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Volume VII

THE CHUKCHEE

BY

WALDEMAR BOGORAS

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THE CHUKCHEE.

INTRODUCTORY.

THE following account of the Chukchee tribe contains chiefly the results of my own observations, made during a protracted stay in the Kolyma district from 1890 to 1898; and later during a journey to Kamchatka, Anadyr, and the Chukchee Peninsula, in 1900-01. From 1895 to 1898 the work was performed in connection with the Sibiryakoff Expedition, and part of the material was published in Russian by the Imperial Academy of Sciences in St. Petersburg.¹ The expedition of 1900-01 formed part of the Jesup North Pacific Expedition. The collections made during this period are deposited in the American Museum of Natural History.

On these journeys I visited nearly all parts of the country inhabited by the Reindeer Chukchee, from central Kamchatka and the Upper Omolon to Chaun Bay and Cape Chukotsky; but I saw only the maritime villages that are located on the Pacific coast, between the mouth of the Anadyr and Indian Point. These are inhabited by Chukchee and by Asiatic Eskimo.

In my protracted intercourse with the northern Reindeer camps I had ample opportunity to see people from Arctic villages, and was able to obtain a variety of information regarding their customs and manner of living.

The material life of the Reindeer Chukchee is quite uniform throughout all the extensive territory occupied by their camps. The same may be said of the maritime villages, which have exactly the same material culture, whether they belong to Chukchee or to Eskimo tribes.

In order to avoid repetition, I have found it advisable to describe together the main features of the material life of both Maritime Chukchee and Eskimo. The provenience of the specimens illustrated, however, is indicated in the legends to the figures.

¹ See list of authorities quoted, p. 3.

In the psychological and sociological life of all three divisions of the population, there are many curious points of similarity and difference, which will be stated later on in this account.

The illustrations were made by Mr. Rudolf Weber; the photographs in the field, by Mr. Alexander Axelrod of Switzerland, and by myself. The drawings for Plates v (Fig. 2), vii, xiv, were made by Mr. A. E. Döring from several photographs in my collection.

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The following alphabet is used in transcribing native words: —

- a, e, i, u have their continental sounds (in the Chukchee and the Koryak always long).
 o like *o* in *nor*.
 ä obscure vowel (long).
 ě like *a* in *make*.
 A, E, I obscure vowels (short).
 ê like *e* in *bell*, but prolonged.
 'i a diphthong with an accent on *i*. It always has a laryngeal intonation, 'i⁸.
 e between *o* and *u*, long.
 ŭ mouth in *i* position, lips in *u* position (short).
 w, y as in English.
- Extra long and extra short vowels are indicated by the macron and breve respectively.
 The diphthongs are formed by combining any of the vowels with *i* and *u*. Thus:
- ai like *i* in *hide*.
 ei „ *ei* „ *vein*.
 oi „ *oi* „ *choice*.
 au „ *ow* „ *how*.
 l as in German.
 ɭ pronounced with the tip of the tongue touching the palate a little above the alveoli of the upper jaw, the back of the tongue free.
 L posterior palatal ɭ, surd and exploded, the tip of the tongue touching the alveoli of the upper jaw, the back of the tongue pressed against the hard palate.
 ɮ posterior palatal ɭ, sonant.
 r as in French.
 ř dental with slight trill.
 ʀ velar.
 m as in English.
 n as in English.
 ñ nasal *n* sound.
 n' palatized *n* (similar to *ny*).
 b, p as in English.
 b', p', d', t', g', k' have a spirant added (*gehauchter Absatz* of Sievers).
 v bilabial.
 g like *g* in *good*.
 h as in English.
 x like *ch* in German *Bach*
 x' „ *ch* „ „ *ich*.
 k as in English.
 q velar *k*
 ɣ velar *g*
 d, t as in English.
 d', t' palatized (similar to *dy* and *ty*).
 s as in English.
 s' palatized (similar to *sy*).
 š „ German *z*
 c like English *sh*
 č „ English *ch*
 j „ *j* in French *jour*
 j' „ *j* „ *joy*
 č' strongly palatized č
 j' strongly palatized j
 ! designates increased stress of articulation.
 8 a very deep laryngeal intonation.
 ' a full pause between two vowels: yiñe'a.
 - is used to connect.

I. — NAMES AND HABITAT.

NAMES. — The name of the Chukchee is derived from the Chukchee word čau'ču, which signifies "rich in reindeer." The Reindeer division of the tribe call themselves by this name in distinction from other kindred people; as, for instance, the Reindeer Koryak or the Maritime Chukchee. The same word is used, too, by the Reindeer Koryak, while both tribes call each other ta'n'ñitan (*pl.* ta'n'ñit).

The Maritime Chukchee call themselves and other maritime people añqa'lit ("sea people"), from a'ñqa ("the sea"); or rama'glat ("seacoast dwellers"). In distinction from other alien tribes, both Reindeer and Maritime Chukchee call themselves li'i-yi'lilit ("those of genuine language"), also ora'wêlat ("men") or li'ê-ora'wêlat ("genuine men"), in the same way as the Asiatic Eskimo call themselves Yu'it or Yu-pi'it (yuk, "man;" yu-pi, "genuine man"). The people of the alien tribes are called by the Chukchee a'lva-yê'lilit ("those of alien language"). All other names used by various writers in connection with the Chukchee tribe are for the most part the result of misunderstanding.

Thus the assertion of so many travellers, from Krashenninikoff to Bogdanovitch, that the maritime inhabitants of the Chukchee or Koryak shores call themselves also Čau'ču, shows only that the people with whom they conversed, though following maritime pursuits to some extent, were originally of Reindeer stock, and probably still had some herds farther inland. The like is actually the case everywhere within the limits of the coast of the Chukchee and the Koryak.

The name Tuski, adopted by W. H. Hooper with the strange explanation that it means a confederation or brotherhood, has probably arisen from an attempt to simplify the misspelling Tchuski instead of Tchukotski (Чукотский), the Russian adjective from the substantive Tchukcha (Чукча, "Chukchee"). Hooper writes Tchutskoi Noss instead of Tchukotskiy Noss ("Chukotsky Cape").¹

The name Chukmari, adopted by A. A. Resin for a tribe "intermediary between the Koryak and the Chukchee,"² is derived from the popular Kamchatkan term for the Chukchee, Chukhmaryo (Чухмарье). He gives this name to the people living on the Opukski and Tumanski coasts; i. e., respectively to the Kerek and the Telqä'p Reindeer Chukchee, who are in reality the rudest and most primitive branches of the Koryak and the Chukchee tribes.

W. H. Dall even considers the Kerek to be Eskimo. At least, he asserts that the Eskimo are slowly moving to the south along the coast. In

¹ The word Tchutski was employed before that by M. Sauer.

² Resin, p. 156.

the year 1879, he says, a new Eskimo colony settled at Cape Olutorsky, and another one was going to join them the next year.¹ The Cape Olutorsky of Russian and American maps is in reality Cape Anannon, close to which are situated the first southwestern villages of the Kerek; while the real Cape Olutorsky lies close to Baron Korff's Bay (on the Russian maps, Cape Govensky).

In former times the Eskimo of Indian Point and other villages actually sent trading-expeditions to Capes Barykoff and Navarin, on the shores of which are situated the first northeastern villages of the Kerek, while Cape Anannon and Baron Korff's Bay were not within their reach. Furthermore, no attempts at colonization were made as recently as the eighties of the last century; nor could the country around any of the capes mentioned be found uninhabited, as Mr. Dall was told by the people of Plover Bay.

The Russians call several of the divisions of the Reindeer Chukchee — for instance, those living around Chaun Bay and to the north of the Anadyr River — "White-Sea Chukchee." This name is probably connected with the term *êlh-a'ñqa-ñaw-yito'ot* ("offspring of the white-sea-woman"), which the Chukchee apply to themselves in their heroic tales. To the Maritime Chukchee the Russians give the name "Cape Chukchee," or sometimes "Kavralin," from the Chukchee word *kavra'lit* ("those going around"). The Chukchee give this name to a peculiar class of traders, who travel all their lives with reindeer from East Cape and Indian Point to the fairs held on the shores of the Kolyma and the Anadyr, bartering, as they proceed on their way, among the camps of the Reindeer people. Almost all the *Kavra'lit* are of Maritime descent. Many of them, in their youth, were poor seal-hunters; then they turned to reindeer-breeding, and, after obtaining a few score animals, started to travel for barter.

ANCIENT HABITAT. — According to the traditions of the Chukchee, they were in olden times primarily a coast people, engaged in maritime pursuits and occupations, but also carried on reindeer-breeding. In the modern life of the Reindeer Chukchee there are several traces of this former state of affairs. Thus their tales treat chiefly of maritime subjects, and but comparatively few refer to reindeer-breeding. Their winter habitations are arranged in the same manner as those of the maritime people. They remain in one place for three or four months, while the herdsmen move from one pasture to another with their herds.

Moreover, the inner room of the winter house is called "polar-bear skin" (*umka'-ne'lhın*), though at present even the Arctic Maritime Chukchee make its covering of reindeer-skins. The tool-bag of the Reindeer Chukchee is called "whalebone receptacle" (*ñala'wgočhın*), though no whalebone is used at present for any kind of implement. The larger bags for storing food and

¹ Geographical Notes (Proceedings of the Royal Geographical Society and Monthly Record of Geography, New Series, Vol. III, No. 1, p. 49).

clothing, though made of reindeer-skins, are invariably given the form of a seal-skin bag, stripped whole from the carcass, with a cross-slit in the middle for an opening.

In religious beliefs and rites the dog plays a more important part than the reindeer, though, under the present condition of life, dogs are of little use to the people; besides, dog-breeding does not harmonize well with reindeer-breeding, as will be shown later on. I was told several times by the Reindeer people, "The Russians unjustly wonder why we keep so many dogs. The dog is the guardian of man, a strong help in every misfortune, a true friend, keeping off the Evil One." In travelling, a dog as a companion frightens the evil spirit away, while a reindeer has no such power. In times of infectious disease a small pup is rubbed against visitors coming from afar. This will either frighten away the spirits that may come with the traveller, or, if they are too powerful, it will at least serve as an expiatory victim.

On the other hand, the names of the months, both in Chukchee and in Koryak, curiously enough, indicate that both of these tribes, or some parts of them, came from more southern latitudes, and that perhaps they had reindeer-herds at that time. The fact is, that some of these names do not correspond to the real change of the seasons on the northern tundra. For instance, the fifth month of the Chukchee year (from the beginning of April to the beginning of May) is called "[month] of the waters" (Imlr'rlin). The rivers of the tundra, however, open only at the end of May. The third month of the Koryak calendar is called "false reindeer-birth month" (Tr'nmr-qo'ya-yo-yê'lhin); and the fourth, "genuine reindeer-birth month" (Lhê-qo'ya-yo-yê'lhin). These names seem to indicate that in some former country fawns were born a month earlier than in the present home of the Koryak. The incongruity in both cases was pointed out to me by the natives, who themselves were astonished at it.

Another curious detail in the Chukchee tradition points even farther to the south. It is the description of a large worm that lives near the villages of the dead, on the Aurora Borealis. This worm is red in color, and striped, and is so large that it can attack big game. When hungry, it is very active, and will spring from ambush upon a wild reindeer, and then, after having seized it, will kill it with the pressure of its coils. It swallows its prey whole, since it has no teeth. After taking a meal, it becomes inert, and sleeps for several days on the same spot; and the children of the dead cannot arouse it, even by pelting it with stones. This is a very accurate description of a boa-constrictor, and is apparently of ancient origin, since its location is in the sky and with the souls of the dead. There are no snakes in any part of northeastern Siberia; and therefore this tale, if based on facts, must point toward the south as far as those warmer shores where the boa-constrictor actually exists.

Perhaps it will not be out of place to mention here another Chukchee legend which seems to be even more ancient. In olden times there lived in the Anui Mountains a large beast called Keli'lhu.¹ He was tall and long, had a huge mouth which opened wide, and long-clawed paws. A certain young herdsman wandered among the crags, looking for a lost reindeer, and was seen and eaten by Keli'lhu.

Some time afterward the young man's father started to look for him. He went among the crags, and soon met Keli'lhu. He said, "Keli'lhu, have a laugh! I am fat, you will eat me; my reindeer are fatter, you will eat them too." — "Ha, ha, ha!" laughed Keli'lhu; and his mouth opened so wide that his upper jaw reached his back, while his lower jaw hung down to his breast. When he stopped laughing, he closed his jaws with his paws, and continued his pursuit; but the man had succeeded in gaining ground. After a while the beast approached him again; but the man repeated, "Keli'lhu, have a laugh! I am fat, you will eat me; my reindeer are fatter, you will eat them too." — "Ha, ha, ha!" laughed Keli'lhu; and his jaws sprang as wide apart as before, and he closed them in the same manner, and continued his pursuit. At last they reached the village, where a number of young men killed Keli'lhu with spears; but he had also killed many, because he was light and nimble, jumped high, bit with his teeth, and smote with his paws.

PRESENT HABITAT. — The villages of the Maritime Chukchee are situated on the Arctic coast between Cape Erri and East Cape, and on the coast of Bering Sea between East Cape and Anadyr Bay, except where a few Eskimo settlements are interspersed, — two near East Cape, and seven between Indian Point and Cape Ulakhpen (Улахпень). The latter is called by the natives Wute'en, the same name as the village close by.

The Reindeer camps are scattered over the whole country to the northeast of a line drawn from the mouth of the Indighirka River to Cape Anannon.

The part of the country lying to the west of the rivers Chaun and Anadyr forms the so-called "Chukchee territory"² (Чукотская земля). This territory, according to the obsolete but not yet abolished paragraph of the Russian Code, is considered to be "not thoroughly subdued." Its inhabitants, as well as all other Chukchee, have the privilege of settling all their affairs according to their own customs, including even murder if committed within the limits of their own territories. Such privileges sometimes lead to strange results.

G. Dyachkoff³ relates the following incident, that occurred among the Olutora Koryak. In 1882 a man was murdered. The brothers of the murdered man refrained from the usual revenge, and sent a complaint to the magistrate in Gishiginsk. During the whole year there was no answer; after that, the

¹ This name is probably a mispronunciation of Ke'li-lū' ("spotted face").

² See p. 15.

³ Dyachkoff, p. 64.

collector of the tribute, a Cossack officer from Gishiginsk, passing through Olutora, explained to the complainants that they had to deal with the offender according to their own tribal customs. Then the relatives of the victim gathered together, and, coming to the village of the murderer, covered with burning wood the underground house where he lived with his numerous family, and all the inmates were burned alive.

The reason for this unusual forbearance lies in the fact that the last campaigns which the Russians conducted against the Chukchee, in the eighteenth century, utterly miscarried, since the Cossack captain, A. Shestakoff, was defeated and killed March 14, 1730, on the river Ega'č; and Mayor Pavlutzky, after some temporary success, was likewise defeated and killed March 21, 1747, on the banks of Mayor's Lake, not far from Markova, on the Middle Anadyr. After that, the government, tired of an expensive and useless war, withdrew its garrisons, and in 1764 even ordered the fort of Anadyrsk, the remotest Russian post in northeastern Asia, to be demolished.

Intercourse with the Chukchee, renewed in 1789, was carried on the whole time with much circumspection, and no new attempt was made to conquer the Chukchee by force. The border divisions of the tribe have gradually submitted to Russian influence. The bulk of the Chukchee territory, however, up to the present time, remains practically exempt from any trace of Russianization; and there are many camps and villages where a Russian face has never been seen, nor a word of the Russian language heard.

About a century ago the territory of the Reindeer Chukchee extended beyond the limits of the so-called "Chukchee territory,"¹ — on the Arctic side as far as the river Baranikha, and on the Pacific side to the river Opuka; but in the early twenties of the nineteenth century the Reindeer Chukchee, induced in a measure by the increase of their herds, began to extend their boundaries westward and southward. In the sixties they crossed the Kolyma River, and spread over the flat tundra between the Kolyma and the Alaseya; the people of some camps even crossed the Alaseya, and went as far as the Indighirka. At the same time, other bands went from the Dry Anui to the Large Anui, and thence to the Oloi and the Omolon, driving the original inhabitants, the Lamut, farther and farther into the woods, or settling side by side with them on the borders of the forest.

On the Pacific side, Chukchee herdsmen rapidly spread beyond their former boundaries, and occupied the lower parts of the rivers Opuka, Poqa'č (Похача), and the high flat country around the Palpal Mountains, — lands which before had had no inhabitants at all, on account of the continuous petty wars between the Chukchee and the Koryak. Some of the Chukchee emigrated to the Parapolsky Dol,² interspersing themselves among the Koryak as far

¹ See p. 14.

² The high flat country between Penshina and Baron Korff's Bays.

as southern Kamchatka. Most of these became assimilated to a considerable degree with the Koryak, though even in Kamchatka the older generation still speaks Chukchee. On the border-line between the Chukchee and the Koryak I came across some camps the inhabitants of which were themselves unable to decide to which tribe they belonged, since the tribal names of Reindeer Chukchee and Koryak are identical and the languages very similar.

NEIGHBORING TRIBES. — In the early years of the Russian invasion — that is, in the first half of the seventeenth century — there lived on the large tundra west of the Kolyma some Reindeer people whom the Cossacks also called Chukchee, and with whom they were engaged in continual petty warfare. Two rivers of the tundra were named after them, — the Large and the Small Chukchee. According to the tradition of the inhabitants, the oldest Cossack settlement on the western branch of the Lower Kolyma, the village Pokhotsk, was destroyed by them; though the story is given in an epic way, and some of the details call to mind the tales of the Central Eskimo of America, and must date back to a time prior to the appearance of the Russians. Other villages were pillaged and burned down by certain Chukchee who are reputed to have come by sea in skin boats, though at the present time there are no maritime villages within three hundred miles to the east off these places.

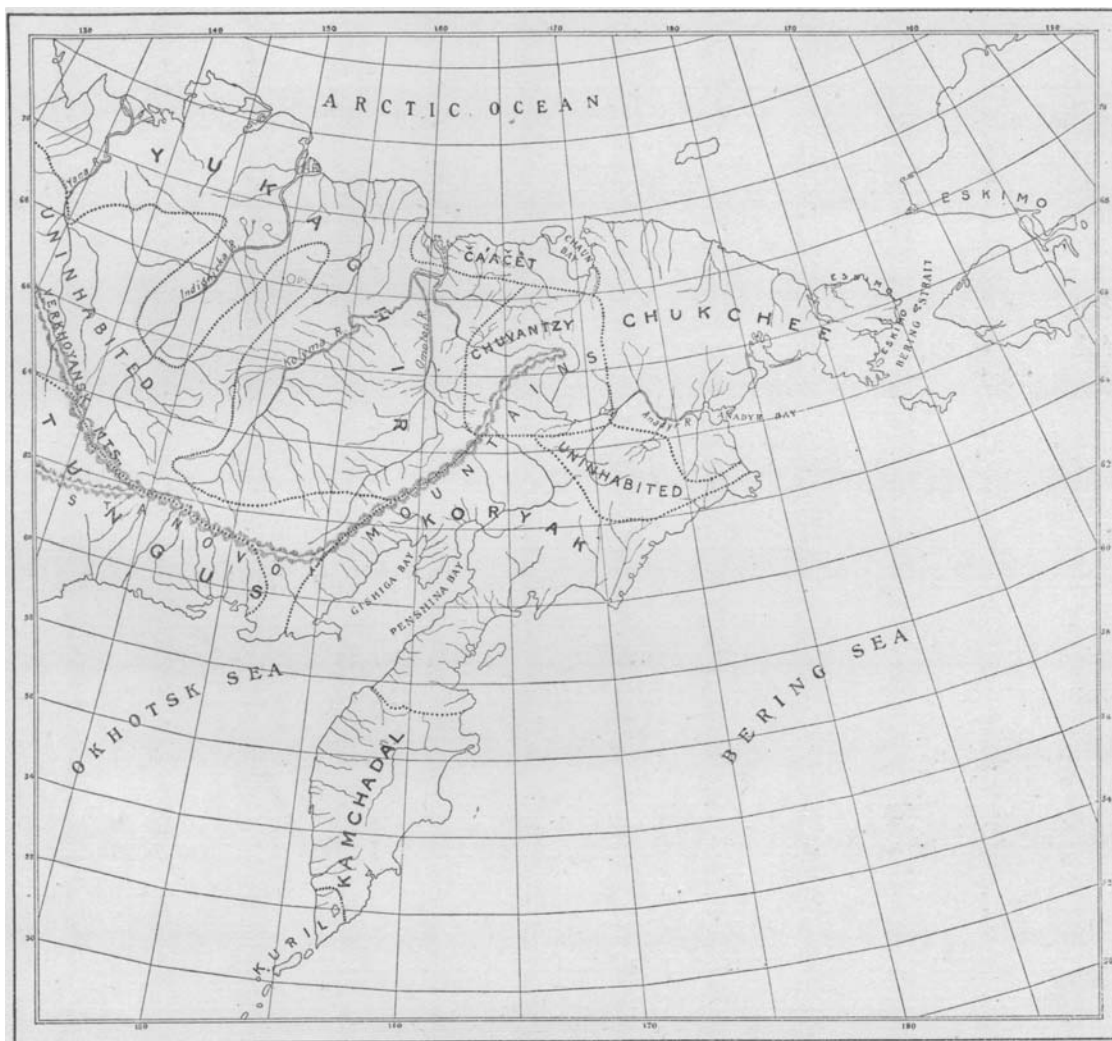
The Chukchee tradition calls this people, not Chukchee, but Ča'áčên, from the Ča'an or Ča'wan River ("Chaun" of the maps), whose banks were their principal territory (Fig. 1). They were, however, closely connected with them, though the Ča'áčêt spoke a language of their own. I was shown some very old burial-mounds on both sides of the mouth of the Kolyma, filled with large accumulations of reindeer-antlers which had been offered to the dead. These were said to have belonged to the Ča'áčêt; the Chukchee arguing that they could not have belonged to their own tribe, because among the antlers of slaughtered reindeer were some which had been shed, and they offer to the dead only the antlers of slaughtered reindeer. Some of the piles were so old that the antlers crumbled away under one's fingers, and were large enough to indicate that a long range of years had elapsed during their accumulation. Some of the Chukchee with whom I was acquainted even claimed descent from a remote generation of Ča'áčên stock. The same claim was professed by the Chukchee Kamakai on Cape Erri, in conversation with Wrangell.¹

The Russianized natives² along the Kolyma tell of still another extinct tribe, whom they call Shelags (Шелаж), and from whom is derived the name of Cape Shelagskoy (Cape Erri) on the Arctic. These were maritime people, and lived somewhere along the Arctic shore. The remnants of the houses

¹ Wrangell, p. 338.

² The Russianized natives of the Kolyma consist chiefly of Yukaghir with a strong admixture of Russian blood, and some of the Yakut and the Chuvantzy. The Russianized natives of the Anadyr consist of Yukaghir and Chuvantzy elements with some admixture of Koryak and Russian.

on the Bear Islands, near the mouth of the Kolyma, are also supposed to be theirs. They have often been confounded with the Ča'ačët, though nothing



Map showing Ancient Distribution of Tribes, by W. Bogoras and W. Jochelson.

Fig. 1.

is known about the mutual relations of the two tribes. Both are supposed by the natives to have emigrated westward. This is also mentioned by Wrangell.¹

Maydell, without any apparent reason, denies the existence of either tribe. He mentions, however, almost in the same passage, that Peter Mangol, one of his Chukchee fellow-travellers, affirmed that in former times, on Cape Erri, there had lived Maritime Chukchee who spoke a language different from that of the modern villages.²

Further on he mentions the hunter, Ivan Viligin, who lived in the latter part of the eighteenth century. He affirmed that he knew an old man by

¹ Wrangell, p. 338.

² Maydell I, p. 331.

the name of Kopai, who claimed to belong to the Shelag tribe, and who had his place on the seashore at a distance of two hundred versts (about a hundred and twenty-five miles) from the mouth of the Kolyma. Maydell regards the whole story as a misunderstanding.

I was told by the natives, however, that on the seashore, westward from the island of Ayo, some ruins similar to those on the Bear Islands still exist, and this gives support to Viligin's words.

The name Ča'ačên, in its Russianized form, would be Chavantzy or Chauntzy, which is almost identical with that of Chuvantzy. This latter tribe, almost extinct at present, in former times lived somewhere in the country between the Yukaghir and the Chukchee regions. It bred reindeer, and probably was an intermediate tribe between those two. The last remnants of the Reindeer Chuvantzy are, at the present time, assimilated with the Koryak, and speak the Koryak language; while the fisher-people of that tribe are Russianized. The few words of the Chuvantzy language given in the curious book by G. Dyachkoff,¹ the native school-teacher of the village of Markova, on the Middle Anadyr, who comes from Chuvantzy stock, are mainly Yukaghir. There are still on the tundra to the west of the Kolyma two or three clans of Yukaghir who to some extent breed reindeer, and are intermingled with the Tungus. The oldest documents in the archives of Nishne-Kolymsk, dated about 1770, mention several *Yukaghir of the Khodynsky Chuvansky clan*.² Now, the single clan of Chuvantzy existing to-day is called by this same name, Khodynsky.³

In later times the Chuvantzy were always allied with the Cossacks, and waged common warfare against the Chukchee. The latter, after the defeat of Major Pavlutsky, are said to have destroyed more than half of them. The situation in former times may have been different, since even the Yukaghir of the Upper Kolyma preserve a curious tradition that the Chukchee were once their brothers, and that they had a defensive and offensive alliance with them.

The names given by the Chukchee to their various neighbors are as follows: —

Ta'n-ñitan (*pl.* Ta'n-ñit), as mentioned before, is given to the Reindeer Koryak.

Mê'lhī-ta'n-ñitan, which signifies "fire-tools Ta'n-ñitan," is applied to the Russians. The same name is given to the Russians by the Koryak. Previously it may have been Mê'lhī^s-t-ta'n-ñitan (i. e., "Ta'n-ñitan with a fire-lock," or, more

¹ Dyachkoff, p. 101.

² Dr. Kyber, one of Wrangell's fellow-travellers, says, "The Chuvantzy are of Yukaghir stock. Their languages are very similar. I knew one Chuvantzy man who, without previous intercourse with the Yukaghir, could easily communicate with them. But the clothes of the inland Chuvantzy are like those of the Chukchee." — KYBER, II.

³ In the middle of the seventeenth century, Deshneff, in his well-known report to the government about his travels and discoveries, mentions, in connection with the Chuvantzy, the tribe or the clan of the *Anauly*, whom he exterminated on account of the resistance they offered. Nothing is known about them except their name.

literally, "fire-tools-bow Ta'n-ñitan"). At present, however, on account of mispronunciation, there has arisen a tale of a fire-drill which was left on a camping-place and transformed into a Russian.¹

A'tal-ta'n-ñitan is applied to the Chuvantzy. A'tal (e'tel)² is the name these people give to themselves at the present time. Krasheninnikoff gives it as the Koryak name for the Yukaghir, which certainly agrees with the data I have already given concerning the Chuvantzy.

In contrast to all these Ta'n-ñit, the Chukchee often call the Koryak Li'ê-ta'n-ñit ("genuine Ta'n-ñit") in the same way, perhaps, as they call themselves "genuine men." As to the meaning of the word Ta'n-ñitan, no explanation could be obtained, and there is no existing Chukchee or Koryak root akin to it. J. Murdoch says that even the Point Barrow Eskimo use the word ta'ning or ta'ngin for the Russians or for ships which pass by.³

On the Pacific shore the Russians are called also Ru'ssilit (from the English "Russian").

American whalers are called Lelu'tvilit (from lelu'tvet, "ship;" literally, "whisker-boat;" though no reason is assigned why a ship should be associated with whiskers [perhaps the whiskers of the crews were included in the definition]). Sometimes the Russians are also called Le'lu-re'mkin ("bearded people"), whence the Asiatic Eskimo term la'lo-re'mka. Americans also are called Pnau'kulit ("file-mongers," from pnau'kun, "file" [literally, "whetting-stone"]); or they are sometimes called even Ta'n-ñit, like the Russians.

The eastern branch of the Maritime Koryak, who live on the Pacific coast from Cape Anannon to Cape Barykoff, are called Ke'rek. The origin of this name is unknown. It can hardly have anything in common with Koryak, — a name created by the Cossacks from qora'ki, of the southeastern Koryak dialect, which means "(being) with reindeer."

Both Lamut and Tungus are called qa'a-ra'mkit, which signifies "Reindeer tribe." More strictly speaking, the Lamut are also called qor-êmtê'-qa'a-ra'mkit, or "reindeer-carried Reindeer tribe;" and the Tungus of the tundra west of Kolyma, together with the Reindeer Yukaghir, are called o'rwu-qa'a-ra'mkit, or "sledge Reindeer tribe," because they travel with sledges. The Yukaghir have no special name, and are called ve'emilit ("river people"), the same as the Arctic Russians, because both are fishermen and live on the rivers or in their neighborhood.

The Eskimo of Indian Point and of the neighboring villages are called

¹ In one of the reports of the Kolyma officials I came across another, even more curious mispronunciation, *êlh-a'êttam* ("white bone"), with the explanation that the Chukchee wish to point out the nobler origin of the Russians, "white bone" signifying in popular Russian the equivalent of noble origin, and being applied to the gentry. I cite it here merely as a curiosity.

² Two forms of the same stem, which replace each other according to the rules of harmony of vowels existing in the Chukchee language.

³ Murdoch, p. 53.

Ai'wan (*pl.* Aiwa'nat). This name is also applied to every Maritime Chukchee who does not own a single reindeer. Many of the Maritime Chukchee have a few reindeer-does in the herds of some friend. On the other hand, not only on the Pacific coast in the immediate vicinity of the Eskimo, but also even in the language of the Chaun Reindeer-men, ai'wan čimče'kin means "a maritime relative," čimče'kin signifying "relative."¹ The Asiatic Eskimo call themselves Yu'it (the plural of yuk, "man") in the same way as the American Eskimo call their tribe Inuit (the plural of inuk or inung, "man").

The inhabitants of the Eskimo village Nə'əkan, on East Cape, who differ in language from those on Indian Point, are called simply Nə'əkalit, or, with derision, Pe'ekit.² The inhabitants of Wute'en, the last Eskimo village on Cape Ulakhpen, to the northwest of Plover Bay, also differing in language from those on Indian Point, are called in a similar way Wute'elit. Mr. Gondatti maintains the opinion that the Nə'əkalit and the Wute'elit cannot understand the language spoken on Indian Point, and have to use Chukchee in speaking with its inhabitants.³ Following in his footsteps, Mr. Bogdanovitch speaks of the extensive mixing of peoples on the coast of the Chukchee Peninsula.⁴ However, from comparative texts in all three dialects, which I brought with me, it is evident that the dialectic differences are not so great as Mr. Gondatti supposes. Indeed, I had occasion several times to witness the people of all three tribes conversing without difficulty, every one using his own dialect. Of course, being conversant with the Chukchee language, they can also use it for the same purpose. In any case, it is not necessary to assume for these two villages an origin from an independent and unknown stock, as Mr. Gondatti is somewhat inclined to do.

The language of the Nə'əkalit is intermediary between that of the Aiwa'nat and that of the natives of the Diomedé Islands, who in their turn are connected with the Alaskan Eskimo.

The case of the Wute'elit is not so clear, because they live farther to the south. They are so seaman-like and hardy, however, that they might easily have come over from some place on the opposite shore.

The inhabitants of St. Lawrence Island are called Eiwhue'lit; and the island itself, Eiwhue'n. Their language is quite similar to that of the Asiatic Aiwa'nat; and they are plainly a colony from the nearest shore, probably from Indian Point. Tradition clearly points that way; and the immigration from the

¹ The Maritime Chukchee and the Asiatic Eskimo apply the name Aiwa'nat to the inhabitants of St. Lawrence Island, because the latter are comparatively poorer in reindeer-skins and other products of reindeer-breeding, and can get them only from the natives of the Asiatic coast.

² East Cape is also commonly called Pe'ek. The origin of this name is doubtful. The Chukchee consider it to be derived from nipé'whaqên ("envious"); but according to Maydell, Cape Ro'wtin, on the Arctic Sea, was in former times also called Pe'ek. The Chukchee call Cape Ro'wtin at present also Pee'kiñei ("Mount Pe'ek").

³ The Population of the Anadyr District (Memoirs of the Amur Section of the Imperial Russian Geographical Society, Vol. III, Part I, pp. 167, 168; quoted from Bogdanovitch, p. 64).

⁴ Bogdanovitch, p. 66.

mainland is considerable, even at the present time, while the old families of the island are slowly dying out. Of course, some influence and connection with America have also existed on the island from ancient times.

The categorical assertion of Mr. Gondatti, however, that the Asiatic Eskimo came from St. Lawrence Island, seems to me highly improbable, though I also assume that the Asiatic Eskimo are not indigenous to the Pacific coast. Whether they came from the Arctic coast of Asia or that of America is another question; but, in any case, they migrated from north to south, and St. Lawrence Island is the limit of their migrations. W. H. Dall repeats a statement of a native of Plover Bay by the name of Nokum, who told that the "Bowhead [whale] men" came to Asia long ago from the Islands to the northeast (the Diomedes), and were allowed by the "Deer men" to settle on the barren, rocky coast.¹

The inhabitants of the Diomede Islands are called Yikirga'ulit ("the [large] mouthed"), from yikirgin ("mouth"), the labrets which they wore in former times having made their mouths their most conspicuous feature. The American Continent is called Krimin.² Its inhabitants are called Krimilit, and also Yikirga'ulit, or, again, Ro'chilit ("opposite-shore people").

It is a question open to discussion, whether in former times there were any Eskimo villages on the Arctic coast. At present there are none except Ne'okan; though some of the inhabitants of Uwe'len, the nearest settlement to the west, are Eskimo. The older travellers, such as Lütke and Wrangell, mention a few tribal names supposed to be Eskimo, as Onkilon and Namollo; but of these, the former resembles the Chukchee añqa'lin,³ while Namollo brings to mind the Koryak word for "maritime settlers," nirmilu, which in Chukchee takes the form nirmilit ("inhabitants"), from nirmim ("habitation").

Wrangell, and also Nordenskiöld, following in his footsteps,⁴ mention an Eskimo tribe that some two hundred years ago occupied the whole Arctic coast from Cape Shelagskoy (Erri) to Bering Strait, and was driven away by the Chukchee. They base their chief argument upon the difference between the actual Chukchee dwellings and the remnants of the old underground houses found here and there. In reality, this difference means nothing more than that, with the increase of reindeer-breeding, the underground houses, being unwholesome, and requiring a great consumption of oil, were gradually abandoned by both Eskimo and Chukchee for another type of house, probably also ancient, but more similar to the tents of the Reindeer people, and with a sleeping-room made of thick skins.

The Pacific Eskimo were slower to effect this change, since they had no

¹ Dall, I, p. 375.

² Taken from the Asiatic Eskimo Krimin (an inhabitant of Cape Prince of Wales, opposite East Cape). Cape Prince of Wales and the Eskimo village on it are called by Asiatic Eskimo Ki'hi (cf. p. 30): hence Krimin comes to mean "the inhabitant of Ki'hi." In their own language, the inhabitants of Cape Prince of Wales call themselves Ki'nugmut.

³ Plural, añqa'lin (see p. 11).

⁴ Nordenskiöld, I, p. 406.

reindeer of their own; yet at the present time, on the whole West Bering coast, there are only five underground houses still inhabited, — one in Uwe'len, and four in Ne'ëkan. It is easy, however, to understand that to Wrangell, who approached the northern shore from the Kolyma side, the tents of the Reindeer people appeared to be typical Chukchee dwellings. The difference was the more striking, since around Kulu'či Bay the inhabitants turned from maritime pursuits to reindeer-breeding. I know of some, whom I saw on the northern tundra, who claim that their grandfathers lived on the coast and occupied themselves with seal-hunting. This same change occurred in several other places, as will be shown farther on.

It is not my intention to deny that on the Arctic coast there was previously more of the Eskimo element, which little by little became assimilated by the Chukchee. Thus, some of the Chukchee village names, both on the Arctic and on the Pacific shores, have an Eskimo sound, and moreover, especially in their Ai'wan form, can be explained on the basis of the Eskimo language. Compare, for instance, the following village names.

ON THE ARCTIC COAST.

<i>Chukchee.</i>	<i>Ai'wan.</i>
Ne's'qan.	Na's'kok ("head").
Kulu'či.	Kulu'sik ("old iceberg").
Iqä'lurun.	Iqä'luwhak (fish of the species <i>Gadus wachna</i>).

ON THE PACIFIC COAST.

<i>Chukchee.</i>	<i>Ai'wan.</i>
Nigč'en.	Nixci'rak (from ni'xcak, "ringed seal").
Nunä'mun.	Nuna'mo ("land's end").
Če'win.	Ca'vik ("knife").
Ce'čin.	Te'sik. ¹
Meči'wmın.	Me'sik.

In regard to the legend cited by Wrangell, about the Eskimo chief Krächoj, who is said to have emigrated across the sea to certain islands, I may say that I too heard it among the Chukchee; but it is mythical in character, and is connected with other tales about vanished tribes, similar to corresponding tales of the Eskimo. It is true, however, that the northern Chukchee believe that in some northern land, not very far distant from the continent of Asia, there lives a race of men sprung from these ancient emigrants. This land is said to have been seen by the crew of a boat which drifted out into the open sea. It corresponds to Wrangell's Land, and I have heard from people from

¹ St. Michael's Fort, in northern Alaska, is called by the same name. In Central Eskimo it signifies "lake."

the same village, Kulu'či, which was mentioned by Wrangell, a tale of seemingly still more recent origin than his, in which it was asserted that a few years ago two kayakers of the village were carried out by the wind to this land across the sea. They discovered houses and stole some provisions from the underground cellars, and finally succeeded in getting away unnoticed. All these details were given so vividly, that, if I had not known that Wrangell's Land is destitute of inhabitants, I should have had no hesitation in crediting the narrative.

The belief that there are unknown tribes still living in some remote part of the country, exists in various places in northeastern Asia. Besides the tale of Krāchoj, the Chukchee tell a story about the Vai'ñê-qa'a-ra'mkit, or "twilight Lamut," and say that they, too, emigrated beyond the sea, but that they often swim back again, overcome by homesickness, and may sometimes be seen in the twilight, outlined against the last short rays of the fading day. They are supposed to be quite inoffensive, only stealing an occasional ration of food from the storehouses. From time to time the Chukchee have a chance to shoot one of them; and then it is seen that the victim looks very much like an ordinary man, except that his feet are larger and the toes are webbed for swimming.¹

The Chukchee do not assimilate readily. Whenever they come in contact with another tribe, they do not learn its language, but force the other to learn theirs. The chief reason for this is that they are the greatest reindeer-breeders in the country, and other tribes have to depend upon them for food and sustenance. Thus it is that outsiders are forced to seek a means of easy intercourse with them. The Maritime Chukchee in the immediate vicinity of the Eskimo likewise learn very little of their language, while all the Eskimo men and a majority of the women speak Chukchee as fluently as they do their own language.

Again, in the same way, a few Chukchee families living on the Anadyr River, not far from the Russianized village of Markova, have not learned much Russian, while at least all the men in Markova speak Chukchee fluently.

The Chukchee are so self-sufficient that they prefer to make words of their own for new objects coming from the civilized world, rather than adopt the foreign names. Thus they have for mustard, čí'myčín ("bitterness"); flour, piñ-wu'rrín ("powder-like" [Kolyma dialect]); bread, pin-teki'čhín ("powder-meat"); brandy, ä'q-i'míl ("bad water"); iron file, pílvi'nti-pnau'kun ("metal whetting-stone"); tea-kettle, pi'lhí-kuk ("muzzle-pot").

CHARACTER OF THE COUNTRY. — The territory of the Chukchee is situated chiefly in the tundra region, and includes the northern border of the forest.

¹ At the mouth of the Anadyr the Chukchee call them va'ý-qa'a-ra'mkit ("grass Lamut"). They say that they are clad in grass garments. During the night-time they creep cautiously along, and occasionally kill young children when met alone, with nobody to protect them. Here the notion about the mysterious human tribe evidently comes nearer to the usual ideas concerning evil spirits.

In the Kolyma district, on the western side of the mountains, the climate is cold and dry. The snowfall is not so heavy, and tempests are not so frequent, in the coldest time of the year, as on the Chukchee Peninsula.

On the Pacific coast, while the temperature does not fall so low, the snowfall is much heavier; and snow-tempests, dry in winter, and damp and misty in the fall and spring, often last for several weeks without cessation. Therefore the floras of the two districts are quite different. On the Kolyma side the chief tree is the larch, which attains a great height and has a well-developed form even beyond the polar circle and as far north as latitude 69°. The limit of its distribution is quite sharp, and runs along the larger rivers, about fifty miles from the seacoast. Shrubby willows of about a man's height are found even twenty miles farther north, and their growth becomes stunted only a few miles from the seacoast. On the Pacific side — in the valley of the Anadyr River, for example — the larch-tree is less commonly found than west of the mountains, and thrives only in the interior portion of the country, along the river Main, a tributary of the Anadyr. The chief trees are the willow and the poplar, which are distributed about evenly. Even on the southern side of the polar circle, a hundred miles from the coast, their growth becomes stunted, but as shrubs they continue for some distance to the north. Almost everywhere some very small shrubby willows and alders are found in the river-valleys. The coast for many miles is bare of every kind of growth except reindeer-moss and a few lichens. On sandy spots, like Indian Point, the inhabitants cannot gather grass enough even for the soles of their boots, and are obliged to bring it from farther inland.

Bogdanovitch mentions that he has seen good grass on the mountain-slopes around Konyam Bay, but he does not specify how large these grassy spots were; he even expresses the opinion that the Chukchee Peninsula can be crossed with horses in the summer-time.¹ I wish to point out, however, that even farther to the south, along the forest-line, horses used for travelling² often starve for want of fodder.

According to the latest meteorological observations, the average temperature of the seasons in the Kolyma country is as follows: —

	<i>Nishne-Kolymsk.</i>	<i>Sredne-Kolymsk.</i>
Winter	—32.79° C. (—27.00° F.)	—35.0° C. (—31.00° F.).
Spring	—13.06° " (+ 8.49° ")	—14.6° " (+ 5.72° ").
Summer	+10.37° " (+50.67° ")	+11.2° " (+52.16° ").
Fall	—14.66° " (+ 5.61° ")	—12.6° " (+ 9.32° ").
Average of the year . . .	—12.50° C. (+ 9.50° F.)	—12.75° C. (+ 9.14° F.).
Absolute maximum, Sredne-Kolymsk, +29.4° C. (+84.92° F.).		
Absolute minimum, Sredne-Kolymsk, —54.0° C. (—58.72° F.).		

¹ Bogdanovitch, pp. 51, 70.

² This was the case with the merchant Trifonoff and others between Anui and Anadyr; with D. Melikoff and several Yakut traders between Okhotsk Sea and Sredne-Kolymsk; with W. Jochelson between Gishiginsk and Paren.

The Kolyma River freezes, at Nishne-Kolymsk, Oct. 12; at Sredne-Kolymsk, Oct. 11. The ice breaks up, at Nishne-Kolymsk, June 15; at Sredne-Kolymsk, June. 4.¹

The average temperature in the Anadyr country is as follows: —

	<i>Mariinsky Post.</i>	<i>Markova.</i>
Winter	—18.8° C. (— 1.84° F.)	—22.4° C. (— 8.32° F.).
Spring	—13.4° " (+ 7.88° ")	—13.2° " (+ 8.24° ").
Summer	+ 9.0° " (+48.20° ")	+12.6° " (+54.68° ").
Fall	— 4.4° " (+24.08° ")	— 7.6° " (+18.34° ").
Average	— 6.9° C. (+19.58° F.)	— 7.6° C. (+18.34° F.).

Absolute maximum, Mariinsky Post, +20.2° C. (+68.36° F.); Markova, +26.6° C. (+79.88° F.).

Absolute minimum, Mariinsky Post, —42.7° C. (—44.86° F.); Markova, —47.0° C. (—52.6° F.).

The estuary of the Anadyr freezes, at Mariinsky Post, Oct. 17. The ice breaks up in the Anadyr River, at Markova, June 5; in the estuary of the Anadyr, at Mariinsky Post, June 17.²

The average temperature at Pi'lhãqäi (Pitlekai), Arctic Sea,³ is as follows: —

October	— 5.20° C.	Average for winter months, —24.32° C. (—11.81° F.).
November	—16.58° "	
December	—22.80° "	
January	—25.06° "	
February	—25.09° "	Average for spring months, —15.79° C. (+3.58° F.).
March	—21.65° "	
April	—18.93° "	
May	— 6.79° "	
June	— 0.6° "	
July (1-17)	+ 2.68° "	

Absolute maximum, +11.5° C. (+52.7° F.); absolute minimum, —46.1° C. (—50.98° F.).

CAMPS AND VILLAGES. — The camps of the Reindeer Chukchee are situated in groups, mostly along the rivers; and their grazing-grounds are divided by watersheds, which are ordinarily so devoid of vegetation and so exposed to winds as to be unfit for reindeer-breeding. In the fall the camps are moved to the border of the forest to find shelter from the winter tempests; while in the spring of the year the herds are driven to the tundra, as far as the sea-coast, in order to be freer from noxious insects, and to give them pasturage better suited for the summer season. Some of the camps near the head waters of several rivers move to the mountains instead of to the sea, and stay near some small glacier, where the insects are less numerous than in the valleys. Often these herds do not thrive so well as those which are driven down to the sea. The range of the wanderings of a Chukchee camp extends from a hundred to a hundred and fifty miles, and in most cases covers the same or nearly the same territory every year; but any camp that becomes dissatisfied with its range may pick out a new one wherever it chooses, the only condition

¹ The Climate of the Province of Yakutsk (in the Note-Book of the Yakutsk Province, for the Year 1896, pp. 8, 26).

² Annual Report of the Main Physical Observatory, St. Petersburg, 1900 (in Russian and French), p. 301.

³ Observations Météorologiques, réduites par H. Hildebrand Hildebrandsson (Vega Expeditionens vetenskapliga iakttagelser, I, pp. 598-649).

being that it may not trespass on any ground already occupied by others for the season running.

The groups of Reindeer Chukchee are as follows: —

The Indighirka and Alaseya Group, along the rivers of the same names, — 13 camps, with a population of about 150 souls. This is the most westerly group, and its territory is surrounded by districts inhabited by Yakut and Tungus. Some of its reindeer-herds consist of as many as 5,000 head, and their owners regularly supply the Russian town of Sredne-Kolymsk and other settlements with meat.

The Western Kolyma Group, as the name indicates, on the tundra to the west of the Kolyma River, — about 35 camps, with a population of 400 souls. This group, on account of a severe epidemic of small-pox, which in 1884 devastated it and caused one-third of the population to perish, is rather on the decrease. After the epidemic many large herds, left without guards, disintegrated, and joined the herds of wild reindeer; while some of the western camps, who formerly lived in this district, recrossed the Kolyma River and re-occupied their former territory.

The Dry Anui Group, between the Arctic Ocean and the Dry Anui River. This group is the largest of all, and its camps extend at intervals of from five to ten miles from the right bank of the Kolyma, along the Anui, to the confines of the Chaun tundra. The camps number about 100. Their herds are not very large, for the most part consisting of from 300 to 400 head, which is sufficient to supply two families (i. e., from ten to fifteen persons, the average size of a camp) with meat, clothing, and trading-skins. Several herds, however, number 2,000-3,000 animals. Farther to the east the herds of this group are of larger size.

The Large Anui Group, consisting of hardly 20 camps. Their number has been considerably depleted by migration southward to the rivers Oloi and Omolon, where at present the most southerly portion of the tribe is living. This is a group of about 45 camps, with a population of 500 souls. Some of their herds are as large as those of the Indighirka, and supply two Russian towns — Sredne-Kolymsk and Gishiginsk — with meat. They have no access to the sea, however, and consequently live in the mountains during the summer months, so that there have been considerable losses in reindeer among them from time to time.

The Upper Anadyr Group, which comprises about 30 camps. These also resort to the mountains in summer. Of late their herds, too, have been greatly reduced.

The Chaun Group, — about 50 camps, living on the tundra near Chaun Bay. They are separated from the Anui Group by the mountains of the watershed. Their herds, like those of the Eastern Anui, number about 400 or 500 head, though more numerous herds also occur. The same may be said of

The Erri Group, whose territory lies farther to the east, and which is made up of about the same number (40-50) of camps.

The O'nmiln ("the inland one") Group, living between the north bank of the Anadyr River and Holy Cross Bay, — about 60 camps. It varies considerably in the proportion and distribution of its herds. Many camps are very poor, and live on fish and seal three seasons out of four, while others are well-to-do. This whole group includes a number of Maritime Chukchee from the Pacific villages who have turned reindeer-breeders within the last thirty years. Their herds have not yet had time to become very large.

The Telqä'p Group, called by the Russians Tumanskiye Chukchee (Туманские Чукчи), — about 50 camps. Their herds are of moderate size (400-500 head). These are the roughest and most indomitable of all the Chukchee, and in former times were the leaders in the wars against the Koryak.

The camps along the river Utte'gničen, a southern affluent of the Anadyr (called by the Russians Big River), and farther on along the Koryak border, including those scattered on the Parapolsky

Dol¹ and in Kamchatka, numbering perhaps 80 in all. Owing to the extent of territory covered by them, the strength of their herds is very unequal. Their herds also resort to the mountains in summer.

The White River Group, numbering about 25 camps; and the group in the Pe'qul-ñei Mountains, containing the same number.

On the so-called Chukchee Peninsula, between Kulu'çi Bay, Holy Cross Bay, and the Pacific Ocean, the whole number of reindeer-camps is from about 80 to 100. The herds are not very large, owing to the severity of the climate and to scanty pasturage. Almost half of these camps obtain the best part of their food from the sea; they keep dog-teams, own skin boats, etc.

Within the last thirty years the breeding of reindeer has increased gradually, and even some of the Eskimo have succeeded in gathering herds of their own; but the winter of 1900-01, when we were in the field, was so unfavorable, that the reindeer were famished everywhere, and many of the northern herdsmen especially lost about one-half of their whole stock.

It would be easy to increase the number of the divisions, since almost every small cluster of camps, united by ties of kinship, claim to have a separate name derived from the river on the banks of which they wander with their herds. Thus Mr. Bogdanovitch gives the name Tahrait to those living around St. Lawrence Bay near the river Marich. Perhaps this is a distorted form of the word tegre'tilit ("those coming down [the river]").

According to the situation of their districts in the western or the eastern part of the country, the divisions of the Reindeer Chukchee call each other eig's'qilit ("westerners;" literally, "those coming leeward") or aiva'La't ("easterners;" literally, "those coming windward"). These names have arisen from the fact that the chief wind of the country comes from the west along the Arctic shore. Perhaps the names Ai'wan and Eiwhue'n have a common origin with aiva'Lat (from ai'g-èpu, "windward"), since the inhabitants of the Pacific coast are called Aiva'Lat by all the inland and Arctic Chukchee, whom they, in their turn, call indiscriminately Eig's'qilit.

All camps to the southeast from Chaun Bay are called by the more eastern people U'nmi-nute'kinet ("those from the inland country").²

The whole number of reindeer camps amounts to about 650, with a population of 7500-9000, rather more than less.

In compiling the list of the maritime villages, I have utilized, besides information collected by myself, the very valuable paper by Nordquist and the official "Register of the Inhabited Places of the Seacoast Province of Siberia." In the latter the data relating to the Chukchee were furnished by Mr. N. Gondatti. Unfortunately, while writing this memoir, I have not been able to use the very valuable article of Mr. Gondatti, the title of which is given on p. 20, but, so far as I can remember, it does not differ much from the Register. The journey of Mr. Gondatti from the mouth of the Anadyr to East Cape was made in the spring of 1895. Some data given by Krause, Bogdanovitch,

¹ Compare p. 15.

² Compare the O'nmlm Group, p. 26.

Hooper, and Hilder, have also been taken into consideration as far as possible. I have enclosed in parentheses the statistics obtained from these authorities. Krause's geographical information, and his maps of the coast, seem to me to be quite correct; his list of villages from Holy Cross Bay to Kulu'či Bay is also accurate.¹

Only the names of the principal villages are here given, because the smaller ones mentioned by many travellers are not fixed dwelling-places. They are simply hunting-stations, that are used for a few years, and afterwards abandoned for other places a few miles away. The name belongs to the locality, not to the village. Even the larger villages are not very stable; and the population often desert one and move to another, according to the changing conditions of seal-hunting. However, those among the smaller settlements which were mentioned by several older travellers, and which happen to be inhabited at the present time, are included in the following list.

The villages on the Pacific coast are as follows: —

CHUKCHEE.

Ve'n, in Anadyr Bay, near the mouth of the Anadyr River.² The Russians subsequently founded a settlement near by, and called it Mariinsky Post. In former times the Chukchee village lay nearer the open sea, on the low sandy shore of Geëk Land. Ve'n has at present 7 native houses and about 40 inhabitants.

Mr's-qan ("hill"), on the west point of the long, narrow island Mr's-qan,³ in Holy Cross Bay; and Ré'tkên ("clayish"), on the east point of the same island. During my visit in 1901 the former village had 3 houses, and, besides, 1 family was living a few miles off; while in two places there were 6 tents of some very poor half Maritime, half Reindeer people. The total population was 41 (according to the Register, 7 houses, 30 inhabitants). Ré'tkên had 6 houses with 35 inhabitants (Register, 6 houses, 22 inhabitants).

Farther along the shore, on Cape Wu'kwên ("stony"), there used to be a small settlement whose inhabitants afterwards turned to reindeer-breeding and went inland.

¹ In his statistics, Krause gives for the large village Uñi'sak (Indian Point) only 13 houses "from personal observation." He evidently confounds the small village Ku'kun with the larger Lu'eren, since he states that there are 20 houses in Ku'kun, and only 2 in Lu'eren, whereas in reality the numbers are the reverse.

² On the Middle Anadyr live about ten Chukchee families scattered in five or six places. Of these, Chikayeva has two families, and Under-the-Cliffs three. The first name has been borrowed by the Chukchee from the Russianized natives; the second name has the same meaning, both in the Chukchee and in the Russian languages. The other settlements are unstable.

³ Long, narrow islands or spits, consisting of sand cast up by the waves, are met with everywhere on the shores of Bering Sea and the Arctic Ocean, especially at the mouths of rivers or of narrow, deeply indented bays. These islands are called by the Chukchee Te'pân in the Pacific dialect, and Te'pqân in the Arctic dialect. With the Kamchadal and Koryak, where salmon is abundant, the villages near such spits lie on the mainland shore, which is less exposed to the wind. Mouths of rivers and entrances to bays are very convenient places for catching salmon, which enter there in masses for the purpose of spawning. The Maritime Chukchee and the Eskimo, on the contrary, build their villages on the outward shore of such islands or spits for convenience of sealing. The same is true of all islands lying near the shore. For instance, the Koryak village in Karagha Bay, of northern Kamchatka, lies on the mainland shore, opposite the large island Karagha. The Chukchee village in Kulu'či Bay, on the contrary, is situated on the small island some distance away from the narrow mouth of the bay. On Kihî'ni Island the village Kihî'ni lies on its outward northwestern shore. The villages of Mr's-qan, Ré'tkên, and Yan'ra'kê-not are situated on sandy spits which lie at the entrance to the bays.

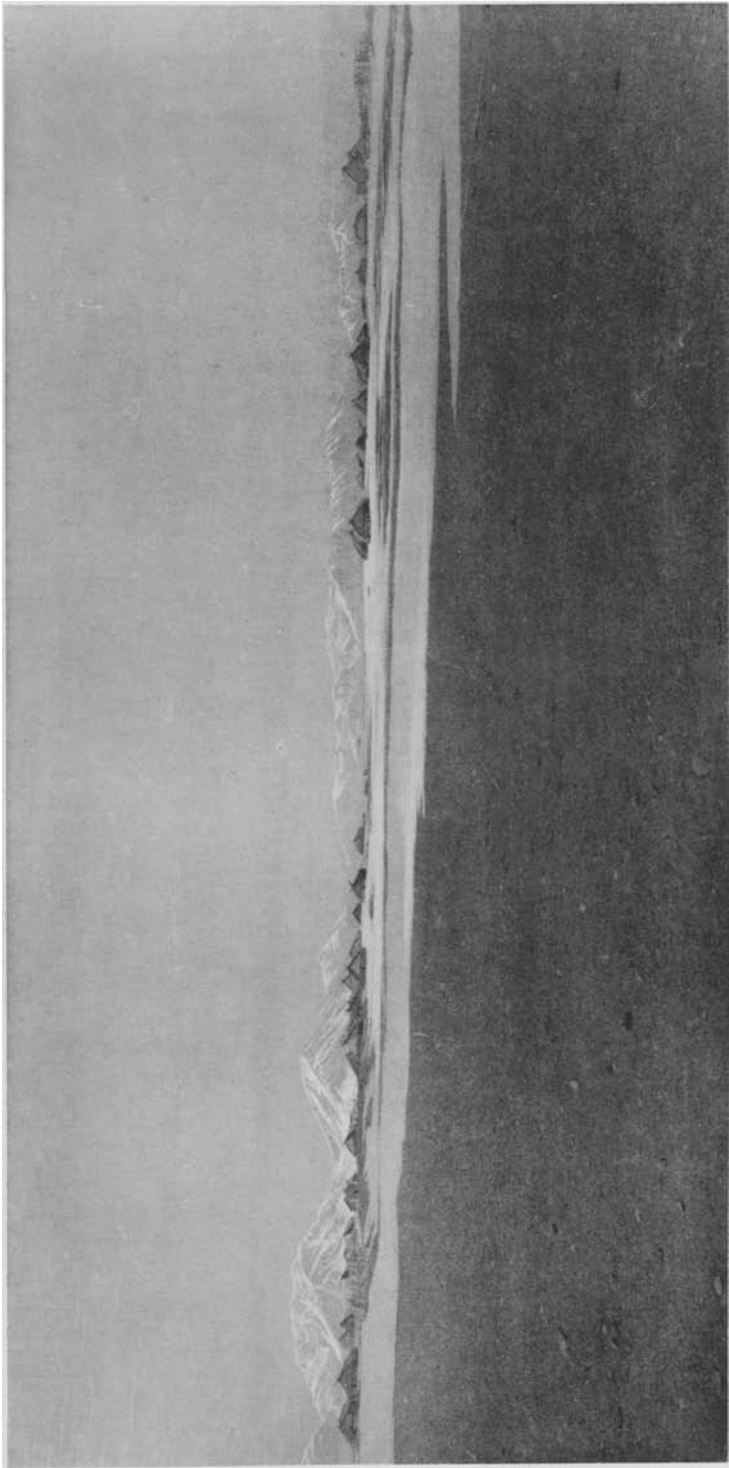


Fig. 1. Village Uñi'sak.

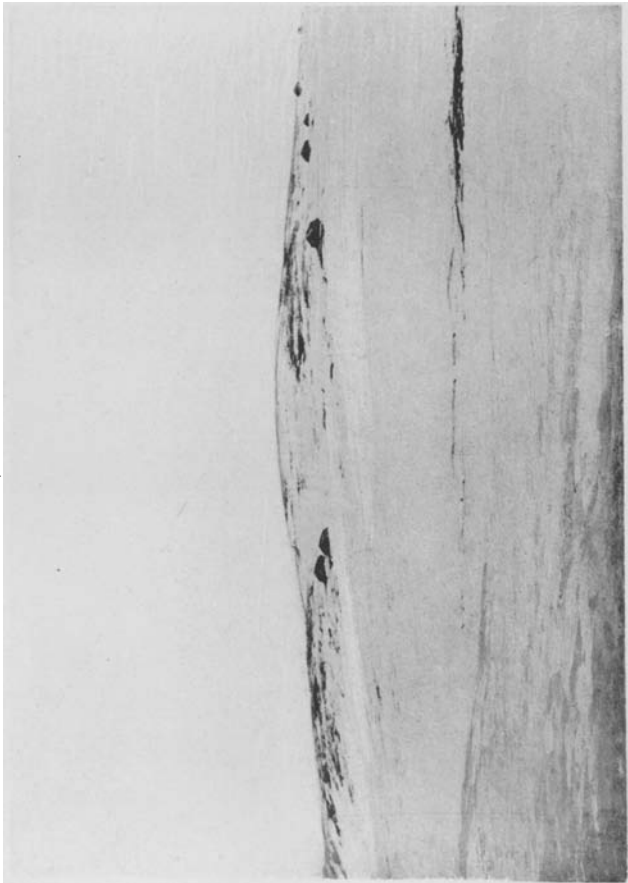


Fig. 2. Village Nu'nlgren.

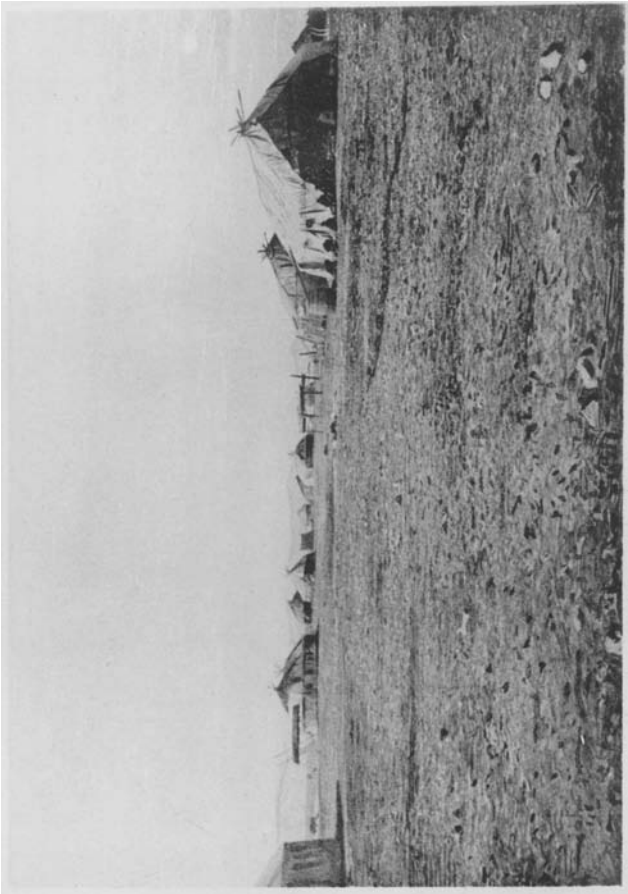


Fig. 3. Street in Village Uñi'sak.

Valka'lên ("having houses of whale's jaw-bone"), which had during my visit 4 houses with 28 people (Register, 7 houses, 39 inhabitants). The underground houses alluded to in the name went out of use long ago, and the inhabitants now live in large "genuine houses" of the usual type.¹ E'nmlîn ("craggy"), in the Ai'wan Eskimo language Tiki'vak, which lies five miles farther on, along the shore. It had 17 houses, and a mile from it 2 more, with a total population of 126 (Register, 19 houses, 104 inhabitants).

Nu'nligren (see Plate I, Fig. 2), which had 17 houses in one place, and 4 in another near by, with a population of 104 (Register, 25 houses, 110 inhabitants).

A'çon, the last Chukchee village, which had during my visit 5 houses with 24 inhabitants. They were very poor Reindeer people, who had turned to seal-hunting as a last resort, but were not successful even at that (Register, 4 houses, 19 inhabitants).

ESKIMO.

Wute'en or Wu'turen (Eskimo, Čerī'nak), the first Eskimo village, which lies near Cape Ulakhpen. It had 8 houses with 58 inhabitants (Register, 14 houses, 77 inhabitants).²

Between A'çon and Wute'en, in former times, there was a small settlement, Če'nlin, occupied by the Wute'elit and the Chukchee. The greater part of its inhabitants, however, perished in the famine of 1880. The remainder turned to reindeer-breeding or emigrated to Wute'en and to St. Lawrence Island.

I'mtun (Eskimo, I'mtuk), a few miles off, which had 12 houses with 65 inhabitants (Register, 9 houses, 43 inhabitants). Most of the people are Ai'wan, but four families came from Wute'en.

I'en (Eskimo, Ri'rak), in Plover Bay, which had only 2 houses with 9 inhabitants (Register, 4 houses, 24 inhabitants); but two families moved to Eu'nmun a little while before our coming. The people are Ai'wan, and very poor.

Eu'nmun (Eskimo, A'vak), near Cape Chukotsky, which during our visit had 12 houses with 88 inhabitants. Besides these, two families with 10 men came over from I'en, where of late sealing has been very unsuccessful. There were then 98 inhabitants in Eu'nmun (Register, 16 houses, 101 inhabitants). The people of Eu'nmun are Ai'wan.

Če'čin (Eskimo, Te'sik), on the west shore of the bay of the same name (Čeči'kin qu'im, i. e., Če'čin Bay),³ which had 18 houses with 94 inhabitants (Register, 25 houses, 142 inhabitants). The people are Chukchee and Ai'wan, half and half.

Uñi'in (Eskimo, Uñi'sak), on Cape Chaplin (Indian Point) (Plate I, Figs. 1, 3), which had 61 houses with 442 inhabitants, all of them Ai'wan (Register, 51 houses, 500 inhabitants).⁴

NORTH OF INDIAN POINT.⁵

Nepe'kuten (Eskimo, Napa'kutak), on the island called Ipe'kut in Chukchee (Eskimo, Ci'rluk⁶), the last Ai'wan village: 4 houses, 37 inhabitants (Register, 5 houses, 52 inhabitants).

¹ The Chukchee use the expression "genuine house" for a tent-like dwelling with an inner sleeping-room made of heavy skins. For description see the chapter on "Habitations," farther on.

² See p. 20.

³ Mr. Gondatti has confounded Providence Bay with Če'čin Bay, which led him to many misunderstandings, and induced Mr. Bogdanovitch to hint that Mr. Gondatti did not visit all the places that he mentioned (BOGDANOVITCH, pp. 66, 67). On the Russian maps Če'čin Bay is called Tkachen Bay or Admiral Butakoff's Bay. American whalers call it Marquis Bay, of which Krause made "Marcus Bay."

⁴ The decrease in population on this coast since Mr. Gondatti's visit is due undoubtedly to the epidemic of measles in the year 1899.

⁵ Northward from Indian Point my information is reliable only for the number of houses. The Register gives the number of inhabitants in every case, but I fear the figures are often only approximate. The average of inmates in a house, according to my calculations, which agree with the data given by Mr. Gondatti, is about 6½ or 7. Lieut. Nordquist allows for the villages of the Arctic shore not more than 5 to a house, but this seems to me rather too little.

⁶ Messrs. Bogdanovitch and Gondatti call it Ettyhren.

Kihi'ni (Eskimo, Ki'hi¹), on an island of the same name: 3 houses (not mentioned in the Register).
The people from here northward are Chukchee.

Ye'rgin (Eskimo, Ya'rga), on the southwestern end of the island Kihini: 3 houses (not mentioned in the Register).

Ala'yon ("the summer place"): 3 houses (Register, 5 houses, 26 inhabitants).

Ihi'nin: 2 houses (Register, 5 houses, 28 inhabitants).

Če'win (Eskimo, Ca'vik, "knife"): 2 houses (Register, 2 houses, 8 inhabitants).

Nigč'en (Eskimo, Nixci'rak, "one with seals"): 2 houses (Register, 2 houses, 12 inhabitants).

Yanfa'kê-not ("separate land"): 2 houses (not mentioned in the Register).

Meči'wmn (Eskimo, Me'sik), on the bay of the same name: 6 houses (Register, 2 houses, 18 inhabitants).

A'grtkin, on the Meči'wmn spit: 2 houses (not mentioned in the Register).

Lu'sren (Eskimo, Nu'kak): 10 houses (Register, 21 houses, 115 inhabitants).

Ku'kun: 1 house. All the other inhabitants have become reindeer-breeders. (Register, 3 houses, 23 inhabitants).

Aka'nên (Eskimo, Aka'nik): 7 houses (Register, 10 houses, 42 inhabitants).

Ya'nfa-ñai ("separate peak"): 15 houses (Register, 28 houses, 101 inhabitants, which number seems to me rather too large).

Nute'p'nmn ("tongue of land"): 2 houses (not mentioned in the Register).

Nunä'smun (Eskimo, Nuna'mo, "land's end"): 11 houses (Register, 13 houses, 63 inhabitants).

Či'ñin (Eskimo, Si'nik): 5 houses (Register, 4 houses, 17 inhabitants).

Puo'ten (Eskimo, Puwu'tak): 6 houses (Register, 17 houses, 40 inhabitants).

enmita'hin ("cliff's end"): 6 houses (Register, 8 houses, 42 inhabitants). The people are Nə'əkalit Eskimo.

Nə'əkan (Eskimo, Nabu'qak), on East Cape: 48 houses (Register, 50 houses, 299 inhabitants). The people are Nə'əkalit Eskimo.

The villages on the Arctic coast are as follows: —

Uwe'len (Eskimo, U'lak, "carving-knife"): 30 houses (Register, 38 houses, 231 inhabitants; Nordquist, 40 houses). Half of the people are Chukchee, and half Nə'əkalit Eskimo.

Tu'ñqen (Eskimo, To'ñqak): 4 houses (Register, 2 houses, 17 inhabitants; Nordquist, 5 houses; Krause, 10 houses). From here westward all the villages belong to the Chukchee tribe.

Inčo'win (Eskimo, Inčo'rvik): 18 houses (Register, 19 houses, 142 inhabitants; Nordquist, 33 houses).

Iñe'sen (Eskimo, Inñe'rñik): 3 houses (Register, 3 houses, 21 inhabitants; Nordquist, 5 houses).

Ot-enmita'hin ("cliff's end of U'ten"): 1 house. All the rest of the inhabitants had turned reindeer-breeders. (Register, 2 houses, 27 inhabitants; Nordquist, 8 houses.)

U'ten (Eskimo, U'tak), 12 houses (Register, 8 houses, 64 inhabitants; Nordquist, 20 houses).

Ču'lpen (Eskimo, Ču'lpak), called in the Register and by Lieut. Nordquist Ču'tpen: 12 houses (Register, 4 houses, 32 inhabitants; Nordquist, 15 houses).

I'sčen (Eskimo, I'čak): 11 houses (Register, 11 houses, 78 inhabitants; Nordquist, 13 houses).

