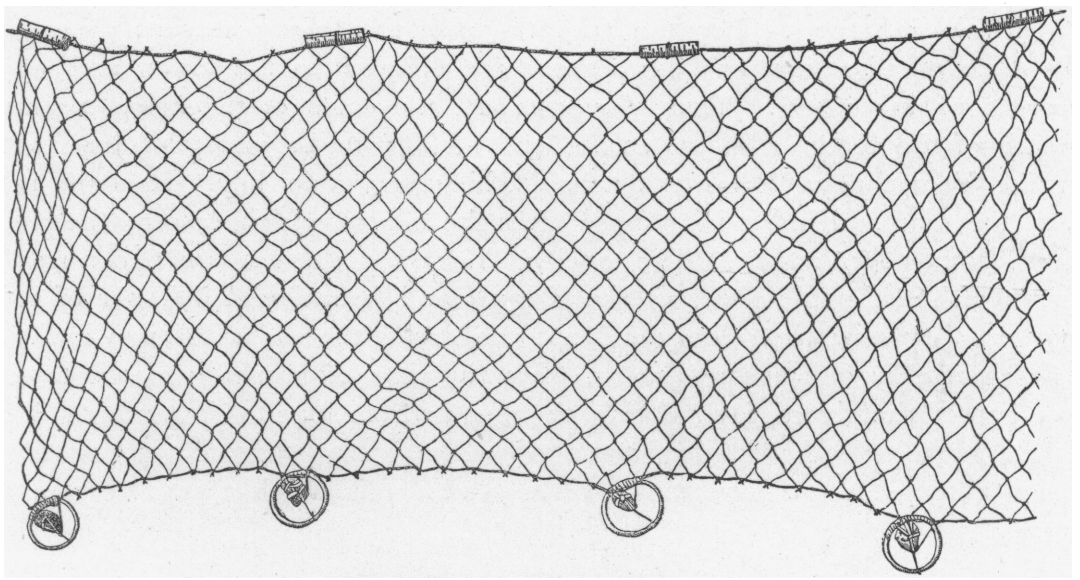

Fig. 40 ($\frac{70}{858\frac{1}{4}}$). Yukaghir twine fishnet.

into the bottom of the river. Several owners of nets join together and sew them to a sein. The results of the catch are divided among the families to whom the nets belong, according to their needs. The Yukaghir name for seine is pa′rul (Yassachnaya River) or lo′bal (Omolon River). I have never seen the Yukaghir fish with a line, but they have a name for an angle, čumu′če. The winter fishing with nets through ice holes is carried on as

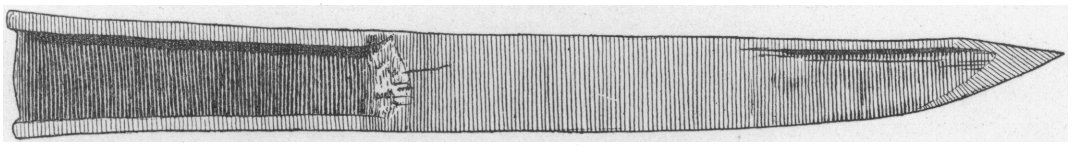

Fig. 41 ($\frac{70}{9\frac{1}{3}0\frac{1}{2}}$). Iron ice pick.

follows. They make two holes in the river ice with an iron pick (Yukaghir, ču′lga, see Fig. 41), to which a wooden shaft is fitted. Then they let down into one hole a net, tying the line of the net to a peg driven into the ice, and with a hooked rod catch the other end of the net through the second hole. They then tie the other end of the line to another peg. In this way the net is fixed between two ice holes. At intervals it is drawn out through one hole in order to take the caught fish. (See Plate XXVI, Fig. 2.) The

Fig. 1. YUKAGHIR FISH WEIR WITH WILLOW TRAPS.

Fig. 2. YUKAGHIR FISHING WITH NETS THROUGH THE ICE.

Fig. 1. KORKODON YUKAGHIR ROWING A TRIANGULAR RAFT OF LOGS.

Fig. 2. PUNTING IN CANOES MADE OF THIN BOARDS.

omul is caught mainly by seines and weirs; chir, sturgeon, starlet, grayling and *Salmo coregonoides* are caught through ice-holes.

In the tundra lakes the Yukaghir, as well as the Yakut and Tungus, fish with nets made of horse hair, during the summer from canoes and in winter through ice-holes. The Yukaghir buy material for hair nets from the Yakut.

Boats and Canoes. Before entering upon a description of hunting, I shall describe the boats of the Yukaghir. Before their meeting with the Russians the Yukaghir had only canoes, but not boats. Instead of boats they used rafts called mi′no. The mi′no consisted of logs tied with willows in the form of a triangle, the apex of which formed the prow of the primitive conveyance, and the base its stern. It was propelled by one or two pair of oars with rowlocks. Such a mi′no made on the Korkodon River is shown in Plate XXVII, Fig. 1. On the triangular raft was built a platform of planks half a meter high, on which women and children sat. The mi′no was propelled mostly by old men, women, or girls. Young hunters paddled ahead in canoes.

They make two types of craft: dugouts and board canoes, both of which are still used. The dugout canoe, (Fig. 42), Yukaghir e′kčil, is made of a poplar

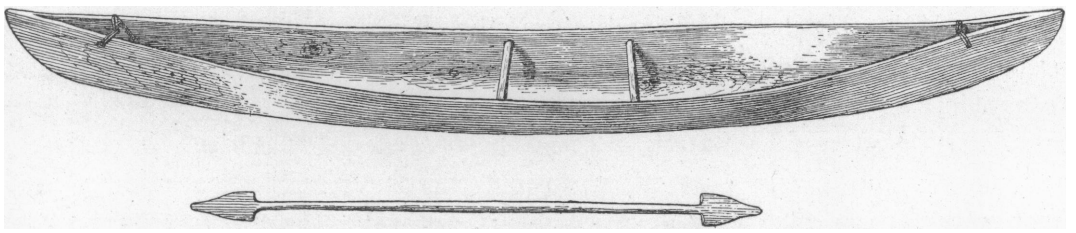

Fig. 42 ($\frac{70}{8814}$). Yukaghir dugout canoe and double paddle.

trunk hollowed out by means of adze and knife. A straight poplar is selected. The side of the trunk turned to the south is called i′nil, i. e., "belly" and the side towards the north is called yobo′ǧo, i. e., "the back-bone." The branches on the belly are at right angles to the trunk; on the back they form sharp angles with the trunk. The trunk is split with wedges and the belly is used for the dugout, as it furnishes soft elastic wood while the back consists of tough longitudinal fibres. Large poplars are found on the banks of the upper Kolyma and Korkodon rivers. The length of the dugout canoe is about 5 to 6 meters, and the width about 65 cm. It is so thin that the weight of the boat is not more than 65 pounds, and can easily be carried on the shoulders from one river to another. To try the thickness of the canoe they make a hole and plug it by inserting a peg besmeared with grease. In Fig. 42 the prow is to the left; below is the double paddle with blades the shape of a poplar leaf. The canoeist sits between the two crossbars on a pad of dry grass covered with skin. If there is a passenger he sits with outstretched legs, his face turned to the stern and his back against the back of the canoeist. To keep the balance the people in the canoe have to sit without

moving, otherwise the canoe would capsize. The canoeist moves only the arms in paddling. The fisherman has a net by his side; the hunter, his gun, bow, arrows and spear. Going home the fisherman brings in the canoe his catch and the hunter killed reindeer, birds or other animals.

Another kind of canoe is the xo′dol^{c} (Yukaghir), in Russian *ve′tka*. It is made of thin boards sewn together with sinew threads. The seams are covered on the outside with larch-gum. The xo′dol^{c} is shown in Figs. 43 and 44. All that has been said aboud the e′kčil may also be applied to the xo′dol^{c}. The latter is more stable, as its bottom consists of a flat board. The prow

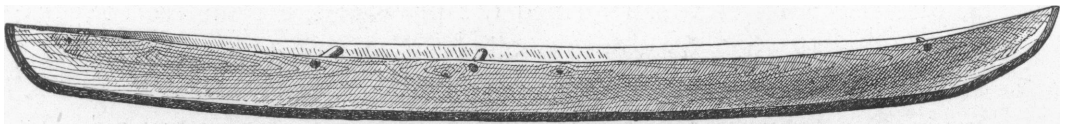

Fig. 43 ($\frac{70}{82\frac{1}{2}97}$). Yukaghir board canoe.

is to the right. With both the dugout and the canoe made of boards two slender sticks are used for punting in shallow water or up stream, as is shown in Plate XXVII, Fig. 2.

The Yukaghir have learned from the Russians to build boats. Their Russian origin is proved by their name, xa′rbeč (boat) from the Russian *karbass*. But the Yukaghir do not use a single piece of iron in making a boat. Fig. 45 *a* and *b* shows a boat in process of making. It consists of three parts: the lower part is a dugout canoe (e′kčil); the middle part is called ni′boi, from the Russian word *naboi*, gunwale; the top boards are called po′rumnye which seems to me to be also a Russian word.[1] The middle

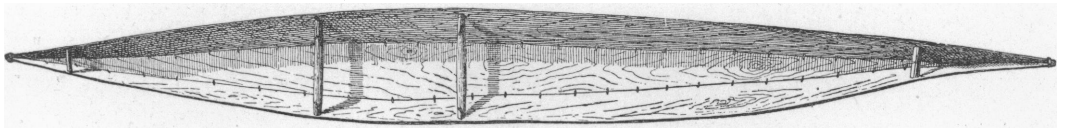

Fig. 44 ($\frac{70}{82\frac{1}{2}97}$). Top view of canoe Fig. 43.

boards are sewn to the dugout bottom piece, and the upper boards to the middle ones by means of birch twigs which must be soaked in hot water before they obtain the requisite flexibility. The boat is caulked with moss (u′o-lebiye′) instead of tow. The curved ribs are called opru′ka from the Russian *oprug*. There are four of these. Boats three fathoms in length have four ribs, those four fathoms in length have six ribs. The ribs are sewn and nailed with wooden pegs to the upper boards. There are row locks for the paddles (ča′mje). On the prow and stern are inserted pieces of wood nailed with wooden pegs to the boards. There are two oarlocks for one pair of oars. In a four fathom boat there are two pairs of oarlocks. Thwarts are

[1] Probably from the Russian word *parom*, a raft, ferry-boat or a kind of flatbottomed boat.

Fig. 1. YASSACHNAYA YUKAGHIR BUILDING A BOAT.

Fig. 2. YAKUT BLACKSMITH AND HIS ASSISTANT AT WORK.

put on the edges of the middle boards. The steersman with the steering paddle sits on the stern corss-bar. The dougout and the middle planks are made of poplar, the upper planks of larch or poplar. The ribs are made from the hard wood of larch roots. The holes for sewing are made with an iron drill and after sewing the drill holes are stopped up with pegs. The wooden pinchers for holding the boards while sewing are called kol. Plate XXVIII, Fig. 1 shows Yassachnaya Yukaghir working on a boat.

Travelling upstream the boats are towed by long ropes made of willows.

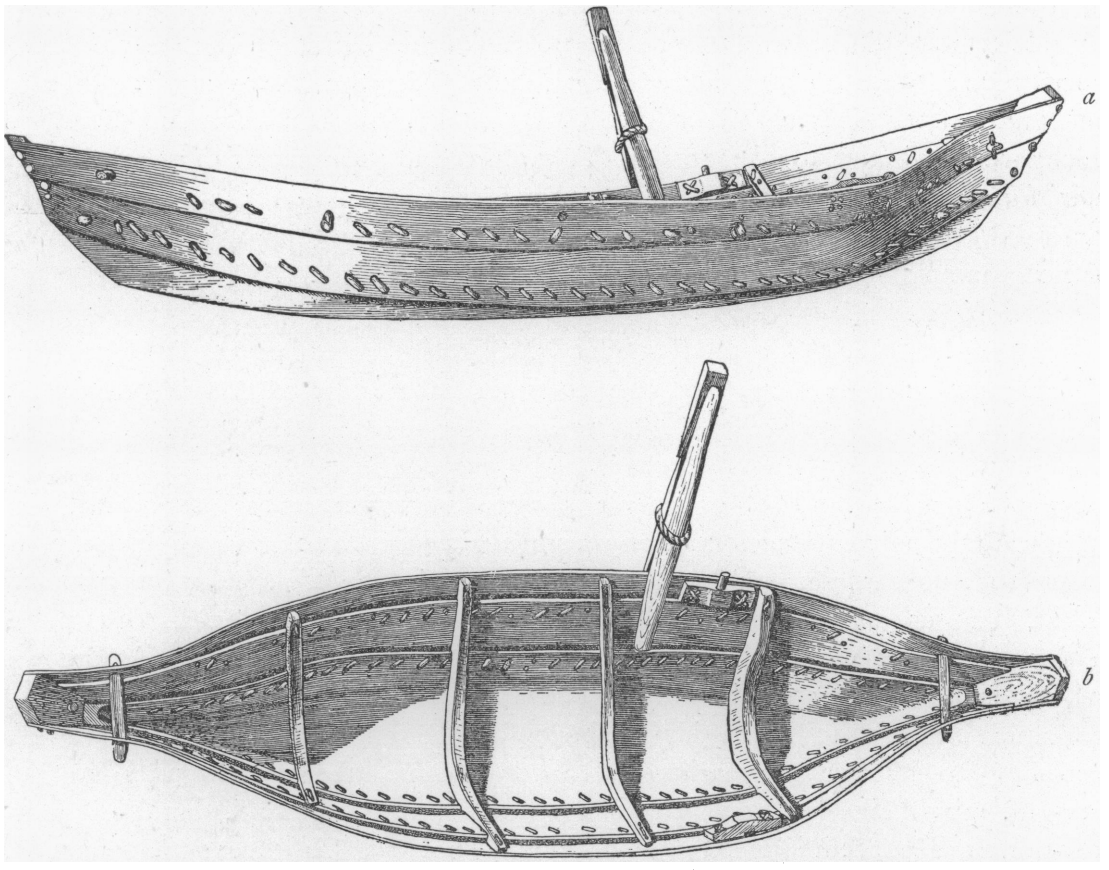

Fig. 45 ($\frac{7}{8}\frac{9}{8}\frac{1}{0}$). Side and top views of a Yukaghir boat in the process of manufacture.

A team of dogs is used for that purpose if the bank is favorable, i. e., if it has no bushes, trees or projecting boulders that would catch the rope. If the bank is not straight and low men have to help the dogs or do the towing themselves.

As the inhabitants of the lower Kolyma and particularly of the treeless tundra have no material of which to build canoes and boats, they have to buy them from the upper Kolyma Yukaghir. The latter build canoes and boats during the winter and spring on the banks of the upper courses of the Kolyma River or on the Korkodon where large poplars are found, and, after

the river breaks up, float them down for sale to Sredne-Kolymsk. In former times the Yukaghir of the lower Kolyma ascended the Omolon river and built their canoes and boats.

Owing to the absence of large birch trees in the polar region, the Yukaghir have no birchbark canoes, such as are found to the south of the Yukaghir country among the Tungus and Yakut. On the other hand, being U'nuñ-o'mni, i. e., "River People", the Yukaghir have no skin boats or canoes such as those of the Čo'bud-eu'reyed-o'mni i. e., "Sea-going People", as the Yukaghir call the maritime Koryak and Cukchee.

HUNTING. There are at present no Yukaghir living on the sea-coast and consequently they do not hunt sea animals. On the Bear-Islands, opposite the mouth of the Kolyma River have been found ruins of underground dwellings which are attributed to the ancient Yukaghir, but no remains of specimens of their former material culture were reported. I may add that tales of sea monsters are often found in Yukaghir mythology and that a common name for sea mammals is čo'bun-to'low, i. e., "sea wild reindeer."

Hunting of Land Game. In olden times the most important game animal was the elk. It was not so abundant as the wild reindeer, but it was found in such numbers that the Yukaghir at times could neglect the wild reindeer. The enormous weight of the elk furnished large quantities of meat. Of its skin, winter clothing and footwear were made. Of the male's huge antlers household articles and other carvings were manufactured. At present, this animal is met only in places far away from human habitation. Its disappearance is due to its extermination by hunters. Not only the Yukaghir, but also the Yakut, Tungus and Russians took advantage of the defenselessnes of the elk. In deep snow it is quite helpless against pursuers on snowshoes. At present an elk is killed very rarely only. The importance of the elk in the former economic life of the Yukaghir is shown by the numerous names of the elk according to its age: a yearling is called ca'xaluo (the reddish one); a two-year-old, pugo'lbiediye, (the little shaggy one); three-year-old, lončak;[1] four-year-old, nyačexaremi'djiye (with a black spot on his face); five-year-old, o'nmun-moi'be, (notches on the antlers); six-year-old male, ū'nel (finished one); six-year-old female ū'oye (the one giving birth). The common name for elk is pi'edje. The skin of the elk is called e'yiñ and the dressed hide no'lodjed-e'yiñ.

The wild reindeer also has lost its former importance as game. In former times the wild reindeer migrated in the spring from the forests across the Omolon and the two Anui rivers to the Chaun tundra, and in the autumn returned to the forest. They migrated in large herds and the Kolyma, Omolon and Anui Yukaghir killed them by hundreds as they were crossing the rivers,

[1] It must be noted, however, that lončak is a Russian word (*lonshak* or *lonchak*) meaning yearling colt or stag, but in some localities, as in the Province of Kursk, it means a three-year-old colt. The skin of a two or-three-year-old elk provides excellent and soft material for fur clothing.

in water or on ice. About sixty years ago, this migration ceased, partly owing to the extermination of the reindeer by Lamut hunters and partly owing to the change of the reindeer trail. The Omolon and Anui Yukaghir who depended on wild reindeer for their subsistence starved out or settled in the Russian-Yukaghir fishing villages on the Kolyma River. It was said that in recent years the wild reindeer renewed their migrations across the Omolon, but in very small herds. Fig. 46 shows a Yukaghir spear used in killing reindeer from canoes when they cross the river.

At certain seasons, particularly at the end of winter and in the spring, when supplies of fish caught in the autumn have come to an end, the Yukaghir

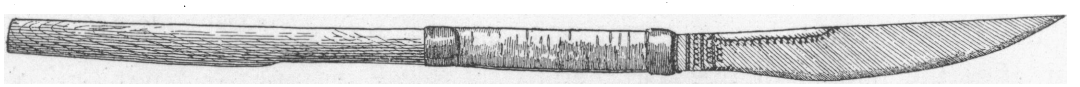

Fig. 46 ($\frac{79}{8677}$). Yukaghir spear used in killing reindeer from canoes.

of the Upper Kolyma region depend on the wild reindeer for their subsistence. They hunt on snowshoes. The sight of the reindeer is not very good, but its hearing and scent are keen. Therefore the hunter approaches it against the wind. Getting within gun or bow shot he fires or releases an arrow. An alert hunter may come so close to the reindeer that he can make use of his spear or knife. The reindeer Yukaghir of the tundra hunt wild reindeer by means of decoys. I have described this kind of hunting in my work on the Koryak [1] and on "The Animal Industry and Fur Trade." [2]

Hunting of Birds. At present birds of the woods like heath-cock or wood-cock, are hunted with shotguns. The ptarmigan is caught in snares made of sinew. The noose is spread on the ptarmigan track and the cord is tied to a branch. Water-fowl, like ducks, geese and swans, that come in the spring and leave the country in the autumn, are hunted with the gun. Only the Russianized Yukaghir on the mouth of the Kolyma River have preserved the old method of killing water-fowl with a bird-dart and bola. The Tundra Yukaghir hunt the moulting ducks and geese as follows: In autumn moulting ducks and geese gather on certain lakes. Fish nets are put up around the lake by a company of hunters. A number of men go out in their canoes and drive the helpless birds into the nets. Others, stationed near the nets catch the birds with their hands and wring their necks close to the head.

Hunting of fur-bearing animals. Three species of fur-bearing animals have completely disappeared to the north of the Verkhoyansk ridge. These

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[1] See The Koryak, p. 499.

[2] Sketch on the Animal Industry and Fur Trade in the Kolyma District, St. Petersburg, 1898, p. 44 (in Russian).

are the sable (*Mustela Zibellina*), Yukaghir, no′xco; the wolverene (*Gulo borealis*), Yukaghir, a′rnumoya; in the Tundra dialect, i′nmeñ; and the lynx (*Felis lynx*), Yukaghir, po′n·xo-no′do, which means the white beast, although the lynx is far from being white. The sable inhabited chiefly the mountainous country on the right bank of the Kolyma River and its right tributaries between the Anui Rivers and the sources of the Kolyma in the same localities where its prey the squirrel lived and still lives. It was once very numerous. Towards the end of the XVII century at the fair of Sredne Kolymsk there were sold anually 36,000 sables.[1] It must be noted that this is the official total from which 3,600 skins, i. e., a tenth, were taken as taxes by the government, and that the smuggling trade greatly surpassed the open one. In the beginning of the XIX century a good Yukaghir hunter still killed yearly 30 sables. But after the middle of the last century the sable disappeared and at present not one is found in the polar region. The sable was exterminated by the newly arrived hunters. Instead of the walking Yukaghir hunter alone, there appeared the Russians driving dogs, Yakut riding on horses, and Tungus hunters on reindeer and among themselves they killed off that valuable furbearing animal.

The same thing has happened with the wolverene and the lynx. The fur of both animals served the Yukaghir for trimming coats, aprons and caps. The fur of the wolverene is particularly prized by the Chuckchee and, in view of the absence of this animal in the northern region, traders from Yakutsk take its fur to the Chukchee fair on the Anui river. However, the Yukaghir hunters in some years kill single representatives of these species. Thus, in 1901, my interpreter killed a wolverene on the Korkodon River, and the footprints of a lynx were shown to me in the same year on the Omolon River.

The most important fur bearing animals hunted are the varieties of the fox (*Canis vulpes*), red, gray, dark gray and black, Yukaghir caxa′le, ni′ĕtle or no′do, and the Arctic fox (*Canis lagopus*), white and blue, Yukaghir, nya′unikliye. The *Canis vulpes* is a forest animal but occasionally invades the tundra in search of food. The polar traveller Wrangell once met a red fox on the ice of the Polar Sea, 100 verst from the coast.[2] The Arctic fox is a typical tundra animal but in hunting for mice and lemmings it visits the forest region. A Yukaghir told me that he once found an Arctic fox in a fox trap on the Korkodon River, 1500 verst to the south of the forest limit. The polar fox visits also the sea ice to pick up the remains of the polar bear's meals.

The percentage of foxes of dark color is very low. The fur traders of

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[1] See Slovtzov, Historical Survey of Siberia (Istorieheskoe Obosreniye Sibiri) St. Petersburg, 1886, part. I, p. 168.

[2] See F. von Wrangell, "Narrative of an Expedition to the Polar Sea in the Years 1820—1823," Russian Edition, St. Petersburg, part II, p. 159.

the Kolyma district estimated it as 15 foxes of grey varities and 2 black ones to 1,000 red foxes. The blue variety of polar fox is very rare on the Yukaghir tundra. The average proportion is estimated as one blue to 1,000 polar foxes. The blue fox is more numerous on the Chukchee peninsula and on the eastern coastal regions of northern Siberia.

There are different methods of hunting foxes. The most common is by dead-falls, a method learned from the Russians. Before the advent of the Russians there were in the Yukaghir country foxes in such quantity that in case of need they were easily killed with clubs. A single Yukaghir may have from 100 to 300 traps put up on the river banks at intervals of 200—600 meters, and it is estimated that 10—15 traps may give one fox during the winter. The traps are inspected in October and in March and April.

The Yukaghir seldom use self-acting bows as do the Yakut. The Yukaghir hunt foxes with the help of a hunting dog who overtakes and kills foxes. The hunting dog discovers the foxes' burrows. The hunter then closes all the openings of the burrow except two and putting a burning stick into one compels the fox to run out through the other, where the dog is ready to seize it. The Tundra Yukaghir goes hunting on a reindeer sledge. He tracks the fox and when he overtakes it he kills it with a club. The Yukaghir do not use the gun for hunting foxes. The reputation of the native as a good shot is much exaggerated. He misses a running animal. The Polar Yakut hunt foxes on horseback.

The polar foxes are hunted by the same methods as the common fox. The number of polar foxes on the Kolyma tundra is not very great. They are much more numerous on the Indighirka, Yana and Lena tundras. From the Verkhoyansk District the fur traders export yearly from 15,000 to 20,000 skins of the polar fox.

The second in importance of fur-bearing animals is the squirrel, (*Sciurus vulgaris*), Yukaghir yo'dodjube, and in the Tundra dialect le'rčiyeñ. I pointed out the localities which were formerly inhabited by the sable.[1] The same localities are still inhabited by the squirrel. It is hunted with old fashioned firelock guns and to a certain extent with snares and automatic bows. Two or more hunters depart on dog sledges, on horseback or afoot. The Yukaghir going with sledges takes only a few dogs which carry their food, sleeping skins and other necessary articles. The hunters themselves go on foot, sometimes on snowshoes of netted thongs or on skis. Poor people who have no food for dogs start out on foot with provisions and guns on their backs, snowshoes under their arms, and a staff or a spear in their hands. People of greater means, i. e. the good hunters, hire from the Yakut horses for their hunting expeditions. Some of the hunters take with them besides guns, a bow and arrows with blunt points made of bone so as not to spoil the squirrel's

[1] See p. 380.

skin. Poor men hunt with bow and arrows only. But this occurs very seldom at present. For shooting squirrels, the Yukaghir use special small shot. When the squirrel is in its nest, the hunter knocks on the tree and the animal appears on the tree. Quite often there are several squirrels in one nest in order to warm one another during the cold season. Yakut and Russian hunters catch squirrels by snares made of horsehair attached to a long staff. The hunter endeavors to catch the head of the squirrel with the snare. A good hunter may kill about 500 and more squirrels in a winter. About 90,000 squirrel skins were exported annually from the Kolyma district in the years 1900–1902.

Less important fur-bearing animals are the ermine (*Putorius ermineus L.*), gray wolf (*Canis lupus L.*), bear (*Ursus arctus*), polar hare (*Lepus arctus*), polar bear (*Ursus maritimus*) and otter (*Lutra vulgaris L.*). The ermine, Yukaghir ču'llol, is caught only by automatic bows, and about 10,000 skins are exported anually. The wolf, Yukaghir ko'diel, is mostly met on the tundra where it hunts reindeer, wild and domesticated. Reindeer breeders have to defend their herds against the wolf. The wolf is hunted on the tundra mostly with lassoes. Two men on racing reindeer harnessed to light sledges run after a wolf until they catch it with a thong tied with a running noose. The Yakut put up self acting bows and Chukchee reindeer breeders use iron traps bought on the Chukchee peninsula from American traders. Wolf skins are not exported. They are used for trimming winter coats, caps, and mittens. The brown bear is often met, although the Yukaghir do not hunt it and kill it only occasionally. The Yukaghir have several names for the bear: i'ñličebon, i. e., the dreadful one; xa'xa, grandfather or old man; xaxate'ge (xa'ičietege in the Tundra dialect), the great-grandfather; axmu'releye xa'xax^{c}, the bare-footed grandfather; ke'nmegi to'lou, some other wild reindeer. The bear is called "barefooted" on account of his hairless soles. He is also called me'mečen, evidently a word of Tungus origin. The Tungus call the bear a'tikan, i. e. old man. Yukaghir kill the bear when they find its den, when it steals food from storehouses, or when it destorys deadfalls put up for foxes. When they find a bear in its den the Yukaghir kill it with spears through a hole made in the den. First they wake the sleeping bear. The Yukaghir claim that the bear does not attack a sleeping man.

The polar bear which lives on the islands and the ice of the Arctic Sea is hunted occasionally by the Russianized Yukaghir and other inhabitants of the mouth of the Kolyma River while going to the Bear Islands to kill seals for dog food. This occurs in winters when the summer supplies of fish are insufficient.

The polar hare furnishes meat and fur for winter clothing and is caught in small traps.

The otter, Yukaghir mu'djeñ, is very seldom met. It has its den on

great rivers as well as small ones, from where it may catch fish. It is not specially hunted. Sometimes it is found caught in a fox trap. On its trail between two rivers a self-acting bow is put up. When it is taken unawares on the river ice dogs are sent to fetch it. It sometimes happens that the otter steals into a fish trap and cannot get out, and thus is caught. When its den is found, which occurs very seldom, it is dug out like the fox.

War. *Armor and Weapons.* The ancient Yukaghir warrior, according to tradition, wore over his ordinary garment an armor consisting of rings made of reindeer antlers strung on elk sinew. His chief weapon in the open field was a spear made of an elk rib fastened to a shaft of birch wood. He had also a knife or dagger made of an elk rib. The warrior's bow had a loose string so that it could be quickly and easily stretched. The archer ordinarily erected a kind of fortification of a circle of upright sledges, called me'jin-koinbe [1] from behind which he shot his bone arrows until his two quivers were empty. When an attack was expected particular precautions were taken. A watchman, called i'čel, was put for the night on a high platform by the camp. His duty was to warn the warriors of the approach of enemies. One story tells how captive Tungus women in a Yukaghir camp helped Tungus assailants treacherously to kill the watchman and the sleeping warriors and to seize the camp.

Bow. The Yukaghir had and still have two kinds of bows (e'ye), a compound bow, o'uyed-e'ye, and a simple bow, uo'rped-eye, i. e. a boy's bow, for practise in shooting.

The compound bow was used by the Yukaghir in war as well as in the chase. After the Russians subjugated the tribes of northeastern Siberia they were prevented by the victors from waging war on one another and the bow was left only for hunting. But after receiving from the Russians firearms, (called by the Yukaghir ku'kud-e'ye, i. e., the devil's bow), powder and lead for making bullets, the Yukaghir almost abandoned the bow for hunting. Only when they break their clumsy firearms or lack powder or lead, do they resort to the bow.

Fig. 47 shows a Yukaghir compound bow. The stave, called e'yen-cāl, i. e., wood of the bow, is made of two kinds of wood; the flat outer layer is

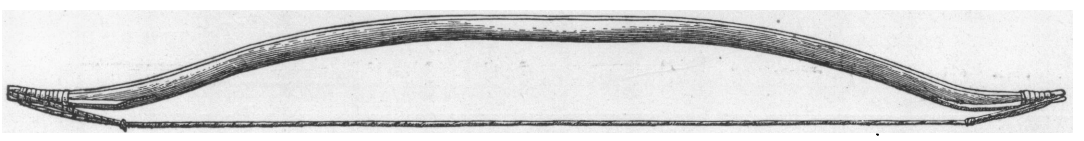

Fig. 47 ($\frac{70}{8457}$). Yukaghir composite bow.

of larch and is called e'yed-āle. The larch part has one flat surface towards the outer birch layer, the other surface being rounded. Āle is the word for the somewhat curved side of the larch tree, the side turned to the sun. The

[1] See above p. 260.

wood substance of this side is denser and more solid. The two staves are glued together with sturgeon glue. Before glueing, the outer side of the larch stave is repeatedly greased with reindeer fat and warmed before the fire. This makes it unbreakable and elastic. The outer, convex side of the birch stave is covered with sinew. A dorsal sinew of a reindeer, called yobo′godiñji, is hammered to a thin wide strip and covered with glue and laid on the outer side of the birch stave. This adds strength and elasticity to the bow. To the sinew strip, the skin of birch bark is glued. The middle of the stave for the grip, is made a little narrower and thicker. The string, Yukaghir ma′rai, is made of twisted hide of reindeer or young elk. For bracing the string there are inserted into the horns two notched bone ears, made of antler or of mammoth bone. The horns with the ears are called e′ye-mara′i-more′ye. The bone ears are glued into the horns and further secured by thongs. Fig. 48 shows a horn of the bow just described with set-in notched bone plate, crossing

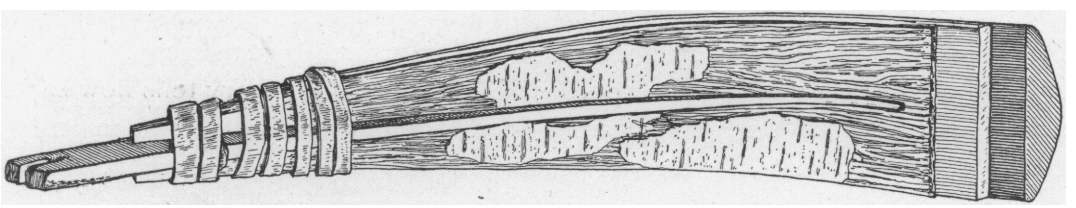

Fig. 48. Horn of bow shown in Fig. 47.

the four layers of the bow: birch bark, sinew, birch stave and larch stave. The bow string for war was loose in order that it could be quickly and easily stretched and handled. The hunter's bow must be strong and tight in order to increase the lenght and speed of the arrow's flight. It is not easy to string the bow of a strong hunter. To increase the tightness of a bow the Yukaghir, according to Middendorf,[1] used to lay on bone plates of the fossil rhinoceros. In olden times a young man had two bows, one for warfare and one for hunting. The former was light and small. The length of the string of the bow described is 161 cm., and that of the bow 164 cm.[2]

While shooting the bow is held vertically with the left hand, the arrow on the left of the bow. The primary release, thumb and first joint of the forefinger pinching the arrow nock, is used by the upper Kolyma Yukaghir. On the tundra I saw also the use of the Mediterranean release, fore and

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[1] Reise in den äussersten Norden und Osten Sibiriens, Bd. IV, Teil 2, p. 1375.

[2] B. Adler, Die Bogen Nordasiens, (Internationales Archiv für Ethnographie Bd. XV, 1902), p. 12, gives for the length of the Chukchee bow only 117—130 cm., while Bogoras gives for the length of a compound Chukchee bow 155 cm. (The Chukchee, p. 154). For a comparative study of the compound bow see the following works: Henry Balfour, The Structure and Affinity of the Composite Bow, (Anthropological Institute, London, Vol. XIX); John Murdoch, A Study of the Eskimo Bows in the U. S. National Museum (Report of the Smithsonian Institution 1884) p. 2; D. N. Anuchin, Bows and Arrows, (Transactions of the Tiflis Archaeological Congress, Moscow, 1887, in Russian); O. T. Mason, Bows, Arrows and Quivers, (Report of the Smithsonian Institution, 1893, Washington 1894, pp. 631—680).

middle fingers on the string held between them,[1] adopted, perhaps, from the Chukchee.