Čei'tun (Eskimo, Ča'xtuk): 16 houses (Register, 8 houses, 56 inhabitants; Nordquist, 18 houses).

Čeča'ñin (Eskimo, Čeča'ñik): 10 houses (Register, 11 houses, 77 inhabitants; Nordquist, 11 houses).

Iqā'lurun (Eskimo, Iqā'luwhak): 10 houses (Register, 7 houses, 48 inhabitants; Nordquist, 5 houses).

¹ Cape Prince of Wales is called by the same name (cf. p. 21).

- Ke'ñičvun (signifying, with a slight modification of the last vowel, "curve"): 11 houses (Nordquist, 17 houses; it is not given in the Register, and probably the inhabitants are counted with those of Ne'te-ke'ñičvun, a hunting-station near Ne'ten).
- Enu'rmin (Eskimo, Ano'rmik): 12 houses (Register, 20 houses, 125 inhabitants; Nordquist, 20 houses).
- Ne'te-ke'ñičvun ("the curve of Ne'ten"): 1 house (Register, 5 houses, 29 inhabitants; Nordquist, 2 houses).
- Ne'ten (Eskimo, Na'tak): 9 houses (Register, 5 houses, 33 inhabitants; Nordquist, 14 houses).
- Nat-enmita'hin ("cliff's end of Ne'ten"): 2 houses (Register, 4 houses, 30 inhabitants; Nordquist, 2 houses).
- Imi'lē ("the whole one"): 4 houses (Register, 7 houses, 49 inhabitants; Nordquist, 4 houses).
- Mä'mi-pi'lhin ("mouth of Mä'mi"): 2 houses (Register, 3 houses, 19 inhabitants; Nordquist, 1 house).
- Mä'mi ("with arrows"): 3 houses (Nordquist, 7 houses; not mentioned in the Register).
- Te'pqān ("low straight coast"): 8 houses (Nordquist, 9 houses; not mentioned in the Register).
- Palo'nnan: 1 house. The other inhabitants had turned to reindeer-breeding. (Register, 4 houses, 28 inhabitants; Nordquist, 1 house.)
- Ne's'qan (Eskimo, Na's'kok, "head"): 8 houses (Register, 10 houses, 59 inhabitants; Nordquist, 6 houses).
- Velkä'l-tnu'p ("jaw hill"): 4 houses (Register, 6 houses, 33 inhabitants; Nordquist, probably under the name Kakodla, 9 houses).
- Ne's'qaqāi ("little Ne's'qan"): 6 houses (Nordquist, 7 houses; not mentioned in the Register).
- Irgu'nnu'p ("pointed hill"): 5 houses (Nordquist, 6 houses; not mentioned in the Register).
- Yi'nřilin ("having steep hills"): 5 houses (Register, 4 houses, 26 inhabitants; Nordquist, 4 houses).
- Pi'lhin ("mouth"): 1 house. The other inhabitants had turned reindeer-breeders. (Nordquist, 3 houses; not mentioned in the Register.)
- Kulu'či (Eskimo, Kulu'sik, "old iceberg"): 11 houses (Register, 14 houses, 94 inhabitants; Nordquist, 20 houses).
- Nute-pr'nmin ("tongue of land"): 4 houses (Register, 4 houses, 23 inhabitants; not mentioned by Nordquist).
- Wañkarē'man (derived from Wa'ñka, "walrus-tusk"): 7 houses (Register, 4 houses, 28 inhabitants; Nordquist, 9 houses).
- Rirkai'pryan ("walrus barred off"): 11 houses (Register, 9 houses, 52 inhabitants; Nordquist, 15 houses).
- Nota-tr'mlin ("close to the land"): 4 houses (Register, 4 houses, 28 inhabitants; Nordquist, 3 houses).
- Re'n ("food"): 1 house. All the other inhabitants had turned reindeer-breeders. (Not mentioned either in the Register or by Nordquist.)
- Kinma'nka-u'tir: 3 houses (Register, 2 houses, 13 inhabitants; Nordquist, 4 houses).
- Ya'qan: 3 houses (Nordquist, 5 houses; not mentioned in the Register).
- enmaa'tir ("cliff-brook"): 2 houses (Nordquist, 4 houses; not mentioned in the Register).
- enmita'hin ("cliff's end"), 3 houses (Register, 2 houses, 16 inhabitants; Nordquist, 6 houses).
- Uwga'rgin: 2 houses (Nordquist, 4 houses; not mentioned in the Register).
- Three different places on Cape Erri: 6 houses (Register, 2 houses, 10 inhabitants; Nordquist, 13 houses).

In summing up the whole population, we obtain in round numbers, for the Chukchee on the Pacific shore, 1100; for the Eskimo, 1200;¹ for the

¹ Besides these, there are about 400 inhabitants on the Diomed Islands and on St. Lawrence Island; so that the whole number of Eskimo in Asia, in round numbers, is 1600.

Chukchee on the Arctic shore, 1600, which should be increased to 2000, because I omitted in my enumeration some of the minor settlements the names of which I obtained, but which I was unable to identify with villages mentioned by Lieut. Nordquist. Lieut. Nordquist arrives at the same number of inhabitants, but the number of houses in his list are more than 400, as compared with 266 enumerated by me. His estimate is based, according to his own statement, on the assumption of only five persons to a house, whereas my figure is six and a half. With an equal average of inmates to a house, his census of the population on the Arctic shores would exceed mine by 600. It seems probable, therefore, as Mr. Gondatti asserts, that the maritime population has diminished of late years. His assumption, however, that the Arctic shore is more thickly populated than the Pacific, seems to me unfounded.

The total number of the Chukchee amounts to 12,000, rather more than less, of which three fourths are reindeer-breeders, and only one fourth maritime. The decrease in the maritime population may be partly accounted for by the fact that each year many families turn from maritime pursuits to reindeer-breeding.

Several villages have nearly or altogether disappeared, because all the inhabitants have gone inland and have turned reindeer-breeders. These are, on the Arctic coast, besides those of Kulu'či Bay, mentioned above, the villages Re'n, Ot-enmita'hin, Palo'nnan; on the Pacific coast, Ku'kun, Če'nlin, Wu'kwên, also nearly one-half of the inhabitants of the large village E'nmlin, and others.

II. — GENERAL CHARACTERISTICS.

APPEARANCE. — As ascertained from anthropological measurements (148 of men, and 49 of women, all adult), the height of the Chukchee is, men, maximum, 186 mm.; minimum, 150 mm.; average, 162.2 mm.: women, maximum, 168 mm.; minimum, 138 mm.; average, 152 mm. The cephalic index of the men is, maximum, 96; minimum, 75; average, 82: of the women, maximum, 88; minimum, 74; average, 81.8.

The Chukchee are well built and healthy, though rather heavy; so that the saddle-reindeer bought from the Lamut frequently prove too weak for their new masters. Nor are the Chukchee as nimble of foot as are the Lamut hunters. Stout people, however, are rare. I met only one who was rather portly, and on this account he received the nickname Um-Kutu'wgi; i. e., "Stout Kutu'wgi."

The hands and feet, as with all tribes of Arctic Asia, are small. The young men of the Reindeer division sweat copiously upon slight exertion, — for instance, while running about the herd, — and on this account the Reindeer Chukchee call themselves, half facetiously, "the sweating-people" (gīŋo'ta-ra'mkin). Many of the women are clumsily shaped, with short waists, and legs out of proportion to the rest of their bodies. Some of the Chukchee have considerable physical strength, especially the reindeer-breeders, who have a superior diet. I saw men who were able to carry a whole reindeer-carass on their backs for a quarter of a mile, or lift a great stone about two hundred pounds in weight. The younger Chukchee are continually bent on increasing their physical powers by lifting and carrying stones, by running foot-races for long distances, etc. The Maritime Chukchee and the Eskimo even have special lifting-stones for each man. These are picked up among the crumbling rocks, and are usually cylindrical in shape, with smooth surfaces. One of my European fellow-travellers, however, was able to surpass all the men of the villages between Mariinsky Post and Indian Point in a hand-pulling contest.

The cheek-bones of the Chukchee are much less prominent than those of the Tungus or Yakut; their noses are often large, well-shaped, and even aquiline, though noses with the low Mongolian bridge are also frequently met with, especially among the women.

Many Chukchee have faces that are clumsy in outline, flat skulls, and low straight foreheads, while the lower part of the face is disproportionately large and strong.¹ A handsome head is frequently compared to a round grassy hummock. In their tales, man is sometimes called "hummocky-head."

¹ Compare Nelson, pp. 27, 28.

Faces strongly Mongolian in outline are more frequent among the women, though many are as fair and as well formed as the average woman of the white race.

Their eyes are straight, and frequently as large as those of Caucasians, and *plica* occurs but rarely among them; and their hair, as well as that of the Koryak, is often wavy or even curly, while the Kamchadal always have straight hair. Several Reindeer Chukchee that I met in various parts of their territory had the surname "curly" (ka'mčĭ) because of their very curly hair; as, for instance, "Curly Ya'tirgĭn" (Ka'mčĭ-Ya'tirgĭn). The hair of some people in Pacific villages even looked woolly. This effect was produced because the hair was coarse and thick, and at the same time formed tight curls.

In the interior and on the Arctic coast the color of the hair is black, but on the Pacific coast about fifteen per cent of the people have dark-brown or even light-brown hair. The growth of hair on the face is scanty, but beards are more frequently seen than among the Lamut or the Yakut. Accordingly, while the Lamut are very careful to pull out the beard-hair with tweezers, the Chukchee frequently allow their beards to grow, and are even proud of them. With the Reindeer people a mustache (or, rather, the appearance of a black down on the upper lip) is considered the crowning feature of full growth, the warrant of independence. The eyebrows are often thick and bushy, especially among old men. The growth of hair on the body is scanty. Thick eyebrows, long thick braids, and hairy pubes are counted as marks of beauty in woman.¹

The color of the face is bronze, with intermediate tints varying from brick-red to blood-red. The ideal of beauty in both sexes requires that the face be "as red as blood, burning like fire." The color of the skin of the body is generally scarcely distinguishable from that of Caucasians. There are, however, numerous cases of brown or even dark-brown skin, more frequently among the Maritime Chukchee. The latter even consider the brownish complexion to be the handsomest. The breasts of women who are with child frequently assume a dark-brown color over the whole surface.

One of the marks of superiority is the ability to eat quickly. "When the young men eat quickly, the old men look on with pleasure," says the proverb. Accordingly the Reindeer Chukchee have adopted a peculiarly fierce and hasty method of eating, accompanied by sounds reminding one of the snarling of a hungry dog. One of the young herdsmen whom I saw on the Anui River acquired so much skill in this respect, that he could strip a whole joint of its flesh by taking hold of it with his teeth and pulling off first one side, then the other, — "like a wolf," his companions remarked admiringly.

¹ A Chukchee proverb says, "Hairy pubes of the wife keeps the husband's hands busy." The pubes of the Lamut and Yakut women is, on the contrary, almost hairless. The women of these two tribes, moreover, shave the scanty hair of their pubes, or pull it out with tweezers.

MIXTURE WITH OTHER TRIBES. — Notwithstanding considerable diversity in the features of the Chukchee, I doubt whether their blood is much mixed. At present the Reindeer men do not hesitate to take wives from among the Russians, the Lamut, or the Chuvantzy; but these intermarriages are of recent date. All cases of such intermarriages are on record, and they are but very few in number. Moreover, the births resulting from the marriages of Russian women (or, more strictly speaking, of Russianized Yukaghir women) with Chukchee men have not been numerous. The reason for this is probably that these women, who are not very prolific in their native environment, are still less so under the conditions of nomad arctic life.

On the Koryak border considerable intermixing with this tribe is going on at the present time. The Maritime Chukchee may have been intermixed with the Eskimo from ancient times. At the present date, in the village of Uwe'len on the Arctic, and of Če'čin on the Pacific, one half of the families are Chukchee, while the other half are Eskimo, and very extensive intermarrying is taking place. Other villages have an unmixed population, and mixed marriages are not so frequent as one might suppose. However, the question is not yet settled as to whether the Chukchee and the Eskimo belong to the same anthropological stock or not.

FERTILITY. — The Chukchee are the healthiest of the tribes in northeastern Siberia. Their families contain more children than those of any of their neighbors. While taking the census in the Kolyma district in 1897, I came across several families having five, seven, and even nine children living. Ten per cent of the families had not less than five children living. One man had by two wives twelve children living. Another, by seven wives (three of them dead), had fourteen children living.

On the Pacific coast, among the Maritime Chukchee, one woman had had thirteen children (seven living and six dead); another one, eleven (three living and eight dead); still another, nine (five living and four dead); etc. Several times, chiefly among the Reindeer Chukchee, I met with twins. This degree of fertility results in the steady increase of the Chukchee, especially among the Reindeer division, in spite of the contagious diseases which ravage the country once every ten or fifteen years. It is interesting to note that even among the Kamchadal, who are steadily decreasing in numbers, I came across several women with many children. One, for instance, had eight living and two dead; another, five living and ten dead; a third, five living, two dead, and five abortions; a fourth, seven living, three dead, and three abortions; a fifth, six living, two dead, and two abortions; etc.: so that here, at least, the decrease is not produced by any reduction in the number of births.

As far as can be ascertained, the decrease of native tribes in northeastern Siberia was produced by the direct or even indirect contact with civilization, exactly as was the case in other countries. It began with extermination during

the bloody wars of the early conquest by the Cossacks, and in subsequent mutinies, which were subdued by wholesale murder. After that came severe oppression; demand of tribute (hitherto wholly unknown); exactions from the officials and Cossacks, who succeeded in enslaving a number of the strongest men and women; and the fraudulent acts of the merchants, who imposed on all those that remained free the burden of interminable debts. Then came contagious diseases, which made havoc not only among the natives, but also among the conquerors, who lived under the same material conditions.

Worst of all, the natives lost their vital energy and their zest for life, which gave them the power and the will to struggle with the harsh Arctic nature. A number of them abstained from matrimony and from producing offspring. They dropped a large part of their former pursuits, and patiently submitted to regular periods of famine, considering their tribe doomed to destruction. For instance, among the vanishing clans of the Yukaghir on the Lower Kolyma the number of unmarried people is disproportionately large. The hunting of reindeer and the capturing of moulting birds to a considerable degree went out of practice, because they required too much exertion. The people live solely by fishing, and every spring suffer from the scarcity of food, often amounting to a real famine. It must not be forgotten that also under the natural condition of affairs before the arrival of the Russians, the increase of population, even among the strongest tribes, was very uncertain, and was continually checked by war and famine.

One of the old men at Indian Point said to me, "The spirits, it seems, take care that the people of this country shall not multiply. In olden times war was sent down to ward off increase. After that, in spite of the abundant variety of sea-game, famine would come and carry off the surplus. At present, with the fulsome supply of American food, the disease comes down, and the result is exactly the same."

BIRTH AND CHILDHOOD. — The Chukchee women are delivered with little labor. Custom strictly forbids the woman to groan, or to give way to the pain by any audible sign. Nor may help be given by other women. The woman who has been delivered has to attend to her own needs herself, and to those of the new-born infant. She cuts the navel-string and puts away the placenta.¹ The woman who accepts help in these operations will be mocked her whole life long, and even her husband will occasionally receive the derisive nickname "the helped one." Accordingly a large pelvis, because it eases delivery, is considered one of the chief features of womanly beauty. The Chukchee lover, in praising his beloved, will begin with her strength and

¹ The help that the Chukchee woman in labor gets from her assistants among the neighboring tribes is such, that, for the most part, she is better off without it. Among the northern Yakut, and even among the Russianized natives and the Russians, if the labor-pains last too long, especially with the first birth, the assisting women often take a heavy box and press one of its sharp edges against the abdomen of the laboring woman, thinking by this means to squeeze the child out.

stature, then state that she is fat, then mention her large pelvis, and only after that call attention to her long hair, heavy eyebrows, and ruddy face.¹ A short formula of praise is simply, "large woman, large pelvis, long braids" (ñaus'qa'tičhin, ñoi'ñičhin, kitta'lčičhin).

The Reindeer Chukchee assert that their young people become mature later in life than do those of the Maritime Chukchee, and give as a reason for this the hardships of nomadic life. This is, perhaps, partly true. However, so far as can be ascertained among a people who do not keep any written records, full growth is attained by the Chukchee not later than by northern European races. The young men marry early, and sexual relations sometimes begin before full maturity is reached. Not infrequently very young girls bear children, and the language contains a special term for them, êčva'k-ä⁸La' ("the fawn-mother"). Nevertheless the Chukchee hold to the idea that early marriages are injurious to the health of the woman, and tend to diminish the number of births. It is therefore usually held to be blamable to have intercourse with a girl that is not perfectly mature, or, according to their own statement, with "one not having full breasts and the menses." Notwithstanding this, the Chukchee are sensual, and enjoy ribald sayings and lewd gestures. When refused by a woman, they are inclined to violence and rape. Many of their pet names and nicknames are very obscene.

Their endurance in undergoing cold, hunger, and various hardships, is very great. Small children are left all day in the open air in winter. I have seen infants lying on the snow attempt to get out of their fur combination-suits. The upper part of their bodies remained naked for a long time, yet they did not show any signs of discomfort, though the cold was severe and the wind blew sharply. The women work with the needle in the open air even in March, at a temperature of 30° below zero, Centigrade. Their fingers remain unprotected for several hours at a stretch. The exertion even makes them feel warm and perspire so, that they throw aside their ample fur bodices and remain half naked, or else even thrust large cakes of snow into their bosoms.

The reindeer-hunters frequently start out with very little food, depending upon future quarry for their sustenance. When unsuccessful, they get along on very little food for several days, and all the while display the utmost agility in walking about and searching for game. Reindeer herdsman, men or women, often go without sleep for two or three days. A young girl will work for a whole day on skins, then watch the herd all night long, and in the morning return home and busy herself till evening, without any visible strain upon her strength.

EXTREME AGE. — Among the Reindeer Chukchee there is a fair number of old men. Sometimes four generations live together in the same family, the great-grandfather being from seventy to seventy-five years old. Among the

¹ See p. 34.

Maritime Chukchee the men who seem to be quite decrepit almost always prove to have become so rather from the hardships of life than from old age. Such men are speedily carried away by disease. Therefore the really old men, in my opinion, are not numerous.

THE SENSES. — Of the special senses, smell seems to be more developed than with civilized races, since the Chukchee assert that every man has a smell peculiar to himself, and that his clothes, etc., can be ascertained from it. I was told that in olden times, during the wars among the Koryak, the invading Chukchee parties, finding an old camping-place, were able to ascertain, from the odor of broken bones and other remains, whether they belonged to the Koryak or to their own tribe. Accordingly mutual sniffing has the same value as kissing, as is the case with many other primitive tribes. The Chukchee father, when leaving his family for a trip, will perhaps kiss his wife; but he will usually apply his nose to the nape of his children's necks, and inhale the odor of their fur shirts.

I must note, too, the sensitiveness of the Chukchee to unfamiliar odors. Every time that I happened to open my small chest of medicines in a Chukchee sleeping-room, the inmates complained loudly of the offensive smell which came from it, and sometimes I was obliged to go away to the outer tent with my patients. Similar complaint was made against some wild onions that I brought in, though the Russianized natives use them for food and even store them in large quantities for winter use. The Chukchee name for them is *tkê'-va'glîñm* ("smell-grass").

The taboo against bringing into a Chukchee sleeping-room any objects connected with the hearths and households of other families is founded, in the minds of the people, chiefly upon their unfamiliar odor. I have had some curious experiences regarding this idiosyncrasy. In 1896, while travelling among the Anui Chukchee, I happened to procure a document of the year 1789; acknowledging the loyal faith of a certain *Qr'miqäi*, evidently a rich reindeer-owner (the document calls him, with the usual misapprehension of the Chukchee social organization, "Chief of the Chaun Chukchee"). This document had been preserved in the family of *Qr'miqäi* for more than a century, and had gradually come to be considered, along with the fire-drills and strings of amulets, a part of their sacred possessions. The family became extinct, and I was able to acquire it, together with a curious wooden case adorned with beads and tassels, for a moderate price. When I brought it to the tent in which I was temporarily living, my host warned me against taking it into the inner room; but as it was bitterly cold outside, and as I wished to examine the paper, I took it in. No sooner had I produced the fatal wooden case from my bag, than the mistress of the house, a sickly woman of thirty, who sat opposite me, nursing a child on her lap, moaned and fell senseless. We had much trouble in reviving her, and afterwards I had to expiate my offence

by making offerings to the household spirits. She declared that an unfamiliar odor given off by the case made her feel giddy and sick; "since it has seen so many strange countries and hearths," was added by way of explanation. On the other hand, my books and instruments, although they have been in still stranger countries, were not objected to at all; nor were the provisions of civilization — canned meats, fruit, vegetables, sugar, etc. — rejected on account of their foreign odor.

Regarding taste there are also some peculiar features. Thus the Chukchee generally do not care for salt; many of them have, in fact, a decided aversion to it, declaring that it is bitter and tastes of sea-water. The Lamut, on the contrary, relish salt, and, when it is at hand, often use it with their tea. Some of the Chukchee have also an aversion toward soft bread, which to them tastes too sour. They will consume only hard biscuit, especially unsalted hard-tack. The Russianized natives, on the contrary, who are used to baked bread, find ship-biscuit tasteless. The desire for fat seems to be innate in the Chukchee. I saw an infant not a year old that cried every time an oil lamp was carried past his head. As the oil was very rancid, he evidently recognized it by its odor, and wanted some of it. To grown people an admixture of fat will improve the taste of all spoiled provisions: therefore putrid meat which has been stored in summer is usually consumed with oil or tallow. The consumption of fat, however, has some limitations. Many persons, especially women, cannot eat the blubber of the male rough-seal (*Phoca hispida*) because of its disgusting odor. Among the Reindeer people the marrow of the wild reindeer-buck is considered the best food in the world. Notwithstanding this, most of the people are not able "to break the joints" (i. e., to eat the marrow) of a whole animal, and some are contented with a single leg. There is a special term for the taste of food that is excessively fat and sweet, — *niñi'rñuqin* ("too rich" or "too savory").

The Chukchee scale of colors is also somewhat peculiar. The best-known colors are white (*ni'lhaqin*), black (*nu'uqin*), red (*ničč'loqên*), gray (*čêva'ro*). Among reindeer-skins the color "yellowish" (*ipli'li*) is also recognized. Occasionally this term may be applied to other skins, but never to anything else.

Other colors are not strictly defined, but are included among the preceding, or described by comparison with various existing objects. Thus we have the following: —

"Weed-like" (*nüwtiči'rraqên*), an indefinite term, that is applied to all the tints of green, yellow, or even blue when not very deep. The usual summer color of the weeds on the tundra is green for the leaves and the tip-ends of the stalks, but the lower parts of the plant are more or less yellow. When shown both green and yellow, the Chukchee are able to distinguish between them; but generally they apply one term to both colors, and in ordinary conversation always confound the two.

"Black weed-like" (n-uwa'la-nūwtič'rraqên), which is given as the color of gall. On the other hand, sprouting leaves, in the Chukchee eye, have the color of gall (ni-lêlê-pêra'qên, "gall-like").

Withering leaves look red to the Chukchee.

Light yellow ranks sometimes with white, sometimes with red.

"Ochre-like" (ni-čê'ra-pêra'qên) is applied to the straw color of reindeer-skins curried and dyed with ochre.

The color of the sky seems to them light green.

"White weed-like" (n-ê'li-nūwtič'rraqên).

Deep blue is grouped with black.

The Chukchee are fond of singing, especially on ceremonial days. Every family, and even every individual, has several songs of his own. Some of them are hereditary, and others they compose themselves. The shamans have numerous and various tunes, some of which have a pleasant effect, even on the civilized ear. The Chukchee are likewise sensitive to the melodiousness of a fine voice; and the people often gather in the house of some young shaman, known not so much for his skill as for his pleasing voice, to enjoy his singing.

The Maritime Chukchee are said to have a larger percentage of deep and rather hoarse bass voices than the Reindeer people, by whom they are much ridiculed on this account.

CLEANLINESS. — The Chukchee cannot be called a clean people, at least from a civilized point of view. They eat their own lice (Plate xx, Fig. 3), wash with urine, and allow the dogs to lick out their dishes. They consume the large larvæ of the reindeer-fly, and in summer the herdsmen occasionally consume even reindeer-dung mixed with young leaves of various plants. Habits of cleanliness, however, are liable to be considered from different standpoints. For instance, many of my native acquaintances strongly objected to cow's milk on account of the unclean ways of the animal that yields it. They asserted also that beef has a peculiar and unpleasant odor, similar to that of cow-dung, and some of them even refused to enter the room where beef was being cooked. On the other hand, when we objected to the odor of seal-meat, they, in their turn, would say, "The seal is quite clean. It washes itself continually in clean water. Why do you not object rather to the meat of your own filthy animals?"

DISEASES. — Contagious diseases have repeatedly made their appearance among the Chukchee. Small-pox has several times ravaged the population of northeastern Siberia. Its latest outbreaks were on the Lower Kolyma in 1884, and on the Middle Kolyma in 1889; though the latter epidemic affected chiefly the Russians and the Yakut, and had little effect on the Chukchee.

In 1899 an epidemic of measles, brought from Vladivostok by a Russian trader, spread northwards, and in the summer of 1900 reached the Chukchee villages and camps. Everywhere its effects were most disastrous, especially

as it requires the utmost caution against colds during convalescence, and the conditions of arctic life make this practically impossible. Even in the Russian settlements, such as Gishiginsk and Markova, almost a fourth of the inhabitants were carried off. The Chukchee suffered even more severely. In several Reindeer camps near the Pacific coast only a few children were left, and the masterless herds were scattered. This also happened on the Kolyma tundra in 1884, after the epidemic of small-pox. In the year 1901 the disease crossed over to America, and there also carried off many victims. The whole number of people who perished from this disease must have amounted to several thousands.

Some fifty years ago syphilis was much dreaded. The Chukchee regard it as indigenous, though its name (a'tal-va'irgin [a'tal, "Chuvantzy;"¹ va'irgin, "substance"]) suggests the tribe who in earlier times were mediators between the Russians and the Chukchee, and probably, after obtaining the disease from the Russians, introduced it among the Chukchee. However this may be, one afflicted with syphilis was regarded as unclean. At home he was provided with bedding of his own, with a separate dish and bowl, and was kept aloof, lest others should contract the disease. A family having several syphilitics among its older members was considered as "subject to shunning" (ku'rgu lr'nyo). Their fire especially was regarded as tainted. They were not allowed admission into clean camps, lest the odor of their hearth and the shadow of their entrance might prove infectious to their neighbors. Nowadays syphilis has evidently decreased; but elderly men and women with deformed noses and ugly scars on their foreheads, showing the third stage of the disease, are frequently met with everywhere. Even now these are considered unclean, though the precautions against them are not observed. The outbreaks of syphilis which occasionally occur among the younger people are considered simply as a different sort of disease, milder and less contagious.

Curiously enough, among the Reindeer Chukchee of the Kolyma, the children have a game in which the winner each time "immerses" the loser one degree deeper into syphilis; for instance, the fourth point scored is called t-^{ei}ñinnu'pet-hit ("I [immerse] you to the instep"); the sixth, t-imipča'k-git ("I [immerse] you to the boot-tops"); etc.²

Another contagious disease, a kind of grippe or influenza, spreads through the various parts of the country almost every year, claiming scores of victims. I found it mentioned in the archives of Kolyma as far back as a hundred years ago, and witnessed it myself two or three times among the Chukchee, the Russianized Yukaghir, and the Kamchadal. Its symptoms are those which usually occur in influenza, — violent cough; headache; affection of various organs and parts of the body, such as deafness in one ear, partial lameness, sharp pain in the muscles, etc. It usually spreads from the south and the

¹ Compare p. 18.

² Compare Chapter XI.

west, and therefore must be considered as coming from the Russian settlements. The Chukchee are very much afraid of this disease, since it occurs so often. In 1896, while I was travelling on the Upper Anui, all the Chaun people, hearing of some cases of the disease on the Wolverine River, fled from the whole western part of the Chaun tundra in order to avoid the "spirits seeking for prey."

Of nervous diseases, which are also dreaded and considered "subject to shunning," I may make mention of *ite'yun*, akin to epilepsy. Sometimes it occurs with the usual fits; sometimes with convulsions or with contraction of the muscles, amounting almost to a temporary catalepsy. It lasts for several hours, and the patient is unconscious during the whole time; then it gradually passes away, but in a few days returns, perhaps in a more violent form. *Ite'yun* progresses rapidly, and invariably ends in the death of the sufferer. Sometimes, however, it lasts for years before the fatal issue.

Another disease of a like character is *iu'metun*, a kind of violent nervous affection, which comes on at night like nightmare. During an attack the breath appears shortened, the blood rushes to the face, and sometimes the sufferer chokes on the spot. The Chukchee attribute both diseases to special spirits, and do not like even to mention their names. A man suddenly afflicted with such an illness while travelling, may be almost sure that he will not be allowed to enter any house, nor will he be given either fire or warm food.

The well-known form of Arctic hysteria, which is so widespread among the Yukaghir and Lamut women, is very rare among the Chukchee, especially among the Reindeer branch of the tribe. This disease develops chiefly in the form of an uncontrollable desire to repeat in a loud voice each word spoken by somebody else, and to imitate every sudden gesture or action. Even the women among the Russianized natives, and Russians, are affected with it to a considerable extent, while those of the Chukchee are practically exempt from it.

Leprosy, so frequent among the Yakut, does not attack the Chukchee, who have, however, various kinds of skin-diseases, perhaps on account of their filthy habits of living. They often call themselves "the not-washing people" (*ilhiteu'kä-re'mkin*).

The most common of skin-diseases is scabies, which often afflicts whole families. The Chukchee pay little attention to it. Scabby people have told me, half in joke, that they even find pleasure in spending their spare time fingering their itching sores.

More uncommon is *ta'irgin*, a peculiar disease that increases the pigment in the skin, so that the afflicted look like mulattoes. They do not complain of any pain, but lose in strength and agility; nor can they endure the hardships of their former pursuits, though their term of life does not seem to be shortened. I met with only five cases of this disease.

Kalè'lr-ta'irgin ("spotted ta'irgin") covers the skin with large spots of a light, ashen color, often over the whole body, including the face and the hair of the head. It does not seem to affect the health. A man named Tu'rkew, who was affected by this disease, received the name of Keli'lr-Tu'rkew ("Spotted Tu'rkew"). He was well known in the Anui country on account of his piebald hair. At the age of fifty years he was still active for his time of life.

I came across five deaf-mutes. Three of them were full-grown, and took part in all the daily pursuits of their camp. They communicated with other people by means of simple signs. Sleep, for instance, was expressed by leaning the face on the palm; eating and drinking, by representative motions of the hand to the mouth; woman, by forming an imaginary braid on each side of the face; man, by pointing out the mustache; going, by a motion of two fingers on the palm; etc. These signs are similar to those used by the Chukchee for communicating with people who do not understand their language, though no conventional signs exist in either case.

I met two dwarfs. One of them was married, and had three well-developed children. There were several weak-minded people. One of them was a deaf-mute; another had been struck with the palsy, and could not walk or move his left hand. But the Chukchee had no notion of supernatural power possessed by such people, as is held by the American Eskimo. Cases of violent madness also occur. I was told by a woman shaman that she was out of her mind for three years, because of a spell wrought on her by a rival. When in a fit, she would lose all feeling in her wrists, and sometimes in her whole body. At such times she would snatch a stone and pound her fingers with it, without feeling any pain. In fact, the upper joints of two of her fingers were missing. Frequently she would want to harm other people, and then her housemates would tie her hands and bind her to one of the house-poles.

In another case I heard that a man of the Reindeer division of the tribe, who for a long time was afflicted with similar fits, kept making attempts to injure his camp-companions, and ultimately was put out of the way by common consent.

Blindness occurs often, especially among old people. The young herdsmen often have sore eyes on account of loss of sleep in the seasons when the herding of the reindeer requires extra exertion, and because of the corrosive action of sweat mixed with dirt. Snow-blindness in the spring is very common among all who make journeys across the tundra. In treating inflamed eyes, the lids are sometimes turned outward and bled by being rubbed with the large hard larva of the reindeer-fly, the segments of which act like the teeth of a fine file.

Lame people use crutches of various shapes, made in the same way as those used by civilized people.

The Chukchee do not use any remedies of their own except magic, unlike

the Kamchadal and Russianized Yukaghir, who apply many plants and minerals for medical purposes. Even the medicines of civilization, of which the Chukchee are often very fond, have received the name *e'ñeñ*, which, in the proper sense of the word, signifies "shamanistic spirit," and also "Russian (Christian) God," "crucifix," "image of a saint," etc. The civilized physician is called simply *eñe'ñilIn* ("shaman").

MENTAL TRAITS. — There exist two exactly opposite notions concerning the natural disposition of the Chukchee. The older writers, drawing chiefly from the accounts and narratives of Russian Cossacks and other adventurers, represent the Chukchee as the inscription on Lotteri's chart of their country runs: "Tjutzchi natio ferocissima et bellicosa, Russorum inimica, qui capti se invicem interficiunt."¹ All tribes in their neighborhood, even at the present day, hold a somewhat similar opinion regarding them, perhaps on account of former wars, in which the Chukchee always gained the upper hand.

Recent travellers among the Chukchee, — Hooper, Maydell, Nordenskiöld, Gondatti, Dr. Slunin, Melikoff, — on the contrary, describe them as quite peaceful and inoffensive. Maydell undertakes the thankless task of defending them against the former reports of the Cossacks, who, as he has it, were always deceived by the treacherous Koryak, and ascribed all their misdeeds to the Chukchee.²

W. H. Gilder, who in 1882 made a long journey among the Chukchee villages quite alone and unarmed, and the Russian priest Benedict, who in 1898-99, without an assistant or provisions, made a still more remarkable trip among the Reindeer Chukchee, and thence through all the villages on the Arctic and Pacific, were treated very kindly and hospitably by the inhabitants, though unable to pay even for conveyance and food.

These cases indicate very clearly that the Chukchee have laid aside their former hostility toward the civilized world, and after more than a hundred years of constant trading with Russian settlers on the Kolyma, and with American whalers on the Pacific coast, have tried to show themselves friendly to the few white people who have happened to come to their villages and camps. From the visits of several men-of-war, the Chukchee have been able to form an opinion of the real power of the white people. Trade has become quite indispensable to them; and those who have come into contact with Russian officials have been willing to submit, at least nominally, to Russian authority, and even to pay tribute, however slight and precarious. "These are peaceful times," said one of the wandering Chukchee traders to me at Indian Point. "Wars have ceased, everybody thinks only of gain, and all

¹ Nordenskiöld, II, p. 79.

² Maydell, I, pp. 627-680. He even asserts (p. 77) that the poor Koryak attacked the rich Reindeer Chukchee to get their herds, though the facts are quite the reverse, and also assumes that in the rebellions the Koryak would disguise themselves in Chukchee garb to lead the Cossacks astray.

tribes and nations intermingle." Ra'lə gene'leet ("blended together") is the ordinary Chukchee term to describe intertribal relations on all borders. On the other hand, when in 1895, during a brawl at the Anui fair, a Reindeer Chukchee was killed by the Cossacks, the others resented the deed so much that they were almost ready to attack the fort. Notwithstanding the "weregild" paid by the officials to the family of the slain man, the Chukchee harbored a feeling of ill will for a long time afterwards; and the next winter, when travelling among the Anui camps, I had one or two rather unpleasant encounters with the people.

A considerable part of their former intractability remains at the present time, especially among the Reindeer people, and shows itself even in the minor details of every-day life. The Chukchee is easily angered; often a trifle will suffice to transform his merry laughter into the most unreasonable rage. They themselves are not unconscious of this peculiar feature of their mind. "I am a tundra wanderer," one of my Chukchee acquaintances, named Ñíro'n, would say to me. "My anger rises suddenly. It comes and goes of its own accord." Some women bear a special name on account of their violent temper. They are called "quarrelling women" (mara'-ña'us·qattê). These are regarded as nuisances even by their housemates. Among the men, some have the very suggestive epithet "hasty" (qivr) prefixed to their names, as "Hasty A^omu'lin" (Qivr-A^omu'lin).

The Chukchee, when angry, growls, shows his teeth, and makes a threatening bite on his sleeve or on the handle of his knife, in defiance of his foe. Some of them, when angered, shed tears of rage, and tear their hair like unruly children.

Their language is singularly poor in abusive terms, and quarrels are immediately settled by blows or wrestling. There is no lack of murders, some of them of a barbarous character. Thus, in a camp near Cape Erri, the son and the nephew of the rich reindeer-breeder Yeku'tku, being goaded to the extreme by constant blows and abuse, cut his throat, and that with the knowledge of his wife, the mother of one of the murderers. In the summer of 1896 on the Poplar River, an affluent of the Small Anui, a young man killed his brother in order to get possession of his flock. The murderer, with his accomplice and their victim, arranged a contest of jumping over a barrier, the loser to pay the forfeit of skipping about for a while with his feet and hands bound together. When the elder brother lost, the other two men accordingly tied his feet, and coolly stabbed him with their knives. I heard the details of both deeds from the murderers themselves.

In the tale of "Elendi and his Sons," published in my "Chukchee Materials," Elendi, to avenge the treachery of his slave, kills him in a most cruel manner. With sharp stakes he fastens the slave's hands, feet, the fleshy parts of his sides, and the skin of his scalp, to the ground, and then makes both of his wives urinate and defecate into his mouth.¹

¹ Bogoras, *Chukchee Materials*, p. 350.

Not all the Chukchee are of this irascible type. Some are quiet and good-natured, often prone to loquaciousness and to giving reasons even for obvious things; but these also are not free from occasional outbursts of anger. An old man named Aiñanwa't, who had lived with me for two years in the Kolyma country, and had patiently helped me the whole time even in the most tedious ethnographical work, told me an incident of his former life. When vexed by the unruliness of his reindeer-herd, he so lost his patience that he suddenly stopped running after the reindeer, and, turning to the setting sun, invited the wolves to come and devour the herd. According to the belief of the Reindeer Chukchee, such words amount almost to a sacrilege; since the wolves are classed with evil spirits, and the curse, once uttered aloud, can never be revoked, because it becomes a promise of sacrifice. Within a few moments the exasperated herdsman realized what he had done, and tried to avoid the disastrous consequences by the sacrifice of his best team, but it was of no avail. His luck had turned, and his herd suffered misfortune without end.

In addition to this irritability, the Chukchee shows a peculiar obstinacy in accomplishing whatever seems of momentary interest to him. In trading, when a Chukchee has set his heart on any trifling object, he is often ready to offer thrice, or even ten times, the price of it. If his offer is not accepted, he will start a brawl rather than desist from his purpose of his own free will. The small Russian traders sometimes skilfully avail themselves of this weakness by goading their wild customers on, and then withholding the article, in order to get a larger price for it. In a wrestling-match the defeated competitor will again and again try his luck, though repeatedly thrown, until at last a fight ensues. When thwarted in his purpose, the Chukchee is ready to go to any extreme, even to committing suicide, from uncontrollable rage. I know an instance of a young girl who went out to the herd and hung herself to a tree, out of anger because her mother refused to take her along to the feast in a neighboring camp.

This motive frequently plays a part even in cases of voluntary death among old men, of which I shall speak later on. Thus in one of the texts published in my "Chukchee Materials" (p. 52), a man, Little-Spoon, having been angered by his sons, requested that he be killed. The Chukchee frequently have a lurking inclination towards suicide, which is mentioned in the words of Lotteri previously quoted, and is well known even to the Chukchee themselves. "You know our people," I was told on several occasions. "For any reason they want to kill another man or themselves." During the epidemic of influenza on the Wolverine River, before mentioned, there occurred two cases of suicide. One was that of a husband vexed at the loss of his young wife; the other, that of a mother who had lost her only son, a child of ten. There are cases of something like *tedium vitæ*. In 1895, at the Anui fair,

I spoke with a man named Ka'tik, who declared that he did not want to live any longer. He gave as his reason, that fortune was adverse to him, that all his relatives had died, and that he was afraid that his herd at some time might begin to dwindle away, although at the time of speaking his reindeer were prospering. I did not pay much attention to his words, but the next winter I heard that he really had ordered himself to be strangled.

At the head waters of the river Omolon I met a family four of whose members had taken their own lives within four years without any apparent reason. Their neighbors felt much afraid, and expressed the opinion that the spirits who wanted more prey had treacherously led them on to self-destruction.

A rough kind of compassion for all suffering characterizes the Chukchee mind. Once in my presence a Reindeer man rescued a ptarmigan that was being hunted down by a hawk and had come to the camp exhausted, and angrily expostulated with some children who wanted to catch the bird. Another time a Reindeer woman paid a ransom to one of my dog-drivers to stop him from punishing one of his own dogs.

Still more remarkable is the generosity which the Reindeer Chukchee display toward everybody who is in need, even if he be of strange tribe and language. On the Chaun tundra live a small number of Lamut families, members of various clans who have wandered northward. They are a peculiar people, very poor and very indolent; and fully one-half of their food is drawn, with very little pay, from the herds of their well-to-do Chukchee neighbors.

Similar relations have existed of late between the Chukchee and the Tungus on the western Kolyma. At present, however, most of those Chukchee are poor; and the few rich breeders farther to the west have acquired a taste for trade, and have gradually adopted the ways of the Yakut or Russian dealers. In occasional times of need the starving Russian settlements on the Kolyma and Anadyr were relieved, up to a very recent time, by the neighboring reindeer-breeders, who often slaughtered several hundred animals, taking very little or no pay for them. This disposition to help the needy of a strange tribe probably sprang from the peculiar relations of both branches of the Chukchee, which in so many respects form a unit, although they differ widely economically.

The woman, as is the case among all peoples, is more compassionate than the man. In the tale of "Elendi and his Sons," quoted before, the hero reproves the wife of his foe, who had been very severe to his neighbors, saying, "Why did you not feed your neighbors in secret? Why did you not give them food yourself?"¹ In reality, in the camps of rich reindeer-breeders, when the master is too niggardly toward his helpers, it is considered the duty of the mistress to make up for his shortcomings from her storerooms and clothing-bags.

¹ Bogoras, Chukchee Materials, p. 346.

I heard of no cases of cannibalism among the Chukchee, notwithstanding the fact that several cases of famine which wiped out whole villages were still fresh in the memory of the people. On the other hand, a Yukaghir family which was starved in 1895 on the Middle Omolon had recourse to the most horrible cannibalism. Nor am I aware of any cases of exposure of new-born girls, as among the American Eskimo. New-born babes, indeed, after the death of their mothers, are frequently smothered, and carried out with them to the funeral-places, but this is because of the impossibility of raising them. I have heard, too, of women just delivered, who, when feeling very ill, would smother their children as a sacrifice to the spirits.

Hospitality to travellers is much more liberal among the Maritime Chukchee than among the reindeer-breeders. The Arctic people say, that, even if a guest wants to strike his host, the latter must continue to be friendly. During my last journey along the Pacific coast, when we were several times detained in Chukchee or Eskimo dwellings by a storm, it would often happen that the master of the house, having little blubber and no wood to feed the fire, would break up his sleds, and even tear out one by one the wooden supports of his house, thus endangering its safety.

With the Reindeer people it is otherwise. First of all, they are much more superstitious about the "shunning" of diseases. In times of disease, even a healthy traveller, when he comes to a Chukchee camp from afar, especially if he arrives at night, runs the risk of not being admitted to any of the tents. This would never happen in a Maritime village. Many travellers of the Reindeer tribe are themselves averse to entering strange houses at such times, and prefer to sleep in the open, content with an incantation against the spirits, in lieu of supper. Even at ordinary times a guest arriving at the camp is considered as having no more rights than the inmates of the house. He will have to wait outside with the other people till evening, when the sleeping-room is made ready. Sometimes he will be given no food until the time of the principal meal, which is eaten in the evening. At the time of the great reindeer races, scores of people come to take part in the races or to look on. Often they are given no food at all, and, after a whole day spent in the open, return in the evening to their respective camps, scattered around at a distance of some thirty or forty miles.

Theft among the Maritime Chukchee is comparatively rare. To steal from a neighbor in the same village is considered very improper. It is customary for a stranger to place all his property in the storehouse of his host and under his personal care. In recent years, however, the increase of trade has spoiled this native honesty. Now, in all large villages, the owners of wooden storehouses, which are bought from the whalers, carefully lock their doors with steel padlocks for fear of robbers. During my stay in Indian Point a shaman woman was caught twice almost in the very act of stealing some peltries from

a storehouse in order to sell them to the whalers. The skins were restored to their owner, but the thief was not punished, except with harsh words. As witnessed by Nordenskiöld, theft, and deceit toward a stranger, are not considered unlawful. I must acknowledge, however, that, during my journey among the Maritime Chukchee and the Eskimo, hardly any of my belongings were lost; while among the Reindeer people not a single trip would pass without almost open attempts at stealing, amounting even to robbery. "Look out for my mother!" I was once warned by my host. "Her nature is such, that she will steal even fresh excrement from under a man."

Among the Reindeer people, indeed, theft between the camps and herds is held to be an almost lawful pursuit. There is in the language, besides the usual word for stealing, *ti-tule'erkın* ("I steal"), still another, rather euphemistic term, *ti-ngintiwe'erkın* ("I abstract;" literally, "I cause [the thing] to flee"). Quarrels are continually going on between neighbors on account of mutual accusations. Several of the people that I knew were given new derisive names on account of their thieving exploits. One was called "Knee-Walker" (*Ñire'-čei'vun*) because he was once accused of crawling on all-fours to his neighbor's herd in the calving-season with the intention of taking away some of the new-born fawns. Another was called "Necklaced *Latu'wgê*" (*Ê'nniçhi-Latu'wgê*) because while on a visit to another camp he stole some half-cooked entrails that were boiling in the kettle, wound them around his neck, and, when pursued, continued to eat from one end thereof. These names stick so well, that at last even the persons themselves begin to use them, especially after some trouble with the spirits of disease, when the Chukchee like to change their names. During the Russian fairs small thefts take place every day in the block-houses as well as in the camps, and even inside the tents. In my presence, a young man who came into the trading-store, picked up a bunch of squirrel-skins from the floor, and tried to sell them to their real owner. When detected, he only said, "Take them, if they are yours," and then sat down on the bench, waiting for the usual hospitality.¹ I have in my collection a white fox-skin roughly patched with hare-skin to make it look whole. Nordenskiöld² relates similar tricks, chiefly of the Arctic Maritime Chukchee.

As mentioned before, quarrelling between the Chukchee and their neighbors has almost ceased. The Kerek of Cape Barykoff occasionally complain that the *Telqä'p* Chukchee ill-treat them, taking their peltries without paying for them, and carrying away their children to use as herdsmen; but even here a good mutual understanding usually prevails, since the Kerek obtain from the *Telqä'p* Chukchee reindeer-skins for garments, sinew for nets, meat, Russian wares, and American rifles and cartridges, which come all the way

¹ It is usual with traders to treat their Chukchee customers to some tea and hard rye bread two or three times a day.

² Nordenskiöld, II, pp. 136, 137.

from Indian Point. The dog-drivers from Kulu'či complained at Indian Point that the inhabitants of the Pacific village Lu'ren had the habit of occasionally robbing the sledges which returned from trading-trips loaded with foreign wares. Between Lu'ren and the village Ya'nra-nai a kind of feud is kept up that was going on even two generations ago.¹

The inhabitants of Lu'ren, Ya'nra-nai, and other villages and camps around St. Lawrence Bay, are famed for their roughness. Some of them buy from American whalers revolvers, which they carry in a special pocket up the sleeve, ready to handle. Mr. J. Kelly, the American agent for buying reindeer, who spent the winter of 1897-98 on the shores of St. Lawrence Bay, in a block-house built for the purpose near the village Ya'nra-nai, had considerable trouble with the natives; and I heard that an attempt was made to attack his house and to rob it.

The Chukchee cannot be called quick-witted, especially in trading-transactions, in which they are easily imposed upon by their neighbors. Their system of calculation is quinary-vigesimal, but very imperfect, and all numerical operations are performed with the help of the fingers of both hands. The word for counting means literally "I finger" (t-r'lhrkin). The question "How many?" runs "How many fingers?" (Ter r'lhit?) The numbers proceed in the way usual to many primitive languages, so that m'lñen ("five") is shortened from mingr'lñin ("hand"); mingr'tkên ("ten") signifies "belonging to two hands;" kílhr'nkin ("fifteen") is probably contracted from gítka'lhikên ("belonging to the foot"); qli'kkin ("twenty") signifies "belonging to a man." The word qla'ul ("man") is also used frequently for "twenty." The fingers and toes play such a prominent part in counting, that I doubt whether a Chukchee would be able to make a calculation without them. The larger numbers are composed of groups of "twenty" ("man"). They are also counted on the fingers, so that the limit of enumeration is "twenty scores" (qlik-qli'kkin). All numbers above this are called "knowledge limit" (gryeu'-te'hin).

This term is also applied by a few rich traders to express the idea of "one thousand." Many of the people, especially the Reindeer men, are unable to deal with as high a number as a couple of scores. Therefore when dealing in small skins, like those of fawns, squirrels, etc., which are traded in large numbers, they tie them in bunches and trade off each bunch or small group of bunches by itself. Squirrel-skins are tied in tens after the manner of the Lamut; the fawn-skins are done up in threes (the usual barter price of a piece of compressed tea, called a "brick") or in fives; then four bunches are fastened together to make a score.

In recent years the Chukchee traders, and especially the collectors of tribute, in imitation of the Russians, have begun to use small notched sticks as tallies, every notch representing one five, and the fourth notch being marked out by a deeper cut to indicate a score.

¹ Hooper, p. 153.

The herdsmen, of course, never count their reindeer, nor are they able to remember all their animals by their looks, as has been asserted by travellers.¹ In the larger herds they know only the more conspicuous animals, such as breeding-bucks, old dams, harness-animals, etc. If there be any loss, they become aware of it only by the absence of one of them. Of the smaller animals they take little notice, nor do they care much about them.

The Rev. Argentoff relates that one Mai'ñi-qla'ul, a rich reindeer-breeder from the Dry Anui, tried to ascertain the number of his animals by counting them by corrals. Each corralful was represented by a chip of wood, and these were placed together in a glove.² Operations of this kind were performed by the rich Tungus for the same purpose; but among the Chukchee they can occur only exceptionally, because every new experiment with the herd is considered to thwart the qa'a-va'irgin (literally, "reindeer substance;" i. e., the herd's good fortune).

SEASONS. — It may not be out of place to add here the Chukchee method of dividing the year. The year is divided into twelve lunar months or "moons" (yi'elhin). The series begins with the winter solstice, the time of which is marked pretty accurately. The dark interval between two "moons" is called "moon interval" (yu'etir). The names of the months are —

1. inp-lu'wleñ-yi'elhin ("old-buck month"), from about the 20th of December to the 20th of January.
The origin of the name is uncertain.
2. Čačanlo'rgin ("cold udder [month]").
3. Lê'ê-lo'rgin ("genuine udder [month]").
4. Gro'ê'elhin ("calving month").
5. Imli'rilm ("water [month]").
6. Ta'wtriñ-yê'elhin ("making-leaves month").
7. Om-yê'elhin ("warm month") or A'no-yê'elhin ("summer month").
8. Nej-i'elhin ("rubbing-off-velvet [antlers] month") or Ele-yi'elhin ("midsummer month").
9. Ñe'rgej-i'elhin ("light-frost month").
10. Githa'ê'elhin ("autumn month"), called also ilv-ei'ñe-yi'elhin ("wild-reindeer rutting month").
11. Yara'učin, probably from Ya'raw ("muscles of the back"), because it is supposed that the muscles of a reindeer's back strengthen in mid-winter. The same name, with the same explanation, was found among the Koryak of the western shore of Kamchatka in the form yara'wučin. This month is also called by the Chukchee Tu'r-eže ("new-snow cover").
12. Qu'ulej-i'elhin ("shrinking [days] month").

The Maritime Chukchee use the same table of months. The Koryak in different localities have different systems of names, but for the third and the fourth month most of them have names signifying "false reindeer-birth month" and "genuine reindeer-birth month."³ Of course, the twelve lunar months do not exactly coincide with the solar year between two winter solstices; but the Chukchee do not care about a few extra days. In ordinary talk the names of the months are often replaced by those of the seasons, which are much more numerous than with us. The following are most frequently employed.

¹ Compare Melikoff, p. 136.

² Argentoff, II.

³ See p. 13.

1. Emyi'rik ("in the extending [of the days]"). Loosely speaking, it corresponds to the first month of the year.
2. Ure'tvik ("in the lengthening"). This corresponds to the second month.
3. Niwle'wki ("during [the days] growing long"). It lasts about six weeks, until the reindeer-dams begin to calve.
4. Am-gro'ki ("in the calving [time]"). This corresponds more or less to our term "spring."
5. Tur-ele'tvuk ("in the new summer growing").
6. Ki'tkitik ("in the first summer").
7. A'nok ("in the second summer").
8. E'lek ("in the middle summer").
9. Êh-i'ntok ("with the fresh air going out").
10. Nerge'rik ("with the first light frost").
11. Tur-ä'le'tik ("with the new snow").
12. Gi'tha'k ("in the fall").
13. Lä'le'ñki ("in the winter").

Yawri'na means "in the next year," and is applied to the beginning of the next fall.

LANGUAGE. — The Chukchee language is rich in words, and pliant in forms; and the people are eloquent in their own way, but they do not like to be bored with questions. The Reindeer men, who are in their houses practically only when eating or sleeping, and keep in motion all the time, were with difficulty persuaded to spend a few hours with me in the tent, giving explanations or dictating texts. Even the old men would say, "Bad thing, dotage," and would prefer to stay outside. Most of them, moreover, were quite unable to dictate. Even their curiosity is not lasting. When I came to a new camp, the inhabitants would pay close attention to my doings for a few hours; then they would gradually drop off, and finally would be interested only in barter. There were certainly exceptions, as Aiñanwa't, whom I have mentioned, and a few others. In the Maritime villages, where the inner rooms are much larger, and furnished with steadily burning lamps, the old people are more used to sitting indoors, and accordingly are more tractable and more useful for scientific investigation.

III. — TRADE.

ANCIENT TRADE. — Even before the arrival of the Russians, a lively traffic was carried on between the Reindeer Chukchee camps and the Maritime villages (both Chukchee and Eskimo), and also between Asia and America across Bering Strait. The Reindeer people were in need of blubber, thongs, and seal-skins, and would offer in exchange reindeer-skins and ready-made garments, just as is done at the present day. On the American side, reindeer-skins brought a much better price than in Asia: therefore Chukchee and Asiatic Eskimo parties crossed over every year on trading-expeditions, occasionally, however, indulging in piracy.

In the tale of "Elendi and his Sons," the hero, coming to an American Eskimo, requests "a score of ground-seal skins, a score each of bleached and black-dyed coils of thong, the same of rough-seal skins; whatever you have, one score of each." The host asks for an equivalent, but Elendi has nothing: so a quarrel arises, and they fight. Elendi vanquishes the Eskimo, commands the people of the village to deliver up to him everything he had asked for, and returns home carrying his subdued enemy away as a slave.¹

The chief part in such expeditions, however, belonged to the Nø'ekalit Eskimo of East Cape, although the Chukchee often accompanied them. It is told that as late as three generations ago large parties would start from East Cape for America. The Nø'ekalit went in their large boats, sometimes with thirty paddles in each; the Chukchee from the neighboring Arctic villages went in smaller boats. These fleets crossed to America, carrying on trade or piracy, as circumstances dictated. Similar expeditions of Eskimo and Chukchee, though on a smaller scale, went over from Indian Point to St. Lawrence Island.

Trade, even in Asia, was carried on with considerable mutual distrust. I was told that in very ancient times there was a kind of fair in Nø'ekan or in Uwe'len, which was held outside of the village, on the flat seashore, for fear of hostilities (the same custom was afterwards universally adopted in the Russian fairs, and it is persisted in at the present time in Anadyr). The people came to trade fully armed, and offered their wares to each other on their spear-points; or else they would hold a bundle of skins with one hand, and with the other a bared knife, in readiness to raise a fight upon the slightest provocation.

A mute trade took place in Asia as well as in America. In this manner a party of adventurers, who in 1646 sailed from the mouth of the Kolyma west-

¹ Bogoras, *Chukchee Materials*, p. 345.

ward along the Arctic coast, carried on trade with the Maritime Chukchee. They would leave their wares on the shore and go away. The Chukchee would come afterwards, take the wares, and leave their equivalent in peltries, ivory, and ivory carvings.¹

Chukchee tradition relates the following regarding trade with America: —

“On the other side of the sea, in a large forest, live ‘the invisible ones.’ When they come to trade, one can see only the fox and beaver skins which they carry in their hands, and it seems as if the peltries move of themselves. They come to meet our traders on the border of the forest, and shout, ‘Let us trade!’ The traders take a bundle of tobacco and fling it far away. ‘Tobacco, tobacco!’ rings through the forest, but nobody is seen. After a while a bag filled with fox or beaver skins is flung from the forest. For one bundle of tobacco they will give a bagful of white-fox skins.”

Some trade with the Koryak was also probably carried on before the advent of the Russians. I heard that in the south of the Parapolsky Dol, on the river Anapka, an ancient fair was held at which several camps of Reindeer Koryak and Chukchee, of Maritime Chukchee, and even of Kamchadal, used to gather. Perhaps a few articles of Japanese manufacture may have come to the north in this way. At least, the question of the origin and manufacture of Chukchee iron armor suggests a connection with the Japanese which does not exist at present.²

This armor, made of small pieces of iron with fastenings of narrow leather strips, was very common among the Reindeer Chukchee until recently. Even now, many individuals preserve their armor out of reverence for its antiquity. Besides armor, helmets and greaves were used, all of which are in some degree similar to those of Japanese production. The Chukchee, however, are not sufficiently skilled in the blacksmith's art to forge such armor. The only place where it could have been made is in the Koryak village of Poi'tin (Russian Paren, Парень), the inhabitants of which have for a long time occupied themselves with farriery; and the tradition of the southwestern Chukchee points in this direction. The question arises, whether the manufacture of this armor was really developed only after the arrival of the Russians, especially as the wars have decreased since the last half of the eighteenth century.

Not less remarkable are the armor and helmet of Japanese make which I acquired from a Reindeer Chukchee of the North Anadyr tundra. They are old and rusty, and it was asserted that they had been in the family of their owner for several generations. It is certain that in recent times no Japanese traders have visited Anadyr Bay. The Japanese probably had some intercourse with the southern Kamchadal. Steller and Krasheninnikoff mention that the Kamchadal name of the Japanese (Sühsemen according to the former,

¹ Nordenskiöld, II, p. 75.

² See Chapter VI, section on armor.

Shishaman according to the latter) was derived from the Kamchadal word *sühse* or *shish* ("needle"), because of the iron needles obtained from them.¹

The Cossack S. Yepischeff, sent to the mouth of the Okhota River, on the Sea of Okhotsk, in the year 1656, reports that he met "numerous natives with arms and ammunition, with bows and spears, with breastplates and helmets of bone and iron."²

In the report of Midshipman Matiushkin, the Omoki³ of the Kolyma country are supposed to have been acquainted with the use of iron before the arrival of the Russians.⁴ The Chukchee name for the star Aldebaran is *Cêło'-ma'qim* ("copper arrow"), *čêłočêł* signifying "something red, copper." The same word for "copper," with proper phonetic change, is repeated in several Koryak dialects; likewise it is used for the name of Aldebaran. It seems to indicate that both tribes knew copper-tipped arrows in very remote times. It is pretty sure that a name like that applied to the star could not have been created in the course of the last two centuries, since the arrival of the Russians, and spread from tribe to tribe over a space of two thousand miles.

TRADE WITH RUSSIANS. — The wares of civilization added to this primitive trade an importance quite unknown to it before. The natives still preserve reminiscences of the strong impression which the iron tools, tobacco and brandy, made upon the minds of their forefathers. The Yukaghir on the Lower Kolyma tell of a native who was challenged by a new-comer to a tree-cutting match, and then received an iron axe as reward for his dexterity. The Yukaghir on the Upper Kolyma report the ecstatic exclamation of one of their old men of that period concerning brandy: "Have no evil thoughts, boys! In my life I have tasted no water so delicious as this."⁵ The Chukchee describe how their warriors coveted the iron arrows, spears, and the glistening coats of mail of the invaders, and how much the women valued the beads, and how they would sometimes pay a good price for a single pair made into ear-rings.

Even the terms of the language applied to trade and its operations changed, and became more detailed. In olden times the Chukchee applied to the trade simply the verb *elpu'rirkın* ("to exchange"), with its derivatives. The same word was applied also to the vendetta, with the meaning "to exchange revenge." The modern language has a special word, *vili'urkin* ("to trade"), with many derivatives, such as *vi'lvil* ("goods"), *vêl'tko-qla'ul* ("merchant"), etc. This word, in Koryak, with the proper phonetic change, is *vili'vikin*, and signifies "to make peace with." The difference between the old and the new term is very striking.

The first century of intercourse between the Russians and the Chukchee

¹ Steller, p. 320; Krasheninnikoff, II, p. 49.

² Slunin, I, p. 12.

³ The old Russian name for the Yukaghir.

⁴ Wrangell, p. 187.

⁵ Jochelson, Yukaghir Materials, p. 77.

was spent, however, in war, and very little is known about the trade relations of that period. I heard in the Anadyr that the bartering of iron arms to the Chukchee was strictly forbidden, but that they bought kettles and cut iron into knives and arrow-points. Even now old kettles are utilized in this manner. Firelocks taken in battle were hammered with stones into rough spears.¹ At the present time the Chukchee make knives and adzes out of American files by hammering them into the desired shape.

ANUI FAIR. — In 1788, forty-one years after the defeat of Pavlutsky, and twenty-four years after the recall of the garrison from the fort of Anadyrsk, Banner, the chief officer of the town of Sashiversk, on the Indighirka River, who also held command over the Kolyma country, succeeded in establishing anew peaceful relations with the western Reindeer Chukchee. As a result, a regular trade was started the following year. A few Chukchee were induced, by means of gifts and promises, to subject themselves to Russian authority and to pay tribute. The Chukchee were more anxious for trade than the Russians. From the Anadyr came complaints that the people of the district were forgotten by the Russians and did not get any wares. A tradition of the Anui Chukchee relates that three Chukchee warriors took captive the deputy of the Czarina,² and consented to release him only upon his promise to establish an annual fair. After this, to appease his anger, they gave him rich presents of black and blue fox-skins. The Chukchee fair was held at irregular intervals, sometimes on the Dry Anui, near Mount Obrom, and at a place called Ostrovnoye ("Insular"), sometimes on the Large Anui, near the mouth of its affluent, the Angarka. Finally Ostrovnoye prevailed, because the Chukchee were more numerous on the Dry Anui; moreover, travelling on the Large Anui was difficult for dogs and reindeer because of the heavy snowfalls; while the Dry Anui, which is contiguous to the tundra, is more open to the winds. The Russians built at Ostrovnoye, a wooden fort called Fort Anuisk. The fair grew rapidly in importance, and in the second decade of the last century its traffic amounted to two hundred thousand rubles³ yearly, which is a considerable sum in view of the scarcity of money in that period. Some of the best peltries (such as beaver, marten, and lynx), muskrat and marten garments, also a large portion of every kind of fox and polar-bear skins and of walrus-tusks, came from the American shore. For instance, in 1837, according to data contained in the official records found among the archives of Kolyma, there were sold at the fair 100 beavers, 395 martens, 30 lynxes, 31 marten garments, 13 musk-rat garments, etc., all from America, since these animals are not found in Asia. To this must be added about one-half of the 580 red foxes, 80 gray foxes, 13 black foxes, 268 white foxes, 8 blue foxes, and 1563 walrus-tusks sold that year at the fair. These figures,

¹ Compare Krashenninnikoff, II, p. 48.

² Catharine the Second.

³ A ruble is equivalent to about fifty cents.

moreover, must be at least doubled to reach the real trade value, because the merchants of Kolyma always greatly underestimate data for official records. The products of reindeer-breeding were then of very slight importance, while at present they amount to about three-fifths of the total Anui purchases. The fair took place in the spring, and lasted three days; it was held in the open, before the gates of the Russian fort, sometimes even farther away on the ice of the river. The Chukchee came fully armed with spears, bows and arrows, and large knives tied to their belts. Altercations and brawls, and even bloodshed, were not uncommon because of disagreements about prices. Therefore in 1812 Gen. Treskin, the governor of Irkutsk, who also ruled the Yakutsk province (i. e., northeastern Siberia as far as Chaun Bay and the Anadyr River), ordered that trade in tobacco, the principal commodity, which was bartered by the Russians for beavers, foxes, martens, and walrus-tusks brought by the natives, should be conducted on terms fixed beforehand by the chief officer, with the advice of prominent merchants. The prices were fixed annually by the common consent of the merchants, and iron and copper kettles were often included in the list of commodities with fixed price.

At the usual rate, one pud (thirty-six pounds Avoirdupois) of tobacco or of iron kettles was equal to ten red foxes, and one pud of copper kettles was equal to twenty foxes. In later years a wolverine-skin or a large kettle was given in addition to the large tobacco-bags of three puds each, which were valued at sixty fox-skins. The value of other peltries was expressed in red-fox units. For instance, four white foxes were equal to one red fox, one gray fox or one beaver was equal to two red foxes, one black fox was equal to twenty red foxes, etc. The details of these rules were oppressive to the small traders, who were punished for the slightest infraction. In several instances even the richer merchants forfeited their right to trade with the Chukchee by accepting a seal-skin as the equivalent of a single missing paw in a lot of many hundred red-fox skins. The fox-skin should have had all four paws to be worth a price in tobacco. In the sixties of the last century, with the decline of the fair, the rules began to go out of use, and in 1869 they were abolished by Baron von Maydell.

In its most flourishing time, the Anui fair drew not only numerous Reindeer-camps and Kavra'lit traders,¹ but also enterprising men from the maritime villages as far as East Cape and Indian Point, who came with dog-sledges the whole long distance, often running the risk of losing their animals from exhaustion on the return trip. These were called A³tti-kavra'lit, i. e., "Dog-kavra'lit." Their route was along the Arctic coast as far as Ya'qan or even Cape Erri, then around Chaun Bay along the line of the Reindeer-camps, and across the watershed to the Upper Anui, whence an unbroken line of

¹ See p. 12.

Anui camps led them to the fair. As late as 1879 Nordenskiöld saw several dog-sledges passing by on their return from the fair, while during the whole of my stay in the Kolyma district (1890-98), hardly a single dog-sledge came to the fair from the maritime villages.

At the present time about six or seven hundred people gather together for the Anui fair (Plate II, Figs. 1, 2). One-fourth of these are Russians, Russianized natives, and Yakut, from settlements on the Anadyr, Kolyma, Alaseya, and Indighirka; one-fourth are Kolyma Lamut; and the rest, Reindeer Chukchee and Kavra'lit. Commerce has fallen off greatly, because American peltries have nearly ceased to come, and part of the peltries from the Asiatic shore are bought by the whalers. Of the remainder, a large portion goes to the Anadyr. Of late the total of the Anui trade has been, according to official data, from twenty to twenty-five thousand rubles annually. Of this amount, two thirds is contributed by the Reindeer Chukchee; the remaining third belongs to the Lamut, Russianized Yukaghir, etc.

OTHER FAIRS. — At about the time of the founding of the Anui fair, the Anadyr and the Telqä'p Chukchee began to trade at Gishiginsk and Kamen-skoye, on the Sea of Okhotsk. In the beginning of the century, simultaneously with a spring fair for the Reindeer Koryak, was established another one for the southwestern Chukchee on the Parapolsky Dol, not far from the upper part of the river Opuka. In the village of Markova, on the Middle Anadyr, a fair was held, for the Anadyr and O'nmilin Chukchee. During the last fifteen years, from the time of the institution of separate district administration in Anadyr, three more fairs were opened, — one, the Tumanskaya fair, on the west (Plate III, Fig. 1), near the mountain I'rgu-ñei ("pointed mountain"), chiefly for the Telqä'p Chukchee; another in the small village of Va'karena, on the Middle Anadyr, for the O'nmilin; and a third on the Yeropol River, for the Chukchee of the Upper Anadyr and for the Lamut (Plate III, Fig. 2). The extent of trade in the Anadyr region, however, is by no means sufficient to support all these fairs, the annual receipts being about twenty thousand rubles. In 1901, on account of heavy snows, only two Telqä'p camps went to the Tumanskaya fair, and but three O'nmilin camps to the Va'karena. The annual trade at the Chukchee fair on the Opuka River amounts to not more than a few thousand rubles.

ROUTES. — In former times a few Russian traders went with dog-sledges along the seashore from the mouth of the Kolyma to the Arctic villages. This route was shorter, but more difficult, than the inland one, because between the mouth of the Kolyma and Cape Erri there are no settlements whatsoever. The last of these traders was the Cossack, Ivan Kudrin, who, in 1882, brought W. H. Gilder to the Kolyma, and in a way wanted to take him captive, as Mr. Gilder relates in his book.¹ Mr. Gilder names him Vanker, a corruption of his two

¹ Gilder, p. 148.



Fig. 1. Anui Fair: Chukchee before the Closed Gate of the Fort in the Morning.

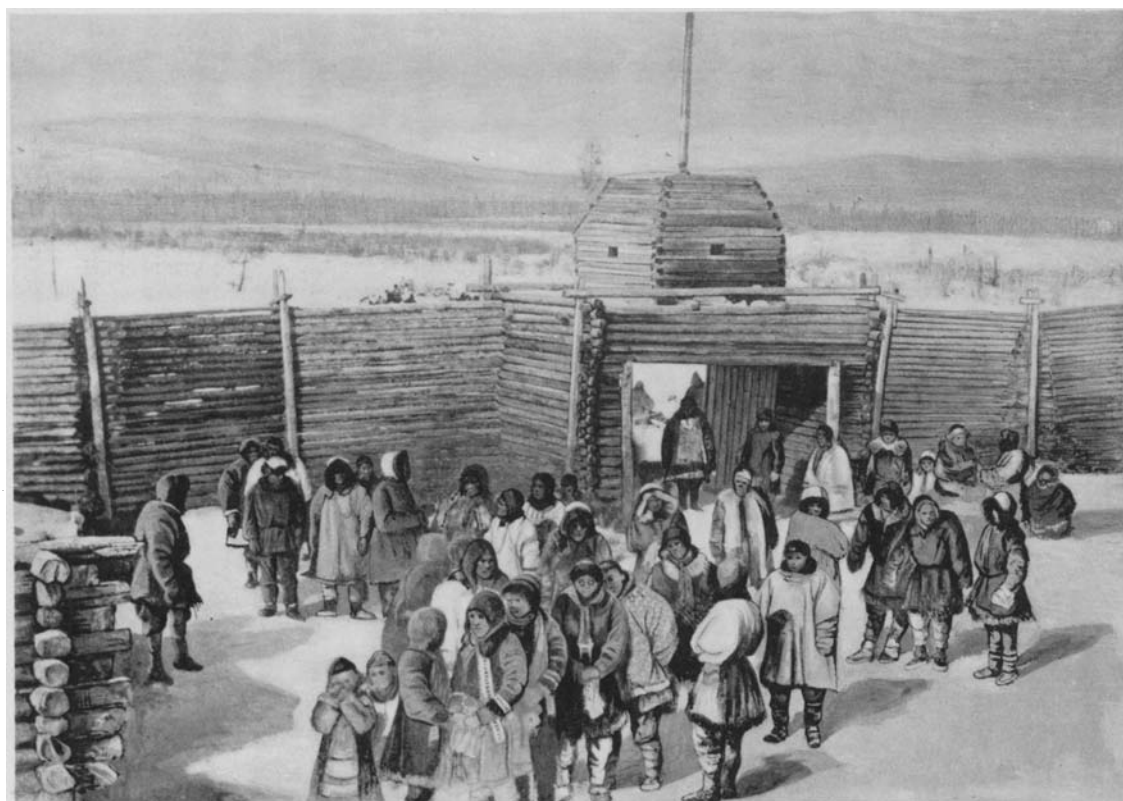


Fig. 2. Anui Fair: Inside of the Fort.

The Chukchee.



Fig. 1. Tumanskaya Fair.



Fig. 2. Yeropol Fair.

The Chukchee.

names. The trouble evidently arose from their being unable to understand a single word of each other's language; though Kudrin, now deceased, had the reputation of being out of his mind. His brother, Theodore Kudrin, who is still living, is even one of the few Russian shamans of the Lower Kolyma.

The people of the Pacific villages continue to go every year with dog-teams to the Russian settlements on the Anadyr, because the route to that point is much shorter than to the Anui. The best place for meeting is not at the fairs mentioned above, but in the neighborhood of the mouth of the Anadyr, whither the journey from the nearest Chukchee village, across Holy Cross Bay, can be made, in the spring of the year, in five or six days. For half a century the meeting-place has been on the tundra, twenty miles northward from the mouth of the Anadyr, near the Hare Mountains; but for the last ten years two small fairs have been arranged instead at Mariinsky Post, — one in the spring, and the other in the summer, about the time of the arrival of the mail-steamer. In the spring about fifty dog-sledges come from the Chukchee and Eskimo villages as far as Indian Point, and about twice as many reindeer-sledges from the O'nmiln and Telqä'p camps. In summer ten or fifteen skin boats from the same maritime villages, a few boats of the Telqä'p Reindeer Chukchee, and even some of the Kerek, visit the port.

TOBACCO AND BRICK-TEA. — Of all Russian wares, tobacco held the first place. The craving of the natives for it is aptly expressed in a tale well known to all tribes of northeastern Siberia.

In the time of a tobacco famine, when all the people were nearly mad because they had nothing to smoke, one well-to-do reindeer-breeder possessed a large pouch quite filled with tobacco, but would not share it with any one. At last his own brother asked for a pipeful, and was refused. The next day he overtook the owner of the tobacco on the tundra, stabbed him from behind with his spear, ripped open his breast, and took out his lungs, which he found covered with soot. He scraped away a part of this, and used it to fill his pipe. The pouch he left untouched. When caught by the Cossacks and brought before the Russian magistrate, he showed him the big pouch and the sooty lungs, and was acquitted of the charge.

Tobacco has found its way from Siberia far eastward into arctic America. The Chukchee tradition in regard to the ancient trade, previously referred to, continues as follows: —

"Farther on live men who dissever themselves at will. They stay among the trees on the shores of the lakes, cleft in halves; but, at the slightest rustling, the parts come together, and they dive into the water. These, too, have a longing for tobacco, and pay for it with large fish and otters.

"Still deeper in the woods live dwarfs not larger than the fore-arm of a man. Three of them can hardly overcome one goose. They dwell in trees, and buy tobacco with the skins of the lynx and of the muskrat.

"Then, again, there are shaggy people with the bodies of polar bears and the faces of men. These pay best of all, since for a small piece of the black deposit from a pipe-stem, not larger than a finger-nail, they will give a marten.

"And all men of that land covet tobacco throughout their lives."

The kind of tobacco traded with the Chukchee was the strong cheap tobacco of southern Russia, called Cherkassky (Черкасский, from the old Muscovite name for the southern Russians, Черкасы). Some English authors (for instance, Nelson¹) misspell it "Circassian" (Cherkessky, Черкесский). It is sold either in bundles of about a pound and a quarter each, Avoirdupois (Fig. 2) or in



Fig. 2 (пѣтѣ А). Bundle of Leaf-Tobacco. Length, 32 cm.

large and small bags. A small bag has about twenty-five bundles; a large one, three times as many. A bag of the latter size generally forms one side of the usual horse-pack. Since the arrival of the whalers on the Pacific shores, American smoking and chewing tobacco has begun to replace the Russian, because it is sold more cheaply, and is brought in abundance every summer. The natives, even as far as St. Lawrence Island, still prefer the Russian tobacco, however, and are often willing to pay a higher price for a smaller quantity of it.

Other Russian wares are sugar, iron and copper kettles, cottons, cheap warm scarfs and shawls, cheap hardware and cutlery of Yakut make (brought from Yakutsk), beads, etc. Within the last fifty years brick-tea (tea compressed into so-called "bricks"), which furnishes the favorite drink of eastern Siberia, has become of more importance than anything else (Fig. 3). It is now used in the remotest inland camps and all along the Arctic and Pacific coasts. Those few people who still have no tea-kettle are derided by their neighbors as "tea-shunners" (ačai'kelat).

SPIRITS. — Trade in spirits has at all times been strictly forbidden, but in the Kolyma country it forms one of the important items in the Russian dealings with the Chukchee. The town of Sredne-Kolymsk, which has three saloons, and imports from the south three hundred barrels (eighteen thousand bottles) of unrectified alcohol, is the central point whence the spirits are carried out through the settlements and camps. The traders have numerous ruses to elude official watchfulness when it occasionally becomes

¹ Nelson, p. 229.

more than nominal. For instance, they put small wooden flasks of alcohol, more or less diluted with water, in among the bundles of tobacco that are placed in large bags. These bags are afterwards sealed and sold to the rich Kavra'lit. The Yakut traders disguise the flasks by covering them with a kind of whipped cream, which is much used in the north in a hard, frozen state. Petty traders of Nishne-Kolymsk sometimes soak in alcohol fresh rye bread, still hot from the oven, and prepare a kind of bitter bread, afterwards to be sold at retail. Most frequently the traders and the officials simply take large quantities of alcohol to the camps and fairs, labelled "for personal use."

The Anui brawl of 1895, of which I spoke in the preceding chapter,¹ arose out of the trade in spirits. On the Anadyr side, strong drink is scarce; and whatever is brought there, is actually for the personal use of the traders. The Chukchee have a chance to buy it only from the mail-steamer, which, during the two weeks of her stay in Anadyr Bay, forms a retail store for the sale of every kind of provisions.

On Bering Sea, trade, as already stated, was formerly carried on by parties of Chukchee and Eskimo traders, who travelled in large skin boats along the Arctic and Pacific coasts to East Cape, and thence crossed to America, after stopping at both the Diomed Islands. American natives also went to Asia, though not so frequently, because all the products of civilization came from the Asiatic side, and the prominent part in this trade belonged to its inhabitants.

TRADE WITH WHALERS. — Since the year 1848, and especially after the purchase of Alaska, American whalers resorting to these waters started a trade on both shores of Bering Sea. In the beginning, the articles they sold were chiefly cheap rum, rifles and ammunition. Afterwards were added all kinds of wares needed by the natives, — flour, biscuits, granulated sugar, black molasses, drilling and muslin, hardware and cutlery, beads, etc. They took in return chiefly whalebone, making enormous profits, since the natives had large stores of it for which they had no use except to make lashings and to shoe their sledge-bottoms. It is curious that Russian traders, even at present, care little for whalebone.

The trade in spirits has somewhat decreased in the last few years, because most of the whaling-captains have ceased to consider it a very desirable way of making profit. Of ten ships which called at Indian Point during my stay

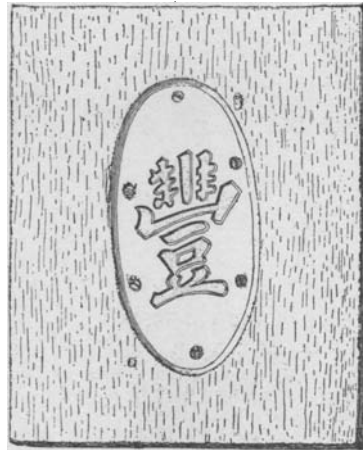


Fig. 3 (茶磚 a). Cake of Brick-Tea.
Length, 24 cm.

¹ See p. 45.

there in 1901, only two carried on a regular trade in rum. Besides, the natives are not so eager for liquor as formerly, because their means of buying have rather diminished, and new and varied wants have been acquired, which they are bent upon satisfying above everything else. However, quantities of rum, put into bladders and small gut bags, are carried inland far from Indian Point and East Cape. In the traffic in the Hare Mountains it even formed one of the most important items bartered by the Chukchee to the Russians. At present similar transactions take place at Mariinsky Post every time the Chukchee and Eskimo traders come from the north. Thus the relations of the Russians and the natives toward each other are quite reversed, as often happens in remote parts of Siberia. The Russians pay in tea, tobacco, etc., also in live dogs, which last are considered to be much better than the Chukchee race, and are taken every year from Anadyr to northern native villages.

The guns sold now by the whalers are chiefly Winchester rifles of 44, 45.60, or 45.70 calibre, for the most part second-hand. They also sell cheap shotguns, and reloading-tools for both kinds of guns. At present all the natives on both the Arctic and Pacific shores are armed with these rifles, and use them for every kind of hunting. At Indian Point alone the number of fire-arms in 1901 was over four hundred in a population of four hundred and forty. The Reindeer Chukchee eastward from the Kolyma also have many Winchester rifles; while those of the western tundra and of Omolon still use firelocks, with only a small number of second-hand Berdan rifles sold by the Russian Government.

Wheat flour has become an article of regular consumption on the Pacific shore, especially in times when seals are scarce. Then, according to the assertion of the natives, it is their only means of keeping off famine. In truth, during the spring of 1901, people in the village of I'en, on Plover Bay, and also at Indian Point, lived chiefly on flour cakes baked with a little oil. The same spring, at Indian Point alone, about five hundred sacks of flour (forty-four pounds to the sack) were bought from the whalers. On the whole coast, about twenty-five hundred sacks of flour — rather more than less — are sold every summer. Among the Reindeer Chukchee, cakes made of wheat flour form one of the most relished dainties, while rye flour is little cared for, even in the vicinity of the Russian settlements.

Besides these provisions and wares, the natives willingly buy second-hand whaling-boats, small whaling-guns, exploding-harpoons, and also mineral oil and oil-stoves; in 1901 even Primus lamps, ships' compasses, the use of which is well known to the Eskimo at least, etc., were traded in.

In 1882, Kuva'r, the richest trader of Indian Point, tried to buy a schooner for the purpose of carrying on whaling and trading on a larger scale. Unfortunately a Russian warship, the "Kreisser," had been sent that very year to keep off the American whaling-ships, and to seize such of them as might

be found trespassing in Russian waters or carrying on unlawful trade on the shores. I cannot tell whether the "Kreisser" seized any American ships or not, though several of them have been taken at different periods; but she met the schooner "Henrietta," just bought by Kuva'r, and carried her off as a prize, in spite of all remonstrance. The schooner was afterwards fitted with a steam-engine and used for keeping watch on the Sea of Okhotsk, where she was lost in a storm in 1895. Kuva'r applied several times to the authorities for redress, but without avail. The officials in Vladivostok maintained that the schooner was not yet paid for; but I was told at Indian Point that Kuva'r gave for it the whalebone of two whales, a large pile of walrus-tusks, three bagfuls of white-fox skins, and three polar-bear skins. During my stay, another occasion to buy a schooner presented itself, and I was asked for advice as to the possibility of a second confiscation, but withheld my opinion.

American wares generally are twice as cheap as those brought from the interior of Siberia. Even those brought from Vladivostok by sea cannot compete with them, because most of them are of American origin, and have come by a more circuitous route. American granulated sugar forms an exception. It is inferior to the well-refined, hard lump-sugar of the Russians. American cutlery is not always so well adapted to the uses of the natives as are the rough strong knives made for this purpose in Yakutsk, Sredne-Kolymsk, Markova, etc. Moreover, the whalers do not trade in brick-tea, because they do not visit any Chinese or southern Siberian ports. Once or twice they brought brick-tea from Japan; but Japanese brick-tea is of much poorer quality than Chinese, and the cakes are smaller in size.

After the native stock of whalebone became exhausted, the whalers began to accept instead walrus ivory and the skins of white foxes and of black and polar bears. Other Asiatic peltries, such as those of red and cross foxes and of wolves, also skins from America, like the beaver and marten, are taken to the Russian fairs because they fetch a much better price in Asia than would be paid by the whalers. At the present time the chief source of income of the natives are fawn-skins, which are much needed by the American natives and by the Alaskan miners for making garments; also skins of full-grown reindeer for sleeping-bags, ready-made garments even of poor quality, and, most of all, various kinds of seal-skin boots, which are used both by the whaling-crews and by the miners. Asiatic and American natives sell these boots by the thousand every summer; but the demand keeps increasing, and in 1901 the price at Indian Point was a sack of flour per pair.

The chief places for trade continue to be East Cape, and especially Indian Point, where the sea is cleared of ice by the strong currents as early as the middle of April. Two or three native traders in both places have acquired year by year a larger amount of native products, until finally they are able to obtain by exchange each summer a sufficient amount of European wares

to last for the trade of the whole year. They have even bought wooden storehouses brought on purpose from San Francisco.

At the present time the whole number of such storehouses on the Pacific shore is fourteen. Indian Point has five, of which three belong to Kuva'r, now the richest man on the Chukchee Peninsula. No'ekan has three; Uwe'len, one. Single storehouses are found in several Eskimo and Chukchee villages.

The whalers seldom skirt the Arctic coast westward from Uwe'len, and even then almost never go beyond Kulu'çi Bay. All the Maritime people who wish to take part in this trading, resort, those from the Arctic villages, to East Cape; those from the Pacific villages, to Indian Point. No positive times are set for these gatherings; but, beginning with the middle of March, the dog-teams and reindeer-caravans begin to appear one after another. They keep coming long after the appearance of the first whaling-ships, because the snow melts away only late in the spring. Travelling with skin boats begins at the end of May, and from July on wholly replaces journeying with sledges. Only skin boats are used, since it is difficult to make a landing with wooden whaling-boats, owing to the heavy surf, and because they are too heavy to be pulled ashore.

Direct trading with the American natives has fallen off, because the whalers act as middle-men. At the present time the American Eskimo have not enough peltries and seal-skins to trade with the Asiatic natives, because all such things go to the local white traders.

People from St. Lawrence and Diomedé Islands often come over to the Asiatic shore, for the most part on board the whalers, carrying their skin boats with them for cases of emergency. Trading-parties from Indian Point still go over in boats to St. Lawrence Island to barter reindeer-skins for spare blubber, walrus-hides, and some whalebone, which last now forms an important item in the native trade before it is sold to the whalers. They also gather driftwood on the northern shore of the island, or buy roughly-hewn runners and parts of skin-boat frames from the natives of the island. A similar trade in wood and in roughly-hewn runners, dishes, trays, etc., is carried on across Bering Strait. Enterprising men from Indian Point and East Cape sometimes go over with the whalers to St. Michaels or to Cape Nome, carrying loads of reindeer-skins, which are sold chiefly to the white people.

TRADE IN REINDEER. — Live reindeer have always formed an object of trade between different native tribes. During the last ten years the American Government, to wishing breed reindeer in Alaska and on St. Lawrence Island, has also begun to buy live reindeer from the Asiatic shore. In 1899 there were 9 herds in Alaska, with an aggregate of 2,837 reindeer, of which 1,021 had been bought on the Asiatic shore,¹ 144 imported from Lapland. The

¹ Jackson, I, p. 16.

remainder came from the natural increase of the herds. In 1901 there were in these herds 4,164 reindeer, of which 229 more were bought on the Asiatic shore, and 1,100 were fawns that survived from the spring. The total of those bought on the Asiatic shore was 1,300.¹ The American agents paid three times the usual price of reindeer, but nevertheless could not secure enough animals, because reindeer-herds are not sufficiently numerous on the seacoast from Kulu'či Bay to Indian Point.

It is remarkable that the inland Reindeer Chukchee, especially the Kavra'lit, are very hostile to this traffic, since they are conscious that their trade with American natives is decreasing all the time, and are afraid that the newly-bred American reindeer will diminish it still more. Five years ago, while the American purchasing agents still had the good-will of the Russian Government, I heard a curious tale among the Wolverine River people, who asserted that the chief aim of the Russian cruisers was the pursuit of the ships that carried on the trade in reindeer.²

Apart from this apprehension, trade in live reindeer, if organized in a proper way, can only be profitable to northeastern Asia, because there the reindeer number millions, and as many animals are slaughtered for food in three days at any of the larger fairs as the American Government has purchased in ten years. The Administration in Vladivostok, during my visit there, ceased to countenance the idea of this trade, influenced partly by the last two Russian travellers on the Chukchee Peninsula, Messrs. Gondatti and Bogdanovitch, both of whom do not favor the continuance of trade in Bering Sea, at least in the way it is carried on at the present time.³

INLAND TRADE. — Inland trade among the Chukchee is carried on at present in much the same way as it was before the advent of civilized people. In the Reindeer branch of the Chukchee, a man more active than the others, though oftentimes not over-attentive to his herd of reindeer, of which he has but comparatively few, will want to go to the seashore for barter. There is a special term for this journey, t-ñirke'urkin ("I go to the country about East Cape for trade"). He will begin collecting fawn-skins for trading, and pack-sledge reindeer for the journey, his relatives and neighbors loaning him some of the latter. He will go partly as their agent, and will carry skins to sell for them on commission. These skins to be sold on commission have a special name, vi'linñir ("property held for sale"). He will start with a travelling-camp in February or March, and will proceed very slowly, being careful not to over-fatigue his reindeer, by routes leading from the Anui and Omolon to Chaun Bay; thence he will advance from one small watershed to another, following the general direction of the seacoast, but all the time keeping at a consider-

¹ Jackson, II, p. 17.

² Bogoras, Chukchee Materials, Introduction, p. xxxii.

³ Compare Bogdanovitch, Chapter V.

able distance from it. With the advance of the season, he will proceed eastward as far as possible, and turn to the shore only when travelling with reindeer becomes impossible. Sometimes he will reach East Cape; more often he will stop in some other village between Kulu'či Bay and East Cape. To stay west of Kulu'či is inconvenient, because in the western villages the population is scanty, and the sea-journey to East Cape presents more trouble, and even danger.

He will spend the whole summer on the seashore; he will take part in the seal-hunting, so as to have a share in the spoils without paying for it; and he will journey by boat to East Cape. In exchange for his skins, he will try chiefly to get ground-seal hides and all kinds of thongs, and American products, — alcohol, Winchester rifles, and cartridges. In the middle fall he will start on his return journey as slowly as before, and will finally go back to his own country in the spring. He will return the borrowed reindeer, for the most part without any particular pay, and will distribute some of the wares he has bought among those whose agent he has been, retaining a considerable share of profit for himself out of every transaction of this kind. Such a journey will last a whole year, and perhaps even longer; so that a caravan leaving two months before fair-time at Anui will be back just in time for the next fair. Travelling between Indian Point and the Anadyr is much shorter, and is usually accomplished in one winter, so that a caravan starting in the fall will come back about the middle of the next spring.

When a man finds zest and profit in such journeys, he makes them his vocation, and becomes a Kavra'ln. As mentioned before, the greater part of the Kavra'lit are maritime people who first turned to reindeer-breeding and then to trade, and thus are experienced in both pursuits and in the customs of both parts of the tribe. The Kavra'lit are continually *en route*. In former years they were anxious to visit the Russian fairs. They went down to the seashore to meet the boats coming from the Diomed Islands and America, and often associated with them and made a trip across the sea to secure an additional supply of valuable peltries. Sometimes the father of a family would start westward with a reindeer-caravan. Meanwhile one of his sons would wait till summer and cross Bering Strait in his boat. The next spring father and son would meet, and arrange for the distribution of their wares for new journeys. Even now a few Kavra'lit traders have not restricted the range of their travels, and continue to visit both the Anui fair and the Diomed Islands. Others, however, trade chiefly in fawn-skins, and do not go as far as the Ostrovnoye market-place or the Kolyma settlements.

At the present time about ten or fifteen caravans, each consisting of six or eight tents, resort every spring to the Wolverine River, on the eastern confines of the Anui country, coming from the east. Some of these come from the Chaun tundra, others from the neighborhood of Cape Erri, Ya'qan,

and Rirkai'piyan; still others from beyond Kulu'či Bay. Lively barter goes on for two weeks; then the traders start on their return journey.

In former times there were richer men among the Kavra'lit than there are at present. About forty years ago one of them bought horses and made summer trips between the Reindeer camps, carrying his wares on horseback. Another one, at his own request, was sent to Yakutsk by the officials of the Kolyma district. He visited the Russian governor at Yakutsk, and received through him a gold medal and a parade coat adorned with silver lace. At present none of them equals in wealth Kuva'r and the other Eskimo traders of the Pacific shore.

Several other regular trips, but of shorter range, are made for the purpose of trading. In the Anui country Russian traders travel among the camps, in winter with dog-teams and in summer with horses, collecting chiefly small fawn-skins and white and red foxes. The Russian traders of the Anadyr do not make such trips, and they do not go even as far as Holy Cross Bay; indeed, neither the Russian traders nor the Cossack invaders cared to go beyond the forest border, at least when travelling by land. On the other hand, petty traders go in the winter-time with dog-sledges from every native village of the Chukchee Peninsula to the Reindeer camps, collecting large fawn-skins and ready-made garments. Later in the summer whole squadrons of boats start from Indian Point on their journey to Holy Cross and St. Lawrence Bays, where the Reindeer people perform the ceremonial slaughtering of the season. They return heavily laden with skins and meat. Some of the boats go to the Anadyr and proceed upstream to take part in the large reindeer-hunts. Twenty years ago they proceeded along the seacoast to the Telqä'p summer camps, and as far as the Kerek villages. Here, near Capes Barykoff and Navarin, was the southern limit of the Chukchee-Eskimo trade on the Pacific coast.

UNITS AND PRICES. — The Chukchee trade is carried on exclusively in barter. Money is quite unknown. The Reindeer people have not even a word for it, and call it keli'tul ("a piece of variegated"), which name may be applied also to any piece of paper with writing on it. The Maritime Chukchee call it manê'man (from English "money" of the whalers).

The unit of value in Russian trade remains a bundle of tobacco "not tampered with," because the traders often abstract a few leaves and replace the bindings. In recent years brick-tea has also come into use as a standard of value, and is even preferred because of the uniform size of the bricks.

In the trade with whalers no particular unit is applied. Prices are very variable, according to season and place. The same commodities are sold in some places and seasons at prices two and three times as high as in others. The following are a few samples of prices from different districts: —

In the nineties of the last century, in southern Russia, a bundle of tobacco

(a pound and a quarter Avoirdupois) was worth about 30 kopeks;¹ in Yakutsk, 60 kopeks; in Sredne-Kolymsk, 1.80 rubles; at the Anui fair, 2.40 rubles or 3 black fawn-skins of small size; in Anadyr, 80 kopeks; on the tundra, 5 black fawns-kins; in the Chukchee Peninsula, 1 white-fox skin.

In Vladivostok or Irkutsk a piece of brick-tea is worth about 30 kopeks; in Yakutsk, 50 kopeks; in Sredne-Kolymsk and on the tundra it is equivalent to a bundle of tobacco. One Russian pound (nine-tenths of a pound Avoirdupois) of sugar is worth in southern Russia 15 kopeks; in Yakutsk, 40 kopeks; in Sredne-Kolymsk, 1 ruble; at the Anui fair, 1.50 rubles or 2 black and 1 gray fawn-skin of the smaller size.

A bottle of undiluted alcohol is worth, in Sredne-Kolymsk, from 2 to 2.50 rubles; at the Anui fair (largely diluted with water), 5 rubles or a good red-fox skin; on the tundra and in the Anadyr, any price that it will bring.

In trading with the whalers, a storehouse that is worth \$100 in San Francisco, is sold for 100 slabs of whalebone (about 400 pounds), worth from \$2.50 to \$3.50 per pound; i. e., for \$1000-\$1400. A second-hand whale-boat, with equipment, is sold for 20-30 slabs of whalebone, or from \$200 to \$420; a shotgun or a Winchester rifle with reloading-tools, for 4-6 slabs; a small box of chewing-tobacco ($6\frac{1}{4}$ pounds), for 2 pairs of boots; a keg of black molasses, for 1 or 2 pairs of boots; a sack of white flour, for 1 or 2 pairs of boots; etc. A good fawn-skin is equal in value to a pair of boots; a plain garment, to 2 pairs of boots; an embroidered garment, to a slab of whalebone; etc.

At the mouth of the Anadyr, American wares are bartered away by the Chukchee for commodities that, according to our scale of prices, are worth less than what is paid to the whalers for them. One rifle is sold for from 20 to 30 pieces of brick-tea, i. e., 8 to 12 rubles; one whale-boat, for 70 pieces of brick-tea, 30 pounds of sugar, 20 pounds of tobacco, — in all, about 50 rubles. Smaller articles, such as powder, percussion-caps, cotton goods, are bought by the Cossacks at still cheaper rates. The reason is, that in former times the Russians did not accept whalebone, and set on their wares high prices in peltries; so that the Maritime natives who barter at present for American wares with whalebone are accustomed to regard them as of lesser value in comparison with Russian wares.

In the inland trade among the western camps, prices are as follows: for a hide of a large ground-seal, from 10 to 15 fawn-skins of larger size; for a coil of white thong, 5 fawn-skins; for a large bag full of seal-oil, 3 reindeer for slaughter; for a Winchester rifle with accessories, 2 sledge-reindeer; etc. Among the Kerek a Winchester rifle with accessories is worth 2 sable-skins.

The total yearly trade between the Chukchee and the Russians, in all

¹ A kopek is equivalent to about half a cent.

the three northern districts, yields about 70,000 rubles. The total amount of the whalers' trade on the seashore is uncertain. In the last few years there have come annually to the shores of Asia about ten whaling-ships, each of which carries on trade to the amount of about one or two thousand dollars; so that the whole yearly proceeds may be anywhere from \$10,000 to \$20,000. As stated before, this trade is carried on chiefly with the Eskimo.¹

The yearly amount of trade done in the three districts of northeastern Asia by all the tribes — including the Chukchee, the Koryak, the Eskimo, the Lamut, the Yukaghir, the Russian settlers, the Russianized natives, and the Yakut — does not exceed 200,000 rubles, — 70,000 in Gishiga, 70,000 in Kolyma, 25,000 in Anadyr, and about 30,000 on the Chukchee Peninsula. Of course, even the first three figures, though based on official reports, are only approximate.

¹ Mr. Gondatti (op. cit., p. 12) mentions Tñe's-qan of Uwe'len as being the wealthiest trader on the Arctic coast. The name Tñe's-qan is Chukchee, as are the majority of the inhabitants of Uwe'len. A few years after the visit of Mr. Gondatti, Tñe's-qan died. It is true, however, that the Chukchee on the Arctic coast do take a more active share in trading with whalers than those on the Pacific.

IV. — REINDEER-BREEDING.

GROUPS OF REINDEER-BREEDERS. — The domestication of the reindeer among the tribes inhabiting the Asiatic side of Bering Sea forms the chief distinctive feature in their economic condition as compared to that of the Arctic tribes of America. Nevertheless it is difficult to say how reindeer-breeding, and the nomadic state of life entailed by it, were introduced into the extreme north-eastern corner of Asia.

Along the western parts of the Arctic shores of the Old World there dwell a number of tribes who have possessed from ancient times domesticated reindeer that are harnessed to sledges and also used for food. Their herds are, or rather were, large; and their whole existence is based on the supply of meat and skins furnished by these herds. Their economic condition resembles in this respect that of the more southerly cattle-breeding tribes. These reindeer tribes are the Laplanders, Zyrians, and Samoyeds (European and Asiatic). Their methods of reindeer-breeding are somewhat uniform, and they all use the shepherd-dog in managing their herds.

The widespread branches of the Tungus and Lamut constitute the most prominent reindeer tribe of eastern Siberia. Usually they live some distance from the shore, and many bands use the saddle in place of the sledge. Their herds are so small that they can use their reindeer for riding and transportation only, not for slaughter. They have not become nomadic, but, owing to the introduction of the reindeer, have been enabled to extend their hunting and fishing expeditions over a larger extent of territory, in the same way as the North American Indians did after the introduction of horses. Several bands, however, raise large herds, so that they are able to live on their products.

Although the riding of reindeer is the most striking feature among Tungus reindeer-breeders, numerous bands have adopted a peculiar form of sledge (Fig. 4) with stanchions fitted into circular holes in the runners and fastened

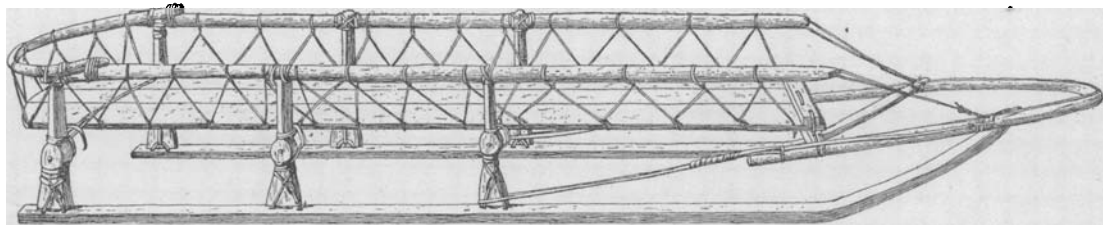


Fig. 4. Tungus Sledge. (From a photograph.)

with thongs, and with a circular bow-like fore-part for attaching the traces, — the same as is used throughout eastern Siberia for dog-teams.

Between the Yenisei and Indighirka Rivers the Tungus approach the seashore. In this region they are intermixed with a group of the Yukaghir, who, here at least, also used to possess some reindeer. The ethnography of this tract is still very imperfectly known; and the problems to be solved here are exceedingly intricate, owing to the invasion of the Yakut, who assimilated all the smaller tribes, and modified in many respects their original cultures. The Tungus do not use the dog with their herds. Their lean, small, and nimble-footed dogs are used only for hunting-purposes, and they retain all the ferocious habits of former freedom. They consider all reindeer, wild or tame, their lawful prey: therefore in camp these dogs are carefully tied up; otherwise they would give chase to the herd and disperse it in every direction. The reindeer are less thoroughly domesticated than among the western tribes, though tame enough to be milked, and used for regular service with post and merchant caravans.

The Koryak and Chukchee form the third group of reindeer-breeders, and live to the east and north of the Tungus. Like the tribes of the extreme west, they use reindeer only with the sledge, not for riding, and their herds are very numerous, perhaps the most numerous in the world; but the degree of domestication is very imperfect. One is almost tempted to assume that they did not introduce the tame reindeer from their neighbors, but that, in imitation of them, they attempted to domesticate the race of reindeer inhabiting their own country. This would seem the more plausible, since their reindeer is quite different from that of the Tungus. Their dogs are likewise the natural foes of the reindeer-herds, and the latter are so wild that they return easily to their former freedom. Milking is impossible; and the reindeer are difficult to manage even in harness, and are unable to endure prolonged and regular service.¹

BEGINNING OF KORYAK AND CHUKCHEE REINDEER-BREEDING. — Although at present the herds of the Koryak and Chukchee are numerous, it was probably otherwise in former times. Among the various Koryak bands in northern Kamchatka and around Baron Korff's Bay there are still some who combine seal-hunting with reindeer-breeding; and while one part of the band is settled in huts on the coast, fishing and hunting, the other part is wandering about with its reindeer-herds on the neighboring mountains. Usually each band has only one village on the coast, but several inland camps, each with one herd. There is a constant interchanging of the inhabitants between the village and the camps, since every fisherman possesses a few reindeer, which are in charge of one of his relatives among the herdsmen. From time to

¹ G. Mortillet, in his well-known work on prehistoric man in France, asserts, on the authority of Karl Vogt, that reindeer-breeding is impossible without the use of the watch-dog (*Préhistorique*, p. 439). Vogt knew only about the European Reindeer tribes. It remains an open question whether reindeer-breeding was begun with or without dogs.

time he visits them to enjoy the freedom of a wandering life under the skin tent. The herdsman, on his part, wishes to catch fish and to spear seals, and during the hunting season descends to the shore. The herds are not numerous, however, since the attention of the people is divided between their care and the sea-fisheries.

Not more than a hundred and fifty years ago the forefathers of the people of almost every Koryak village of Kamchatka had reindeer, while now the inhabitants live solely by fishing. Similar conditions prevail among the Reindeer Chukchee around the mouth of the Anadyr and along the seacoast from Holy Cross Bay to Cape Erri. Everywhere about half of the Reindeer-camps have small herds only, and support themselves largely by seal-hunting. It was only in the last century that the herds of the Chukchee became numerous. Even at the time of the appearance of the Russians, the continuous warfare on the Koryak border was carried on by the Chukchee chiefly for the purpose of carrying away herds of reindeer. For instance, according to Krasheninnikoff,¹ the Chukchee, in 1738-39, had driven off the herds of the Koryak of the Opuka and Khatyrka; and the latter had to settle in underground huts, and lived on fish and roots. The Koryak fishermen on the River Opuka claim to be descendants of those reindeer-breeders who were robbed of their herds by the Chukchee; and in reality they speak the Reindeer-Koryak dialect, and in some respects are different from their western Maritime neighbors. Almost all Chukchee tales referring to this subject give the same reason for the beginning of their border wars. The Reindeer Koryak are described as having large herds, living exclusively on their produce, and as being unskilful in sea pursuits. The Reindeer Chukchee are represented as a semi-maritime tribe, with a decided aversion to getting too far away from the seacoast, and with an excessive liking for sea-meat (anqa'tel), — whale-skin and seal-blubber, — often ready to risk their lives to procure this relished food.² In the tale of "Elendi and his Sons," a Chukchee girl is carried away by a Koryak warrior, and forced to become his wife. She upbraids him for his way of living, in words like these: "When I lived with my brothers, they fed me with sea-meat and seal-blubber. Why do you annoy me with your everlasting reindeer-meat?"³

INCREASE OF CHUKCHEE REINDEER-BREEDING. — The increase of the Chukchee herds has taken place chiefly during the last fifty years, and is simultaneous with their forward movement in a western and southern direction.⁴ When I

¹ Krasheninnikoff, II, p. 204.

² Bogoras, Chukchee Materials, p. 352.

³ Ibid., p. 342.

⁴ As early as the first part of the nineteenth century, Dr. Kyber called the Reindeer Chukchee very rich reindeer-breeders. "The poor Chukchee," he says, "has several hundred animals; the well-to-do, a thousand; the rich one does not know the number of his herd" (KYBER, II). His information, however, seems to me to be drawn from the Russian inhabitants of the Kolyma, who are inclined to exaggerate the wealth of the inhabitants of the tundra. According to the unanimous assertion of the old men of the Chukchee two generations ago, only very few herds numbered their reindeer by the thousands.

was visiting the country on both Anui Rivers, twenty-five years after Baron von Maydell, the natives pointed out to me that at present the families who in Maydell's time were dependent on other people's herds, had for their subsistence, as a rule, herds of their own. On the Omolon, Ei'heli, the son of Amra'kwurgin, — the rich herdsman (now deceased) who was selected by Maydell for the position of "principal chief," — had five large herds instead of the two of his father.¹ His brother-in-law and one of his cousins had three each, etc. In 1901, however, I heard in Anadyr that the reindeer-herds in the Omolon country were greatly reduced by the hoof-disease.

I mentioned before that the inhabitants of several maritime villages have turned reindeer-breeders, and that even some of the Asiatic Eskimo have acquired reindeer-herds. Thus Kuvár of Indian Point had two large herds that he had placed in charge of a Reindeer-Chukchee friend, whom he kept supplied with every American, Russian, or Eskimo ware required for the use of his family.

DOMESTICATED REINDEER. — There are several races of domesticated reindeer. The Chukchee reindeer (timñê'-qor, "ordinary reindeer") is distinctively different from the Lamut reindeer (wa'wa-qor or wa'waq). It is undersized, its legs are shorter, body heavier, head not so long, the antlers thicker and heavier and the difference between buck and doe in this respect less marked, and the general color of the animal of darker hue. The Koryak reindeer is still smaller and darker than that of the Chukchee. The Lamut reindeer on the Sea of Okhotsk is large, and the darkest of all. The Chukchee reindeer is quite unfit for the saddle, and is not so strong in the harness, especially in heavy snow, as the Lamut reindeer; but it is much better for slaughter, since it fattens quickly, and does not lose its fat as easily. In good pasture the Chukchee reindeer accumulates so much fat that its whole body is covered with it. On the hind part, near the tail, the fat is about two inches thick.

At present a brisk trade in reindeer is carried on between the Lamut and the Chukchee. The Lamut reindeer commands about twice the price of the Chukchee reindeer. Usually a Lamut fawn is exchanged for a grown Chukchee reindeer. A broken Lamut reindeer is worth three Chukchee reindeer; and the Lamut and the Tungus often break all the young bucks in their herds in order to barter them away to the Chukchee. Therefore the larger portion of Chukchee harness-reindeer are at the present time of the Lamut race. The Lamut, on the other hand, have stopped slaughtering their own reindeer, because they can always get Chukchee reindeer, which are cheaper, and better fitted for the purpose.

Crossing between tame and wild reindeer frequently occurs, especially in the Chukchee herds, although with the wild reindeer the rutting-season begins a couple of weeks later than with the tame one. One by one wild bucks

¹ Ei'heli succeeded his father in the office of "principal chief." I spent about six months among his herds on the Middle Omolon.

come to the herd, fighting with their tame rivals, and seeking for some doe that is still rutting. During this time the herdsmen visit the herd as little as possible, even at the risk of losing some animals. When visiting the herd, they are careful to keep on the windward side of the shy guest, in order not to frighten him away. The visits of wild bucks are considered as blessings, obvious tokens that Providence looks favorably on the herd: therefore the herdsmen, with special charms and incantations, strive to allure and to detain as long as possible the wild reindeer. After the crossing, the herdsmen try to kill the wild buck as speedily as they can, since its escape is interpreted as the recall of the blessing. If several bucks that have crossed with the herd should make good their escape, they will induce the herd the next spring to return the visit, and will keep them afterward. The offspring of the cross between tame and wild reindeer is highly valued by the Chukchee. They trace the lineage of such blood for three or four generations. All cross-breeds are broken for the harness, and used especially in racing, because they are swifter and have more mettle than any tame reindeer. The offspring of the wild buck and the tame doe is called *rite'qäu*; and that of the *rite'qäu* buck and the tame doe, *i'čve-tei'kin* ("wild reindeer made"). Sometimes the Chukchee buck, when roaming about free, will cross with a wild doe. The offspring, when caught young, can be broken, and is prized more highly than any other reindeer. The Chukchee assert that the first cross-bred generation of *rite'qäu* is better and even more docile than the second, in which the innate wildness returns. The crossing between the Lamut and the Chukchee reindeer does not attract any special attention.

The tame reindeer shows considerable variety in color, ranging from spotless snow-white to dark gray and hazel-nut brown (usually called by the natives black). It is darkest shortly after shedding its hair, and lightest in the spring, before shedding. Fawns are darker than the old ones, and white fawns are therefore much valued. The Chukchee distinguish the following colors of reindeer-skin: —

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| 1. <i>Teñ-uwe'le</i> ("quite black" [chestnut brown]). | 9. <i>Čë'čhên-ya'qilhin</i> ("under-leg grayish" [light-gray spots under the legs and on the groins, body brown]). |
| 2. <i>Uu'rgiln</i> ("black hair tipped"). | |
| 3. <i>Čëva'ro</i> ("gray"). | |
| 4. <i>Êlhi-čëva'ro</i> ("gray with white") or <i>yi'li-lu'</i> ("moon-faced," since the white is usually on the face). | 10. <i>Uw-ya'qačhin</i> ("black, under-leg grayish" [same as before, belly light gray, white spot on the forehead]). |
| 5. <i>i'purgin</i> ("yellowish hair tipped" [on brown ground]). | 11. <i>Ya'qilhin</i> ("under-leg grayish" [same as before, brown parts less extended]). |
| 6. <i>Uu'plil'e</i> ("black yellowish" [somewhat lighter than the preceding one]). | 12. <i>Yr'hilhin</i> ("whitish" [with brown stripe along the back]). |
| 7. <i>i'plil'e</i> ("yellowish" [on gray ground]). | 13. <i>Ê'lhar</i> ("white fox"). |
| 8. <i>Ilh-i'plil'e</i> ("whitish yellow"). | 14. <i>Ilhi-lile'</i> ("white-eyed" [albino] ¹). |

¹ Albinos have pink eyes. Their velvet is rosy on account of the transparency of the skin. They are weak and sleepy, though very tame. The Chukchee usually kill them at an early age, as, on the whole, they do not like anything abnormal among their reindeer.

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| 15. Elve'ek ("one hind-leg in white stocking" [body gray or brown]). | 22. Keli'lin ("spotted" [white spots on brown or gray ground]). |
| 16. Ke'mgekem ("both hind-legs in white stockings"). | 23. Rew-i'stin ("ptarmigan-neck" [white body with a black head, like a ptarmigan in spring plumage]). |
| 17. 'Iñit-qe'ñu ("nose-tip white" [literally, "nose-tip white mixed with brown"]). | 24. r'pl'i-qe'ñu ("yellowish gray mixed with white"). |
| 18. Arê-qa'ño ("groin white mixed with brown"). | 25. r'pl'i-keli'lin ("yellowish gray spotted with white"). |
| 19. Ri'čit-qe'ñu ("belt white mixed with brown"). | 26. Kerg'i'pitku-qe'ñu ("speckled with white" [on yellowish-gray ground]). |
| 20. Qe'ñu ("white mixed with brown"). | |
| 21. Mei'ñi-qe'ñu ("very much qe'ñu," i. e., more white than brown). | |

The name of the reindeer is generally taken from its color or from some peculiar feature of its antlers. Examples of such names are The-quite-Black-One, One-with-a-Cross-Branch-over-the-Forehead, etc. Some breeders give real names to a few reindeer of their herds: e. g., Young-Lamut-Reindeer (Tor-wa'waq), — though this name was given to a Chukchee reindeer partly for the purpose of increasing its agility through the force of the word, — Mushroom-Eater (Po'ñolin), etc.

The term of a reindeer's life is from twelve to fifteen years, though some animals live considerably longer. According to age, they are classified as follows: —

- Qāyū' ("fawn"), both male and female.
 Qli'kin ("male fawn") and ečve'k ("female fawn").
 Pē'ēčvak (both male and female), less than one year old.
 Pe'nvel (male) and vañqa's-qor (female), from one to two years old.
 Krim'nti (male) and kri'm-qor (female), from two to three years old.
 Taačim'nti (male) and ñêra'n-igr'i'm-qor ([literally, "two times kri'm-qor"] a female), from three to four years old.
 Ñireqa'ulin (["one of the second time"] male) and tur-rewkute'tilin (["new doe grown"] female), from four to five years old.
 Ñiroqa'ulin (["one of the third time"] male) and re'wkut (["doe"] female), from five to six years old.
 Ñiraqa'ulin ("one of the fourth time"), male only, from six to seven years old.
 Čū'māñ ("buck"), more than seven years old.

The reindeer begins to shed its hair in the spring, and finishes in the middle of summer. Well-fed animals start shedding before lean ones, and grown animals before younger ones. A herd in good condition will finish two weeks earlier than a lean one. The new hair is short and sleek, but it thickens rapidly; and in September the skins of fawns are suitable for making winter garments. For this purpose skins of fawns are used almost exclusively. The fawns are killed at two set periods in early fall, according to the kind of fur desired. The late fall fawn-skins are used only for heavy overcoats; and the skins of grown animals, for sleeping-room coverings, bedding, and the like. For the Russian trade, spring fawn-skins of smaller size, called by the traders "vyporotki" (выпоротки), are required. Of these, the black skins are more highly valued, and bring almost three times the price of gray ones.

Fall fawn-skins (black), called by the traders "pyshiki" (пыхики), are also traded. The full-grown skins are soft-curried before being sold to the traders. In bartering with American Eskimo, white spotted fawn-skins are most highly valued. Pure white skins are highly prized everywhere. For making garments, the Chukchee men lay equal value on white, black, and spotted skins; but the women prefer spotted ones.

In winter the reindeer feed solely on reindeer-moss, which grows in abundance everywhere on the flat tundra and on the hills. There are some seven species of reindeer-moss: —

1. Lē'ê-watta'p ("genuine moss," *Cetraria Islandica*), otherwise called ê'luh-watta'p ("white moss") or ko'o-watta'p ("large moss").
2. Qai-watta'pqai ("small moss") or ê'mu-watta'p ("fine moss"), small moss with thin tender fibres. There are two varieties of different color: (a) ki'mčir, black; and (b) lo'qai, light green, like the ordinary large moss.
3. Kaima'-watta'p ("bald moss," *Stenocaulon paschale*), otherwise called a'm-tal-watta'p ("ground-bones moss"). It is light green in color, with small round rolls of fibres.
4. Koihu'-watta'p ("glacier moss"), like the ordinary large moss, but dark brown in color.
5. Mi'rgičhin, also of two colors: (a) uwa'la-mi'rgičhin, black, similar to very rough horse-hair tangled together; and (b) ê'w-mi'rgičhin ("wolf's moss"), similar to wolf's hair.
6. Ka'kwêl-watta'p ("ear-like moss," *Cetraria arctica*), in large flaps, and light green in color. Sprouts chiefly on burnt ground.
7. Aio'pčū-watta'p ("pricking moss"), of two different colors, — light green and dark brown.

Of all these varieties, No. 1 is the most common; No. 3 is scarce, especially on the tundra; No. 4 is very good fodder, but grows only in certain places; No. 5 is poorer fodder; Nos. 6 and 7 are good fodder, but they grow only on burnt places, and are scarce.

With the first green sprouts that shoot up through the snow, the reindeer cease to care for the moss, and scatter over considerable distances in search of new kinds of food. In summer they feed on sprouts growing on the tundra, chiefly on various species of reed-grass; also on young leaves of low willow-bushes, shore-grass, and the like, with the exception, however, of common grass, — "horse-fodder" (ko'nên-va'glinin) as the Chukchee call it. Even late in the fall, reindeer require some reed-grass and withered leaves mixed with moss, and without it they will not fatten. On the other hand, toward the end of summer they require moss mixed with the grass, and without it they will not thrive. This season is the most critical one for the herdsman, since a herd that does not gather fat enough in late summer will not be able to keep in condition through the whole winter, even in the best pastures, and in the springtime will be in danger of losing all fawns on account of the exhaustion of the dams. In the fall the reindeer has a great relish for mushrooms, and seeks for them so obstinately as to neglect its ordinary fodder, and lose fat. It also consumes bird-dung with relish, quantities of which are heaped around the moulting-places of ducks. The Yukaghir on the Middle Omolon, who subsist on fish, and ride reindeer instead of driving dogs, keep their

animals, especially the younger ones, during the season of insects, pent up in sheds to avoid losing them in the thick forest. They feed them all this time with willow-sprouts and fresh fish. Two small graylings (*Thymallus vulgaris*) is the daily allowance of a grown reindeer. Frequently the reindeer has a liking for animal food. Occasionally it catches mice in the moss,¹ and unfledged birds among the sprouts, and picks up around the houses scraps of fish and meat. Some even steal frozen reindeer-meat from the stores; but such a reindeer is speedily killed, for it is considered to bring misfortune. The reindeer drinks water in the summer-time; but in the winter it is contented with eating snow, as are the dog and every other Arctic animal. If in the fall, after the lakes and rivers are frozen over, snow does not fall for a long time, the herd is in a sad plight, as the reindeer, on account of the peculiar position of its convex hoofs, is unable to walk on ice toward open places. The herdsman breaks water-holes in the ice near the banks. Nevertheless, without snow, the herd loses fat very quickly.

Reindeer-moss grows throughout the year, but, if too much trampled upon, it will wither and dry up. Such spoiled pastures are exceedingly slow in recovering, and they sometimes remain waste for more than twenty years. The same is true of districts that are burnt over.

Reindeer cannot remain too long at one place, since the constant scraping of their hoofs hardens the snow, and it becomes difficult to reach the moss under it. Large herds especially have to move forward after a few hours, and actually keep moving the whole winter. Therefore the animals in very large herds do not have much fat. A pasture, after having been grazed over for a day or two, is useless till the next year, and will not be resorted to again in the same season. A pasture that has been used for three or four successive years has to be given a rest for five or six years. Thus reindeer-herds will thrive only when the available grounds are large enough for a continuous change of good pastures, carefully picked out among the vast spaces of poor land and coarse fodder. The summer pastures are not so easily exhausted; and on the Arctic seashore, between the Kolyma and Chaun, although resorted to every year for half a century, they still thrive, and sprout again every spring. The best strip of pasture-land here lies close to the shore, and is usually occupied by poor people, who quite overcrowd it, — at least in the Chukchee conception of the word. They live so close together that "the tents are visible one from the other" (am-ya'ra-wu'rra). In the spring of the year, when going to the shore, several camps often start a running-match in order to secure the best place. Their herds, however, get so tangled up at the end of the season, that it is difficult to separate them before leaving for the forest. Rich men do not care to go to this region, notwithstanding

¹ Compare Middendorff, p. 949.

its abundant pasture, because they would lose half of their reindeer among those of their neighbors. In other, more spacious districts the reindeer-breeders keep a careful eye on the grounds around their summer camps, because they have to take the herd there for the ceremonials and slaughtering of the early fall. Therefore trespassing on these pastures is held to be a grave offence, and leads to quarrels and fighting. In the winter-time, trouble often arises, not from the encroachment upon pastures, but rather from the entanglement of the herds grazing together on the same spot, the separation of which requires considerable work and time. A rich breeder who finds a poor neighbor coming too near, always suspects that the latter wants the herds to become entangled, that he may have an opportunity of appropriating some stray animals, whose ear-marks he can change.

The reindeer scrape the snow with the hoofs of their fore-feet, the sharp rims and pointed ends of which penetrate the snow, even when covered with a very hard crust. But wherever the snow is very heavy, — for instance, in the thick of the forests, — the reindeer soon become tired, and want to lie down before they have had enough to eat. Reindeer-breeders, therefore, do not like to go too far into the forest. The hills of the forest-border are most favorable for them, because on their slopes snow is always scarce, and moss abundant.

The females calve from the middle of March till the breaking-up of the ice; i. e., the end of May. The fawns, after a few days, begin to dig for moss. They are weak, and sensitive to frost and hunger; and hundreds of them perish under unfavorable conditions (in the average year, about fifteen per cent). The wild reindeer calves two or three weeks later, in accordance with its later rutting-season. This is favorable for the fawns, which do not perish in such numbers as in the domesticated herds. During calving-time the herdsmen resort to an open place well sheltered from north winds, and with little snow; as otherwise the females will lack milk, and the fawns will be starved. In all the larger herds the pregnant females, before calving, are separated from the bucks, harness-animals, etc.; and each part of the herd is pastured on separate grounds. Otherwise the bucks would injure the fawns in their runs, which occur several times a day. The two parts of the herd are joined again late in summer, or in the fall of the year, when they are returning from the summer pastures. The reindeer-doe begins to rut when one year old; but some begin in the same year in which they were born. The more favorable the summer, the more frequent will be the cases of half-grown fawns beginning to rut. I was told by the herdsmen of the American Government herd on St. Lawrence Island, that, on account of the rich moss-pastures without insects, almost all the fawns began to rut the first year.

This early fertility accounts for the rapid increase of the reindeer-herds under favorable conditions, although the doe rarely brings forth more than one



Fig. 1. Reindeer-Herd.



Fig. 2. Chukchee Corral.

The Chukchee.

fawn. Even twins are often born dead. One of living twins, or even both, are often killed by the Chukchee because they are afraid of anything unusual in connection with their herd. Some of the breeders, however, value twins highly, asserting that when grown up they will be very swift, and will make good racing-reindeer. Therefore when living twins are born into their herd, they look for another doe that has just given birth to a dead fawn, and carefully wrap one of the living twins into the placenta of the dead fawn to make the dam raise it as its own. Of course, this is feasible only in large herds, where in calving-time there are daily about twenty or thirty fawns born. If a suitable reindeer-dam is wanting, they will sometimes kill some new-born fawn and put one of the twins in its place. If they prefer to kill one of the twins, they keep a female one, because they believe that it will grow up to be a barren doe, fit to use for the harness.¹ Breeding-bucks are best at the age of three and four years; later on, their value decreases, although the bulk of the body and the dimension of the antlers continue to increase until the fifth or sixth year. The doe breeds to the end of her life.²

The Chukchee herdsmen are careful to select for breeding those does that bear the strongest fawns. Those whose fawns have died for several years in succession are killed first, when meat is required. The herdsman observes the lineage (*yǝhr'yǝkwǝn*) of his animals through three or four generations in selecting the best breeding-does.

Although the Chukchee have a very imperfect system of numerals, and never know the exact number of animals in their herd, still they keep a strict proportion between its integral parts. Fertile does always form a large majority. The largest bucks, aside from those used for breeding, are usually gelded. Such geldings and a few barren does are allowed to fatten. The harness-reindeer are also geldings, with the exception of a few large barren females with large antlers. The majority of the bucks are killed for their skins in the first fall of their lives. On an average, there are in a herd, to every hundred breeding-does, about a dozen breeding-bucks, from ten to fifteen sledge-reindeer, and from sixty to seventy half-grown fawns. In a large herd (Plate IV, Fig. 1) there may be to a thousand breeding-does thirty breeding-bucks, eighty sledge-reindeer, and from three hundred to four hundred fawns. The number of fattened bucks varies from a very few to about as many as there are breeding-does. However, large bucks and barren does are highly prized, since the Chukchee assert that a herd without bucks with large antlers looks poorly, and that without barren fattened does, all signs of wealth disappear. Even in springtime, when almost every doe is with fawn, the Chukchee herdsman is often more ready to kill a breeding-doe than a large fattened buck.

¹ See below.

² The Rev. Argentoff (I, p. 92) says that some of the does bring forth fawns for forty years. Perhaps this is a misprint, since the average life of the reindeer is from twelve to fifteen years. See also p. 75.

During the greater part of the summer the reindeer are much worried by large and small mosquitoes, and still more by two kinds of reindeer-flies. The first one (*Æstrus tarandi* Nordenskiöld, *Tabanus tarandinus* Slunin) lays its eggs on the hair of the reindeer, fastening them to the ends of the hair. After a little while a small maggot hatches from the egg, and immediately makes its way into the epidermis. While there it grows rapidly, and finally reaches the size of a hazel-nut. When full grown, it protrudes from the skin, and is ready to fall down. The maggots evidently cause itching, since the reindeer scratches its back whenever possible. When the maggots are very numerous, the reindeer loses its fat, and sometimes even dies. Later in spring the backs of some hapless animals look as if they were stuffed over and over with maggots, and the skin is riddled with small holes. Chukchee herdsmen very dexterously pick out these maggots, when large enough, from the reindeer's back, and eat them with great relish. The Lamut sometimes gather a quantity and boil them in water. Although this fly, when laying its eggs, does not cause the reindeer any pain or discomfort, the animal is much more afraid of it than of the stinging mosquito, and the herd will not remain quiet when the flies are numerous.

Another fly, of smaller size and darker color (*Edemagena tarandi* Slunin), lays its eggs in the reindeer's nostrils. The larvæ go up to the throat, and penetrate the cartilage. The next year, when the maggots are full-grown, they cause a constant cough, which continues until the last one drops to the ground. The Yukaghir and the Tungus, following the example of Yakut cattle-breeders, try to protect their reindeer from obnoxious insects by a smudge of smouldering dung, or of a fire covered with green leaves. But with the wild and large herds of the Chukchee such fires are of little value, and not without danger. Thus, some five years ago, Tungus herdsmen who were tending the herd of a rich Chukchee on the Alaseya River tried to surround it with fires, and finally burned the whole pasture, and injured half of the animals.

Hoof-swelling is the most common of reindeer-diseases, and occurs almost every year to a greater or less extent in most herds. It develops where the animals walk on dry and hot ground. Large abscesses break out between the joints of the foot. Sometimes the foot swells to the size of a child's head. The disease is catching, and is more dangerous in the mountains than on the seacoast. The Chukchee believe that when an animal afflicted with hoof-disease steps on the tracks of a healthy animal, it communicates the disease to the latter. Therefore an infected herd sometimes finds trouble in moving about the country. In an unfavorable summer a third or even half of the herd may die of it; but usually the loss amounts to only a few score. The first cold rapidly restores health to those that were not seriously affected. The symptom of another disease, that is not so frequent but much more dangerous, is a

scab covering the whole skin, and causing all the hair to drop off. The disease is said to proceed from a very small insect that burrows through the skin, probably a species of tick. Dr. Slunin mentions having seen it, though he does not give the name of the species. It develops in mid-winter, and the reindeer die of cold and exhaustion. This disease is also catching; and a herd, once infected, will generally be exterminated. Sometimes the disease will last for several years, disappear for a while, and then break out with renewed vigor. When it assumes a violent form, the Chukchee herdsmen often leave the whole herd, house and everything in it, even stripping themselves to the last fur shirt, as a sacrifice to the spirit of the disease. Sometimes they kill all their animals, and pile them together around the tent. According to data contained in the archives of Nishne-Kolymsk, in the spring of 1872 a Chukchee reindeer-breeder, Tiñei'mit, brought his whole herd, stricken with scabies and about three thousand head strong, to that town to be slaughtered. The inhabitants of all the neighboring villages flocked together, and all the slaughtering was done in three days. The scabies infected the dogs and the people, who had touched and eaten the diseased meat; but the results were not so fatal as with the reindeer. Dr. Slunin also mentions that scabies may be conveyed to men. Other diseases — such as muzzle-swelling, abscesses on the sides, etc. — are of no great importance. The Chukchee do not undertake to cure any of them, but slaughter the affected animal, and consume it as readily as they would a healthy one. Occasionally they tie up a fawn's broken leg in thin boards, or they cut open the swollen penis of a buck that is too much affected by the rut, and sometimes they even bore with a knife an extra outlet for the urine.

A number of beasts of prey are dangerous to the herds. The wolverine and the black bear will occasionally kill a stray reindeer. The polar wolf is much more dangerous, since, in the localities where the Chukchee herds are numerous, it follows them wherever they wander, and generally lives on them. The natives assert that there are two varieties of polar wolf. One is smaller and swifter than the other; it hunts the wild reindeer, and never approaches the herds, since it dreads the smell of man. The other variety is of larger size, and, since it is not swift enough to overtake the wild reindeer, it preys entirely on the domesticated herds. In winter the wolf selects for its raids dark, windy nights, or those with heavy snowfalls. Oftentimes several wolves make a joint attack from various points. In such case they may in a single night kill several scores of reindeer, and — what is worse — disperse the herd so widely that some of the younger animals cannot be found again. The Chukchee consider the wolf a shaman, who, among other things, possesses a charmed hood of thick hare-skin as white as snow. To make his raid successful, he will put it over the herdsman's head when snow is falling, and thus put him to sleep. In summer the wolf sometimes becomes so bold that

he makes an attack in broad daylight and in the presence of several herdsman, as I myself had occasion to witness. Possibly this may be due to the fact that the Chukchee have a taboo against the use of fire-arms on the wolf, and will use only a lasso or a trap for killing it.

THE HERDSMAN'S WORK. — On the open, stormy tundra the Chukchee herdsman, who has no watch-dog, has a considerable amount of trouble with his half-wild herd. The reindeer are only half domesticated, and ready to disperse on the first occasion. When left to themselves in the open tundra, they soon become quite wild, and even more wary than the wild reindeer, since they know the ways of man. Every now and then, when going to a fresh pasture or wandering over the tundra, some wayward animals will start in the wrong direction, and the herdsman has to head them off. The herd, therefore, progresses but slowly; and the more slowly, the larger the number of animals. The highest praise for a herdsman is to say that his herd moves along swiftly; like "the small cluster of a poor man," to employ the usual expression of the heroic tales.

During certain seasons, especially with the coming of insects, the herd requires the utmost exertion of everybody in the camp, including girls and married women. The latter, though not very active, are able to relieve the men for a little while, so as to give them their much-needed rest. The herd will not stay on the same spot, even for a short time, but wants to move against the wind to find relief from insects. When stopping for a while, only the centre of the herd stands quietly. The outer animals move swiftly around it — now from left to right, then from right to left — as if performing a dance, and then suddenly dash forward against the breeze, carrying along the whole herd. When the herdsman are too few for regular watches, they may not get time to sleep for two or three days in succession, and often are so tired that they drop to the ground and fall asleep against their will. The worst weather is a heavy warm fog without wind, because then the insects are most troublesome, and the herdsman cannot watch the movements of the distant animals. At such times a herd may easily be lost, if the herdsman should fall asleep even for a moment. To find its tracks in summer is no easy matter; and the reindeer may either disperse, small bands joining neighboring herds, or, in more lonely districts, run wild again. After the small-pox epidemic of 1884 on the western Kolyma tundra, so many domesticated herds ran free and dispersed, that their descendants may be recognized even now among the wild reindeer at the mouth of the Kolyma. The wild reindeer in Asia is uniformly gray. All those having black or white spots are descended from the domesticated race. The best qualities of a herdsman are endurance in walking, and ability to go without sleep for a long time.

A small herd is more difficult to handle than a large one;¹ and several

¹ "A small herd, like a short lasso, slips out of the hands," says the proverb.

poor families usually combine for the summer and form a large herd with plenty of herdsmen. Early in the fall the herds are separated; and in winter some of the poor men will join their wealthy neighbors and help them watch the herd, receiving for their pay some skins, and some animals for slaughter. Such temporary helpers generally leave in spring, before the calving-season, since at that time a large herd gives much trouble. It must be kept moving in search of new pastures. Does with young ones are very slow. In a herd of a thousand does there are some thirty calvings daily. The herdsman has to keep his eye on every one of these. He leaves them behind, then comes back for them, and even assists the inexperienced dam.

Many poor families, especially those who want to raise a herd of their own, enter the service of one of their wealthy neighbors for several years. They are very hard-worked, and receive as pay their meat-supply and skins from the herd of their master; but in moving from camp to camp they must use their own pack and driving animals. Meanwhile their own little stock is left undisturbed to multiply. In return for good services, they may expect to receive from their master every year about ten fawns; and with the natural increase of their own animals they may secure one hundred reindeer in the course of five fairly favorable years. Such helpers are called "dwelling-mates" (nim-tu'mgit); and the owners of every large flock, when short of hands, will strive in every way to attract at least one poor family. Often these are poor relatives of the owner of the herd. If there are any young unmarried men in these families, they will be offered a girl of the master's family in marriage, and thus become relatives of his.

With the beginning of summer, when sledges become useless and tents cannot be moved around the country, the Chukchee herdsmen usually leave their families in camp, and move with the herd about twenty miles away, to the summer pastures. Boys and girls of more than ten years, and young women having no small children, usually go along for a time. While moving about with the herd, the herdsmen have to carry on their backs all necessities, such as extra clothing, rifle and ammunition, kettles, and provisions. After they have killed a reindeer, they must carry its skin and meat until it is consumed. For this reason the herdsmen are so averse to slaughtering an animal at that season, that they sometimes go for several days on starvation rations. If the hoof-disease breaks out, they have plenty of meat, but they have to carry along additional loads of skins. Sometimes they are so heavily laden as to be hardly able to move. The burdens are carried by girls and by men who are not very agile; while the best herdsmen must remain unencumbered for moving swiftly around the herd.

The time of the first sprouting of weeds, and the mushroom season in the fall, are also hard on the herdsman; but the winter is easier, especially the coldest months, which have clear sky and calm air. If no wolves' tracks

are seen in the vicinity, the herd may be left for a day, and even for a night, without any watch; and two boys are sufficient to keep watch for several weeks, with an occasional visit from their father or elder brother, who attend chiefly to the change of pasture. Thus in the winter-time the older people have more leisure for visits and amusements.

The Chukchee are supplied with meat and skins from their herds. No milking is possible on account of the wildness of the reindeer. Early in summer the herdsman may catch one of the does with fawn, strike her to the ground, and try to suck some milk from her udder, although she may kick desperately all the while. The man has to strike her udder with his fist, just as the fawn does with its forehead, to cause a more abundant flow of milk. Sometimes the milk that has been sucked out is spit into a bladder and brought home as a rare present. The amount is rarely more than half a glassful. But these milking-operations must not be repeated too frequently, otherwise the fawn would be starved. When the herdsman is very hungry, he may also chop off a few pieces of the soft velvet of some buck with large antlers, and eat the thick, soft outer skin. The animal is released without any dressing of the wound; and the blood will sometimes continue to trickle down for hours.

Bucks are gelded in a way somewhat corresponding to the process of milking. The animal is struck to the ground, and the herdsman bites with his teeth either through the dowcets or through the spermatic ducts. This operation does not affect the reindeer much, and immediately afterward it continues to graze. Sometimes the scrotum is tied very tightly with a sinew thread, and after a while becomes atrophied and drops off. Usually the antlers of the driving-reindeer are cut short with a saw early in the fall, when they are dry and hard. The mark of the owner (vêlo'lhin, "ear"), which is a very simple one, is bitten out of the fawns' ears in late summer, or the next spring

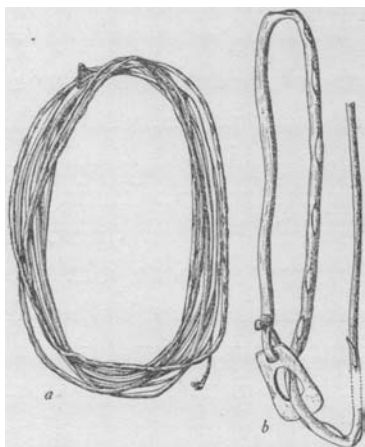


Fig. 5 (нѣтѣ): *a*, Lasso (total length, 15 m.; thickness, 1 cm.); *b*, Noose.

during the separation of bucks from pregnant dams. For catching reindeer the herdsman uses the long lasso (ča'at) with a knot on one end and a noose formed by means of a bone eye on the other (Fig. 5). It is made of thin seal-skin straps plaited together, sometimes of intertwined sinew cords, or of ground-seal and walrus thong carefully softened by rubbing, and well smeared with blubber to make it more pliable.

A good lasso is worth a fat buck for slaughter, or even a sledge-reindeer. The Chukchee herdsman will not go abroad without his lasso, even when far from his herd (Fig. 6; also Plate xxvii, Fig. 2). While walking, he usually carries it around his neck in a thick coil, like a huge boa. It is sometimes used in hunting

wild sheep, also for catching wolves that are first hunted down with a swift sledge, and occasionally for black bear and wolverine. Once, in my presence, a man who was drowning in a large river was caught and drawn to the bank by means of three lassos tied together. Two men held the coils; the third, who was the strongest, threw the noose across the river.

After having caught the reindeer, the man tightens the line and swiftly approaches, gathering in the coils. At the same time another man seizes the reindeer by one of its antlers, and with the other hand deftly stabs it through the heart, using a long, thin knife pointed at one end, and



Fig. 6. Herdsman throwing a Lasso. (From a photograph.)

strong enough in the back not to bend too easily. This is usually done by men. When, however, owing to lack of men, girls and young women have to tend the herd, they carry the knife in their belts, throw the lasso, and perform the slaughtering, just as well as men. For sacrifices and in ceremonials the reindeer is stabbed with a spear (Plate VI, Fig. 1). At the present time the Lamut kill the reindeer by stabbing; but I was told in the Kolyma district that in very ancient times the Lamut strangled their animals with a running noose.¹

REINDEER-DRIVING. — Reindeer-fawns are usually broken in the first winter. The herdsman selects for this purpose those that seem to be the least shy. Sometimes the Lamut reindeer submits the first time it is put into harness, while the Chukchee reindeer requires considerable time to be thoroughly broken. The reindeer like the taste of urine. For this reason, every Chukchee herdsman or reindeer-driver has tied to his belt or fastened to his sledge a small leather urine-vessel (Fig. 7), which he uses to attract the reindeer that he wishes to harness. When thoroughly tame, reindeer will come and drink

¹ Compare Slunin, I, p. 640.

from the hands of their masters. Reindeer that are to be trained for pack-

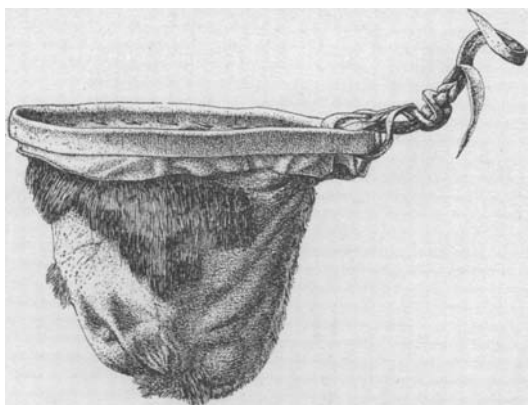


Fig. 7 (яѳѳѳ). Urine-Vessel. Height, 11 cm.

sledges are usually attached to the last little sledge of the line. On this sledge the tent-poles are carried, tied together, and the struggles of the reindeer can do no harm to the load. The sledge is attached to the preceding ones, which are hauled by trained animals. In a few days the young



Fig. 8 (яѳѳѳ а). Taming-Club. Length, 82 cm.