Leather bracelets made of the neck skin of the elk served as wrist-guards for protecting the hands from the rebounding string. The bracelets were called e′ye-mara′ye-eyu′nuye, i. e., the bow-string receivers, or nu′gon-to′bul‘, i. e., hand cover.

Arrows. According to the Yukaghir, arrowpoints were made in olden times of bone, ivory or wood; at present they are made also of iron. No mention was made of stone arrowpoints, although the Yukaghir told me of stone axes which their ancestors used. Unfortunately, as yet no excavations of ancient village sites have been made in the Yukaghir territory. Figs. 49, 50 show two feathered arrows with iron points. Arrows with such iron points

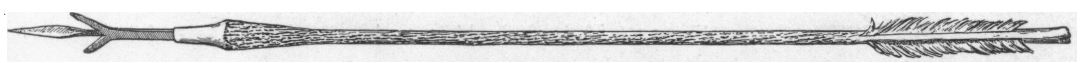

Fig. 49 ($\frac{70}{8289}$). Yukaghir iron pointed arrow.

Fig. 50 ($\frac{70}{8288}$). Iron pointed arrow.

are called aña′ye. Those with single point are called covi′ya. An arrow with a spear-like point made of bone is called yogo′ti. An arrow called lo′kkil‘ with a rounded head made of bone or wood is used for squirrel hunting in order not to spoil the skin, and also by boys while practising shooting. A large blnnt arrow is called čomo′l lo′kkil‘. The forms of the bone arrowpoints are the same as those of the Chukchee illustrated in Bogoras work.[2] I have not seen any barbed bone arrowheads.

Fig. 51 represents a quiver showing the outer embroidered side. It was carried on the back supported by shoulder straps. The warrior carried usually two quivers full of arrows. To protect the quiver from rain an extra covering was used, made of smoked reindeer hide or of fish skin, and likewise usually embroidered. The bow also had a rain-proof case.

Snowshoes and staffs. The Yukaghir skis, ugu′rče, were broader than those of other tribes of northeastern Siberia. The length of the ski (Fig. 52, *a*, *b*) is 149 c.m. and the greatest width 29 cm. Their large surface keep the hunter on hardcrusted as well as on soft snow. They are covered underneath with sleek reindeer leg skin, the hair turning backwards to assist in gliding along smoothly when ascending or descending a hill and on level places.

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[1] For the charactirization of various releases see E. S. Morse, Ancient and Modern Methods of Arrow Releases, (Bulletin of the Essex Institute, Vol. XVII, 1885, Salem, Mass., 1886), pp. 145—198.

[2] The Chukchee, Vol. VII of this series, p. 156.

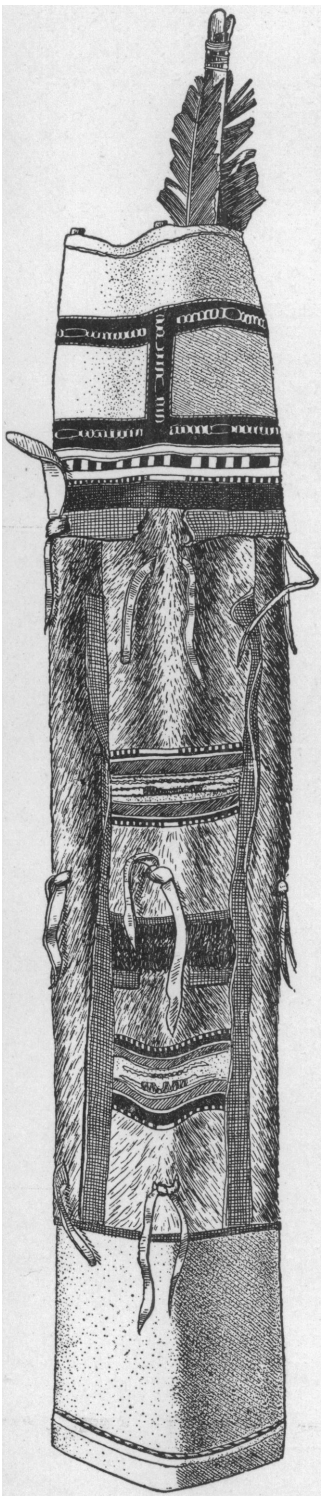

Fig. 51 ($\frac{70}{8426}$, *a*). Embroidered quiver.

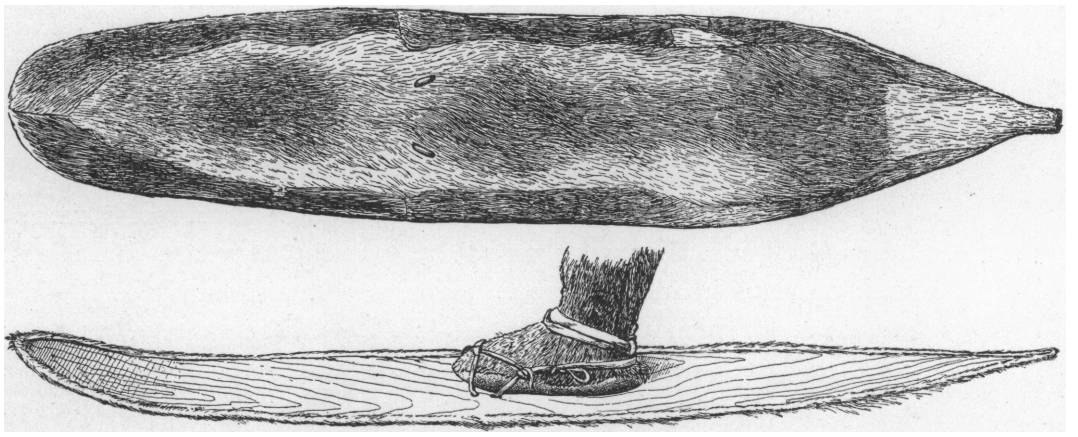

Fig. 52 ($\frac{70}{8332}$). Yukaghir snowshoe, (a) bottom view, (b) side view.

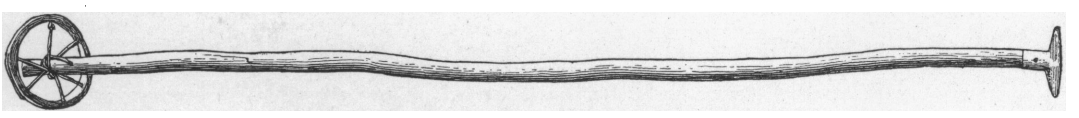

Fig. 53 ($\frac{70}{5176}$). Staff of snowshoe runner.

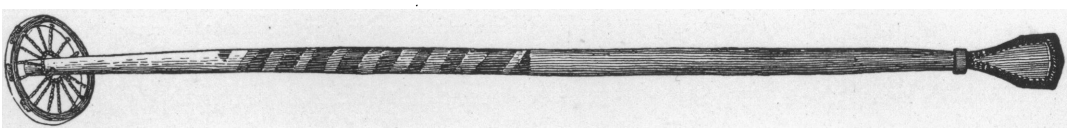

Fig. 54 ($\frac{70}{8333}$). Woman's staff.

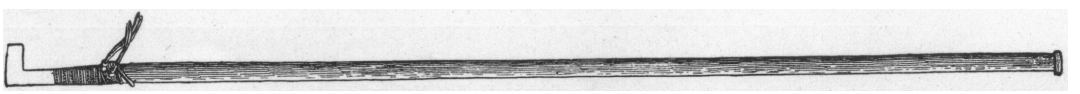

Fig. 55 ($\frac{70}{5186}$). Staff of reindeer rider.

Nordenskiold [1] obtained a snowshoe from the Chukchee that seemed to him too clumsy to admit any possible use until he saw a Japanese picture representing an Ainu driving a reindeer while on such skis, i. e., they served as a sledge. In a Yukaghir tale [2] a Tungus girl drags the body of her killed brother on skis, using them as a sledge.

The ski runner leads on a long staff, called yeri′dje (Fig. 53). It is provided on the lower end with a small hoop supported by thong spokes, called by the Yukaghir ā′be, which prevent it from sinking through the snow. The upper end is provided with two hooks, called by the Yukaghir nyo′rike, and used in climbing and descending steep mountains. Another staff without hooks (Fig. 54) is used by women while travelling in winter. It is called paipe-yeri′dje, i. e., woman-staff. Still another kind of staff (Fig. 55) is used by the reindeer Yukaghir and Tungus while riding on reindeer.

Netted snowshoes are also used by the Yukaghir and are called in the Tundra dialect qa′ramen-noils, i. e., raven's feet. They are made of a wooden frame, length about 65 cm. and width about 20 cm., interlaced with thongs. The foot rests on the middle of the net and is fastened with a loop of the same kind as is used on the ski.

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[1] A. E. Nordenskiold, Vega Expeditionens vetenksapliga iakttagelser utgifna: Stockholm 1882—1887, vol. II, p. 101.

[2] See p. 290.

XXII. — MATERIAL CULTURE. CLOTHING.

As has been seen before, a division of the Tungus living with the Yukaghir, namely the Tungus of Verkhne Kolymsk and of the Kolyma tundra have adopted the Yukaghir language, manners and beliefs. The reverse is true of the style of clothing, for the Yukaghir in general have adopted the Tungus type. Yukaghir clothing shows that cultural adoptions are not always limited to the most convenient and suitable objects, for the Tungus style of clothing is less suitable to the climatic conditions of the polar regions than is the ancient Yukaghir clothing of Chukchee style. The tight trousers, the apron covering breast and abdomen and the coat closely following the lines of shoulder and trunk, with flaring skirts and open flaps make a poor costume to withstand the frosts and winds of the far north. This type of costume was invented somewhere in the forests of the Amur region by a hunting and reindeer-riding Tungus tribe. The closely fitting garment is suitable for running on snowshoes and riding a reindeer in a more moderate climate than the Yukaghir country offers. In the polar region, however, the use of such a garment is a matter of fashion and not of comfort.

The costumes of both sexes are fundamentally alike. The distinctions are few. The general name for clothing is nier in the Kolyma and cu'kun in the Tundra dialect.[1]

Men's Garments. The front and back of a man's summer coat of the Upper Kolyma Yukaghir are shown in Fig. 56, *a* and *b*. It is made of curried and smoked reindeer skin. Two skins are used. They are seamed down the back and the collar and sleeves are made of the trimmings of the skins. Smaller coats are made from a single skin. In front are two pairs of leather strips to fasten the coat. The coat is too narrow to close over the apron, so that in winter the cold easily penetrates. The Tungus frocks gape still wider than those of the Yukaghir. The borders of the skirt, sleeves and collar are trimmed with strips of black calico and red flannel. The same type of decoration is used on the front flaps and on the back. The ornamentation of the flaps simulates pockets. The smoking of the leather renders the coat water-proof and prevents its shrinking. A coat is called ma'gil, and the one described is called pugo'le koi'pen ma'gil, i.e., summer man coat.

Fig. 57 shows a belt (yu'o) for a man's coat. It is worn while hunting.

[1] Such household objects as tent covers, bedding and cooking vessels are also called nier and cu'kun.

A small bullet bag (pu'led-a'but) ornamented with beads of three colors and dyed hair from the mane of an elk is attached. A powder measure and horn powder flask are usually attached to the belt. To facilitate running the hunter tucks the corners of the skirt under the belt and the coat recalls the cut of a dress-coat. The belt is ornamented with sinew threads wound around reindeer hair, by strips of cloth and by strips of black leather. The dye of the leather is made of ground willow charcoal mixed with sturgeon glue.

Fig. 56 *a* and *b* ($\frac{7}{8}\frac{9}{4}\frac{}{0}\frac{}{5}$). Man's summer coat of smoked reindeer skin.

The winter coat of the upper Kolyma Yukaghir is of the same style as the summer coat, but it is made of reindeer skins with the hair left on. On account of the scarcity of skins of wild reindeer, the Upper Kolyma Yukaghir obtain skins or ready-made clothing, mostly old and worn out, from the Tungus reindeer breeders, in exchange for squirrel skins, or as gifts.

Fig. 58 shows the back of a boy's winter coat made of a mountain sheep skin.

Figs. 59 and 60 represent men's coats of the tundra Yukaghir, made

of reindeer skins which are worn in winter as well as summer. They always wear furred reindeer skin clothing, as the tundra summer is rather cold. The only difference between the winter and summer clothing is the quality of the skins. In summer they wear old, worn out clothing. The cut of the tundra coat differs in some points from that of the Upper Kolyma. The tundra coats have an extra shaped piece on the back of the skirt which recalls

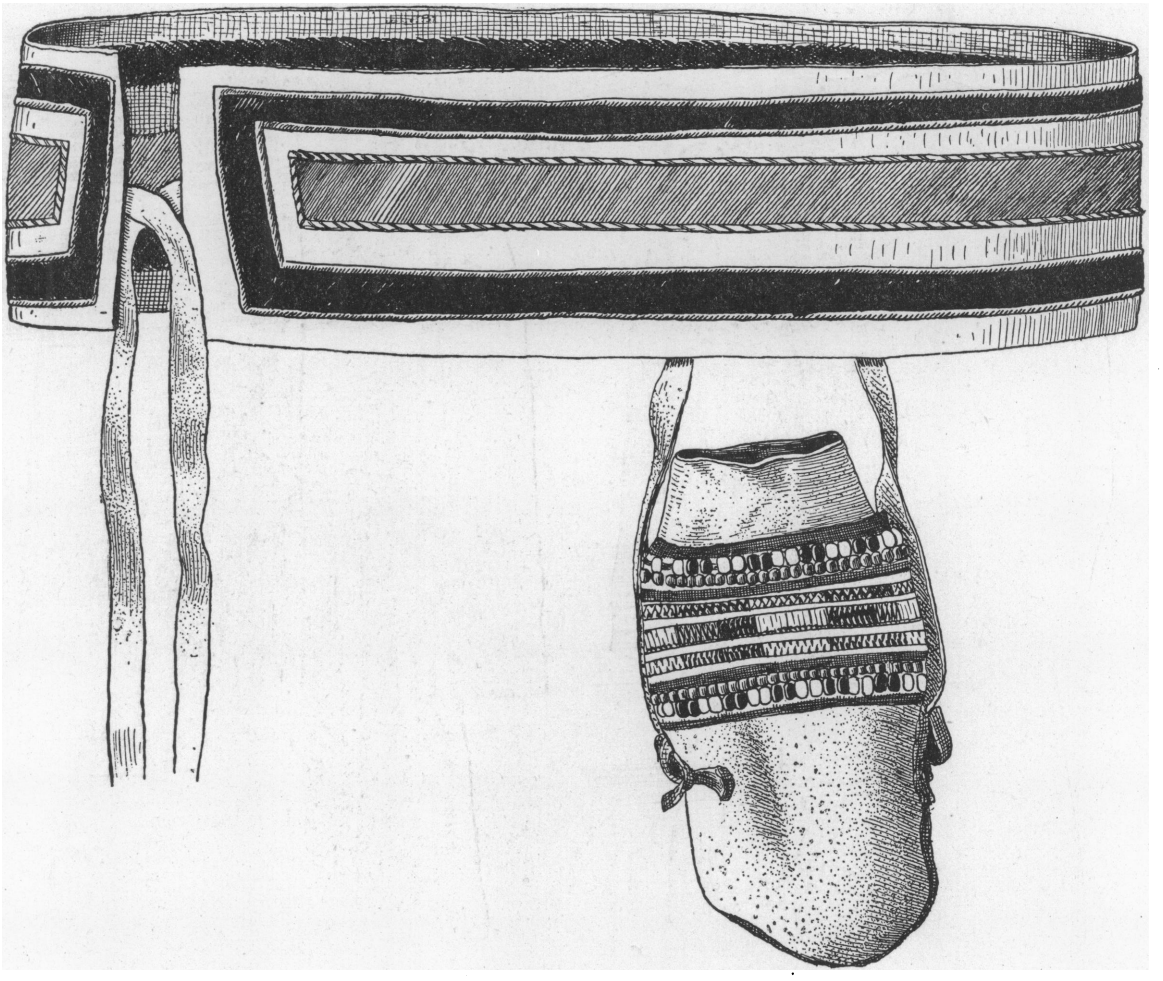


Fig. 57 ($\frac{70}{8288}$). Man's hunting belt with bag for cartridges.

the tail of the Eskimo coats or that of a Koryak man's funeral coat.[1] Were it not for the additional strip of skin on the skirt of the coat it might be said that the coat is fashioned in accordance with the natural contour of the material. Of course it is probable that the additional strip is adjusted to the form of the skin. Another pecularity of these coats consists in the absence of the collar which is found on the Chukchee shirt-coats. During

[1] See The Koryak, Vol. VI of this series, Part I, p. 106, Fig. 44, and Part II, p. 704, Fig. 225.

the winter the Tundra Yukaghir wear a special overcoat made of full-haired fall or winter reindeer skins, with an under coat made of short-haired summer skins or of fawnskins. The under coat is worn with the soft fur next to the body. The skirts of the coats are trimmed with strips of dog or cow skin. The cowhide is obtained from the neighboring Yakut. On the back of the coat Fig. 59 are attached two strips with tassels made of seal-skin. Such strips are found only on some of the men's coats and not on women's coats.

Fig. 58 ($\frac{70}{1174}$). Boy's winter coat of mountain sheep skin.

Fig. 61 shows another man's coat with tassels on the back. It is ornamented on the front with beads and appliqué work consisting of small horizontal strips of painted leather. On each side there is also a disc of hammered silver.

Yukaghir trousers are either short or long. Fig. 62 shows short winter trousers with the fur inside. They are worn with high boots or stockings.[1] Fig. 63 represents long winter trousers for short boots. To both kinds of

[1] See p. 405.

trousers is attached a belt called igidie'ne. Rings made of reindeer hoofs are attached to this belt for carrying sheaths for hunting and carving knives. The belt igidie'ne is regarded as the most characteristic part of the Yukaghir costume. In tales dead Yukaghir warriors are recognized by their belts.

Summer trousers are made of curried and smoked reindeer leather.

Fig. 59 ($\frac{70}{5687}$). Man's reindeer skin coat of the Tundra Yukaghir.

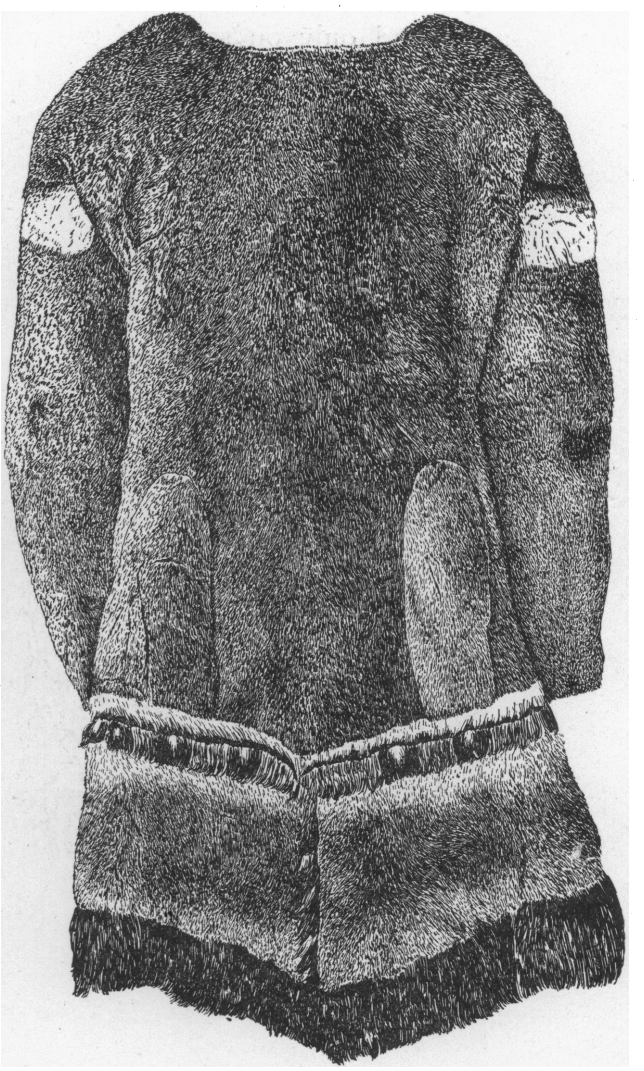


Fig. 60 ($\frac{70}{8386}$). Man's reindeer skin coat of the Tundra Yukaghir.

Long-legged leather stockings are worn with short trousers. These stockings are tied to the belt by leather thongs. There are also special leggings worn with short boots and tied to the short trousers. Trousers, particularly the leather ones, are narrow and fit the calf snugly.

Winter boots (Fig. 64) are made of reindeer-leg skin, the hairy side out. The general name for boots is mu're. Boots made of reindeer-leg skins are

called no′ngar-mu′re.[1] The leg of the boot, Fig. 64, is made of fur of two

Fig. 61 ($\frac{70}{5181}$). Man's coat. Tundra Yukaghir.

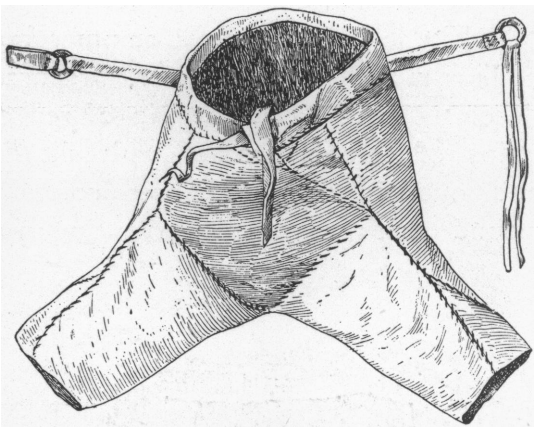


Fig. 62 ($\frac{70}{8405}$). Man's short winter trousers.

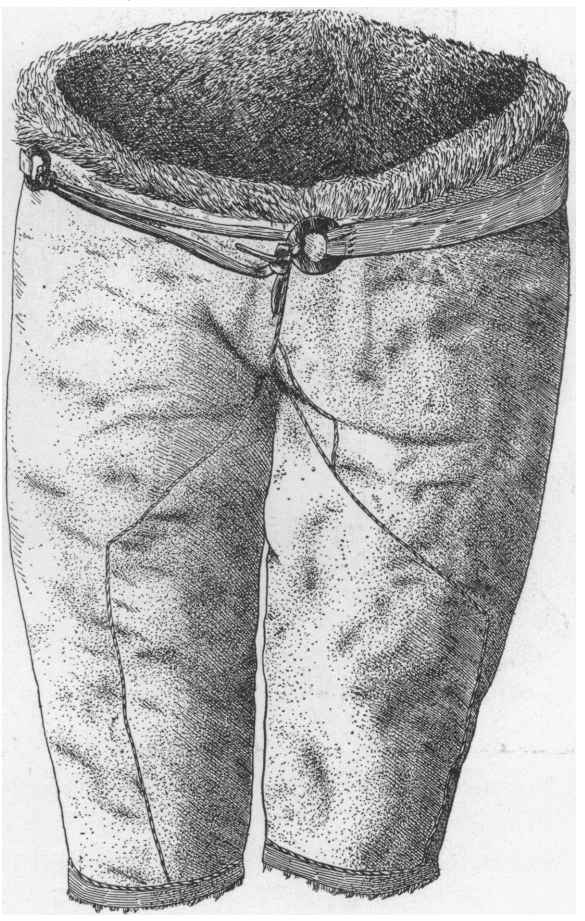


Fig. 63 ($\frac{70}{8891}$). Man's long winter trousers.

colors, black in back and grayish white in front. A strip of skin is sewed around the edge of the sole. To this is attached the piece covering the top of the foot. The top of the leg is ornamented with three strips of cloth (one black and two red) and a strip of leather. The soles are made from the neck skin of elk. At present, however, they are mostly cowhide furnished by Yakut traders.

[1] From noil, leg and xar, skin.

The Tundra Yukaghir also use thong-seal (*Erignathus barbatus*) soles purchased from the Chukchee.

Fig. 65 represents a summer boot made of curried reindeer skin, called no′ǰiner-mu′re (from no′ǰiner, prepared reindeer skin). The top of the leg is decorated with a wide strip of red cloth or flannel on which are appliquéed strips of colored leather with slit embroidery, caught-in strips, wound strips and overlaid seams. Three colors are used, black, red and white. The wound strips are made from the dyed mane of elk or reindeer bucks. The

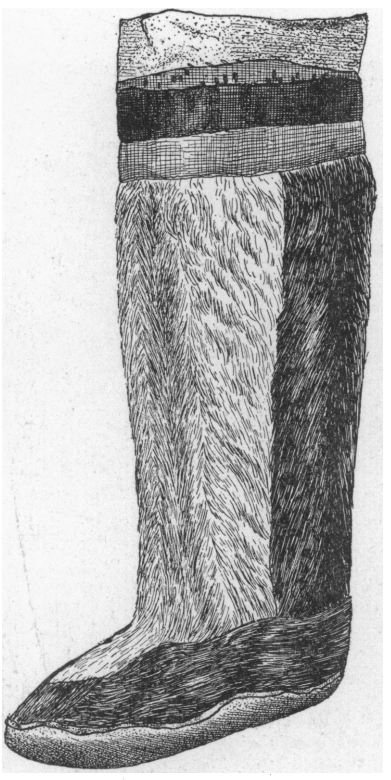


Fig. 64 ($\frac{70}{8421}$). Man's winter boots of reindeer skin.

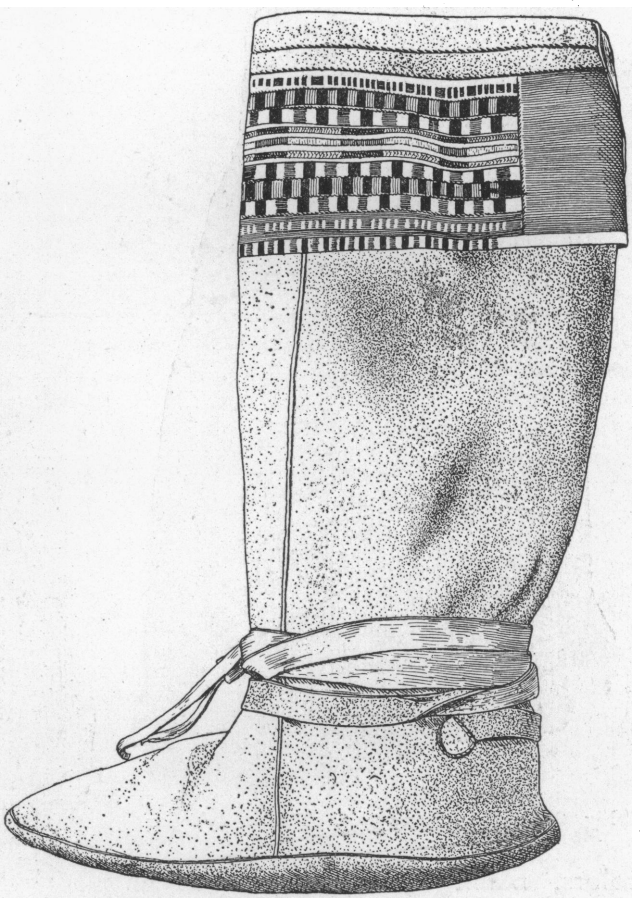


Fig. 65 ($\frac{70}{8199}$). Man's summer boot of dressed reindeer skin.

cut of this boot is quite different from that of the winter boot previously described. The sole is made of dressed skin from the neck of the elk. This kind of summer boot is worn without stockings but grass insoles are inserted.

The Yukaghir at present often wear waterproof boots made of dressed horsehide, obtained from the Yakut. They are called parana′-mu′re, i. e., raven's boots because of their black color.

Figs. 66–68 represent men's aprons (nige′yebun). Fig. 66 is a common apron. An ornamental effect is produced by sewing together strips of skin

of different colors. The upper part is made of reindeer leather, the lower of reindeer-leg skins. The borders of the lower part are trimmed with dog fur. The apron is tied with leather strips at the neck and waist. The upper part is so narrow that when the coat is not tied together, the naked body may be seen. Fig. 67 represents an ornamented Yukaghir apron. The orna-

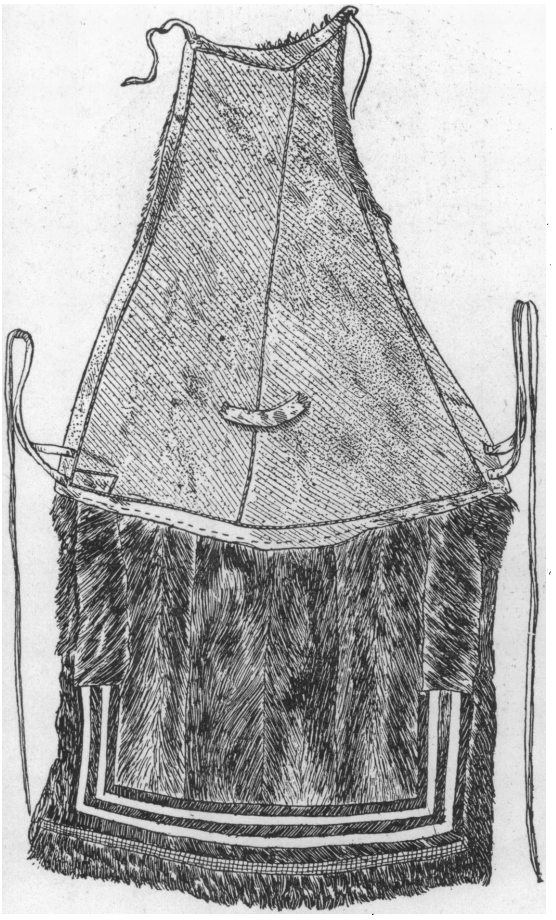


Fig. 66 ($\frac{70}{8270}$). Man's ordinary skin apron.

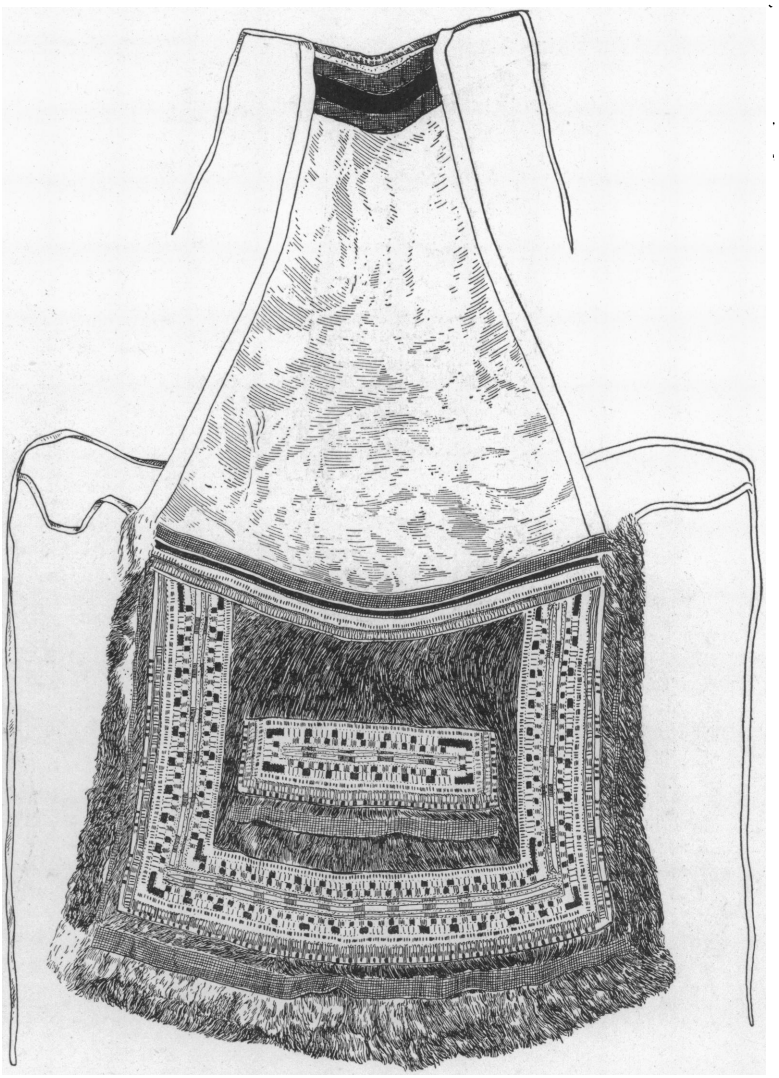


Fig. 67 ($\frac{70}{8200}$). Man's apron decorated with strips of colored leather.

mentation consists of colored leather squares, caught-in strips, twisted strips and sinew seams. The lower border is of squirrel fur. Fig. 68 represents an apron with decorations of the Tungus type. Beads are added forming lines, circles and curves.

Figs. 69 and 70 show two men's fur caps (mo′go in the Kolyma and mo′ño in the Tundra dialect). The cap shown in Fig. 69 is made of reindeer skin with short hair, ornamented with beads and trimmed with squirrel fur.

The ends of the cap are joined by a band of cloth of such length that when it is crossed under the chin and pulled over the crown of the head it will hold the cap in place. The Kolyma Yukaghir usually make men's caps of squirrel skins and trim them with squirrel tails. Fig. 70 shows a pattern of a cap cut from birch bark. Below is one of the side parts, above is the top part.

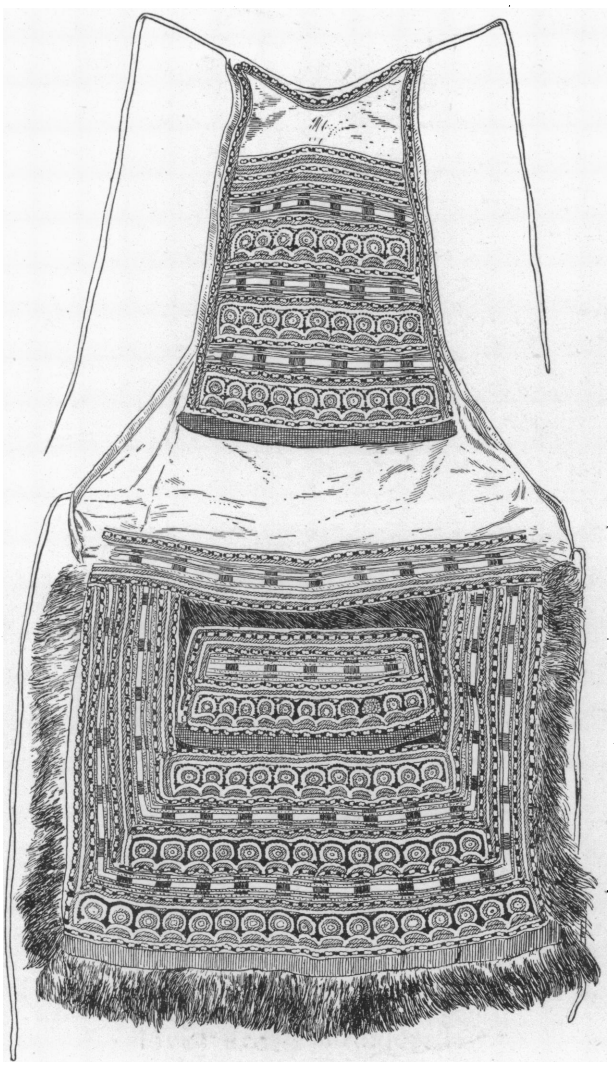


Fig. 68 ($\frac{79}{5169}$). Man's apron decorated with colored leather and beads in Tungus style.