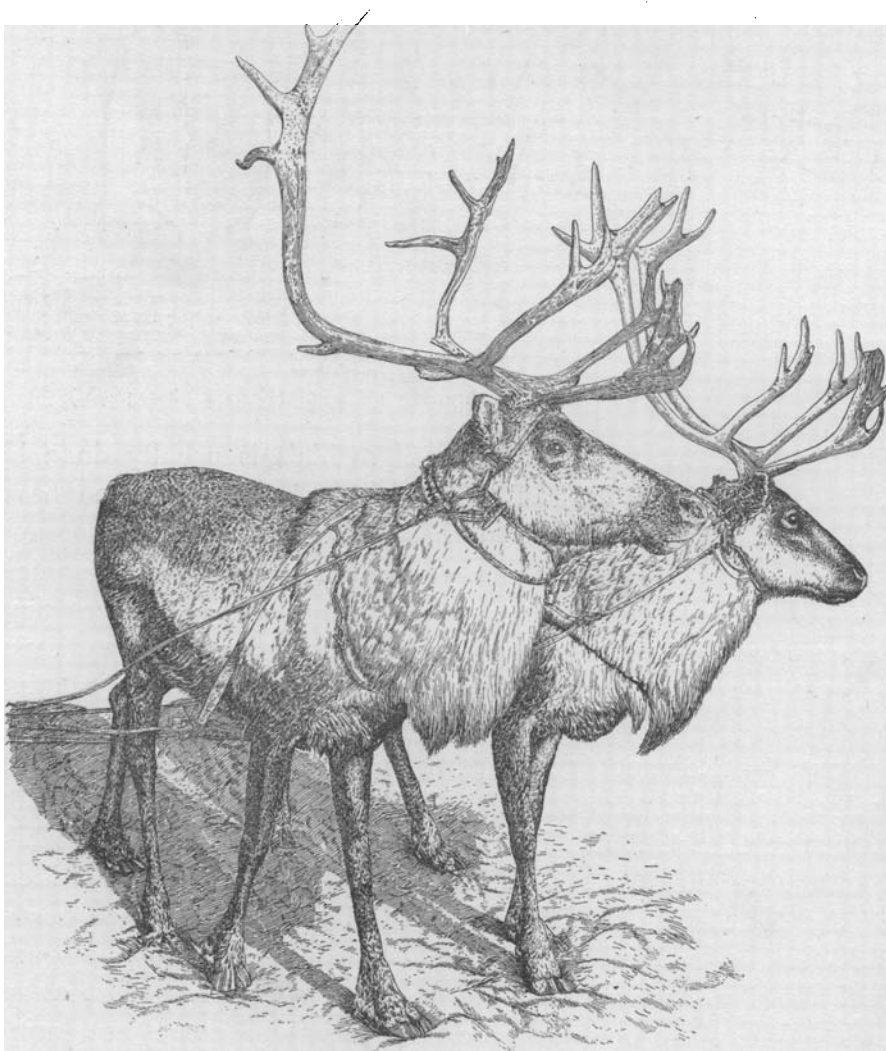


Fig. 9. Reindeer-Harness. (From a photograph.)

dragged several times behind the line, together with the sledge, learns to bear even with the rattling of the poles. Reindeer for driving-sledges are broken in by means of the čr'kil (Fig. 8), a heavy wooden club that is fastened to one of the reins or to the end of the halter. Whenever the reindeer wants to turn off the track, or even

to turn its head, the č'kil is violently jerked several times by the driver, causing the animal considerable pain. When the newly broken reindeer kicks too much, or, after pasturing, does not allow itself to be caught for harnessing, the herdsman will pull it for half an hour by one of its hind-legs by way of punishment. Reindeer are generally attached singly to the pack-sledge, and in pairs to the driving-sledge. Only a poor man will drive a single reindeer, and then for short distances only, because the reindeer would very soon be completely tired out.

The reindeer-harness is quite simple (Figs. 9, 10). It consists of a heavy strap four centimetres wide, which forms a bight, one end passing along the right side of the animal, the other end across the left shoulder and then between the fore-legs. I will call this bight the collar. The ends broaden, and a wooden toggle is inserted in a slit

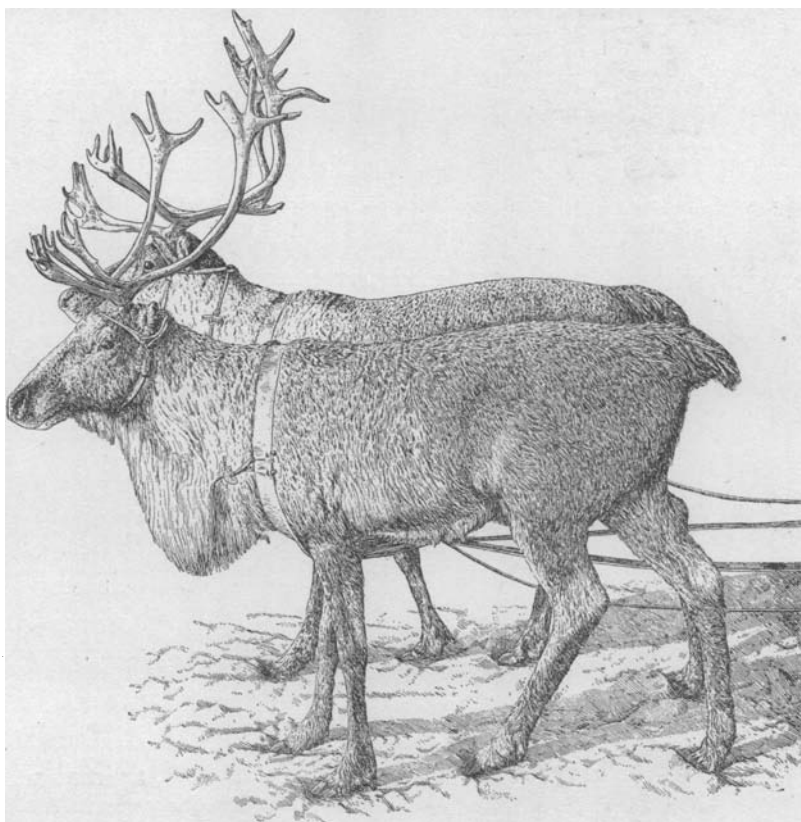


Fig. 10. Reindeer-Harness. (From a photograph.)

in each end (Fig. 11). Then both ends are passed through the eye of the trace. The harness-strap of the pack-reindeer sometimes has the middle part covered with soft skin, especially in the season of hair-shedding, when the skin of the reindeer is very sensitive and becomes sore easily. In winter little care need be given to the harness, since the reindeer does not perspire, and the harness is always dry and clean. Two thin strips of leather are fastened to each side of the collar. They reach around the chest, and are joined by means of a wooden toggle. Sometimes a stronger breastpiece is fastened in the same way.

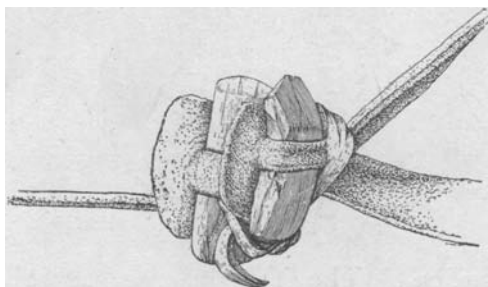


Fig. 11 (тѣло). Detail of Reindeer-Traces.
Length of toggle, 4 cm.

With the driving-reindeer the collar is slung over the left shoulder of both animals; and they have separate traces, which are fastened to the middle of the sledge-front (Fig. 12). The larger reindeer is usually placed on the right

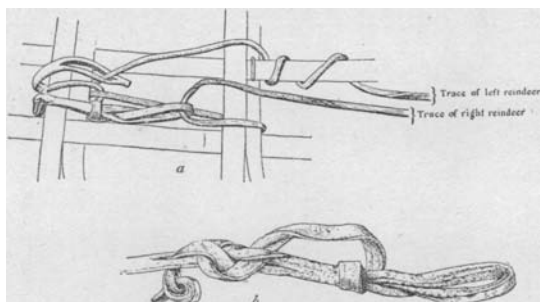


Fig. 12 ($\frac{10}{107}$): *a*, Attachment of Traces; *b*, Detail of Attachment of Right Trace.

side; and it does more work than the one on the left, especially in turning and changing the course. Two reins — one on the right-hand side and one between the reindeer — are fastened to a common halter (Fig. 13). They end with loops that are usually put around the mittened wrists of the driver.

The end of the right rein is strengthened by a thin piece of whalebone wound

around with thin thong, and sometimes supplied with rings of ivory or lead to give a better hold for the hand. Several sharp, notched attachments made of ivory, antler, or iron, serve in place of the bit (Fig. 14).¹ When the reins are pulled, these prick the animal. When one of a couple of driving-reindeer is inclined to jostle its companion off the track, a wooden implement with sharp antler prongs is fastened on the body of the latter to prick the restive animal whenever it gets too near (Fig. 15).

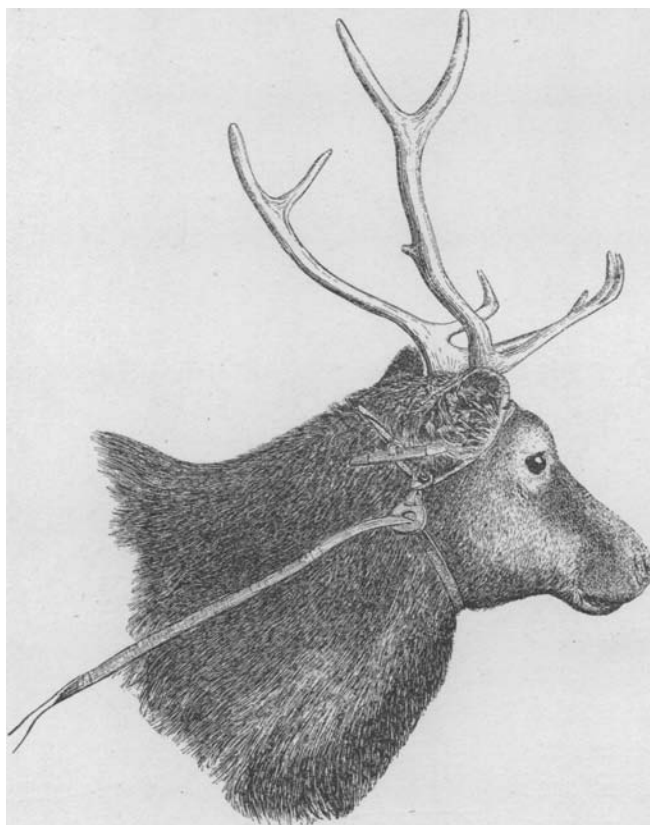


Fig. 13 ($\frac{10}{107}$). Reindeer-Halter.

Pack-reindeer are tied to the preceding sledge by means of a halter without notched clasps. Pack-reindeer do not walk without being thus attached.

Collars of about the same shape as those of the Chukchee are used by the Tungus, the Samoyeds, and even by the Laplanders. The Tungus reindeer-collar (used also by the Yakut and the Russian reindeer-drivers) passes along the left side of the left reindeer, and the right side of the right one. The trace is double, and for attachment is simply slung

¹ Compare Middendorff, p. 1275.

across the curved fore-part of the sledge, so that both reindeer are compelled to pull with equal force. Otherwise the traces of the weaker one would become shorter, and its hind-legs would be struck by the sledge.

The driving-harness of the Tungus has only one rein, and therefore is less handy. Their draught-reindeer are attached to the sledge in twos with the same double trace, and tied to the fore-sledge with two separate halters. A Chukchee pack-reindeer hauls from a hundred to a hundred and fifty pounds on the sledge; a pair of Tungus or Yakut pack-reindeer, from two hundred and fifty to four hundred pounds; and a Lamut saddle pack-reindeer, from forty to fifty pounds.

The whip is made of a long, thin, pliant rod of willow or birch, usually broken in one or two places and fastened together with sinew thread to give it greater pliability. It has a thick antler ring on the hand-end, and an ivory cap, usually made of a molar of the walrus, with one protruding, somewhat blunt end (Fig. 16, *a-c*). In experienced hands, this light and apparently inoffensive instrument can draw blood from the thick skin of the reindeer-buck, though generally the Chukchee do not strike their reindeer very hard. Maltreatment of reindeer or dogs is considered a great sin against Ya'gtač-va'irgin ("Life [giving] Being").¹ Occasionally a whip with shorter handle and thin thong is used (Fig. 16, *d*).

The details of the Koryak harness, whips, and sledges, are more or less similar to those of the Chukchee.

The Chukchee reindeer-sledge has double curved cross-ribs made of antler, or of strong boughs naturally curved. The fore-ends of the runners are joined to the upper rails, the whole forming a curve (Fig. 17, *b, d, f*), and the ribs are tied to the runners in shallow slots roughly hollowed out, but not

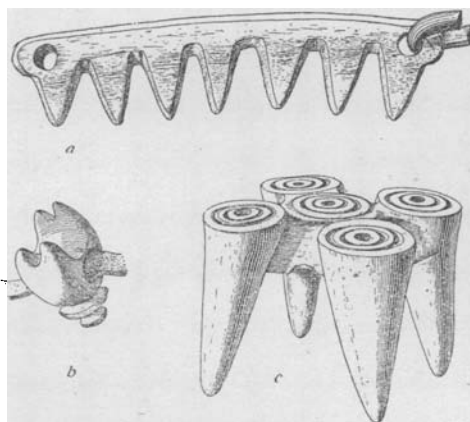


Fig. 14, *a-c* (нѣтъ). Ivory Spikes.
a, Length, 13 cm.; *b, c*, height, 1.75 cm., 5 cm.

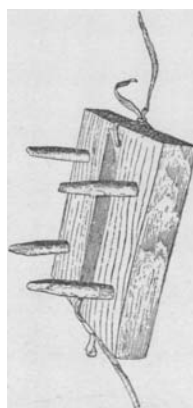


Fig. 15 (нѣтъ).
Implement to prevent
Reindeer from jostling
Each Other. Length,
12.5 cm.

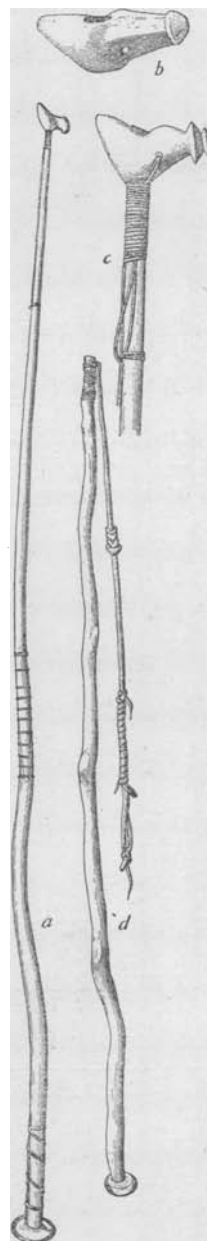


Fig. 16, *a* (нѣтъ),
b (нѣтъ), *c* (нѣтъ),
d (нѣтъ). Whips.
Total lengths, *a*,
122 cm.; *d*, 171 cm.

¹ See Chapter XII.

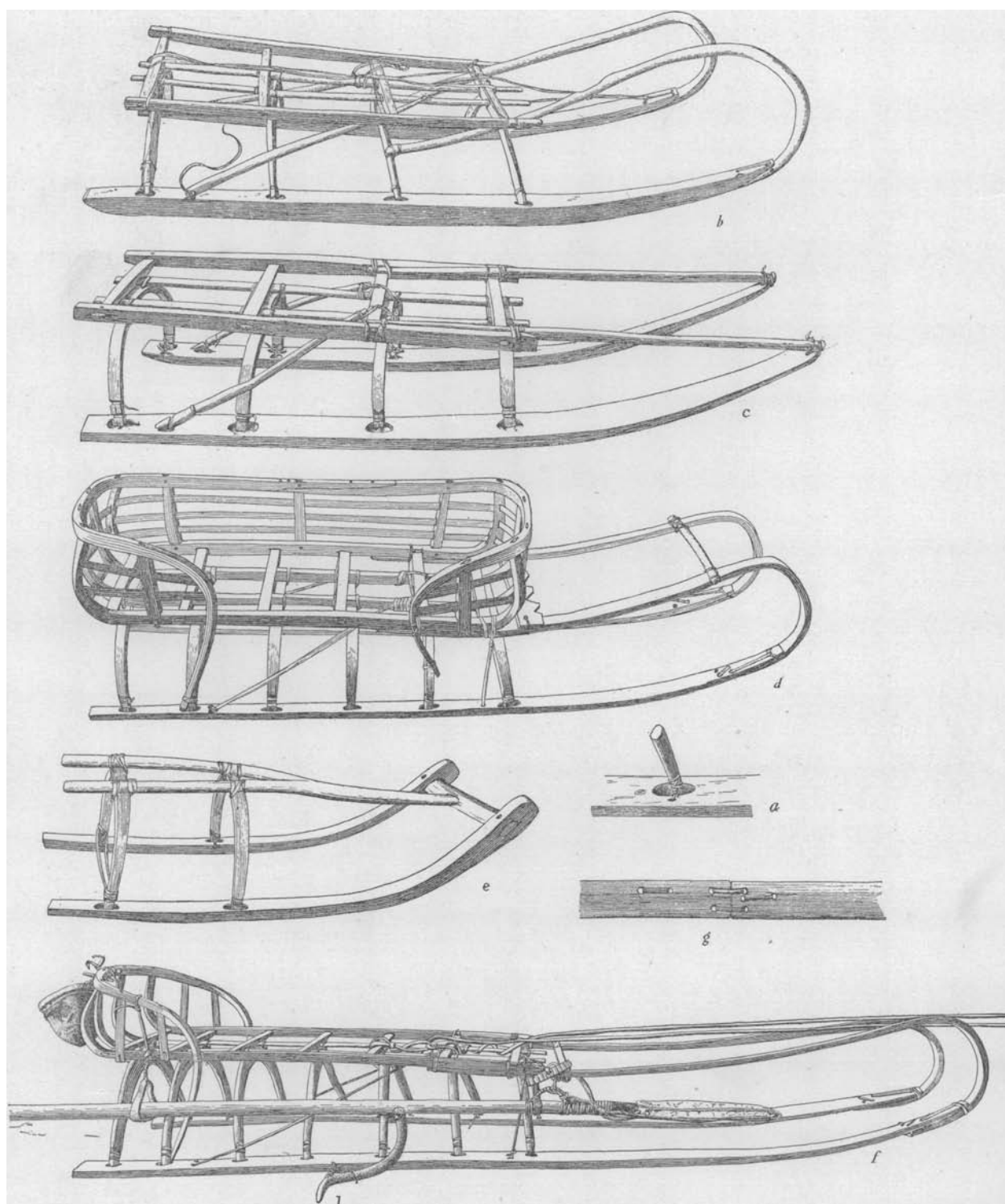


Fig. 17. Sledges.

a (ᑭᑭᑭᑭ), Detail of fastening rib to runner; *b* (ᑭᑭᑭᑭ), *c* (ᑭᑭᑭᑭ), *d* (ᑭᑭᑭᑭ), *e* (ᑭᑭᑭᑭ), Pack-sledges (from models); *f* (ᑭᑭᑭᑭ), Driving-sledge (length, 2 m.); *g*, Detail of shoeing.

exactly fitting the rib (Fig. 17, *a*). A hole is drilled through the upper edge of the slot on the inner side of the runner, and the line that fastens the rib passes through that hole. All joints are fastened together with thin, pliant thongs, which are drawn very tight, without any pegs or nails. The pack-sledge (Fig. 17, *b*) is made of larch-wood, and is of rude workmanship. The fore-ends of the rails are often straight, and tied to the runners in a very simple way (Fig. 17, *c*). The runners are thick; but the ribs frequently break or become unfastened under pressure. These sledges vary in size, according to their special loads. Those carrying the halves of the outer tent-cover are the largest; those for house utensils, kettles, etc., are supplied with a framework open on one side (Fig. 17, *d*); and the smallest ones, on which the poles are carried, often have a forked rail in the middle (Fig. 17, *e*). The tent-poles are attached to the arms of this fork. The driving-sledge (Fig. 17, *f*) is made of birch-wood, with thin, flat runners, curved ribs, and a frame of flat, slender sticks tied together with thongs. Often a hoop is fastened in the middle in an upright position, from which to suspend a bell. In the spring-time, when the birch runners do not glide so smoothly over the half-melted snow, they are shod with slabs of whalebone, or with several lengths of flat pieces of bone cut from the whale's jaw and joined together (Fig. 17, *g*). This shoeing is fastened with thongs, which are sunk into grooves in order to avoid friction against the snow, or simply with wooden pegs, or with a combination of both. Driving-sledges are not ungraceful in shape; but they are very brittle, and can be shattered to pieces by striking against any obstacle. They vary in form and dimension. The woman's sledge is usually larger than others, and has a wider and more comfortable seat. The usual measurements for the man's driving-sledge are: length, 180-200 cm.; distance between the runners, in the middle, 30-35 cm.; height in the middle, 24 cm. The measurements for the woman's driving-sledge are: length, 220-250 cm.; distance between the runners, 35-40 cm.; height, 25 cm. The racing-sledge, on the contrary, is so small, that the driver has hardly room to sit. Even the woman's sledge is so light, that a man can easily lift it with one hand and carry it on his back, not to speak of drawing it with a rope over the snow. The seats of driving-sledges, of whatever shape, are usually supplied with a low back.

A special sledge, larger and broader than any pack-sledge, has a square frame (Fig. 18, *a*) covered with skin, and is used for carrying small children when changing the abode in the cold season. The woman's driving-sledge is sometimes furnished with a small covered space on the back seat in which to carry her infant (Fig. 18, *b*, *c*). The coverings are usually adorned with a fringe of tassels, and are embroidered along the edges (see Plate XXI, Fig. 1). A large circular piece of embroidery (see Plate XXI, Figs. 2-4), called "sun" or "moon" according to its pattern, is also fastened on the back of the sledge.

A man or a woman riding a sledge usually sits astride of it, with a piece

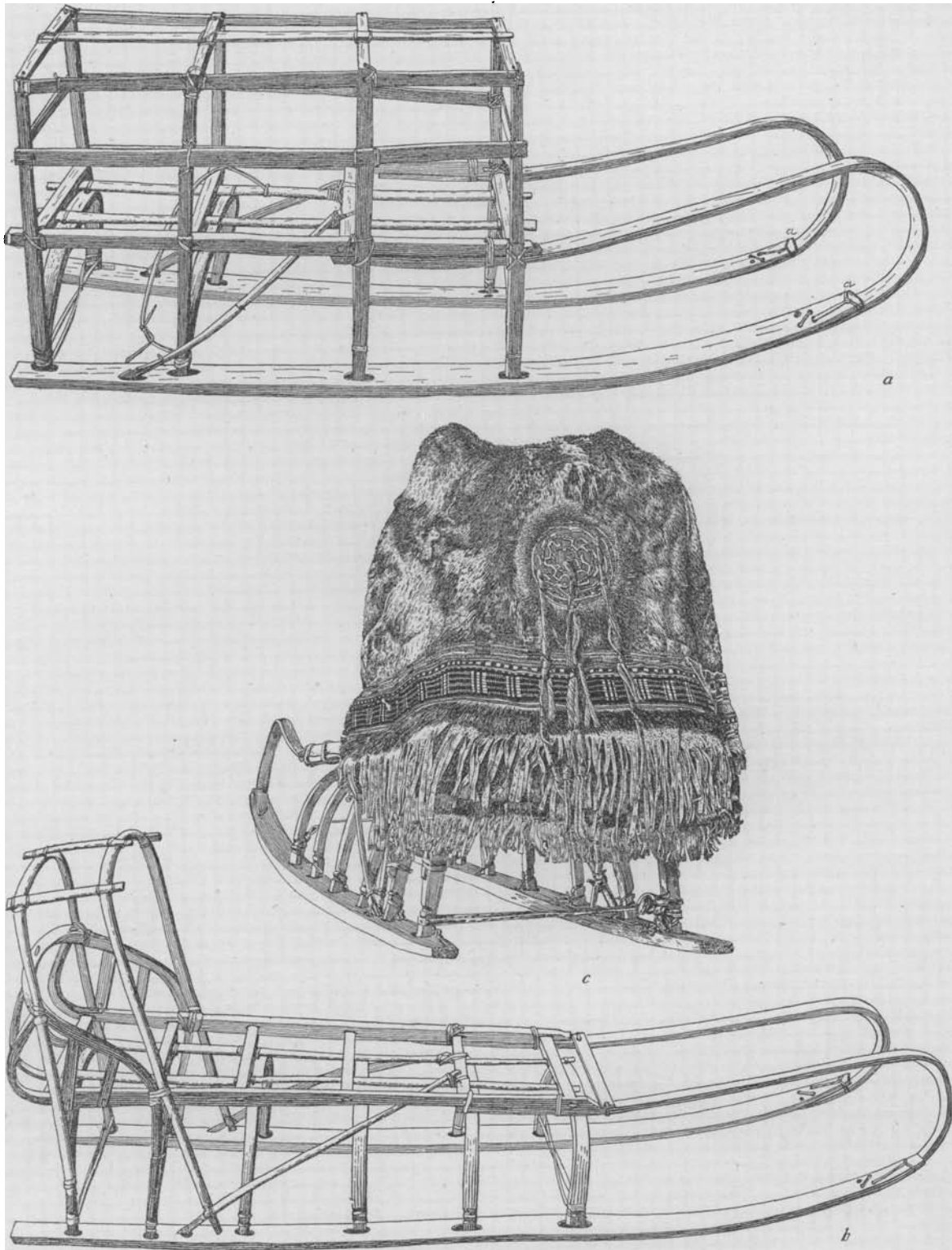


Fig. 18, *a* (ꞑꞑꞑꞑ), *b*, *c* (ꞑꞑꞑꞑ). Family Sledges. (From models.)

of skin for a seat-cushion, and with feet hanging down or resting on the runners (see Plate v.). Thus they easily direct their course with their feet, and avoid stumps, bowlders, and other obstacles. The same position is required by the dog-sledge of the Gilyak, and especially by that of the ancient Kamchadal (Fig. 19), that had also curved ribs, and, on the whole, was similar

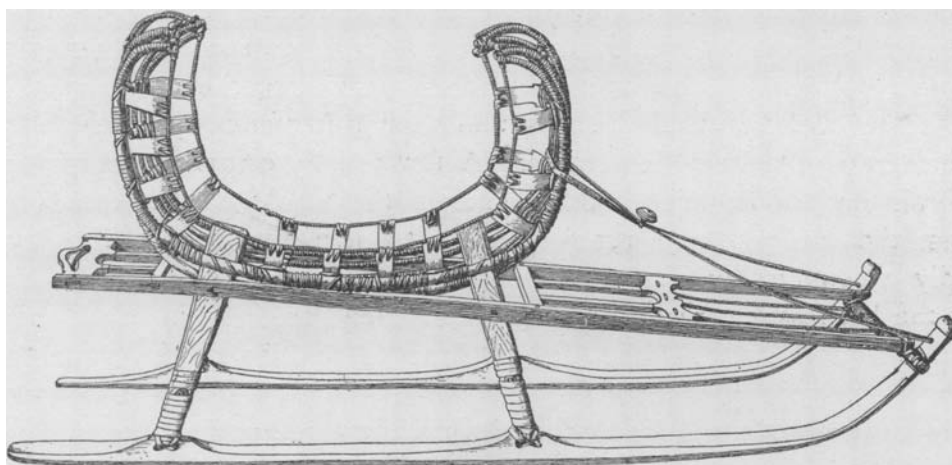


Fig. 19 ($\frac{110}{7042}$). Kamchadal Dog-Sledge. (From a model.)

to the reindeer driving-sledge of the Koryak and the Chukchee. When gliding down a slope, the driver generally uses his feet as a brake. In the spring, when the upper snow-crust becomes hard and slippery, a brake made of antler is used (see Fig. 17, *f*¹), that is loosely tied to the right runner, and, when required, firmly pressed with the foot against the snow.

The Chukchee driver, as a rule, does not carry anything on his sledge, for fear of fatiguing his reindeer. Even for a long journey he takes on his sledge only a lasso, a spear, an outer coat for protection against storms, and for provisions a cake of ground meat mixed with tallow, but no kettle and no cup. For subsistence he depends solely on the villages and camps along his route, or, if he fails to find these, he sleeps patiently on the snow without meals. For the most part, however, Chukchee journeys are undertaken with a train of from eight to ten sledges, a woman goes along to attend to it, and a few score reindeer drag it along.

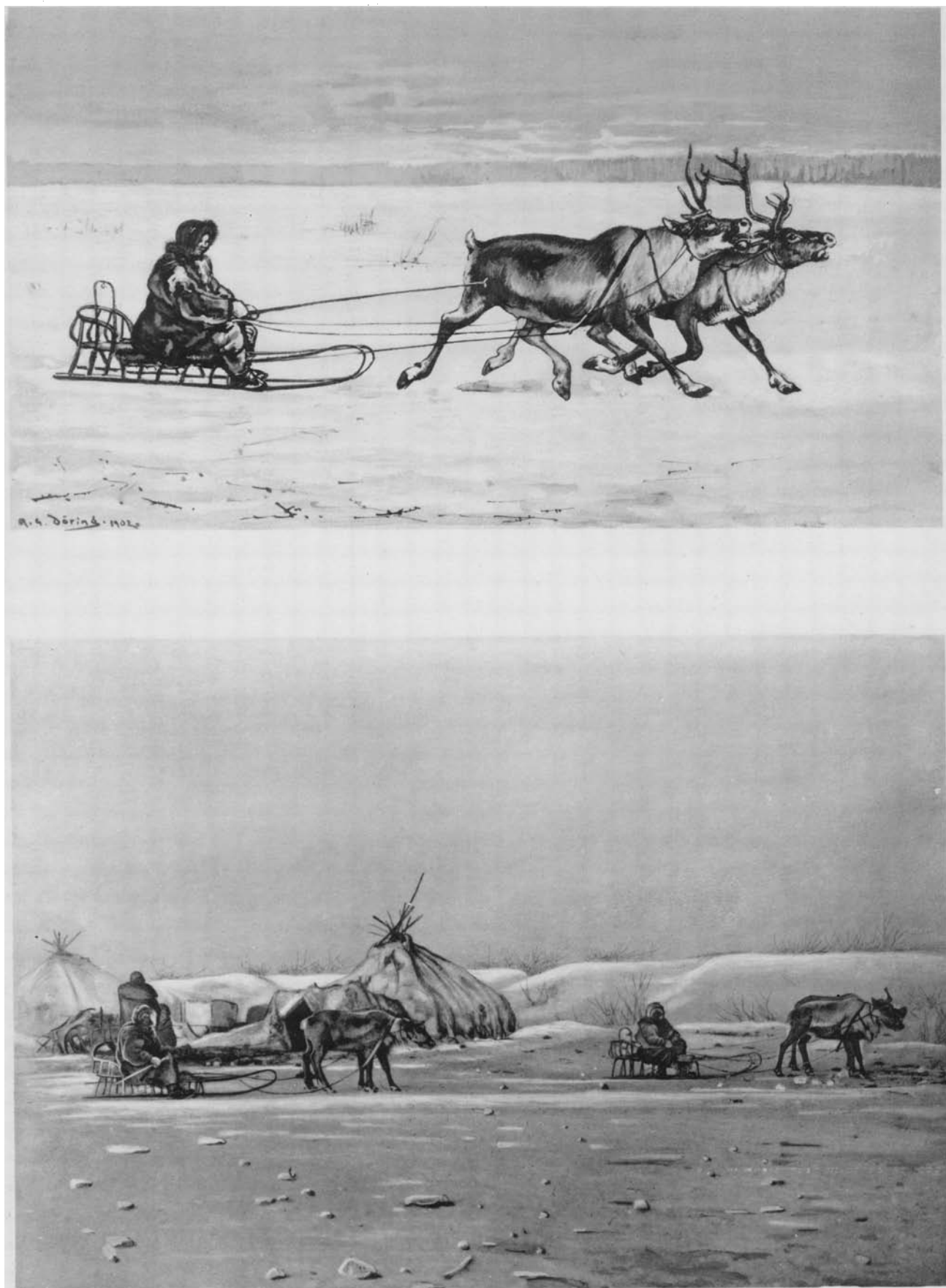
All pack-sledges have their definite place in the travelling-line, which begins with the woman leading it, and ends with the pole-sled. One woman can lead from ten to fifteen sledges; and a well-to-do house with a large family may have forty or even sixty sledges, which travel in from four to six separate lines. When starting, the sledges are packed early in the morning, and placed in the usual order. All the lines are joined together, forming a large corral (Plate IV, Fig. 2) in the shape of a horseshoe, into which the reindeer are driven. Most of the sledges are stood up one against another in a slanting position, and the corral is strengthened with sticks, shovels, large skins, etc.,

and watched in all the weaker parts by old women and children. The herds-men bring the herd, and first of all try to catch with their lassos, or by means of the urine-tube, about ten harness-reindeer, which are placed at the entrance of the corral; otherwise no free reindeer could be induced to enter it. Then they drive the herd to and fro before the corral, picking out one by one other harness-animals and driving them into the corral. The wildest ones are caught with the lasso, which is thrown over them, or spread like a snare on their track. When all the harness-reindeer are inside, the entrance is barred with a heavy rope, and all the men and women immediately enter and secure the reindeer with halters and traces. A few usually escape, breaking through the corral, or jumping it; and sometimes the whole pack succeed in overthrowing the sledges, and running away to join the herd. This happens especially when any of the unbroken breeding-bucks have entered the corral among the harness-reindeer. When all the animals are in their places, somebody gives the signal, and all the sledges drop to position at the same moment and start on, going in their respective lines. This difficult process requires the help of several people, and occupies usually three or four hours. A small family, living by chance in a separate camp, especially when lacking young, swift men, will sometimes fail to catch their own harness-animals for two or three days in succession. The Koryak and the Lamut harness-reindeer, on the other hand, are taken without any corral, by means of a long leather rope, which is drawn around the required animals (Plate VI, Fig. 2). All those not surrounded by the rope will come in of their own will. Many can be taken by hand. The whole operation takes not more than an hour.

Lieut. Polander,¹ as an eye-witness, describes one very docile Chukchee herd, about fifty head strong, that every morning came to greet their master. Then, at a signal of the master, the animals, which all the time stood in regular line, wheeled about and walked away to the pasture in the same unbroken order. I do not know the reason for this unusual docility. Possibly, since it happened early in the morning, the animals were attracted by the pieces of the large snow-clod, soaked with urine, that is carried out of the Chukchee tent every morning and eagerly consumed by the reindeer when near at hand. I can hardly imagine Chukchee reindeer, however, making turns at a given signal, "like the crew on a man-of-war," to use the words of Polander.

When driving a single sledge and stopping for the night in the open air, the Chukchee traveller cannot turn his reindeer loose, because they would probably go back to the herd, even if at a distance of forty or fifty miles, or because he would not be able to catch them in the morning. The reindeer are hobbled by means of a short noose tied loosely to one of the fore-feet of the animal, so that it keeps continually treading on it with the hind-feet.

¹ Nordenskiöld, II, pp. 17, 18.



Chukchee driving Reindeer.

The Chukchee.

Sometimes a medium-sized log, or a clumsy wooden implement similar in shape to a thick two-pronged fork, is tied to the animal's neck, though it hinders it from grazing properly. The reindeer, secured by the end of the lasso, are usually turned out to pasture for a short time daily; but at night the man who wants to pasture his animals well will sit up himself, holding the end of the rope in his hand, and now and then, while dozing, take a look at his reindeer; otherwise they would become entangled, and could not graze at all.

If well pastured and not overworked, reindeer are swift; and in two days a single driver often makes two hundred miles, provided the snow is thin and hard, as it usually is on the tundra. The lightest camp makes, on an average, twenty-five miles a day; and the large camp, from ten to fifteen miles, though often, especially early in the fall, not more than from three to five miles. When tired, the reindeer, especially the Chukchee reindeer, must be given immediate rest. If compelled to make further effort, it will become quite exhausted, and oftentimes drop dead on the spot. Therefore wealthy men are always on the look-out to acquire additional harness-reindeer, either for pack-sledges or for fast driving, that they may be able to relieve frequently those in use. The Chukchee saying is, however, "The poor man's reindeer are more enduring," compelled as they are to constant exercise. In the reindeer-races, the fresh, well-rested reindeer always win; and, to quote another saying, "All stakes are taken by the largest breeders."

ECONOMICAL VALUE OF REINDEER-BREEDING. — The possession of reindeer-herds makes the material life of the nomadic Chukchee more stable, especially when compared with the precarious subsistence of most of the fishing and seal-hunting tribes in his neighborhood, not excepting even the Russians and the Russianized natives. In the Kolyma district, where the white salmon does not come from the Arctic Sea in large numbers, and where wild reindeer are thinly scattered over a large wilderness, the Reindeer Chukchee, though in every other respect inferior to the fisher-folk of the river, play the most prominent part in the economic life of the country. The river people depend on them for skins and fur clothing; and every spring, when the fish-supply is exhausted and the usual famine is at hand, the river inhabitants, one by one, drive over the tundra with their dog-teams, carrying with them all the household things they can spare, to buy with them such animals as their half-wild nomadic friends will sell. Even the officials of the towns of Sredne-Kolymsk and Nishne-Kolymsk find themselves obliged to visit the wealthy camps, and urgently beg the reindeer-breeders to come nearer to the river with animals for slaughter, as otherwise the people of the town and the cossacks will be starved. The trade of the country at present is carried on chiefly with the produce of reindeer-breeding, such as fawn-skins, curried leather, etc. The costly peltries, before coming to the market, also pass through the hands of the wealthy reindeer-breeders, who buy them with slaughter-animals from the Tungus, Lamut,

and Yukaghir. At the fairs the numerous Russian dogs, as well as their masters, subsist solely on reindeer. At the Anui fair, for instance, there are killed in three days several hundred animals, besides which there are large supplies of meat, blood, and intestines, which have been stored in skin bags from summer time. The number of reindeer killed by the breeders for the benefit of their neighbors must be counted by thousands. Every small trader, when travelling with two or three dog-teams among the camps for barter, will want three reindeer daily for his three teams. I myself, when travelling with dogs among the Reindeer Chukchee, sometimes had to buy in one month, for dog-food, from fifty to sixty reindeer. Reindeer for slaughter are very cheap throughout the whole country. The highest famine price in Sredne-Kolymsk is eight rubles (four dollars) for a large buck. The usual barter price at fair-time for an average reindeer for food is one piece of brick-tea and one bundle of leaf-tobacco. The price of these two items together varies with the locality. It is a ruble and a half at Anadyr and Gishiga; three rubles at Sredne-Kolymsk; and four rubles at the Anui fair. Dog-food is much cheaper, especially in camps, where a young, not fat, buck is often bought with half a piece of brick-tea or a few leaves of tobacco. This peculiar dependency, however, in no way hinders every river inhabitant — from the well-to-do trader down to the poorest, half-starved dweller in the remotest Arctic hamlet — from striving to deceive and cheat in a hundred different ways the half-wild nomad, who cannot even count more than one or two scores.

According to Krasheninnikoff, the same relations have existed from very ancient times farther to the south, between the Maritime and the Reindeer Koryak. On the Anadyr River, which the red and pink salmon from the Pacific Ocean ascend in countless numbers, and which the wild reindeer twice cross in large herds, the Russianized fishermen are much more independent of the reindeer-breeders.

The relations between the Reindeer and the Maritime Chukchee are more complicated, since the breeders, though rich in reindeer, depend on the Maritime hunters for thongs, seal-skins, and especially for blubber and walrus-meat, which, as I said before, are considered the most palatable of the common diet. Moreover, the Maritime hunter is more daring, used to greater danger and to every kind of adventure, than the lonely herdsman living on the dull plain, always encumbered with his herd. However, a herdsman is considered to be much more amply equipped for life; and every year young men and whole families go from various Maritime villages to the Reindeer camps, often far inland. They settle as "dwelling-mates," marry into families of the Reindeer people, and gradually acquire a competency of their own. The Eskimo of the Pacific shore, some forty years ago, were, on the contrary, in a position inferior to that of the Reindeer people, notwithstanding their trading ability and their constant journeyings between the shores of Bering Strait. Even

their name, Ai'wan, was used among reindeer-breeders as an expression of contempt. With the coming of American whalers, however, Eskimo traders came into possession of so many things necessary or tempting to the Reindeer people, that they could no longer be despised. With their increased trading capacity, their demand for Chukchee reindeer is much greater than ever. Every fall the squadron of Indian Point skin boats and whale-boats returns from St. Lawrence Bay or from Holy Cross Bay, where the Reindeer people are numerous, deeply laden with skins and meat, part of which is bartered off to the Eskimo of St. Lawrence Island for whale-skin and blubber.

V. — DOG-BREEDING.

GROUPS OF DOG-BREEDING TRIBES. — The origin of dog-team driving is still more obscure than that of the domestication of the reindeer. In Asia there are three groups of dog-driving tribes, differing in their methods of harnessing, the shape of harness and sledge, etc. Those belonging to the first group, who inhabit northwestern Siberia, use a peculiar circular strap that girds the dog's body about the middle, like a belt, and without bands across the shoulders, so that the dog can pull only with the hind-part of its body (Fig. 20, *a*). This method of harnessing does not work well: the dogs do not draw as heavy loads as the East Siberian teams, and they go more slowly.

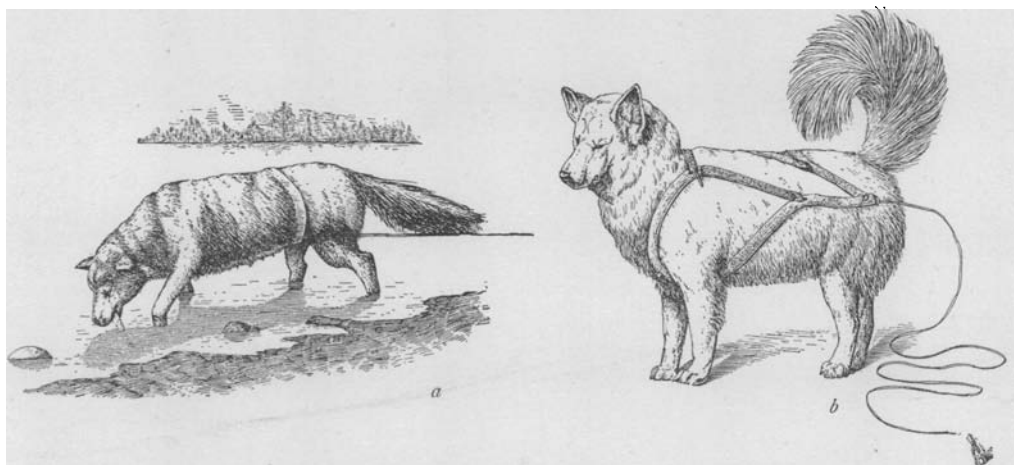


Fig. 20, *a*, Dog, showing Harness of Northwestern Siberia (from Nordenskiöld, I, p. 353);
b, Dog, showing Harness used by Asiatic Eskimo.

East of the Lena River, and as far south as the Amur, all fishing and seal-hunting tribes use dog-teams with uniform sledge and harness. The sledge has three or four pairs of stanchions and a circular fore-part.¹ The dogs are attached in pairs to a long, thick strap, in place of a whiffletree, with about a fathom's distance between the pairs; and a full team consists of six or seven pairs. The course is directed by the voice, with special call-words. These are understood and obeyed by the leading dog, which is trained specially for that purpose. The harness is somewhat similar to the ordinary horse-harness, with a breast-piece, and two or three bands across the back.

The third group of tribes — those of the Chukchee Peninsula — used,

¹ In the collections of the Smithsonian Institution, in Washington, I saw a sledge of the Alaskan Eskimo, which, curiously enough, is similar in shape to a Siberian form of sledge used by the Gilyaks of the Amur River. Its runners are bent upwards at both ends, and are joined by a horizontal bow similar to that at the front end of the Chukchee sledge (p. 105). The stanchions, too, are similar in shape, only their upper ends are bent inward and fastened to cross-pieces, in the usual Eskimo manner.



Fig. 1. Ceremonial Slaughtering.

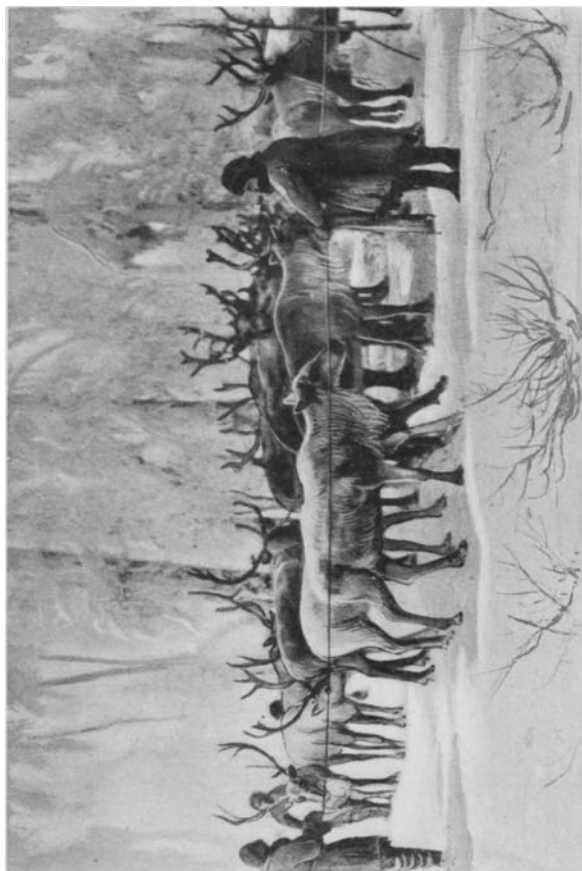


Fig. 2. Lamut catching Reindeer.



Fig. 3. Feeding Dogs with Dried Fish at Marinsky Post.



Fig. 4. Dog-Teams resting.

up to the middle of the last century, a sledge with curved ribs, similar to the reindeer-sledge, and a peculiar kind of harness (Fig. 20, *b*), identical with that used by the American Eskimo. They harnessed the dogs abreast in the same way as is done in North America. Since that time, however, they have entirely abandoned the old mode of dog-driving, and have adopted the southern form of sledge and the "tandem" method of attachment. Nelson¹ gives a sketch of a dog-sledge from Plover Bay, on the Siberian Pacific coast, which seems to me rather to be a reindeer-sledge, as it is too long and slender to be driven with dogs. It is somewhat strange that he did not see any other dog-sledge on the Siberian shore. Nordenskiöld,² too, gives a sketch of a dog-sledge similar to a reindeer pack-sledge. Of the native drawings reproduced in his book, one represents a man driving a similar sledge with three dogs harnessed abreast and a leader ahead; and another pictures a man driving an ordinary East Siberian dog-sledge with a tandem team. Lieut. Nordquist, in his Report given by Nordenskiöld,³ describes likewise the old method of dog-harnessing; but Nordenskiöld says elsewhere that it was used only for short trips, and that almost all drivers that passed along the coast on a prolonged journey had dogs attached tandem fashion. The old method of harnessing has gone entirely out of use; and I have never seen it employed in Maritime villages, though poor Reindeer people along the seacoast, when using dogs, sometimes attach them to a reindeer-sledge. Among the Asiatic Eskimo there are cases (for example, in the ceremonial races in the spring) in which the dogs are still attached in the old way (Plate VII, Fig. 1).

A model made in Mariinsky Post shows that the bone eyes at the ends of the long traces were strung on a line tied across the sledge in front of the first cross-piece joining the rails. This line is more or less similar to that of the Eskimo sledge described by Boas.⁴

I met with instances among the inland Yakut where ordinary house-dogs were attached singly to small sledges by means of a wooden shaft, or even with a small wooden yoke, in a manner similar to that used for harnessing bulls to wooden sledges. This method has no connection with that employed in the common dog driving-sledge adopted by the northern fishing Yakut on the Lena and Indighirka.

Perhaps in former times the methods of dog-driving among the first and second groups of tribes were not so different as they are at present. The ancient Kamchadal sledge, to which I referred in the preceding chapter, as has been said, was similar in shape to the Chukchee reindeer-sledge; and the

¹ Nelson, p. 208.

² Nordenskiöld, I, p. 453.

³ Ibid., p. 459.

⁴ Compare Central Eskimo, p. 533. The dog-sledge of the Eskimo group in the Anthropological Museum at Chicago has curved ribs made of antler, and in all its details belongs to the ancient Siberian type. It seems to me probable that this sledge is actually of Siberian provenience. I understand, however, that it is supposed to be characteristic of the Eskimo of Port Clarence in Alaska. It would be interesting to know to what extent sledges of this shape are or were manufactured by Eskimo on the American shore.

driver sat on it astride, with his feet hanging down. He used for a seat-cushion double bags of seal-skin, that were thrown across the sledge, and hung from each side like saddle-bags. It is curious to note, that even now, when another form of sledge has been universally adopted, the dog-driving people on the Kolyma and Gishiga Rivers still use these saddle-bags for carrying provisions, etc., though now a single bag would be more convenient. The dog-teams were not so large as they are now. Krasheninnikoff says that the average team was three pairs, while now it is twice as many. A two-pair team was also much used. The driver frequently walked before the team, especially in heavy snow, breaking the path with his snowshoes, and with voice and motion urging the team to follow. This is still done in Kamchatka, and the dogs follow obediently; while Kolyma dogs, should the driver go ahead of them, would take it as a suggestion to stop. The method of walking before the dogs, urging them to follow, is generally employed by Eskimo drivers. It is interesting to note that two terms relating to dog-driving, and used by the Russians in northeastern Siberia, — *kayu'r* for the driver, and *o'shtol* for the brake, — are both of Kamchadal origin. In Kamchadal the driver is called *ke'yux*; and the brake, *o'cxtlënañ*, from the verb *t-ocxta'l-ick* ("I work with a brake"). This is the more curious, as the Cossacks went to Kamchatka later than to the Kolyma and to Anadyr.

Among the Yukaghir of the Upper Kolyma, who are probably the most primitive of all the tribes concerned, only a few dogs are attached to a sledge. They are placed in tandem position, — not in pairs, but separately,¹ — three or four dogs forming a team. There is no leader; but the men and women, on snowshoes, walk on both sides of the team. By means of long straps placed around the shoulders they help the dogs draw the sledge, and direct their course. The same method of dog-driving was adopted by the Yukaghir of the Lower Kolyma, of both the Anuis, and of the Omolon, as early as the fifties of the last century.

DOMESTICATION OF THE DOG. — The domestication of the dog in northeastern Asia surely preceded by a considerable period of time its adoption for carrying-purposes. Lamut dogs, for instance, are now used exclusively for hunting-pursuits. They scent squirrels and sables in the woods, overtake elk and reindeer on the hard-crusting snow in the spring-time, and catch white and red foxes on the open plain. Notwithstanding their fleetness, they are not well fitted for driving, on account of their roaming disposition. On the other hand, some European dogs, bought by Kamchatka drivers from merchant-ships, prove to be well adapted for the harness, and are able to keep pace with the native team, at least for short distances.

It is an interesting fact, that, among all northern dog-driving tribes, stories

¹ In this the Yukaghir method of attaching dogs is similar to that of the Gilyak, as described by Schrenck (II, p. 172; and Plate xxxvi, Fig. 2).

are told of experiences in harnessing young wolves. One Russianized Yukaghir told me that his own grandfather tried to harness tame wolves, but that they proved useless. They were too shy, and would frequently lie down flat and allow themselves to be dragged by the team. Moreover, the amount of food required by them daily was three times as much as is needed by the dog. According to the belief of the Russianized natives of the Kolyma, the "forest-owner," a supernatural being,¹ drives, instead of dogs, foxes and wolves. Perhaps this belief accounts for the amplification of the above story.

Among the Chukchee and the Koryak the dog is also used for sacrifice, and even for food. The Maritime Koryak sacrifice so many dogs, that not enough are left for driving. The Reindeer Chukchee sacrifice both reindeer and dogs frequently, but the poorer people sacrifice principally dogs and puppies. Besides this, the Maritime Chukchee and the Eskimo use dogs for food in case of famine. In the winter of 1901, for instance, the Chukchee families of Mariinsky Post, at the mouth of the Anadyr, suffered greatly from famine, and ate nearly all their dogs. I know of cases where families of the Arctic shore have, in times of famine, eaten all their dogs. Even in times of plenty, some families occasionally kill a fat dog to feast on its head and intestines, although, on account of the jeers of Russian cossacks and American whalers, that taste has decreased rapidly, or at least its gratification is concealed from other people. However, when I wanted specimens of dog-skin, the natives who killed the animals for me were careful to take the meat home for their own private use. Sacrificed dogs are not generally eaten. The assertion of Nordenskiöld,² that the Chukchee do not eat dog-flesh even in times of need, evidently refers only to sacrificed dogs.

It is not necessary to speak of the races of the East Siberian team-dog, since all dogs are much alike in size and color. On an average, they are of the size of an ordinary shepherd-dog; rather smaller, however, than the dogs of the American Eskimo. Their appearance calls to mind the wolf; and the form of their heads, the jackal. They are shaggy, and have very thick, woolly tails, especially in the more exposed regions along the seacoast. Among the Yakut on the Upper Kolyma I have often met dogs of curious appearance, resembling that of the fox. They were undersized, with rather long bodies and furry tails. Their fur was red or reddish gray. These, however, were not team-dogs.

The most frequent colors of team-dogs are brindle wolf, black, white, black with white spots, white with black spots, red, and reddish yellow (the last two chiefly on the Pacific side); in southern Kamchatka they are sometimes white with gray or red spots.

The names of dogs among the Chukchee are derived chiefly from their colors; for instance, wute'l ("brindle wolf"), uwe'le ("black"), ê'lhar ("white

¹ See Chapter XII.

² Nordenskiöld, II, p. 96.

fox"), etc.; though other names have a different origin, for instance, *kei'ñin* ("bear"), *ve'le* ("raven"), *nene'n* ("infant"), *titi'ñi* ("needle"). Other names cannot be translated; for instance, *pappa'lhin*, which is given only to black dogs, and *eli'hiki*.

Dogs of the southern and western districts are considered the swiftest and the most enduring. Among the Russianized natives the large and shaggy dogs of the Indighirka River are especially valued; among the Kamchadal, those of the southwestern villages Yavina and Golyghina; and among the Koryak, those of the Poqa'č. The Chukchee dogs are considered the poorest of all, probably on account of their more scanty diet. Therefore the trade in live dogs between the Russian settlements in Anadyr and the Chukchee villages on the Pacific shore is of importance. A good dog can be bought with four or five white fox-skins, or two dogs with an American shotgun with accessories, etc.

Kamchadal, Koryak, and Russian dogs are fed exclusively on fish, — raw, dried, or frozen, according to the season or the locality (Plate VI, Fig. 3). The Kolyma Russians often cook for their dogs a kind of porridge made of putrid fish, roe, fish-bones, refuse of human food, etc., and serve it in long wooden trays; but this kind of food is convenient only at times of rest, since the dogs feel heavy with too much liquid food. The Chukchee dogs are fed on the intestines of seals, and on seal, walrus, and whale blubber. Their share of meat is small, and consists only of kitchen refuse, since their masters want all the meat proper for themselves. However, exclusive blubber diet is insufficient for dogs. In the summer-time, in the Chukchee villages of the Pacific coast, I saw large pieces of blubber strewn all over the ground; and the dogs prowling among them did not appear to be overfed. The natives said, that, whenever the dogs were satiated, they would desist from eating blubber for a long time. On the contrary, in the fishing villages of the Koryak or Kamchadal, at the same season, when food is scattered on the ground, the dogs grow so fat that they can hardly walk.¹

The continuous fluctuations of success in seal-hunting, and the frequent seasons of famine, have a deteriorating effect upon the Chukchee race of dogs; but fishing among the more southern tribes is much more regular. Chukchee dogs need something to season their blubber, and are generally inclined to eat up all the dry thongs they can get; they even gnaw at the lashings of sledges, and destroy their own harness and traces, much more than do the southern fish-fed dogs. On the contrary, the Russian fish-fed dogs thrive best when they are given blubber mixed with their dried fish. The dogs are fed once a day, usually in the evening, by some of the drivers immediately after stopping; while others prefer to wait until they have had three hours of rest. A piece of blubber measuring two inches each way, and some shreds of putrid walrus-meat or whale-skin, form the daily ration of every dog. During the

¹ As regards the poor quality of blubber diet for dogs, compare also Maydell, I, p. 570.

day's run, most drivers, when food is not scarce, give their dogs a piece of blubber by way of encouragement. The dogs can go several days without food, even on the journey. They will, of course, become very weak, and unable to carry heavy loads. When not at work, the dogs can subsist on very little. At the end of spring, when sledge-driving is over, the dogs are released for the summer, and are not fed at all, because the seal-catch is not abundant; then they live on such scraps as they can secure. During the entire summer, in certain localities, the dogs find their own subsistence. In the Kolyma country, for instance, they live on mice and spermophiles; on the southern shores of Bering Sea, on dead salmon, etc.

After the summer rest, the dogs, before being put into harness, have to be carefully tied up and kept for a day or two with very little food, or even without any, according to the amount of fat they have accumulated. Dogs harnessed too soon will be spoiled for the whole winter, being unable to endure long, fast runs. Dogs are harnessed in the first autumn of their lives, often when only two months old. Sometimes the female dog is attached in the front, and her whole litter of pups in the rear. In a few months, when the pups are quite grown, such a team will perform heavier and more uniform work than any other.

The females are good leaders; but, since they are weaker and smaller than the males, they are not good for drawing heavy loads. The males are gelded with an iron knife. The operation, contrary to that upon the reindeer, requires some skill, since the fat male dog will easily die from bleeding or inflammation. On the Kolyma, the operators assert that they can cause the animal operated on to assume afterward whatever pace they like, — trot, canter, or gallop. On the Pacific side there is no occasion for such assertion, because the dogs are not allowed to go at any swifter pace than a brisk trot. The Kamchadal and the Koryak crop the tails of their dogs, believing that this will increase their speed. Disobedient dogs often have their tails cropped on the road, and have to go till evening, the blood trickling all the while. The team-dogs serve till ten or twelve years old. After the sixth or seventh year they begin to decline. Contrary to what has been said of the Eskimo dog, the Asiatic harness-dogs are sullen, and care little about their masters. I myself had occasion to breed several generations of dogs under the ordinary conditions. Most of those that I gave away would not recognize me at all after a few months.

The same dog, however, when ungelded and rarely used in harness, is as merry and affectionate as any European dog, though perhaps more uncouth and boisterous in the display of feeling. The dog Mr. Jochelson brought with him from the Kolyma to St. Petersburg, though considered remarkably mild when in its own country, was a continual nuisance. It wanted to kill every domestic bird it happened to come across; it frightened the horses, and

had to be kept carefully tied all the time. The Siberian harness-dogs are more given to howling than barking. Their howl is long and whining, and ends with an occasional yelp. On winter nights the whole canine population of the village, often several hundred head strong, will raise a chorus that will last for half an hour, subsiding several times, and then breaking out again.

Of dog-diseases, the peculiar Arctic form of rabies occurs frequently, especially in the spring. I observed that it occurred most frequently after a long course on the open tundra; and, according to native ideas, it results from the action upon the brain of the excessive brightness of the snow, analogous to the spring snow-blindness of men. Dog-rabies, however, is not so bad in northern as in southern latitudes; and, though I have known of many men being bitten by a rabid dog, I have never heard of any bad results from the bite, but I have heard of some such cases with rabid wolves. However, any dog bitten by a rabid one will itself go mad, and sometimes, when the rabid dog is not killed in time, several teams will be greatly injured. On long journeys the drivers simply muzzle the rabid dogs at first, so that they cannot bite their companions; and they continue to drive them thus for two or three successive days, as I witnessed when travelling among the Chukchee between Anadyr and Indian Point in March, 1901. Dr. Slunin¹ asserts that animals bitten by a rabid dog are not infected. However, I had dogs in my own team perish from such cause. A dog suspected of being rabid is speedily made away with, for fear that it may bite some of its companions — except on long journeys, when the driver has to utilize the whole strength of his team. I would also mention a kind of palsy — a disease of northern dogs, that affects the head of the animal, and disables it for walking — and a kind of cramp that often precedes the palsy. Both diseases are contagious, and may destroy a whole team in twenty-four hours, since the animal generally dies with the first fit.

DOG-DRIVING. — The dog-sledge now in use in northeastern Siberia (Fig. 21) is long and narrow, and has three or four pairs of stanchions. The lower end of the stanchion is cut off square, except a rough peg which is left standing in the middle. The peg is inserted in a circular hole in the runner (Fig. 21, *b*). Each pair of stanchions is joined at half their height by a round stick, which is mortised into a circular hole in the stanchion. A thin, broad plank — or rather two planks laced together — rests on these sticks. Two rails are fastened on the upper ends of the stanchions, and are lashed to the boards with thong, which forms a kind of retaining-net all around the sledge. 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 (Fig. 21, *c*). Another vertical bow is fastened above the foremost stanchions; and the driver directs the course of the sledge, and prevents it from overturning, holding on

¹ Slunin, I, p. 628.

to the top of this bow with his left hand, while with his right hand he works a brake (Fig. 21, *a*¹). The length of the runners is 3-3.5 m.; breadth, 8 cm.;

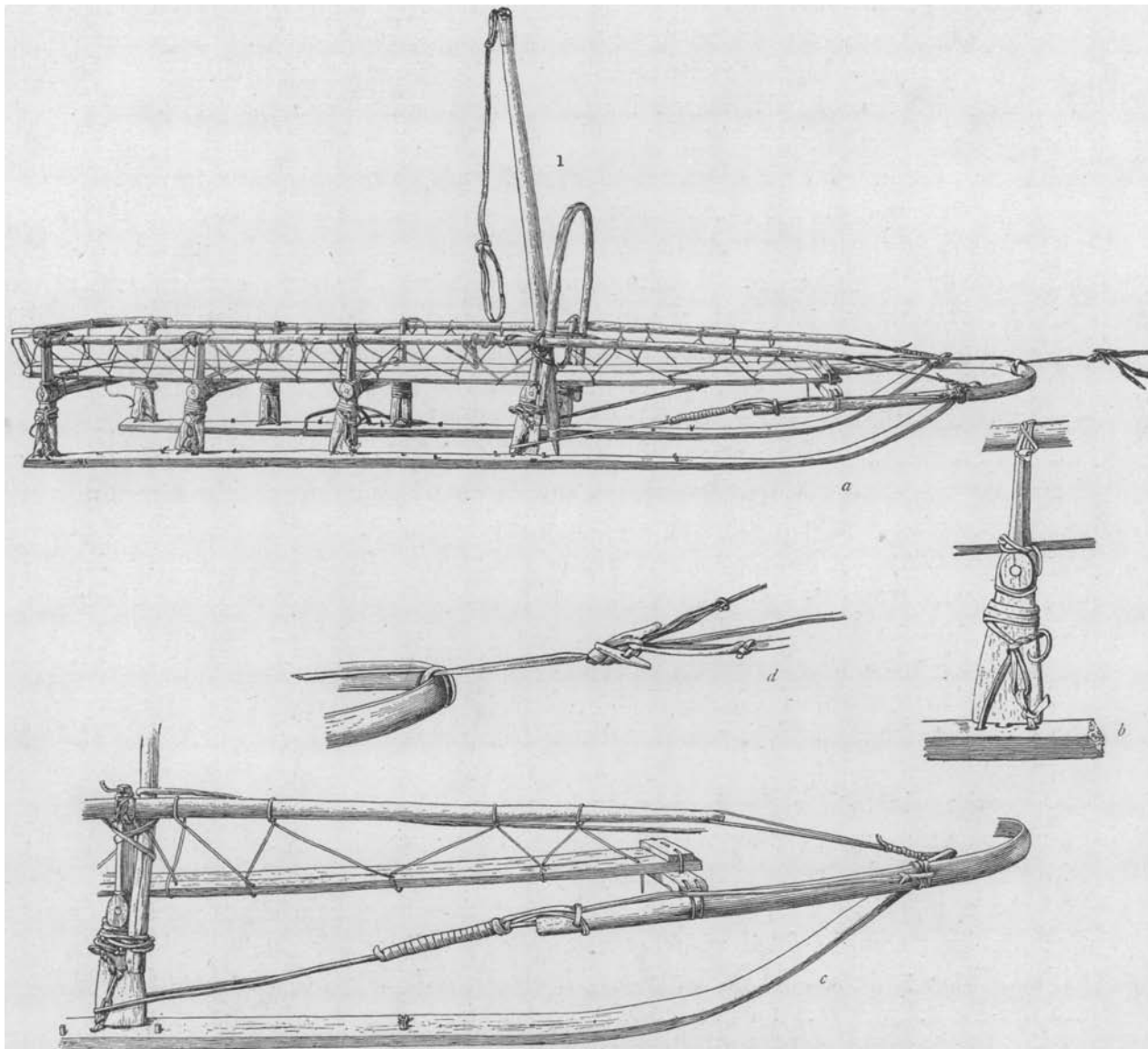


Fig. 21 (¹⁰/₃₀₁₇). Dog-Sledge, showing Methods of fastening Parts. Length 3.6 m.

thickness, 3 cm.; height of the standing bow, 120 cm.; height of the sledge when heavily laden, 1 m. All joints are fastened with strong, ingeniously twisted lashings (Fig. 21, *b*, *c*). The general shape of this sledge is, as has been said, identical with the Tungus reindeer-sledge, which, however, is shorter and clumsier. The latter has only three pairs of stanchions, and no standing bow in the middle. Its planks are broader, and the lashings are stiffer and ruder.

All parts of the dog-sledge, especially the runners, are made, if possible,

of birch-wood; but the Arctic Chukchee use also various kinds of driftwood, especially American pine, and even oak picked out from wreckage. On some parts of the Arctic shore driftwood is piled up in large masses (Plate VII, Fig. 2), sometimes covering an entire acre, and wreckage may be found everywhere among the wood. The Pacific people buy lumber from whalers, or even bring it themselves from St. Lawrence Island or the Alaskan shore in their boats. Birch runners are fit only for the cold season, and after the end of March will not run easily in the daytime, when the snow is damp and loose and all the sharp points of the ground protrude. The friction of birch-wood is so strong as to tire out the best dogs, and, besides, wear out the precious runners in a couple of weeks. In the Kolyma district and in the eastern Arctic villages, runners made from the outer layer of the larch, with twisted fibre (called in local Russian *крень*), are substituted for use in springtime. The material is obtained from the trees that grow on the mountain-slopes, and is much harder than the ordinary larchwood. In the damp weather of spring the drivers will sometimes smear the birch runners with oil, though it may spoil them for the winter; or they will tie a piece of blubber to the quirt, and every now and then, while going ahead, whip it across the track, to be passed over alternately by both runners, to make them more slippery. Much more frequently the runners are shod with whalebone, or with pieces of bone taken from the whale's jaw, sewed to the runner with sunken stitches (see Fig. 17, *g*) or fastened with wooden pegs. On the Chukchee Peninsula, drivers protect their wooden runners with bone shoeing throughout the winter, though it makes the sledge twice as heavy, and the bone does not run smoothly on the cold, crisp snow.

In the winter-time the birch runners are covered with a thin sheet of ice to make them run more smoothly. For this purpose they are well saturated with water in the early fall, usually by immersing them in a pool or small lake for a couple of weeks; or in winter, when the pools are frozen, by steaming them in long troughs filled with hot water or by frequently wetting the bottoms with boiling water. Only damp wood, well soaked with water, will hold the ice-sheet, which is formed by wetting the bottoms of the runners several times over by means of a small piece of skin. The colder the day, the hotter the water that is used for the process. Larch-wood holds the ice-sheet only for a short time, and bone hardly at all: therefore it is not subjected to the process. This method of covering the runners with ice is adopted by all the West Bering tribes. The people in South Kamchatka, however, on account of their damp winters with frequent thaws, do not employ it much. The Kolyma Yakut cover the runners of their reindeer and horse sledges also with ice.

Among the Maritime Chukchee and the Asiatic Eskimo there exists also a peculiar form of small sled, — not related to the usual Asiatic forms, but

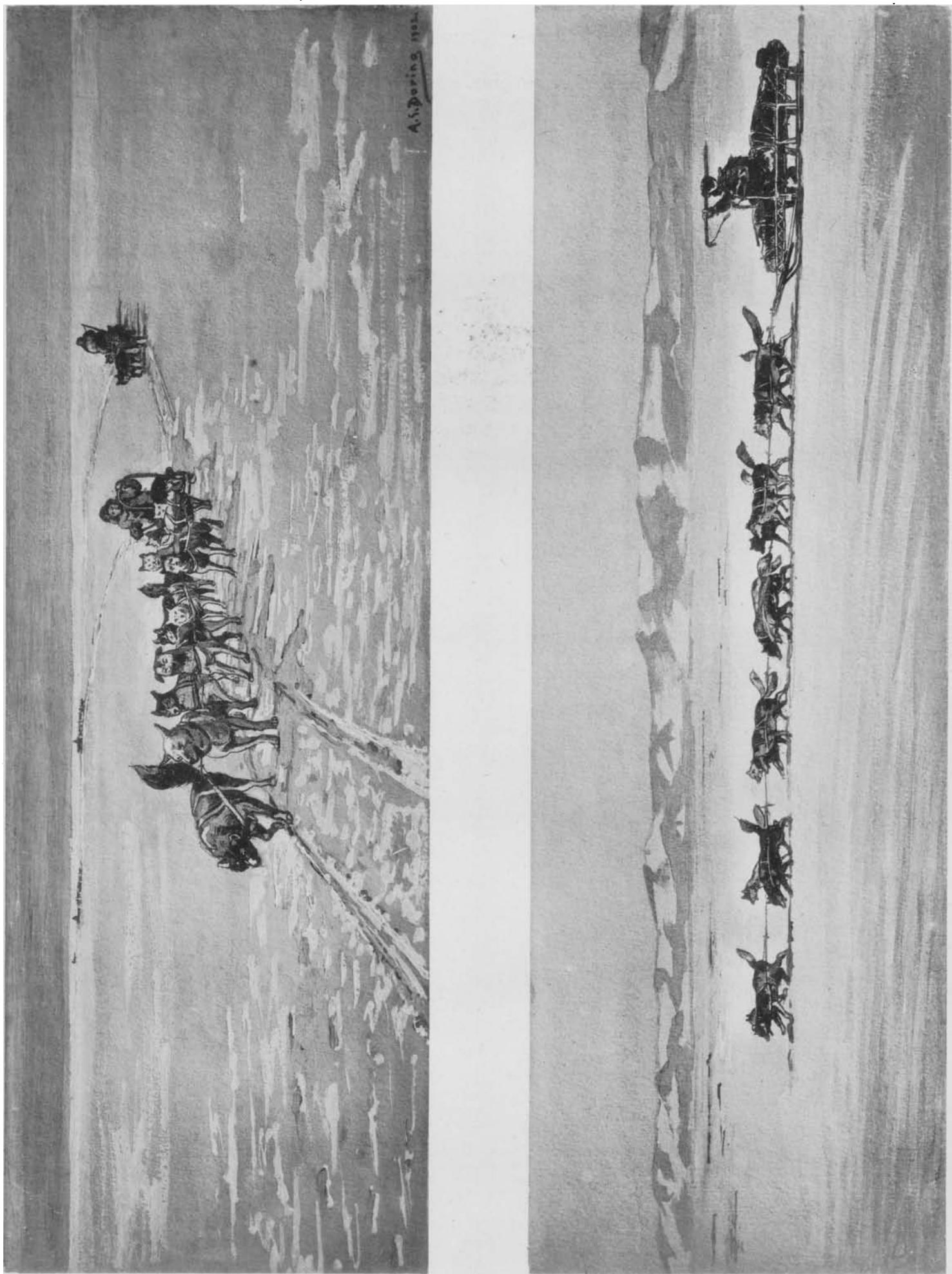


Fig. 1. Asiatic Eskimo Dog-Team of Former Times.