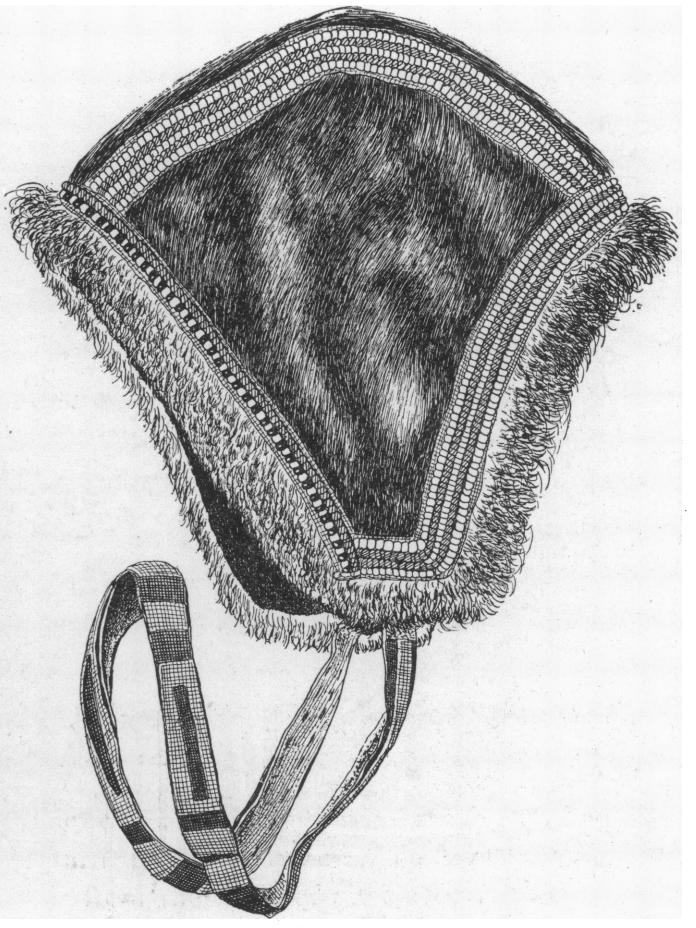


Fig. 69 ($\frac{79}{5179}$). Man's reindeer skin cap trimmed with beads and bands of squirrel fur.

Fig. 71 shows a man's cap of the Tundra Yukaghir type, made of the skin of a polar fox and trimmed in front with wolf skin. This cap has two leather strips which are tied under the chin. The ears of a polar fox are sewed to the top for decoration.

Fig. 72 represents a fur chin and cheek protector (numǰet-a'mdiye) of the Kolyma Yukaghir. The outer side of the skin is covered with cloth of two colors.

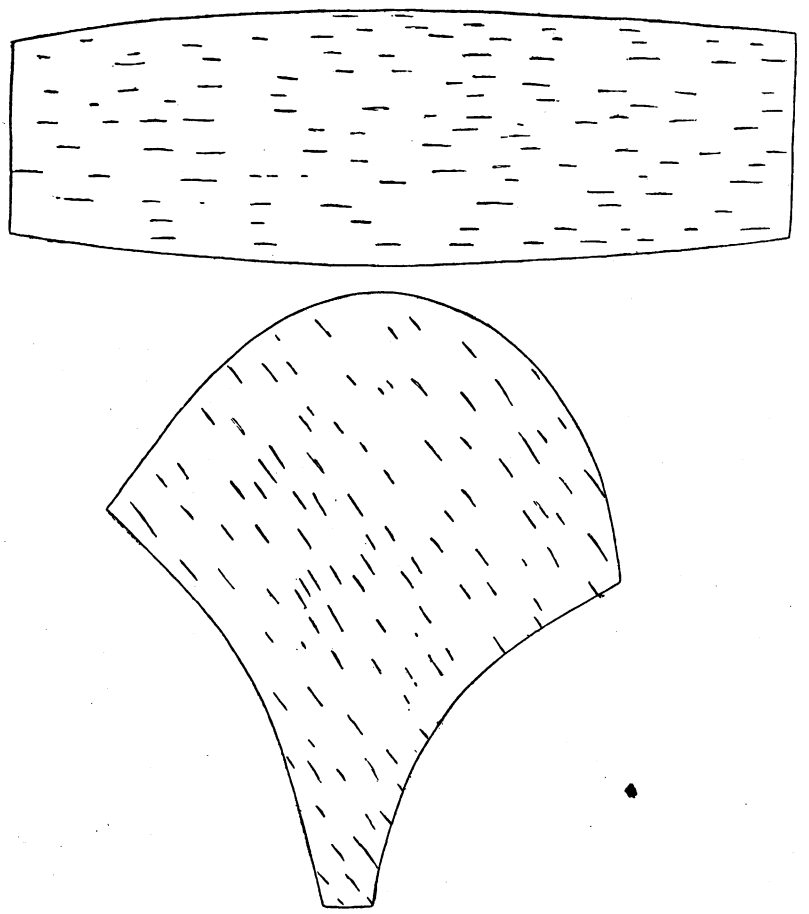


Fig. 70 ($\frac{70}{8091}$). Birch bark pattern for man's cap.

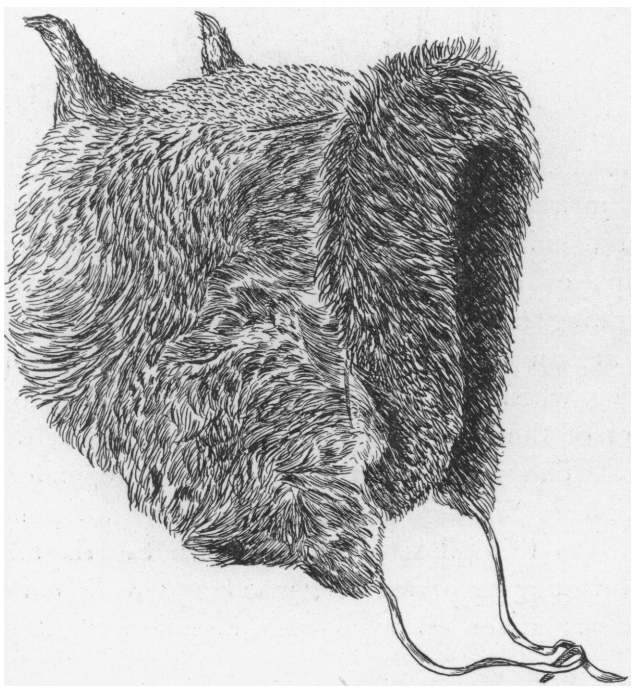


Fig. 71 ($\frac{70}{8410}$). Man's fox skin cap of Tundra Yukaghir.

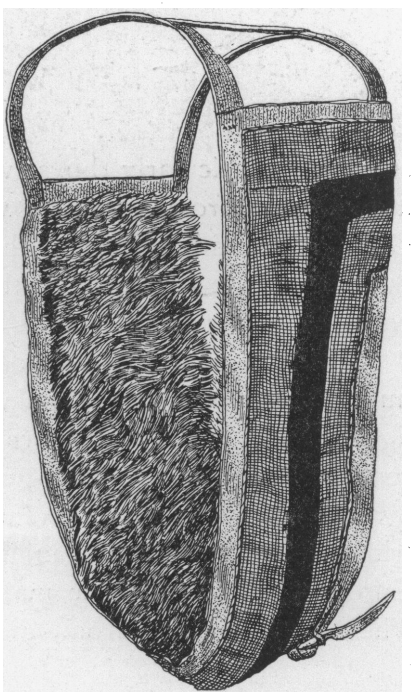


Fig. 72 ($\frac{70}{8242}$). Fur and cloth chin protector.

Fig. 73 represents a boa (nemara′i in the Kolyma n·a′mirukun in the Tundra dialect) made of hare tails. The tundra boas are usually made of tails of polar fox. The Yukaghir of the Upper Kolyma make them of squirrel tails.

Mittens are usually made of reindeer leg skin, but in imitation of those of Russian traders, the Yukaghir women make mittens also of dressed leather lined with fur, — squirrel, fox or hare. Fig. 74 shows such a mitten. It is trimmed on the outside with fur and has a slit through which the hand can be thrust in case of need. Mittens are called molo′je. Fig. 75 shows a glove (ca′rxun-molo′je, i. e., mitten with fingers) also made Russian fashion, of dressed leather. Nowadays all the young people wear gloves during the

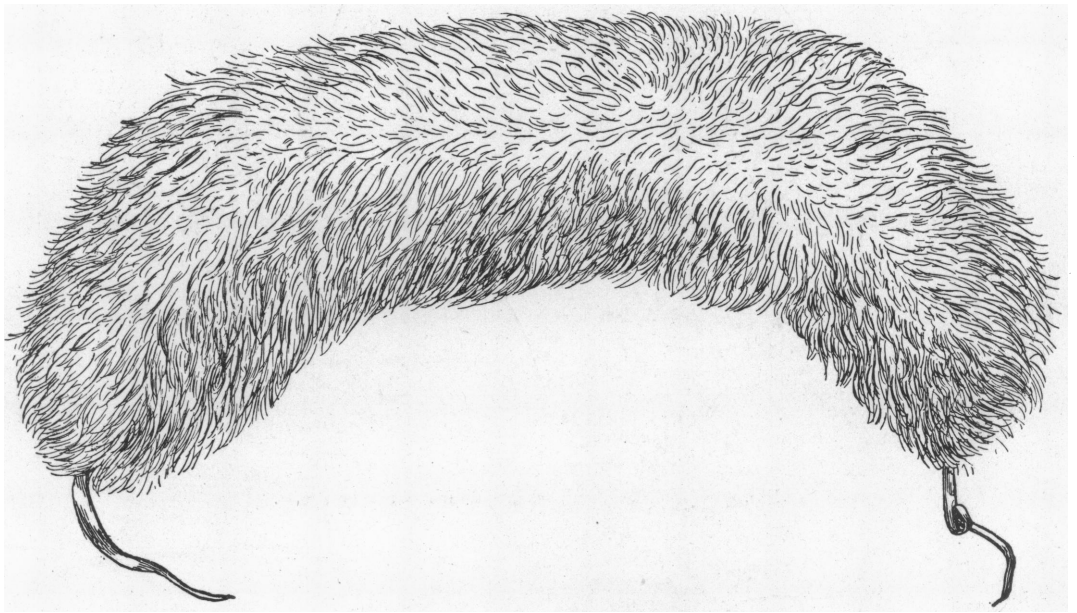


Fig. 73 ($\frac{70}{8990}$). Boa of hare tails.

summer, particularly boys while paddling canoes. Young men receive them as presents from girls or wives in return for ornamented tailoring boards- Gloves are embroidered with colored hair from the neck of an elk or reindeer. buck and are trimmed with strips of black and red cloth. Fig. 76 shows patterns of birch bark used for cutting mittens and gloves.

Snow-goggles. Snow-goggles are an unfailing appurtenance of a Yukaghir hunter's costume in the polar spring when the blinding snow reflects the sun's light during twenty or more hours of the day. Painful snow-blindness is the result of not using snow-goggles. They must, therefore, be an independent invention of the circumpolar peoples. Snow-goggles are used by all polar tribes from the American Eskimo to the tribes of northwestern Siberia and Europe. The Yukaghir make snow-goggles of leather, wood and birch bark. They also acquire from the Tungus silver snow-goggles hammered out of

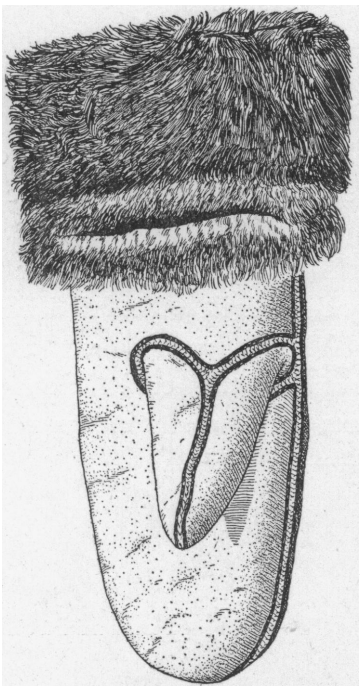


Fig. 74 ($\frac{70}{8477}$). Mitten of dressed skin lined with fur.

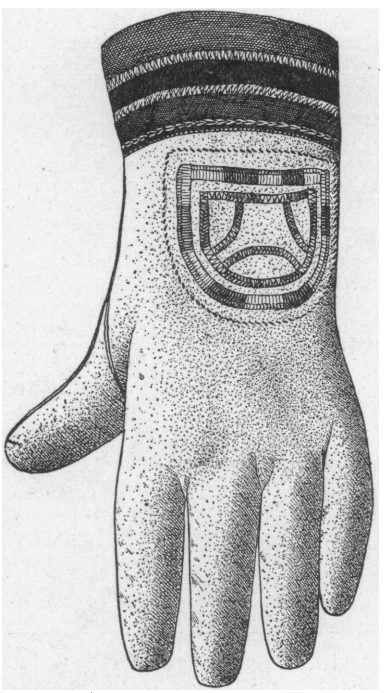


Fig. 75 ($\frac{70}{8294}$). Glove of dressed skin trimmed with cloth and hair embroidery.

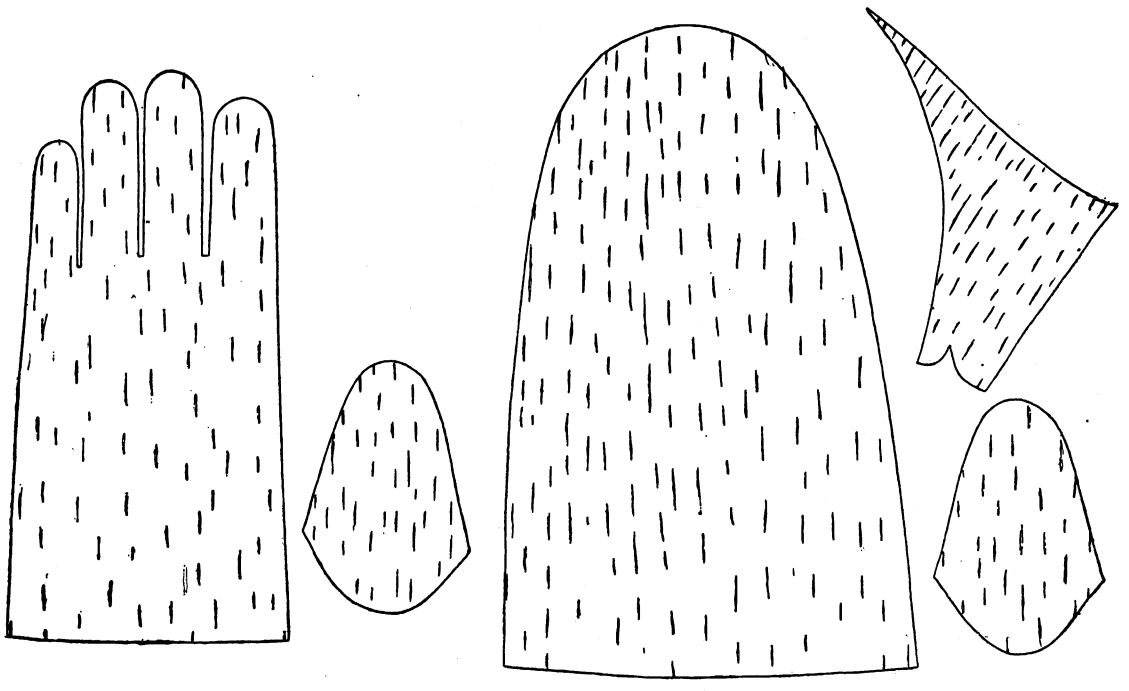


Fig. 76 ($\frac{70}{8298}$). To left, two-piece birchbark pattern for glove; to right, three-piece birchbark pattern for mitten.

silver coins by Tungus silversmiths. Fig. 77 shows such silver snow-goggles with leather bands covered with cloth which pass around the head under the cap. The Yukaghir also purchase snow-goggles made by the Yakut of woven horse-hair, or the glass goggles of the Russian traders. Snow-goggles are called a′ñǰed-ai′bi, i. e., the shadow for the eyes. The Yakut goggles are called Ya′xad-a′ñǰed-ai′bi and glass goggles are called ce′ud-a′ñǰe, i. e., stone-eyes.

Women's garments. The woman's coat differs very little from the man's coat.[1] The woman's summer coat (pai′pen-pu′goce-ma′ǧil) of curried reindeer leather is little longer than that of the man. While a man's coat does not reach the knee, the woman's coat comes down to the calf. Some girls ornament both front borders of their summer coats with brass buttons obtained

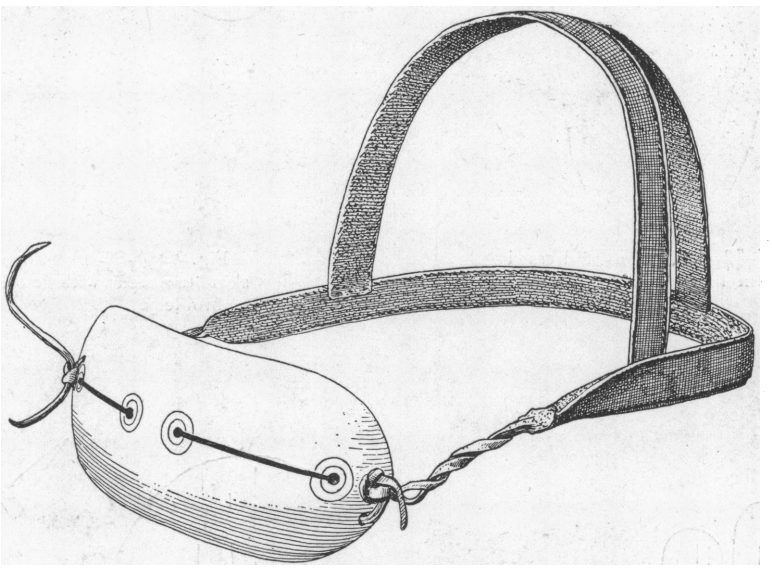


Fig. 77 ($\frac{70}{5160}$). Silver snow goggles of Tungus manufacture.

from Russian traders. The woman's winter coat is usually ornamented with rows of beads above the ordinary fur trimming. Fig. 78 shows a woman's winter coat (pai′pen-čie′ǰen-ma′ǧil), with the fur inside, trimmed with the usual ornamentation and fur strips and further adorned with leather and fur tassels around the skirt. The Tundra Yukaghir women usually make their coats of white or light gray fawnskins. The Koryak make their funeral dresses of similar skins.[2] The distinguishing features of the Yukaghir woman's coat of the Tundra are two long leather tassels at each side of the coat. Fig. 79 shows the back of such a coat. A long tassel is sewed to each side of the back at the apex of a triangle made of alternate pieces of black dog fur and of red dyed sealskin. A similar striped band connects the bases of the two triangles. The red dye is made of the roots of an old larch tree boiled in

[1] See above p. 389.

[2] See The Koryak, pp. 106, 704.

water. The skin of a young seal is boiled in this dye. The lower edge of the coat is trimmed with a band of black dog skin. A dog is killed by clubbing. After the skin has been removed the body of the dog is covered with snow, on which is spread an old piece of dressed reindeer hide. This is given to the dog in exchange for its skin; otherwise, say the Yukaghir, the wearer of the coat would have bad luck.

Fig. 80 represents the side view of a tundra girl's coat. It shows the long tassels on the back. The front border is ornamented with horizontal

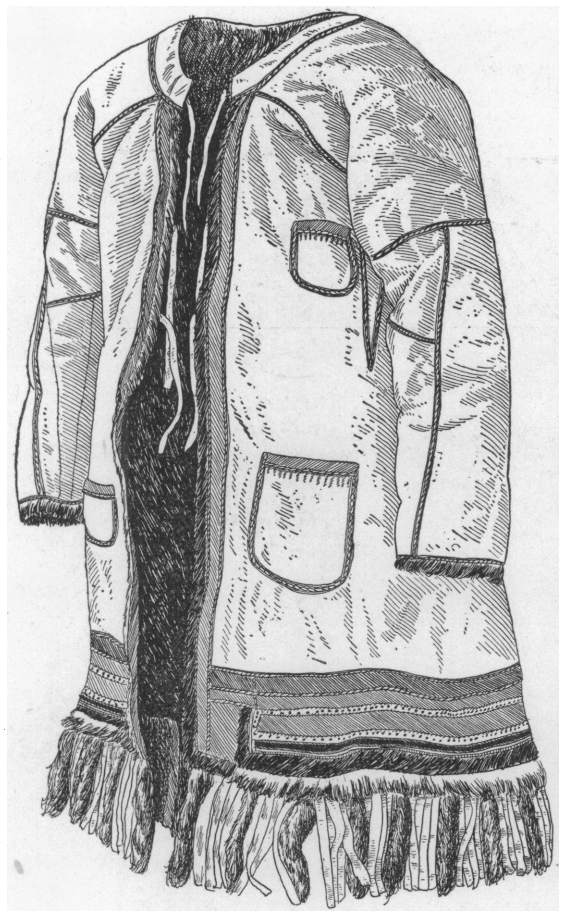


Fig. 78 ($\frac{70}{8408}$). Woman's winter coat of reindeer skin.

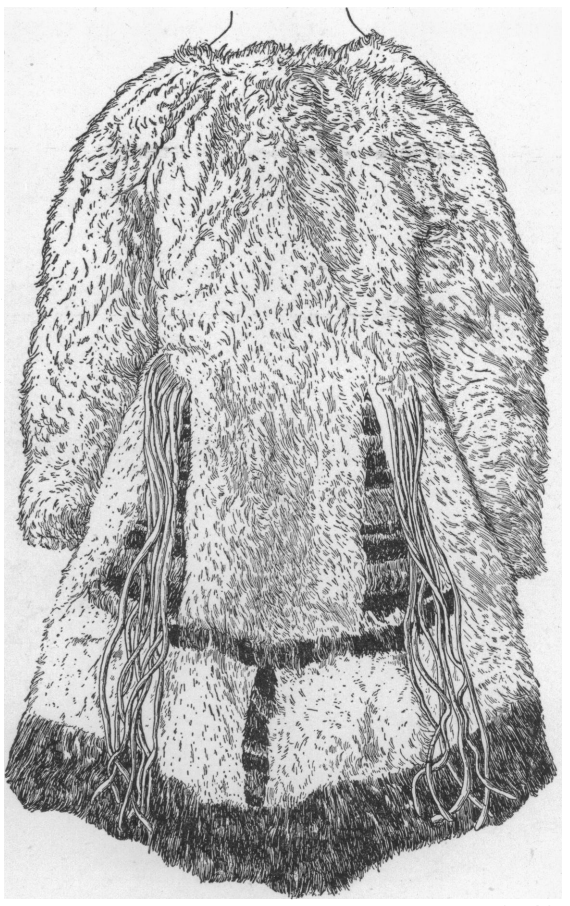


Fig. 79 ($\frac{70}{8852}$). Woman's coat of the Tundra Yukaghir.

bands of dressed reindeer leather, red cloth and dressed sealskin dyed black. The sleeves are trimmed with red cloth to which pieces or brass are attached. Beads and brass bells are fastened to the skirt border and to the ornamental band on the back.

The women's trousers (pa′iped-ōx) do not differ in their cut from men's trousers. Women rarely wear long trousers, but usually short ones with high boots or stockings. The Yukaghir are very reticent with reference to the name of women's trousers. Usually they do not call them by the name

pa′iped-ōx but o′rǰuol-nier, i. e., the middle or central clothing, or a′yin-xa′bik, i. e., that one which goes down.

Women's aprons are distinguished from men's chiefly by their ornamental tassels. The one shown in Fig. 81 is decorated with fur tassels, that in Fig. 82 with fringes made of reindeer hide. Fig. 83 represents an apron for

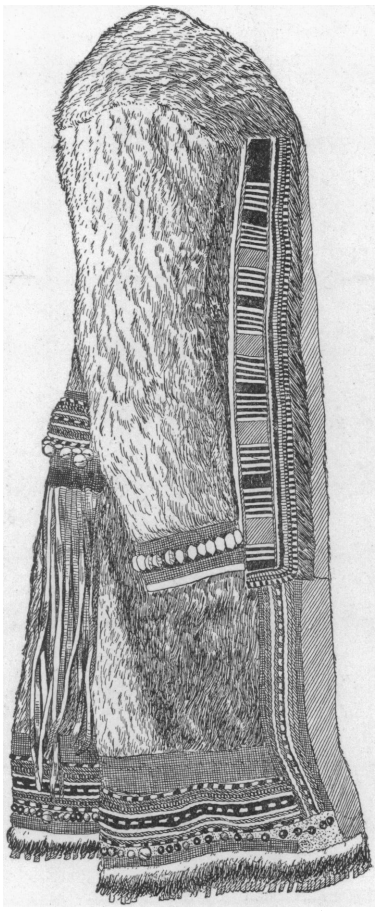


Fig. 80 ($\frac{7\,9}{5\,2\,1\,1}$). Elaborately trimmed coat of a Tundra Yukaghir girl.

Fig. 81 ($\frac{7\,9}{5\,6\,2\,0}$). Woman's apron of reindeer skin with fur fringes.

a young woman or girl which is decorated with various metal pendants in addition to the usual ornaments found on men's aprons (called nige′yebun-cori′le) and the ordinary hide fringe of the women's aprons (called abu′ǰe). At the lower edge of the apron, over the leather fringes are attached five brass bells called loñče. In the middle of the fur band are attached nine brass pendants (called nige′yebun-lu′dul, i. e., of the apron irons). Some of these

pendants have the form of human figures and are regarded as guardians of the young woman. The double function of the pendants makes it difficult to decide their original purpose. Either at the beginning they were amulets and later became ornaments to satisfy the aesthetic taste, or the reverse has taken place. But as these pendants were adopted from the Tungus together with the cut of clothing this question has to be investigated somewhere in the Amur River region.

A steel ornament called e′gniepun, in the form of a fish and ornamented

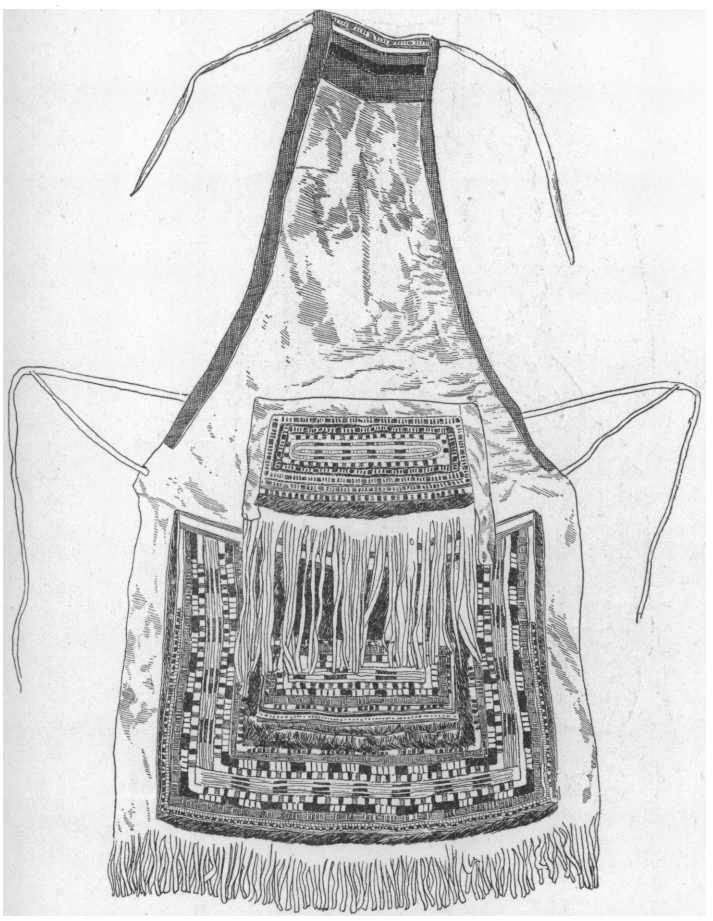


Fig. 82 ($\frac{70}{5195}$). Woman's apron with leather fringes.

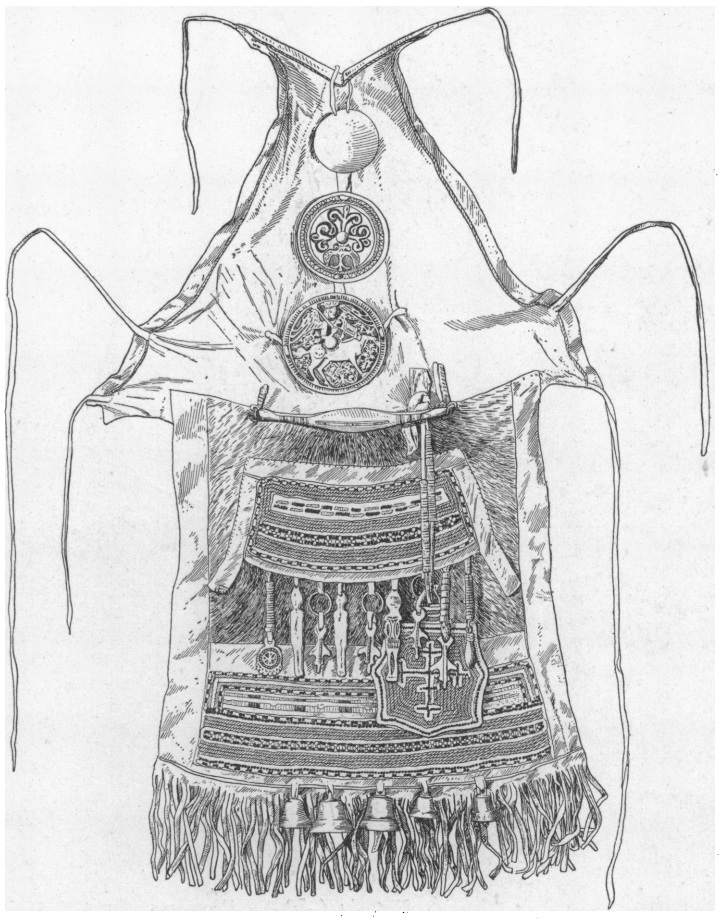


Fig. 83 ($\frac{70}{5190}$). Girl's apron with metal pendants.

with engraved lines, some of which are inlaid with copper is also used. It is regarded as a protector of women against stomach pains and pains connected with menstruation and childbirth.

Of the three discs on the breast part of the apron, the upper one is hammered out of a silver coin and is called me′lun-lu′dul, i. e., chest iron, or chest metal. The middle and the lower discs are made of brass or bronze and are called me′lun-poǰerxo′, i. e., chest suns. The middle disc has a conventional ornament and on the lower one, which will be discussed in the

chapter on art, is a representation of a winged rider on a headless horse.

On the left side of the apron is hung a beaded work-bag to which a needle case is attached.

Young Yukaghir women are very proud of their tinkling metallic ornaments which serve to announce their approach to their sweethearts.

Fig. 84 shows a curved brass piece which is tied around the neck. This brass piece is called to′nmun lu′dul, i. e., throat iron or throat metal, which

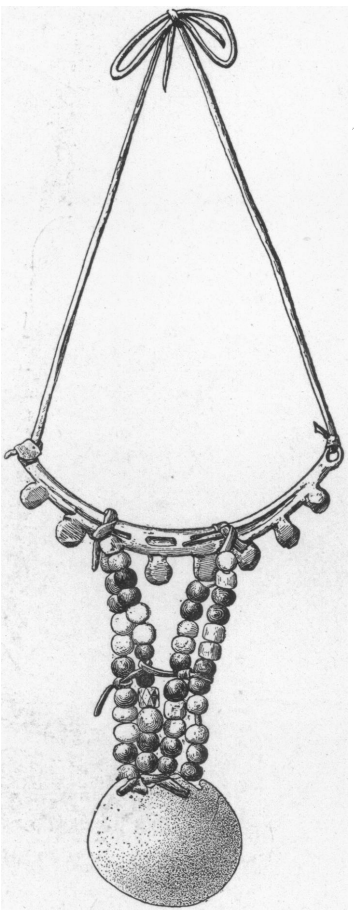


Fig. 84 ($\frac{70}{5640}$). Woman's silver neck ornament.

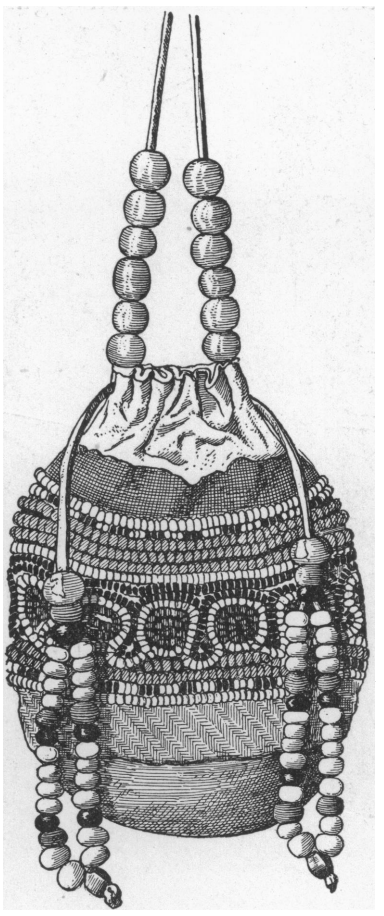


Fig. 85 ($\frac{70}{5627}$). Woman's tobacco pouch of cloth and leather.

is believed to protect the throat against cold. A silver me′lun lu′dul described above, is attached to the throat-protector by means of beaded thongs.