Fig. 2. Driftwood on the Tundra near the Mouth of the Kolyma River.

The Chukchee.



Chukchee Dog-Teams under Way.

The Chukchee.

quite similar to the small sledge of the Eskimo. It has runners made of walrus-tusks or of whale's ribs, also of wood shod with ivory or with bone of the whale.

Fig. 22, *a*, represents a sled from Mariinsky Post, which was used by hunters on the ice of the sea for carrying to the shore walrus-meat cut into square pieces. It is similar to one from St. Lawrence Island which is illustrated by Nelson.¹

Fig. 22, *b*, shows a sled from Indian Point, that is used for carrying skin boats. A wooden

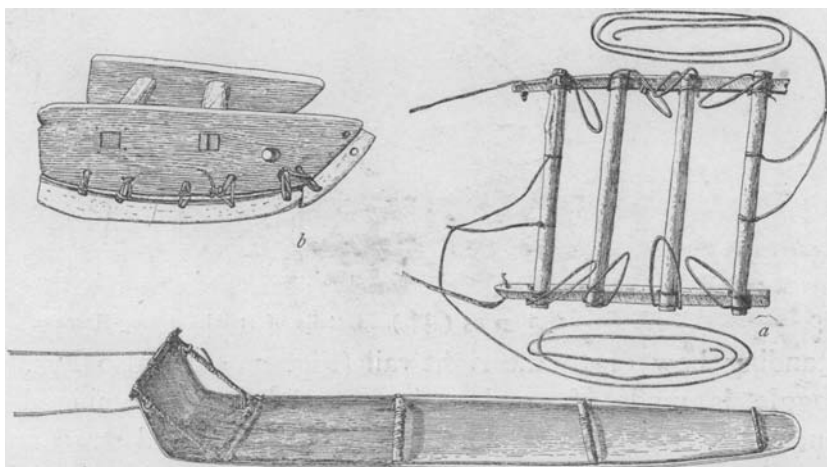


Fig. 22, *a* ($\frac{7}{16}$), Sled from Mariinsky Post (length, 45 cm.); *b* ($\frac{9}{16}$), Small Sled from Indian Point (length, 39 cm.); *c* ($\frac{9}{16}$), Toboggan from St. Lawrence Island (from a model).

sledge of a similar pattern is used by the Russianized natives of the Kolyma and the Anadyr for conveying tubs of water from the common "water-hole" of the village.

In former times a kind of toboggan made of whalebone was used for carrying meat over the ice, while at present the whalebone has too high a market value to be applied for any such purpose. The model in the collection (Fig. 22, *c*) is made of a single piece of whalebone, while the real toboggans had several slabs laced together side by side.

At the present time an ordinary dog-team has six or seven pairs of animals (Plate VIII, Figs. 1, 2; also Plate VI, Fig. 4). An odd dog is attached separately, generally at the rear end; or, if the central strap is too long for the number of dogs, two or three of them are attached separately. Chukchee drivers going on a long journey borrow from their friends and relatives as many dogs as they can, and thus have teams of from sixteen to eighteen dogs. Even double teams of more than twenty dogs are used; though this does not work well, because the foremost pair will hardly do their share of work, and the whole team will lack in unity. Moreover, a double train requires two drivers wherever the road is uneven, as on the hills and in the forests.

The strap serving as whiffletree (Fig. 23) is either made of one piece, or consists of two or three lengths of thong (*a*), each about a fathom long, joined together with bone or iron eyes (*b*). The ends of each piece of thong are slung through the eyes, and sewed together with thin leather or fastened

¹ Nelson, Plate LXXVI, Fig. 1, p. 208.

to them with toggles. The rear end is fastened to the shaft with a larger toggle (c), or simply twisted around the curved shaft and then tied to the

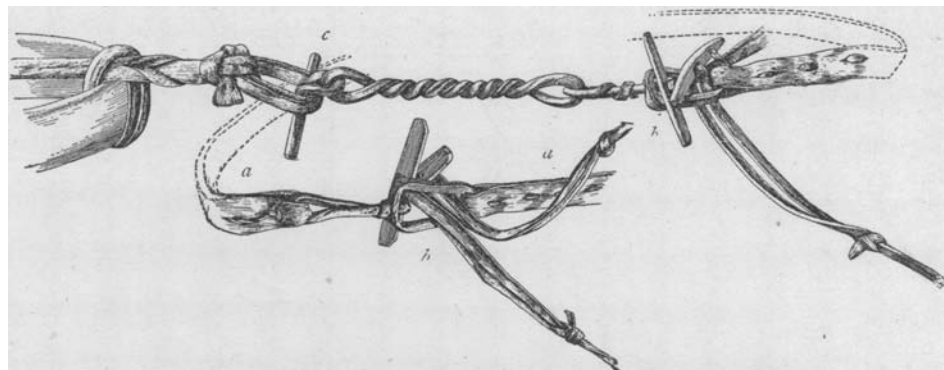


Fig. 23. (ᑭᑭᑭᑭ). Details of attaching Dog-Harness.

standing bow or to the right rail (Fig. 23; see also Fig. 21, a, b). The large toggle is made of wood or iron, and is often combined with a swivel which ends in a large eye. The rear end of the central strap and the first two traces are fastened to this eye. The rear end is thicker, and the strap gradually grows thinner toward the front end. If the strap is of one piece, loops are tied in it (Fig. 24) at distances of about a fathom. The toggles of the traces



Fig. 24. Method of tying Loops in Dog-Strap.

of each pair of dogs are fastened in one loop (Fig. 21, d). The attachment of the dog's traces to the harness is illustrated in Figs. 21 and 23. The dogs pull on the traces somewhat obliquely, so as to leave sufficient room between the animals belonging to the same pair for them to walk without jostling. The two lines of dogs generally follow in the tracks of the runners

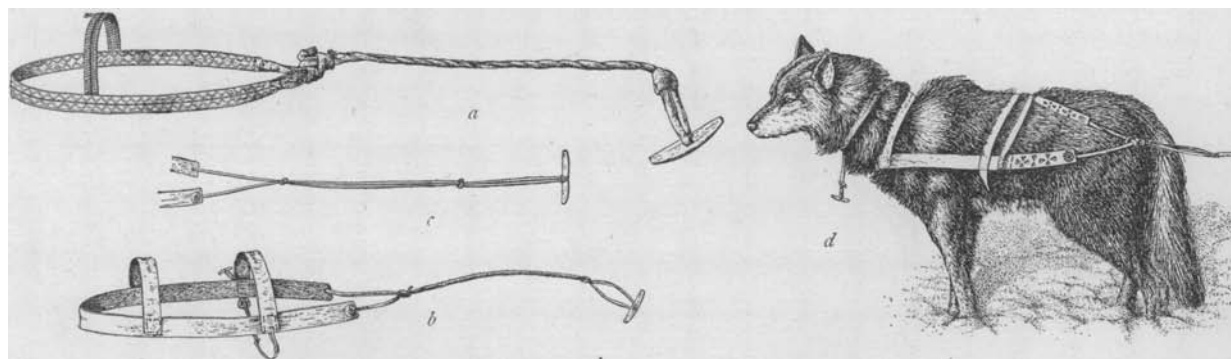


Fig. 25, a (ᑭᑭᑭᑭ) "Oblique" Dog-Harness; b, c (ᑭᑭᑭᑭ), Chukchee Dog-Harness; d, Dog, showing Best Style of Dog-Harness (from a photograph). Length, 117 cm.

of sledges that have preceded them. Thus on beaten trails an elevation is left between the two lines, which keeps the dogs apart.

The harness described above allows of variation. One form, the so-called

"oblique" harness (Fig. 25, *a*), is short, and has only one band across the back. With this harness the animal pulls in a quite oblique position, and its outer shoulder has to work harder than the inner one. This form of harness was introduced from the south. It is in use among the Amur tribes, as may be seen from the description and drawings by Schrenck.¹ It is also used everywhere in Kamchatka, and in the countries farther to the north it is therefore called the Kamchatka harness. The usual harness of northern type (Fig. 25, *b*) has two cross-bands and a single or double trace (Fig. 25, *c*). Those of the finest style even have a third narrow cross-band (Fig. 25, *d*).

Iron, bone, or ivory swivels (Fig. 26) are inserted in the traces to prevent their twisting around the whiffletree-strap. Well-trained dogs, however, are extremely careful not to get their traces tangled up with the central strap. Even when a young or badly trained dog is matched to an old one, the latter

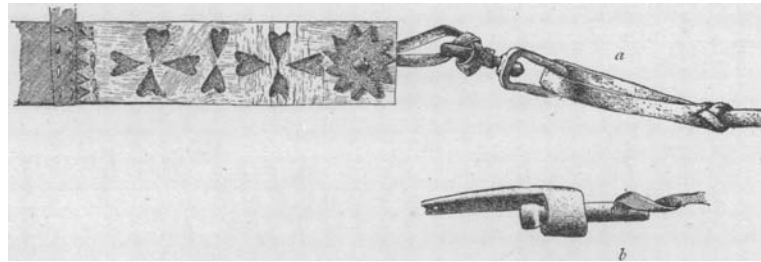


Fig. 26, *a* ($\frac{10}{17\frac{1}{2}}$ d), Ornament of Dog-harness with Iron Swivel;
b ($\frac{10}{17\frac{1}{2}}$), Bone Swivel. Length of swivels, 7 cm., 9.5 cm.

will actually prevent its companion from causing trouble, biting it severely every time it wants to leap across the strap. I had opportunity to see this many times while driving. Willy or disobedient dogs are attached nearer to the sledge, where they can be reached by the stick. Moreover, the nearer they are to the rear end, the more exertion is required, since the sledge, on every slight deviation from the track, gives the rear dogs a hard shake and a pull backward. Therefore strong animals, somewhat slow from age or from lack of mettle, are usually placed at the rear; and those that are younger and more brisk, in the front. Sometimes even the leader may be placed in the extreme rear by way of temporary punishment. While on the run, the driver changes the dogs' places from time to time, according to the change in their disposition and mettle.

The southern drivers cover their dog-harness with colored paint, and adorn it with red flannel and embroidery (Fig. 26, *a*). The Chukchee do not make such harness themselves, but gladly buy it from the Russianized natives of Anadyr. The Asiatic way of attaching dogs, when compared with North American methods, has its advantages for travel on land, especially in the woods, where the path is narrow and winding. With short traces fastened to a central strap, it is difficult for the animals to jump around any tree standing close to the road, as they would do with the long Eskimo traces. Even on the open tundra, the Asiatic method is more convenient, since the dogs do

¹ Schrenck, II, Plate xxxvi, Figs. 3, 4, 5.

not entangle the traces so much, and well-trained dogs not at all. On the contrary, for journeying on rugged ice, the American method must be much more convenient; and from personal experience I can confirm the opinion of Dr. Boas,¹ that the cross-lines of the Asiatic harness would make it very difficult, and even dangerous, to travel on rugged ice.

When bountifully fed, the dogs are quite unwearied, and can make long runs for twenty successive days with but two daily rests. Their feet, however, are very sensitive. Uneven ground with clods of hard snow, for instance; a moss pasture recently left by a reindeer-herd; or rough, bare ice in late spring, — will make their feet bleed, and rapidly disable them. Sore feet heal slowly, though a well-trained dog sometimes keeps pace with the team when all its feet are bleeding. Occasionally small boots of curried reindeer-skin (Fig. 27)



Fig. 27 (ᐅᐱᐱᐱ h). Dog's Boot of Curried Reindeer-Skin. Height, 13 cm.

are put on the sore feet, though many dogs cannot endure them, and will tear them off as soon as started on the journey. Frost-bites of the groins are still worse, since, even after recovery, the dog remains weak, and susceptible to cold. The drivers, when caught on the road by a severe tempest or even by a cold, contrary wind, protect the dogs with strips of soft skin tied around the groins (Fig. 28). The suckling females have square strips of skin tied over their bellies for the same purpose.

When resting for a night, the dogs are usually unharnessed, but are tied up with a halter. Sticks or pieces of horn about thirty centimetres long are fastened to the dog-collars. The ends of these sticks are tied by short lines to stakes or to the sledges. The sticks are long enough to prevent the dog from gnawing the thong fastenings at the other end. Iron chains bought from traders or made



Fig. 28 (ᐅᐱᐱᐱ i). Groin-Protector for Dog. Total length, 115 cm.

by the natives are also used. The dogs lie down immediately, hiding their noses in their bellies, and covering their heads with their large woolly tails, in the familiar attitude of all Arctic animals with large tails. In severe storms, however, the dogs are released altogether; otherwise, without freedom of motion, they would be in danger of being buried in the snow and stifled, especially when they are too tired to stand up every little while, and shake off the snow.

In the old method of Chukchee dog-driving, the course of the team was

¹ Boas, *Central Eskimo*, p. 537.

directed by means of a whip with a very long lash, that was made to snap either from the right or from the left, indicating to the leader to which side it was to turn. The urging call was "Ke, ke, ke!"¹ The stopping-signal was the slow and drawling "Hē!"¹ In the usual East Siberian method, the driver has only a short whip, which is used occasionally for punishing the slow and the disobedient animals. The team is directed chiefly by different calls and signals. According to the various localities and tribes, they are as follows: —

	<i>To the right!</i>	<i>To the left!</i>	<i>Go ahead!</i>	<i>Stop!</i>
Indighirka Russian and Yakut	Tara'x, tara'x, tara'x.	{ Tax, tax, <i>or</i> Taiñm, taiñm, tax, tax, tax.	Poša'.	Toy, to-oy.
Kolyma Russian	S'uta', s'uta'.	Nax, nax.	Poša; pod', pod'.	Toy, to-oy.
Anadyr Russian	S'uta', s'uta'.	Q!x!, q!x!.	Ho, ho, ho.	Toy, to-oy.
Kamchadal and Koryak,	S'uta', s'uta'.	Q!x!, q!x!.	Hu ⁸ y, hu ⁸ y.	□ñia. ²
Chukchee	Čuta', čuta', <i>or</i> Mra.	Q!x!, q!x!.	Ho, ho, ho.	Toy, to-oy.
Asiatic Eskimo	Ti, ti.	Q!x!, q!x!.	{ Qu, qu, <i>or</i> Añ, añ, <i>or</i> Tu'lla, tu'lla.	Toy, to-oy.

Of these calls, S'uta' or Čuta', Pod', pod', and Toy are of Russian origin. S'uta' (from suda [суда]) signifies "here." Pod', pod' (подь, подь) means "Go, go!" Toy (instead of Stoy [стой]) signifies "Stop!" Q!x! is probably an imitation of the raven's cry. Mra is the Chukchee word for "right." Qu, qu; Añ, añ; Tu'lla, tu'lla; — are identical with the urging calls of the Point Barrow Eskimo.

When running fast, the dogs are urged forward by whistling, shouting, or the utterance of various short words suitable to the occasion; such as, "He boys!" "Home, home!" "Goose!" "Reindeer!" When tired, the leader ceases to obey the driver or to understand his calls, and accordingly looks around more and more frequently.

The training of the leader is very simple. A swift and clever young dog, perhaps two years old, is placed as one of the front pair in the team, and in a couple of months begins to learn from its companion. Well-trained dogs, when turning aside, will cast a glance towards the driver to ascertain whether they are doing right. However, dogs that look around too often are considered to be badly trained, since this habit indicates either shyness or too much fear, and always impedes the pace of the team.

With a strange driver, the dog-team is wayward and very shy. For instance, if the leader knows that some turning of the road likely to be taken by the driver is ahead of it, it will accelerate its pace to the utmost, and try to pass before the word of command is given. A dog placed in a strange team feels shy, and often refuses to work, allowing its trace to slacken.

Siberian dog-driving requires the use of a special brake, which has the

¹ Phonetic spelling.

² The first sound is produced by drawing the set lips tightly in, and then quickly opening the mouth.

shape of a strong wooden stick (Fig. 21, a^1). In Kamchatka the brake is slightly curved, while that of other countries is straight. It has a bunch of jingling rings on one end, and a sharp iron spike on the other. A short strap is tied to the jingling end. The driver holds the brake with his right hand, and when required checks the motion of the sledge by thrusting the brake into the snow close in front of the first right stanchion. The brake is used to prevent the sledge from overturning or to raise it when overturned, to slacken the pace when the dogs go too fast, and, in connection with the word of command, to stop the team.

When a dog is disobedient on the way, the driver jingles the rings of the brake, or strikes the brake against the standing bow. Sometimes he throws it over the head of the animal, being careful, however, to hit it with the jingling end, because the spike would kill it outright. After the brake is thrown, the driver has to pick it up very quickly; otherwise the team might go ahead, leaving the driver on the road. When thus started, the team will

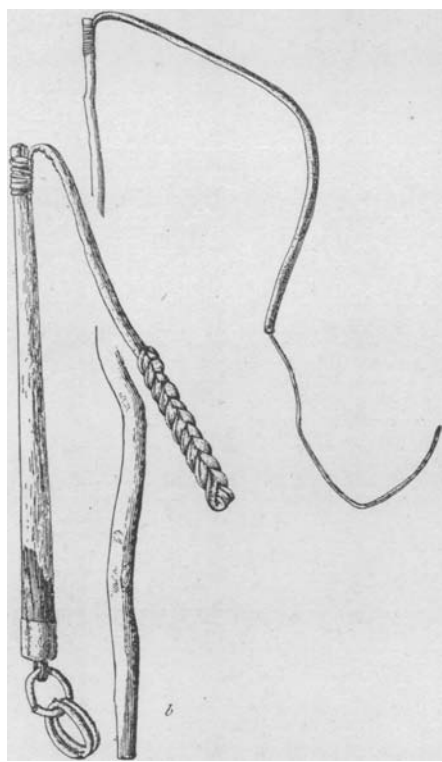


Fig. 29, a (Чукча), b (Эскимос). Dog-Whips. Length of Handles 45 cm.; 68 cm., Eskimo, Indian Point.

not stop until it reaches the next village, unless the sledge should be overturned. Drivers not over-confident tie the brake to the bow with a strap, and avoid throwing it at the dogs.

Besides the brake, the Chukchee drivers use a quirt with a short wooden handle and a thick twisted lash (Fig. 29, a). The handle has likewise a bunch of rings, and the driver uses the quirt instead of the brake for intimidating and punishing his animals. This quirt is probably a modification of the former long-lashed quirt of the Eskimo. A special whip is used for punishing dogs (Fig. 29, b). It has a longer handle and a lash with a very slender end, also similar to the end of the Eskimo quirt. Some of the dogs pull with such energy that foam flows from their mouth, their legs become strained, and they may die from over-exertion. This happens especially at the start-off, with a heavy load, and before the team is fairly under way. Other dogs are

lazy and shy, and will pull the trace just enough to tighten it; they will even lean their backs against the central strap for a while. Pups, when first harnessed, often pull too obliquely, or lie down and are pulled along with the team. To prevent this, their collar-straps are fastened with a thin line to the next loop-hole ahead.

The driving of East Siberian dogs is very fatiguing, and more like a race

than an ordinary run. Well-rested dogs become excited at sight of the harness, and it is difficult to hold them in till everything is ready.

From the start, they go very fast, and want to go at a faster pace than they can keep up afterward. Down hill their pace is quite dangerous, since the sledge behind is liable to hit them. The sledge — long, high, and narrow — overturns easily; and the driver, at any unevenness in the road, has to exert the utmost care to swing the sledge, now to the right and now to the left, and to support it by hanging down from one side or by standing on one of the runners. Of course a light sledge, although it goes faster, is easier to handle than a heavy one.

In short runs, dogs may be a little slower than the best reindeer or horses; but for long distances they excel any animal used for conveyance. I once had occasion to make, with a light sledge and good dogs, a hundred and fifty miles in twenty-three hours, and two hundred miles in two days.

Maydell mentions that in 1869, in a race between the merchant Baramigin and Chief Officer Anatovsky, on the Lower Kolyma, the dogs of the former made the distance between the Anui market-place and Nishne-Kolymsk (a hundred and fifty English miles) in fifteen hours, and the dogs of the latter in sixteen hours. While on the Kolyma I also heard of this race; and, in my opinion, the speed displayed on that occasion is the highest that Siberian dogs have been known to exhibit over long distances.

In the month of March and on a good trail, a strong well-rested team can make five hundred miles in ten days, and, after two days' rest, will continue with the same speed. In the winter of 1900-01 I made from four thousand to five thousand miles with dogs, changing from time to time those that had sore feet or were over-tired. In the spring, after a continuous drive of fourteen days, our dogs were so tired that they would lie down on the slightest provocation, and we had much trouble in rousing them from sleep after even a moment's stop. However, three dogs of mine were able to make the entire journey from the mouth of the Anadyr River to the middle of Kamchatka, up and down, and farther on to Indian Point, and still looked sleek and fat in the summer, after two weeks' rest. Progress with a few weak and half-starved dogs is exceedingly slow. The opinion of Nordenskiöld, that the Chukchee dogs show much endurance, but little speed, is evidently based on experience at a time of famine, when the teams were weak. I saw teams that were hardly able to drag an empty sledge, although the driver walked the whole time. The animals had been ill fed in the fall, and well-nigh starved in the spring.

A good Anadyr team of twelve dogs can carry from four to five hundred pounds,¹ besides a hundred pounds of their own food. Of course over a short distance a dog-team can haul much more than that. The Kamchatka

¹ According to the local way of measuring, two "horses" of freight. A "horse" of freight is the load of one pack-horse, which is about 6 pud; i. e., 240 Russian pounds, or 216 pounds Avoirdupois.

teams are stronger, though the mountainous roads of that country are more trying for the dogs than the level tundra. Chukchee teams are not as strong and well trained, nor are the drivers so skilful, as are the Koryak or the Kamchadal. Maydell asserts that on the Lower Kolyma a team of from twelve to fourteen dogs can haul a load of 60 puds (2160 pounds Avoirdupois), which would average about 154-180 pounds for each dog.¹ This is evidently a mistake, since even postal reindeer-teams often carry only 6 puds on each sledge, which makes 3 puds (108 pounds Avoirdupois) for each reindeer. The dog-drivers of the Kolyma allow for each dog (according to a local saying) "1 pud to carry, 1000 herrings to store" (i. e., for winter food). The "herrings" mentioned are, properly speaking, not herrings at all, but of the species *Coregonus albula*.

Middendorff says that on the Yenisei each dog is reckoned as able to carry not more than 100 Russian pounds' weight (90 pounds Avoirdupois). This is also too high an estimate, and seems improbable, since a few lines before he calls the system of attaching the dogs on the Yenisei undeveloped and full of defects.²

In dragging a heavily loaded sledge, the dogs take advantage of its impetus, for they can draw it along only at a rapid pace. When stopped, they cannot even start again without the help of the driver. When going up hill, the driver has to walk along and pull the sledge with his utmost strength, and at especially steep places he sometimes has to partially unload. Every five or six miles the dogs are given a rest of about five or ten minutes, after which they start again with renewed vigor. In the middle of the day there will be given a longer rest (Plate VI, Fig. 4), perhaps three-quarters of an hour, while the driver melts snow for drinking, and cooks food for himself.

While in harness, the dogs are perhaps still wilder than when at large. A wild reindeer, a hare, or the fresh smell of seal, is quite enough to lure them off the track, regardless of the driver. When passing by a reindeer-herd, the dog-driver may always calculate that the excited animals will carry him into the middle of the herd, and may even succeed in seizing a reindeer, notwithstanding the exertions of the driver to arrest the heavy sledge with the brake.

The dogs preserve their hunting qualities, even while in harness. A Chukchee driver, meeting a white fox on the tundra, will set free his fleetest dog in the hope of good luck. However, hunters say that the speed and acuteness of the dog for hunting are spoiled by the harness, since its back grows stiff. The Kamchadal hunters, when tracking a bear in late spring, sometimes let the team overtake the bear, and, while the struggle is going on, wait their chance for a sure shot. The bear has no advantage in this struggle, and often is so entangled with straps and traces as to become quite helpless. The keen-scented dog, able to find the seal-hole for the hunter, may also be found among the team-dogs.

¹ Maydell, I, p. 170.

² Middendorff, pp. 1297, 1298.

VI. — HUNTING AND FISHING; WAR.

HUNTING AND FISHING.

SEAL-HUNTING. — The Maritime Chukchee support themselves almost exclusively by hunting sea-mammals, the most important among which are the following species of seal: *Phoca hispida* (English, "ringed or rough seal;" Russian Siberian, *акипка*; Chukchee, *mê'mêl*), *Phoca ochotensis macrodens*¹ (Russian Siberian, *ларга*; Chukchee, *keli'lin* ["the spotted one"]), *Histiophoca fasciata* (English, "ribbon-seal;" Russian Siberian, *крылатая нерпа* [winged seal]; Chukchee, *ve'hil-keli'lin*), and *Erignathus barbatus* (English, "ground-seal" or "thong-seal;" Russian Siberian, *лахтакъ*; Chukchee, *u'nel*).

The seals are killed with harpoons, shot with fire-arms, or caught in nets, according to their mode of life in the different seasons. The varieties of harpoons used by the Chukchee in seal-hunting differ mainly in the length of the shaft and the size of the point. Short, light harpoons are used chiefly in winter in killing the animals through their blow-holes. Long-shafted harpoons are used in spring to stalk the animals on the smooth ice, and also during the summer on the open water. Now, however, this latter style of harpoon has been almost superseded by the gun in this kind of hunting. The form of the head is more or less uniform, while there are two different ways of attaching the head to the shaft, the method being the same for short as for long harpoons. The head of the Chukchee harpoon is cut out of bone, ivory, or antler. It is from three to four inches long, and has a piece of iron inserted in a slit at the top. I obtained one harpoon-head the body of which is made of brass, with the usual slit for inserting the iron piece. Two varieties of blade are used. One, found chiefly in the smaller heads, has a lanceolate form, with lower ends curved and filed off almost close to the body of the head (Fig. 30, *a*); the other form is broader, with lower ends protruding on both sides in sharp, cutting angles (Fig. 30, *b*). These two styles of blade correspond probably to two distinct forms of stone or slate harpoon-points, which were used before the iron ones (Fig. 31). The iron blade is firmly fastened into its slit with a wooden, bone, or iron peg.

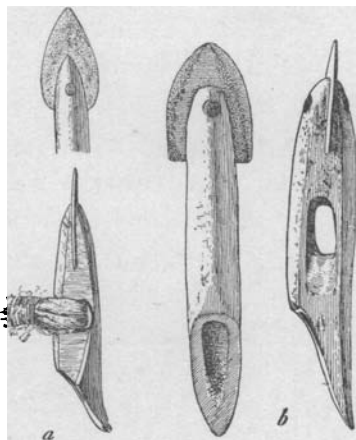


Fig. 30, *a* (710/11), *b* (711/12). Iron Harpoon-Heads. Length, 7 cm., 10.5 cm.

¹ Similar, on account of its spotted skin, to the "harbor-seal," but identified by Professor Allen as a new sub-species of *Phoca ochotensis* of Pallas.

The usual hole for the line is, for the most part, parallel to the plane of the blade. The same two types occur among the Eskimo.



Fig. 31, *a* (1888), *b* (1888). Ancient Harpoon-Heads of Stone. Length, 8 cm., 5 cm. Eskimo, Wute'en.

I brought a number of harpoon-points from the Olutora and Kamchatka Koryak and northern Kamchadal, which present considerable variety in material and shape (Fig. 32). Some of the points resemble those of the Chukchee, although the hole is more frequently at right angles to the blade (Fig. 32, *a*). Others are made of a single piece (Fig. 32, *c*), bone or iron, with one, two, or several barbs (Fig. 32, *d-h*), which prevent their slipping out of the wound. Still another form (Fig. 32, *i*) has a round body. It is tipped with copper; and in the middle is a circular, scalloped notch, which acts as a combination of barbs. The Kamchadal seal-hunters consider this the most effective of all, since the slender, somewhat rounded point enters the flesh easily, and the circular notch immediately tightens its hold under the skin. Specimens found on ancient Chukchee and Eskimo village sites (Fig. 33) present, besides the usual type, also the barbed variety, made of a single piece of bone or antler. Some of the latter seem to have been worked with stone tools (Fig. 33, *a*, *b*).

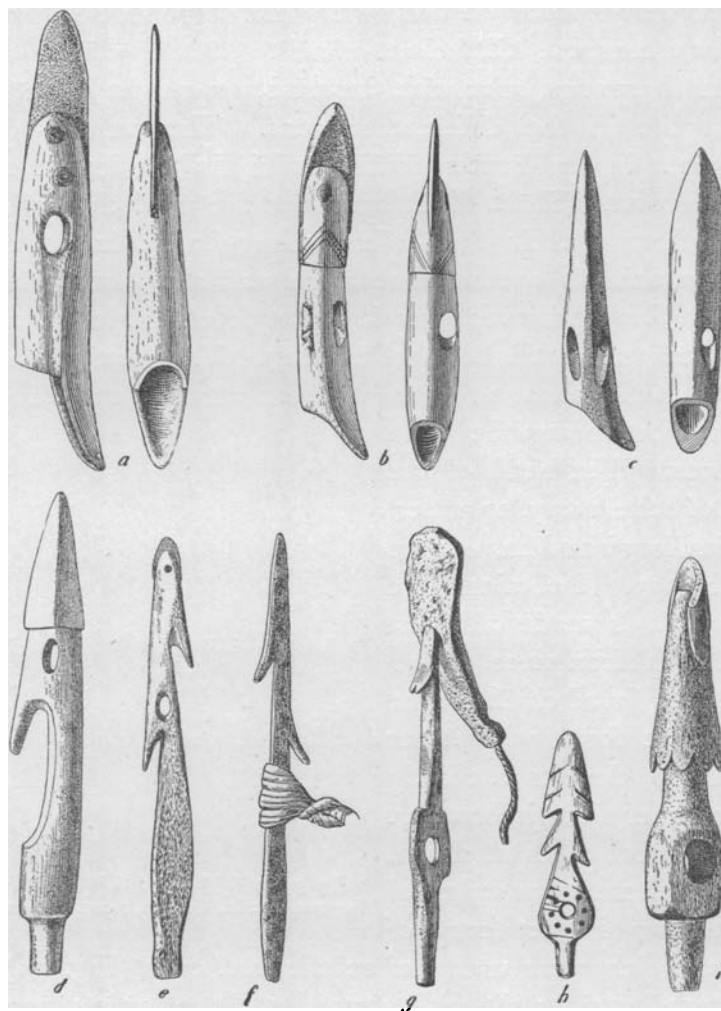


Fig. 32. Harpoon-Heads. $\frac{1}{2}$ nat. size. Koryak and Kamchadal. *a*, *c*, *f*, *h*, from Lesna; *b*, *d*, *e*, Pallan; *g*, Baron Korff's Bay; *i*, Kavran. *a*, 1887; *b*, 1888; *c*, 1888; *d*, 1887; *e*, 1888; *f*, 1888; *g*, 1888; *h*, 1888; *i*, 1888.

Of all the contrivances employed by the Eskimo in maritime hunting, the detachable harpoon-head is most widely employed on the Asiatic shore. Its use extends even as far as the Amur

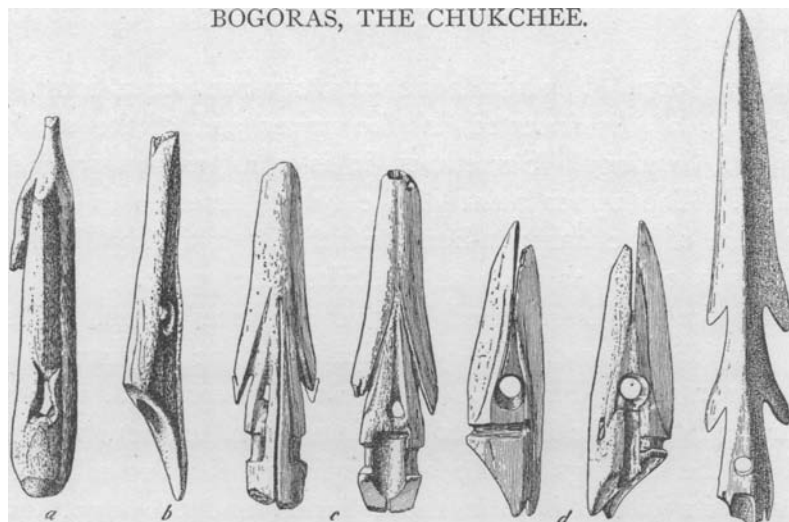


Fig. 33. Ancient Harpoon-Heads. $\frac{1}{2}$ nat. size. Eskimo.
a-d, from Wute'en; *e*, from Eu'nmun. *a*, $\frac{60}{3576}$; *b*, $\frac{60}{4112}$; *c*, $\frac{60}{3577}$; *d*, $\frac{60}{4119}$; *e*, $\frac{60}{3811}$.

country. The skin boat used extensively by the Chukchee and the Koryak is quite unknown to the Kamchadal, although all three tribes undoubtedly belong to the same stock.

A strong piece of thong or sinew, about fifty centimetres long, is passed through the hole of the Chukchee harpoon-point. The two ends of the thong are tied together, so that it forms a loop (Fig. 34, *a*¹), and the sides of the loop are sewed or tied together very near to the hole (Fig. 34, *a*²). The lower end of the loop is fastened to a long line (Fig. 34, *b*¹), which, for the most part, is free from the shaft. The body of the line is wound into a coil, sometimes held together by a few thin threads of damp sinew twisted around it, which will easily come off when desired (Fig. 34, *b*³). Sometimes the line is fastened to the lower end of the shaft with a similar twisting, which is undone by the first violent pull of the game. The end of the line is usu-

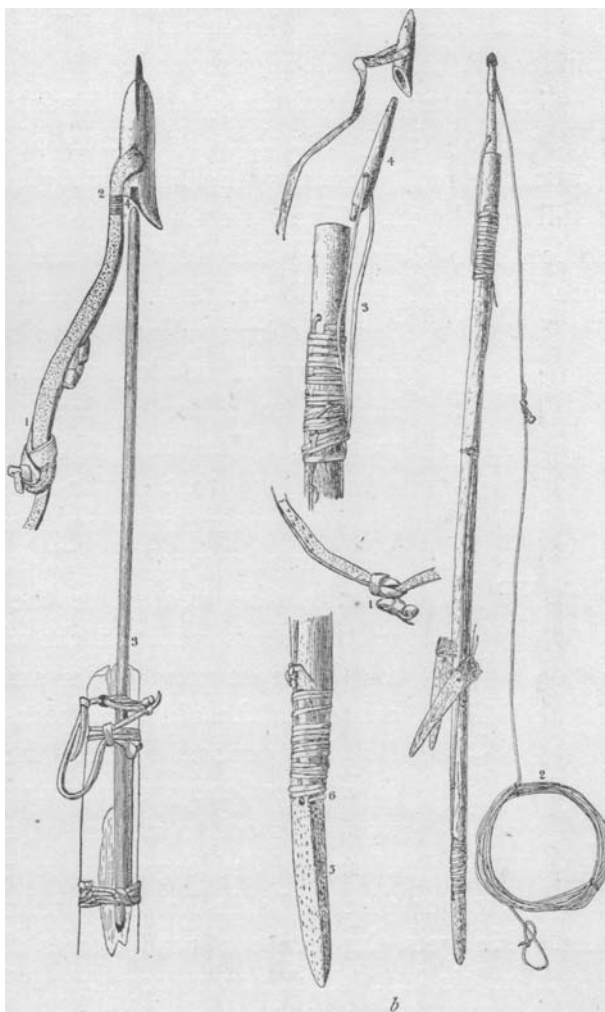


Fig. 34, *a* ($\frac{70}{3577}$), Long Harpoon (length, 279 cm.);
b ($\frac{70}{3577}$), Short Harpoon (length, 152 cm.).

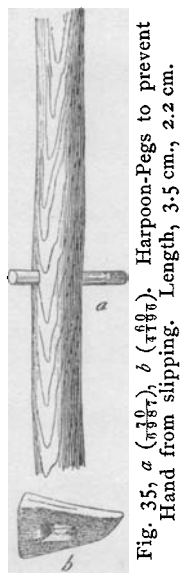
ally tied into a loop. A short bone or ivory rod, or a long, slender piece of iron (Fig. 34, a^3), is inserted in the upper end of the shaft, where it is held firmly with lashings. Sometimes it is also wound around with a thin strip of leather. The upper point of the rod is inserted in a circular hole in the slanting base of the harpoon-head, which fits it tightly (Fig. 34, a^4). The harpoon-head is released as soon as it strikes the game.

Frequently the rod is replaced by two separate pieces. The lower piece (Fig. 34, b^3), which is stout, and cylindrical in shape, is fastened firmly to the shaft. The upper piece (Fig. 34, b^4) is a slender ivory rod, with a hole in the middle. Through the hole is passed a thin strip of leather, both ends of which are fastened to the lashings of the ivory cylinder, forming a loop. The lower end of the rod fits into a hole in the cylinder, and the loop, thus tightened, holds it in place, while the harpoon-head is firmly set on its top. The whole is at the same time tight and elastic. The head becomes disengaged with the blow and remains in the wound, while the movable rod separates from the cylinder and hangs down suspended by the loop.

The lower end of the shaft is furnished with a strong bone or iron point (Fig. 34, b^5) firmly attached by means of a strip of leather. The old method of attachment, by passing the line through holes made with a drill (Fig. 34, b^6), is still employed. The point is used as an ice-pick for breaking holes through the ice, also for testing the depth of the snow, etc. In some cases a slender piece of ivory, used for testing thin, newly formed ice, is substituted for the

bone or iron point. The shaft of the long harpoon sometimes has a small wooden or bone peg (Fig. 35, a , b), halfway of its length, to allow a firmer grasp of the hand in throwing the weapon. The shaft of the short harpoon is about four feet and a half long; that of the long harpoon, eight feet and a half long.

The short harpoon is used in winter for killing seals through their breathing-holes. These holes are found on the land-ice, or on the floe nearest to the shore, whither the ringed and the spotted seals resort in the winter time. The holes are concealed, for the most part, under small snow mounds, and can be located only with the aid of a keen-scented dog selected from the team for the purpose. When the hole is found, the sealer sits down to wait patiently, sometimes for hours. He brings along a small wooden stool to sit on, or makes himself a seat of square pieces of snow piled together, covering the top with a piece of reindeer-



skin. Another piece of skin he lays under his feet to keep the cold from his soles. He gets the harpoon ready, frees the coil from the sinew twisting, and lays it on his lap. If the snow covering of the hole is very thick, he cautiously removes a portion of the snow. As soon as the seal is heard blowing, the hunter suddenly stands up and throws the harpoon straight down into the hole

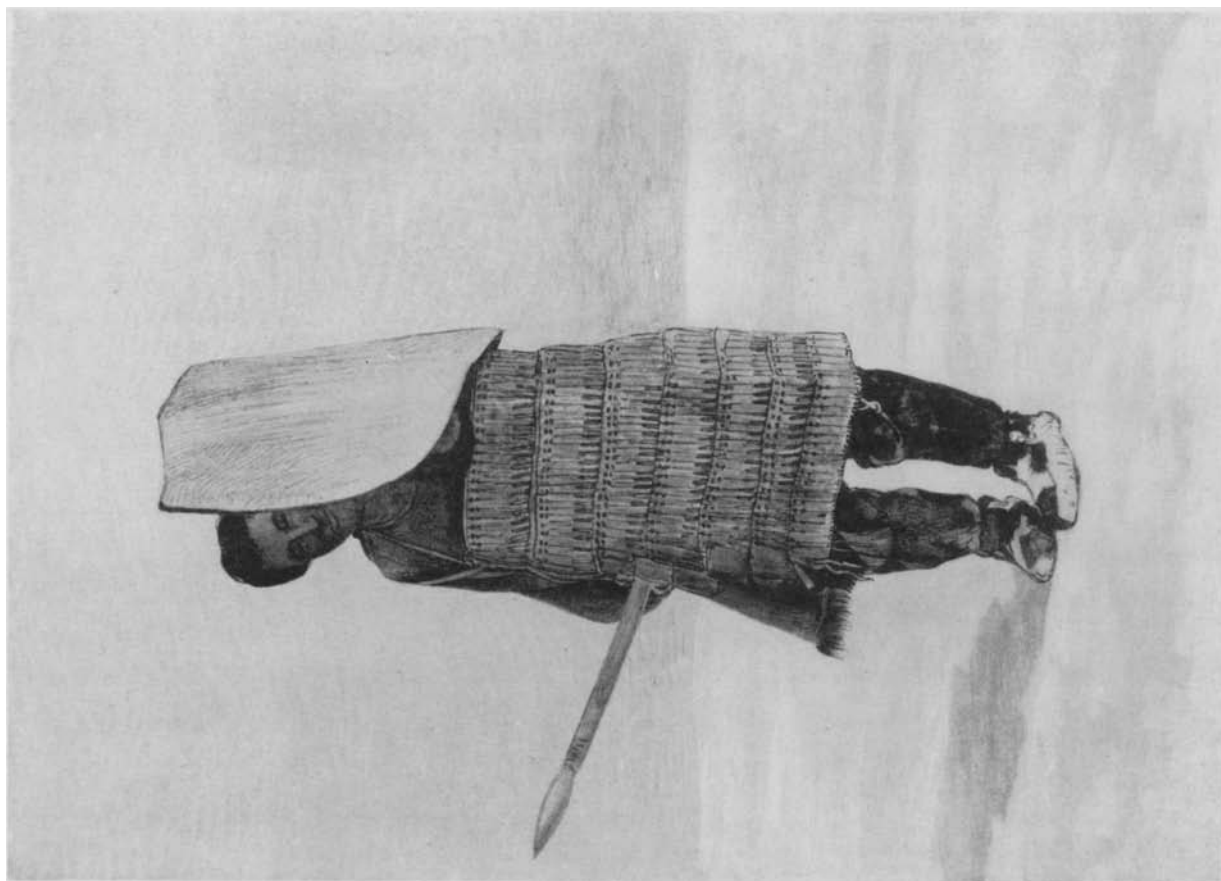


Fig. 2. Chukchee (Ka'ka) in Armor.



Fig. 1. Chukchee Sealer.

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with all his might (Plate ix, Fig. 1), paying out the line, but keeping hold of the loop on its end. The force of the blow detaches the shaft, which remains on the surface. The seal pulls strongly only during the first few minutes. Then it becomes tired, chiefly from want of breath, and is easily hauled in, and despatched with a blow on the nose. When a wait of several hours is expected, the sealer sometimes builds around his seat a semicircular wall of snow-blocks to keep off the wind. The harpoon is laid across two wooden pegs stuck into the snow within easy reach. The sealer covers himself with a large cloak of reindeer-skin, puts on his fur-trimmed hood, pulls his arms inside of his fur shirt, folding them over his breast, and remains motionless, waiting for the familiar sound of the blowing seal.

In the spring, when the seals come up to the surface of the snow to bask in the sun, another method of hunting is adopted. The hunter puts on a special hunting-dress, consisting of a short shirt of reindeer-skin, worn with the fur side next to the body and the gray inner skin outside. As the Chukchee have no seal-skin coats, this serves as the nearest imitation, in appearance, of the seal. A special cap is fastened on the head, in imitation of the seal-muzzle, with two round black pieces for eyes (Fig. 36, *a*). The left elbow and knee, sometimes both knees, are protected by square pieces of polar-bear skin, to prevent friction, and to keep off the moisture of the melting snow. Whenever the left hand is raised, the protecting piece acts like a white screen, helping to conceal the hunter from his prey. As soon as the animal is sighted, the sealer begins to creep towards it from the windward side, armed with a long-shafted harpoon, or, more rarely, with a gun. He proceeds very slowly, imitating the motions of the seal, and from time to time scratching the snow, as the seal does, with a wooden scratcher tipped with seal-claws (Fig. 36, *b*, *c*). When the seal lifts its head, the hunter immediately lies still, and does not proceed until the seal lies down again.

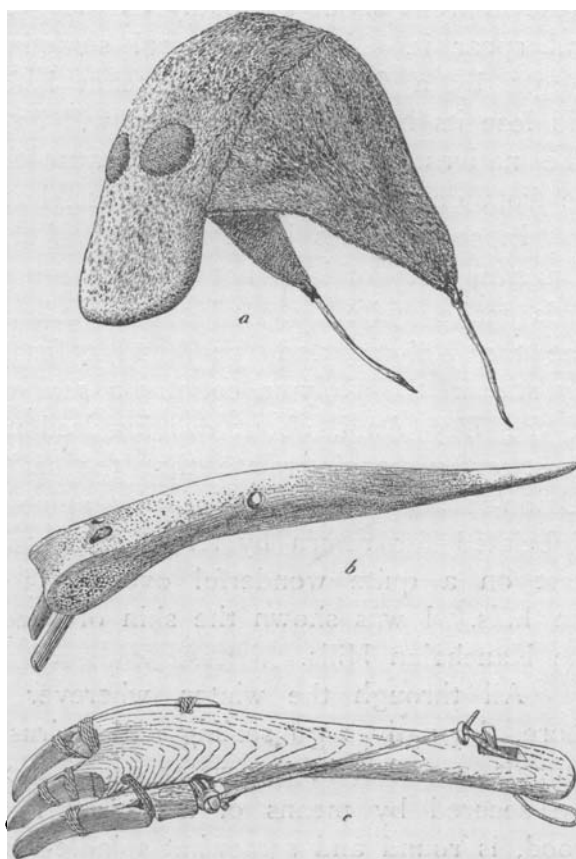


Fig. 36, *a* (ᐱᐱᐱᐱ ᐱᐱ), Seal-Hunter's Cap, in Imitation of a Seal-Muzzle (width of front part below, 10 cm.); *b* (ᐱᐱᐱᐱ ᐱᐱ), *c* (ᐱᐱᐱᐱ ᐱᐱ), Ice-Scratchers used in sealing (length, 23 cm., 28 cm.).

Gradually he approaches so close to the seal as to be able to play the harpoon. These two methods are quite similar to those of the American Eskimo.¹

Seals are also killed in the spring on the edges of the ice-cracks, where they like to sleep at noontime. Before the breaking-up of the ice, wherever small streams of fresh water run into the sea along an ice-crack, seals gather around their outlet to bask in the sunshine. A sealer will tie into a rough bundle some scraps of old skin and send it downstream. It will float down unobserved, but, on coming to one of the small whirlpools which form in the crack, it will pop out suddenly and frighten away the seals lying around, so that they can easily be overtaken on the ice. Seals sleeping on the ice, when suddenly frightened, will often lose their holes and crawl away in the wrong direction. Then they can easily be overtaken, especially the younger ones. Perhaps this accounts for the method of hunting of the Netchillirmiut, reported by J. Ross,² where a party of hunters slowly approach the sleeping seal, then those in front shout as loudly as they can, and the others run up to the seal and spear it. A basking seal sometimes sleeps so soundly that it may be caught by a fast-running dog-team before it wakes up. At other times it will lose its hole altogether, and will be found crawling helplessly on the ice. The natives say that this is because the seal wants to take a walk on the ice from one to another of its holes, but loses its way.

In some places large numbers of seals are killed while trying to go over a narrow strip of land between the sea and the inner bay. Occasionally the seals make quite long trips overland. Thus they ascend the largest rivers, like the Kolyma and the Anadyr, for more than a hundred miles. During my stay in the Kolyma country a seal was even caught on the middle course of the Dry Anui, about two hundred miles from the mouth of the Kolyma. Trustworthy people relate that the seals which ascend the Anadyr after the salmon-shoals often turn into its affluents, the Kanchalan and Big Rivers. If belated for return by river, on account of low water or early frosts, they start on a quite wonderful overland journey on impracticable roads among the hills. I was shown the skin of a rough-seal killed on such a journey in the Kanchalan Hills.

All through the winter, wherever the open water is not far from the shore, the natives go sealing and walrusing at the edge of the land-ice. The animals are shot in the water or on the drifting ice. Then, if feasible, they are secured by means of a special implement (Fig. 37), which is made of wood, is round and somewhat spindle-shaped, and has several iron hooks, and a long stout line at the bottom. It is flung at the passing body, and, if the aim was correct, one of the hooks will catch into it. When the body is too

¹ Boas, *Central Eskimo*, pp. 477-486.

² *Narrative of a Second Voyage for the Discovery of a North West Passage*, p. 451, cited in *Central Eskimo*, p. 485.

far away, the hunter will pick out a small cake of ice, and, using his spear for an oar, will push forward to the body, and then drag it to the land-ice with the harpoon-line.

In summer, seal-hunting is done chiefly with guns from the shore or from large skin boats. Kayaks are used on the Arctic, while on the Pacific shore they are employed only in reindeer-hunting on the Middle Anadyr, as will be described later. The Maritime villages on the Pacific have but very few kayaks. I saw one in the Eskimo village Wute'en (see Fig. 47, *c*), which was about fifteen feet long, and obtained a model of a kayak made at Indian Point. I had no opportunity of seeing the Arctic kayaks, but, according to the natives, they are of various sizes, sometimes have two seats, and are used for seal-hunting and travel, as mentioned many times in Chukchee tales. These kayaks are so large, that sometimes a man creeps into one and lies down, to be carried as a passive passenger. I was told of one case where three men set out in a kayak across Chaun Bay. Two of them fastened themselves in the manholes, and the third lay down in the hold. A tempest suddenly arose and capsized the kayak, so that the paddlers were drowned; but the man inside remained safe and sound, and on the second day drifted ashore in the kayak, together with his dead companions, and was able to get out and go away. Perhaps this is only a fragment of some folk-tale.

In hunting from boats, the harpoon is thrown at the animal, and the shaft becomes detached from the point in the same way as described. Then the animal is hauled in, and the floating shaft picked up. At present, however, seals do not allow the boat to come near enough for the use of the harpoon. With the rifle they are shot at wherever they come out of the water, no matter how far away they may be. The native hunters are pretty good marksmen, but of course many shots go amiss. The animals that have been killed sink so rapidly that they are often lost before the hunter can secure the body. Especially is this true in shooting from the shore, though the small boat stands ready to hand. Only fat seals, mostly the younger ones, do not sink after death.

Hunting on open water is more successful early in the season, when the drift-ice is abundant, because all kinds of sea-animals go along with it, basking all the while on its surface. Later on, when the ice has drifted away, the animals become more scarce and the hunt difficult. Then the seal-hunters go far out to sea in search of game. The Arctic hunters in their large boats sail off with fair wind, and go so far that the highest mountain-tops near the shore are out of sight. They remain in the open sea for two or three days, waiting for a change of wind to get back to land.

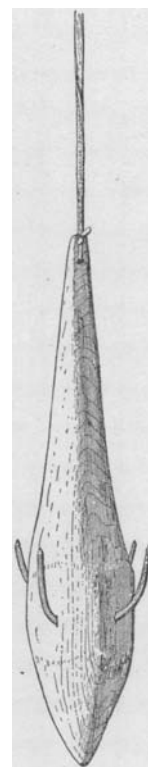


Fig. 37 (719).
Retriever. Length
of wooden part,
34 cm.

WALRUS AND WHALE HUNTING. —

The long harpoon used in walrus-hunting has the same shape as the harpoons already described; but the end of the line has one or two floats tied to it (Fig. 38). These are thrown into the water after a successful blow. Floats (Fig. 39, *a*) consist of a whole seal-skin, skilfully removed from the carcass of the animal. The mouth is enlarged by an oblong cut down the neck, and the skin is pulled off like a stocking. The head is carefully sewed up, the fore-flippers often cut off, and the openings firmly tied up. One of them is used for inflating the float, which is done without an inflating-pipe such as is used by the Eskimo. The skin of the hind-flippers is carefully stitched; and when the body is inflated, the flippers stand out, furnishing a hold for the separate loops on the end of the line (Fig. 39, *b*).

At the present time, however, walrus-hunting is done almost exclusively with rifles, especially on the Pacific. Thirty years ago American whalers applied themselves to a great extent to walrus-hunting, and the number of walrus on the Pacific consequently began to decrease rapidly. Later on, the whalers desisted from the pursuit, asserting that prices were too low, and that the whole business was not remunerative enough. Then the decrease slackened, although even now the reckless shooting of walrus by the natives continues to work disaster. To the south of Anadyr the walrus have greatly diminished in numbers. That is the reason that the Kerek on the southern shore of Anadyr Bay, who in former times subsisted on walrus, are now rapidly starving to death. Farther to the south walrus became very rare in the vicinity of most of the villages, and are now met with only on the shores of some islands, as Karagha Island, for instance. To the north of Anadyr, beginning at the northern shore of Holy Cross Bay, considerable numbers of walrus are still killed. For some villages, as Mi'sqan and Rê'tkên in Holy Cross Bay, also Ye'rgin and Kihî'ni, on the island of Kihî'ni, they still form the staple food of the inhabitants.

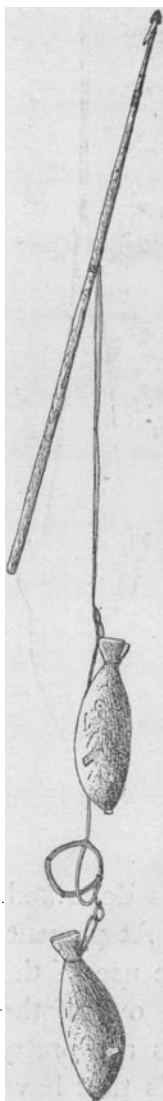


Fig. 38 ($\frac{11}{8838}$). Harpoon with Floats, used in Walrus-Hunting. (From a model.)

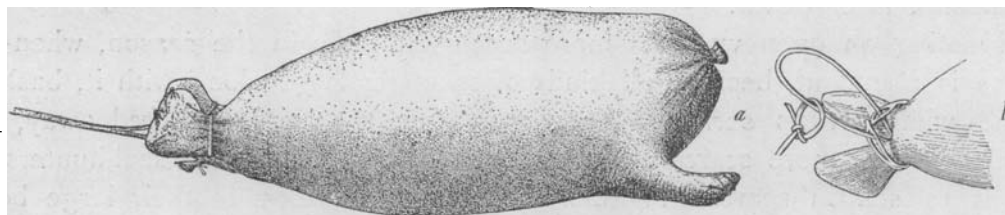


Fig. 39, *a* ($\frac{11}{8838}$ b), Float (length, 103 cm.); *b* ($\frac{11}{8838}$), Details of attaching Float. (From a model.)

On the Pacific shore the walrus is killed chiefly during its migrations from Holy Cross Bay to East Cape and back again (Plate x, Figs. 1, 3).

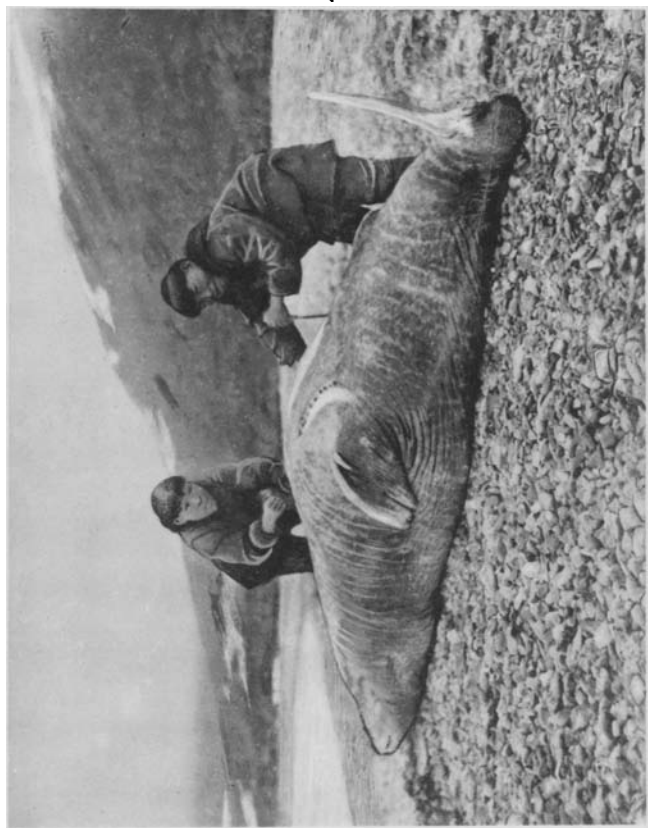


Fig. 1. Carving a Walrus.

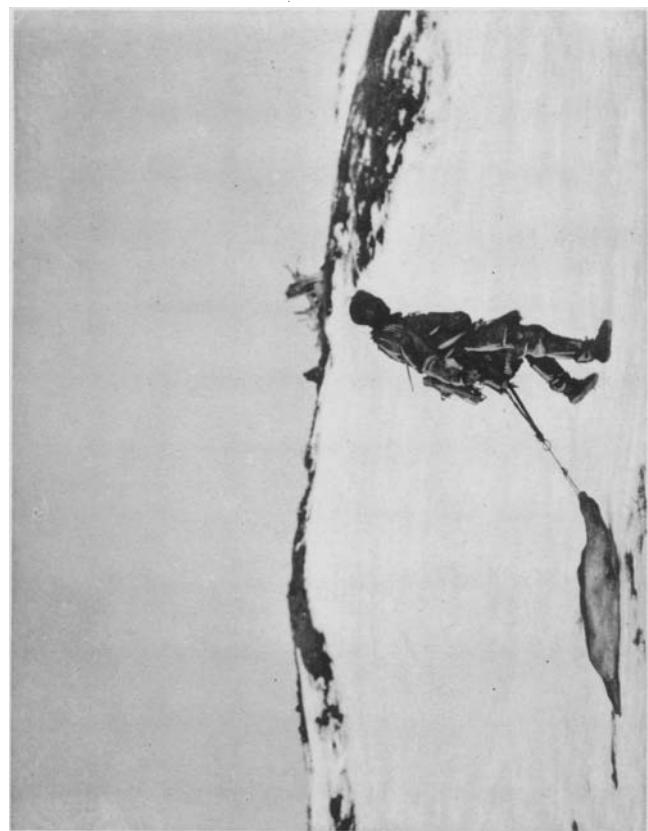


Fig. 2. Chukchee Man dragging a Seal.



Fig. 3. Chukchee Man carrying a Walrus-Head.



Fig. 4. Chukchee Men dragging a White Whale to the Shore.

The first shoals pass northward in May with the drifting ice. The later ones begin to leave their winter places in Holy Cross Bay about a month after the first migration, and go northwards all along the shore. At the end of June, when returning from Indian Point to the mouth of the Anadyr, we met in one day, near the village E'nmilin, a great many of these shoals, containing perhaps more than a thousand animals. Their course lay a few miles from the shore; and the natives everywhere would open on them a most wanton shooting, killing a few, and wounding many more. Next day we saw on the shore in different places three large walrus-carasses. The animals had evidently died from wounds, and were carried by the tide to the shore. One was already in a quite putrid state.

On the whole, at least half of the wounded sea-animals — seals, walruses, and white whales — escape the hunter, and are afterwards drifted ashore in a putrid state. Any animal of this kind that is found by the people is used

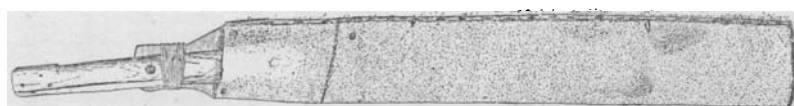


Fig. 40 ($\frac{10}{1879}$). Seal-skin Splasher. Length, 85 cm.

for dog-food, and the blubber is tried out for lamp-oil, but of course the greater number are wasted. Several times I saw a man who was shooting from the shore use about three dozen cartridges in three hours. Although nearly every shot was well aimed, he would secure but a single seal. Of the others, two or three would occasionally be found afterwards by other people, twenty or twenty-five miles off, but without benefit to the hunter.

In the middle of September the walrus start on the return-journey. The natives assert that at this time the walrus are most easily killed, since they are quite unmindful of the hunter's presence until the shooting begins. Several boats join in the hunt in order to cut off the retreat of the animals. A peculiar kind of splasher (Fig. 40), made of seal-skin and about three feet long and four inches wide, is used to frighten the animals. Every time the walrus dive, several splashers from various boats are struck against the water, making a sharp sound, similar to the report of a gun. The walrus are so much frightened

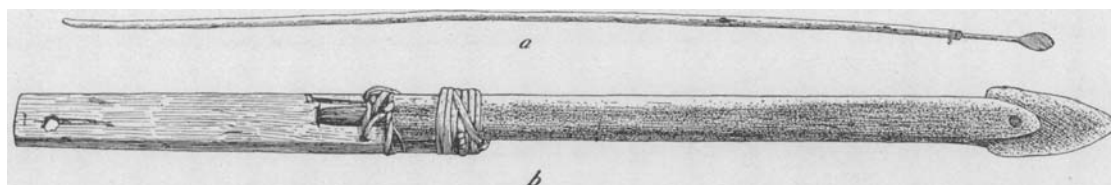


Fig. 41, *a* ($\frac{10}{1873}$), *b* ($\frac{10}{1876}$). Lances used in Walrus-Hunting. (*a*, from a model; *b*, length, 59 cm.)

that they hasten to come out again, and are shot. After diving and emerging a few times, they become quite confused, and cannot discern which sounds are connected with the real danger. The wounded walrus are despatched by means of a long lance with an iron point (Fig. 41).

Whaling was done in former times chiefly by the Arctic Chukchee, and on the Pacific coast by the Eskimo. For this purpose a large harpoon, with a heavy head perforated at right angles to the blade, was used. The line was very long and stout, and floats were attached to it in pairs at several places. Altogether there were two, three, or even four pairs. Now, on the Pacific, but little whaling is done, and that exclusively by the Eskimo of Indian Point, of Cape Chukotsky, of Cape Ulakhpen, and also by the inhabitants of Čibu'kak on St. Lawrence Island. They all use explosive harpoons. On the Arctic the number of whales has also considerably dwindled. Thus the natives of Ya'qan told Maydell that they had hardly caught a whale in later years. The whalers ceased going along the Arctic shore of Asia, because whales became too scarce in that region. The single harpoon-head that I was able to procure at Indian Point is old and worn, showing that it is the remains of an old, now unused weapon (Fig. 42, *a*, *b*).

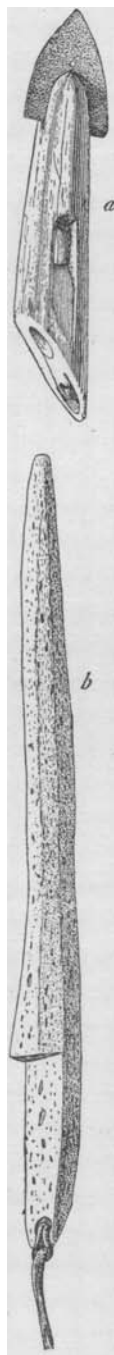


Fig. 42, *a* (3880), Bone Rod of Whaling-Harpoon (length, 18.5 cm.); *b* (3881), Head of Whaling-Harpoon (length, 45 cm.), Eskimo, Indian Point.

The white whale is killed in the same way as the walrus, with the rifle, and sometimes with the harpoon. The natives eagerly pursue it, because its meat and blubber taste better than those of any other sea-animal (Plates x, Fig. 4; xi, Fig. 1). I did not find current among the Chukchee the notion, peculiar to some American Eskimo, that white whales must be struck with a flint.¹ It is curious that this idea re-appears among the Koryak on the Okhotsk Sea, in the villages of Kamenskoye and Paren.

SEALING-NETS. — Sealing-nets are perhaps still more efficient than harpoons, especially in the winter-time. They are made of thin strips of seal-skin or reindeer-skin, with buoys of wood or of inflated pieces of gut, and stone or ivory sinkers. A peculiar net used on the Arctic and on portions of the Pacific coast is square in shape, and is fastened beneath the seal's breathing-hole like a cradle (Fig. 43, *a*).² For this purpose four wooden poles tied to the mouth of the net are put through the hole and arranged underneath the ice so as to form a square. The net hangs by the corners on short cords, allowing the seal a free passage into the hole from all sides. The seal, arriving at the hole, may see perfectly well that something unusual has happened, but, as it is its breathing-time, it slips in between the net and the ice, and rises to the surface. That done, it will, as is its wont,

¹ Murdoch, p. 240.

² In this figure the ice is represented only on one side, in order to show the position of the net.

plunge down head foremost; but instead of diving, it lands in the net, where its flippers easily become entangled, and it is drowned. Often the animal, with the net, comes out of the hole and dies on the ice. This net can be used only in the spring, when the ice is several feet thick and blow-holes are less numerous.

The more common kind of seal-net has a shape similar to that of the

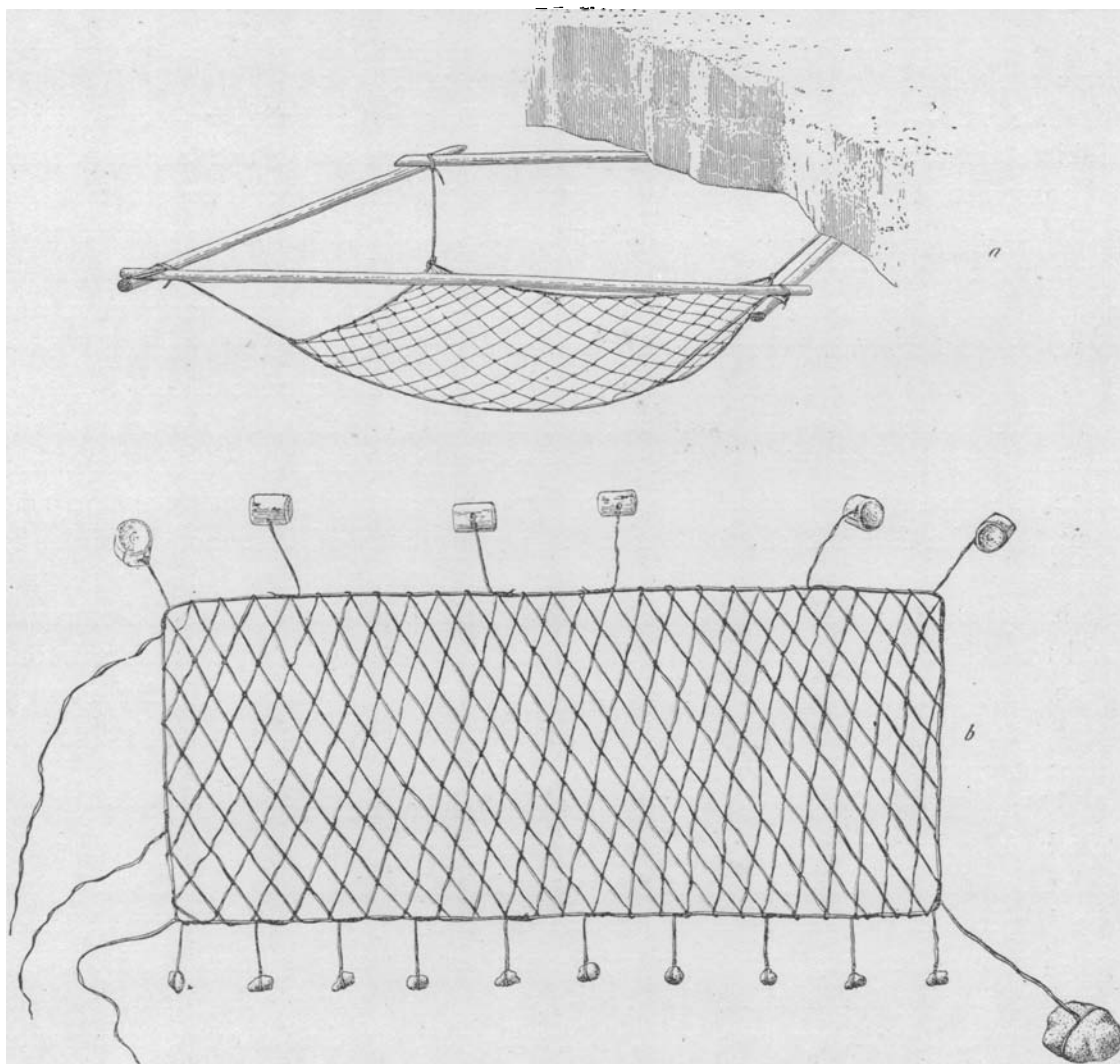


Fig. 43, *a* (10/11), *b* (10/11). Seal-Nets. *a*, 96 cm. square; *b*, total length, 250 cm.

straight fish-net, only that its meshes are much larger (Fig. 43, *b*). The specimen obtained is twenty-seven meshes long and ten meshes high, each mesh being six inches square. It has large wooden buoys and stone sinkers. It is set under the ice between the breathing-holes or along the cracks, and during the summer in those places to which seals frequently resort. Thus, in the small bay of E'nmilin, near the village of the same name, the nets are

set under the water very near the shore. The place abounds in seaweed, quantities of which gather near the shore. Numbers of small fishes live in this weed, and seals are all the time hunting for them. Therefore the net-catch is abundant; and while we were in E'nmil'm every owner of nets secured daily one or two seals.