Fig. 85 represents a woman's tobacco pouch. It is made by sewing together different strips of cloth which are decorated with beads. The mouth strip is made of leather. A leather string with beaded ends passes through a hem at the upper edge and is used to close the pouch. It is worn around the neck attached to a beaded string short enough to allow it to rest on the chest.

Figs. 86–88 represent women's footwear. Fig. 86 shows a decorated high boot (mu′re) made of white reindeer leg skin with long fur stocking (mu′red-u′o) which is tied to the short breeches. Fig. 87 shows one of a pair of long legged fur boots which are worn without fur stockings and reach to the thighs. The legs are attached by strips to the short women's breeches. Fig. 88 shows a summer boot made of dressed reindeer hide. Between the

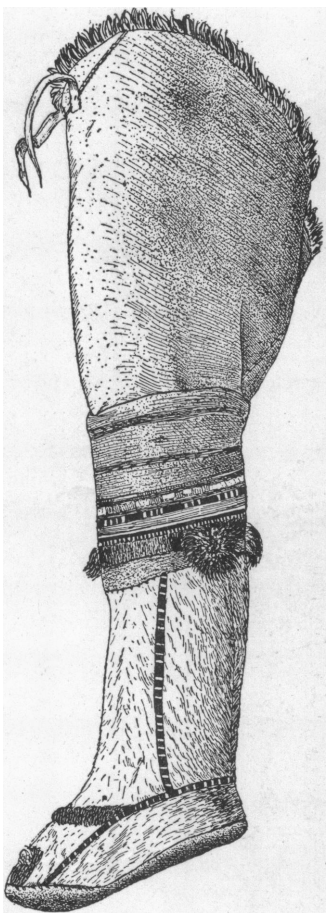


Fig. 86 ($\frac{78}{8855}$). Woman's high boot and stocking of white reindeer skin.

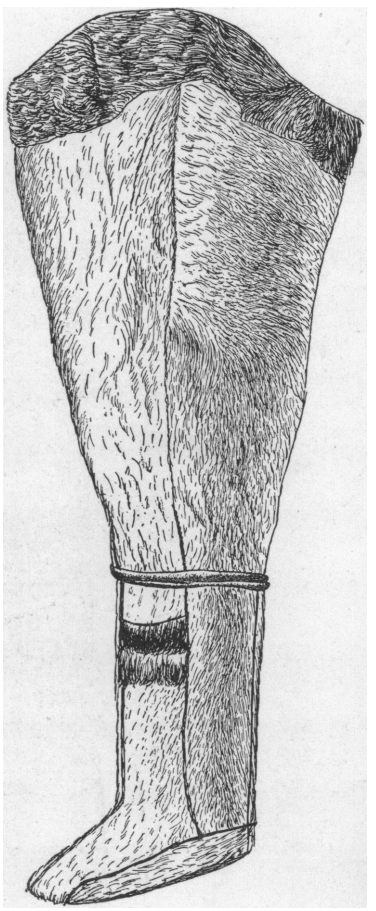


Fig. 87 ($\frac{70}{8357}$). Woman's high fur boot.

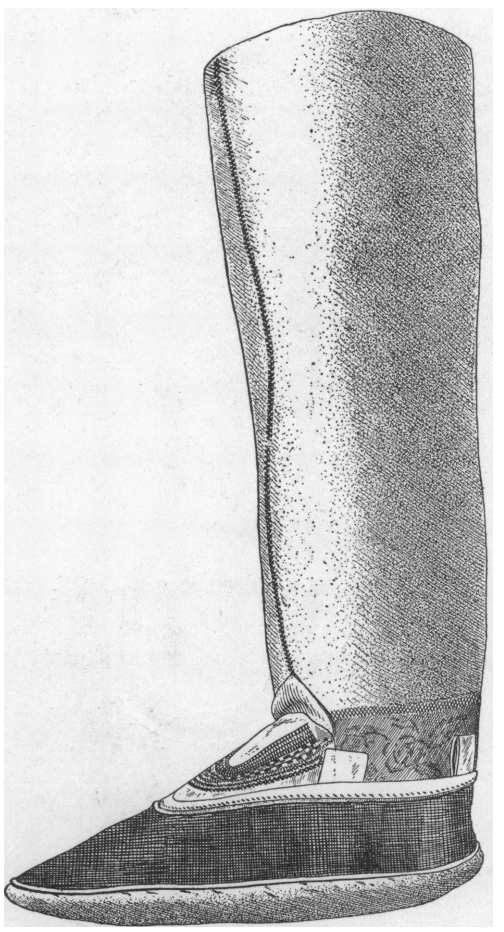


Fig. 88 ($\frac{70}{8488}$). Woman's summer boot of dressed reindeer hide.

sole and the vamp there is a strip of dark painted skin. The instep is decorated with silk embroidery.

In Figs. 89, 90 are shown two woman's caps (pai′pen-mo′go) of the Upper Kolyma Yukaghir with decorations of the genuine Yukaghir type. The ornamentation consists of squares of black and red leather alternating with uncolored squares; of caught-in strips of dyed dog's esophagus caught in by white chamois; of strips wound with white and red dyed hair from the mane of a reindeer buck or elk, and of sinew seams. The caps are trimmed

with squirrel fur. The same kind of fur forms the top and the middle part of the cap.

Fig. 91 represents a woman's cap with decorations of Tungus fashion. Beads of three colors and silver pieces are added to the colored leather strips and wound hair-strips. Women's caps are sometimes trimmed with fox skins.

Figs. 92 and 93 show two ornamented caps of Tundra Yukaghir women (ni′melenǰe pai′pen mo′ño). The decorations consist of black and red dyed

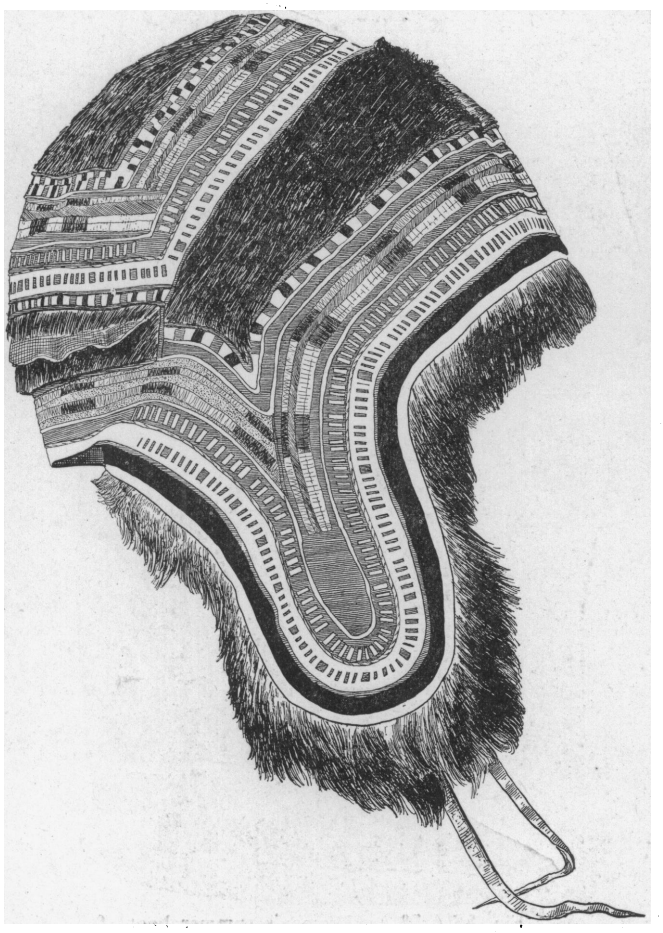


Fig. 89 ($\frac{70}{8198}$). Woman's embroidered cap of the Kolyma Yukaghir.

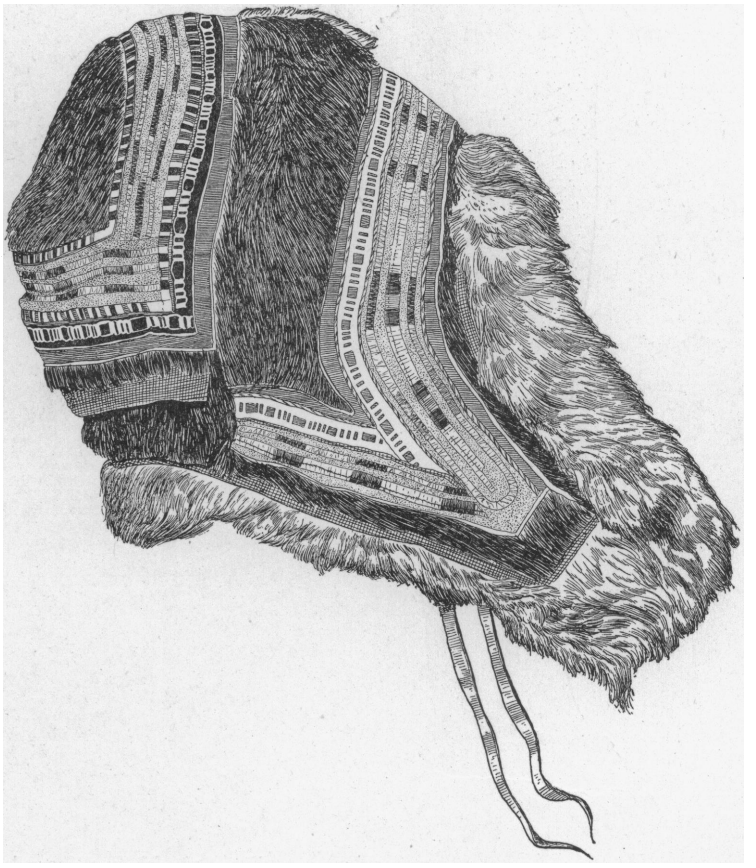


Fig. 90 ($\frac{70}{8198}$). Woman's embroidered cap.

leather strips, of strips of alternating squares of red and white leather, of wound strips and sinew seams. The fur trimming is of dog skin. There are no squirrels on the tundra. Trimmings of wolf or fox skins are used. The Tundra Yukaghir women paint leather black by rubbing it with charcoal and covering this with sturgeon glue. The red dye is made of a decoction of alder bark in which the leather strips are boiled.

The cap Fig. 93, has a hole in the top called eku and the cap is called eku′enǰe·mo′ño. Such caps are worn by married women.

Fig. 94 shows a wooden comb, which young men make for girls or

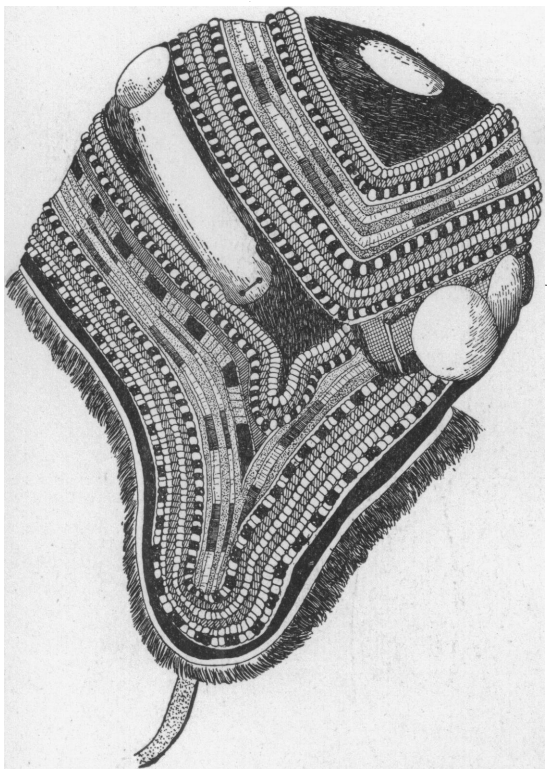


Fig. 91 ($\frac{70}{5187}$). Woman's cap with decoration in beads and silver.

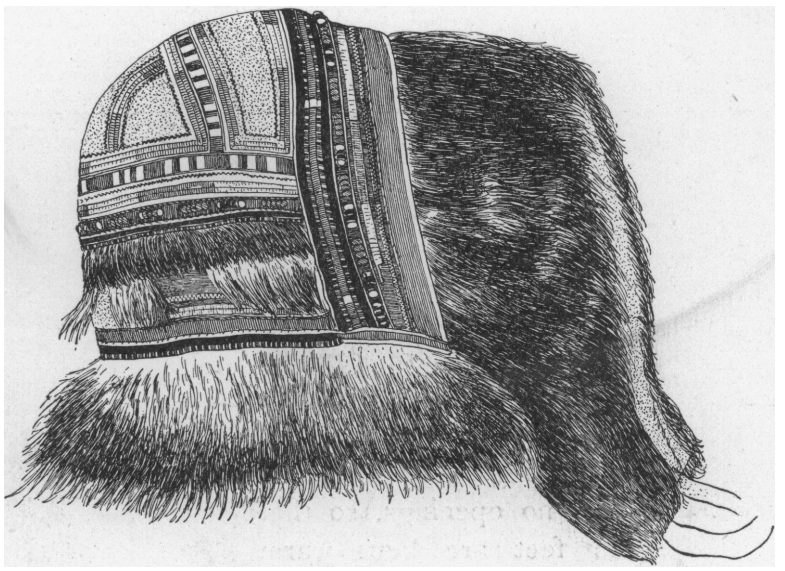


Fig. 92 ($\frac{70}{8372}$). Cap of Tundra woman.

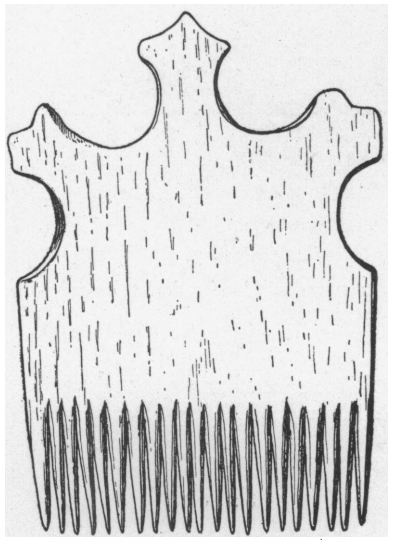
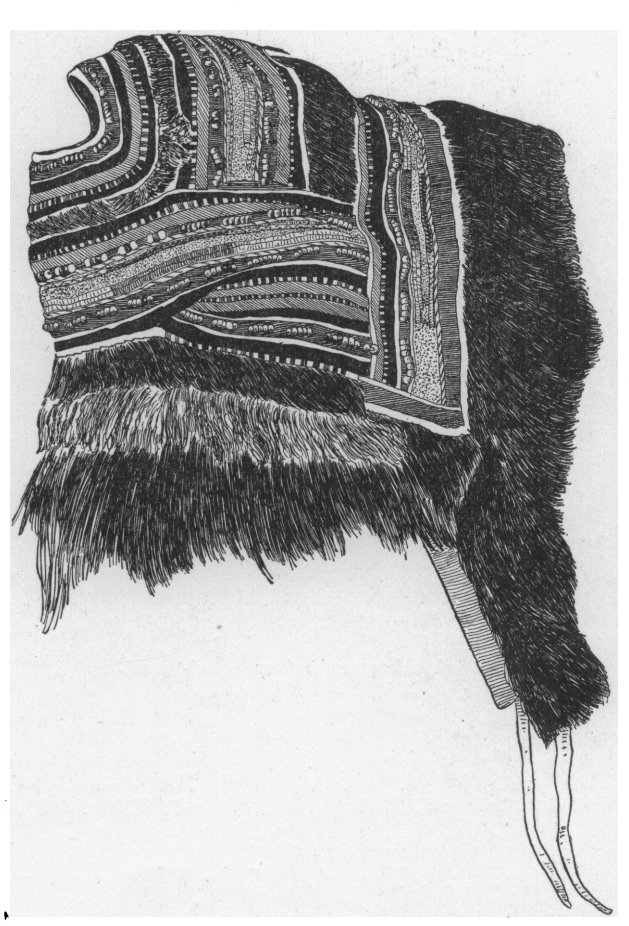


Fig. 94 ($\frac{70}{8828}$). Wooden comb.



Fig, 93 ($\frac{70}{8388}$). Cap of married Tundra woman.

women. When mammoth bone is available they make combs of ivory. Fig. 95 shows a birch bark case for a comb of mammoth ivory.

Figs. 96 and 97 represent a costume for a child of six months or older, male or female. This was obtained from the Tundra Yukaghir. Fig. 96 shows the front and back of fur trousers with a chest protector, instead of a special apron, and a fur flap (a′re) sewed on at the back. The a′re can be tucked between the child's legs and its ends fastened with strings. The breeches have no openings, so that the feet are kept warm inside. The breeches are called a′renǰe-cu′kun, i. e.,

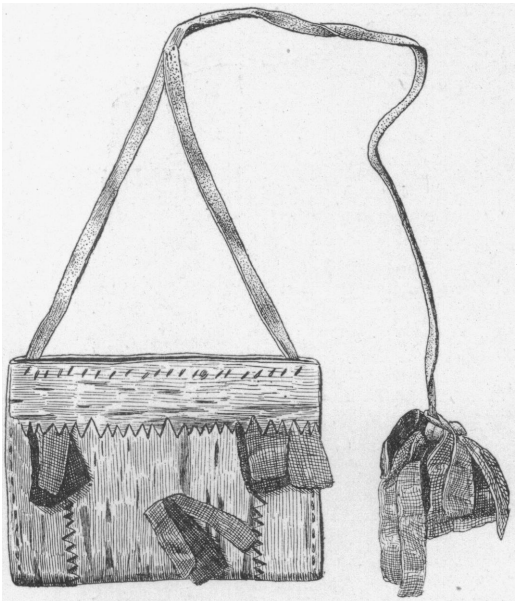


Fig. 95 ($\frac{70}{8328}$). Birchbark case for ivory comb.

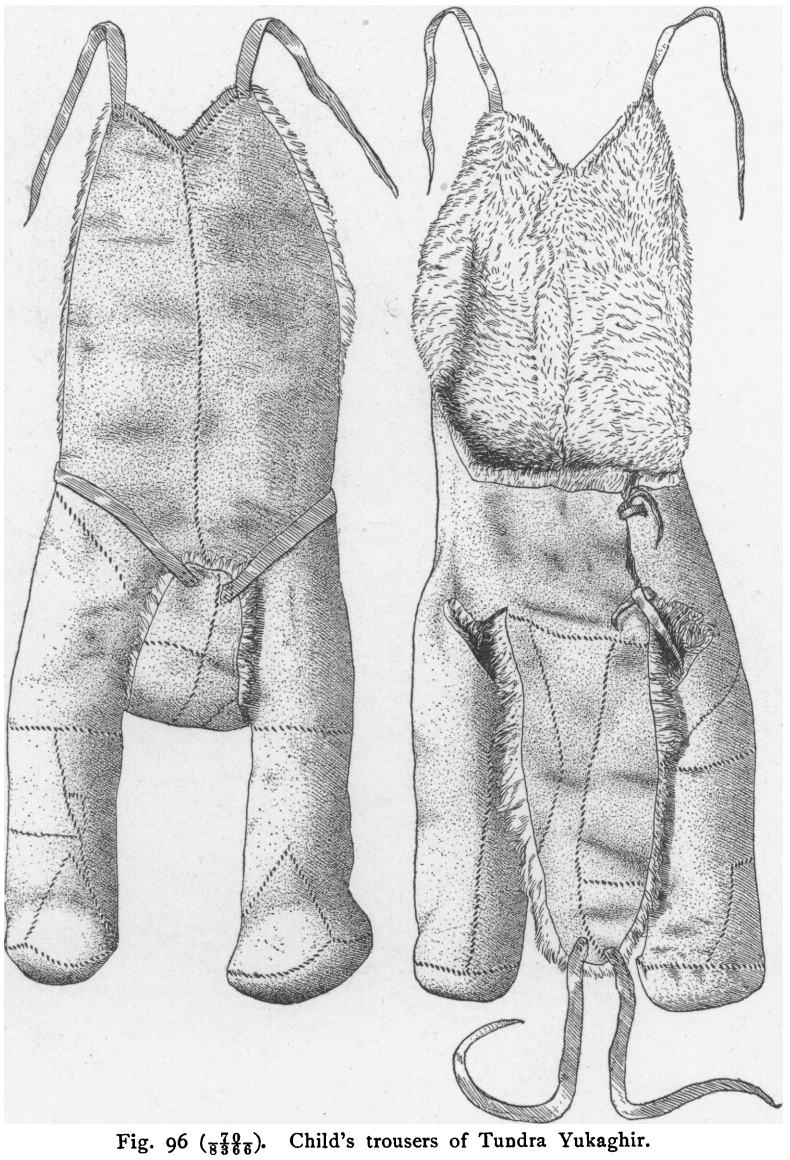


Fig. 96 ($\frac{70}{8366}$). Child's trousers of Tundra Yukaghir.

a thing with a flap. Fig. 97 shows the fur coat of the costume, called i′ñied-u′o-ca′uda′ǧil. Its sleeves also have no openings. For small infants, instead of separate breeches and coat, a combination garment, called nema′ye is made. The "a′re" is filled with moss called u′o-lebie (infant's earth) and rotten wood — u′on-yo′llo (infant's rot) which absorbs the excreta and is

changed several times a day. The closed sleeves and breeches are called pu'gubki (their, i. e. of the infant's dress, warmers or heaters). When a lad,

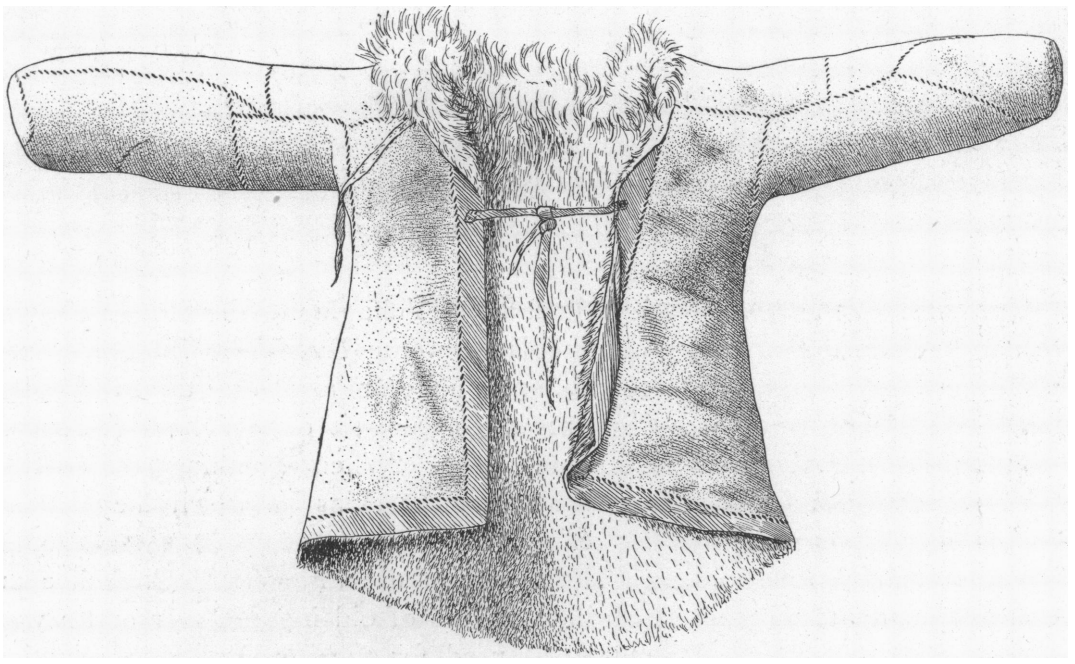


Fig. 97 ($\frac{70}{8567}$). Child's coat worn with trousers Fig. 96.

before becoming a hunter, courts girls, older people make fun of him asking whether he has seen the tracks of the pu'gubki on his trail.

XXIII. — MATERIAL CULTURE.
HOUSEHOLD UTENSILS AND FOOD.

Utensils. *Furniture.* The Russianized Yukaghir of the Lower Kolyma have adopted the use of tables and stools from the Russians. In their winter houses the Yassachnaya and Korkodon Yukaghir also use tables made of square boards with four low legs at which they sit on benches. They use no furniture in their spring and summer tents. When partaking of food they place a square wooden board on the reindeer skins on which they sit and when the meal is over this is set aside.[1]

Lamp. The stone or clay lamps still in use among the Chukchee are no longer found among the Yukaghir. Pieces of old iron, copper or tin ware battered into the shape of a ladle are used for the purpose of illumination. Fig. 98 shows such a lamp, the handle of which is stuck between the logs of the earthen winter hut. Either fish oil or reindeer tallow are burned in these lamps. The wick is of sphagnum moss or plaited cotton rag, as shown in Fig. 98. A lamp is called by the Yukaghir term pe'dinuye, i. e., that one which burns. The well-to-do among the Tundra Yukaghir use as a lamp an iron frying pan set up in an oblique position. No lamps are needed in the summer tents of the Yukaghir since even in the southern parts of the Yukaghir tundra the polar nights are bright and of very short duration.

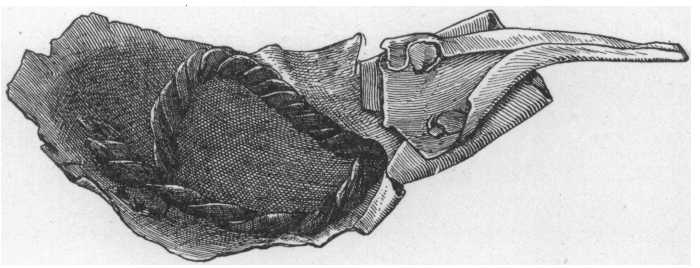


Fig. 98 ($\frac{7}{8}\frac{9}{2}\frac{}{2}\frac{}{5}$). Modern Yukaghir lamp of scrap metal.

Kettle. The present day Yukaghir have no recollection of the use in former times of clay kettles for cooking or stone pans for frying.[2] They now use imported copper or iron kettles and teapots. As they are generally too poor to buy new vessels they continue to mend them as long as possible.

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[1] A bench or stool is called modi'be, i. e., sitting place. A table is called isto'l, from the Russian *stol*, table, or le'ñdibecāl, i. e., the board on which one eats.

[2] See p. 415.

Fig. 99 shows a copper kettle with a patch fastened on the bottom with iron rivets. The Yukaghir call a copper or iron kettle lu′dun-pi′ge or lu′nbuge which means iron birchbark dish or box, from lu′dul, iron, and pi′ge, birchbark dish or box. The iron kettle is suspended from a wooden hook which hangs from a tripod over the hearth in the winter log cabin. The hook is called pi′gonḍā, i. e., the wood for the kettle.

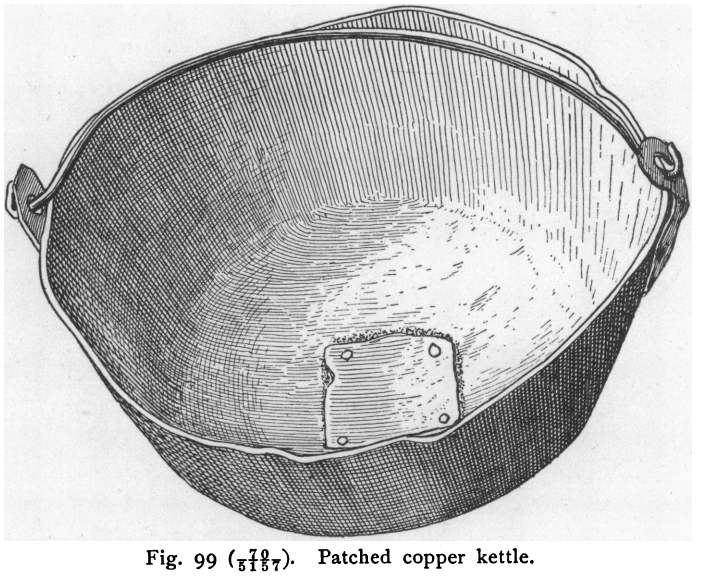

Fig. 99 ($\frac{7}{5}\frac{9}{1}\frac{}{5}\frac{}{7}$). Patched copper kettle.

Teapot. The Yukaghir drink a great deal of water. When travelling or hunting, they eat hard snow. But when in their dwellings or when putting up a tent, they prefer hot tea; a teakettle is the most desired vessel for a household. The possession of a copper teakettle is an indication of the wealth of the owner.

Water supply. The Yukaghir while travelling put up their temporary tents on the bank of some river or lake. In winter, water is obtained through a hole in the ice and care is taken that the hole does not freeze over. When the ice in a new camp is too thick to be broken through, snow or pieces of ice are melted, but ordinarily they try to avoid doing this as it is a slow process.

Dishes, bowls, etc. Wooden trays and dishes of various sizes are used by the Yukaghir for serving cooked meat of fish. Meat is taken from the kettle by means of an iron or bone hook, and fish with a fish skimmer of bone or wood, in imitation of the Russian settlers. Figs. 100 and 101 represent trays (cobo′go) of birch wood. They are used for serving cooked food and for grinding fish roe. Fig. 102 represents a dish made of a knob on a trunk of a larch tree. It

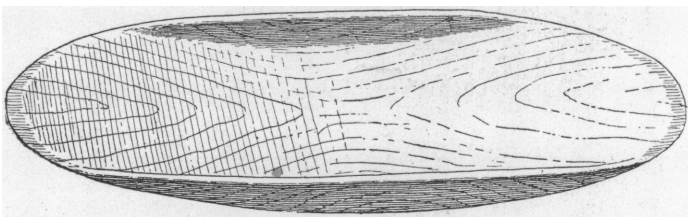

Fig. 100 ($\frac{7}{8}\frac{9}{8}\frac{}{0}\frac{}{7}$). Birchwood food tray. Length 26 cm.

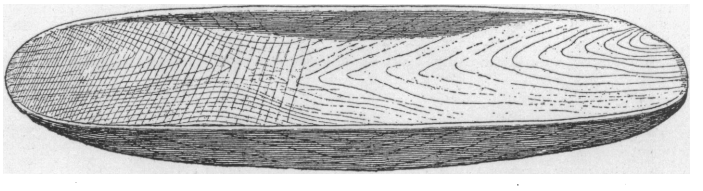

Fig. 101 ($\frac{7}{8}\frac{9}{2}\frac{}{6}\frac{}{4}$). Birchwood food tray. Length 49 cm.

is also called cobo'go, but it is fashioned after the form used by the Russians. Fig. 103 shows a plate made of elk antler.

Figs. 104 and 105 show stone axes (nu'moǰi) of the ancient Yukaghir.

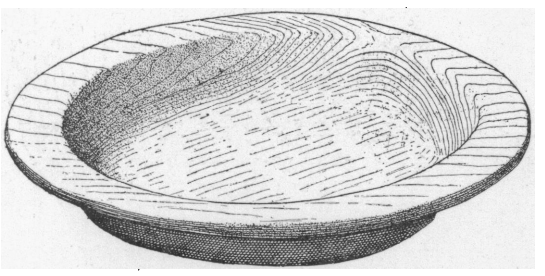

Fig. 102 ($\frac{70}{5882}$). Food dish of larchwood.

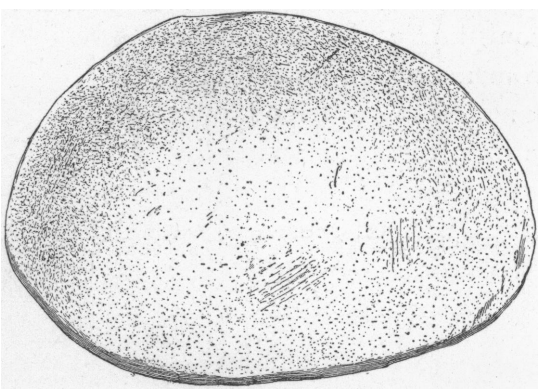

Fig. 103 ($\frac{70}{8400}$). Plate of elk antler. Length 21 cm.

They were found on the tundra and used by the present Yukaghir for chopping meat and grinding fat and berries. Fig. 106 shows a birchbark cup for water (o'ǰin-ō'tče) which is carried in the canoe and is usually made for the hunter by his sweetheart. It is ornamented by indentations and pieces of colored cloth. A thin willow branch is fastened around the rim by means of sinew thread. A leather strip, decorated with a tassel of leather and colored cloth is attached to the rim so that the hunter may fasten the cup to his belt. Similar cups without the willow rim and leather strap are used for drinking tea and are called čaio'ǰin-pi'gek. Such a cup is shown in Fig. 107.

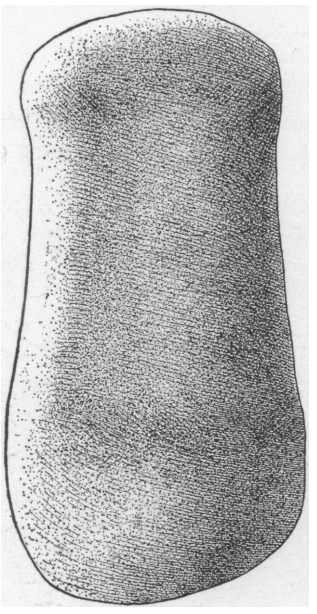

Fig. 104 ($\frac{70}{8468}$). Ancient Yukaghir stone axe.

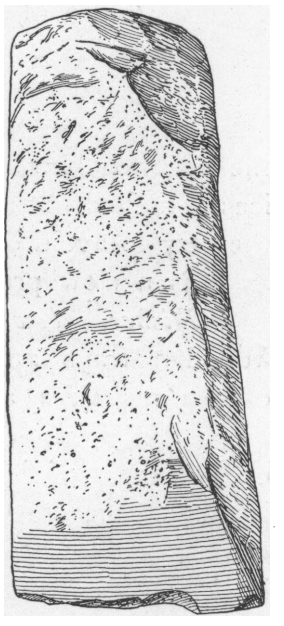

Fig. 105 ($\frac{70}{8449}$). Ancient stone axe.

In Fig. 108 is shown a birchbark dish for berries (lebe'idi-pi'gek), and in Fig. 109 a birchbark fish tray called a'nin-pi'gek. Fig. 110 represents the front of a birchbark vessel (čo'gol^{c}) used for gathering berries. It is held by the handle and the rim is struck against the bushes so that the berries fall into the container. Fig. 111 shows the back of a čo'gol^{c}.