Ivory plugs for stopping the wounds of seal are known to the Chukchee, and have nearly the same shape as those of the American Eskimo. Seal-drags, however, are not used, but the seal is dragged along by means of a rope passed through a cut in his nose (Plate x, Fig. 2).

BOATS. — The large skin boats used by the Chukchee and the Asiatic Eskimo are very similar to those of arctic America in shape and in details of construction. The differences are not greater than those between boats of the western and eastern Eskimo, especially since whole frames and parts of them have been carried from ancient times across Bering Strait as objects for sale. The Koryak boats, with their flaring sides and semicircular stern and bow, on the contrary, form a quite separate type; while the Kamchadal have no skin boats, but use instead dug-outs with planks fastened to the upper edges.

The reason for this does not rest exclusively with the difference of the natural surroundings of the tribes mentioned. It is true, that with the Chukchee the scarcity of wood sufficiently explains their predilection for the skin boat, but the Koryak shore abounds in large trunks of driftwood suitable for building wooden boats. On the other hand, the shores of Kamchatka are probably even richer in sea-mammals than those of the Chukchee Peninsula, and thus afford every convenience for constructing skin boats. The Kamchadal, nevertheless, remain a fishing tribe, with clumsy wooden canoes; and they have never shown much skill in maritime pursuits, although they crave blubber and hides as much as do their northern neighbors.

The Chukchee and the Asiatic Eskimo cover their boats with walrus-hide, which is split for the purpose, one thin strip being left intact for joining the halves. The walrus-hide is so large that a skin and a half suffice to cover the largest boat. The specimen in the American Museum of Natural History is thirty-five feet long, and is covered with less than two skins. Ground-seal skin, though quite suitable for boat-coverings, is never used because of its great value for thongs and soles. The Koryak, on the contrary, cover their boats with skins of the Okhotsk variety of ground-seal, having indeed no other material. I have never heard of large Chukchee boats being made of skins of smaller seals. The Koryak, and especially the Kerek, sometimes have no better material, though such boats are weak, and tear very easily when landing in rough weather.

Besides the large boats, others of lesser dimensions are used, especially on the Pacific, where no kayaks are employed. They may have three or two thwarts, and sometimes only one thwart with two oars. The smallest carry

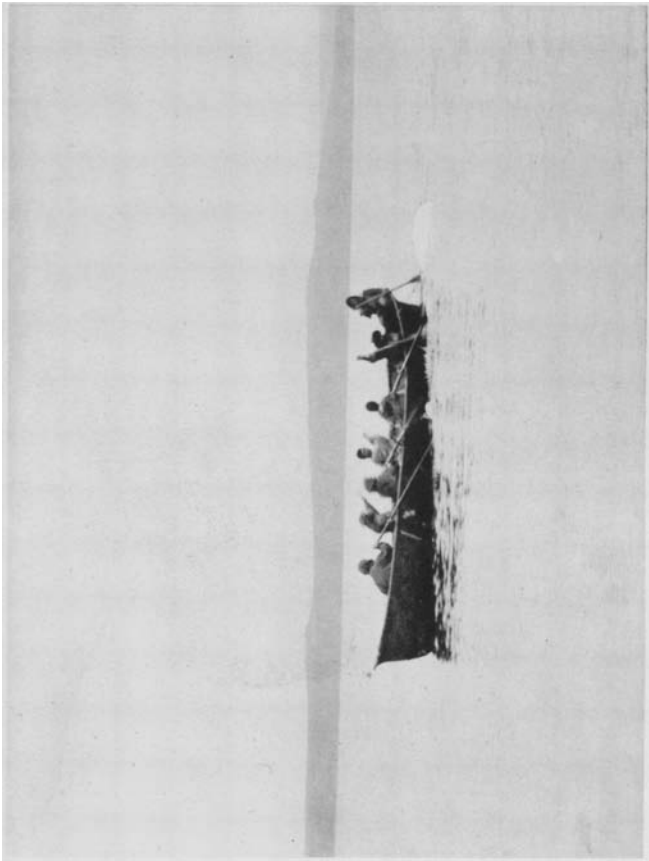


Fig. 1. Skin Boat towing a White Whale.

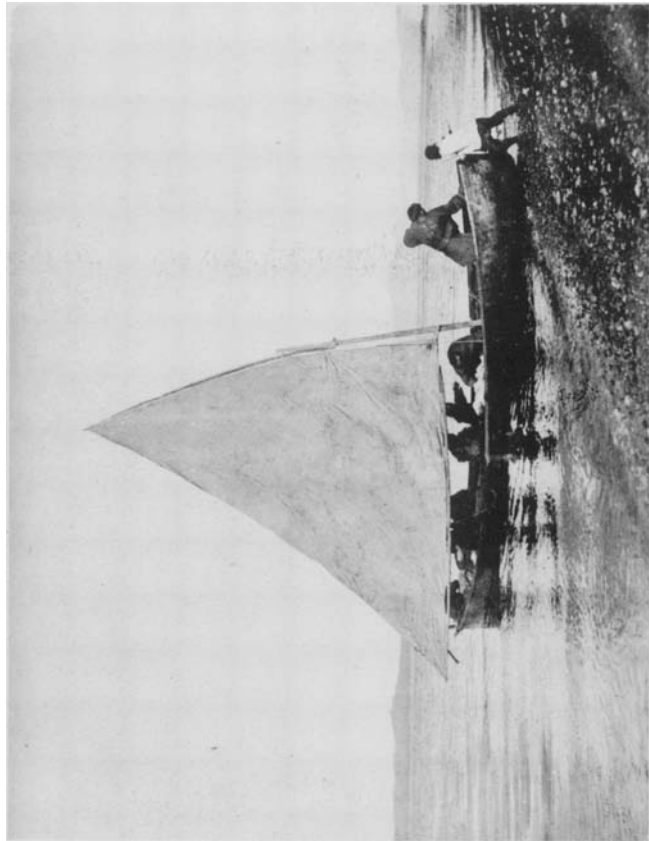


Fig. 2. Skin Boat leaving the Shore.

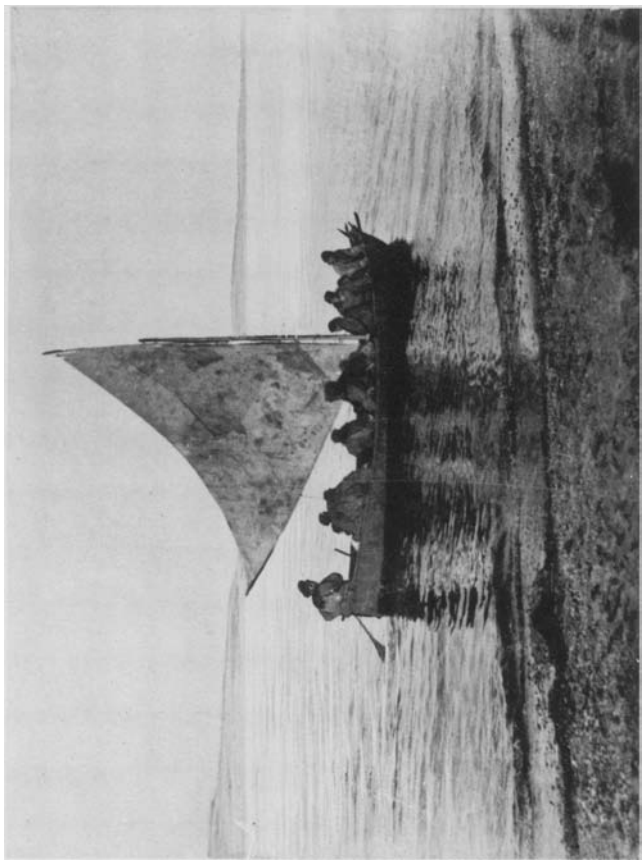


Fig. 3. Skin Boat sailing.



Fig. 4. Constructing a Boat in the Village Uñi'sak.

but a couple of men, and are used for short trips within the village range; for instance, to catch dead seals floating on the surface or sunk to the bottom, to go shooting water-fowl along the shore, to inspect the fish and seal nets, etc.

The frame of the large boat resembles that described by Nelson,¹ except that the ribs and the cross-pieces of the bottom are set much closer together (Fig. 44). The dimensions of the boat secured for our collection are, length, 35 feet; breadth in the middle, between the gunwales, $4\frac{1}{2}$ feet; breadth of bottom in the middle, $2\frac{1}{2}$ feet; height, 2 feet 8 inches. It has 21 cross-pieces, and as many ribs on each side; 4 thwarts; 5 large oars and as many paddles. It requires a crew of from six to eight men, and can carry freight up to two tons. The central timber, strips and gunwales, according to the man who sold me the boat, were brought from America in a rude state. The frame was constructed on East Cape, and taken thence to Meči'wmin, and afterwards to Indian Point. At the last-named place it was covered with skin and used for several years; so that, from the very circumstances regarding its construction, it must be called typical for the Asiatic coast (Plate XI, Fig. 4). The home-made boats of the Pacific villages between Indian Point and Anadyr, however, are clumsier, and their sea qualities poorer.

The skin cover is unfastened for the winter and safely hidden from the dogs. Late in the spring it is taken out and soaked for several days in some pond or in the sea, though in the latter case the owner is obliged to keep a sharp lookout for drifting ice and for the force of the current, which may break the thongs by which it is secured and carry away the skin. The work of covering is done by several persons; the boat's crew, in order to hasten matters, calling on their acquaintances and relatives to aid them. The wet cover is pulled around the frame as tightly as possible, and its edge is bent over the gunwale and laced to the middle strip with stout leather thongs. After a while, when the lacings have dried a little, they are tightened by means of walrus-tusks, which serve as marline-spike and hand-lever. Every little hole in the skin is carefully patched and the boat turned bottom-side up and allowed to dry for twenty-four hours. During this time it receives two or three coatings of oil, and the patches are smeared around with thick oil-drippings, at present more frequently with oil paints bought from whalers.

In former times boats were propelled by paddles (Fig. 45, *a*), and a large broad-bladed paddle was used for steering (Fig. 45, *b*). At present, along with the paddles, long narrow oars are used (Plate XI, Fig. 1). These are imitations of the American whale-boat oars, and are often simply bought from the whalers. Rowlocks, also copied from civilized designs, are fastened to the skin covering. Each thwart has, for the most part, only one man, who rows in civilized fashion. A rude helm (Fig. 45, *c*) has gradually replaced the steering-paddle. It is curious that the oars of the Koryak boats, rest in loops instead

¹ Nelson, Plate LXXVIII, Fig. 38, p. 218.

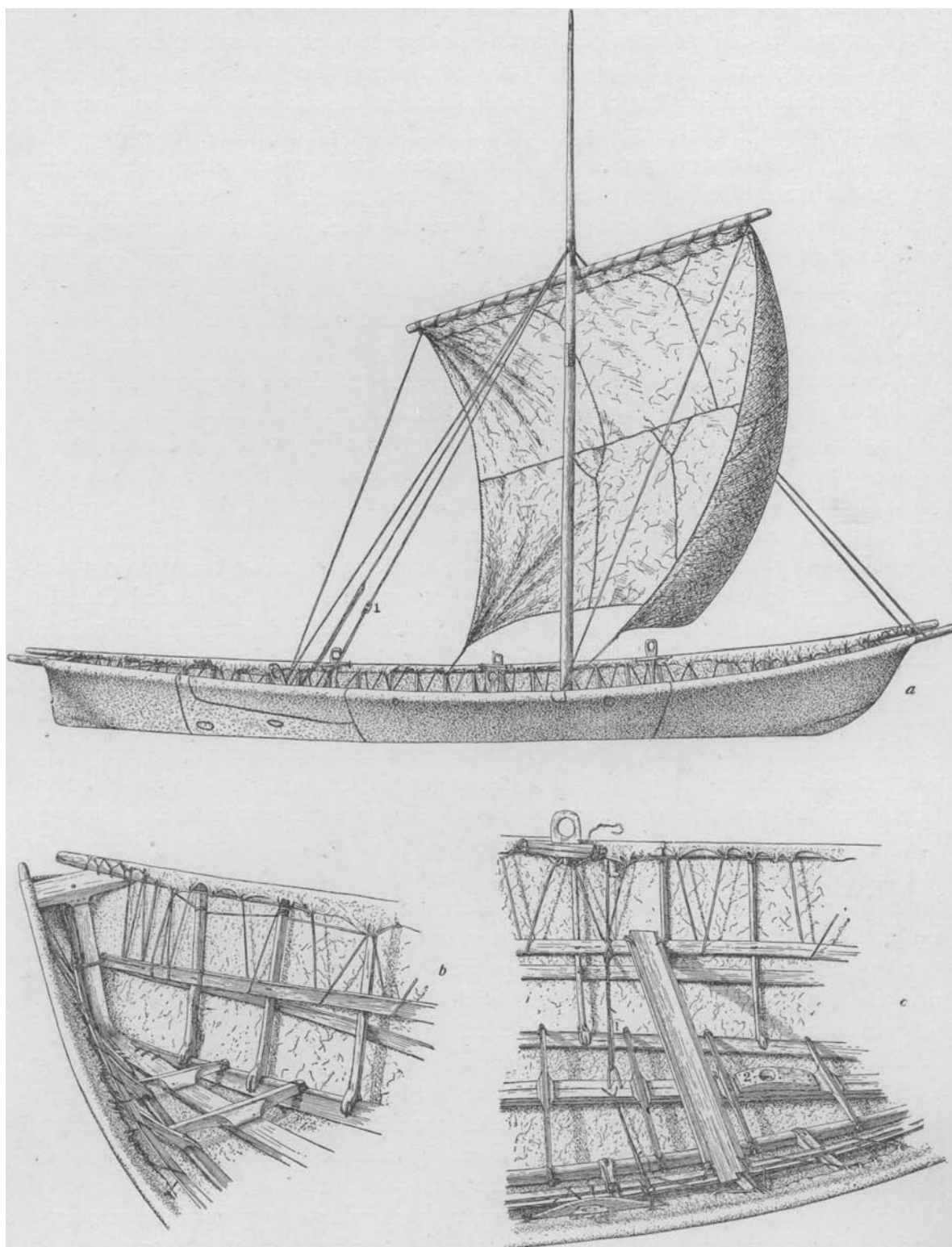


Fig. 44, *a-c* ($\frac{19}{118}$). Skin Boat (length, 11.85 m.). *b, c*, Details of Frame.

of rowlocks, after the manner of American Eskimo; also their gunwales are furnished with wooden guards to prevent friction of the oars.

Wherever the shore will allow, the boats are towed by a long thin rope. Dogs are used for the purpose; and with a well-trained leader, they will go by themselves, if the shore is straight enough, and has no sharp, projecting bowlders that will catch the rope.

On our journey from Indian Point to the mouth of the Anadyr, eight dogs were strong enough to tow the heavily laden boat; and when the weather was favorable, we made about a hundred miles in twenty-four hours of uninterrupted travel.

The skin boat has a mast, which is set on the central timber between the two foremost thwarts, more rarely between two middle thwarts. A small piece of wood serves as its socket (Fig. 44, *c*²). The mast is supported by four stays fastened to its top or passing through a hole in it. The fore-

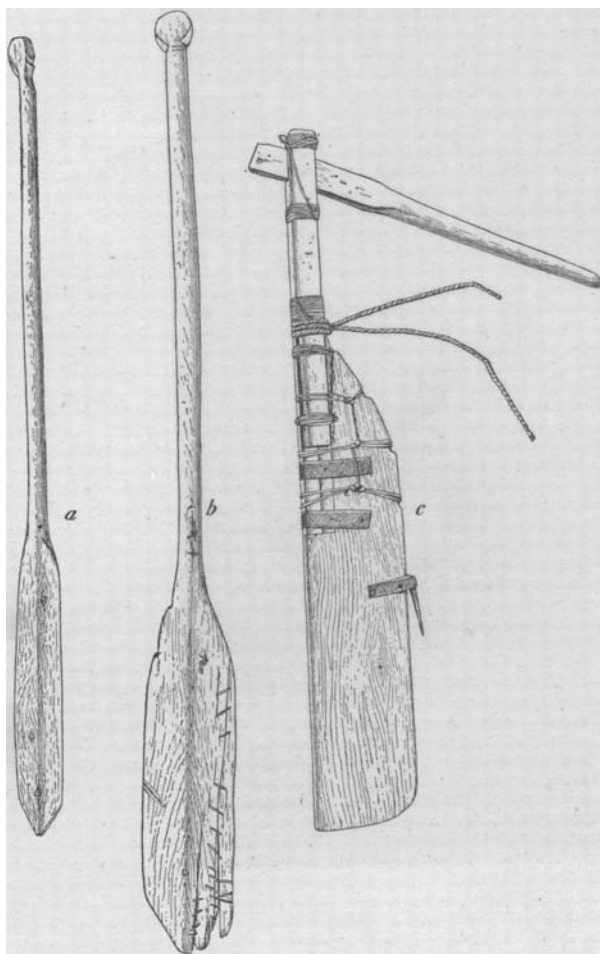


Fig. 45, *a-c* (819 *e, f, i*). Paddle, Steering-Paddle, and Helm of Skin Boat. Length, 200 cm., 220 cm., 130 cm.

stays are joined together and simply slung over the end of the bow. The back-stays are fastened to the middle strips by means of ivory blocks (Figs. 44, *a*¹; 46, *a*¹; 46, *b*), which are occasionally replaced by loops of thong (Fig. 46, *a*²). Sometimes, when the weather is rough, two extra stays are fastened, one on the right, and the other on the left side.

The sail is large and square, and is fastened by loops to a yard. It is hoisted by means of a stout seal-skin thong which is passed through a hole in the top of the mast, sometimes with the aid of a pulley. Four slender lines extend from the ends of the sail and yard to the stern, where they are tied to the inside strip-lashings. By means of these lines the position of the sail can be changed, enabling the boat to go with a side wind. The boat I obtained has two sails, one above the other, with separate halyards and lines. At the present time the square sail is gradually being superseded by a triangular one, copied after that of the whalers (Plate XI, Figs. 2, 3), which enables

the boat to beat to windward. With the wind aft, however, the square sail is much more effective; and even with a side wind it keeps the boat much steadier.

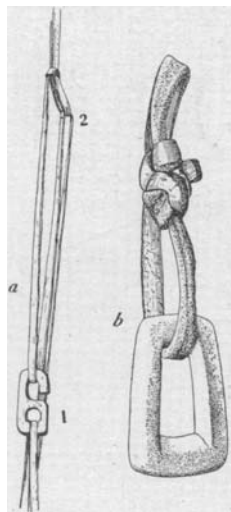


Fig. 46, *a* ($\frac{8}{11}$), Details of attaching Stays of Mast to Skin Boat (length of block [1], 7 cm.); *b* ($\frac{6}{17}$), Ivory Block used in attaching Stays (length, 6 cm.).

In former times sails were made of curried reindeer-skins sewed together. Nowadays white and blue drilling is used in the trading-villages, while in more remote places numerous pieces of cotton and skin are patched together to form a large sail. In rough weather, if the wind is fair, two large floats are fastened on both sides of the boat, below the railing; while with a side wind the boat itself is too buoyant to allow the floats to be added. The sides of many boats are provided also with flaps of skin or drilling, which in rainy weather are used for covering the cargo, and in rough weather are raised, and held in place by sticks or simply by inverted paddles. These are very convenient, and keep off the dashing spray even in very rough weather.

The skin boat has many advantages over the wooden whale-boat. It is much lighter, and, while it carries more freight, can be propelled or towed along the shore with less labor. For the windward motion the skin boat is not so convenient, because it is too buoyant, and, moreover, has no outer keel. Much more important is the advantage the skin boat possesses in being able to land through heavy surf. Both on the Arctic and on the Pacific shore the sea is very rough, especially in the fall; and sudden squalls are frequent. The skin boat, when caught in a storm, does not seek the harbor, but makes for the first sandy spot free from stones, and screened from the rushing wind in some way by coast cliffs. The landing is effected in a peculiar way: the boat, propelled by oars, boldly makes for the shore, and in a favorable moment the end of a rope is thrown to the shore, or, when there is nobody to catch it, a man will jump out with it. The boat, while free on the water, is made by the steersman to turn in alongside the shore, and then the end of another rope is thrown from the stern, or another man jumps out with it. By pulling the ropes tight, the men on the shore make the water side of the boat stand up high against the breaking surf, and the first incoming wave catches the boat — crew, cargo, and all — and casts it ashore. The flat, slippery boat acts like a live fish; and the stronger the wave, the farther on shore will the boat be carried. Then all the crew jump out and begin to unload, the first two men all the time pulling the ropes, and making the boat, as it becomes lighter and lighter, bound farther and farther toward the shore. To prevent the skin from rubbing against the ground, oars are thrown under the boat and secured with separate lines, so that they cannot be carried away by the waves. When the boat is lightly laden and the people are numerous, — as, for

instance, on a village shore, — they simply seize the boat by the lashings and carry it along, cargo and all. These methods of landing, quite impracticable with the ordinary wooden whale-boat, look strange to a civilized eye; but when, in the first heavy surf encountered on our journey, we tried to land with the bow forward, in the ordinary way, the boat filled with water and nearly capsized; and it would have been completely wrecked had it not been for the extreme toughness and elasticity of its frame.

Of the wooden boats I had occasion to see, the "sampan" of northern Japanese fishermen with flat bottom and smooth sides, more nearly resembles the skin boat. Like that, it is able to land through surf, when ordinary European boats are threatened at every attempt with capsizing.

For setting out from shore, the skin boat is put close to the water, with bow foremost but out of reach of the larger waves. Two or three inflated floats are laid under it, with long lines tied to their flippers. Then the boat is loaded, and with one effort pushed into the water; while the crew, with oars and poles, prevent it from being hurled against the shore.

On narrow strips of land between two shores the boats are unloaded and taken across. Six men can easily carry on their shoulders an empty boat, even when soaked with water. Sometimes only part of the freight is taken out, and the boat is pushed across on the floats, which act like rollers and prevent its contact with the ground.

One of the drawbacks of the skin boat is the fragility of its cover. Every sharp stone is liable to cut a hole through it, especially when it has been soaked and softened with water. At every landing it is necessary to look carefully over the whole skin surface, to clean away from under the central timber every small pebble, and to patch even the minutest hole; otherwise the boat may suddenly spring a leak while on the water, and necessitate an extra landing. When in good repair, the boat is water-tight, and requires no bailer; on the other hand, I know of cases where, on account of an overlooked gap, boats were almost sunk before a landing could be effected. While on shore, the boat is turned upside down, pebbles and sand are shaken off by repeated blows with the oar, and the cover is allowed to dry. If not dried for a long time, the boat will warp and get out of shape. To prevent warping, the boat has several sets of special lashings (see Fig. 44, *c'*), which connect the gunwales with the central timber, and can be lengthened or shortened.

The Reindeer Chukchee living near the seashore also use skin boats; and the boats of the Telqä'p people, for instance, are just as large as those of the Maritime villagers. The inland Reindeer people have no boats, and hardly need any. A few of them buy from the Russianized Yukaghir or from the Yakut small wooden canoes, and drag them along to use in summer on the lakes and larger rivers.

Camps travelling late in spring, especially those of the Kavra'lit, are

often hampered while on the road by the breaking-up of the ice. In order to cross the mountain rivers, suddenly swollen by floods, they sometimes construct a peculiar device, consisting of several sledges tied together in a pile, and protected from beneath by the cover of the outer tent. This is used as a raft to carry over men and household things.¹

HUNTING OF LAND-GAME. — Of land-game, the wild reindeer is the most important. It is nevertheless not so abundant in northeastern Asia as the caribou in America, because the best pastures are occupied by domesticated herds. Only the depths of the forests and the higher slopes of the mountains are left quite undisturbed for the wild breed, because they are unsuitable for the breeding of domesticated animals. Wild reindeer, however, are met everywhere in northeastern Asia, in single heads or in small herds.

The wild reindeer is larger than any of the domesticated varieties. Its step is wider, and its footprint longer, because its hoof-joints are more supple. Its antlers are more or less similar to those of the Lamut reindeer, but generally the ends are bent up in a hook-like shape. Also the difference in size of antlers between buck and doe is still more marked than with Lamut reindeer. The color of the skin is uniformly dark gray, somewhat lighter on the belly and lower part of the neck. Those living on the northeastern tundras and close to the ocean are smaller, but accumulate more fat. In this respect, however, all varieties of the wild reindeer are superior, even to the Chukchee breed. Late in summer, when insects cease to swarm around the pastures, a wild buck often takes on three inches of tallow on his hips, so that he is no longer able to run with his usual swiftness.

Some wild reindeer always live in the same places. They are called "resident reindeer." Others gather every year in large herds and migrate considerable distances, from the forest border to the tundra and back again.

In former times there were two different trails in northeastern Asia for these migrations. One led from the Kolyma Mountains across the Omolon and the two Anui Rivers to the Chaun tundra; the other, from the high country of Palpal, across the Anadyr River, to the Chukchee Peninsula. About fourscore years ago the reindeer migration over the former trail began to lessen, and finally ceased altogether. Several Yukaghir villages which depended on wild reindeer for their subsistence were starved out in consequence, and the remainder went to the northwest and settled in the Russo-Yukaghir fishing-villages on the Kolyma River. In the year 1896, when descending the Omolon on a raft, I passed several of these deserted or starved-out hamlets. The houses of some were still standing. Others had completely fallen in, and only a grassy patch that interrupted the continuous line of the forest along the bank indicated the former dwelling-place of humanity. For the abandonment of this trail by the reindeer, Yukaghir hunters blame the Lamut, who every

¹ Compare Maydell, p. 211.

spring came from the south and followed the reindeer-herds to the very river's edge, although, according to ancient Yukaghir custom, hunting was strictly forbidden on land, and allowed only on the river. The old men of both tribes attributed this calamity to the increase of sinfulness in the world. There is an old Yukaghir legend which aims at branding the wanton extermination of game and fish. It relates how some men, in most versions some Russian cossacks, tired of killing reindeer on the water, caught one, flayed it alive, and allowed it to escape to the shore. Afterwards, in the fishing-season, they took out the eyes of a live salmon, and in the same manner let it go free. The next year, in hunting-time, the flayed reindeer was seen on the herd's trail, causing the herds to turn away from the river. Likewise the injured salmon made the salmon-shoals go back to the sea, and a frightful famine ensued. Up to a late period, when reindeer-herds or salmon-shoals were not forthcoming, it was considered by the old people as a just punishment for the reckless extermination of the game. It is true even at present, that the Chukchee or Markova hunters, when successful, will kill much more than they want, and afterwards take only the skins, at least from the lean animals, leaving their carcasses to rot. The real reason that reindeer ceased to migrate in the direction of Omolon and the two Anuis, however, probably lies in the fact that the Reindeer Chukchee spread to the west, occupying the tundra pastures, and so there was no place left for wild reindeer. On the upper course of the Omolon the Lamut hunters complain, too, that the "resident" wild reindeer retreated before the Chukchee herds farther into the forest. On the contrary, the hunters on the banks of the Kolyma within the forest border assert that the "resident" reindeer even increased in number, perhaps after their retreat from the tundra, only the animals ceased to gather in herds and to move northwards in certain seasons.

On the Anadyr River the crossing-places of the reindeer are situated on the middle part of the river, between the mouth of the Maïn and the small Chukchee settlement Chikayeva. The reindeer leave the Palpal Mountains about the middle of March, and keep crossing the river in bands of varying numbers till the end of June. The greater portion, especially the pregnant dams, cross before the ice breaks up. After having crossed the river, the reindeer scatter all along the tundra. A large number remain in the Pe'kul-ñei Mountains, to the north of the Anadyr. At the end of July the reindeer begin to assemble and come back to the river; then the most important hunting-season begins. Reindeer-herds take the same trail every year, and cross the river at the same places. There the hunters, in separate groups, lie in ambush and wait for the game, each tribe by itself. The Russianized natives keep watch more to the west, chiefly near the mouths of the Maïn and White Rivers. The Chukchee take their places farther downstream, as far as Chikayevo. Both tribes hunt in a similar manner, only the western natives use the wooden

canoe, constructed of three very thin and flexible boards, or dug out of a hollow poplar-trunk, while the Chukchee use the skin canoe. The hunters occupy a place a little downstream from the trail, and keep very quiet. They even refrain from making a fire, in order that the animals may not be frightened away by the smell of smoke. The reindeer come to the river, one (usually a young active doe) running ahead as leader, and begin to swim across, being all the while carried downstream by the current. When the animals are not far from the middle of the river, the hunters rush out in canoes and boats, and try to impede their progress. The frightened animals turn upstream, and exhaust their strength in a vain struggle with the force of the running water; then one or two canoes go around the herd in order to cut off their retreat to the opposite bank, and slaughtering begins. The reindeer huddle together, and float quite helplessly in the middle of the stream. Men in canoes approach the herd and stab the reindeer with spears, which have a very long and slender shaft, a small iron point, and are not used for any other kind of hunting. One side of the double paddle is also often furnished with a small iron spear, which, though not so long, is much handier to use (Fig. 47, *a*).

The killing is done with incredible rapidity, a man being able to kill as many as a hundred animals in one hour. The wound is inflicted on the lower part of the body, and the wounded animals immediately turn on the side and are carried away by the stream. Most of them do not attempt defence. Young strong bucks, however, often try to kick at the canoe, though the hunter easily avoids their attack. Those hunters who are most skilful with the paddle penetrate into the middle of the herd, and, placing their canoe close between two large bucks, spear all the animals within reach, beginning with those farthest away; while the nearest, not being disturbed, keep quiet, and their bodies shield the canoe from the surrounding commotion. Old men, women and children, row in boats farther down the river, and intercept the game. All animals, when brought to the shore, are skinned. The fattest bucks are carved, and some of the meat is hung up to dry. All other carcasses are simply deposited in storehouses or in temporary hunting-huts, and are used chiefly for dog-food in the winter. A score of Chukchee families living in wooden huts on the Middle Anadyr have no herds, and do very little fishing, but live exclusively on the produce of the chase; and in a successful season one family will have as their share from a hundred and fifty to two hundred reindeer. For their own food they use the animals killed late in the season, especially those shot on the ice of the river, because the reindeer continue to cross late into the fall, and a few stragglers are met on the river even as late as the middle of November.

The Anui and Omolon Yukaghir, who had only a few dogs, were more careful to preserve the meat. They usually cut all the meat in long thin strips, drying it on special drying-racks in sun and wind.

The later the season, the better is the meat, because the animals are no longer worried by insects, and can feed undisturbed. The meat of young animals killed in midsummer is so lean and tasteless, that it is really only fit for dog-food. The buck-skins are valued for summer bedding and as the best material for curried leather. The fawn-skins, on the contrary, are poor, since the hunter cannot choose his own time for killing. Only the poorest people use them for garments, while all others buy fawn-skins from the reindeer-breeders.

At the places where the migrating reindeer crossed the Kolyma and its affluents, the Yukaghir inhabitants used to set long rows of snares on both banks of the river, spreading them out on the trees and among the bushes. These were still more efficient than hunting on the water; but bush and forest on the Middle Anadyr are too scanty to allow of this method of hunting. At the mouth of the Kolyma, where the migration of reindeer still continues to some extent, a few score reindeer are killed every summer on the water, and in some places single snares are still spread on the reindeer-trail.

The frame of the kayak used by the Chukchee for hunting reindeer on the rivers (Fig. 47, *b*) is similar to the common Eskimo form, but it is covered

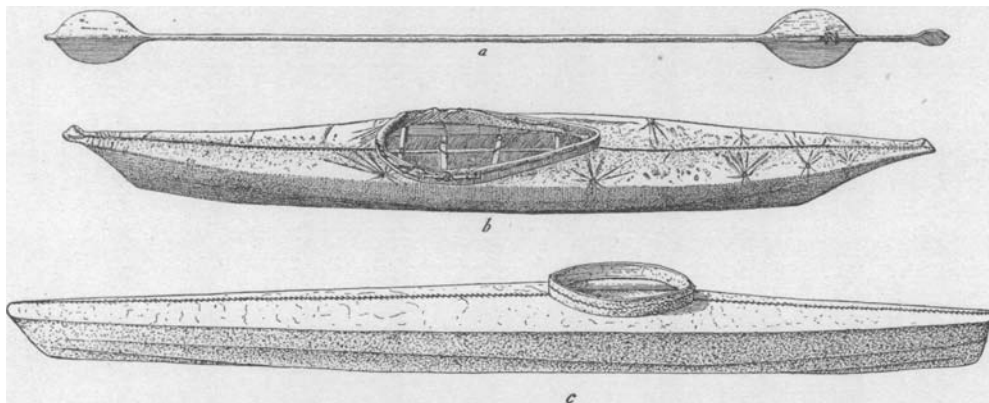


Fig. 47, *a* (70882 *b*), Double Paddle with Small Iron Spear; *b* (70882 *a*), Kayak from the Middle Anadyr; *c*, Eskimo Kayak. *a*, *b*, from models; *c*, from a photograph.

with reindeer-skin instead of seal-skin. The manhole in the middle remains open, because there is no need of making it water-tight for use on the river. The kayak is employed because of its lightness as compared to that of the wooden canoes of the Russianized Yukaghir. The type of the Maritime Chukchee kayak is represented in Fig. 47, *c*. The double paddle (Fig. 47, *a*) is similar to that of the Yukaghir, and has a stem that is straight or somewhat curved, with blades in the shape of a poplar-leaf. In shallow waters two slender sticks about 150 cm. long and 1 cm. thick are used, both with the dug-out and with the skin canoe, for punting. The sporadic occurrence of the kayak all along the Asiatic shore is very curious. It exists on the Arctic, then almost disappears on the Pacific, again appears on the waters of the Middle

Anadyr, then disappears for a long stretch of space, to appear finally on the Okhotsk Sea among the Maritime Koryak.

The hunting of "resident" reindeer is done with the gun, and sometimes even now with the bow. For instance, bucks that go to the Chukchee herds in rutting-time may be killed only with the bow or with the lasso. The Lamut, and, following their example, also the Reindeer Chukchee, take advantage of the well-known curiosity of the reindeer, to lure it within shooting range by means of a special decoy-reindeer, which is put to pasture in the open field, on the end of a very long and thin line. When wild reindeer are espied at a distance, the hunter hides behind some tree or large stone. The Lamut on the open plain will crouch behind the back of his riding-reindeer. Thus the hunter patiently awaits the oncomers, directing the course of his decoy-animal by dexterous pulls and jerks of the line. The best decoy-animal is a cross with a wild reindeer, — in the rutting-season a young doe, or a buck with large antlers, that is taken by the wild bucks for a rival.

The Lamut hunt reindeer in the spring, running on snowshoes over the hard-crusted snow, but this is possible only in a wooded country. On the tundra the snow is always too hard-beaten by winds to give a man with snowshoes any advantage over the reindeer.

To the Maritime Chukchee the wild reindeer cannot be so important as to the American Eskimo, because most of the hunt is done by the Reindeer Chukchee and other inland tribes; and the maritime people, for the most part, can only have a share in their large hunts. Thus, as already mentioned, people from Pacific villages in former times used to go up the Anadyr River to take part in the reindeer-killing on the water. On the tundra between the Anadyr and Indian Point the chief reindeer-hunters are Maritime Chukchee, who have acquired a few reindeer, and who for this reason spend much time inland, scouring the country the whole time far and wide. The same is true for the whole Chukchee Peninsula.

The elk, in former times, lived in the Kolyma country, close to the seashore; and the Kolyma Yukaghir derived from it a considerable part of their food. Around old dwelling-places at the mouth of the Kolyma I could always find an abundance of elk antlers and bones; and the jacket of a Yukaghir corpse that Mr. Jochelson found in a wooden burial-box on the lower part of the Dry Anui was made of elk-skin. In the last two centuries the elk has retreated into the forest, and does not go to the tundra. The Chukchee, therefore, hunt the elk but little, though in former times they were familiar with that animal, as is indicated by the frequent use of its name. Among the constellations, Castor and Pollux are called "elks;" a stray reindeer coming into a strange herd, and unlawfully appropriated by its master, is called "elk;" etc.

The mountain-sheep is eagerly pursued by all Reindeer Chukchee on

account of its meat, which is considered the best of all game; also for its horns, which are used for manufacturing spoons, pronged clasps for the reindeer-harness, cups, etc. Its skin is very soft and warm, and is considered more valuable than reindeer-skin.

The mountain-sheep is very cautious, and lives only on rugged mountains. When caught on the plain, it immediately makes for the nearest hill, however low and easy to climb. In this case the dogs hold the sheep at bay, and the hunter is able to catch it with his lasso.

Of fur-bearing animals, the most important are the white and the red fox. The former are much more numerous, though the red variety also lives all along the Arctic and Pacific coasts, and is even met with and killed on the sea-ice while searching for young seals, or picking up bones left over from the feast of the polar bear. The Maritime and Reindeer Chukchee have several methods of hunting the fox. The most simple is to run it down on a sledge with a swift team of dogs or reindeer. The best hunting-time is after the first snow has fallen, which discloses every trace of the animal, and makes it hard for it to escape. Swift reindeer are able to overtake a fox after two or three hours of hard pursuit. When accustomed to that kind of hunting, they become so excited that they try to trample the fox down. The reindeer is also used in hunting down the wolf, and will be just as eager to catch it and to strike it on the head with the hoof. In fox-hunting the reindeer-driver often does not rely exclusively on the swiftness of his team, but sends a hunting-dog after the fox, replacing it by another when the run has lasted for a couple of hours (a dog-driver simply releases the swiftest dogs of his team one after another for the purpose: the fresh dog will be sure to catch the tired animal). When possible, the fox leads the pursuit to some large lake where the ice keeps bare of snow for a long time, and therefore is too slippery for the reindeer. The short feet of the fox, on such ground, give it advantage even over the dog, facilitating sudden turns and retreats. A good dog, however, would not give in, but would obstinately keep on with the pursuit. Sometimes the two adversaries are so tired that they lie down on the ice opposite each other, and rest for a couple of minutes, keeping a close watch on each other's motions. An old wily fox, when pursued, does not go into its burrow, for it knows that it can be dug out from the shallow ground with but little difficulty. On the Arctic shore the crust of the unfrozen soil is so thin, that the ramifications of the burrow extend directly under the surface, and sometimes the roof can be broken in simply with the foot. Foxes, therefore, often prefer to lodge in hollow logs of driftwood or among stones rather than burrow in the ground. If the fox is in the burrow, the hunter often enlarges the entrance with an axe or an ice-pick; then the fox is extricated with a split stick that catches in some of the hair of its coat, or even simply with the hands, the animal having been dazed with smoke beforehand.

In the Kolyma country the Reindeer Chukchee, like other inhabitants, are very assiduous in digging out the young of the white fox, though their skin has hardly any value; and this imprudent extermination has already decreased the number of foxes. In trade, seven qualities of white-fox skin are distinguished, according to age; and the first three are valued at not more than from ten to fifteen cents apiece. In the Kolyma country the Russianized Yukaghir and the Yakut often capture the young of the red fox, and raise them in willow baskets or wooden cases. The animals are half starved, because, if well fed, they would have thin and uneven fur. They are generally killed early in the fall. The Chukchee are too indolent to go to the trouble of raising young foxes in this way, and, moreover, they consider it as tabooed. In the eastern part of their territory, the Chukchee consider it unfair "to break into the house of any resident, even if it be a fox," because every resident, though but a fox, is supposed to have a drum and charms in his house, and vengeance through magic means might ensue. Thus only a fox hunted down in the burrow is dug after, especially since often it does not hide in its own hole.

TRAPS. — Traps with a spring of twisted sinew (Fig. 48), of the shape common throughout the northern part of the Old World and possibly brought

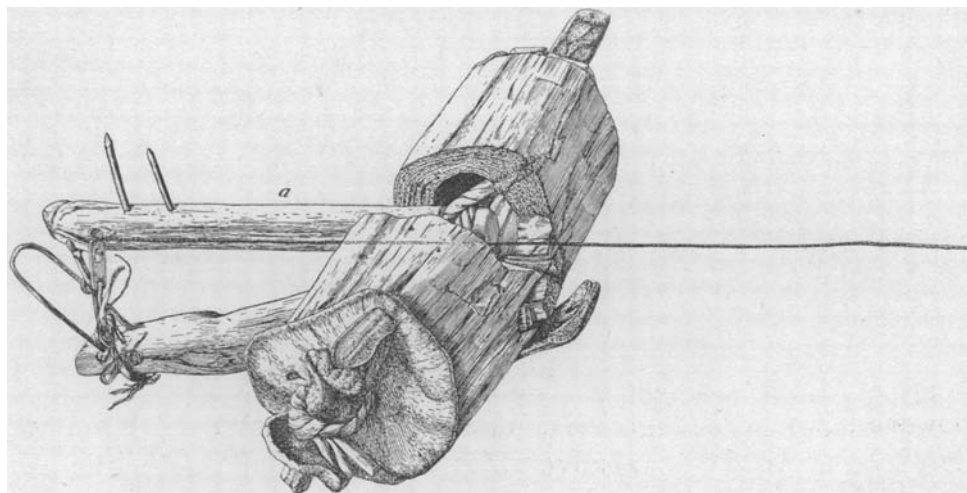


Fig. 48 (¹⁰/₁₁₃). Fox-trap, with Spring of Twisted Sinew. Length of striking-stick *a*, 46 cm.

thither by the Russians, were much used in northeastern Asia, and even came to America;¹ but on the Pacific they are at present superseded by steel traps bought from the whalers, while on the Kolyma and along the Arctic shore the sinew-twisted trap still prevails. This trap strikes the animal from above; and the blow, though prompt and strong, is not quite sure, since the fox is often quick enough to dodge away in time. Then, instead of being killed, it is only hurt, and may be able to escape, breaking the trap, or biting through the sinew cords. On the other hand, this kind of trap is not very safe for

¹ For description, see Nelson, pp. 122, 123.

the owner, and when visited may occasionally strike him on the feet, since under the snow it is not easy to ascertain the actual place of the releasing-string and the trigger.

On the Pacific shore some native blacksmiths, Chukchee and Eskimo, hammer traps of their own out of the bar-iron bought from whalers. They have usually but one spring; since traps with two springs work too strongly, and often cut off the paw, instead of holding it. Both kinds of spring-traps, especially the larger ones of steel, are used also for other animals, — hares, wolverines, wolves, and even swans and geese. When set for the wolf, the steel trap is fastened with a strong chain to a wooden block weighing from twenty to twenty-five pounds, so that the wolf may be able to drag it along on the snow. If the block should be too heavy, the wolf would snap the chain and carry away the trap. Sometimes the wolf that carried away the trap is able to live for several months on the tundra, preying on hares, moulting ducks, etc. Once in the winter I was shown, on the fresh trail of several wolves, the footsteps of one that evidently had only three paws; the fourth paw probably having withered, and dropped down with the trap. Another time a trap carried away by a wolf in the fall was found in the spring far away in the tundra, with the withered paw of a wolf in it.

Dead-falls are used only by a few Chukchee, in imitation of the Russians, who have large rows of them everywhere in the forest and on the tundra. On the Chukchee Peninsula, among the Maritime people, however, wood is too scarce for constructing dead-falls; and the Reindeer Chukchee in other parts of the country do not care very much about them, since they are not very skilful with the axe.

A common fox dead-fall (Fig. 49) consists of a double fence made of thin poles ten feet long and two feet high, with a space between about two

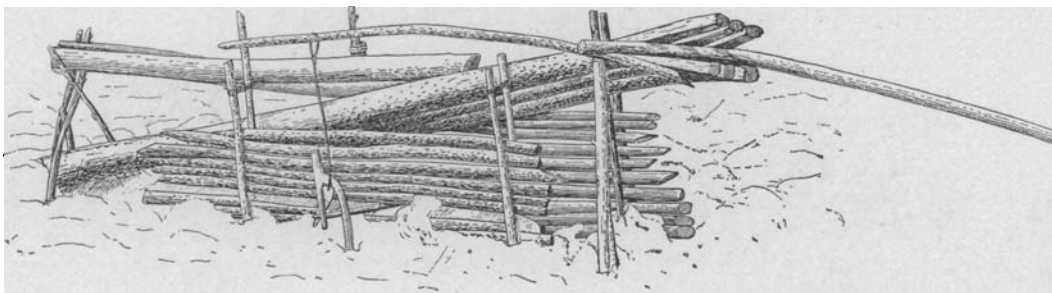


Fig. 49. Dead-Fall of Russianized Natives. (From a photograph.)

feet and a half broad. The flooring is laid loosely; and the roof is formed of two or three strong beams split at the front end, and having a cross-pole jammed into the cleft. The rear end simply rests on the ground or on a special, very low support. Sometimes a large stone is put on the roof to make it heavier. The roof is quite free, and so fitted that in falling down

it will not be interfered with by the side-fences. The long end of the cross-pole touches the ground. The short end is supported by a sweep, which rests on a stake firmly set into the ground. One of the ends of the sweep is connected by a willow withe or by a strong sinew cord with a trigger in the middle of the fence. This trigger is held in place by a short wooden stick, to which the bait is so tied that the first strong pull of the animal sets the trigger free, and the roof, loosened from its support, falls heavily down and crushes it (Fig. 50). For bait a dried salmon-head is used, or the wing-



Fig. 50. Dead-Fall, showing Captured Fox. (From a photograph.)

bone of a goose, or something of that kind, usually in the most putrid state, to attract the animals by its pungent smell.

On the tundra, dead-falls are often raised on special supports to prevent them from being blocked by snowstorms. They are of slight build, being intended chiefly for white foxes, and usually have two dropping-beams. Those within the forest border, being intended for red foxes, are more strongly built, and have three dropping-beams. However, the larger animals, such as wolverines and wolves, are caught in them only when the flooring is made with spaces between the poles. Then the feet of the animal will slip through, and the sudden pain and pressure on its back will deprive it of most of its strength. For hares a lighter dead-fall is used. It has only one stout beam; and the fence is made simply of small stakes stuck in a row around the fall. Pieces of willow-bark, or a few tender sprigs of willow or poplar, serve as bait, and are tied to the bait-stick.

On the Arctic shore the inhabitants make dead-falls of blocks of ice,

which work on the same principle as the wooden ones. Sometimes, in the deep snow among the rough ice, a pit is dug and covered with a large block of ice. This is well poised on its axis, and will swing on slight pressure; so that the animal stepping on it falls into the pit, and the ice-block comes to its former place by its own weight.

Strychnine pills, procured from Russian or American traders, and wrapped in blubber or tallow, are also occasionally used for killing animals.

The self-acting bow was probably copied from the Russians, together with the sinew spring-trap. At the present time, of all the tribes of north-eastern Asia, the Yakut and the Lamut use it most frequently. They secure with it even elk and reindeer. The Chukchee employ it for small animals, such as foxes and hares.

Till recent times the well-known spit of whalebone¹ (Fig. 51, *a*), identical with that of the American Eskimo, was used to catch wolves. It consisted of a slender rod of whalebone, with sharp-pointed ends, folded together several times, and bound with a thin thread of sinew well saturated with oil. Afterward it was several times soaked in water and allowed to freeze. The whole object was then well covered with blubber, tallow, meat, or such like. These folded spring-spits were often joined in strings of five or six, and hung on a bush on the wolf's trail, but so high as to be out of reach of foxes; or they were laid in a hole in the ice and water was poured over them, so that it would freeze to a transparent protecting cover strong enough to resist the attacks of smaller animals. The wolf would break through the ice and swallow all the spits, which would unfold in the stomach, and, breaking through its walls, cause the speedy death of the animal. But with only one or two spits it was able to walk away for a considerable distance, even so far that it would never be found by the hunter.

Polar bears are sought on the sea-ice with dog-teams. When the animal is espied, two or three of the best dogs are released. The bear is easily overtaken by them, and, when held at bay, is speared with a lance, or shot

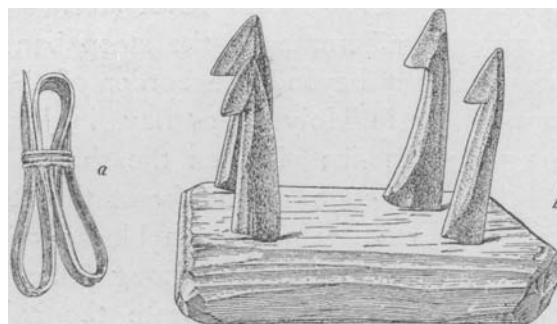


Fig. 51, *a* ($\frac{3}{4}$ "), Eskimo Whalebone Spit for killing Wolves (length, 6 cm.); *b* ($\frac{1}{4}$ "), Spiked Block for catching Bears (height of spikes, 6 cm.).

¹ Its name in Chukchee is wa'pak, which means literally "fly-agaric" (an intoxicating mushroom). The Chukchee and the Koryak are very fond of this mushroom; and when they find it in the woods, they pick it off just as eagerly as the wolves snatch after the greased whalebone spits. The Chukchee believe, moreover, that mice, when gathering roots for the winter, bring in some unknown intoxicating herbs which they use in their ceremonies. These herbs also serve to protect their stores from intruders, because they are said to act as poison on most other animals, including man. These herbs are called by a name derived from that of the intoxicating mushroom, — é'li-wa'pak ("white agaric"), — and a similar name is given to the whalebone spit on account of its power of killing the animal that swallowed it.

with a rifle. The pregnant bear lies down in some convenient spot on the rough ice, and allows the snow to cover her over. She is killed in her snow den, together with her young, much in the same way as are brown bears in more southern latitudes. The polar bear of northeastern Asia is not dangerous, and rarely defends itself. When wounded or hunted down, it simply thrusts its head into the snow, and waits for the blow.

Brown bears are occasionally killed by the Reindeer Chukchee, chiefly during their winter sleep, because that is the least dangerous method. The entrance to the den is sometimes blocked with logs, and the animal is speared or shot through a hole made in the roof. The Maritime Chukchee occasionally have a chance to kill a brown bear, because in the summer-time bears go to the tundra far away from the forest border. Thus on the Arctic coast, near the Kolyma, brown bears are met on the seashore between the mouth of the Kolyma and Brown Bear River (Kei'ñu-we'em). On the Lower Kolyma brown bears even hibernate on the steep banks of some brook, well protected from the wind, but beyond the border of the forest. On the Pacific coast I met a brown bear in Holy Cross Bay, in June, 1901, that was feeding on seaweed along the land-ice piled on the shore.

On the edge of the forest the Reindeer Chukchee sometimes catch the bear with small thin wooden blocks spiked on their upper surface (Fig. 51, *δ*), and left on the pathway among fallen leaves. When the bear steps on one of these, the spikes penetrate the sole of its foot. A wound of this kind rapidly disables it for walking, especially since, in trying to tear away the block, the bear only makes the wound worse. This implement seems to have been copied from some tribe living within the forest limit, though I am not aware that any of the neighboring tribes use it at present.¹

The Maritime Chukchee catch hares in winter by cornering them and finally driving them into a spot surrounded by nets. Women and children join in the *battue* with rattles and sticks to drive the hares in the desired direction. I was told that in one successful *battue* several scores might be caught. In times of famine poor families often escape starvation by this kind of hare-hunting.

Small animals — like marmots, ground-squirrels, etc. — are caught with snares; house-mice, with special mouse-traps; ermines, with a kind of self-acting bow (Fig. 52), probably copied from the Russianized natives. It consists of a small but strong bow fastened in a vertical position to a wooden frame of narrow rectangular shape. The "arrow" is tied at one end to the middle of the string, while on its other end is a cross-piece which runs up and down in grooves, between the vertical sides of the frame. In stringing the bow, the arrow with the attached cross-piece is pulled upward. Then the string is held in position by means of a trigger, which is connected by a sinew cord with

¹ For the use of this implement among the Aleuts, see Mason, Traps, p. 472.

a slender chip of wood. The latter is propped against the bottom of the frame, and holds the cross-piece in place. It is braced by another very slender cross-piece, the ends of which are held by the grooves. The bow is set on the ermine's track, so that the animal has to pass through the lower part of the frame, beneath the bow. A light touch pushes off the wooden prop, releases the trigger, and the arrow with the cross-piece shoots down, catching the animal and strangling it to death.

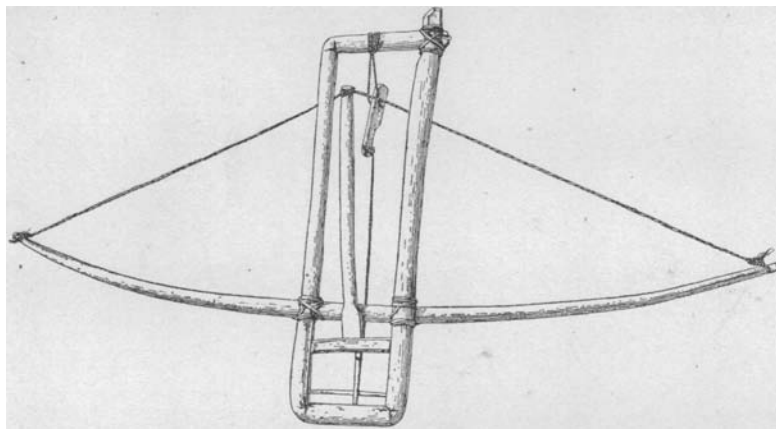


Fig. 52 (7782). Automatic Bow for catching Ermine. Length, 64 cm.

BIRD-HUNTING. — Sea-fowl, such as eider-ducks, guillemots, and puffins, are caught with various kinds of snares. These are made of whalebone and sinew thread, and some of them (Fig. 53, *a*) are quite similar to those of the American Eskimo.¹ Many snares of this kind are joined together and furnished with wooden buoys (Fig. 53, *b*, *c*), then tied to a very long rope and thrown from the shore into the sea as far as possible. The catch is best during long-continued tempests, when the sea-fowl come near the shore. Other snares are spread on the land, close to lakes and rivers, on nesting-rocks for auks and puffins, around entrances to nests, or in bushes for ptarmigan.

The snare represented in Fig. 53, *d*, has two nooses made of whalebone and fastened on both sides of a small stick. They are spread by placing a portion of each noose into small tubes made of goose-quills. The snare has a long line fastened to the middle of the cross-piece, by means of which captured birds are hauled in.

Another kind of snare (Fig. 53, *e*) is set across the entrance to nests of sea-fowl, already mentioned, so that they are caught when passing through.

A ptarmigan-snare is represented in Fig. 53, *f*. Its end is tied to a branch, while the noose is spread on the ptarmigan-track. It is identical with that represented by Nelson,² which he says is used for marmots.

Sitting birds are killed with stones hurled from a common sling (Fig. 54). When on the wing, they are hit with throwing-balls, which have been described many times by travellers both in Asia and America. At the present time, throwing-balls have gone completely out of use, even on the Arctic shore, because with the introduction of the shotgun the birds ceased to come within

¹ Boas, Central Eskimo, Fig. 452, p. 511.

² Nelson, Plate LI, Fig. 4, p. 122.

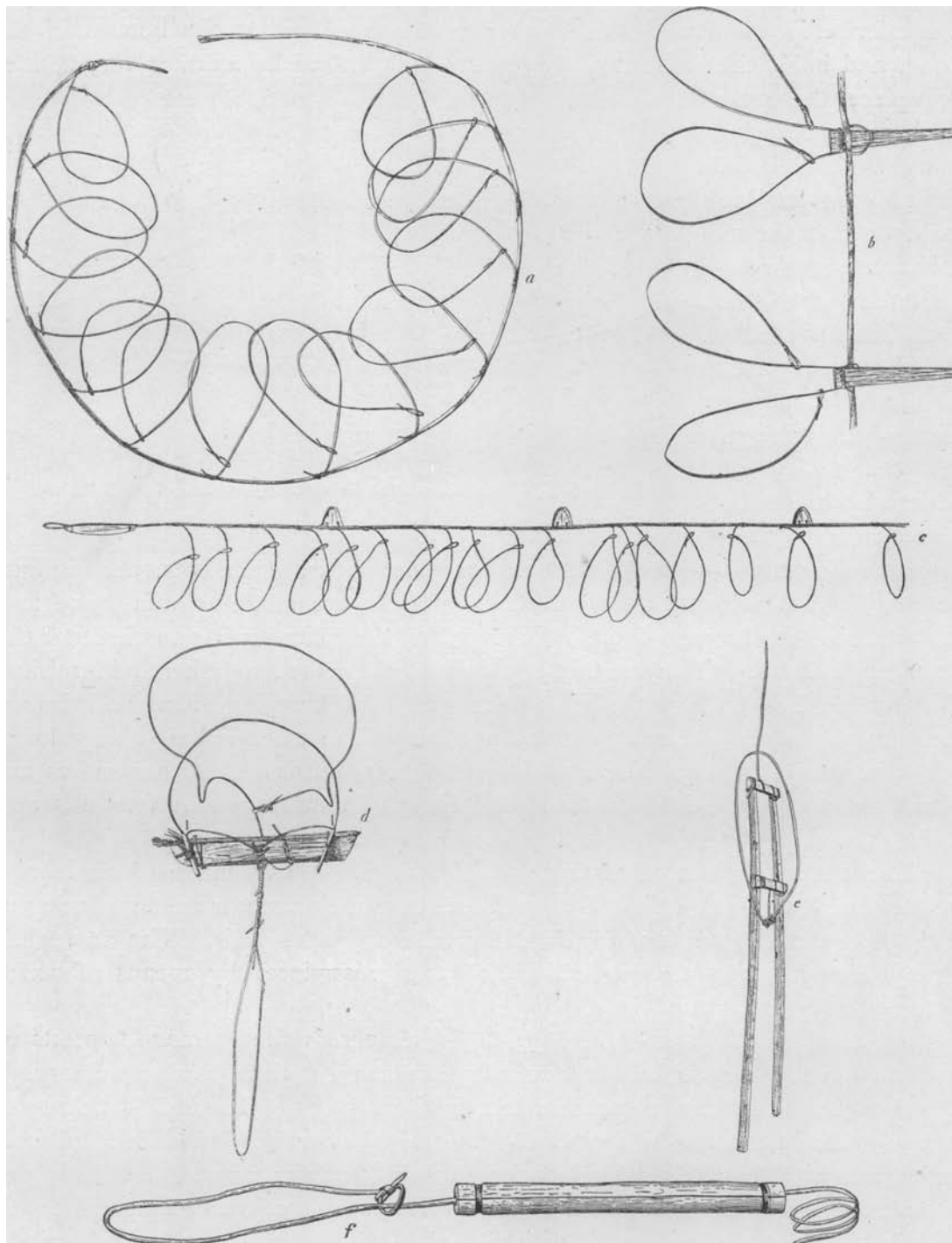


Fig. 53, *a-e*, Snares for catching Sea-Fowl; *f*, Snare for catching Ptarmigan. *a, b, d, f*, $\frac{1}{4}$ nat. size; *c*, $\frac{1}{8}$; *e*, $\frac{1}{16}$. *a-e*, Eskimo; *f*, Chukchee. *a*, 380; *b*, 380; *c*, 380; *d*, 380; *e*, 380; *f*, 380.



Fig. 54 (7807). Sling. Total length, 167 cm.

throwing range of the balls. Therefore all specimens that could be secured are old and worn (Fig. 55). Besides bone and ivory balls, wooden ones were also used. These had the advantage of not sinking when they fell into the water.

The bird-dart is used along the Arctic shore for the killing of moulting ducks and geese, on the Kolyma, alike by the Chukchee and by the Russianized Yukaghir (Fig. 56); on Bering Sea, only by the Russianized natives of the Middle Anadyr, who brought it over from the Kolyma. However, on old house-sites in Wute'en and Eu'nmun I found a few dart-prongs made of bone (Fig. 57). At Indian Point I came across a small dart and a throwing-board; but it was said that they came originally from the American side (Fig. 58, *c*). The Koryak of Penshina Bay in the Okhotsk Sea, however, use throwing-boards and darts of somewhat different shape for hunting both birds and small seals. Those used on the Anadyr (Fig. 58, *a*, *b*) and Kolyma have a shaft about seven or eight feet long, slender at the rear end, and thick at the head. They have one central prong and three circular prongs made of iron, and fastened with sinew or twine. The Anadyr throwing-board has a hole on the right side for the forefinger; that of the Kolyma region has the hole more frequently in the middle. The Chukchee on the Chaun tundra often use the bird-dart without the board, sending it off simply from the hand.

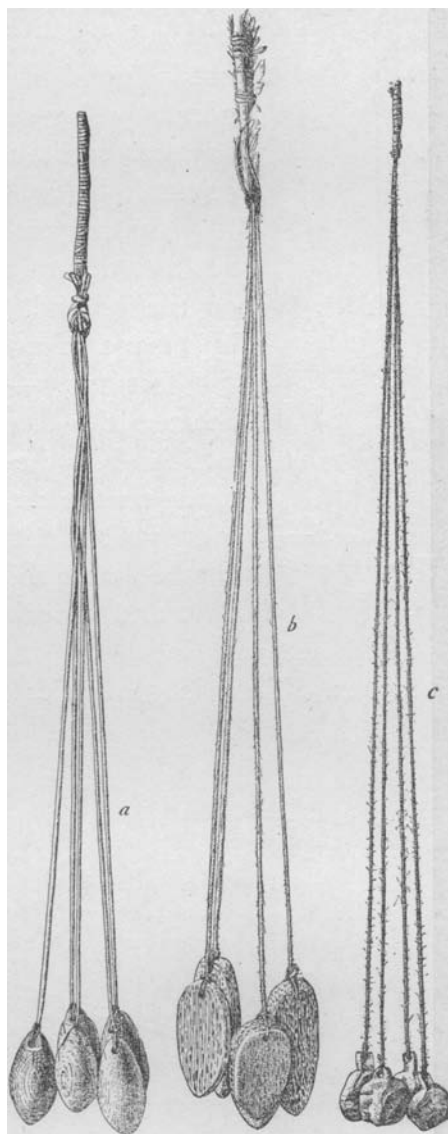


Fig. 55, *a* (Чукча), *b* (Чукча), *c* (Чукча). Throwing-Balls for killing Birds on the Wing. $\frac{1}{2}$ nat. size.



Fig. 56. Kolyma Hunter with a Bird-Dart. (From a photograph.)

The dart is used for ducks and geese, but it is too weak for the swan.

A kayaker, finding a moulting swan on a lake, usually tires it by long pursuit, making it dive frequently. The swan is not a good diver, and, because of its white plumage, can generally be seen while swimming under water. Finally the kayaker overtakes the swan when it comes to the surface. He seizes it by its long neck, which he breaks close to the head.

Ptarmigans and ducks are also caught by means of a drop-net fastened to a hoop. The birds are allured with bait strewn on the ground, and at a favorable moment the net is lowered by means of a long line.

FISHING. — Fishing is of comparatively less importance, because the coast of the Chukchee Peninsula is not very rich in fish. On the Pacific coast the mouth of the Anadyr is the last place to the north to which large shoals of *Salmonidae* resort every year to spawn. Farther on, their number rapidly diminishes. On the Arctic shore, *Coregonidae* begin to be abundant from Chaun Bay, and especially from the mouth of the Kolyma westward.

Fish-nets of sinew are used everywhere by the Reindeer and Maritime Chukchee. Their length varies greatly, according to whether they are employed

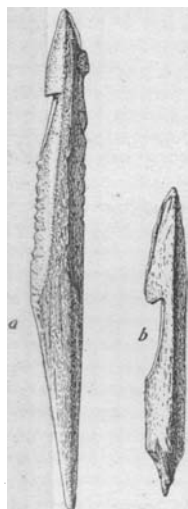


Fig. 57, *a* ($\frac{60}{1687}$), *b* ($\frac{20}{3687}$). Dart-Prongs. Length, 14 cm., 8.5 cm. Eskimo.

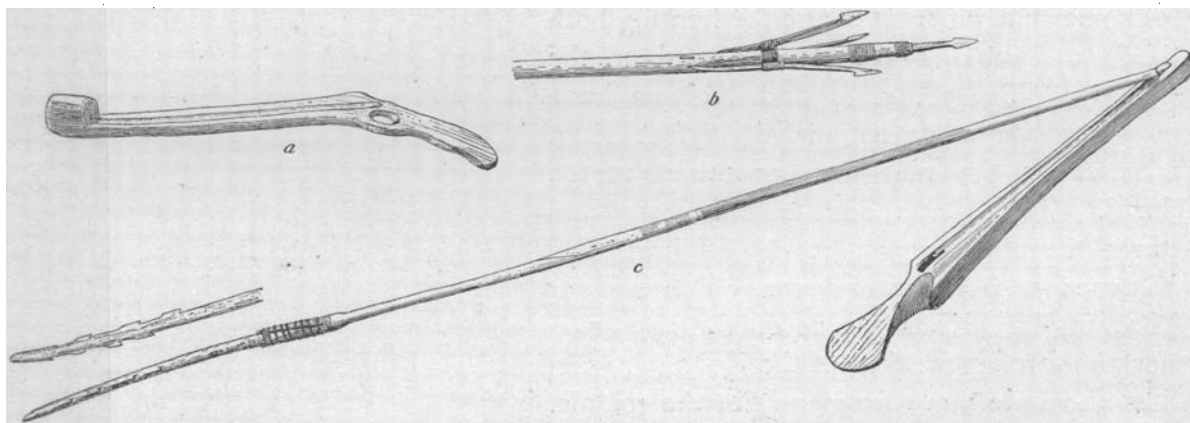


Fig. 58, *a*, *b* ($\frac{10}{8017}$), Throwing-Board and Dart (length, 53 cm., 216 cm.); *c* ($\frac{60}{1687}$), Dart with Throwing-Board (length: board 42 cm., dart 117 cm.). *a*, *b*, from Anadyr, Russianized natives; *c*, from Indian Point, Eskimo.

on the seashore, or in the rivers and lakes of the interior. The small net of the Reindeer people, used in catching graylings, is made of from ten to fifteen pieces of sinew. A larger net of the Pacific fishermen (Fig. 59) requires from twenty to thirty pieces. The length of the latter varies from fifteen to twenty-five feet; the meshes are from two to four inches square. Other nets are made of thin strips of leather (Fig. 60), and in former times they were made also of whalebone. The Reindeer people often make their nets without a shuttle, though the process is very slow. The Maritime Chukchee use shuttles of whalebone (Fig. 61, *a*), wood (Fig. 61, *b*, *c*), or bone, with netting-sticks

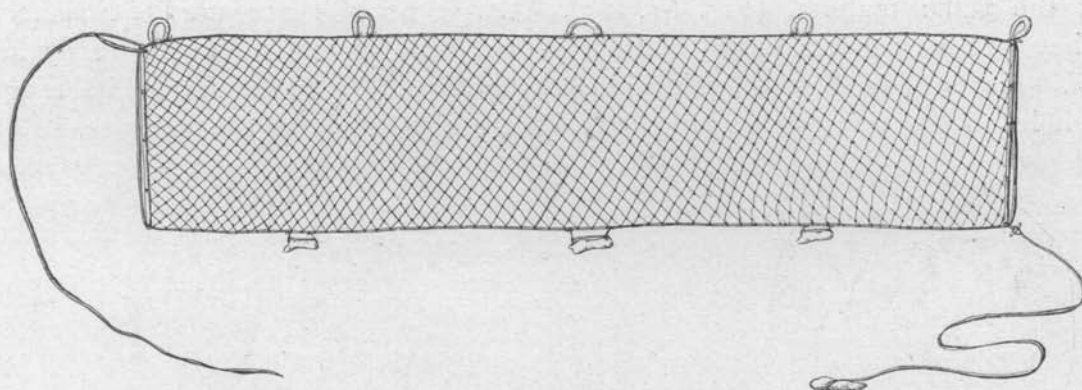


Fig. 59 ($\frac{10}{8555}$). Fish-Net made of Sinew. Length, 580 cm.

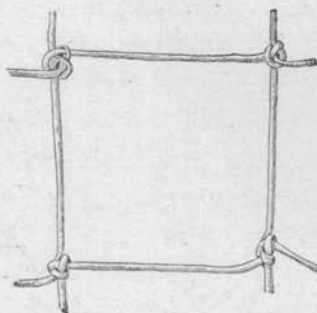


Fig. 60 ($\frac{10}{8555}$). Mesh of a Leather Fish-Net. $\frac{1}{3}$ nat. size.

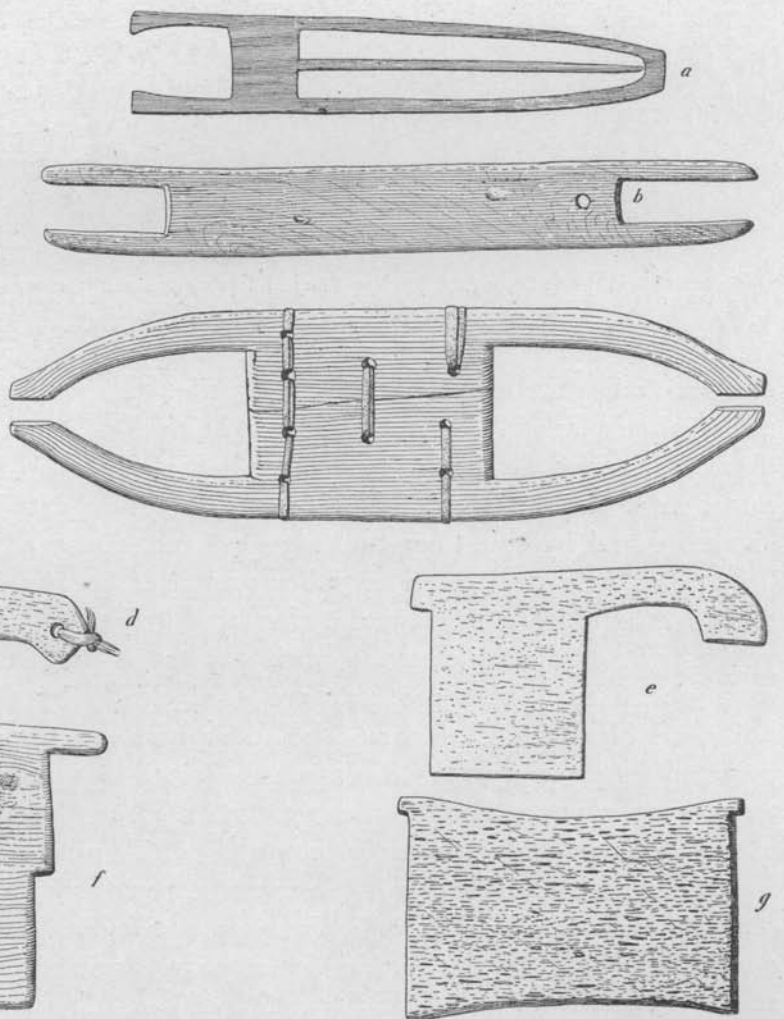


Fig. 61, *a* ($\frac{60}{3811}$), Whalebone Netting-Shuttle (length, 29 cm.); *b* ($\frac{10}{8555}$), *c* ($\frac{10}{8555}$), Wooden Netting-Shuttles (length, 42 cm., 34 cm.); *d* ($\frac{10}{8555}$), *e* ($\frac{60}{3811}$), *f* ($\frac{10}{8555}$), *g* ($\frac{10}{8555}$), Netting-Sticks ($\frac{1}{3}$ nat. size). *a*, *e*, Eskimo; rest, Chukchee.

of the same material (Fig. 61, *d-g*). Large pebbles are used for sinkers. They are strung on loops of thin leather, and, having no notch, easily fall off. Pieces of bone or of walrus-ivory, with a strip of leather fastened through a hole on the upper edge (Fig. 62, *b*), are also used for the purpose.