In Fig. 112 is represented a spoon of reindeer antler, called at present

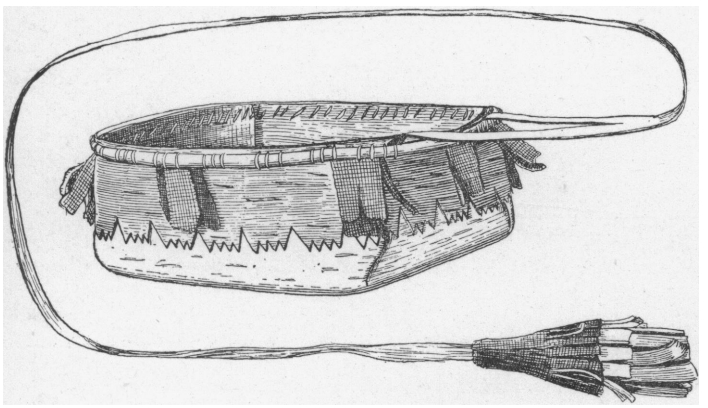

Fig. 106 ($\frac{70}{8297}$). Birchbark water cup.

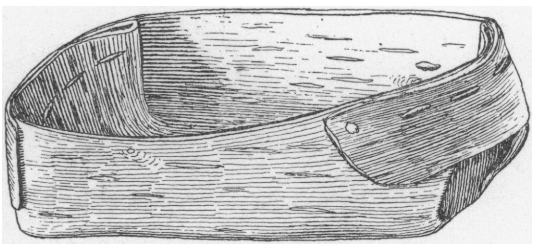

Fig. 107 ($\frac{70}{8255}$). Birchbark teacup. Length 12 cm.

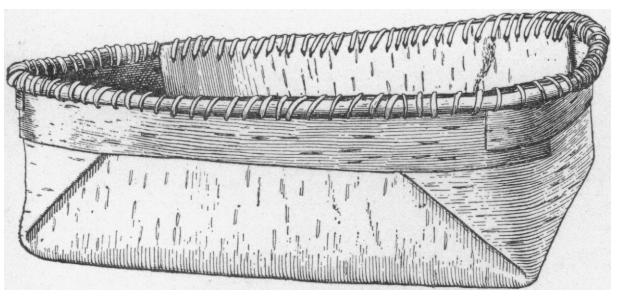

Fig. 108 ($\frac{70}{8208}$). Birchbark berry dish. Length 32 cm.

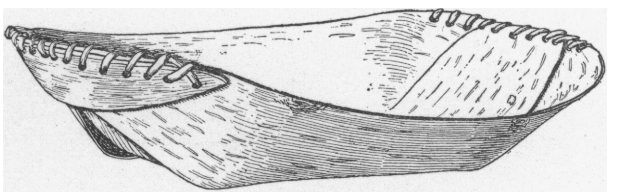

Fig. 109 ($\frac{70}{8234}$). Birchbark fish tray. Length 30 cm.

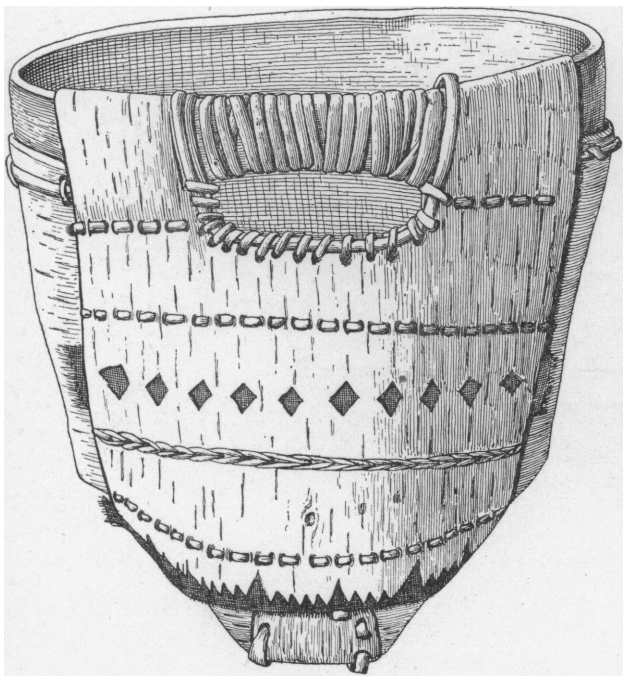

Fig. 110 ($\frac{70}{8259}$). Birchbark berry receptacle. Length 23 cm.

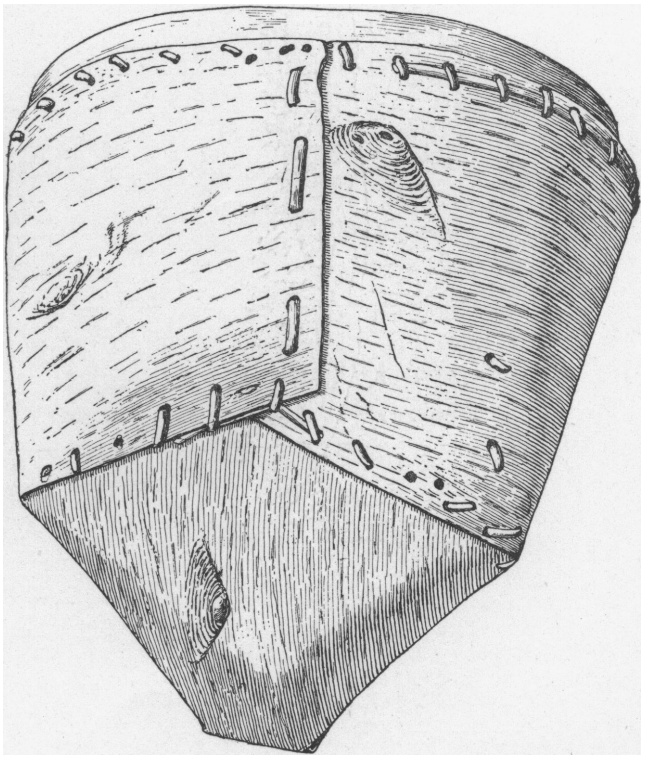

Fig. 111 ($\frac{70}{8207}$). Birchbark berry receptacle (back). Length 30 cm.

by the Russian name, lo′čko (Russian *loshka*), but its ancient name was le′ñdiye, meaning, that by which one eats.

A wooden spoon with incised handle is shown in Fig. 113. A large spoon of the same type is called xamuya′x (from the Yakut, xamiya′x). A

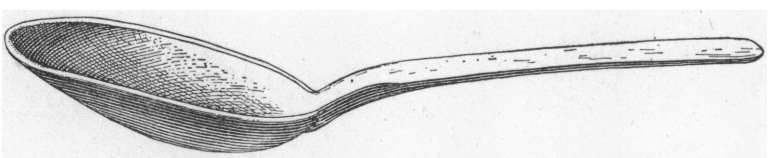

Fig. 112 ($\frac{70}{8340}$). Spoon of reindeer antler.

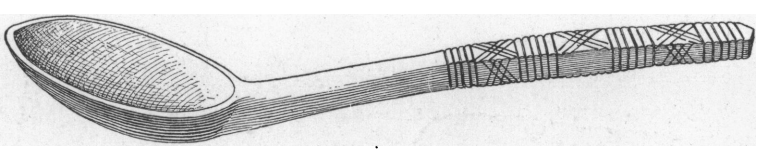

Fig. 113 ($\frac{70}{8251}$). Wooden spoon with incised handle.

flat ladle used as a fish skimmer is called a′nin-polu′čik, i. e., fish receiver, from the Yukaghir, a′nil, fish, and the Russian *poluchi′t*, to receive.

The Yukaghir women make various kinds of bags, co′gi, for carrying

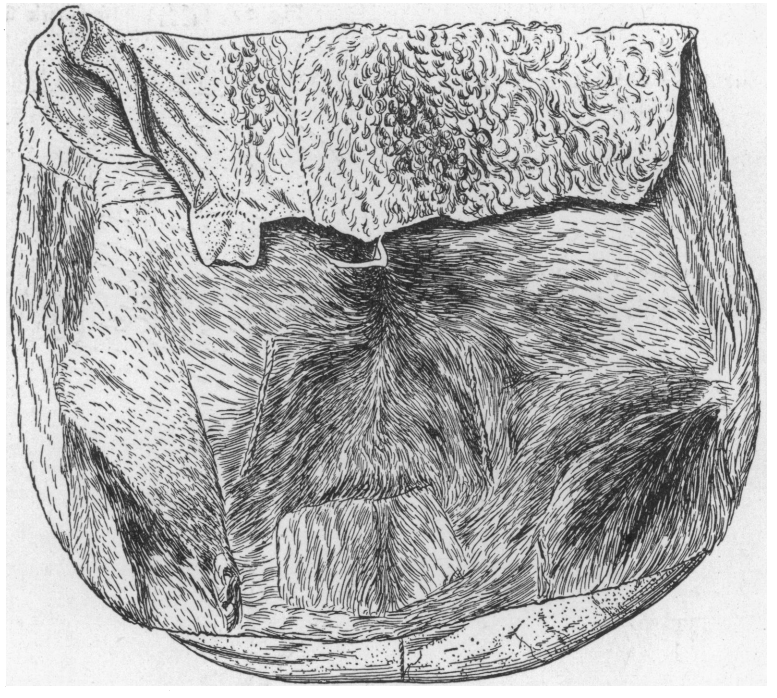

Fig. 114 ($\frac{70}{5725}$). Reindeer skin bag for cooking utensils.

household vessels when travelling. Fig. 114 shows a reindeer skin bag, ā′če-xar-co′gi, for trays and dishes. In Fig. 115 is shown a bag of skins of graylings, ara′uyen-xar-co′gi. Similar bags are made of other fish skins,

particnlarly of burbot skins. Fig. 116 shows a bag made of skins of goose feet. It is called lo′čkod-a′but, i. e., a case for spoons. Such bags are also made of the skins of swans' feet. Skins of goose feet are light colored, those of swans are black.

Food. Animal food. The staple food of the Upper Kolyma Yukaghir (on the Yassachnaya and Korkodon Rivers) is fish. It is eaten fresh, dried, boiled, fried, baked and, in winter, frozen. Fish heads are eaten raw, the cartilage being considered a dainty. Fish heads have a special name, ko′ka, instead of yō, the usual name for head. The Russian settlers on the Kolyma River also use ko′ka for fish heads, and it is difficult to say with whom the

Fig. 115 ($\frac{70}{8205}$). Fishskin bag.

name originated. When preparing sun-dried fish, the Yukaghir also dry the heads for dog food.

During the fishing season most of the fish is eaten boiled. It is difficult to say whether the Yukaghir were in the habit of boiling food before coming into contact with the Russians. Since no excavations have yet been made in the Yukaghir country, we do not know whether they used pottery as did the Koryak and Kamchadal and as the Chukchee still do. Their traditions do not mention pottery, neither is there a name for cooking kettle. Lu′dun-pi′ge, lu′dunbuge, or lu′nbuge, the present name for metal kettles, means iron birchbark dish or box. However, there is a tradition that the ancient Yukaghir used to boil fish and meat in birchbark or wooden vessels by means

of heated stones. This method of boiling fish and meat is still occasionally used by hunters who carry no kettles.

The methods of sun-drying fish employed by Siberian natives [1] as well as by the Eskimo and American Indians are well known and we shall not enter into a description of the process. The frames for sun-drying are called o′rponǰira, and bundles of dried fish no′gilᶜ. A half of a sun-dried fish is called ča′la, which name seems to be derived from the Russian word *tielo*, body or flesh. The ča′la consits only of the fleshy part of the fish. The skeleton is dried separately and is used for dog food. After sun-drying, bundles of ča′la are smoked over the hearth, or a smoky fire is specially made outside the dwelling and covered by a small tent. The process of smoking fish is called la′ǰit. The roe is dried separately and is considered a palatable food.

Fig. 116 ($\frac{70}{3243}$). Bag of skins of goose feet.

The ancient method of roasting fish was to place them on thin wooden spits called ū′ni. These spits were stuck into the ground near the fire. This method is still used by hunters and travellers in their camps. At home the Yukaghir fry fish in iron frying pans, using fish oil, a method adopted from the Russians. The fish oil is obtained from the fat of the intestines. Russianized Yukaghir who have stoves of beaten clay prepare pies and cakes of fish meat covered by a mush of minced and ground fish which cannot be distinguished in appearance from flour dough.

Lean fish, chiefly small omul, are boiled, ground and dried in the sun, yielding a kind of flour which can be well preserved. It is called kori′le, and is eaten with fish oil as a delicacy. Kori′le ground with fat and berries is called kuluba′xa, from the Russian word, *kulebya′ka*, a pie with roe and fish.

[1] See The Koryak, p. 572.

The Yukaghir are also fond of salamat, a kind of gruel made of fish guts cooked with berries. Salamat is a Yakut word.

Fish caught during the winter are generally eaten raw. The fish are frozen and the meat is cut off in thin slices. The Russian settlers of the polar region are very fond of frozen fish and call it *strogani'na*.

Reindeer or elk meat is also eaten boiled, sun-dried, fried or raw and frozen. Pieces of sun-dried meat are strung on a line or thong by means of a bone needle, a'mun-mude'je (see fig. 117). Pieces of meat are broiled on spits. Frozen meat is also shaved into thin chips like fish. The Yukaghir are very fond of frozen bone marrow which is called noil, leg, as marrow is obtained from split leg bones. They also eat the meat of the wild mountain goat, hare, water fowl, ptarmigan and woodcock. They eat beef when they can obtain it from the Yakut, but not all the Yukaghir like it. Women, particularly, show an aversion to what they call alien food, which includes beef, as horned cattle were unknown to them before the advent of the Yakut in the polar regions. Some of the Yukaghir show a strong dislike for horse flesh which is highly valued by the Yakut. Some Yukaghir women leave the house when horse meat is cooking since they cannot endure the odor. The Yukaghir are very fond of fat, particularly of the reindeer. They have different names for certain forms of fat. The generic term for fat is cu'bon or cu'gon. The tallow under the skin is called čo'ñče; tallow under the *regio epigastrica*, a'nǰed-a'but, melted fat po'ñiče, fish oil n·a'nil'. The Tundra Yukaghir call seal oil, which they occasionally obtain from the Chukchee, n·a'nir. No portion of animals killed is left unused. The brain, marrow, kidney, liver, lungs, gristle, tendons, soft spring antlers of reindeer and the soft heads of joints are all eaten raw or cooked and nothing is left on the bones which are given to the dogs. In times of famine the Yukaghir roast and eat squirrels, and I was told the meat tastes like hare. The flying squirrel is not eaten as it tastes, the Yukaghir say, like sulphur. Bear meat also is eaten only in times of famine as the bear is regarded as related to man and of human origin. The flesh of animals killed by wolves is not eaten since the wolf is regarded as an evil spirit. Flesh of birds killed by eagles may be eaten because the eagle is a clean bird; it kills its prey first and then eats it by tearing off pieces of flesh. The hawk and other birds of prey first pick at the heart and drink the blood. This is the method of an evil spirit. If a slain bird is found and the heart and other organs have not been bled, it may be eaten by man, as this shows the bird was attacked by an eagle. Putrid meat and fish are not eaten by the Yukaghir, as is the case with the Kamchadal, Yakut and other northern tribes. The

Fig. 117 ($\frac{70}{8222}$). Bone needle.

Yukaghir told me with abhorrence how the Chukchee eat their lice. On the other hand, the Yukaghir may crush lice on the table board and then cut their food on the same board. They also believe that lice are desirable companions of a man with healthy blood and that they abandon people before their death.

Vegetable food. Vegetable food of various kinds is used, particularly when meat and fish are not abundant.

In the first place should be mentioned lichens extracted from the paunch of wild or domesticated reindeer. The food prepared from it is called mo′niol-ki′el or mo′nion-kuleba′xa. The undigested lichens are removed from the esophagus (co′huyira) and the first stomach called pe′lbiče. The pe′lbiče is cut into small pieces. The second stomach (lepud-a′but, i. e., blood case) is filled with blood of the reindeer's heart and other organs. The third stomach is called mo′niod-abut (i. e. case containing the moniol, half digested lichens). The mo′niol is removed and mixed with blood of the le′pud-a′but and pieces of pe′lbiče and the le′pud-a′but is suspended over the hearth. When warmed up, the mixture becomes a kind of stiff gruel which the Yukaghir find tasty and sweet.

Of edible roots *Fritillaria Kamtschatica Ker. Gawl.* and *Polygonum viviparum L.* are eaten. Edible roots are called lebiye′-le′gulᶜ, i. e. food of the earth. The Yukaghir are very fond of berries. They use sixteen kinds of berries. On the tundra they gather cloud berry (*Rubus chamaemorus*, Yukaghir, čomo′l-mo′lǰe, i. e., large rubus); bleaberry (*Vaccinium uliginosum*, Yukaghir o′dun-lebe′idi, i. e., Yukaghir berry); red bilberry or mountain cranberry (*Vaccinium Vitis Idaea*, Yukaghir, ke′ile-lebe′idi, i. e. red berry); juniper (*Juniperus nigrum Burkh.*, Yukaghir, canaga′i-lebe′idi); black crow berry; *Empetrum nigrum*, Yukaghir paranā′-lebe′idi, i. e., crow berry). In the southern parts of the Yukaghir country there grow, in additon to the berries named, the following species: the rasberry (*Rubus idaeus*, Yukaghir, tobo′ko-čalǰe, i. e., dog-rubus); the brambleberry (*Rubus arcticus L.*, Yukaghir, yuku-ma′lǰe, i. e., small rubus); dog-rose or wild brier (*Rosa canina*, Yukaghir, ce′biče, evidently from the Russian *shipovnik*); three species of currants (*Ribes nigrum*, *rubrum* and *alpinum*, Yukaghir, moro′ǰina, from the Russian *smorodina*); red currants (Yukaghir, lu′či-moroǰina, i. e., Russian currants); mountain ash berries (*Sorbus aucuparia*, Yukaghir, rebi′ne from the Russian. *ryabi′na*); fowl cherry *Prunus padus E.*, Yukaghir, če′remya from the Russian *chero′mukha.)*

From the Yukaghir names for berries (lebe′idi) we see that they are good classifiers. All the *Rubus* species are called čalǰe, and the *Ribes* moroǰina. The favorite berry is the *Vaccinium uliginosum.* For that reason it is called o′dun-lebe′idi, Yukaghir berry. They are also particularly fond of wild rose, which is mentioned in folk tales and of the *Rubus* species. The Yukaghir store the last-named berries for the winter; they like to eat them frozen and, as has been stated before, they grind them with fat and fish.

The inner portion of willow bark is also consumed. It is stripped off the trees, crushed with a stone or bone hammer and cooked with or without fish. This, however, is regarded as famine diet. In the spring the Yukaghir like to drink the sap of poplars and willows (cā′llilᶜ). They strip off the bark and suck or press out the sap with a knife.

The Yukaghir are very fond of flour, but it is too expensive for them. When they can obtain flour, they boil it with water, like gruel, or they bake unleavened cakes on spits. Occasionally they obtain from the Russian traders bread or biscuits which are regarded as delicacies. The Yukaghir doubt whether a man can subsist on bread or biscuits alone. They call flour lu′l̨̇legul or yu′l̨̇legul̨, i. e., smoke food.

They do not eat mushrooms regarding them as unclean food growing from dogs' urine. However, according to traditions, they used to intoxicate themselves with the poisonous fly-agaric, which is still eaten by the Koryak and Chukchee. The Yukaghir call mushrooms can-pai, i. e. tree-girl.

The small nuts of the dwarf cedar (*Pinus pumila Pall.*) are not eaten by the Yukaghir. When I asked my interpreter, Dolganoff, whether they eat them, he was offended and said, "Why, they are eaten by small birds and squirrels, but man cannot eat them; they are too small like lice." They are called ceu′liye, of the stone one, which corresponds to the English stone pine.

The Yukaghir are very moderate eaters. They call the Yakut ku′nj̆eboj̆e coromo′pul, i. e., gluttonous people. The Yukaghir take two regular meals a day, in the morning ogo′yel̨̇le l̨̇e′gul, i. e., the morning food, and in the evening before going to bed, yu′olel̨̇le l̨̇e′gul, i. e., the evening food. The evening food is the chief meal. In the daytime they drink tea frequently, and during the winter may eat several slices of raw frozen fish between meals. But this frugality is not observed with guests who are offered all kinds of food, regardless of the time of day.

Hunters often run on snowshoes for a whole day without taking any nourishment, only eating pieces of snow.

Tobacco. The Yukaghir have learned the use of tobacco from the Russians and have become the most constant tobacco users of all the Siberian natives. Not only the men but the women and children smoke, and mothers place pipes in the mouths of suckling babes to quiet them. They use the strong Russian leaf tobacco which is imported from southern European Russia in bunches weighing about two pounds. Unlike the Chukchee and Koryak who chew tobacco, the Yukaghir only smoke it. For smoking they use the term ō′j̆i, i. e., to drink; they drink the smoke like water. Sometimes old people snuff tobacco ground and mixed with ashes.

Tobacco pipes are of various shapes. In Fig. 118 may be seen a simple pipe with a wooden stem and a bowl and mouthpiece of ivory, the whole being of Russian pattern. The bowl can be removed and the stem cleaned

with an iron pin. Fig. 119 represents another type of pipe; the wooden stem is in two halves held together by a leather binding which also fastens the stem to the pewter bowl. To extract the deposit of nicotine the stem is separated by loosening the leather strip. The pipe is also supplied with a bag for ground tobacco.

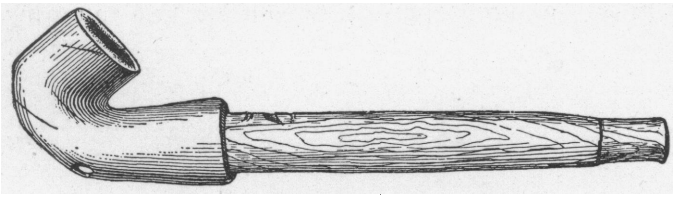

Fig. 118 ($\frac{70}{8851}$). Tobacco pipe of wood and ivory.

Fig. 120 shows another style of pipe. The wooden stem is in a single piece; the butt end of the stem has a perforation closed with a stopper, thus allowing the stem to be cleaned. The brass bowl is secured to the stem by tin bands. It is of Chinese origin

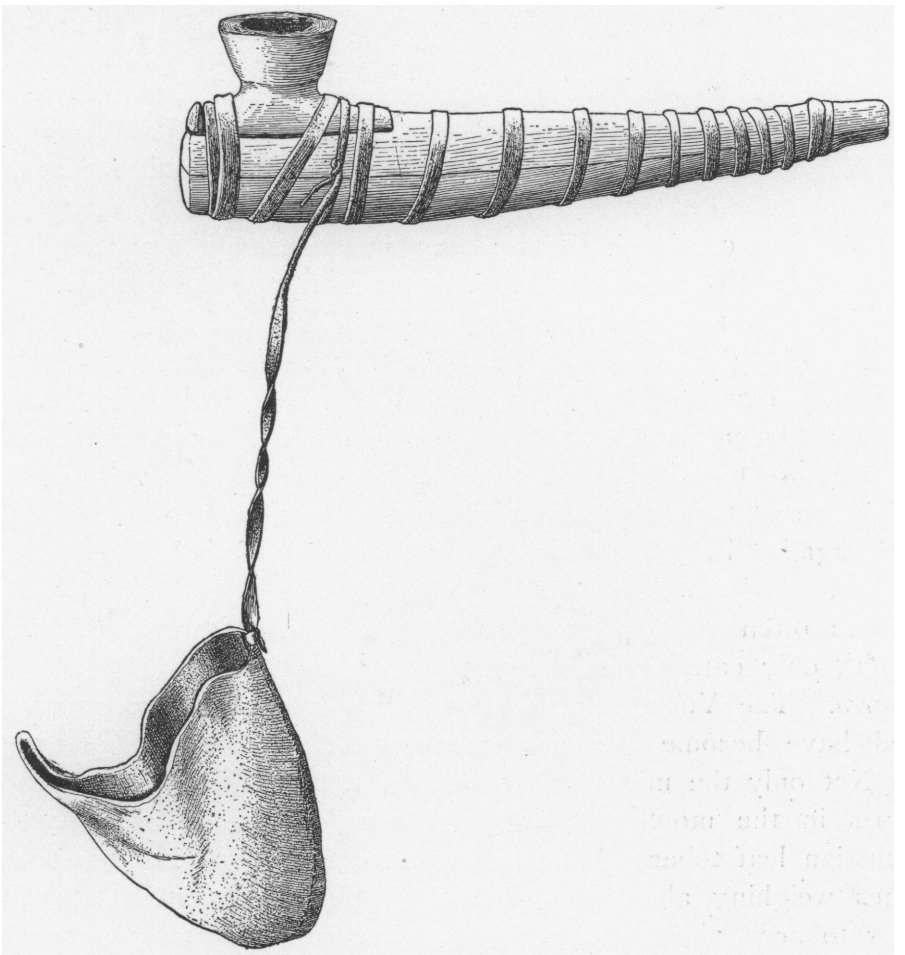

Fig. 119 ($\frac{70}{8219}$). Tobacco pipe of wood and pewter.

and probably imported by wandering Tungus. The wooden stem is ornamented with patterns inlaid with pewter. The mouthpiece is of bone. A leather tobacco pouch, ornamented with beads is attached to the butt end of the stem.

Leaf tobacco for smoking is cut with a knife on a small board. The tobacco is then mixed with wood, about half and half, to make it milder. Usually the spongy knots which grow on birch stems are used for this purpose.

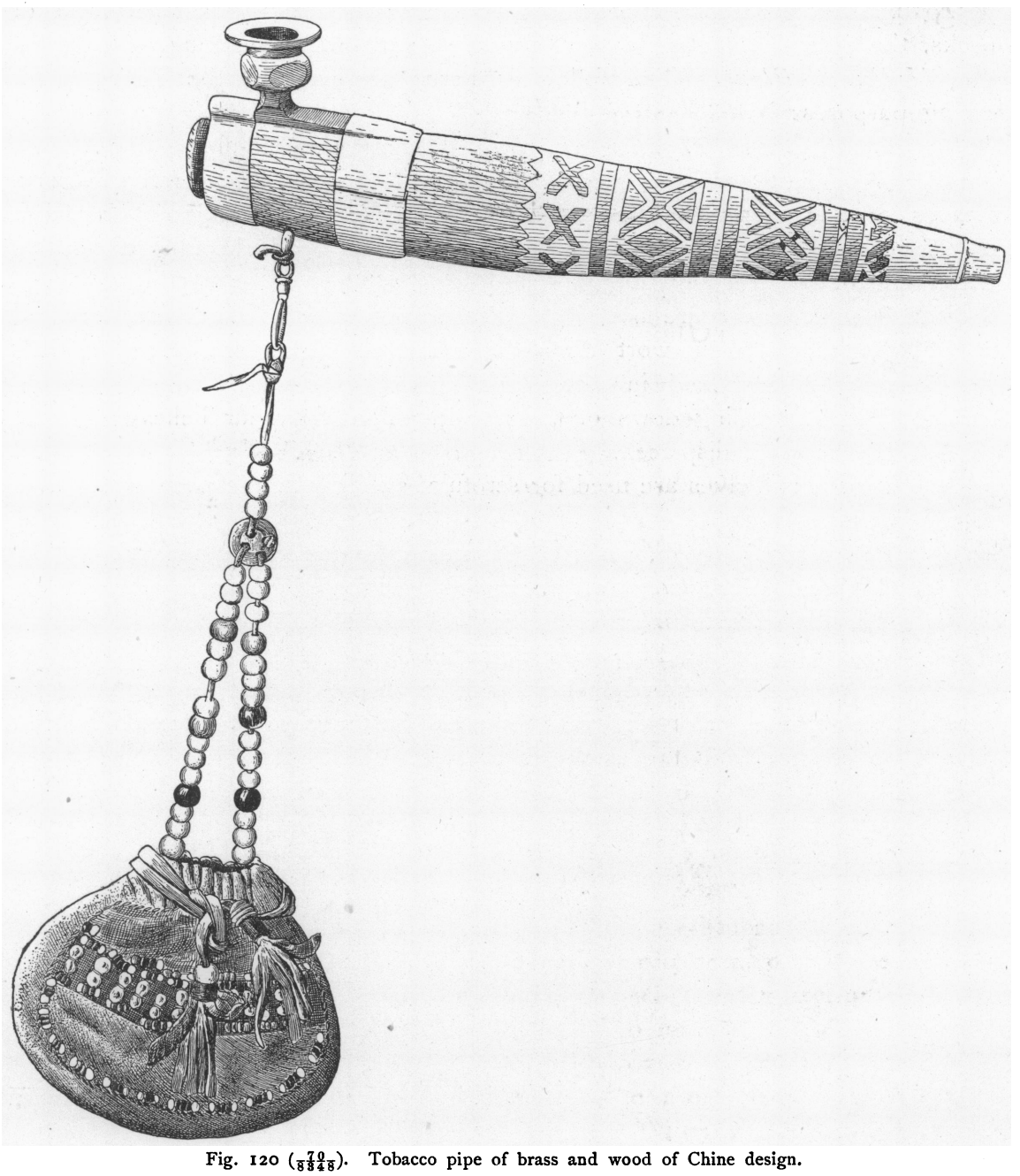

Fig. 120 ($\frac{70}{8848}$). Tobacco pipe of brass and wood of Chine design.

The knot is dried, scraped fine, and rubbed between the fingers.. The powder is called tru'de, from the Russian *trut*, tinder, or punk.

The Yukaghir are such constant smokers that the absence of tobacco is

felt as keenly as famine. They re-fill their pipes continuously and smoke until they become giddy. After a long period of abstinence, the Yukaghir smoker may smoke with such vim that he may fall unconscious. I have seen young people, particularly women, with scars of burning on their faces or necks, the results of having fallen into the hearth while smoking.

Medicinal Plants. The following herbs are used by the Yukaghir for curing purposes:

1. Wild thyme (*Thymus serpyllum*; Yukaghir, xoid-ule'ge, i. e., God's grass). Apparently this is taken from the Russian *Bogorodskaya trava*. Leaves of this plant are smoked with tobacco to cure coughing or placed on charcoal that the smoke may be inhaled. For headache it is applied to the forehead.

2. Currant leaves are boiled and the liquid drunk to cure sore throat.

3. The root of navel wort (*Cotyledon umbilicus*; Yukaghir n·u'ťneye-la'rxul^{c}, i. e., navel-root) is boiled in water and drunk for stomach ache (n·u'ťneye-lou'dul, i. e., the falling down of the navel). The Yukaghir believe that the root of the navel is displaced.

4. Raspberry leaves are used for scrofula, swelling of the neck or inflation of the glands.

5. The perennial herb, grass of Parnassus, is used as a purgative.

6. Cud weed (*Gnaphalium uliginosum*) is used for inflammation of the throat.

7. *Angelica ursina Max.* is applied to wounds and bruises.

8. Mosses are applied to open wounds.

9. An unidentified mountain herb with red leaves, called by the Yukaghir kere'ked-ule'ge, i. e., Koryak grass, is used for the cure of infections. It is burned on charcoal and the smoke is inhaled.

XXIV. — MATERIAL CULTURE. MANUFACTURE AND TRADE.

Work in stone. The present Yukaghir do not work in stone. The only remnants of the stone age found are stone hatchets and axes which are used for grinding fat and plants (see above p. 412). No stone ornaments or pendants such as those still seen among the Koryak and Chukchee were found. Neither were stone arrow or lance points found. From Yukaghir tales the conclusion may be drawn that stone weapons had a limited use. Bone arrows and spears are more frequently mentioned.

Work in bone. We have seen before (pp. 412, 417) that needles and plates are still made of bone. Bone tobacco pipes are also made. According to Yukaghir folklore, before they were acquainted with metals, bone implements and weapons were used. Daggers, lances, and knives were made of elk ribs. Arrow points were made of mammoth tusks. Hoofs and antlers of elk and reindeer were and still are used in the manufacture of bone rings for belts and spoons.

Work in iron. During my stay with the Yukaghir there was on the Yassachnaya River a Yukaghir blacksmith who made tools and implements not only for his own tribesmen but also for Yakut neighbors and Tungus nomads. Among the Tundra Yukaghir was recorded a tradition which relates how the Yukaghir, after obtaining an iron axe from the first Yakut newcomers, carried it from one family to another as needed.

As I have no good photograph of a Yukaghir blacksmith I insert here a photograph of a Yakut blacksmith at work (see Plate XXVIII, Fig. 2). The bellows used by the Yukaghir blacksmith consist of two small oblong skin bags which lie on the ground so that the blacksmith's assistant can sit between them. The wooden pipes extend from the bags and are united to form one iron mouth which leads into the furnace, a hole in the ground lined with clay which covers the end of the pipe. Evidently the Yukaghir learned the blacksmith's art from the Yakut who, in the XVIIth century came to the Yukaghir country from the south under the pressure of the advancing Russians. Russian blacksmiths use single bellows. On the other hand, most of the terms referring to working iron are of Russian origin. Thus, hammer is called mo'lot (Russian word); forge tong is called kilī'či (from the Russian *klestschi*). Anvil is called na'kuolna (Russian, *nakovalnya*); blacksmith kuǰne'č (Russian, *kuznetz*). There is also a Yukaghir word for blacksmith, lu'dun-uyil coro'mo,

i. e., ironmonger man. For bellows they use a Yukaghir word, puji'pe, i. e., the blowers. No Yakut words are used in the terminology of the blacksmith's trade. However, a member of Baron Wrangell's expedition Lieutenant Matyuskin, states[1] that according to a story related by a Yukaghir, the Omoki[2] were familiar with the use of iron before the advent of the Russians. If this is true, the ancient Yukaghir may have obtained iron from the Yakut or from Japan through the Kurilians, Kamchadal and Koryak, or from China through the Tungus. In another place, Matyuskin describes ancient Yukaghir graves erected on posts which seemed to him to have been cut with stone axes, while in the graves were found pieces of iron, brass, and copper, like the ornaments on shaman dresses.[3] These may occasionally have been brought by the Tungus. The great distance and high mountain ridges prevented regular exchange with Manchuria. Trade between Japan and northeastern Siberia was hampered by the suppression by the Shogunate early in the XVIIth century of navigation in foreign waters. About a hundred years later Steller[4] and Krasheninnikov[5] found in Kamchatka pieces of iron obtained from the Kurilian Ainu. But the Kamchadal kept them as a proof of the wealth and social importance of their owners. They did not know the art of forging iron, but they did hammer it cold with stones to make arrow points. Such pieces or iron might occasionally have reached the Yukaghir. They could have learned the art of tempering and forging iron from either the Russians or from the Yakut, but both the technical and historical evidence show that the Yukaghir adopted the art of working iron from the Yakut and not from the Russians. The Yakut influence is strongly demonstrated by the use of the double bellows. The Yakut knew not only the art of forging iron, but also the art of smelting it from iron ores. So far as is known, the first Russian conquerors of Siberia were accompanied by blacksmiths, but not infrequently they had recourse to native experts, like the Yakut, when compelled to work ores.[6]

The double bellows of the Yukaghir belong to the type of the *Schlauch-blasebälge* of the German ethnologists. This type was found not only among the Turkish-Mongol tribes of central and western Asia but also in Eastern Africa. The *Schlauchblasebälge* in their turn have two shapes. One is represented by the Yakut-Yukaghir double bellows. These are distinguished by openings in the form of short slits, in the top of the leather bags. The pipes from the bags run to the furnace, where they are united and have a single mouth. Pairs of small sticks are sewed all along the edges of the slits.

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[1] See Wrangell, Reise, II, p. 6.
[2] Omoki (properly omok) is the name of some Yukaghir clans (see pp. 55, 115).
[3] See Wrangell, Reise, II, p. 137.
[4] G. W. Steller, Beschreibung von dem Lande Kamtschatka, St. Petersburg, 1774, p. 320.
[5] S. P. Krasheninnikov, Description of the Country of Kamchatka (in Russian) Vol. I, p. 48.
[6] P. Slovtzoff, Htstorical Survey of Siberia (in Russian), Petersburg, 1886, pp. 43, 88.

When these sticks are brought together with the hand, the bag is hermetically sealed. The blacksmith's assistant sitting on the floor between the leather bags, alternately raises and opens with his fingers each of the bags, simultaneously closing and lowering the other bag. In this way a continuous draft is maintained.[1]

The Yukaghir smithy differs in some ways from that of the Yakut. The blacksmith sits on the ground at the furnace with the anvil, forge tongs, and other tools beside him. The Yukaghir blacksmith has a permanent shop covered with earth, while the Yakut blacksmith has remained to a considerable degree an itinerant artisan, like the gypsy smith. Usually he carries his tools to the place where the work is to be done. Plate XXVIII, Fig. 2 shows how the Yakut blacksmith has established himself under the roof of a sledge shed of a rich Yakut. It is also interesting to note that, like the Yukaghir blacksmith the Yakut also sits at his work.

The Yukaghir blacksmith, Shalugin, who lived on the Yassachnaya River, was looked upon by his tribesmen with great respect, and his art was regarded as a divine gift. Not everyone is fitted to learn the blacksmith's trade. Among the Yukaghir, Yakut, Tungus and other Siberian natives, the status of the blacksmith is on a level with that of the shaman. Shalugin was always worried because his elder son seemed unable to learn his father's vocation. "My people will be lost," he once said to me, "if my younger son should not be clever enough to become a smith. Who will forge knives, axes and other tools for them, and who will repair their guns and lances?" Shalugin worked for the welfare of his clan, remuneration played quite a secondary role. He was satisfied with any reward and was not disturbed when a customer gave nothing. On the other hand, when he had to buy iron or steel blocks from traders or the government store he was assisted by his people. No one would withhold from him a fox or some squirrel skins to be used in exchange.

While the blacksmith stands high among the Siberian natives, this is not always the case among other primitive tribes. For instance among the Massai in Africa the blacksmiths form a paria-caste; on the other hand, among many other African tribes, as among the Yoruba, in Dar-Fur and Wadai, the blacksmiths are represented among the officers of the court.

The Yukaghir blacksmith was not acquainted with the art of tempering iron. While working tools from a steel block, the metal lost its hardness and

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[1] For a discussion and detailed description of different types of bellows see: R. Andree, Die Metalle bei den Naturvölkern, Leipzig, 1884; L. Beck, Die Geschichte des Eisens, 2 Aufl., 1870–1871; F. von Luschan, Eisentechnik in Afrika (Zeitschrift für Ethnologie, 1907, Berlin, pp. 22–59); W. Foy, Zur Geschichte der Eisen technik in besonder des Gebläses (Ethnologica, Im Auftrage des Vereins zur Förderung des städtischen Rautenstrauch-Joest Museum für Völkerkunde in Köln, I, Leipzig, 1900, pp. 185–222). Dr. Foy combats the contention of Prof. von Luschan that Africa is the place of origin of iron smelting and the blacksmith's art.

knives and lances forged by Shalugin were distinguished by their flexibility. The welding of iron was not perfectly accomplished and traces of welding were visible. Shalugin did not polish his wares. Their appearance was rude, as may be seen in the illustrations.

Fig. 121 represents an iron axe (nu′moǰi) for cutting wood, and Fig. 122 one for splitting logs. Fig. 123 is an adze (te′člo, from the Russian *teslo*) used for the rough hewing of the outer side of wood. With it are hewn the runners and stanchions of sledges, snowshoes, boards for boats and the outer side of the dugout canoe, all of which are afterwards finished with knives.

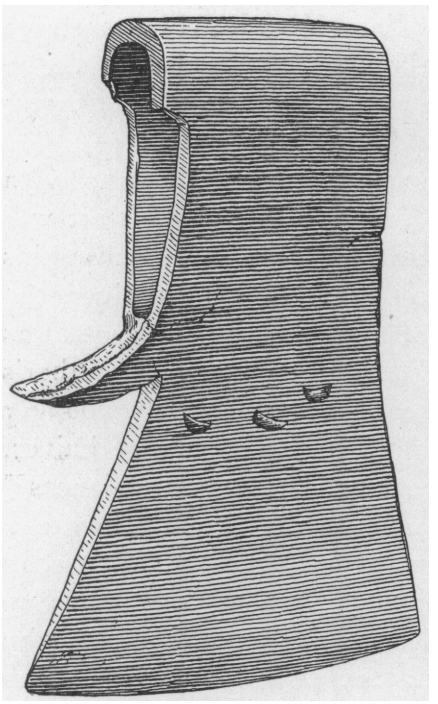

Fig. 121 ($\frac{7}{9}\frac{9}{2}\frac{0}{2}\frac{0}{8}$). Iron axe for cutting wood.

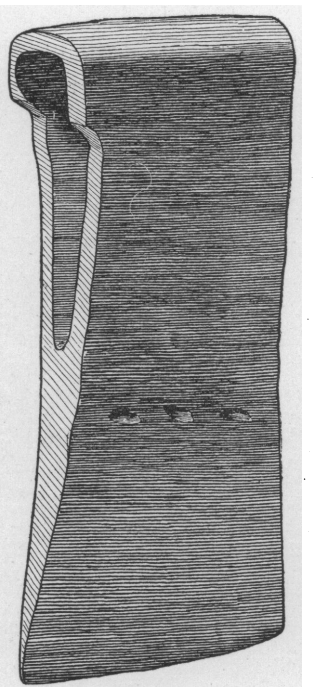

Fig. 122 ($\frac{7}{9}\frac{9}{8}\frac{0}{0}\frac{0}{0}$). Iron axe.

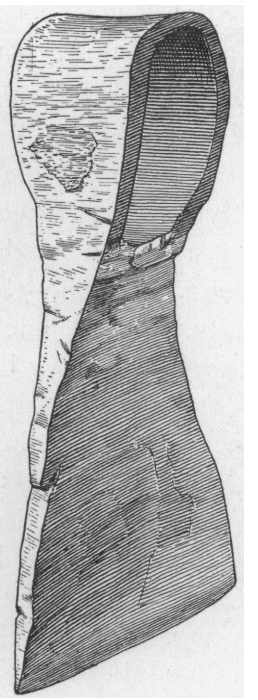

Fig. 123 ($\frac{7}{9}\frac{9}{8}\frac{0}{1}\frac{0}{0}$). Iron adze.

To hollow out a dugout canoe, wooden troughs, dishes and other wooden vessels, a curved adze is used (une′menǰed te′člo, i. e., an adze with ears).

The generic term for knife of čoǫo′ye (also či′rxači, old term) but there are different names for special kinds of knives.

Fig. 124 shows a large hunting knife (čomo′-čoǫo′ye) used in butchering elk or wild reindeer. A hunter overtaking a reindeer in water endeavors to stab it with the čomo′-čoǫo′ye from the canoe. The handle is ornamented with a pattern inlaid with pewter.

Fig 125, *a* and *b* shows two large knives which are called ča′ǫin-čomo′-čoǫo′ye, i. e., haunch large knife, as they are worn in sheaths attached to the belt and tied to the left leg. The knife, Fig. 125 *a* has the shape of a

single-edged hunting spear.[1] It has a heavy large back and is used on hunting trips for chopping wood for the campfire.

Fig. 126 shows the same knives in sheaths attached to one of the bone rings of the igidie'ne, the Yukaghir leather belt. To the right ring of the

Fig. 124 ($\frac{70}{8490}$). Large hunting knife.

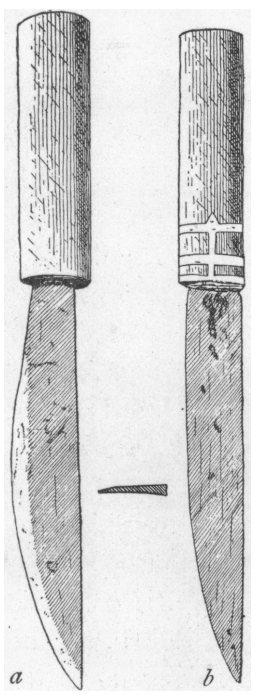

Fig. 125 ($\frac{70}{8433}$). Hunter's set of knives. *a*, knife for cutting wood, *b*, hunting knife.

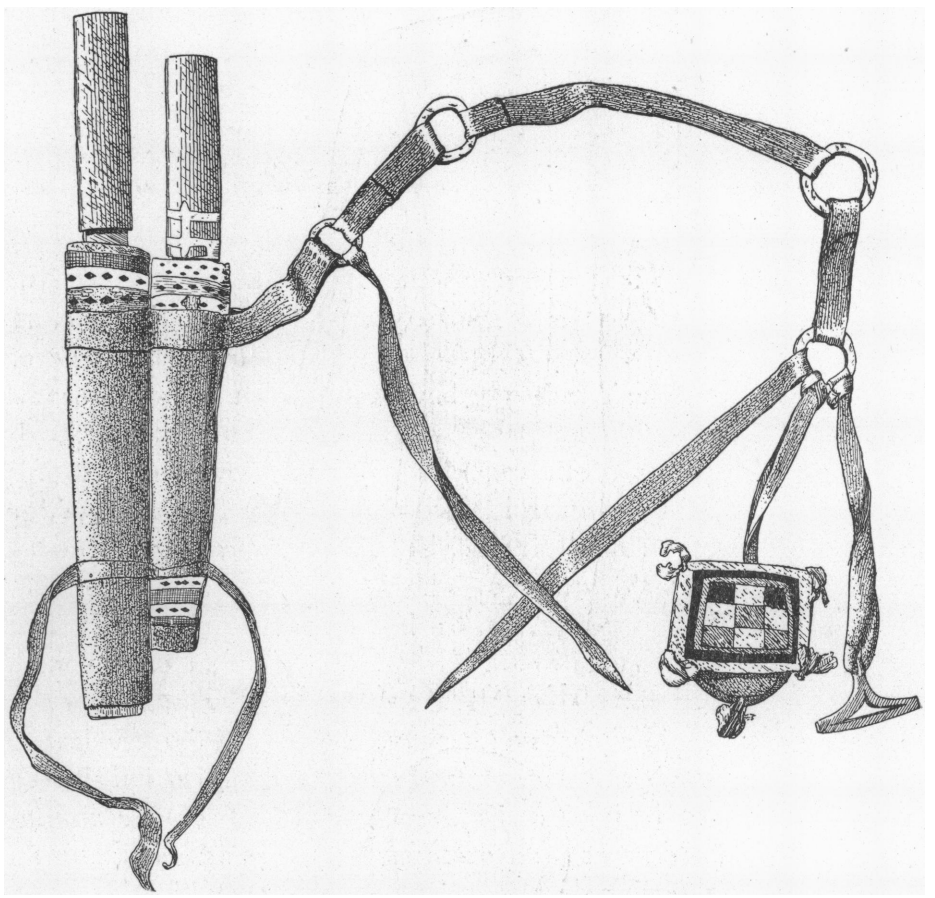

Fig. 126 ($\frac{70}{8433}$). Two knives Fig. 125, sheathed and attached to belt.

belt a steel strike-a-light and an ornamented pouch containing flint and tinder are attached. The sheaths are ornamented with bands of chintz and colored leather.

Fig. 127, *a* and *b*, shows a carving knife with sheath. The knife is called cadā'ye and the sheath cadā'yed-a'but. This type of knife is used in finishing dug-out canoes, bowls and other wooden vessels. The ornamented sheath has a strap for fastening it to one of the belt rings. There is another type of carving knife, a crooked one called e'riyeč. The woman's tailoring knife is like the ordinary carving knife, only a little wider. It is called i'ñǰin-čogo'ye, i. e., knife for sewing.

Fig. 128 shows a strike-a-light (lo'čidi, i. e., fire maker) of Shalugin's

[1] See p. 379.

manufacture, and Fig. 129 represents a pair of iron pincers for pulling out the scanty facial hairs. These are called pu′gače-me′nniye, i. e., the hair taker.

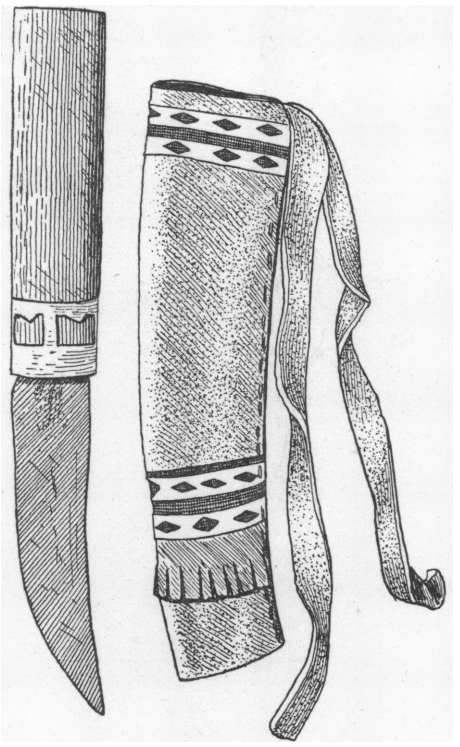

Fig. 127 ($\frac{70}{8480}$). Carving knife and sheath.

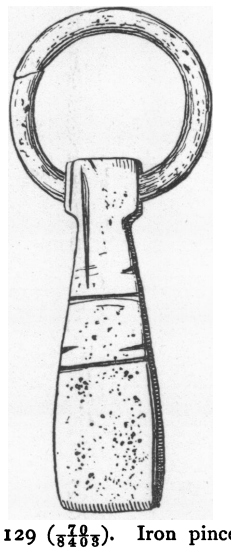

Fig. 129 ($\frac{70}{8403}$). Iron pincers.

Fig. 128 ($\frac{70}{5536}$). Strike-a-light.

Women use it to keep the pubis clear of hair. Some women shave it with a sharp tailoring knife.

Figs. 130 and 131 show bowdrills, xo′nḍodibe (sing. xo′nḍodi), i. e., hole

makers. At present the Yukaghir rarely use a drill for making fire, but two names for it have been preserved: čiʹgiji, the sinking one, or čuʹoled-oʹmnilo'čidik, i. e., ancient people's fire maker.

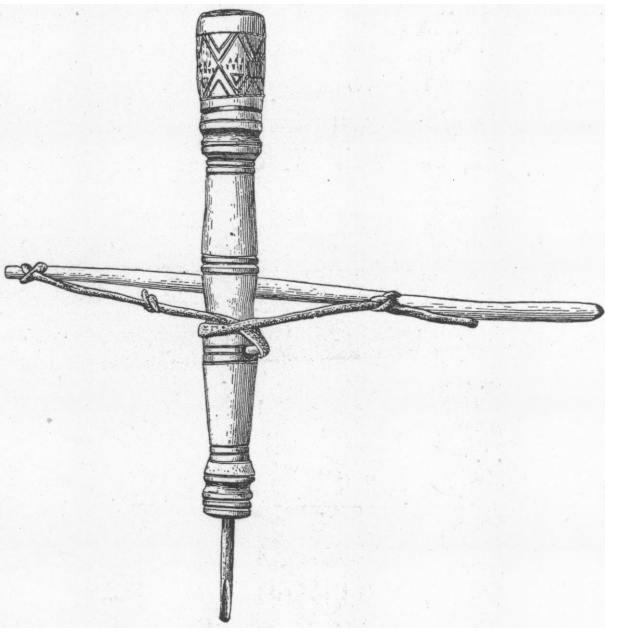

Fig. 130 ($\frac{70}{8821}$). Bowdrill.

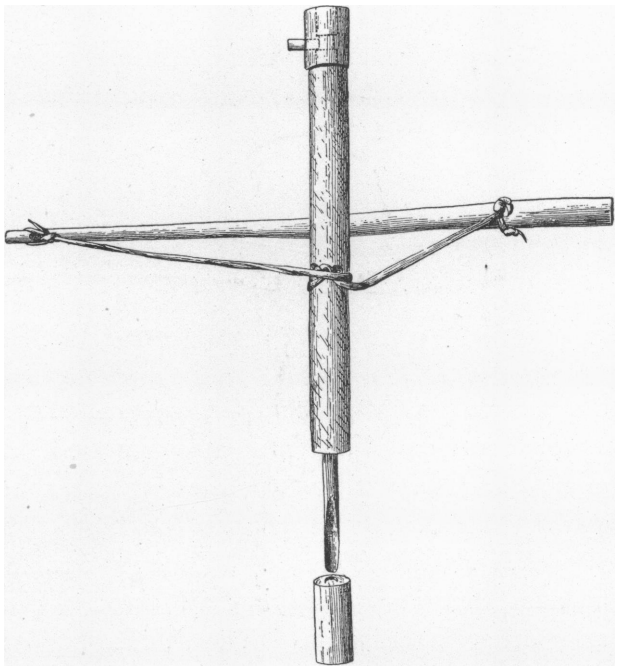

Fig. 131 ($\frac{70}{8431}$). Bowdrill.

Fig. 132 shows a plane of Shalugin's make, in imitation of a Russian plane. Usually the Yukaghir plane with a carving knife. For planing with a plane the Yukaghir use the Russian term, istroʹgai, from the Russian *strogat.* For planing with a knife, there is an old Yukaghir term, cāʹyec, i. e., working in wood.

Skin-dressing. Skin-dressing is done by women. Skins of large animals, like reindeer, bear or elk are stretched on the ground to dry and fastened to the earth with wooden pegs or stones. Before drying, all the meat, fat and sinew are removed with a knife. Skins of small fur-bearing animals, like foxes, are removed whole. They are turned inside out and pulled over a wooden drying rack. Skin scraping tools were formerly made of stone and bone. At present the Yukaghir use iron scrapers. Stone scrapers were called aʹngaǰiceuʹl, and bone scrapers aʹngaǰidaʹmun. In Figs. 133–135 are shown different types of iron scrapers used in skin dressing. Fig 133 is called luʹdud-aʹngaǰi, i. e., iron scraper, or luʹdud-aʹut, and is used in the beginning of the skin dressing process to remove the inner membrane. Then the skin is folded and left over night. On the following day another scraper is applied (Fig. 134). This one is called by its Tungus name, čučuʹn. Then the skin is again dried and another scraper,

called ke'rde (a Tungus word, see Fig. 135) is appplied. It may be that the Tungus names for scrapers are evidence that the metallic scrapers were borrowed from the Tungus. After a second drying, the skin is dipped in a decoction of alder bark and then is scraped again to soften it. A skin thus dipped is said to keep off dampness. For currying, the hairy side of the skin is soaked with water or urine, folded, and left for a couple of days. After this, the hair is scraped off and the skin dried. To obtain a soft hide,

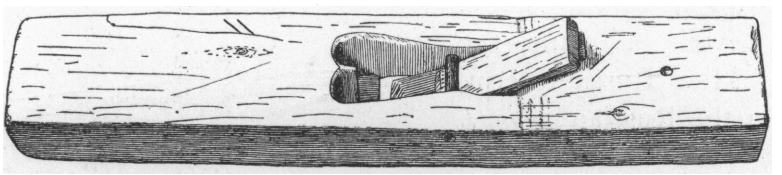

Fig. 132 ($\frac{70}{8284}$). Plane of Shalugin's make.

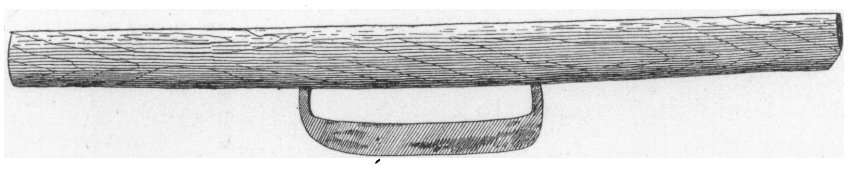

Fig. 133 ($\frac{70}{8438}$). Iron scraper.

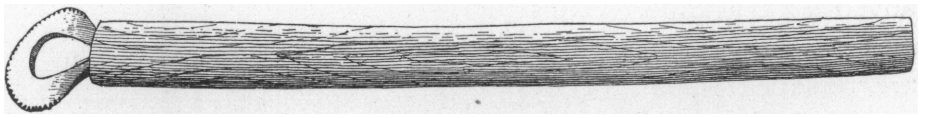

Fig. 134 ($\frac{70}{8280}$). Iron scraper.

Fig. 135 ($\frac{70}{8437}$). Iron scraper.

the curried skin is scraped several times. For summer clothing and tent covers curried skins are also smoked, making the leather fairly waterproof and preventing it from shrinking after being wet. For the use of paints in dyeing skins, see the chapter on clothing. (pp. 389, 406).

Lines and Thongs. Thongs and lines are needed not only for dog harness, but also for tying all wooden portions of the sledge, for nets, seines, and other necessities. The Yukaghir of the Upper Kolyma cut lines from elk skins. For tying together the parts of the sledges, thongs of reindeer skin may suffice, but for the main lines of a sledge to which the dogs are attached, a reindeer skin line is not strong enough. For this several reindeer skin thongs are twisted into a rope. Willow branches are similarly twisted.

Before being twisted they are soaked in boiling water to make them more pliable. Fig. 136 represents a piece of rope for seines made of two twisted willow branches. Fig. 137 shows a line braided of four thongs. Similar cords are also used for nets and seine lines. Plaited cords are made from the sinews of reindeer legs. From the Chukchee the Tundra Yukaghir obtain lines and cords made of seal skin and thongs of walrus hide. Plaited reindeer or seal lines are also used for lassoes and tent ropes. The Yukaghir generic name for line or cord is ige′ye. A twisted willow line is called kilie′č, evidently from the Russian *klyach*; a line of twisted horsehair is called si′med-ige′ye. Horsehair is called ya′xax-ā′če-si′me, i. e., hair of the Yakut reindeer. A line made from the mane of the elk or reindeer (males) is called ye′buled-ige′ye. Ye′bule is the term for hair of the mane and of the neck under the chin of a reindeer and elk. Lines of Russian or American twine are called pre′ǰined-ige′ye (from the Russian *pryasha*, thread, yarn). Walrus thong is called o′ǰin-to′loun-ige′ye or čobun-to′loun-ige′ye, i. e., water-wild-reindeer-line, or sea-wild-reindeer-line.

Fig. 136 ($\frac{70}{8240}$). Rope of willow branches.

Fig. 137 ($\frac{70}{8445}$). Braided rope of thongs.

Weaving. Yukaghir women do not make woven bags or baskets, although there are many kinds of material available for weaving, such as wild rye (*Elimus mollis*), fireweed (*Epilobium angustifolium*), nettle (*Urtica diorica*) from which Kamchadal and Koryak women make bags, baskets and mats. Neither reindeer sinew nor imported twine are used for weaving. The Yukaghir women are content with sewing bags made of skins and baskets made of birchbark. Only fish traps are made of plaited willow rods, as shown in the chapter on Fishing, Hunting and War (p. 373 and Plate XXVI, Fig. 1).

Trade. The trade of the Yukaghir is chiefly exchange. Money is needed only to pay the small taxes imposed by the government. When these are due one or another Russian or Yakut merchant may advance the necessary amount of money against skins to be turned in by a certain date. In such transactions the merchant usually gains 100 percent. Among the Russian goods which the Yukaghir obtain in exchange for pelts, the first place belongs to tobacco, tea, gunpowder and lead; the second to manufactured articles, calico, flannel, cloth, scarves and thread for nets; the third to sugar, flour and pig-iron. Matches, candles, soap, butter and sweets are regarded as luxuries. Flour, gunpowder and lead can be obtained at cost price from the government stores, but the Yukaghir have no cash for such purchases.

Exchange. In the Upper Kolyma country and other forested regions the squirrel skin serves as a unit of exchange; on the tundra the unit of exchange is the fox skin.

An idea of how these units are valued may be obtained from the following equivalents:

1 pound of leaf tobacco	from 10 to 20	squirrel	skins
1 " " powder	20	"	"
1 brick of tea	20	"	"
1 female reindeer	40	"	"
1 castrated buck	50	"	"
1 yearling reindeer	20	"	"
1 flintlock gun	200	"	"
1 pound of tea	20	"	"
1 " " sugar	15	"	"
1 scarf	20	"	"
1 red fox skin	30	"	"
1 gray fox skin	100	"	"
Copper ware (kettles and teapots)	10 to 15	"	"
1 flannel shirt	50	"	"
1 woolen shawl	50	"	"
1 bottle diluted brandy [1]	30	"	"
Silver goggles	40	"	"
1 reindeer skin	10	"	"
5 arshin (about 3 meters) calico	20	"	"
1 pound of beads	20	"	"
1 knife	10	"	"
1 axe	40	"	"

As has been stated before, on the tundra the exchange unit is a fox skin. As a red fox skin is equivalent to thirty squirrels and a white fox skin to twenty squirrels, it is unnecessary to compile a table of exchange values for fox skins. The corresponding value may be obtained from the squirrel exchange list.

Mammoth ivory (xo'lgut-o'nmun) is another trade article on the tundra. Xo'lgut-o'nmun means "the mammoth's antler," from which may be inferred that the Yukaghir have a mistaken idea of the outer appearance of the extinct animal. In the Verkhoyansk District the greater part of the mammoth ivory is found on the adjacent islands of the Arctic Sea. A Russian pud (equivalent to 36 English pounds) of mammoth ivory, before the World War, was valued at from 15 to 25 rubles by local merchants. The yearly export value, before the war, of peltries and mammoth ivory, from the district of Kolymsk was

[1] This, of course is a prohibited article.

estimated at about 70,000 rubles ($ 35,000). If to this is added the value of the exports of the Verkhoyansk District, this sum will be doubled. Of course, this sum includes also the products of the chase of the Yakut, Chukchee, Tungus and Russian hunters of the districts above named.

Boats and canoes. The Upper Kolyma Yukaghir are known in the country as boat or canoe builders. Every summer they float down the river a number of boats and sell them to the inhabitants of Sredne-Kolymsk and other Kolyma fishermen.

Credit. The credit system in use is most injurious for the Yukaghir. They receive goods from Russian and Yakut merchants on condition that they deliver in payment the future products of the chase. In consequence, the Yukaghir hunter is always in debt to the merchants and in his accounts must rely on the trader's good will and trust. The latter, however is not always reliable, changing his records at will. The aim of the hunter is to obtain as large a number of trade articles as possible, with no thought for the future. The more debts a man has, the richer is he regarded. A Yukaghir proverb says that every newborn boy appears in the world as a rich man, i. e., loaded with debts. When he attains manhood he must pay the debts of his father or even his grandfather. It is a matter of honor to pay the father's debts and to be trusted by merchants.

XXV. — MATERIAL CULTURE.
ART AND PICTOGRAPHIC WRITING.

Pictographic writing is still in use among the Yukaghir of the Yassachnaya and Korkodon Rivers. Like the American Ojibway, they trace with the point of a knife figures and lines on the inner surface of birchbark. Drawings are also made by puncturing. Formerly this was done with a bone awl.

We find two kinds of pictographic writing — realistic and conventionalized.

The realistic form of graphic art is used in birchbark letters in which one person or a group of people communicate to other persons his or their exploits or experiences. This form of writing, of course, can be called realistic only so long as the writer is able to trace figures of men, animals and objects. When a hunter is leaving his temporary camp or seasonal habitation he leaves on a tree a birchbark letter to inform passing tribesmen where he has gone and what has happened.

Fig. 138 shows the Korkodon River (1) and its tributary, the Rassokha (5). The rivers are indicated each by a pair of equidistant wavy lines. The line in the middle of the river shows the route of the writer. The lines across the Korkodon River just above the mouth of the Rassokha indicates the place where the river was dammed for fishing. Farther to the right is a representation of a grave (2) with a double cross showing that there a man died and was buried. Still farther to the right, three conical tents (3) are shown. At this place the whole Yukaghir group lived for some time. From there two tents moved farther up the Korkodon River. They had two boats, preceded by four canoes (4). One tent moved back and ascended the Rassokha (6). There they stopped for a time on the left shore and moved up the Rassokha with two boats and two canoes. This means that the people of the tent consisted of two families, although they had only one tent. A boat is distinguished by its steering oar and paddles while the canoe has only a double paddle. This letter was found on a tree by my Yukaghir travelling companions when we ascended the Korkodon River in the autumn of 1895, so that my companions learned where their clansmen had been during the summer and what they had done. They guessed who had died and told me why two families had one tent on the Rassokha River. The cover of the other tent was in our boat; one of my oarsmen belonged to the family that lived in a neighbor's tent. On the Korkodon River are shown three small tribu-

taries. The information such a letter gives is not quite accurate, as the exact time of the beginning and end of the fishing is not given in the picture writing.

Fig. 139 shows, from right to left, four Yukaghir log huts in the form of squares, — a winter village on the Korkodon River (1). In the spring the inhabitants of the village moved on to hunt and put up four temporary conical tents (2) some distance from the winter dwellings. Near the camp are a larch tree, two sledges, and a pair of snowshoes with a staff. Two loaded sledges leave the camp for hunting. The hunters on snowshoes carrying staff's are driving the dogs. On the sledges some boys are sitting who help the hunters while camping at night and hunting. This letter was found by my travelling companions on a tree when we came to the Korkodon from the Yassachnaya River in the spring of 1896.

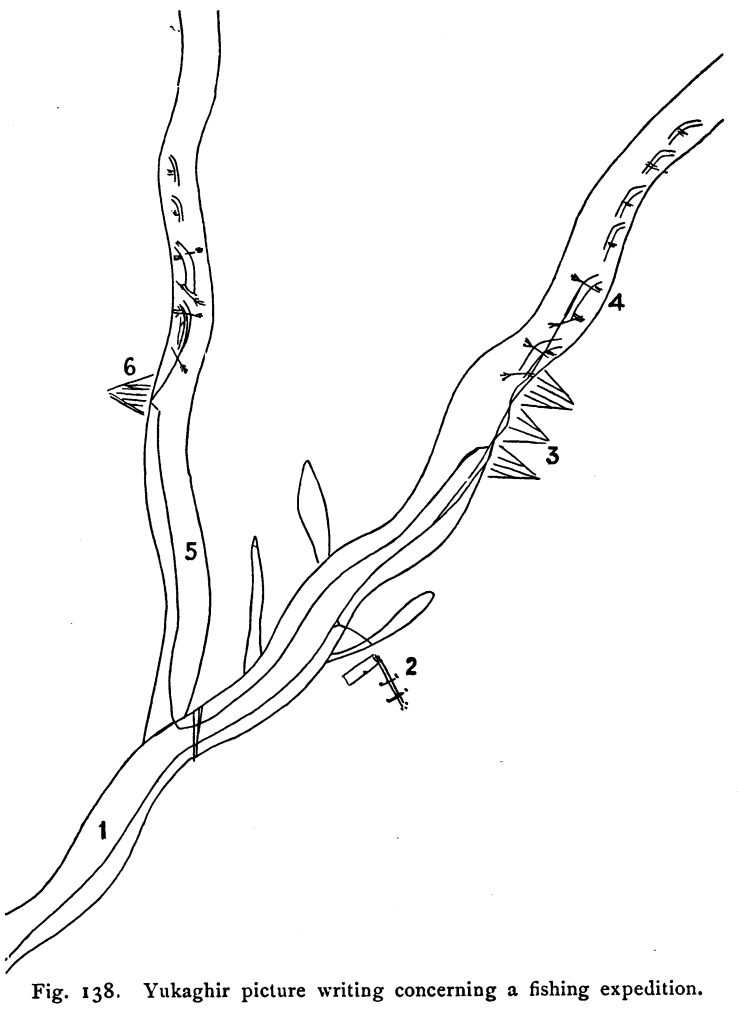

Fig. 138. Yukaghir picture writing concerning a fishing expedition.

Fig. 140 shows Yukaghir hunting scenes. Beginning at the bottom, there are three hunters (1) pursuing three wild reindeer. The next line (2) represents two hunters on snowshoes with flintlock guns and staffs. The first hunter, resting his gun on a support, has shot at two reindeer and hit one of them. At the top, in the right hand corner is a hunter (4) on hands and feet stealthily approaching a tree on which two birds are sitting. It is interesting to note that the birds are turned over with their backs resting on the tree. In the left corner (3) are three conical tents, men, a dog and sledges. The small size of the tents might be explained as evidence of a sense of perspective, but two aprons drawn at the top at the left corner argue against this idea.