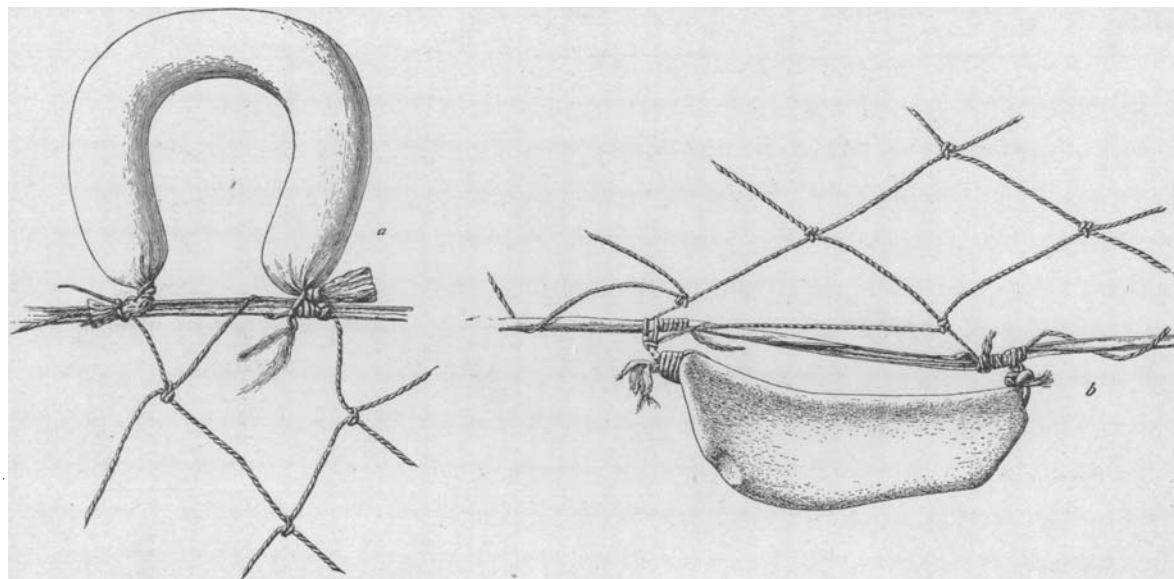


Fig. 62, *a*, *b* (1935). Net Float and Ivory Sinker. Size of mesh, 7 cm. square.

Floats are made of wood, or of pieces of seal-intestines inflated with air and carefully tied up (Fig. 62, *a*). The nets of the Russianized settlers on the Kolyma and Anadyr, made of hemp or horsehair, are eagerly bought, also Russian or American twine, cord, etc. On the small rivers the nets are put across shallow places, and the fishes driven into them by men and boys shouting, and by splashing the water a short distance farther along the stream. Often two nets are joined together and used in seine fashion. Even parts of tent-coverings are used to make the seine longer. Occasionally the whole seine will consist of a skin covering with a piece of net in the middle, in which to catch the fish. These methods are used chiefly by the Reindeer people.

The Maritime Chukchee push their nets into the sea by means of a long pole made up of two or three pieces joined together. A large stone is fastened to the water end of the net with a strong piece of leather. The shore end is tied to some stones or to a stake. These nets are used on the Pacific for catching several species of *Salmonidae*, such as humpback salmon (*Oncorhynchus horbusha*), red salmon (*O. lycaodon* or *niarka*), and pink salmon (*O. lagocephalus* or *keta*); on the Arctic, for catching various species of *Coregonus*, such as *Coregonus omul*, *C. leucichtys*, *C. maksun*, *C. nasutus*, etc.

These nets are also set in the winter through holes cut in the ice with ice-picks having stout iron points (formerly the points were made of bone).

However, no Chukchee has patience enough to cut six feet of ice, as the Russianized fisherman of the Kolyma does in setting his net.

Bag-nets fastened to a square frame made of thin stakes (Fig. 63) are

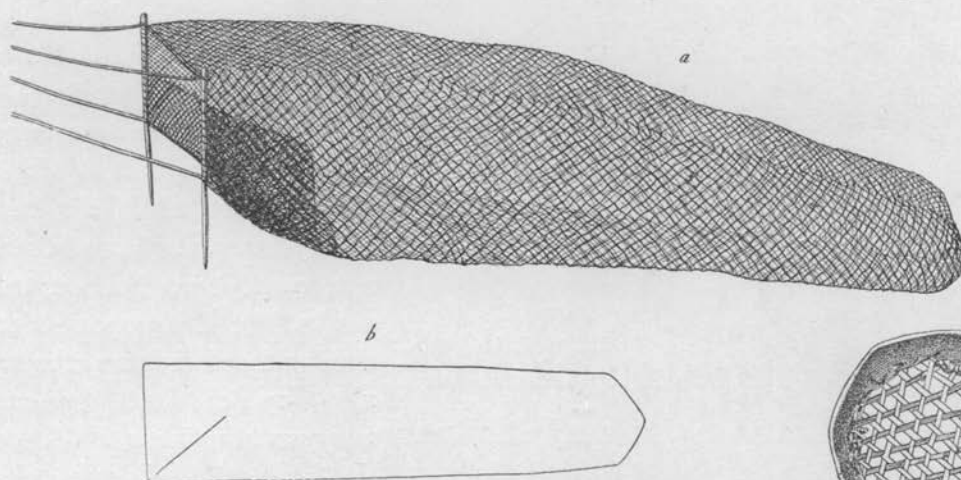


Fig. 63 (Багнет), a, Bag-Net (length, 240 cm.); b, Diagram of Bag-Net.

used in shallow water. The vertical stakes of the frame have sharp points, and are driven into the ground.

The ice-scoop used by the Chukchee (Fig. 64) is of the well-known Eskimo form, chiefly of small size, and has a circular hoop of antler netted across with whalebone strings or thin strips of leather. A round hoop-net made of whalebone (Fig. 65), with one large stone beneath for a sinker, is used for catching wachna.¹ It is identical with the American Eskimo net.²

Nordenskiöld³ gives a picture of a fish-spear made of bone. On the Pacific coast I met with the fish-spear only among the Kerek near Cape Anannon, and in several places among the Kamchatka Koryak. Their spears, however, are more or less similar to that given by Nordenskiöld. The specimen represented in Fig. 66 probably formed one of the prongs of a fish-spear.⁴ It is made of bone, and was found on an ancient house-site in the Eskimo village Wute'en.

The Chukchee make hardly any fish-weirs, because of the lack of proper material for constructing fences and fish-traps. On the Arctic coast, at the mouth of some of the smaller rivers, weirs are occasionally constructed of square pieces of sod piled up across the river in the form of a low wall. Fish-traps are

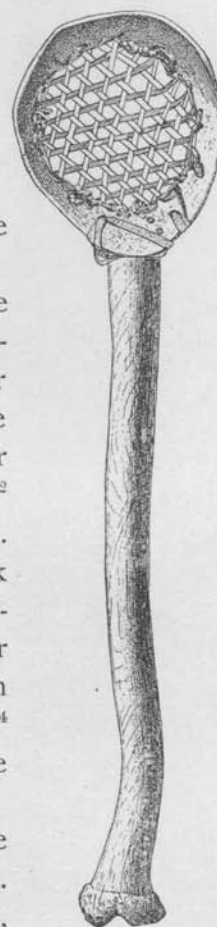


Fig. 64 (Лопатка). Ice-Scoop. Length, 57 cm. Eskimo.

¹ Russian, Вахня; Chukchee and Koryak, ve'qän. This name is applied to various species of *Gadi*; such as *Boreogadus polaris* in the Arctic, *Microgadus proximus* and *Eleginus navaga* (*Gadus wachna* Pall.) in the Pacific Ocean.

² Compare Nelson, Plate LXX, Fig. 12, p. 184.

³ Nordenskiöld, Vol. II, p. 103.

⁴ Compare Nelson, Plate LXVIII, Fig. 1, p. 176.

made of willow-branches brought from the south, or they are simply bought from the inland fishermen, particularly from the Yakut and Russian.

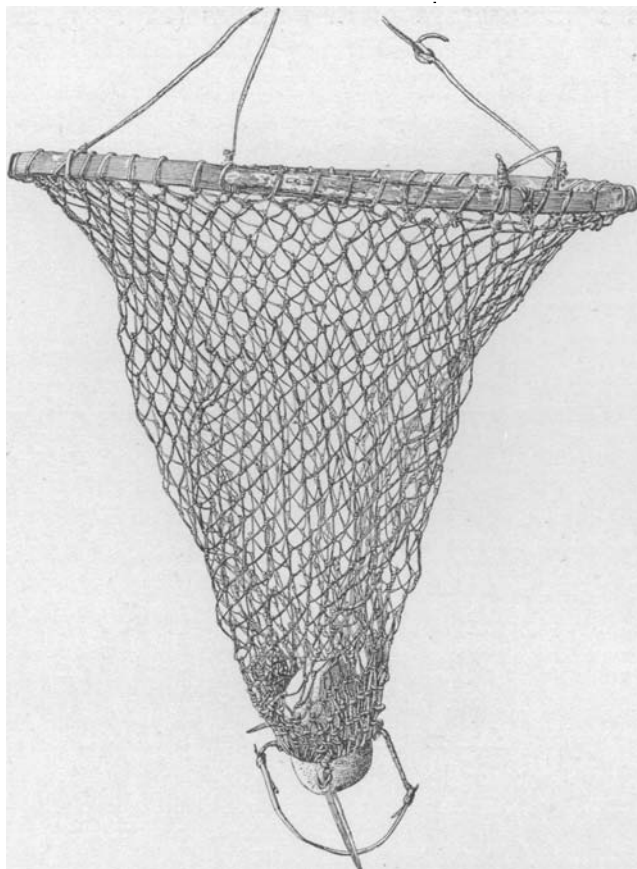


Fig. 65 (ᑭᑭᑭ). Hoop-Net. Longer diameter of hoop, 48 cm. Eskimo.

The simplest kind of fish-hook is that used for catching burbot. It consists of a wooden peg pointed at both ends, with a line tied around its middle. It is baited with small fish of any kind; for instance, with *Coregonus albula*. When swallowed by a burbot, the peg works like a harpoon-point. A similar hook is sometimes used also by children for catching burgomaster gulls. I have seen fish-hooks of similar shape among the collections of Alaskan Eskimo in the United States National Museum at Washington.¹

The ordinary form of hook used in fresh water is represented in Fig. 67, *a*, *b*. It is inserted in an ivory or lead body, and furnished with small pieces of red stuff, which serve as bait. The line is made of sinew or twine.

It is used for catching grayling, also various kinds of trout and other fresh-water species of *Salmonidæ*. A short rod is sometimes used.



Fig. 66 (ᑭᑭᑭ). Ancient Fish-Spear. Length, 10.5 cm. Eskimo.

The fishing-tackle used in salt water (Fig. 67, *c*) is employed chiefly for various gadoid species, such as wachna and tomcod, also for sculpin,² flounder, etc. Three or four hooks are fitted together into an ivory stem, and several implements of this kind are fastened with short strips of whalebone to a common ivory or iron support. If the support is of iron, it serves also as a sinker. No rod is used. The line is of sinew or of thong. Small hooks employed in salt water are represented in Fig. 67, *d*, *e*.

Angling is done throughout the year, whenever opportunity offers. In winter and spring it is done through holes in the ice;

¹ Compare also Nelson, Plate LI, Fig. 7, p. 122.

² Russian, быкъ рыба; Chukchee, qañayolhin. This name is applied to various species of *Cottus*, such as *Cottus niger*, *Cottus quadricornus*, etc.

on the rivers, more frequently on the edge of some open place, whither every kind of fish run in shoals to get a little fresh air. In this way the Omolon and the Anadyr Chukchee angle for grayling, the Chaun Chukchee for salmon-trout, etc.

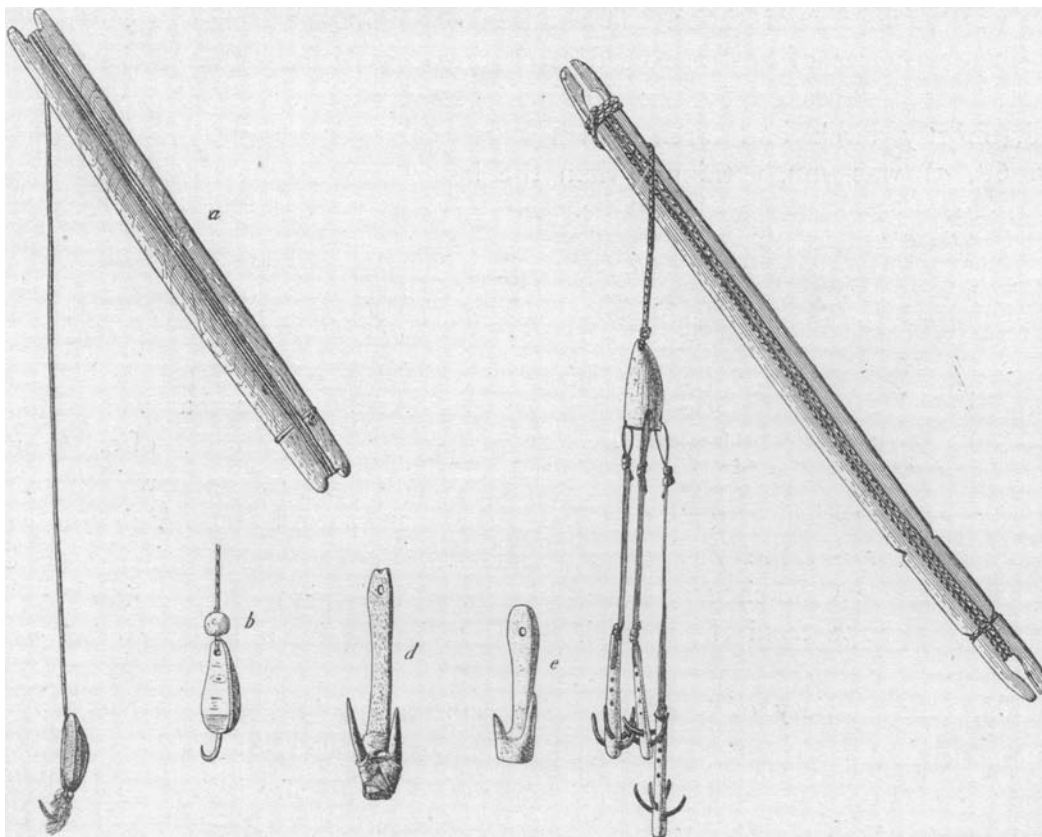


Fig. 67, *a* (Чукча), *b* (Чукча), *d*, Fishing-Tackle for Fresh-water Fishing (length of hooks, 5 cm., 4 cm.; *c* (Чукча), *d* (Чукча), *e* (Чукча), Fishing-Tackle for Salt-water Fishing (length of hooks, 7 cm., 6.5 cm., 4.5 cm.). *a-c*, Chukchee; *d*, *e*, Eskimo.

Hooked poles are used both by the Reindeer people for catching grayling and trout and by the Maritime Chukchee for catching various kinds of salmon. The hook at the present time is made of iron, and is either firmly set in the shaft or is detachable. It is used also by the Russianized Yukaghir, the Koryak, and the Kamchadal.

WAR.

BOW AND ARROWS. — For shooting, the bow was used until recently, and in some remote places it is still used by a few people. In former times it was the favorite weapon of the Chukchee; and as late as the thirties in the nineteenth century, the official reports of the Anui fair, speaking of the number of Chukchee comers, say that there were so and so many camps, with so and so many Chukchee men "versed in archery."

The epic tales are full of descriptions of shooting-bouts and contests.

Ability to split a blade of grass with the point of an arrow was proof of the greatest skill of the archer. Nowadays only the toy-bows of children are put to their full use; and shooting with small arrows is practised much in the same way as in former times, the children beginning at a very early age.

Two varieties of bow are used in northeastern Asia. One is the "double-wooded bow," so called by the Russians. It was composed of two pieces of wood, mostly birch and larch, which were glued together. The outer piece (Fig. 68, *a*) was much thinner than the inner one (Fig. 68, *b*). The horns

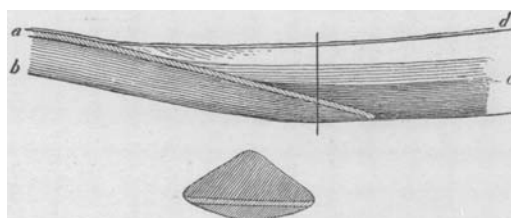


Fig. 68 ($\frac{19}{35\frac{1}{2}}$). Diagrams of "Double-wooded" Bow. Thickness at bend, 2.5 cm.

often consisted of separate pieces, and were spliced to the body of the bow (Fig. 68, *c*). The back of the bow was almost always covered with a thin layer of sinew pasted over with fish-glue (Fig. 68, *d*). Over that was glued a covering of birch-bark, often wound around the body of the bow in a spiral,

to increase its resisting power. This bow was used by the Yukaghir, the Lamut, the Koryak, the Yakut, and, in fact, by all the tribes of northeastern Asia, besides the Chukchee and the Eskimo. The Reindeer Chukchee bought bows of this shape from their neighbors, and had quite a number of them in actual use.

The other variety of bow (Fig. 69) was made of a single piece of wood,



Fig. 69 ($\frac{19}{35\frac{1}{2}}$). Bow with Backing of Sinew. Length, 160 cm.

mostly larch, but occasionally birch or pine, found among the driftwood on the coast. It was strengthened by a wrapping of birch-bark or sinew, and in addition had a plaited-sinew backing. Occasionally even a "double-wooded" bow would have a sinew backing, not only among the Chukchee, but also among the Yukaghir and the Lamut.

The lashing (Fig. 70, *a*) was of the western type, so called by John Murdoch, with a single sinew cable secured about the body of the bow in half-hitches, with extra strengthening on both bends. This type of lashing has been described by John Murdoch as characteristic of the bow of northeastern Siberia, with the occasional mixture of the so-called Arctic type.¹ Small ivory levers (Fig. 71, *a*) were used in twisting up the cords of sinew on the back of the bow, making them into a cable. In shape they are identical with those used by the American Eskimo and represented by Nelson² and

¹ Murdoch, *Eskimo Bows*, pp. 313, 314.

² Nelson, Fig. 30, p. III.

Murdoch.¹ Like the latter, they were used in sets of two. The set in the collection was bought, together with one of the quivers. It has both levers tied together with a cord of sinew passing through holes at their middle points. Sometimes the belly of the bow was strengthened with a smooth flat piece of whalebone fastened to it with glue, or with an extra piece of wood lashed to the middle, beneath the grip (Fig. 70, *b*). This kind of bow was

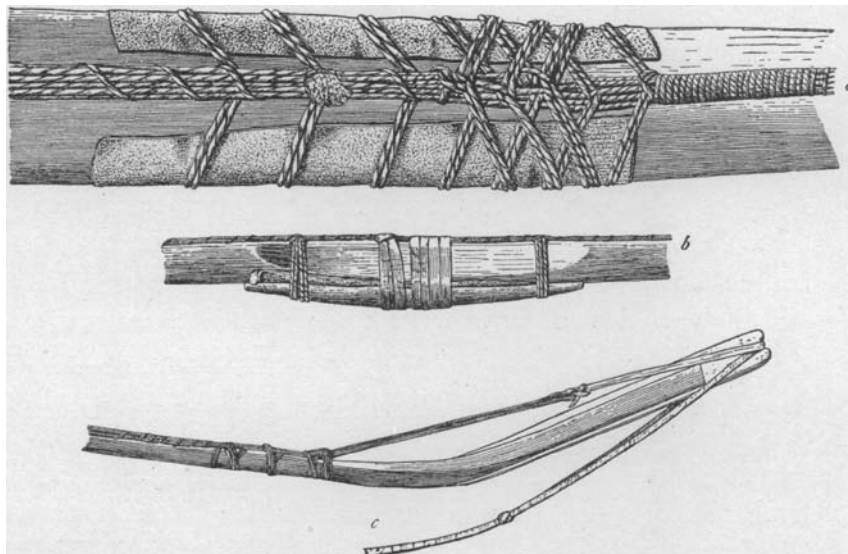


Fig. 70, *a* ($\frac{10}{100}$ a), Detail of Sinew Backing of Bow represented in Fig. 69; *b* ($\frac{10}{100}$ b), Detail of Strengthening of Grip of Bow; *c* ($\frac{10}{100}$ c), Method of tipping Horns of Bow. Length of bow in *b*, *c*, 155 cm.

in use among the Chukchee and the Asiatic Eskimo.

The bows of the Gilyak, as may be seen from specimens in the collections of this Museum, are strengthened with whalebone on the inside in much the same way as the Chukchee bow. They have a layer of sinew glued to the back, and over that a birch-bark covering, but no backing of plaited sinew. According to Schrenck, the finer specimens of Gilyak bows were strengthened with whalebone on the back and with elk-hide on the belly.²

The two forms of bow were alike in shape: they had recurved ends, a body flat on the outside, and flat or rounded on the inside. The grip was in the middle, and narrower than the arms. The bow became thicker and narrower towards the ends, which were almost triangular in cross-section. When unstrung, bows of both types assume a peculiar position, with the belly slightly curved, but with horns so much turned back that sometimes the bows look as if curved outwards.

The string was made of plaited sinew or of thong. The notches for the reception of the string were cut either on the back of the bow or across the

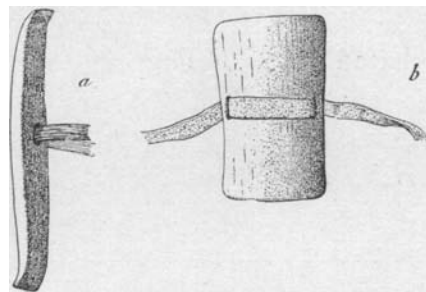


Fig. 71, *a* ($\frac{10}{100}$ a), Ivory Lever for twisting Sinew; *b* ($\frac{10}{100}$ b), Ivory Thumb-Guard. $\frac{1}{2}$ nat. size.

¹ Murdoch, Eskimo Bows, Plate X, Fig. 27; Plate XI, Figs. 28, 29.

² Schrenck, II, p. 245.

ends of the horns (Figs. 69, 70 *c*). In bows without separate horns, each end was often tipped with a long piece of bone (Fig. 70, *c*) as a protection against the impact of the string. Small wooden supports (Fig. 69, *a*) were frequently fastened to the horns to make the string stand off. Some of the Chinese bows — as, for instance, those in the collections recently sent to the Museum by Dr. Berthold Laufer — have many details in common with the Chukchee bow. They are strengthened on the belly with a thin strip of hard black wood, have supports for the string in exactly the same places; their nocks are tipped with iron; and their whole appearance resembles that of the Chukchee bow.

Both varieties of bow were strong, and sometimes could be strung only with the help of the feet, as mentioned in many traditions.

One of the Chukchee bows brought by the expedition from the mouth of the Anadyr is 160 cm. long, and another measures 155 cm.¹ Both are similar in shape, but the former (Fig. 69) is made of a single piece of wood, strengthened from inside with a piece of whalebone reaching to the nocks and neatly fitted in. The back of this bow has the usual layer of sinew glued on, and over that a layer of birch-bark. This is overlaid with a backing of plaited sinew. The cable of sinew is fastened to the body of the bow with a few half-hitches, then it is firmly lashed to the bends and its ends fastened around the horns, not reaching the nocks by two inches. The string is of sinew, and the notches are on the horns of the bow.

The other bow is made of two pieces of wood glued together, as described before. The sinew layer is absent, but it has the usual backing of plaited sinew. The cable of sinew is fastened to the bow by a method similar to that used in the first specimen; but the cable, after being lashed to the bends, extends directly to the nocks. A loop of thong is slung around each nock, and meets the cable halfway, where they are tied together. The bow is covered with bark that is glued on, and adorned on the back with black cross-lines similar in description to those found by Dr. Adler² on a Chuvantzy bow from the Middle Anadyr. The string is of thong. Notches are cut across the ends of the bow, which are tipped with bone (Fig. 70, *c*). One horn was broken, and afterwards spliced and secured with bone wedges and a strong sinew lashing.

Bows were also made of one piece of wood, without backing or covering, and shaped in a single curve. Such bows occur among the Lamut or Yukaghir, but they were used only temporarily, in the absence of weapons of better make; or they may be degenerate forms of the better type that developed after the introduction of fire-arms.

¹ Dr. Adler (II) gives for the length of the Chukchee bows (ancient), 142-159 cm.; for the length of the Chuvantzy bow, 185 cm.

² Adler, II, p. 10.

Among the Chukchee, however, plain bows without recurving ends have always been in use side by side with those of better workmanship. The plain bows consisted of a single piece of wood, without elastic cover, but they were supplied with a heavy sinew backing of the combined Arctic and western types of John Murdoch. I found such bows among the Reindeer Chukchee of the Kolyma country.

The bow is held vertically, and the arrow is on its left. The so-called Mediterranean arrow-release was used, in which the first two fingers were employed for drawing the string, and the arrow was held between them. Arrows were often flattened around the nock, to make them better adapted to the position between the fingers.

The secondary release was also in use, at least among the Reindeer Chukchee, and perhaps also the Mongolian release, if we may judge from the occurrence of the thumb-guard. Specimens of thumb-guards were found among the Chukchee (Fig. 71, *b*), though the owners could not exactly tell their use. Perhaps they were used similarly to those of the Mongolian archers.

Tradition speaks also of bows that were made wholly of whalebone, although this material could not make a strong bow. However, children still use small bows made entirely of whalebone (Fig. 72). Wrist-guards (Fig. 73)

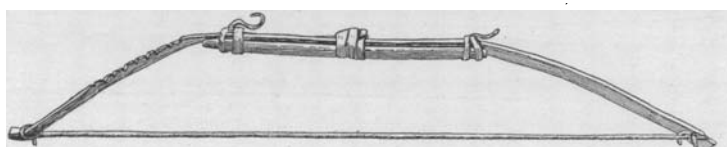


Fig. 72 ($\frac{10}{100}$ a). Child's Bow, made of Whalebone. Length, 46 cm.

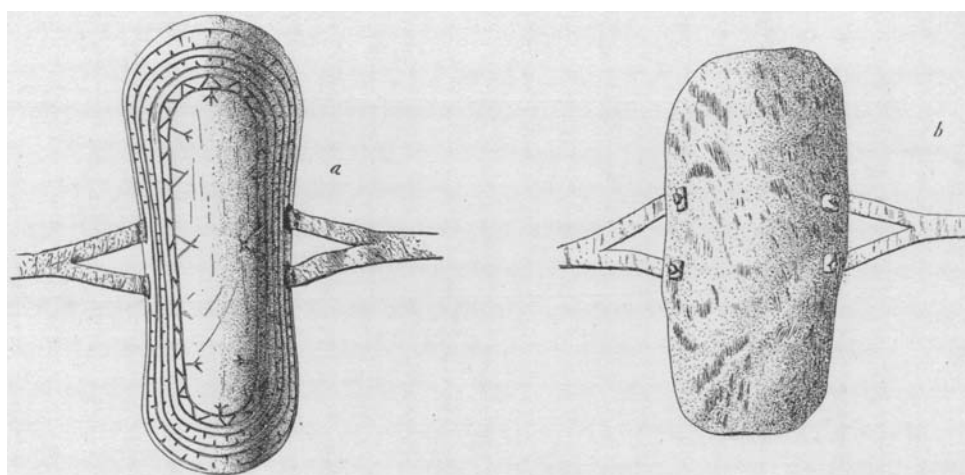


Fig. 73, *a* ($\frac{80}{3885}$), Ivory Wrist-Guard (width, 4 cm.); *b* ($\frac{70}{7885}$), Wrist-Guard made of Hide (width, 5 cm.). *a*, Eskimo, Indian Point; *b*, Lamut.

made of ivory or of strong leather served for protecting the hands from the rebounding string.

In recent times arrow-points were made of iron, bone, ivory, wood, and

of all these materials combined (Fig. 74). They were fastened to the shaft in various ways, — wedged in and occasionally wrapped with sinew, or inserted in a hole in the tip of the shaft. I was told that some were simply slanted

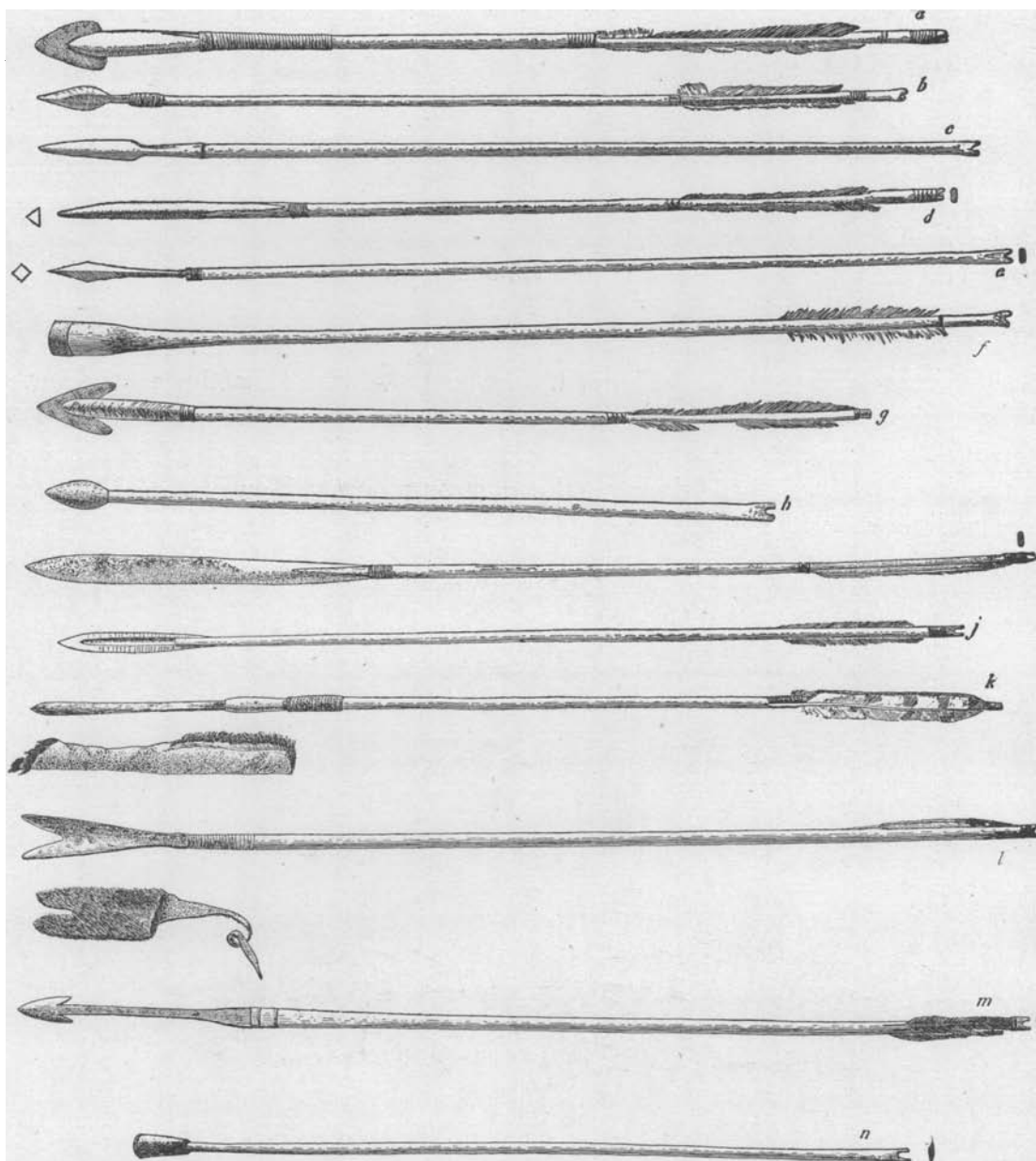


Fig. 74. Various Types of Arrows. $\frac{1}{5}$ nat. size. *a*, 7884 d; *b*, 7833 g; *c*, 7884 f; *d*, 7883 h; *e*, 7883 c; *f*, 7882 d; *g*, 7833 j; *h*, 7831 d; *i*, 7835 b; *j*, 7883 i; *k*, 7833 h; *l*, 7880 e; *m*, 7833 b; *n*, 7844 b.

and tied to the shaft, though among the specimens obtained not a single splice of this kind is found. However, this method of splicing is well known in northeastern Siberia, and is used, for instance, in lashing a man's crooked

knife to its slender handle, and especially in joining two pieces of broken stick, as in canes, arrow-shafts, sledge-rails, etc.

Many of the points had fur sheaths to protect the sharpened edges. Those with heavy blunt heads were intended to stun birds and small animals. The ends of the shafts were often tipped with bone or wrapped with sinew to prevent the nock from splitting. Arrows were generally feathered, and the feathers were either glued on along their whole length, or only their tips were caught in a slit in the rearshaft, and the bases were tied to the nocks with sinew, while the middle remained free. There were arrows with one, two, or three feathers (Fig. 75). The length of the arrows was from 60 to 85 cm.¹

I could find no indications whatever that poisoning of arrows was known to any of the tribes of northeastern Asia, though Steller and Krasheninnikoff mention it as existing among the Kamchadal. The latter, they say, smeared their arrow-points with the juice of some kind of *Aconita*, numerous species of which are found in Kamchatka.

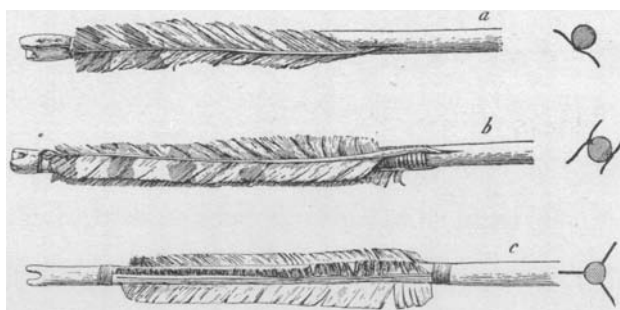


Fig. 75, *a* ($\frac{70}{1180}$ b), *b* ($\frac{70}{1033}$ h), *c* ($\frac{70}{1033}$ g). Methods of feathering Arrows. Thickness, 75 cm.

Arrows were usually put into quivers. These were rectangular in shape, and embroidered on the outer side. They were carried on the back, supported by shoulder-straps, like a knapsack (Fig. 76; see also Plate xxii). Sometimes, to

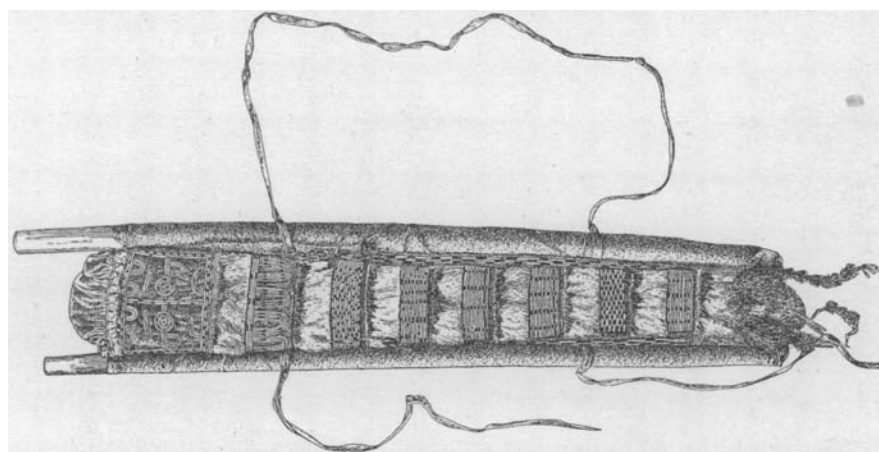


Fig. 76 ($\frac{70}{1033}$ a). Quiver. Length, 83 cm.

protect the quiver from rain, an extra covering was used, which was frequently also embroidered. A covering for the bow was employed for the same purpose.

At present bow and arrows are used everywhere by children in playing. Besides the usual bow, crossbows are much used, with some variations in the

¹ According to Adler (I), 51 to 78 cm.

shape of the trigger, etc. (Fig. 77).

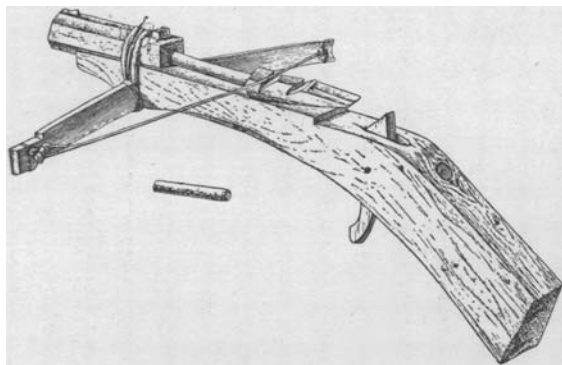


Fig. 77 ($\frac{10}{5887}$). Child's Crossbow. $\frac{1}{4}$ nat. size.

Sticks, small round stones, and small arrows are shot from them. The crossbow was probably copied from the Russians, since the Cossacks were armed partly with bows and arbalets as late as the forties of the nineteenth century. Whips of peculiar shape, for throwing light darts (Fig. 78), are also used by children.

FIRE-ARMS, LANCES, AND OTHER WEAPONS. — Fire-arms of every possible description are used by the

Chukchee. From the Russians they receive, even at the present time, clumsy firelocks (Fig. 79), while the Americans bring percussion-guns and breach-loaders.

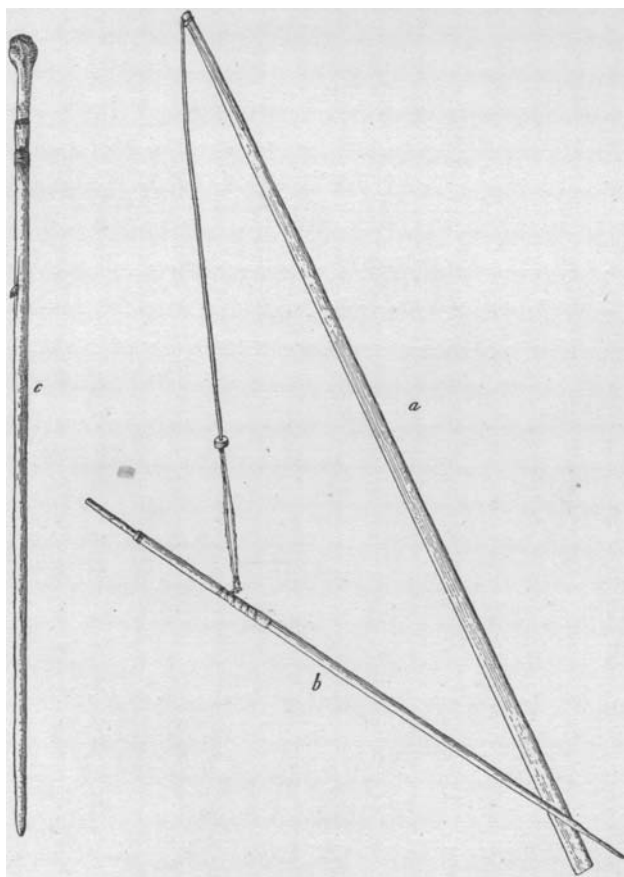


Fig. 78, *a* ($\frac{10}{5887}$ a), Throwing-Whip (length of handle, 102 cm.); *b*, *c* ($\frac{10}{5887}$ b, c), Darts (length, 73 cm., 84 cm.).

All fire-arms are furnished with supports¹ and gun-cases. A piece of cloth is tied around the lock to keep off moisture. To the firelock belong two flasks, — one for powder, and one for bullets (Fig. 80, *a*), — a powder-measure, a ramrod (the latter two often combined as in Fig. 80, *b*), and sometimes a small double tube (Fig. 80, *c*) with a partition in the middle, each part closed at the end with a small plug, and containing a charge ready for use. The plugs are held in place by a string, which passes through the middle of the tube, and is slung around the belt of the hunter.

The lance, with the Chukchee, was chiefly a weapon for defence and war; and among the Reindeer people it still partially retains its former importance. Since the arrival of Russians, iron has been utilized for the point, which was formerly made of flint or bone. Iron lance-points are

¹ Compare Nelson, Plate LXIII, Fig. 31, p. 164.

forged by blacksmiths of all the neighboring tribes, and sold to the Reindeer

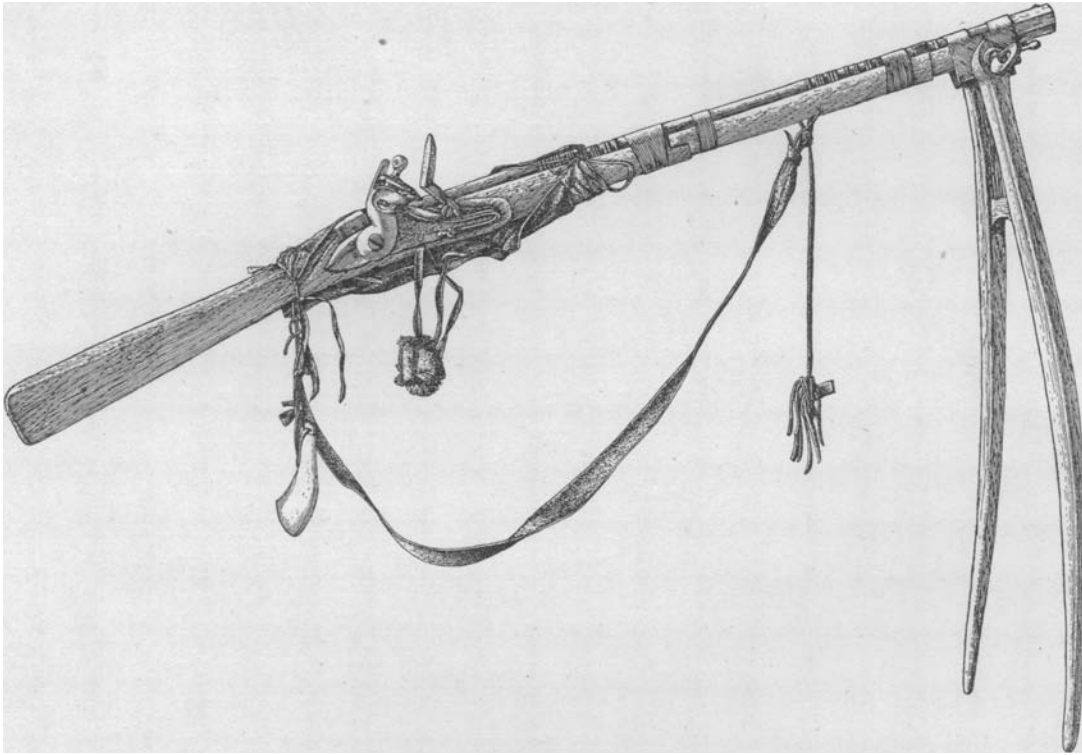


Fig. 79 ($\frac{10}{100}$). Firelock with Support. $\frac{1}{2}$ nat. size.

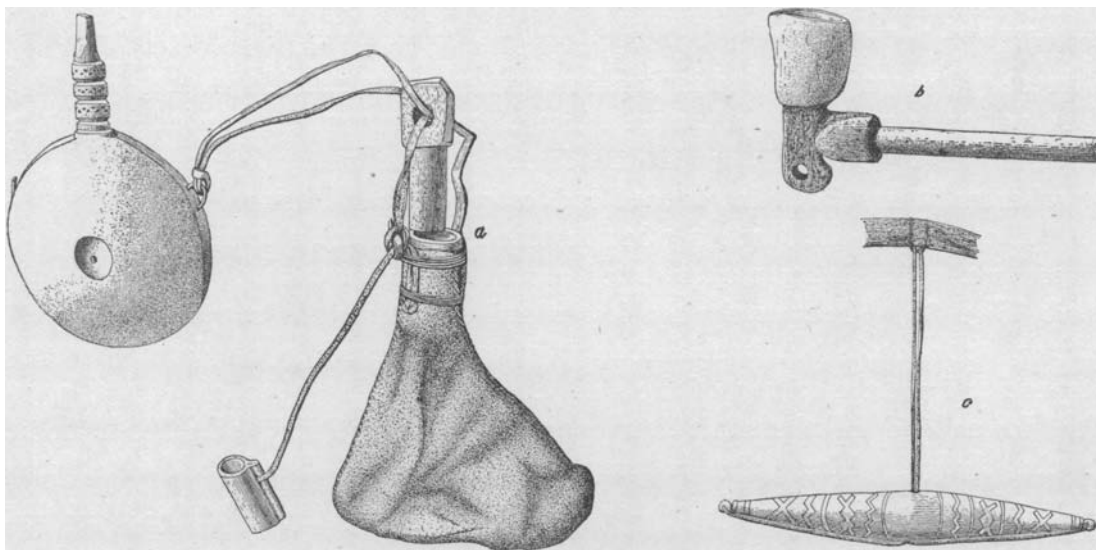


Fig. 80, *a* ($\frac{10}{100}$), Powder Flask and Measure, and Bullet-Bag; *b* ($\frac{10}{100}$), Ramrod and Powder-Measure combined; *c*, Double Tube for Gun-Charges (from a sketch). $\frac{1}{2}$ nat. size.

people, though recently but few new lances have been sold, the people being contented with the old ones.

The points of lances, and sometimes the best arrows, are often adorned

with various designs (Fig. 81), and inlaid with brass and copper, but not with gold, as Nordenskiöld presumes.¹ The pattern on the lance found by him

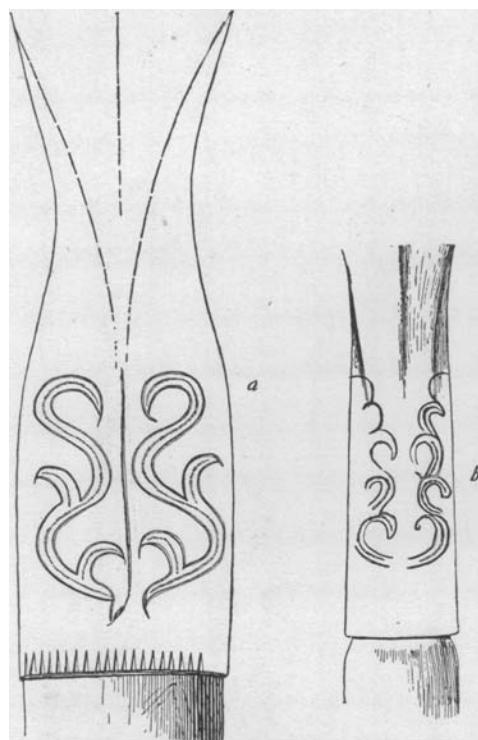


Fig. 81, *a* (7888 a), Portion of an Iron Lance, showing Decoration; *b* (7888 f), Portion of an Iron Arrow-head, showing Decoration.

Chinese. We may even find in Russian carvings and embroideries the cock pattern described by Laufer. Therefore it cannot be decided whether the style of this art is due directly to southern influences, or whether it has been introduced indirectly by the Russians.

The point of the lance is often fastened to the shaft with iron or brass wire, which is sometimes coiled around down the middle of the shaft (Fig. 82). Frequently the lower end of the shaft is supplied with a bone knob. A special loop of thong fastened to the latter serves to suspend it from the railing of the sledge when travelling (see Fig. 17, *f*, p. 90). The lower end of the shaft is supported by a large ring of sheep-horn tied to the sledge. The point is provided with a skin sheath, and often small rings of sheep-horn (Fig. 82, *a*) are slipped over the point to keep the edge from being blunted.

The lance is hardly used in hunting, except for polar bear; but the herdsman usually takes it along on every trip, especially in the inland country. Even a firelock is not so handy for self-defence, because it takes too long to

in a burial-place near Pitlekaj is quite common on the Kolyma, and is probably inlaid in brass. On the Anadyr side, brass inlays are rare, and engraving is done with less care, especially at the present time.

The style of the designs is common to all tribes of north-eastern Asia. It is also similar to that in use among the native tribes of the Amur country, as represented by Schrenck² and Laufer.³ The latter style has been largely influenced by Chinese art. In the case of north-eastern Siberia, however, it seems possible that the style of ornaments was obtained from Russian sources. The Russian style of ornamentation is also of Asiatic origin, and is similar to the



Fig. 82 (7888). Lance. *a*, Sheep-horn Point-Protector. Total length of lance, 2.5 m.

¹ Nordenskiöld, II, p. 105.

² Schrenck, II, Plate XLVI, Figs. 4, 5.

³ Laufer, Plate III, Fig. 2, and others.

handle it in moments of surprise, and it cannot be used at all in rain or with a strong contrary wind.

In times of war a fight with lances was a most common occurrence, as may be inferred from episodes in several tales. A certain degree of skill was displayed in such fights, and young men would assiduously practise fighting with the lance as well as running and carrying heavy stones. However, the chief aim of this practice was to increase the strength of the arms. "He practised so long, that the shaft of the lance became, in his hands, as pliable as a strip of skin," says one tale about a hero. As recently as fifty years ago, fighting with lances, as well as wrestling and racing, were practised for sport in ceremonials. Maydell relates that Amrak'wurgin, already mentioned, was famous for his skill in fighting.

Large knives (*rê'sqan-va'le*, "a cutlass") are carried on the hip, or sometimes on a separate strap slung over the shoulder. Elaborate scabbards are made by the Maritime Chukchee of thin fawn-skin, adorned with fringe (Fig. 83, *a*). These knives are used chiefly as weapons of defence, in the same way as spears. Some of the older cutlasses were quite long. One obtained from a Maritime Chukchee is two feet long, including the handle (Fig. 83, *b*).

Slung-shots were used for braining seals, and possibly also as weapons. However, I saw only one specimen, which was collected by Mr. Gondatti, and now belongs to the Museum of Anthropology and Ethnography of the Imperial Academy of Sciences, St. Petersburg, Russia. It looks ancient, and is quite similar to that of the American Eskimo, as represented by Murdoch¹ and Nelson.²

Regarding its use as a weapon, my Chukchee informants told me that in former times warriors would fasten a slung-shot around the waist like a belt, the stone serving as a button and being always ready for use. A belt of this kind, with a small pebble in place of a clasp, is sometimes improvised by careless persons; but of course the stone used for this is very small, and unfit to serve as a weapon.

ARMOR. — Armor was made of walrus ivory, ground-seal hide, and iron. Of ivory armor, an incomplete specimen is in the collections of the Geographical Society at St. Peters-



Fig. 83, *a* ($\pi\pi\pi\pi$), *b* ($\pi\pi\pi\pi$).
Skin Knife-Scabbards, with Knives.
¹ nat. size.

¹ Murdoch, Fig. 173, p. 191.

² Nelson, Plate LII, Fig. 1, p. 126.

burg. Another was obtained by Nordenskiöld. Judging from the picture in his book, it is also an incomplete one, because it has only three rows of plates and no wooden head-protector. Two specimens are in the Museum of Ethnography and History, Helsingfors, Finland, of which one is in fairly good condition, judging from the figure in Ratzel's paper on the subject.¹

A number of specimens of ivory armor, chiefly from the American side of Bering Sea, are in the possession of the United States National Museum in Washington, but all of these are incomplete. Those represented in the valuable paper by Walter Hough on primitive American armor come respectively from Cape Prince of Wales and Diomed Island.² Apparently there is no difference between them and the specimens brought from the Asiatic shore. Mr. Hough mentions, besides, four armor-plates of fossil ivory from Cape Wañqarê'man, on the Arctic shore; also nine iron plates found together with the ivory armor in a bog at Cape Prince of Wales. According to a communication of Capt. E. P. Herendeen, quoted by Mr. Hough,³ the Chukchee of Plover Bay, i. e., probably the Ai'wan Eskimo, wore a cuirass made of long strips of baleen; but from Capt. Herendeen's words it is not clear whether he saw this kind of armor or only repeats the words of the natives. At the present time no trace of armor made of whalebone can be found on the spot.

One specimen of armor made of hide is represented in my description of the Chukchee collection of the Museum of Anthropology, St. Petersburg.⁴ Another one, also from Siberia and quite similar in shape, is represented on Plate 4 of Hough's paper.

This kind of armor is evidently an imitation in skin of plate armor. It is made of horizontal bands of seal-skin instead of rows of ivory plates, the rings telescoping together like the hoops of a farthingale when the armor is not in use. Mr. Hough compares this type of armor to the banded mail of the middle ages.

A stiff hide head-protector is fastened above the armor. It evidently served to protect the neck from behind and from both sides. Mr. Hough compares it to the neck-fender of the Kingsmill Island⁵ armor.

The specimen of hide armor now in St. Petersburg is made of ground-seal skin. According to Mr. Hough, the armor in Washington is made of sea-lion hide; but I should think rather that it also is made of ground-seal skin, because sea-lions are scarce near the shores of the Chukchee Peninsula.

As stated before,⁶ iron armor has of late been very common among the Chukchee as well as among the Koryak. The expedition obtained two sets of armor from the Chukchee (Fig. 84, *a*) and three from the Koryak (Fig. 84, *b*),

¹ Ratzel, Plate II, Figs. 5, 6, p. 216.

² Hough, *Armor*, p. 634.

³ In the Pacific Ocean, near the Equator.

⁴ Hough, *Armor*, Plates 2 and 3.

⁵ Bogoras, *Chukchee Material Life*, Plate XII, Fig. 1.

⁶ See p. 54.

also parts and separate plates of several other sets of armor, besides the armor of Japanese make¹ mentioned before (Fig. 85). In the region of the Palpal

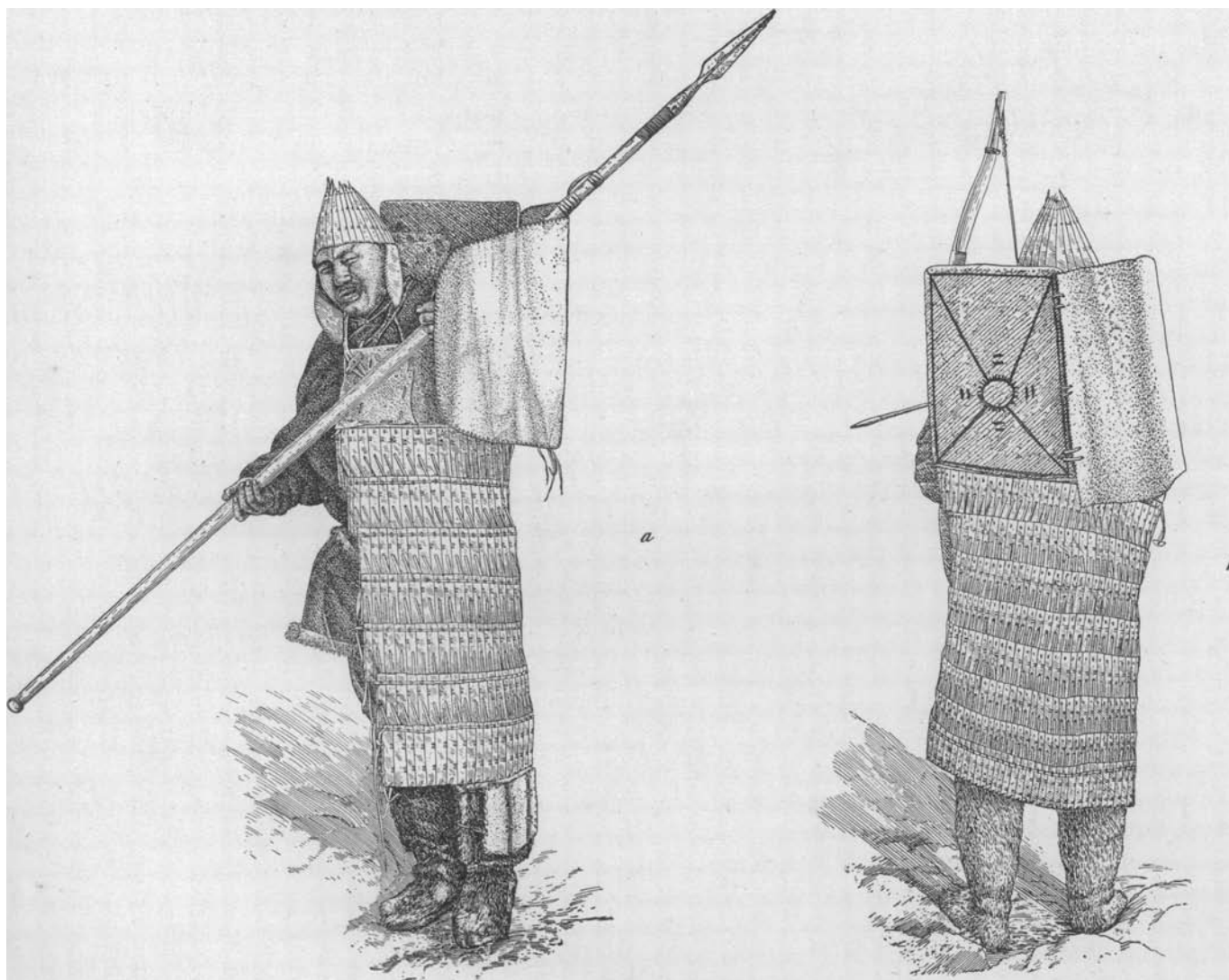


Fig. 84, *a* (1907), Chukchee Man dressed in a Suit of Right-handed Iron Armor, Front View; *b* (1907), Koryak Man dressed in a Suit of Left-handed Iron Armor, Back View. (From photographs).

Mountains and on the upper course of the Big River, which is a southern tributary of the Anadyr, many of the Reindeer Koryak and Chukchee still carefully keep such armor as heirlooms from their ancestors, and do not want to part with it at any price. One rich reindeer-breeder by the name of Ka'ka gave as a reason, that he might have need of it in strife with some of his neighbors.

The specimens brought back, as well as others seen in the possession of the natives, consist of several rows of narrow iron plates, laced together with strips of leather and easily folded. The shape of the plates, and the manner

¹ See p. 54.

of connecting them, are quite similar to those observed on the curious remnants of Gilyak armor collected by Schrenck¹



Fig. 85 (τ_{11}^{10}). Japanese Armor, with Helmet, bought from a Chukchee. O'miln tundra. $\frac{1}{10}$ nat. size.

specimens obtained by the expedition or seen in the field have a head-protector consisting of a central piece and one side-wing; but, judging by traces of the fastening, they formerly had two wings, as indeed Mr. Jochelson has been told by his Koryak informants. The whole was arranged in such a way as to protect the head and the neck from the rear and from both sides. The central piece consists of a square board about 1 cm. thick. Its outer surface was decorated with geometrical designs in black and red

(Fig. 86, *a*). The number of rows ranges from six to ten. Sometimes the plates have rounded edges, which are adorned with small notches (Fig. 86, *b*).

The measurements of a single plate are, breadth, 2-4 cm.; length, 6-13 cm. The armor opens at one side, and the edges are tied together with narrow strips of leather. Of five suits of armor obtained, three open on the right side, and two on the left side. A square piece of tough hide, or a piece of board covered on both sides with thin curried reindeer-skin, is laced to the front of the armor. It has toggles, which are fastened to the straps passing from the back over the shoulders. These straps support the whole weight of the armor, which, when quite complete, must have weighed not less than fifty pounds.

A head-protector made of thin wooden boards, likewise covered on both sides with curried skin, was firmly laced to the upper edge of the armor from behind and from the sides. All the

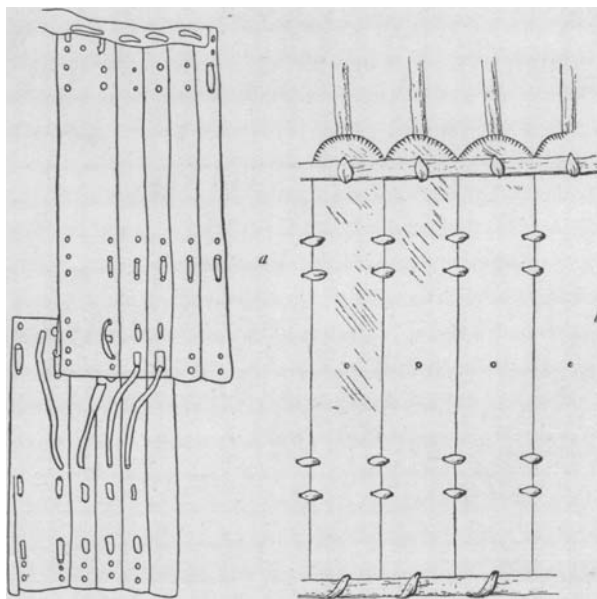
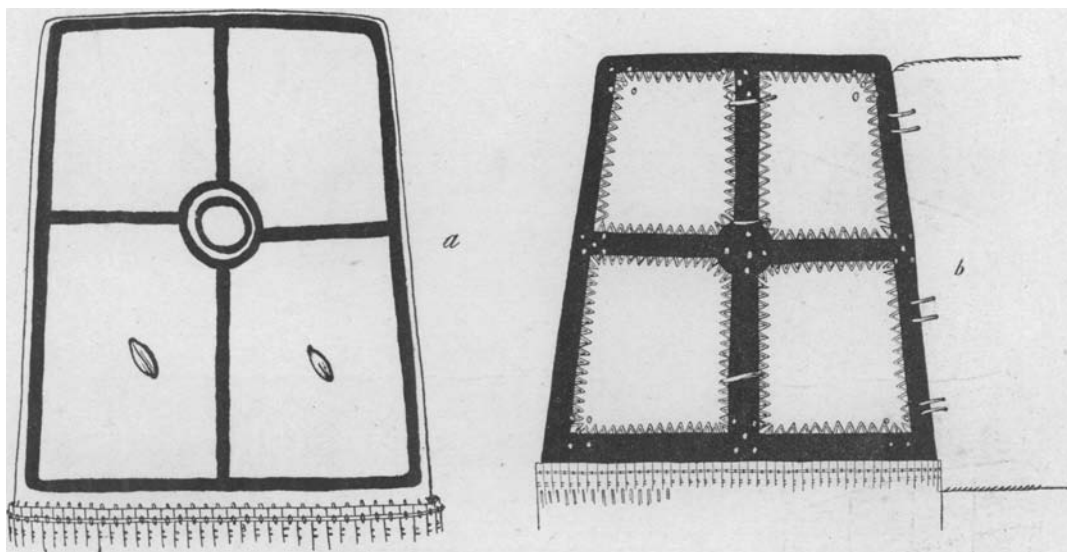


Fig. 86, *a*, Gilyak Armor (reproduced from Schrenck); *b* (τ_{11}^{10}), Details of Chukchee Armor-Plate (length of plate, 13 cm.).

¹ Copied from Schrenck, II, Plate XLIV.

(Fig. 87; see also Fig. 84, *b*), or with pieces of tin fashioned after Rus-



sian patterns. The side-wing consists of several narrow parallel boards sewed between two layers of skin, so that the wing is movable. My Chukchee informants, both on the Kolyma and on the Anadyr, insisted that the armor was one-sided, and had only one wing, destined to protect the left hand, like a shield; while the right hand, armed with a spear or a bow, did not need a shield. Mr. Gondatti, according to his verbal communication, was told the same. It is remarkable that, of the four specimens having a wing on the head-protector, two from the Chukchee have it on the left side, and two from the Koryak have it on the right side; but, according to

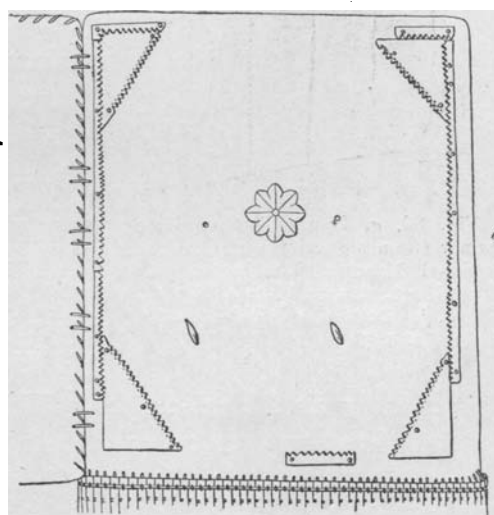


Fig. 87, *a* ($\frac{1}{2}$ nat. size), *b* ($\frac{1}{2}$ nat. size), *c* ($\frac{1}{2}$ nat. size). Designs on Head-Protectors. $\frac{1}{2}$ nat. size. *a*, *b*, Koryak; *c*, Chukchee.

Mr. Jochelson's informants, the latter were used by left-handed men, who evidently wanted to have their left hand free for the use of the bow or the spear. Thus the Koryak informants seem partly to share the idea that the head-protector was one-sided. The specimen of hide armor in the collection at Washington (Fig. 88, *a*), however, has two wings of equal size. Both have loops fastened from the inside, which evidently were slung across the arms. Each wing had two loops; but one of those on the left wing has been destroyed, and indistinct traces of its fastening are the only indication of it. When the armor was used, the left arm probably had one of the loops around

the elbow and the other around the wrist, and was somewhat raised for

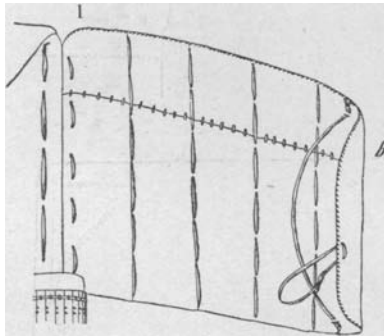
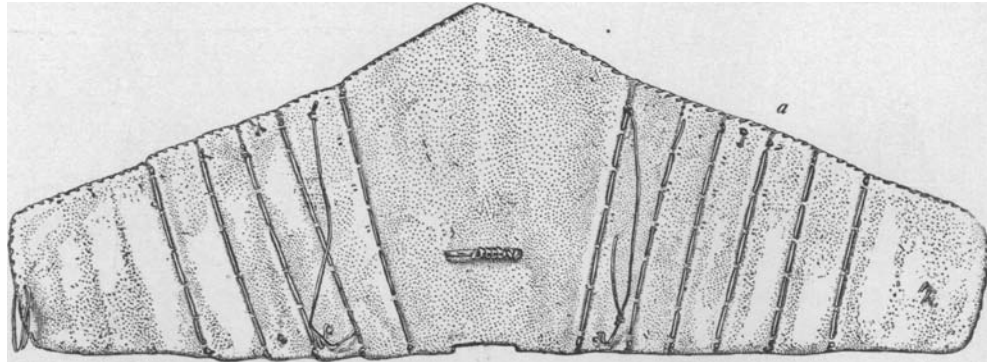


Fig. 88, *a*, Upper Part of Hide Armor (from a specimen in the U. S. National Museum, Washington; see also Hough, *Armor*, Plate 4, Fig. 1); *b* (1898), Details of Head-Protector (height at 1, 56 cm).

covering the face with the left wing. The right arm probably had one loop near the shoulder and the other near the elbow, thus leaving the lower part free for handling the bow. In trying on the specimen, I found that this method was quite in conformity to the position of the wings. The wings of the head-protectors on the specimens in the collections of this Museum also have loops (Fig. 88, *b*) fastened from the inside. On the sketch of Mr. W. Alexander made in 1797, representing a Chukchee warrior in hide armor,¹ the head-protector has two wings, but the left hand is concealed within the armor, probably behind the shield-like part, while the right hand is quite free, and the right wing serves only as a neck-fender. The ivory armor of Helsingfors, represented by Ratzel, has only a narrow neck-fender and no wings. Perhaps there were several ways of arranging the head-protector on the armor.

Two photographs taken in the field show the modern ideas of the natives as to the manner of wearing armor. One was taken at Mariinsky Post (see Fig. 84, *a*) of a man who claimed to have learned the way from his father. The latter died in 1900 at a very old age. Another is that of Ka'ka, whose name was mentioned above, and who claimed to have actual occasion for using his armor (Plate IX, Fig. 2, p. 119.).

Several helmets were brought by the expedition both from the Koryak (Fig. 89, *a*, *b*) and from the Chukchee (Fig. 89, *c*). That represented in Fig. 89, *c*, is quite similar in shape to the helmet of the Gilyak (Fig. 90, *a*), although it has two iron ear-flaps hanging down on both sides, and no neck-fender. Another helmet of the Chukchee, in the collections of the Academy

¹ Hough, *Armor*, Plate 5, copied from Sauer, Plate XIV, p. 321.

of Sciences at St. Petersburg (Fig. 90, *b*), has a neck-fender quite similar to the Gilyak specimen.