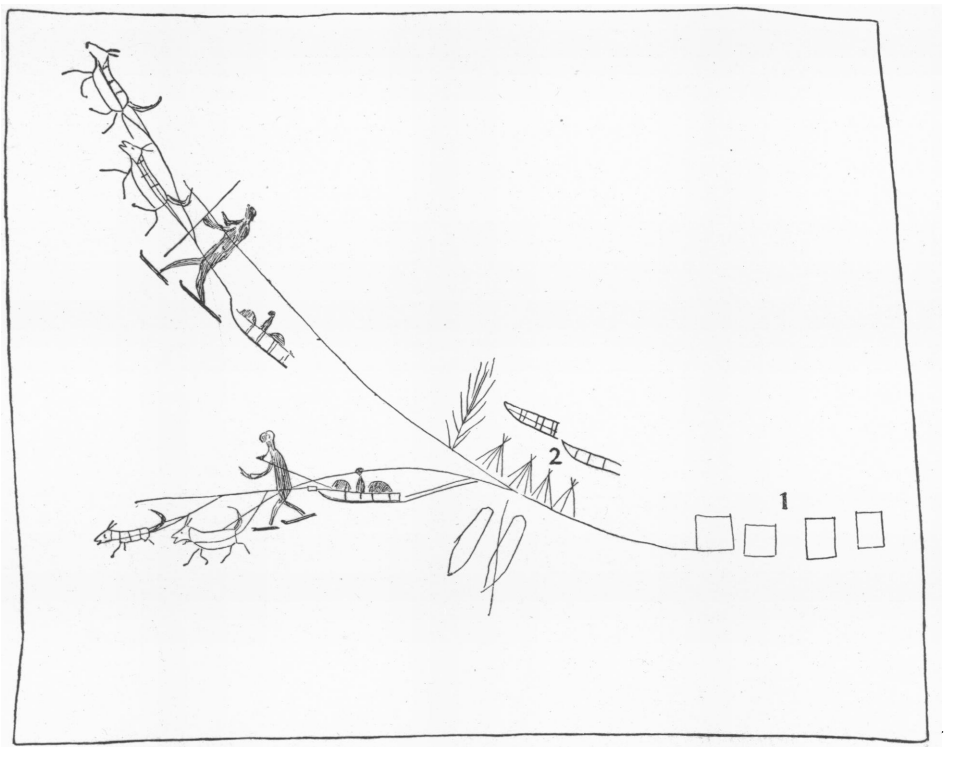

Fig. 139. Yukaghir picture writing telling of spring hunt.

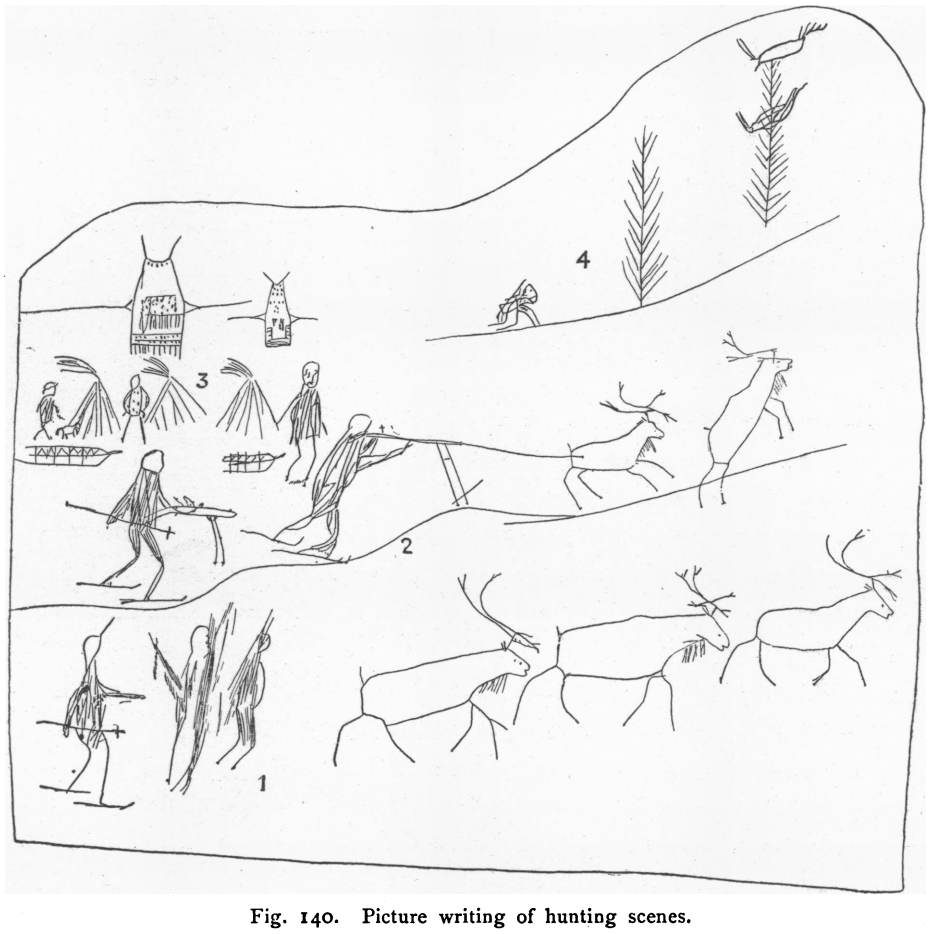

Fig. 140. Picture writing of hunting scenes.

Fig. 141 shows the Kolyma River, its tributary, the Yassachnaya, and the tributary of the latter, the Nelemnaya. On the bank of the Nelemnaya are three conical tents (1) and not far from them, upstream, a weir with nets crosses the river. On the Kolyma River (5) are two boats. Both descended from the Nelemnaya River where the tents are standing. One of the boats (3) is being rowed down the Kolyma. A hunter from this boat stands on

Fig. 141. Picture writing of fishing and hunting.

the bank of the Yassachnaya about to butcher a reindeer which he has killed (4). His gun lies behind him and his canoe is drawn up on the bank above the reindeer. The second boat, which stopped on the Yassachnaya not far from its mouth, where we see a small tent, is going up the Kolyma River (2). Two men are towing it. Two dogs run along, but they are not harnessed to help the men pull the boat. Ahead of the boat a hunter is

poling his canoe against the current. His double-bladed paddle lies across the canoe.

Fig. 142 shows a Yukaghir hunter from the Korkodon River who walked to Verkhne-Kolymsk to get a gun from the Russian chief. 1 is the winter village of the Korkodon Yukaghir situated on the bank of the Korkodon River opposite the mouth of the Rassokha, a trubutary of the Korkodon. The village consists of four earth huts. 2 is a Yukaghir winter dwelling on the Kolyma River, close to the mouth of the Korkodon River. 3 shows the earth huts of the Yassachnaya-Yukaghir. Their winter village is situated on

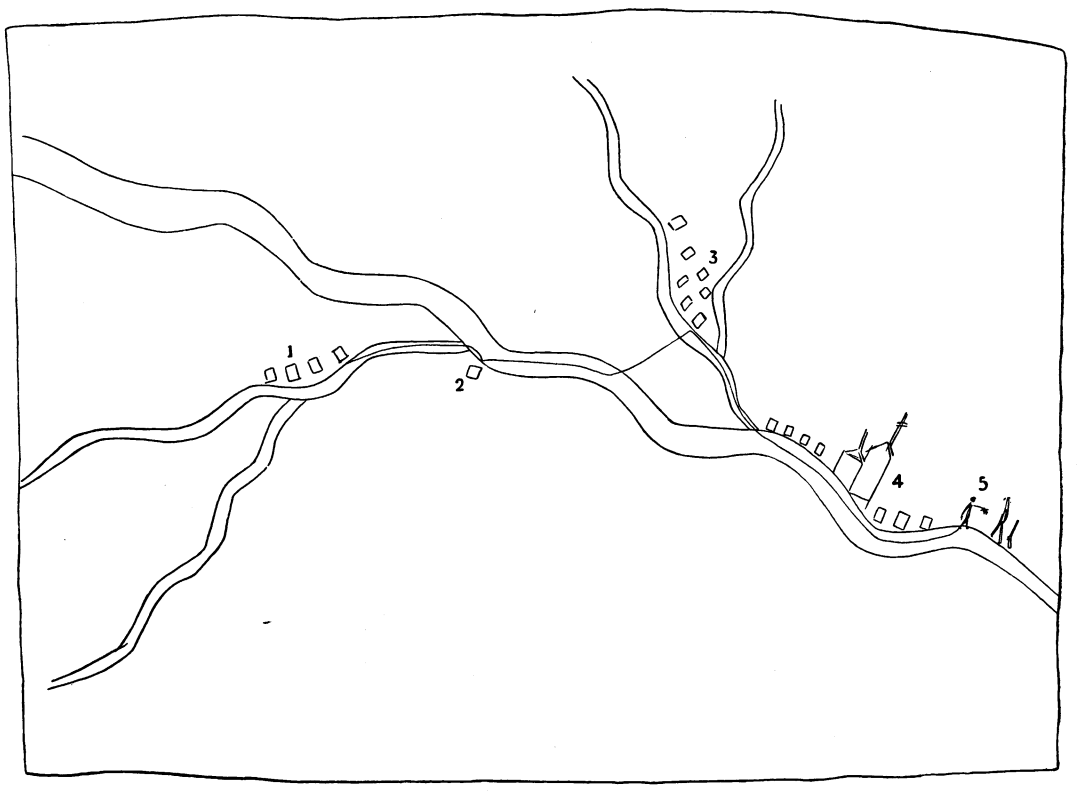

Fig. 142. Picture writing of a journey.

the banks of the Yassachnaya and its tributary, the Nelemnaya. 4 is the Russian village Verkhne-Kolymsk with houses and a church. 5 shows the Korkodon Yukaghir stretching out his hand, asking the Russian chief for a gun which he holds behind him. The village of Verkhne-Kolymsk is incorrectly located. It is situated at the mouth of the Yassachnaya River on an island formed by an arm of the Kolyma flowing into the Yassachnaya several miles above the mouth of the latter.

Fig. 143 represents scenes of winter life among the Yukaghir. The Yassachnaya River (3) is frozen. Dogs and men on snowshoes with staffs pull two dog sledges (7), and in three places men are making holes in the

ice for fishing (5, 6). Farther up river, a man is sitting near a hole in the ice, fishing (4). On the right bank of the river is a hare in front of a trap (1). Farther up, are three huts (2) around them are sledges, snowshoes and bird snares. A snowshoe is hung up on a tree to dry. On the left bank are

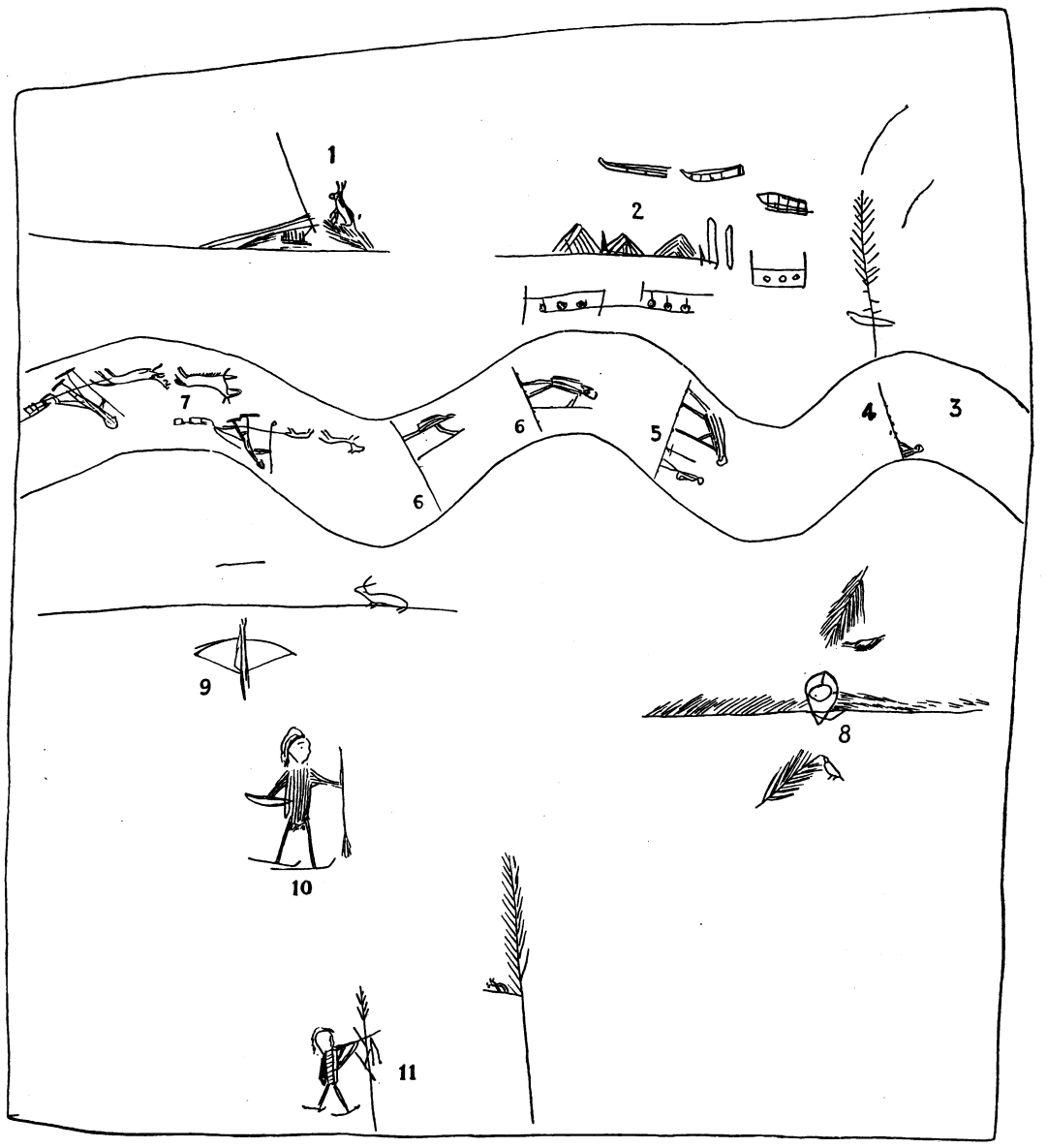

Fig. 143. Picture writing of scenes of winter life.

shown a hare running towards where a self-acting bow is set up (9), a hunter on snowshoes with a bow in one hand and an arrow in the other (10); a hunter on snowshoes, leaning his flintlock gun on one larch tree is shooting at a squirrel on another larch tree (11); to the right is a bird snare with two birds pecking at larch trees (8).

Fig. 144 shows (1) a blacksmith hammering an iron tool while his assistant sits between the double bellows, — leather bags with tubes which he works alternately;[1] (3), under the blacksmith two men carrying a boat to the lake for fishing; (4), to the left of the boat a man mending a net held by a woman; (7) a woman sitting with a knife in her hand and a tailoring board nearby. Behind a big basket is the frame of a conical tent. A man with outstretched hand is asking something of the woman; (2) represents a

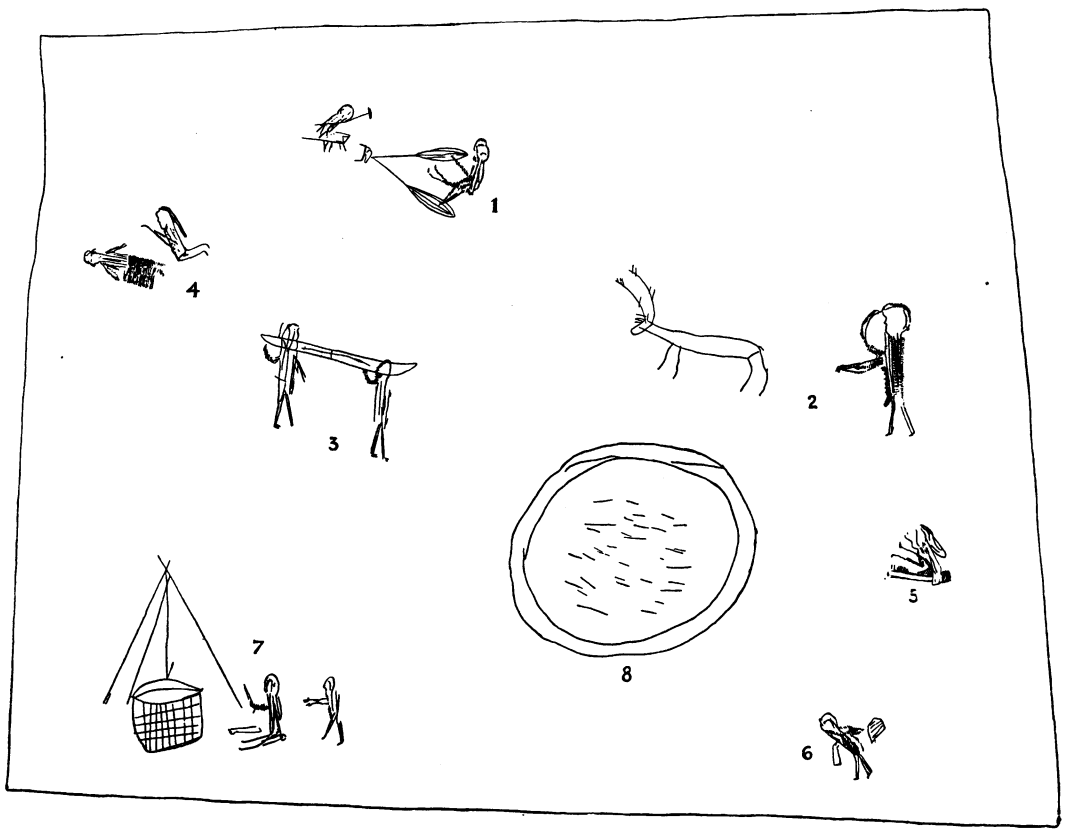

Fig. 144. Picture writing showing native industries.

man looking for a wild reindeer; (5) a man working with a hammer, making an ornament; (6), in the right hand corner, a man carrying a bundle in each hand, (8) a lake with swimming fish.

Fig. 145 shows a hunter preceded by a dog pursuing a fox (8); on the right bank of a river an ermine running towards a self-acting bow (6); a hunter approaching a tree on which a squirrel's nest is seen, while his dog looks up at the nest and barks (7); a dog up-side down (9); a fish dam and a man in a canoe emptying the net in the middle (1); the river barred half way across with three nets set (2); one canoe full of fish and in another

[1] See p. 424.

canoe a man shooting (3); a man in a canoe driving into the river piles to which nets are to be tied (4); a man in a canoe paddling home with fish (5).

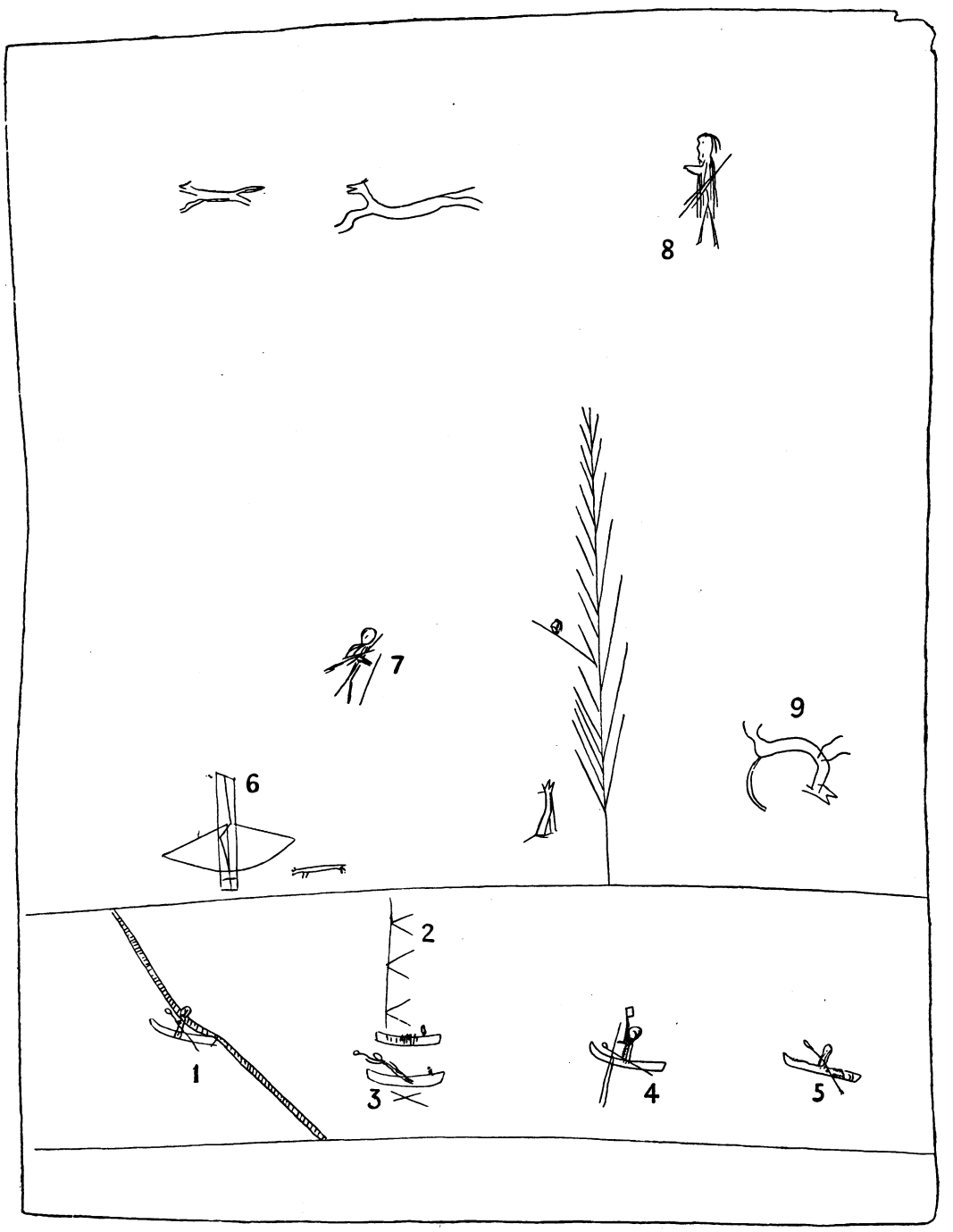

Fig. 145. Picture writing of hunting and fishing.

Fig. 146 shows the Kolyma River (1), its tributary, the Yassachnaya River (3), at the mouth of which is situated the settlement Verkhne-Kolymsk (2),

another tributary, the Popova River (4), with two tents at its mouth and a dam a little up the river. The windings of the Kolyma are shown. On the river is a man in a canoe. At the left of the river are two lakes: on one (6) a man is fishing from a canoe with a hand net; near the other (5), a hunter is raising his flint-lock to shoot two geese.

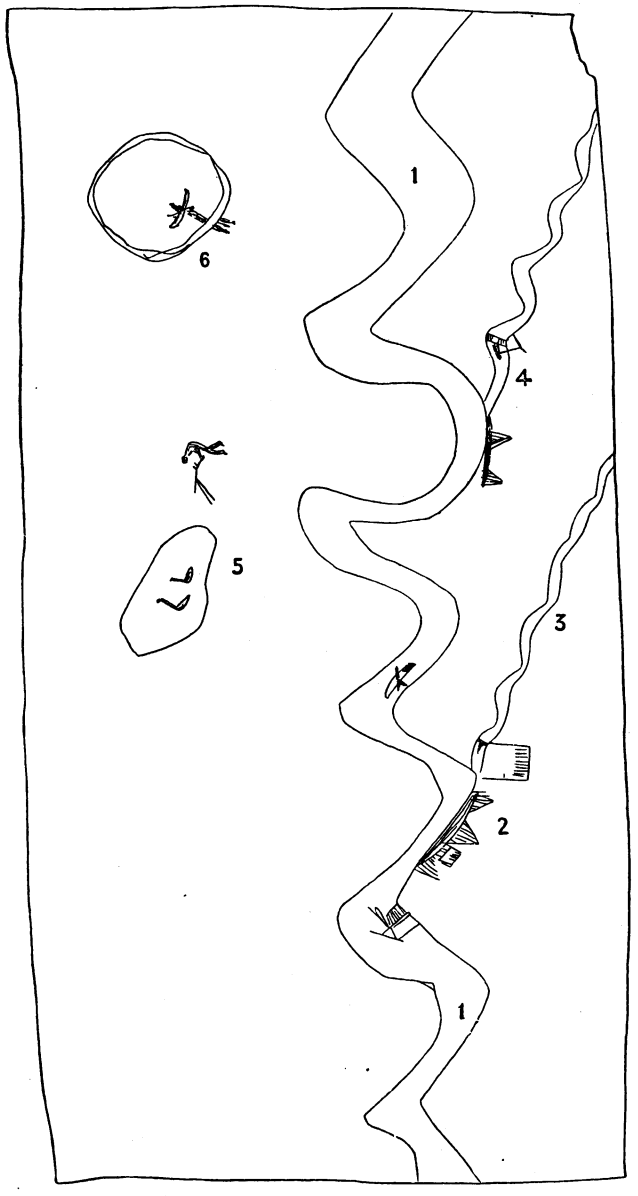

Fig. 146. Picture writing of the Kolyma Yukaghir.

Figs. 147 and 148 are maps. Fig. 147 shows the Kolyma River (1) and its tributaries and the lakes between them, from the mouth of the Yassachnaya River (2) to the mouth of the Buyunda (9). (3) is Prorva, an arm uniting the Kolyma River with its tributary, the Yassachnaya, thus forming a triangular island. On this island on the bank of the Yassachnaya is situated the Russian settlement, Verkhne-Kolymsk. This settlement is not shown on the map, but there are eight conical tents, three on the Yassachnaya and five on the Prorva. The Yassachnaya Yukaghir usually live there for a short time in the beginning of June, after descending from the Upper Kolyma and its tributaries. (2) is the Yassachnaya River and (4) its tributary, the Nelemnaya River. At the mouth of the Nelemnaya are nine winter huts of the Yassachnaya Yukaghir, four on the bank of the Nelemnaya, four on the left bank of the Yassachnaya, and one on the right bank of the Yassachnaya. Not far from the village are shown two lakes. On the shore of the second (5) are huts in which the Yukaghir live when they come to the lake for winter fishing. Opposite the Yukaghir village is a chain of seven lakes (6) between the Yassachnaya and Kolyma rivers. A legend about these lakes states that two shamans began to dig a canal intending to

join the Kolyma with the Yassachnaya and thus shorten the distance between the Yassachnaya and Korkodon Yukaghir. But they were unsuccessful and only the lakes remained. At the mouths of the Popova (7) and Korkodon (8) are Yukaghir huts — one at the mouth of each river. All the dwellings

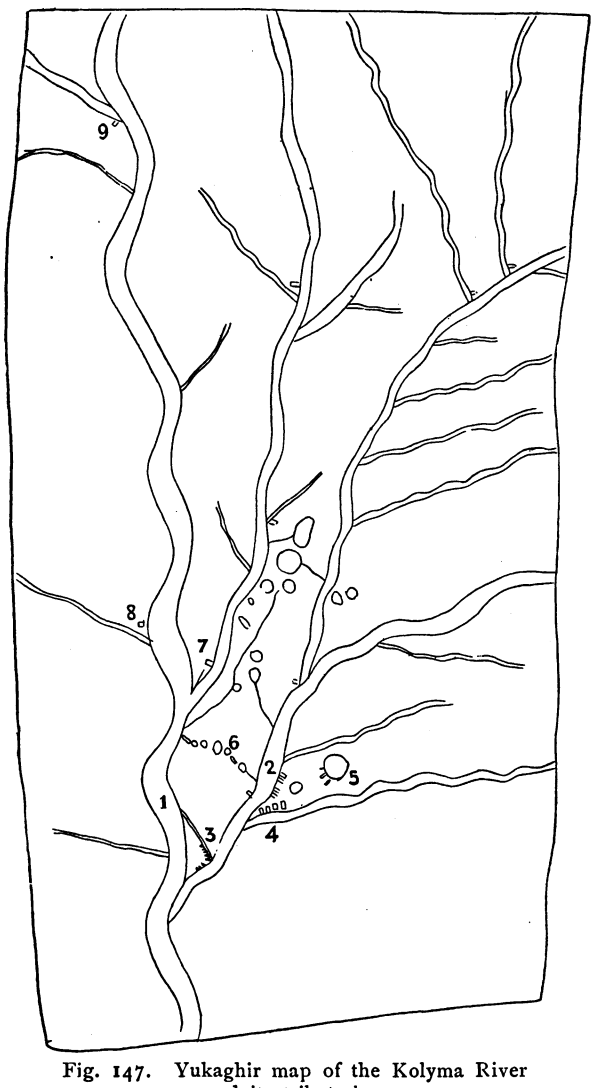

Fig. 147. Yukaghir map of the Kolyma River and its tributaries.

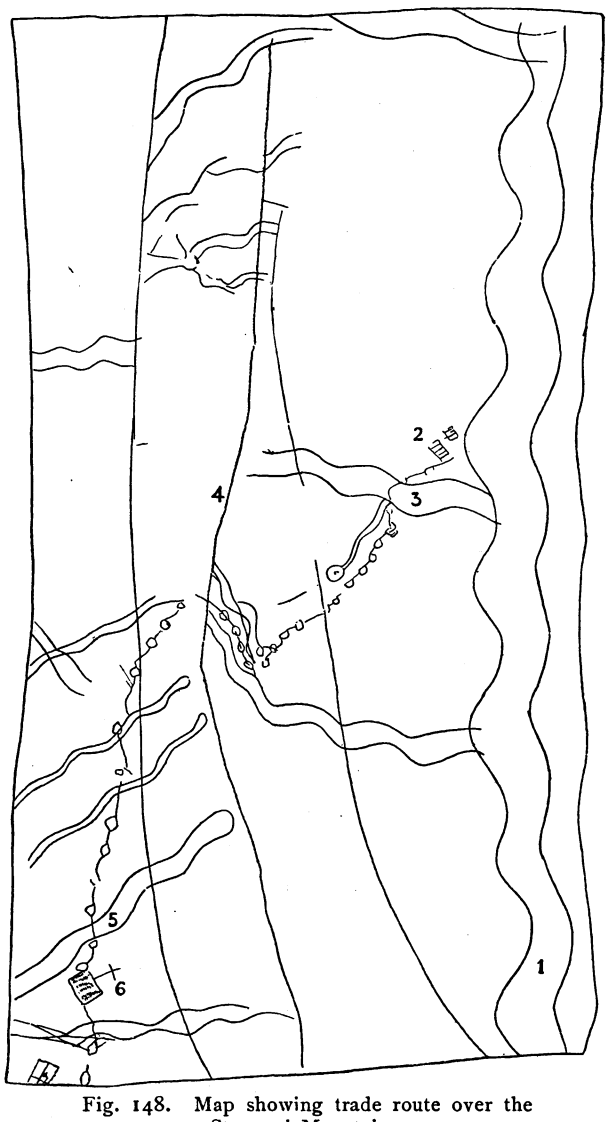

Fig. 148. Map showing trade route over the Stanovoi Mountains.

indicated farther south are those of Yakut. These Yakut recently came to the Kolyma country from the Oimyakon table-land.

The map, Fig. 148, shows the route from the Upper Kolyma region, namely from the mouth of the Buyunda River (3), over the Stanovoi Mountain ridge, to the Gishiginsk settlement on the Gishiga River, twenty versts from the coast of the Okhotsk Sea. The Stanovoi Ridge (4) is indicated by an irregular line. The circles in the route line indicate halting places. The figure

with a cross is the Gishiginsk village (6), the residence of the district administration. This map was made by a Yukaghir who accompanied Yakut traders who travel to Gishiginsk to buy imported articles and to sell fur skins. (1) represents the Kolyma River; (2), a Yakut settlement, (5), the Varkhalam River. According to this itinerary the route from Buyunda to Gishiginsk takes twenty-seven days. It refers to travel on horseback in the spring or early summer when the thaw begins. It took the writer two months to follow the route from Gishiginsk to the Korkodon River, a much shorter route than the Gishiginsk Buyunda, because he travelled in August and September when the country is covered with swamps and marshes. The stopping places beyond Gishiginsk lead to the Koryak territory.

The Yukaghir set down on their birchbark maps only those places which they themselves have seen and know well. In their drawings they display a clear conception of the relative location of the rivers, lakes and mountains of the territory they know and also a knowledge of the four cardinal points. Thus the Yukaghir drawings of routes and maps may be regarded as primitive geographical maps.

In reviewing the drawings on birchbark (Figs. 138–148), we may divide them into pictographic letters and maps. Both serve practical ends. The former are the means of communication between two parties at a distance, the latter give the inexperienced hunter knowledge, chiefly of the river valleys of the country. In both cases the primitive writing is a substitute for oral communication. It is assumed that the expedient of expressing thoughts by other means than oral speech, which can be used only in direct intercourse, has been established by primitive peoples only after the development of speech. But it seems to me that the beginnings of oral speech and of writing as a means of expressing thoughts and feelings may have been simultaneous. Even in animal life we may detect a germ of sign writing. Footprints lead the wolf to the reindeer. The latter informs the wolf by his tracks that he passed by in a certain direction. In the life of a primitive hunter what animals write with their feet is of great importance and the footprint may have been the prototype of writing. The significance of the footprint in the life of a hunting tribe like the Yukaghir has its reflection in the language. In the Yukaghir language every verb has three conjugations. One of these conjugations, the evidential mood, is used when something is told as a conclusion based on evidence.[1]

Fig. 149 represents a sample of a love letter. Each of the figures resembling folded umbrellas represents in a conventional way a human being. The inner pair of lines indicates the legs, the outer two lines the arms, and the dots show the joints of the legs and parts of the body. The dotted line

[1] See W. Jochelson, Essay on the Grammar of the Yukaghir Language, Annals New York Academy of Sciences, Vol. XVI, Part II, March 1905, p. 128.

extending from the side of the second figure, from right to left, indicates a braid, i. e., the figure is a girl or woman. The contents of the letter are as follows: Above the central figure (a) is an object like a hat which represents a deserted dwelling, i. e., one which figure *a* is leaving. The minds or the desires of the two female figures were directed towards the central figure, *a*, but the latter is too important a person for the Yukaghir girls who composed this letter. Their minds stop on the way, not daring to go to their original destination, turn around for a great while, and go back. The mind of *d* goes to figure *b* and the mind of *e* goes to figure *c*. The figures *c* and *e* and *b* and *d* are united by bands of love, but the bands of *b* and *d* are of a more durable nature than those of *e* and *c*. This is shown by the diagonals uniting the heads of both pairs. In the first case we have two diagonals, and in the other only one.

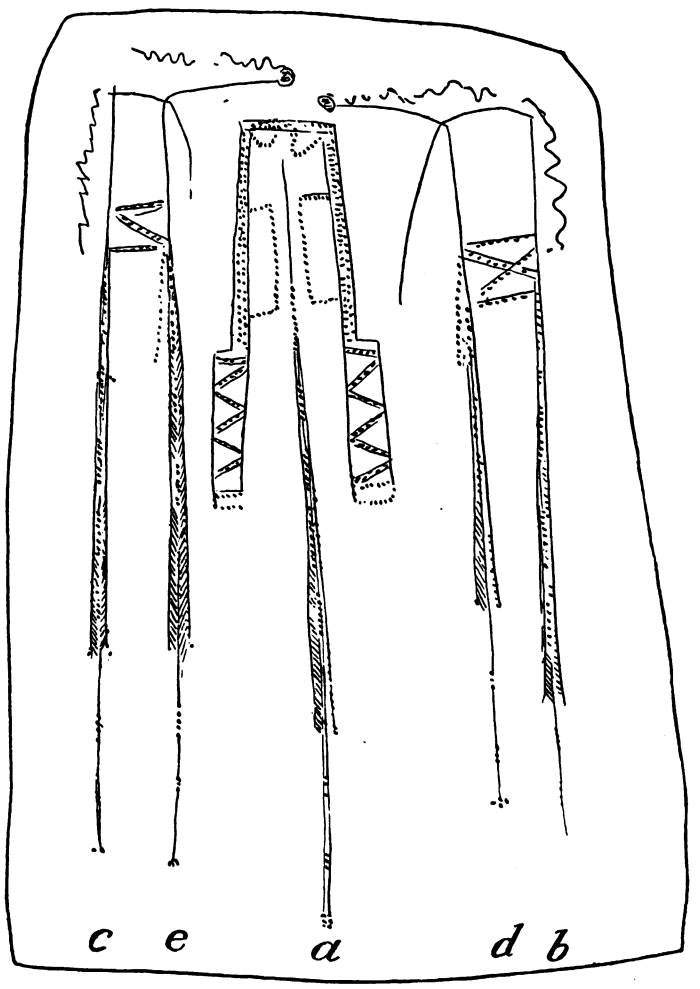

Fig. 149. Yukaghir love letter on birchbark.

I have not been able to find further examples of such letters, neither in my possession nor in the Museum collection. They were probably lost. Copies of the originals may be found in the Museum for Anthropology and Ethnology of the Academy of Sciences in Leningrad.[1]

In describing his Yukaghir love letters Shargorodsky says: "Only girls occupy themselves with such writings. Married women and men do not.

[1] In order to give here a fuller account on the character of Yukaghir love letters, I reprint the description of those collected on the Yassachnaya River by my friend S. Shargorodsky who lived for some time as a political exile among the Yassachnayá Yukaghir before I arrived there. He published his Yukaghir love letters in the Journal Zemleviedeniye (The Study of the Earth) of the Geographical Division of the Society for the Study of Nature, Anthropology and Ethnography of the University of Moscow, parts 2–3, 1895. Major-General von Krahmer translated Shargoradsky's article into German and published it together with illustrations in "Globus", Vol. LXIX, 1896, pp. 208–211.

These writings of girls concern exclusively their declarations of love, the expression of sorrow when being abandoned or other utterings of intimate feelings.

As material for producing such letters, the girl uses birchbark as a substitute for paper and the point of a knife instead of a pen. Of course, girls can indulge themselves in letter writing only in time of leisure, which is very limited. During the work-day they are busy from early morning till late in the evening; even during holidays they have little rest. During the winter an immense quantity of fuel is needed which girls have to bring in from distant places on sledges harnessed with a couple of small badly fed dogs; during the summer they do the hardest work of the fishing season. A real holiday does not arrive until the necessary wood has been brought in and the fishing season is at an end.

On such a day the neighboring settlements of the Yakut are informed

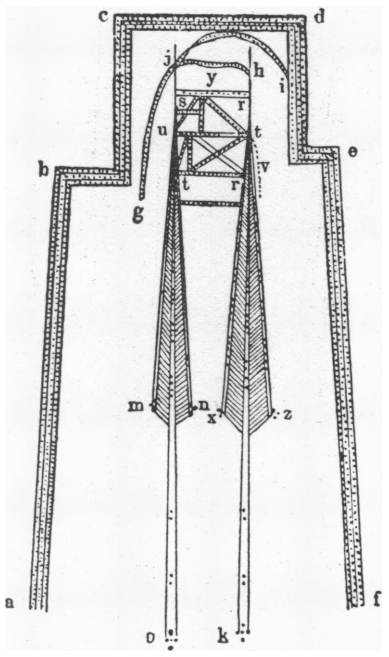

Fig. 150.

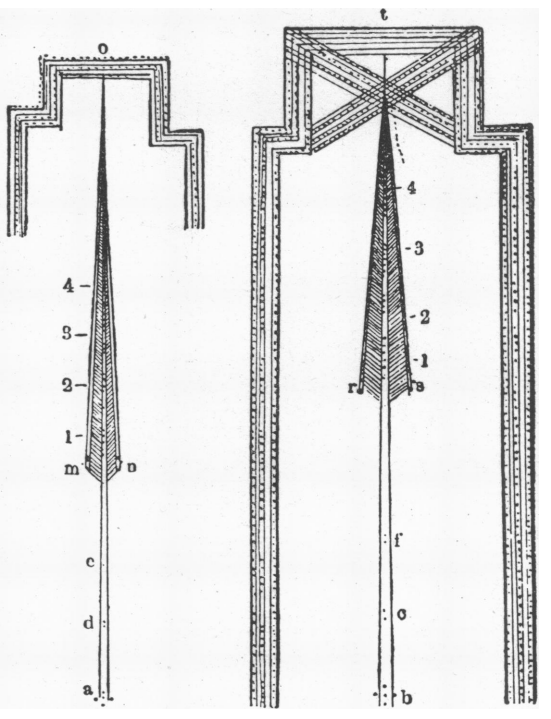

Fig. 151

that a dance will take place at a certain place and time. While the young people are slowly assembling the Yukaghir girls use their leisure hours in preparing love-letters. Usually one girl is writing and the bystanders, boys and girls, try to guess the meaning of the drawings. When the guessing fails, there is opportunity for jest and laughter.

Following are the explanations of Figs. 150–155. In figure 150 the line a, b, c, d, e, f, represents a house. An incompletely drawn house, as in

figs. 151, 152, and 154, indicates that the person shown there abandoned it. It may be added that the houses are drawn not with the same care, but this is not significant.

In the house Fig. 150 there are two figures *ou* and *kh* which bear a likeness to a folded umbrella. The figure *ou* represents a young man, and *kh* a young girl. Although at a first glance looking alike, both figures are nevertheless distinct and characterized by symbols. Of course the men have no beard and wear their hair long, so that they may look like girls; the clothing of a woman is almost the same as that of a man. Both wear leather coats with red and black trimmings, leather trousers and soft leather footwear; the cap for both sexes is also alike. The only difference consists in the long leather tassels of the woman's apron and richer ornamentation of the clothing. The outer appearance of both sexes is so much alike that one can hardly distinguish a man from a woman.

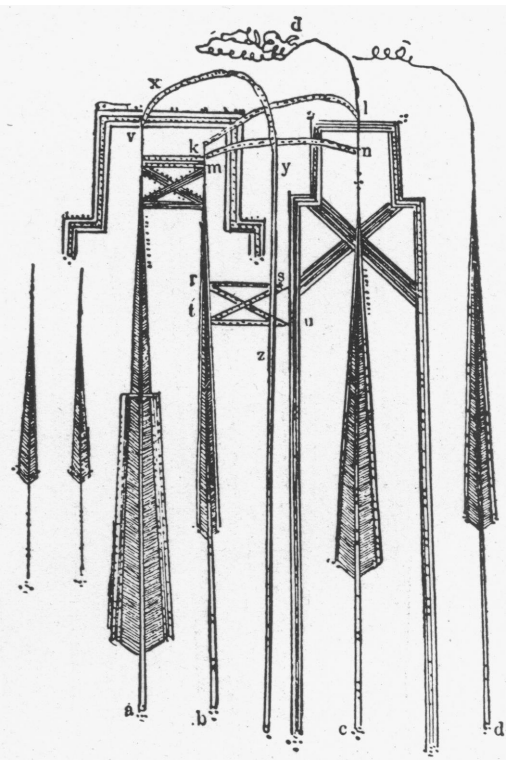

Fig. 152.

The dotted line (*vt*) emanating from the side of figure *kh* marks the tresses which girls wear. When this is not indicated then the female figure may still be distinguished from the males by their greater width, *mn xz*, for usually women are more corpulent than men. The Figure *a* in the illustration 152 may be taken as a representation of a Russian woman, as shown by the indication of a skirt. A further difference between the representation of man and woman consists in the dotted lines *xh* and *zh* (Fig. 150) which indicate arms. These are usually absent in male figures. They are lacking, however, often also in female figures, as for instance, in *g* (Fig. 153) and in *b* in figures 154 and 155. On the other hand we find them in the males *i* and *d* (Fig. 153) and *g* (Figure 155).

Each figure begins with two almost parallel lines *ou*, *kh* (Fig. 150) which converge upward until they run completely together, thus forming the head of the figure. The lower end marks the legs. We find often one line beneath instead of two, as *s*, *j*, *f*, *m* and *g* in Fig. 153, but this is the result of an insecure handling of the knife. Beneath the leg-lines may be seen dots which represent the shoes. The dots *d*, *e*, *c* and *f* (Fig. 151) indicate the knees and hip joints. Between the arm-lines *mo* and *no* in the space *ao*, Fig. 151

and between *rt* and *st* in the space *bt*, Fig. 151 four groups of dots of which the first indicates the belly, the second the breast, the third the neck and the fourth the head. The number of these groups of dots is however not always strictly adhered to; there occur deviations, in accordance with the degree of care applied to the work.

The male and female figures are united by many lines crossing each other. Thus the figures *o* and *k* (Fig. 150) are connected by the lines *rs*, *tu*, *tr*, which show that the two figures here represented love each other. The line *ji* which begins at the head of Figure *o*, and runs to the Figure *k*,

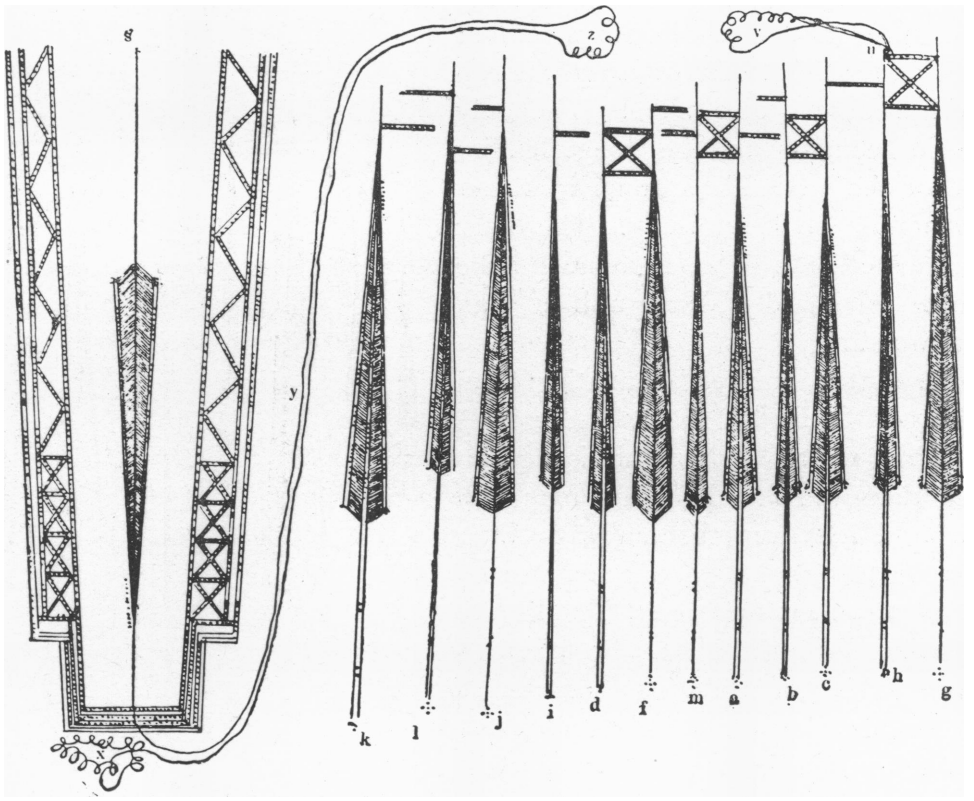

Fig. 153.

as well as the line *hg* running in the opposite direction denote the embracing of the figures. The latter lines are, however, not always necessary to show the love connections of two persons, while the crossing lines have always to be present for that purpose. This may be seen by an examination of figures *a* and *b* (Fig. 152) *b* and *c*, *a* and *m*, *d* and *f* (Fig. 153).

Figure 150 may express in words: "I love thee with all the might of my soul."

Drawing on birchbark is the only means for a young girl to confess her love to a man, as according to Yukaghir custom only the man may declare his love in words.

In Figure 151 two crossing stripes may be seen over the figure to the right. These consist of many punctured lines. The number of punctured lines is variable as shown in *c*, (Figure 152) and *b* (Figure 154). These crossing stripes express the grief, sorrow, and misery of the person concerned. The figure to the left (Figure 151) stands in a house incompletely drawn, which indicates that it is or soon will be abandoned. The meaning of this illustration is: "Thou goest hence, and I bide alone. For thy sake I still weep and moan."

Figure 152 tells us that the young girl *c* is full of sorrow. The lines *lk* and *mn* indicate the person *b* as the source of her affliction. Such lines are necessary, when beside the man on account of whom the girl is in sorrow, there are other man figures represented. The lines *rs*, *tu*, *vu*, *st*, which usually express love, are here intersected by the line *xyz* which proceeds from the point *v*, the head of the Russian woman. This shows that there exists an obstacle between *b* and *c*. By the side of the female figure *a* two small figures are drawn which represent children. The curved line *dc* says that the young girl *c* is thinking of the young man *b*. The young man *d* is thinking of the young girl *c* which is also indicated by a curved line; but these find no response.

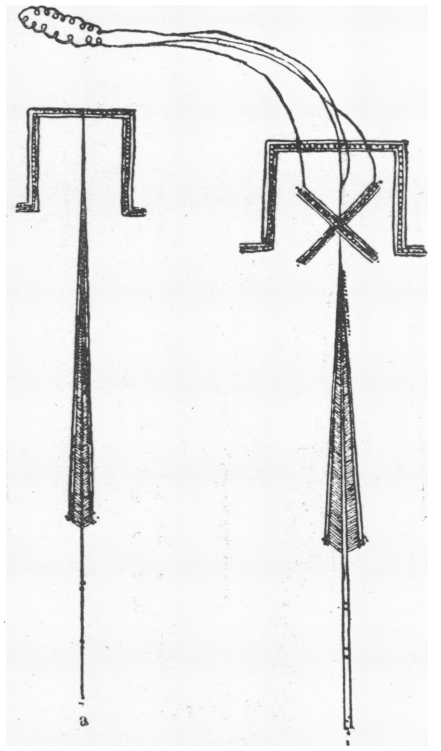

Fig. 154.

The illustration expresses: "Thou (*b*) goest forth, lovest a Russian woman, who bars the way to me (*c*); there will be children, and in a new home joy wilt thou find, while I must ever grieve, as thee I bear in mind, though another yet there be who loveth me."

The Yukaghir, particularly young men, often and for various purposes go to Sredne-Kolymsk. These journeys always arouse the jealousy of the young girls because they think that the Russian women whom the young Yukaghir men meet are much more handsome and attractive than they themselves. They are afraid that the Russian women will alienate their affections. When a young Yukaghir once gets to town, he tries to stay there as long as possible, in order to obtain news, for the more news he can tell on his way back home the more welcome he is. In every dwelling he is gladly met and treated. With this in view, he will rather suffer starvation than leave town prematurely. The Russians in town are not very liberal to their Yukaghir visitors, although the Yukaghir themselves are very hospitable to

Russian guests in their homes. The longer a boy is absent, the more jealous his girl becomes; then she cuts a letter on birchbark saying how sad she is. In this way originate compositions like our figure 152.

The letter fig. 153 shows many figures. Some of them are connected with lines of love, as *d* and *f*, *m* and *a*, *b* and *c*; some of them still are single, not having declared their love, but about to do so. In such a position are represented *k*, *l*, *j* and *i*. Only one girl stands aside and thinks (line *yz*) of the young man whose thoughts are also occupied with her, as indicated by the line *uv*, but he is already connected with the girl *g*.

This letter may be expressed as follows: "Each youth his mate doth find; my fate alone it is of him to dream who to another wedded is, and I must fain contented be, if only he forget me not."

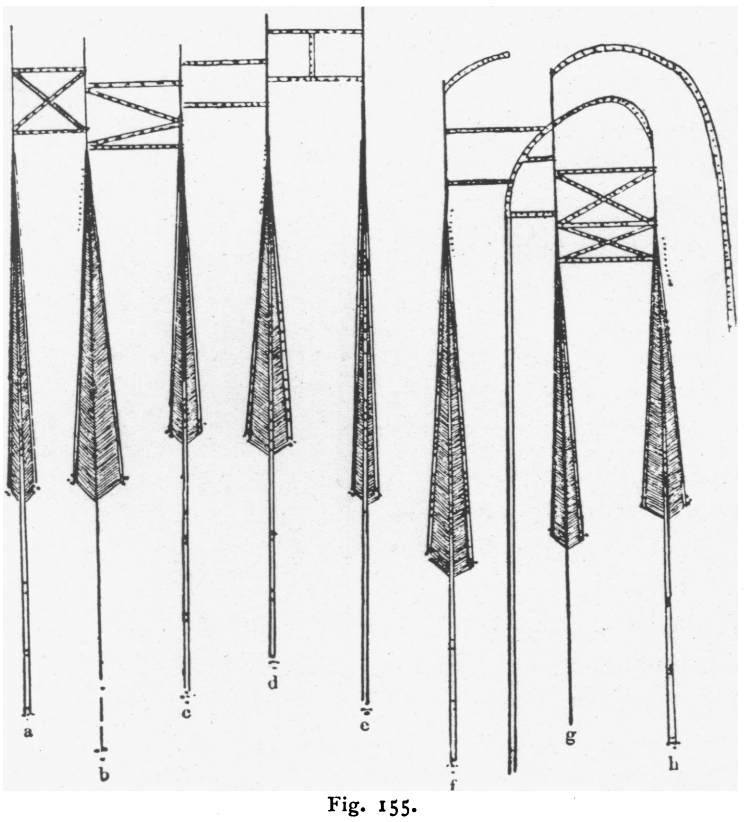

Fig. 155.

Fig. 154 is easily explained by what has been said concerning preceding illustrations. The female figure appears in a house not completely drawn and the meaning of the illustration is: "Thou hast gone hence, and of late it seems this place for me is desolate; and I too forth must fare, that so the memories old I may forget, and from the pangs thus flee of those bright days, which here I once enjoyed with thee."

Fig. 155 shows that *g* and *h* are in love, but *f* also loves *g*, and *h* impedes their approach. The relations of *b* to *c* and *a* and of *d* to *c* and *e* show how easy love connections among the Yukaghir young people are taking place. A young man is courting several girls at the same time before he finally chooses one of them. Also girls maintain love-relations with many boys at the same time, without questioning themselves whether this is admissible. These love affairs take place openly under the eyes of parents who do not consider it necessary to reprove the young people for it.[1]

[1] For particulars on this subject, see pp. 62–66 of this volume.

Engravings. I have not found any Yukaghir carvings worthy of mention. Wooden amulets in the form of human figures were very roughly made. In this respect the Yukaghir lag behind the Koryak.[1] For children's toys they cut figures of animals from birchbark. Fig. 156, *a* and *b*, shows the representation of two elks, a male and a female, the former with antlers.

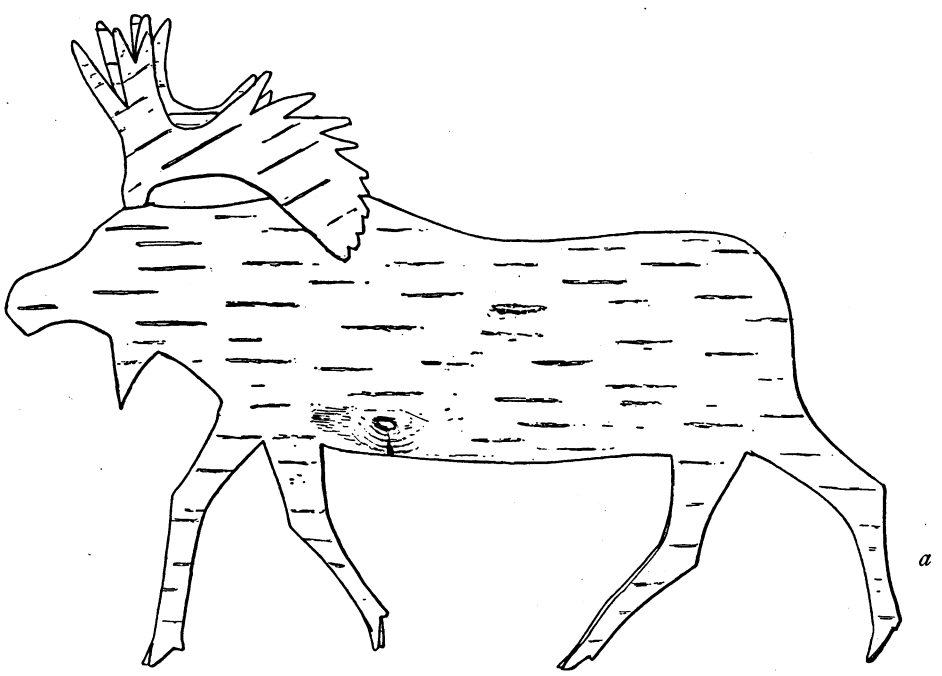

Fig. 156 ($\frac{7}{8}\frac{9}{1}$). Childrens toys cut from birchbark. *a*, male elk, *b*, female elk.

Decoration of Implements.[2] Fig. 157, *a* and *b*, shows a woman's wooden trinket box. *a* is the cover ornamented with engraved figures of a bear running after a reindeer. In front of them is running a female elk without antlers. *b* shows a side of the box engraved with parallel lines, triangles and zigzags.

[1] See The Koryak, pp. 646–666.

[2] For decoration of dress articles, see Chapter on Clothing.

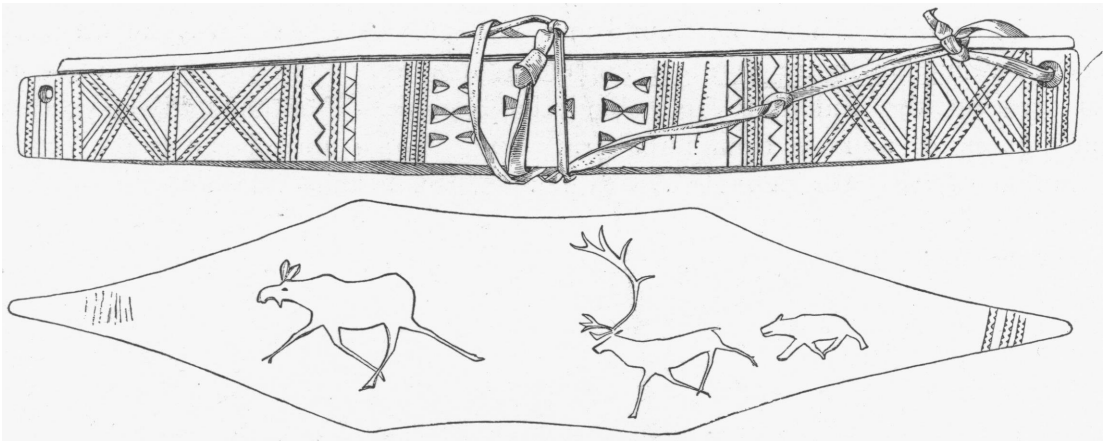

Fig. 157 ($\frac{70}{5900}$). Engraved wooden box; below, cover; above, side.

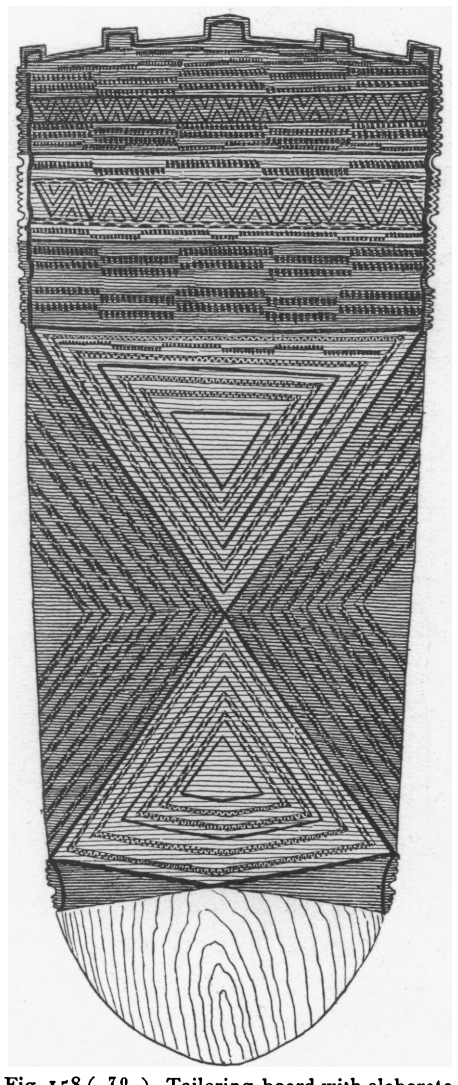

Fig. 158 ($\frac{70}{8302}$). Tailoring board with elaborate incised and painted decoration.

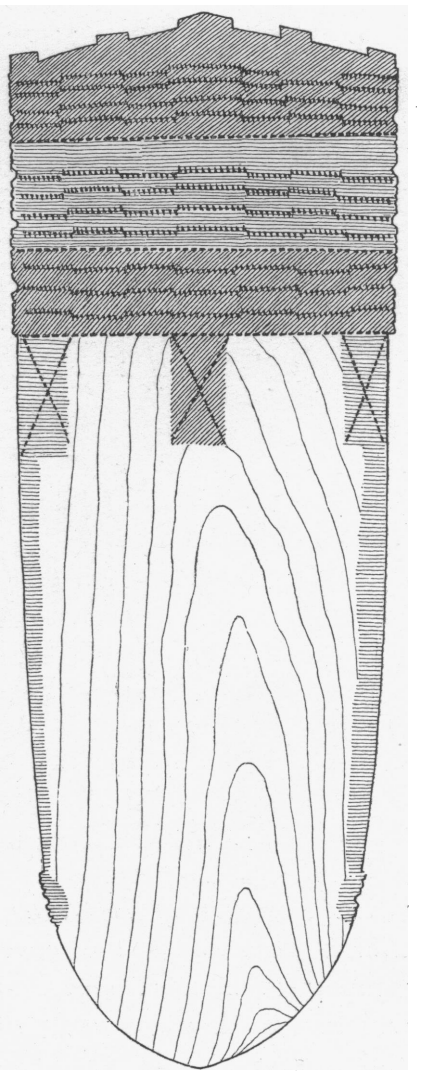

Fig. 159 ($\frac{70}{8192}$). Decorated tailoring board. Length 52 cm.

Fig. 158 represents a Yukaghir tailoring board also ornamented with lines, triangles and zigzags, engraved and painted. Three colors are used: black, red and white, the last being the natural color of the wood. The black paint is made of ground charcoal mixed with fish oil, and the red paint is ochre similarly prepared. The length of the board is 48 cm., and the width 18 cm. The reverse undecorated side of the board is used for cutting. Girls receive tailoring boards as presents from suitors; married women from their husbands, brothers or sons.

Fig. 159 represents a tailoring board ornamented with engravings, less

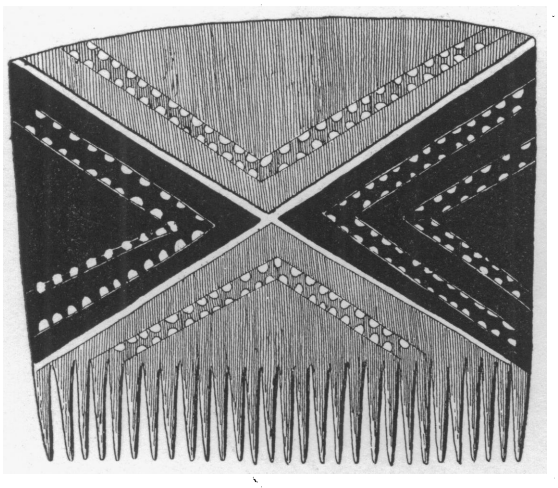

Fig. 160 ($\frac{70}{8312}$). Decorated wooden comb.

Fig. 161 ($\frac{70}{8362}$). Woman's bronze ornament.

elaborate than the preceding. The length of this board is 52 cm. and the width, 17 cm.

Fig. 160 shows a comb made of hard birch wood ornamented with colored engravings. The same three colors have been employed: black, red and white as are used on the tailoring boards.

Fig. 161 shows a circular bronze ornament sewed on the breast of a woman's apron. Similar bronze plates are used as ornaments by Tungus women. The Yukaghir women obtain them from the Tungus. A kind of centaur and conventionalized plant forms appear in bas relief. It is not known whence these plates come, but it is most likely that their origin must be sought in southern Siberia. The peculiarity of this plate consists in the winged rider, the headless horse and the position of the horse's legs, which is not that of a galloping horse, but of one on the point of running. A similar plate is sewed to apron Fig. 83 (see p. 403).

The bronze plate, Fig. 162 is taken from another woman's apron. In

the innner circle there is a headless hoofed animal. The position of its legs is identical with that in Fig. 161, but instead of a winged rider, there are various symbolic figures. Similar figures appear between the inner and outer circles. Dr. B. Laufer, to whom I sent a print of Fig. 162 informed me that he is unable to see any "flying gallop" of Chinese and Japanese art in the specimen, as I suggested, nor could he elucidate the designs which do not resemble any form of Chinese writing or ornament. The only perceptible

Fig. 162. Bronze ornament from woman's apron.

Chinese feature according to Dr. Laufer is the concentric arrangement, and the knob in the center, which may have been borrowed from a metal mirror. As far as I know the Tungus do not manufacture these bronze plates. They must be derived from Western Turkish sources, and be of great age. They bear however no resemblance to the bronze and copper ornaments found in excavations in southern Siberia. Yukaghir women regard these metallic breast-ornaments as valuable objects. They are inherited in the female line through a long succession of generations.

ERRATA.

p. 13, line 5, read *brown bear* instead of *black bear*.
p. 15, „ 29, „ зубатка instead of зчьатка.
p. 19, „ 16, „ *superterranean* instead of *subterranean*.
p. 39, „ 22, „ мѣшокъ instead of міьшокъ.
p. 39, „ 44, „ мѣра instead of міьра.
p. 53, „ 18, „ *58 males* instead of *50 males*.
p. 155, „ 15, „ *caps* instead of *volcanoes*.
p. 193, „ 22, „ *women-shamans* instead of *wowen-shamans*.
p. 250, „ 23, „ *pikes* instead of *pike*.
p. 251, „ 6, „ „ „ „ „
Fig. 89 read *man's cap of the Yassachnaya Yukaghir* instead of *woman's cap*.

SUPPLEMENTARY NOTES.

NOTE to p. 144: —

The Yukaghir believe that fish fall into rivers and lakes from heaven. When the tundra lakes freeze to the bottom during a rough and snowless winter, the fish die and in the spring rise to the surface. However, the lake-fauna recovers soon and the fish reappear. Perhaps some frozen fish may come to life again after thawing, others taking refuge in deep holes. New fish also enter the lakes through connecting rivulets. The Yukaghir claim that the new fishes are thrown down by the beneficient deity Kuǰū', *i. e.*, the sky.

This belief is also met among other peoples. Doctor E. W. Gudger has treated this subject in an essay "Rains of Fishes," (Journal of the American Museum of Natural History, Vol. XXI, November—December, 1921, No. 6, p. 637; see also Waldemar Jochelson "Fishes fallen from the sky," Science, December 21, 1923.) He has grouped together numerous astonishing accounts of fishes falling from the sky.

NOTE to p. 146:

The religious attitude of the Yukaghir towards the bear and the elk is particularly interesting. While the elk is killed for food, the slaying of the bear appears often a necessity for other reasons. First, in case of self defense, a hungry bear always attacks man, usually springing upon him from behind. Secondly, the bear destroys traps, store-houses and steals man's food supplies. In hunting reindeer the hunter often meets the bear as a competitor; he attacks even big game such as the elk. A Yukaghir hunter told me that he once found on his trail a bear and an elk both dead. The elk with one of the hind quarters torn off and the bear with skull broken by the elk's hoof. The bear is regarded to be half of divine and half of human origin. This genetic affinity does not prevent the Yukaghir from eating bear's meat; but in order to escape the bear's anger they try to deceive it, suggesting that a Yakut or an elk was guilty of its death. The bear's bones must not be gnawed nor given to dogs. The bones are gathered and put on a scaffold as was formerly done with honored dead people. When the bear is being skinned he is addressed as follows: —

Xa'xa, lebi'en-čomo'ǰel, mi'tin o'moč čuñḍek!	Grandfather, of the earth master, us well mind!
Te'tul e'le mit ti'te ājeili,	To thee not we in such a way have done,
Ya'xalek' tāt āl';	A Yakut thus did;
Tet čere'urod-a'mun nu'modǰeci.	Thy sllver bones we shall put into a house.
or	
E, čomo'l coro'mo!	Eh, great man!
Le'me ti'te ā?	Who in such a manner did it?
N·an·ma-le'ñ nugiek tāt lel, n·an·ma-le'ñ nugiek tāt lel.	Willows a food having that one (i. e., the elk) thus was, willows as food having that one thus was.

When the bones of the bear are laid on a scaffold, or in a storehouse raised on posts, wood shavings are put into the skull in place of the brain and the tongue is replaced by a splint of wood,

The Yukaghir say: —

Tet yō'ñxode te'ndi ceu'rel	Thy brain thus we put in,
Tet o'nor tendi āl'	Thy tongue we thus made.

For the treatment of the killed elk see p. 147.

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