Greaves and arm-guards were also used. They were made of hide and

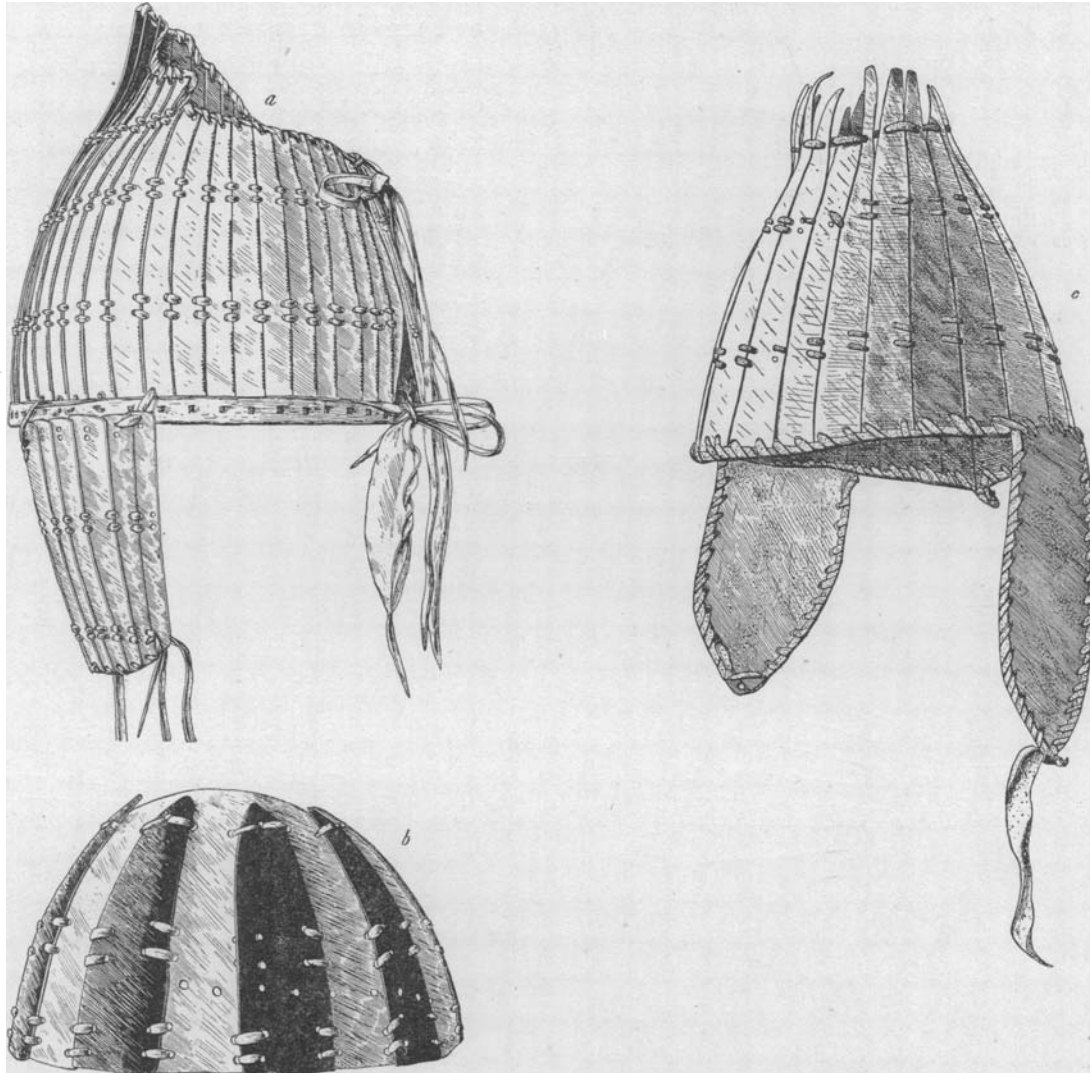


Fig. 89, *a* ($\frac{10}{3820}$), *b* ($\frac{10}{3822}$), *c* ($\frac{10}{7896}$). Helmets. $\frac{1}{4}$ nat. size. *a*, *b*, Koryak; *c*, Chukchee.

of iron. The expedition obtained two iron arm-guards (Fig. 91, *a*, *b*) bought with one of the suits of armor, and evidently used with it for protecting both arms. They are quite Japanese in pattern, with special hand-protectors which were held in place by small loops slung over the thumb and little finger. A greave made of thick skin (Fig. 91, *d*) was obtained with another suit of armor. My informants insisted that usually only the left hand and the left leg were protected by these guards.

The lance was used, together with the armor, as a weapon of defence.

Thrusts were made over the head-protector, as shown in Fig. 84, *a*. For

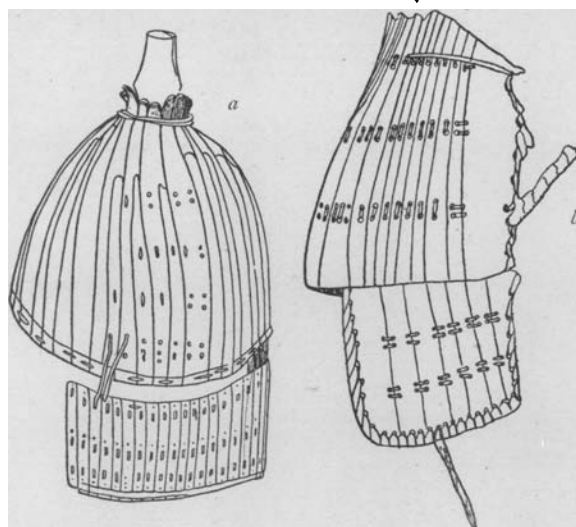


Fig. 90, *a*, Gilyak Helmet with Neck-Protector (reproduced from Schrenck, II, Plate XLIV); *b*, Portion of Chukchee Helmet with Neck-Protector (reproduced from Bogoras, Chukchee Material Life, Plate XII). $\frac{1}{4}$ nat. size.

attacks on the opponent the bow was used. On some of the head-protectors the marks of arrows shot at them in ceremonial or real fights may still be traced. Both kinds of fighting are described in several tales, though the combatants are represented as displaying more agility than would seem consistent with the armor. In other tales the action of the combatants is said to be slow and wary. They cover their faces with the head-protector and discharge one arrow after another, which certainly agrees more nearly with the probable facts.

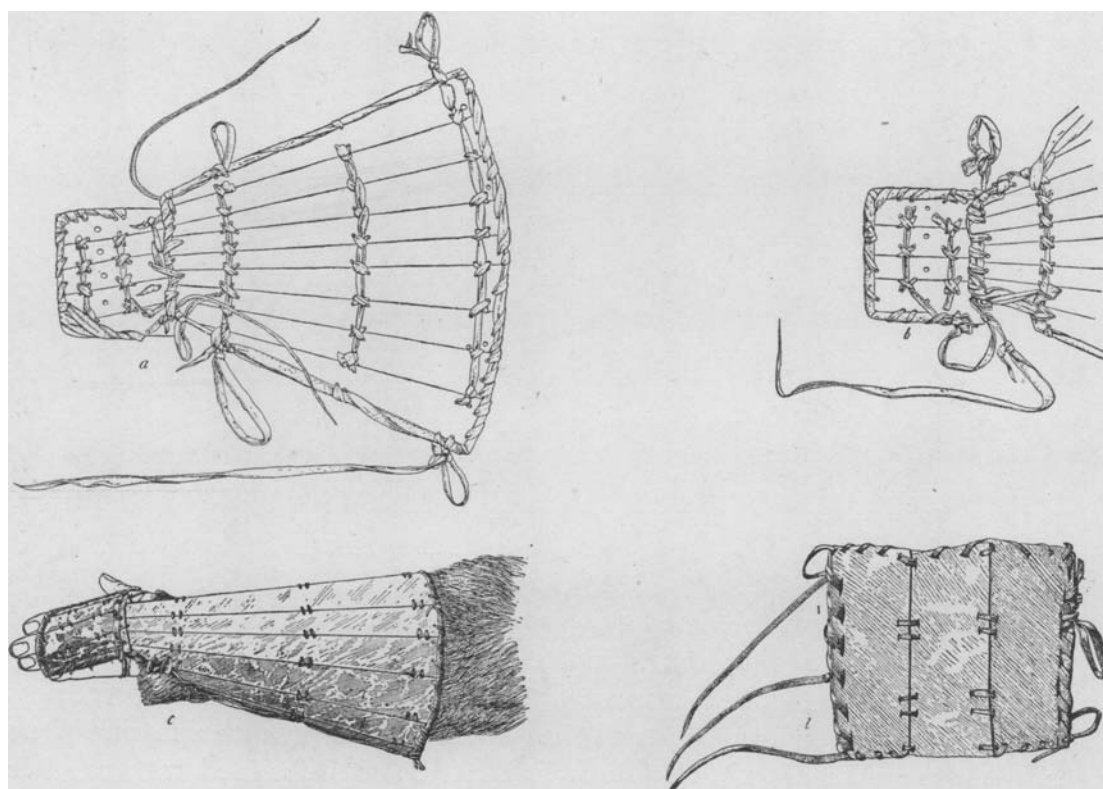


Fig. 91, *a* ($\frac{10}{7898}$ b), *b*, *c* ($\frac{10}{7898}$ c), Arm-Guards; *d* ($\frac{10}{7898}$ f), Greave. $\frac{1}{4}$ nat. size.



Fig. 1. Summer Tent of Reindeer Chukchee.



Fig. 2. Women mending the Tent-Covering.

VII. — HABITATIONS, HOUSEHOLD UTENSILS.

HABITATIONS.

"GENUINE HOUSE." — The general type of the Chukchee habitation is that of a large, round, skin tent, with a square inner room, which during the winter forms the dwelling-room, and is carefully protected against the cold. This type of house has several variations, and is always called "genuine house" (li'è-ran).¹

HOUSE OF THE REINDEER CHUKCHEE. — The tent (yara'ñi) of the Reindeer Chukchee (Plate XII, Fig. 1) is round with flaring sides. Its height in the centre is from ten to fifteen feet; and its diameter, from fifteen to twenty-five feet.

The framework of the outer tent is of the same construction for both winter and summer (Fig. 92). Its central supports are three large, stout poles (*a*), which are tied together through holes in their tops, so that they can be set up firmly on the ground to form a tripod. These poles are considered as the foundation of the tent, and belong to the sacred objects of the household. Therefore, when a new house is founded, this set of three poles (te'wrril), after being prepared and tied together, receives a separate sacrifice, and is anointed with blood. A number of short thin stakes (va'rèt) joined in pairs or threes (*b*) are placed around the central poles, forming a wide circle. They support cross-bars (učvi'čit), *c*, the ends of which are tied to them. Long thin roof-poles (u'ttamit), *d*, are tied at one end to these points of junction, while their other ends simply rest on the top of the central tripod, supported by it, and in turn bracing it upon all sides. The whole frame is firm and elastic at the same time. The poles are stronger, and the lashings are more carefully made, than

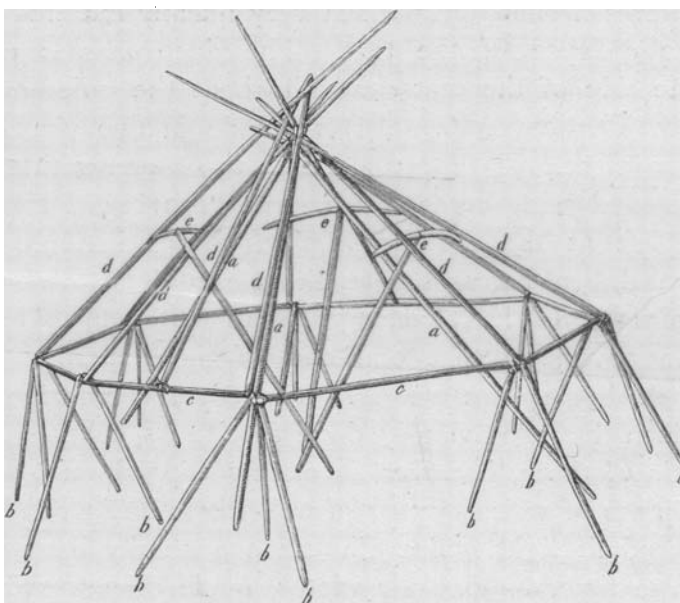


Fig. 92. Frame of Outer Tent of Reindeer Chukchee.
(From a photograph.)

¹ In the same way the Chukchee language is called li'i-yi'liil ("genuine language"); the village or the camp, li'i-n'mnim ("genuine habitation"); and the people themselves, li'è-ora'wêlat ("genuine men"). See p. 11.

in the frames of the Lamut tents, though the construction is essentially the same in both.

When the skin cover is on, three large stretchers are used to tighten its sides (Fig. 92, *e*). The stretcher consists of a thin, slightly curved cross-piece fastened in the middle to the end of a long pole. The cross-piece is set against one of the roof-poles (*d*), and the butt-end of the pole is firmly propped against the ground; then it is pushed outward as far as possible by successive jerks. The tent, propped with the stretchers on all sides, looks like a highly inflated bladder, and is able to resist a strong wind. To make it still more solid, the central poles and some of the most important joints of the frame are strengthened by means of heavy stones tied to them with ropes, or by loaded sledges, which are pushed from inside against the skin cover, the lower end of which is secured under the runners. The sledges are connected with the upper part of the frame by taut cords. Fastened with thongs and secured with stones and sledges, the Chukchee tent is able to withstand the fiercest wind-storms of the open tundra. I had occasion, however, to witness a snowstorm which very quickly battered the frame, and almost caused the collapse of the tent. The deep masses of snow which drifted against one side of the tent gradually bent the poles out of shape.

The cover (*rette'm*) is made in two pieces: only in small tents is it in one piece. It is thrown over the frame with the hair side out, and is then fastened with cords which have been sewed to its ends. A circular opening is left at the top for purposes of ventilation. The strongest of these cords are drawn across the tent inside, and fastened to the bottoms of the central poles or to heavy sledges. An entrance is left between the two halves of the cover, so that one end of the flap may be turned aside and then fall back by its own weight. The cover is made of skins of full-grown reindeer, which have previously done service as covers of the inner room. The thick hair of these, however, is closely clipped off to make them lighter. In front, a piece of walrus-gut or of well-scraped thin reindeer-skin is sometimes inserted to admit light. The Chukchee generally have two tent-covers in use at the same time, — one for winter, made of new skins, in which every small hole is carefully patched (Plate XII, Fig. 2); and an old one for the summer. In summer the new cover is carefully folded up and preserved for the next year.

The Chukchee pick out for camps flat places without too much snow. After the places for the tents have been designated, the women scrape off the snow with adze-shaped scrapers of antler or of bone (Fig. 93). They pull up all the small shrubs, and then fill in the holes with loose earth or snow.

The Inner or Sleeping Room. — The inner room (*yoro'ni*) has the shape of a large rectangular box set on the floor with its bottom-end up (Plate XIII, Fig. 2). Its dimensions vary considerably. In the smallest there is hardly room enough for four people to sleep side by side, while the largest is high



Fig. 1. Woman splitting a Walrus-Hide.

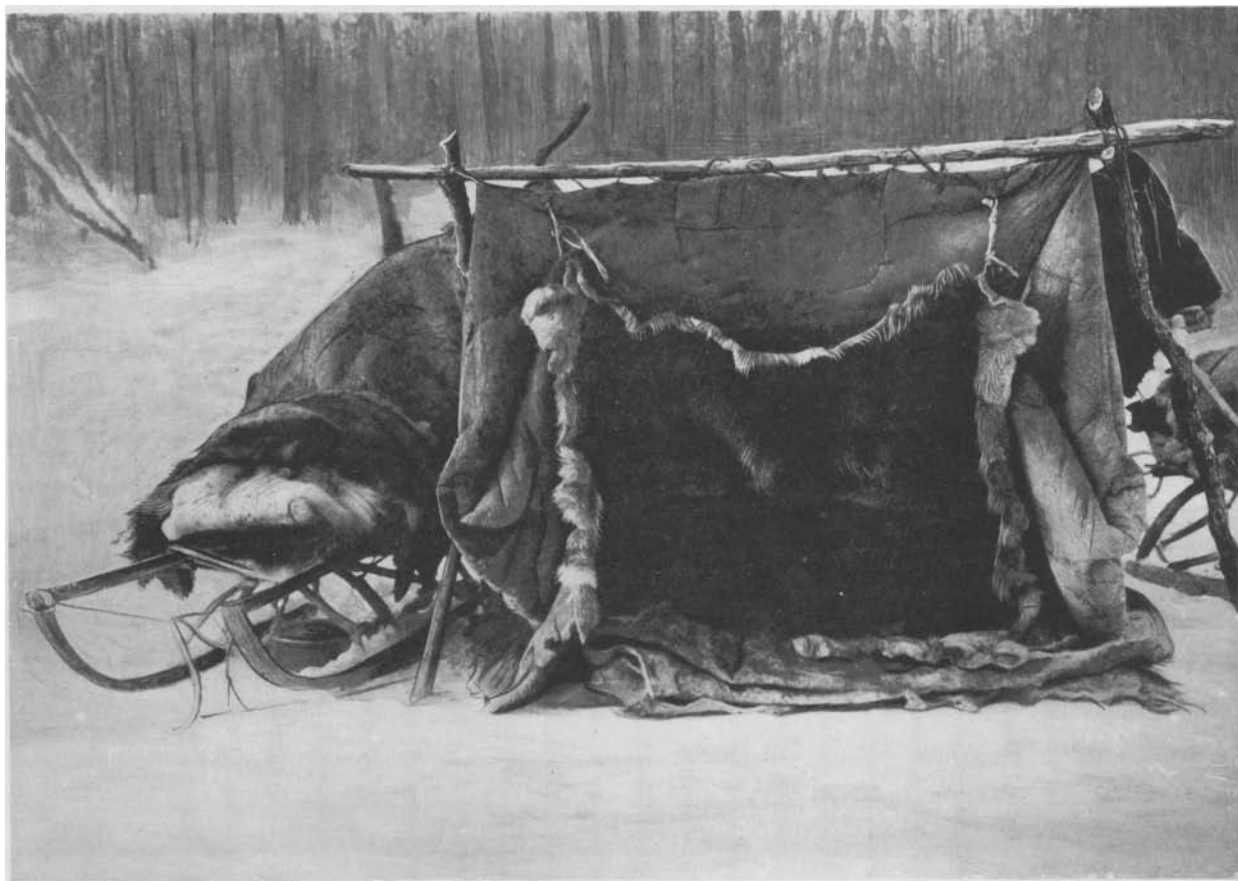


Fig 2. Sleeping-Room of Reindeer Chukchee (without the Outer Tent).

The Chukchee.

and wide enough for a person to walk about. The usual dimensions are about $4\frac{1}{2}$ feet in height, 7 feet in breadth, and 12 feet in length. The entrance is in the long side, which faces the flap of the outer tent.



Fig. 93 ($\frac{1}{8}\frac{1}{4}\frac{1}{8}\frac{1}{7}$). Snow-scraper for Camping-Places. Length, 92 cm.

The cover of the inner room is held in position by numerous loops which are sewed to it, and are passed over two long horizontal poles. The rear pole is fastened to the frame of the outer tent. The front pole is supported by two forked stakes of sufficient size. These stakes are called "thumbs" (e'tti). The floor is covered with willow twigs or with a coarse matting (Fig. 94) made of these, and then with thick skins. The lower ends of the sides of the cover are tucked under the outer edge of the bedding. At the entrance are the bed-pillows, which are made up of one or two oblong bags filled with odds and ends of skins and clothing. These extend along the whole front cover, which can be tucked under them.

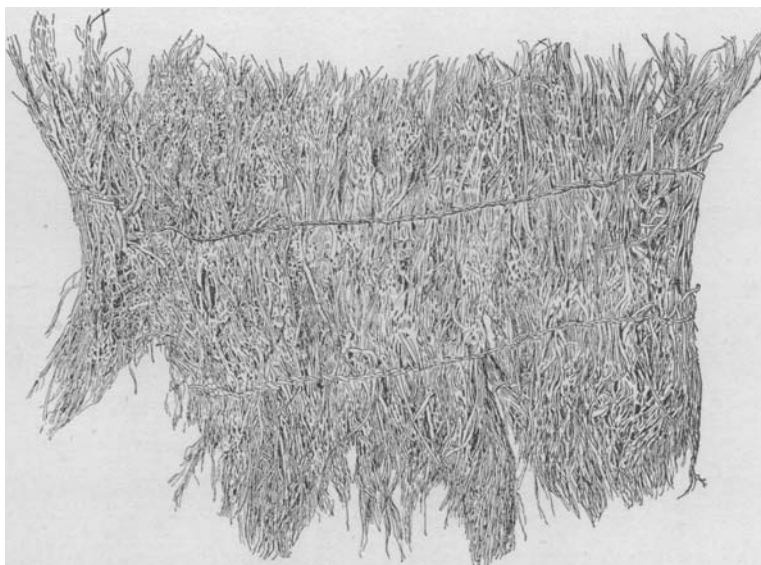


Fig. 94 ($\frac{1}{8}\frac{1}{4}\frac{1}{8}\frac{1}{7}$). Part of Rough Mat covering Floor of Sleeping-Room. $\frac{1}{10}$ nat. size.

The material out of which the cover of the inner room is made varies considerably, according to the season. In the cold season, while the family is still moving with the herd, it is made of the thickest skins with the hair side in, and must be renewed every other year, because each bare spot on the surface of the skins interferes with the comfort of the inmates. These inner rooms, covered with heavy skins, are in use throughout the fall and spring, and among several divisions of the tribe — for instance, the people of the Kolyma tundra — throughout the whole winter. They are lighted by a single lamp, but heated almost exclusively by the animal heat of the dwellers (Plate xiv). Each room is of a size proportionate to the number of inmates, and becomes habitable only after all of them are inside and the loose lower ends of the cover are

tucked in so as to exclude all ventilation. During the night the vapor of the breath and the exhalations from the bodies, having no way of escape, settle down on the fur of the cover. In the morning all the people have to go out; and the women break up the room, and leave its covering to freeze on the snow for an hour or two; then they beat the frost out of the hairy folds with heavy snow-beaters, and afterwards spread the cover on the ground to dry, or hang it up on a tree.

The snow-beater (Fig. 95) is made of antler or wood, and has a

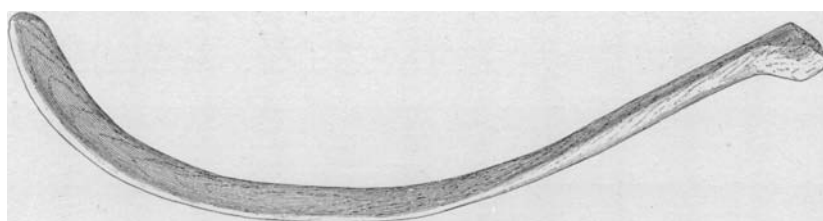


Fig. 95 (ᐱᐱᐱᐱ). Snow-Beater for Tent-Covering. Length, 69 cm.

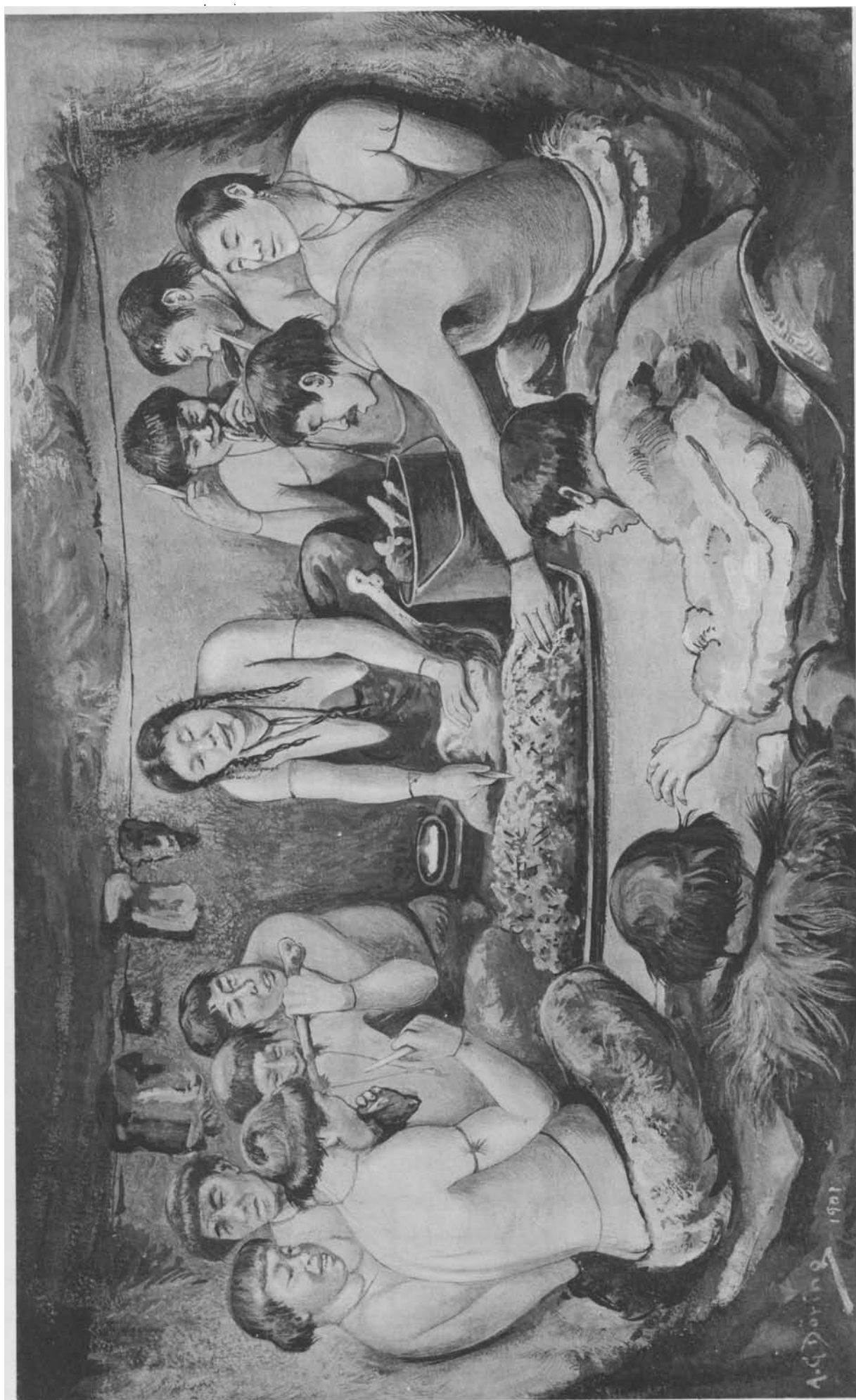
somewhat curved shape, often wider toward the end, and more slender toward the handle, which is rounded, and has a knob to give a better grip

for the hand. Its length is from 50 cm. to 70 cm. The women, when using it, lift it high over their heads, and then suddenly bring the end down with force upon the spread skin. They work alternately with the right and left hands, rapidly changing from one to the other. Usually two women work on the same cover, since one alone would find it difficult to stretch and manage the heavy skin cover. The beating-out of the frost requires considerable strength, and during the whole winter forms the most difficult task of the Reindeer Chukchee woman. However, in the coldest season it is hardly possible to omit a single day's beating, because, if the sleeping-room is not beaten out, it will become damp the next night, and even drip with moisture. This continual change from damp to frost, and the severe daily beating, cause the cover of the inner room to wear down rapidly.

In the fall and spring, especially during thaws, the sleeping-room may be left undisturbed for two or three days, and thin and worn covers may be used without causing inconvenience.

The two halves of the outer cover require about forty large skins. The cover of the inner room is made of from twelve to fifteen skins. For the beds ten large skins are required. Each sleeping-room is occupied by a separate family, and belongs to one woman, who takes care of it. There are sometimes two sleeping-rooms in the same tent, but this is not very often the case. Usually the sleeping-room is in the rear of the tent, facing the entrance, which is generally toward the northeast (Morning Dawn¹), occasionally toward the north or east. Thus the square walls of the sleeping-room have a fixed position with respect to the compass. The left side faces the northwest, and is called "leeward room" (aig'i's'qa-ron). The right side is toward the southeast,

¹ See Chapter XII.



Interior of Sleeping-Room of Reindeer Chukchee.

and is called "windward room" (aiwa'lon). These names call to mind the combinations of winds and points of the compass referred to previously.¹

Because of the position of the sleeping-room, the tent often has a somewhat oval shape, the rear bulging out under pressure of the poles used in the construction of the inner room. The rear side (ki'nmen) of the sleeping-room has a lamp fixed in the middle, quite near the wall (Plate xiv). Above it, near the ceiling, a line is stretched, which serves for hanging up small articles of dress that require drying over the lamp. The left side of the sleeping-room is always occupied by the master and his wife, and is therefore also called "master's place;" while the right side is given up to the younger members of the family, and, when necessary, to guests and strangers. The Chukchee sleeping-room, however, affords little room for the stranger. A few extra men crowd it considerably, and are compelled to sit crouching in the strangest postures while eating or conversing. When there are a number of guests, they can only thrust their heads in, and must keep the rest of their bodies outside of the room, lying flat on their stomachs, and raising themselves up, like so many seals, from under the tent-cover, which is fastened around their shoulders. As these gatherings are usually accompanied by a common meal, and trays of steaming meat and kettles of boiling tea are brought inside, the temperature becomes quite unbearable. The guests strip to the waist, the inmates even farther than this, and their naked bodies are flushed with heat and covered with perspiration. The only way to improve the situation is to lift up the front of the inner tent-cover for a while, and let in a wave of fresh cold air, which almost instantly lowers the temperature several degrees, and causes the moisture to condense in thick white clouds. Such changes of temperature, which occur several times during the evening, are trying to the most hardened constitution, and the natives often catch cold from the sudden frosty draughts. After the visitors have departed, the temperature quickly goes down, and the inmates must be careful not to let in any more cold air. Therefore, after the evening meal, nobody is allowed to go outside; and so, to satisfy the demands of nature, every person is supplied with a special vessel (Fig. 96), which the mistress pushes with one hand out from under the room cover, and empties on a large slab of snow which lies near at hand in the outer room.

The people, like the American Eskimo, sleep with their heads to the entrance, reclining on the common pillow. They cover themselves with blankets made of several heavy skins sewed together, similar to those of the Eskimo.

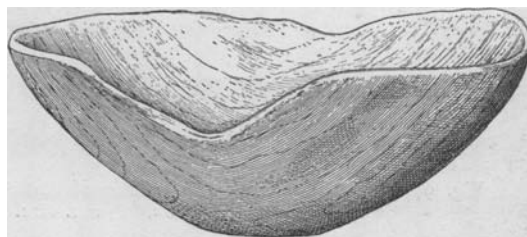


Fig. 96 ($\pi\frac{10}{14}$). Urine-Vessel. Length, 33 cm.

Each blanket serves for a whole family.

¹ Compare, p. 27.

The fire is made in the centre of the outer room, right under the vent-hole, and the hearth is surrounded by stones laid side by side. Sometimes the fire and the vent-hole are placed nearer to one side, so as to leave more space in the tent. Pots and kettles are suspended from hooks which are fastened with a piece of thong to one of the central poles. The hooks vary in form, most of them being similar to those used by the Lamut and Russianized natives. They are made of wood, iron, bone, or antler (Fig. 97, *a*). I collected a hook made of a pair of antlers taken off with the top of the skull, as is usual among the Chukchee. Another kind of hook (Fig. 97, *b*), made of wood, is used with an adjustable attachment to the kettle, so that its height over the fire can be regulated.

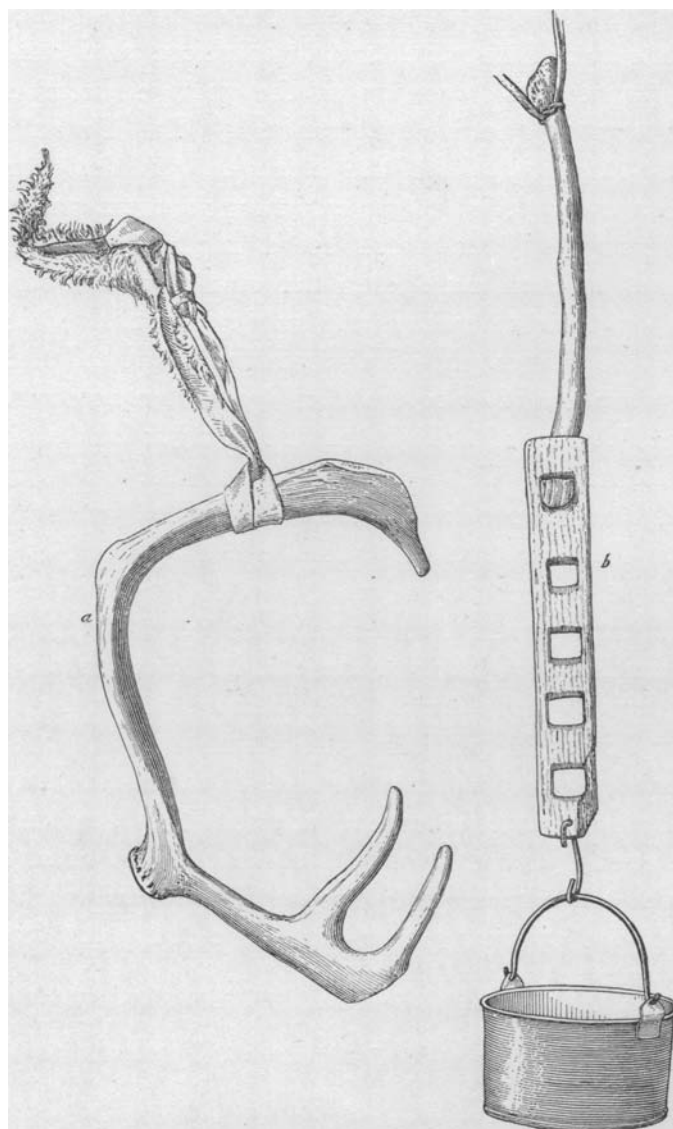


Fig. 97, *a* ($\pi\frac{10}{13}$), Kettle-Hook made of Antler; *b* ($\pi\frac{10}{13}$), Wooden Kettle-Hook. $\frac{1}{8}$ nat. size.

This form of hook occurs throughout northern Asia and Europe as far west as Finland. Within the borders of the forest the fire is made outside the tent, to avoid filling it with smoke. On the tundra, where fuel is scarce, and often brought from a distance of thirty miles, the fire is always made inside the tent, because it is thus protected from the wind and there is less waste of fuel.

When kindling a fire, the Chukchee women split logs into slender chips. They keep the fire as low as possible, and take care to put it out as soon as the cooking is done. They are so accustomed to economize in their fuel, that they continue to stint them-

selves even within the forest, so that the remains of a Chukchee fire can be easily distinguished from those of other tribes. On the whole, the Chukchee do not use the fire of the hearth for heating-purposes. The temperature

inside of the outer room, even while cooking is going on, is almost the same as that outside. The herdsmen or hunters, when sleeping in the open, although they may have an abundance of fuel, are often content to make a small smouldering fire from which to light their pipes, or do not make any fire; whereas the Lamut and the Yukaghir send up a blaze that wards off the cold from a space of several yards around, and often keep it up during the whole night in order to get a chance to sleep comfortably.

Movable House. — The type of tent and sleeping-room here described is especially used in moving about with the herd. That used by the family is very heavy, and requires — with poles, cover, and bedding — six or seven sledges. Whenever the herdsmen leave their principal camp, they carry with them a small sleeping-room, with a light tent, which is often not properly pitched, but only loosely thrown over the sleeping-room to keep off the snow. In this type of house it is difficult to dry damp clothing. Fur clothing generally becomes damp quickly, even in dry, cold weather, especially when it is worn directly on the skin, without any underclothing. When damp, it does not protect the body from the cold: therefore it must be dried every night while its owner is asleep. In the sleeping-room of the Reindeer Chukchee the only place for drying things is directly over the lamp. Only small articles, such as mittens, socks, and boots, can be placed there. Large pieces of clothing, such as shirt or trousers, are dried in a way similar to that used in drying the sleeping-room cover; i. e., by freezing the dampness out, then shaking it off with the snow-beater, and finally drying for a long time in the cold dry wind. The Chukchee herdsman sometimes walks for a fortnight in damp clothes without a chance to dry them, and takes off his undershirt only when it is quite spoiled and unfit for further use. On this account the Reindeer Chukchee are always anxious to avoid the damp. For instance, before coming into the inner room, the whole dress, from the cap to the shaggy boot-soles, is well beaten with the beater to remove the slightest trace of snow, which otherwise would melt in the warm interior and cause additional trouble. In the evening, when the sleeping-tents are put in place ready for occupancy, the entire camp begins to resound on all sides with the short rapping of the snow-beaters, which lasts for half an hour before all the people are ready to retire. Travellers and herdsmen often have beaters of their own, which are carried on the belt or are attached to the sledge-grating.

The snow-beaters for clothing (Fig. 98) are more slender than those used for the room-covers. The knob is often fashioned in the shape of a human or dog's head, which then plays the rôle of the protecting spirit, the so-called "travelling-companion" (lei'hu-tu'mgin).¹

Winter House. — Late in the fall most of the families, especially those

¹ See chapter on charms.

who have small children, cease to move about, and settle down for three or

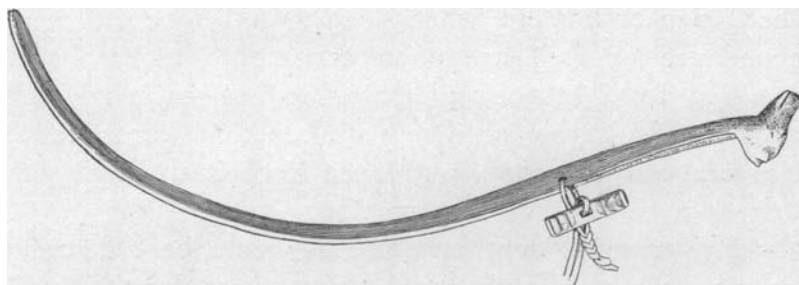


Fig. 98 ($\frac{10}{103}$ a). Snow-Beater for Clothing. Length, 57 cm.

four months within the forest border, and construct a special winter dwelling (see Plate v, Fig. 2). This consists of three parts. The entrance-room (ti'Li-ran) is formed of a few

stakes tied together, and loosely covered with an old tent-cover. It serves chiefly to keep off the wind and snow from the entrance. It often has no door; and in order to get in, one has to crawl in under the tent-cover. The main tent is constructed in the ordinary way, only, for the most part, an old cover is used, because it is likely to be damaged by the hearth-fire within. This fire is kept up all day long; and on this account, as well as on account of the well-sheltered entrance, the temperature of the tent is not very low, usually 10° - 12° above zero Fahrenheit, while outside it may range from 50° to 60° below. The sledges are piled up near the tent, high enough not to be covered by the drifting snow, and after this are tied with thongs to prevent the wind from throwing down the pile. Only a few driving-sledges are left free for daily use.

The sleeping-room is much larger than that of the movable tent, and bears marked similarity to that of the Maritime Chukchee, only it is dirtier and is made more carelessly. The usual dimensions are 5 feet in height, 8 feet in breadth, and 14-16 feet in length. It occupies the whole rear of the tent, leaving only a small space on the sides for storing provisions. The skin cover is made of fawn-skins taken late in the fall, the hair side out. It is drawn tightly across a rectangular frame made of flat, narrow sticks. On the outside it is covered with a thick layer of dried grass tied up in sheaves and fastened side by side. The frame is so strong that a man can walk on top of it. The whole structure is covered with a piece of tent-covering, with the ends carefully tucked in below. The floor is covered with skins of the thong-seal or of the walrus, and over them some scraps of reindeer-skin are put for seats, while the bedding is rolled up and taken away during the day.

One or two lamps burn constantly within, to keep the place dry. There is no kind of ventilation whatsoever: therefore the sleeping-room, although warm enough, in course of time becomes very unclean, and acquires an odor offensive even to the inmates. Notwithstanding the burning lamp, the skin cover becomes damp and covered with mildew. When newly constructed, the sleeping-room is dried by carrying in a pile of burning coals on an iron pan. The same method is sometimes applied afterwards, though it is dangerous,

because the small, low room is filled with charcoal-fumes, which will not entirely disappear for a day or two.

The winter sleeping-room serves also for only a single small family. Sometimes two inner rooms are joined together at an angle. There is no partition between, and a separate lamp is lighted by each family in its own part. This large double sleeping-room is quite similar to that of the Maritime Chukchee and Asiatic Eskimo, as will be described later. In my opinion, the stationary winter house is the typical form of the Chukchee dwelling, while the movable tent is a variety comparatively new, and not even very well adapted to the exigencies for which it is used. It is cumbersome, and requires many reindeer to carry it, especially when compared to the Lamut tent. When under way, it hampers considerably the progress of a Chukchee family.

Summer House. — The summer habitation is arranged in about the same way as the movable winter tent, except that its place cannot be changed till the first snow is on the ground. Therefore all the sledges are piled together for the summer. The best driving-sledges are untied, and the lashings and wooden parts carefully gathered in bundles and concealed in the middle of the pile.

The whole is protected with parts of old tent-covers not in use. These generally serve as tarpaulins. For the summer tent and for the summer sleeping-room, old worn-out covers are used, and the people also wear old clothing which was discarded in winter. The sleeping-room cover is closely cropped with a sharp knife, and is usually put up with the hair side out. A large piece of tent-cover tarpaulin is stretched over it above, resting on several sticks fastened to the outer frame. This serves to keep off the rain, which would come through the vent-hole and through the small holes of the outer tent.

The place of the camp cannot be changed during the whole summer; but in the middle of June, in connection with the first summer ceremonial, the tents are broken up and shifted some fifty or sixty feet. This change is very desirable, because the house is exceedingly unclean. Sometimes at the end of July the family will again change to avoid the offensive smell of their old surroundings. Even in winter the people are often driven out of their warm habitations by the same cause, and resort to the use of the movable tent much earlier than usual.

An *or-ra'n* ("wooden house") is a lodge made of poles, used by the Reindeer Chukchee inside the border of the forests as an annex to the large winter house. Some kinds of work — the boiling out of tallow from bones and the scraping of skins — are done in this lodge. In its simple conical shape, it occurs also among the Russianized Yukaghir as a summer dwelling or as a dog-shelter. Long logs that are collected for fuel in winter are often put in the same position to prevent them from being blocked with snow.

The Reindeer Chukchee have no particular storehouses or cellars. The space in the tent behind the sleeping-room (called *ya'ñan*) serves for storing meat, tallow, etc.; while blood, oil, and the like, are stored in large bags that are kept outside.

For the summer a small hole is dug in the middle of the tent, and meat is kept there to preserve it from decay. The opening of the hole is covered with skins and grass; and it is usually only two feet deep, its bottom reaching the frozen layer of soil, which the Chukchee, with his primitive tools, cannot penetrate.

HOUSE OF THE MARITIME CHUKCHEE. — The winter lodging of the Maritime Chukchee is more or less similar to that of the Reindeer people. The frame, however, is constructed differently, chiefly on account of the scarcity of wood for poles. One great pole forms the central support (Plate xv, Fig. 1). It is placed upright, its lower end being firmly stuck into the ground, while the other end has a cross-piece tied to it to support the roof-poles. Stakes of wood or of bone of the whale replace the *va'rêt*. They are planted in the ground, and form the frame for the walls. The cross-pieces and long poles are tied on as usual, but occasionally whales' ribs are used instead of wood. The whole structure is often surrounded by a low wall of sod (Plate xv, Fig. 3) or of stones, and the cover drawn over the frame is fastened to it by stones and pieces of sod. The stretchers with cross-pieces are also used for tightening the cover. The entrance faces the sea. It is often sheltered by a small structure of sod (Plate xvi, Fig. 1) or of stones, or by a piece of tent-covering thrown over a few stakes, as in the case of the winter houses of the Reindeer people.

For cutting the sod, digging the loose earth, and levelling the spot intended for the house, shovels of wood and of walrus shoulder-blades (Fig. 99, *a*, *b*), and picks of bone (Fig. 99, *c*), are used, though nowadays these are gradually being superseded by iron implements. The forms of those made of bone or wood are similar to those used by the American Eskimo.¹ Fig. 99, *d*, represents a shovel collected among the Lamut, though the Kolyma Reindeer Chukchee use exactly the same form. It also resembles the shovel used in Alaska and represented by Nelson.¹

The covering of the house is for the most part sewed together out of worn-out pieces of tent-covering bought from the Reindeer people. In front a large walrus-skin is placed, in order to give protection against the storms, which usually come from the sea. In more recent years old sail-cloth has begun to be used instead of old reindeer-skins, especially in the Eskimo settlements. Every part of the cover is well fastened with thongs, and weighted down by means of heavy stones and loaded sledges, and even iron chains (Plate xv, Fig. 2). The inner room is almost always double, both sections meeting at an angle.

¹ Compare Nelson, Fig. 22, 1, 2, p. 73

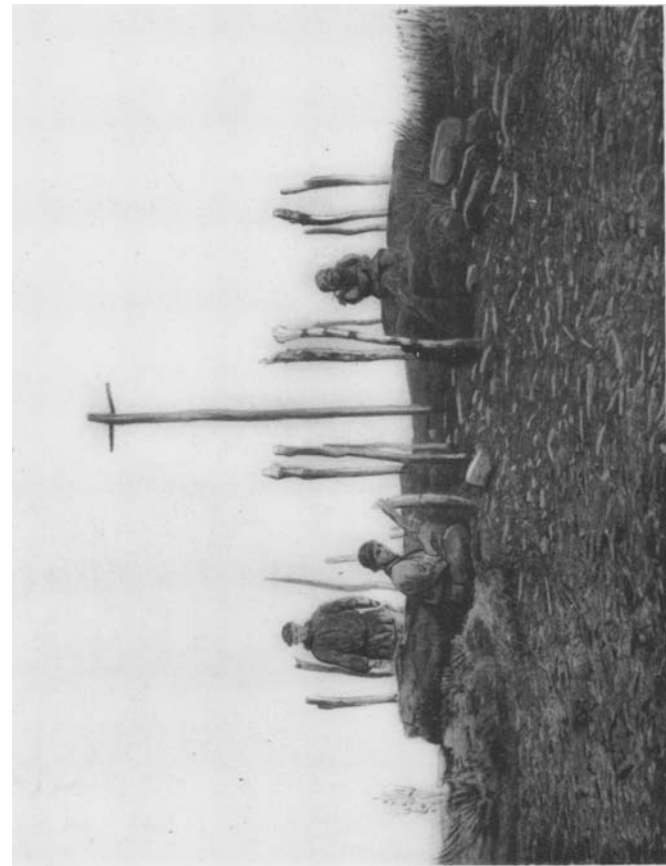


Fig. 1. Constructing a Chukchee Winter House at Mariinsky Post.

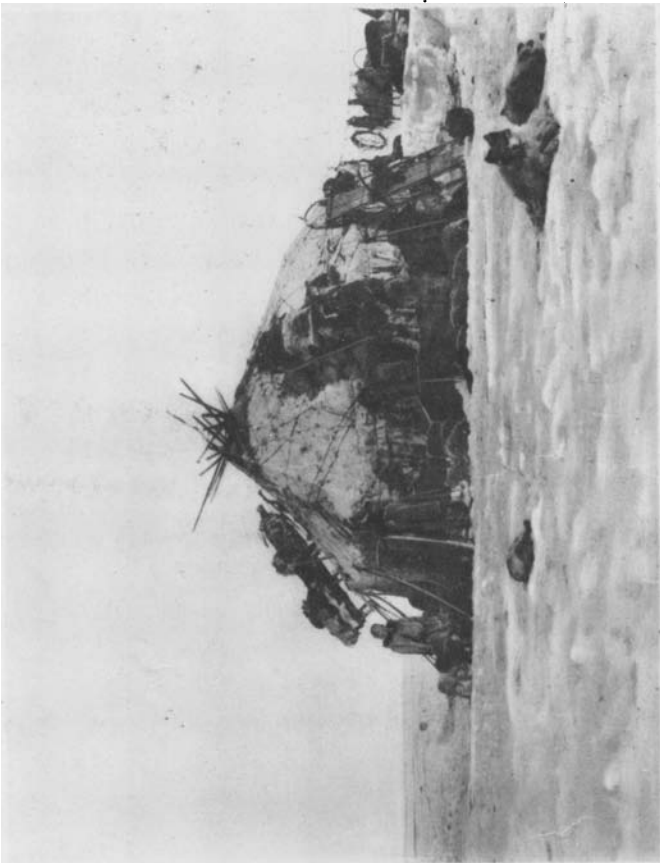


Fig. 2. Chukchee Winter House in the Village Valka'ten.

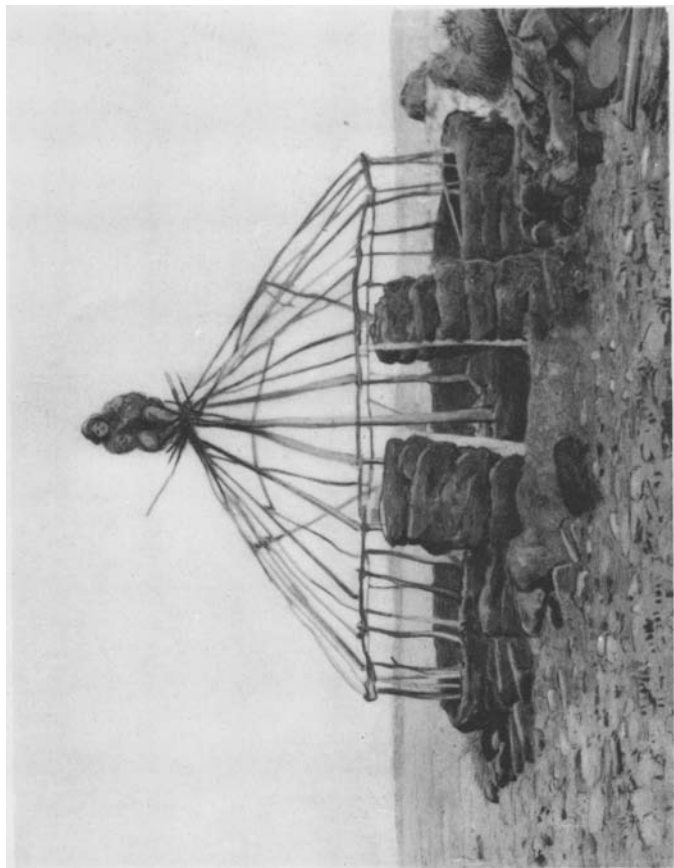


Fig. 3. Chukchee Winter House at Mariinsky Post in Course of Construction.

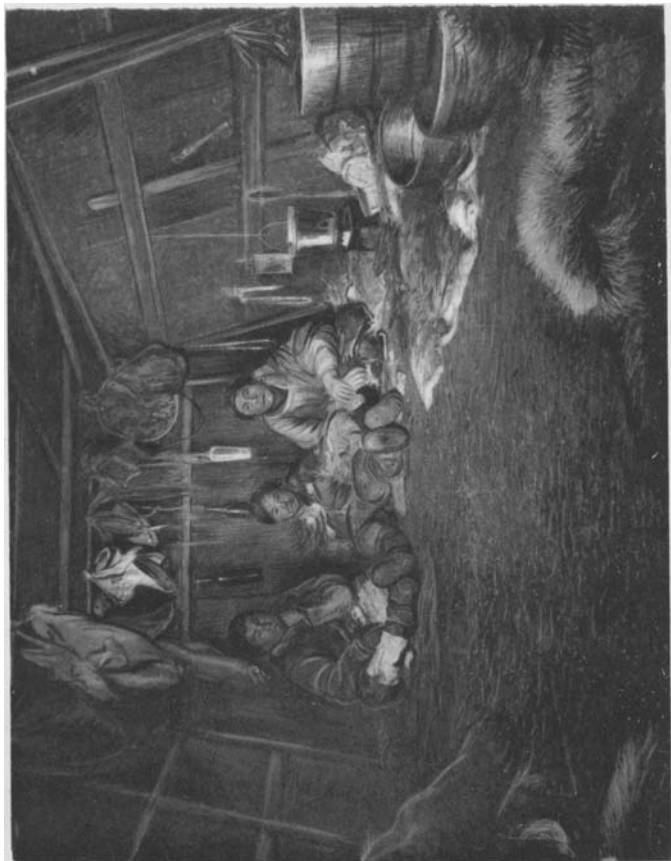


Fig. 4. Inside of House shown in Fig. 2.

It has three or even four lamps of various sizes, which are used not only for light, but also for cooking (Plate xv, Fig. 4).

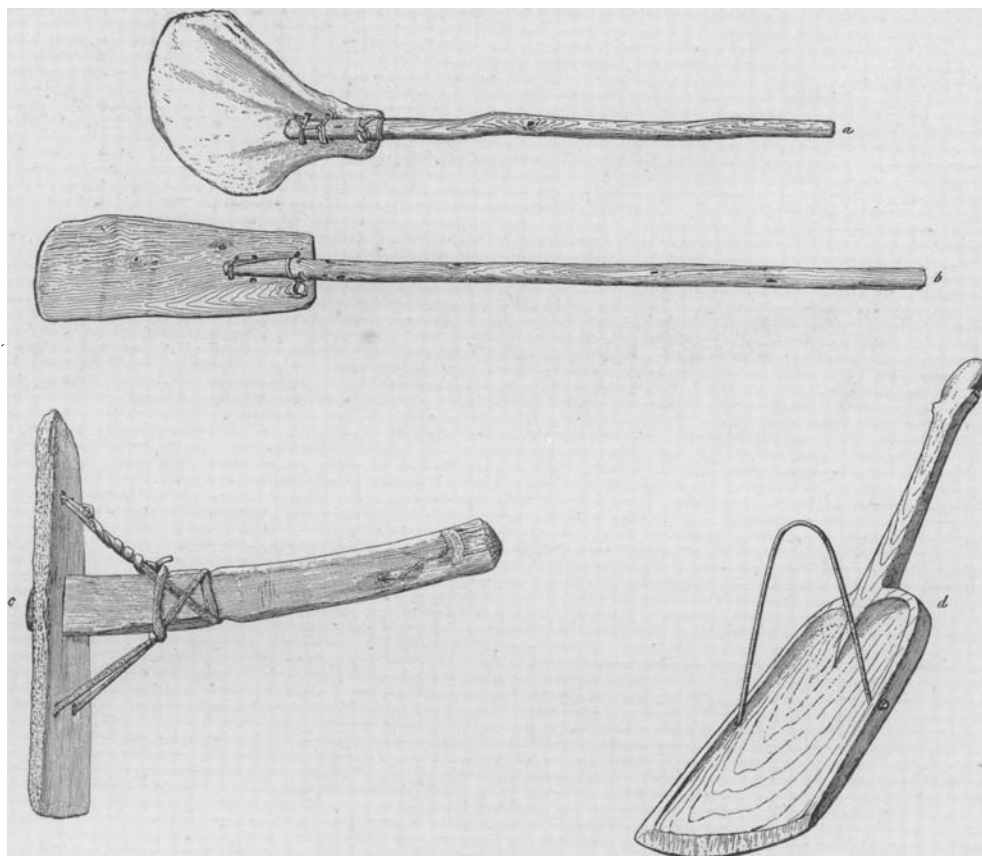


Fig. 99, *a* ($\frac{10}{1110}$), Wooden Shovel (length, 150 cm.); *b* ($\frac{10}{1113}$), Shovel made of the Shoulder-Blade of a Walrus (length, 105 cm.); *c* ($\frac{10}{1118}$), Bone Pick (total length, 65 cm.); *d* ($\frac{10}{1120}$), Lamut Snow-Shovel (length, 79 cm.).

It is usually larger than the inner room of the tents of the Reindeer people; and among well-to-do families it may be about 30 feet in length, 10 feet in breadth, and 6 feet in height. The outer tent is also larger than that of the Reindeer Chukchee. I saw one house which was forty feet in diameter and had eleven stretchers to support the frame. In the outer tent, on both sides of the sleeping-room, are placed two huge seal-skin bags, which are used for purposes of storage.

The bottom of the sleeping-room is covered with a large walrus-hide, forming a hard and smooth floor to tread on. The steadily burning lamps make the room warm and dry, and even afford a chance for ventilation, which is effected either by lifting the front or by opening a special hole in the wall, which may be closed by a round stopper made of a piece of reindeer-skin. Damp clothes are dried by hanging them on pegs or by stretching them on strings tied along the walls.

At the end of May the winter abode is usually abolished, and the summer tent is pitched adjacent to it. The cover of this is made of walrus or thong-seal skins, to afford protection against rains and rough weather. The sleeping-room is similar to that of the Reindeer people, but its cover is also made of tough walrus-hide.

The Eskimo of the Asiatic shore and of St. Lawrence Island nowadays arrange their winter houses in a quite similar way, only the outer cover is almost always made of sail-cloth and has a wooden door, — often the door of a boat's cabin picked up from wreckage or received from the whalers (Plate xvi, Fig. 2).

In the summer, besides the double tent (lî'ê-ran) before described, sheds of irregular form are sometimes constructed of poles, and covered with walrus-skins (Plate xvii, Figs. 3, 4). Sometimes the shelter consists only of a tent-cover thrown over a few stakes joined together. Tents of cloth bought from whalers are also used.

Hut. — The small village that in former times existed in Anadyr Bay, had huts constructed of wood and covered with earth and sod.

Two families of those living in Veñ (Mariinsky Post), not far from the site of the village mentioned, still construct for their winter lodges small huts with wooden frames covered over with earth and stones. The hut has a hole in the roof for the escape of smoke, and within is a sleeping-room of the usual shape. The hut has a square wooden door covered with scraps of reindeer-skin for greater warmth. Plate xvii, Fig. 2, represents one of these huts. The poles in the front serve for hanging dried fish on.

A few Chukchee families of the Middle Anadyr live in wooden huts somewhat similar to the Yakut "yurta." These were copied from the yurtas of the Anadyr Russians, who of late years, however, have replaced their yurtas with log-cabins of the usual Northeast-Siberian type. In ancient times wooden huts of this type may have been in more common use in this territory. Remains of huts found on the Bear Islands are more or less of this type. In the deserted villages of the Yukaghir situated on the Middle Omolon, and inhabited about seventy-five years ago, I have seen huts of the same type. It is not easy to decide whether this type of dwelling is due to Yakut influence, or whether it is an ancient type that developed independently. The construction of the fireplace differs in all of them from that of the Yakut houses. They had no stove with wooden chimney, but simply a central hearth, with a square hole in the roof just above it. In modern times the Yakut arrangement of the fireplace has been copied by most of the Russians and Yukaghir in their log-cabins and huts, and the Chukchee of the Middle Anadyr have also adopted it.

Underground House. — In all the Chukchee and Eskimo villages that I visited on the Pacific coast, ruins of the so-called "jaw-bone houses" (Plate



Fig. 1. Chukchee Winter House at Mariinsky Post



Fig. 2. Eskimo Winter House in the Village Uñi'sak.

The Chukchee.

xvii, Fig. 1) (wa'lkar; *pl.*, wa'lkarat) are found. These ruins seem to be ancient, and are either circular holes or flat mounds, with some battered rafters and beams of bone of the whale. In some villages — as, for example, in E'nmlin — the inhabitants have forgotten the exact location of most of the ruins, because the village has been shifted several times since. In Eu'nmun and Wute'en the "jaw-bone houses" overhanging the flat sandy shore were gradually destroyed by the weather, and crumbled down, together with the ledge of rock on which they stood. In other villages, for instance, in Če'čin and at Indian Point, they are in the immediate vicinity of the present habitations, and the villagers still remember to what families most of the ruins belong. As before mentioned, they claim that these houses went out of use three generations ago. At the time of Hooper's visit in 1848, houses of the modern type were already in use, and he mentions having seen half-ruined underground houses which were in no better condition when I found them, fifty-two years later. The wa'lkar of the Maritime Chukchee and Asiatic Eskimo had a frame made of jaw-bones. Heavy pieces were set in the ground in an upright position at intervals all around the house, and were held in place by earth and stones. Sometimes there were about sixteen of these supports, so that they formed a regular fence. Large pieces of jaw-bone or of whale's ribs were superposed as rafters, and smaller pieces were inserted to make the structure more compact. The floor, or at least the middle part of it, was paved with flat pieces of bone. Then the whole structure was covered with sod, and a thick layer of loose earth was strewn around the bottom. Often the wa'lkar was started with a circular excavation, and, after being well covered with earth, appeared to be a half-underground house, with only the roof protruding above the surface. Even the "jaw-bone houses" built above ground, in the course of a long period of time, assumed the shape of small hillocks, with a human lodging-place inside. Of all the wa'lkarat that I have seen on the Pacific coast, only one, in the village of Nu'nligren, retains its original shape. A comparison with other ruins shows that it is a typical underground "jaw-bone house." It is a large rectangular apartment, 20 feet long, 14 feet wide, and $7\frac{1}{2}$ feet high in the middle. A strong "jaw-bone" frame incrusting in the hardened earth supports its walls (Fig. 100). Most of the uprights which support the side-walls are formed of two parts, the upper being thinner than that below. The upper parts are not fastened to those below, but are firmly implanted on their top. The pressure of the rafters, and the weight of the soil which covers the structure, help to hold them in place. The roof is formed of several curved beams, which rest on other uprights, short and stout, leaned against the front and the rear wall (Plate xviii, Figs. 2, 3). Like the underground house of other tribes, it has two entrances. One is through a long underground passage, and could be used only in winter, because in summer it was filled with water. The level of the floor

of the inner room was above the level of the passage, so that the water could

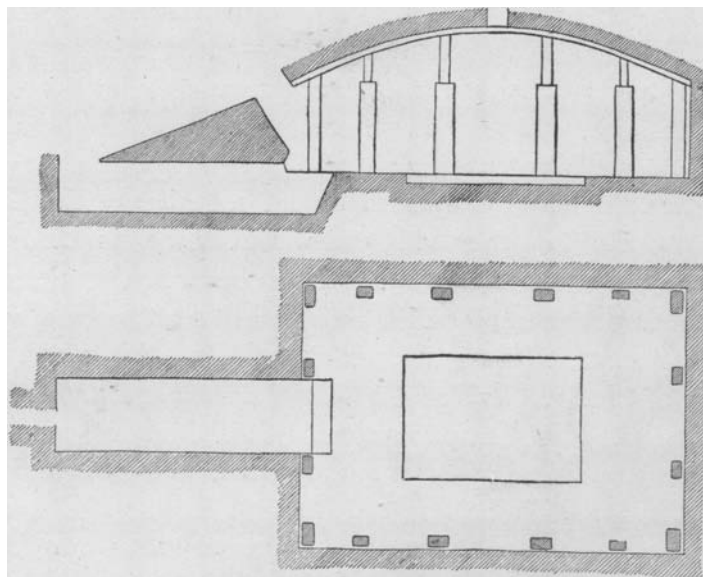


Fig. 100. Plan of an Underground House, Nu'nligren. (From a sketch.)

not injure the living-room. The other entrance, in the upper part of the wall, was a circular hole, which could also be shut by means of a shoulder-blade. It was used only in summer; in winter it was stuffed with grass, then covered with the shoulder-blade and secured with stones. The lower passage was cleared of snow and ice and used till the next spring.¹

In the centre of the living-room a large flat stone served as a support for a large lamp, which burned day and night. Over the lamp, in the roof, was placed a vertebra of a whale, and its opening served as an air-hole. The floor was raised on all four sides, and on the low platforms thus made four sleeping-rooms of the usual shape were arranged. These were occupied by four families, so that the house had about twenty inmates. This house at Nu'nligren, however, was the largest in the whole village. Underground houses of the usual size had only two platforms, — one on the right and one on the left side of the entrance, each with one sleeping-room. Thus, in the modern houses with double sleeping-room, the same number of families are found as in the ancient houses. The underground houses were constructed with the aid of all the neighboring families, and were strengthened and enlarged during many subsequent years. They were occupied generation after generation, till at last the accumulation of dirt and stench within would become so great as to drive away the inhabitants. The natives say that the unwholesomeness of these abodes, fixed forever on the same spot, was the chief reason why the population left them altogether and turned to the skin houses. On St. Lawrence Island the natives of Čibu'kak, who, as mentioned before, have adopted the Asiatic type of skin house for their constant abode, still use the old underground houses in the other parts of the island during their sealing expeditions in winter.

The Rev. Lerrigo, who is also a physician, told me that these underground houses are veritable breeding-houses for the microbes of consumption and of several other diseases, and expressed the opinion that the decrease in the

¹ In the Koryak underground house the lower passage is used in summer, and the top hole in winter.

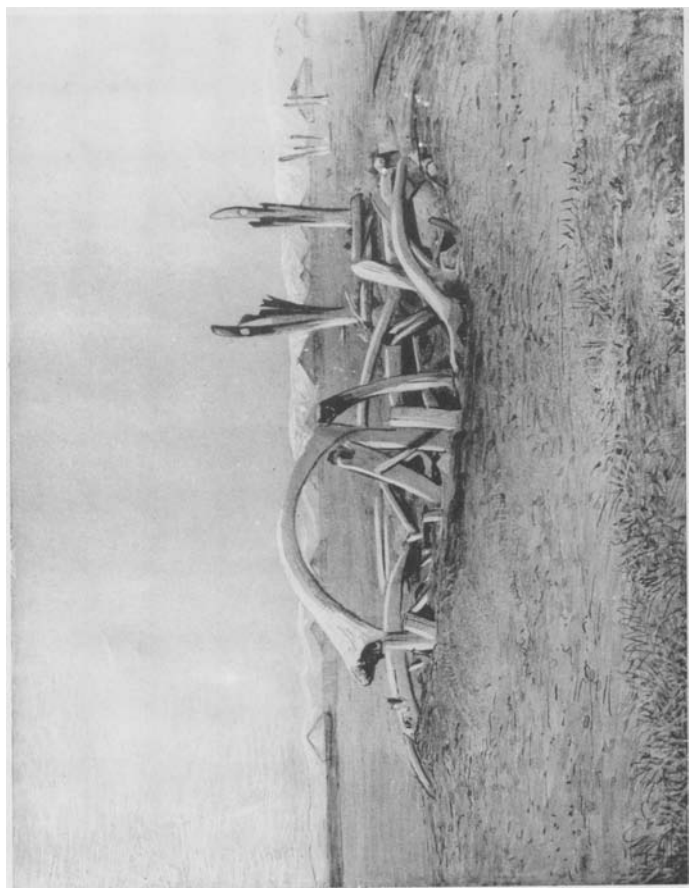


Fig. 1. Ruins of a "Jaw-bone House" in the Village Un'i'sak.

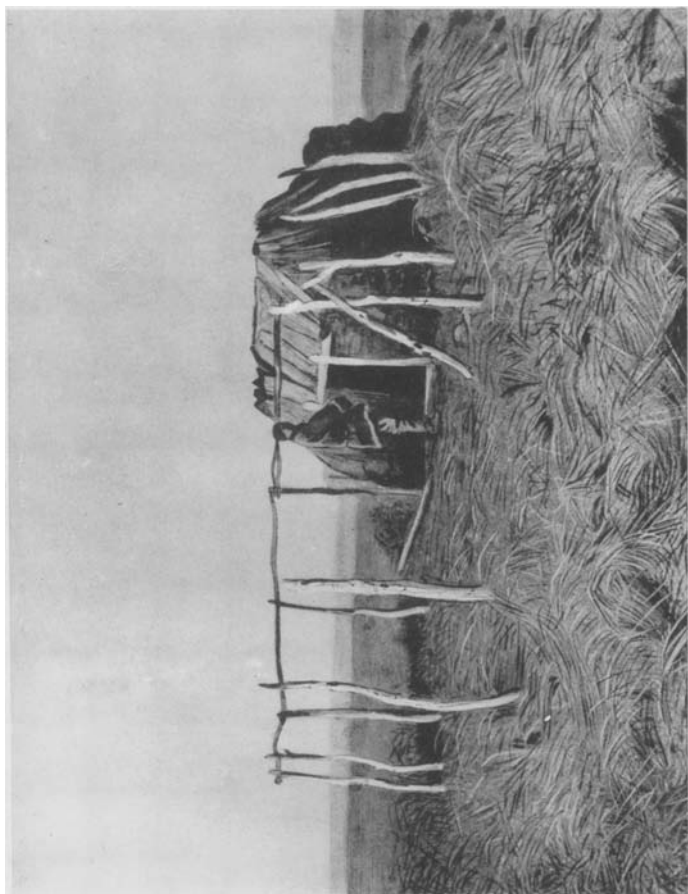


Fig. 2. Chukchee Hut at Marinsky Post.



Fig. 3. Summer Shelter of Maritime Chukchee.

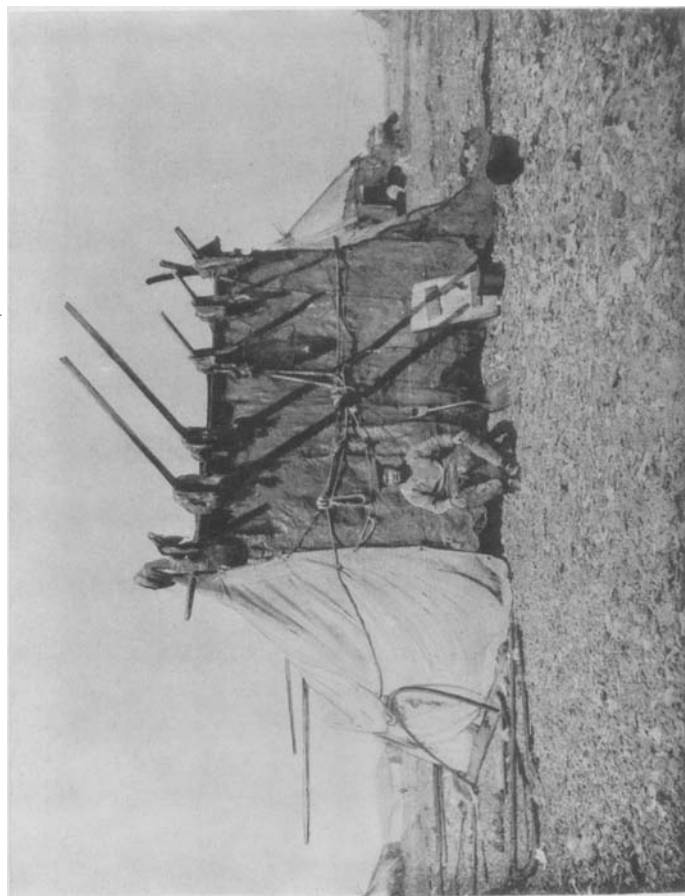
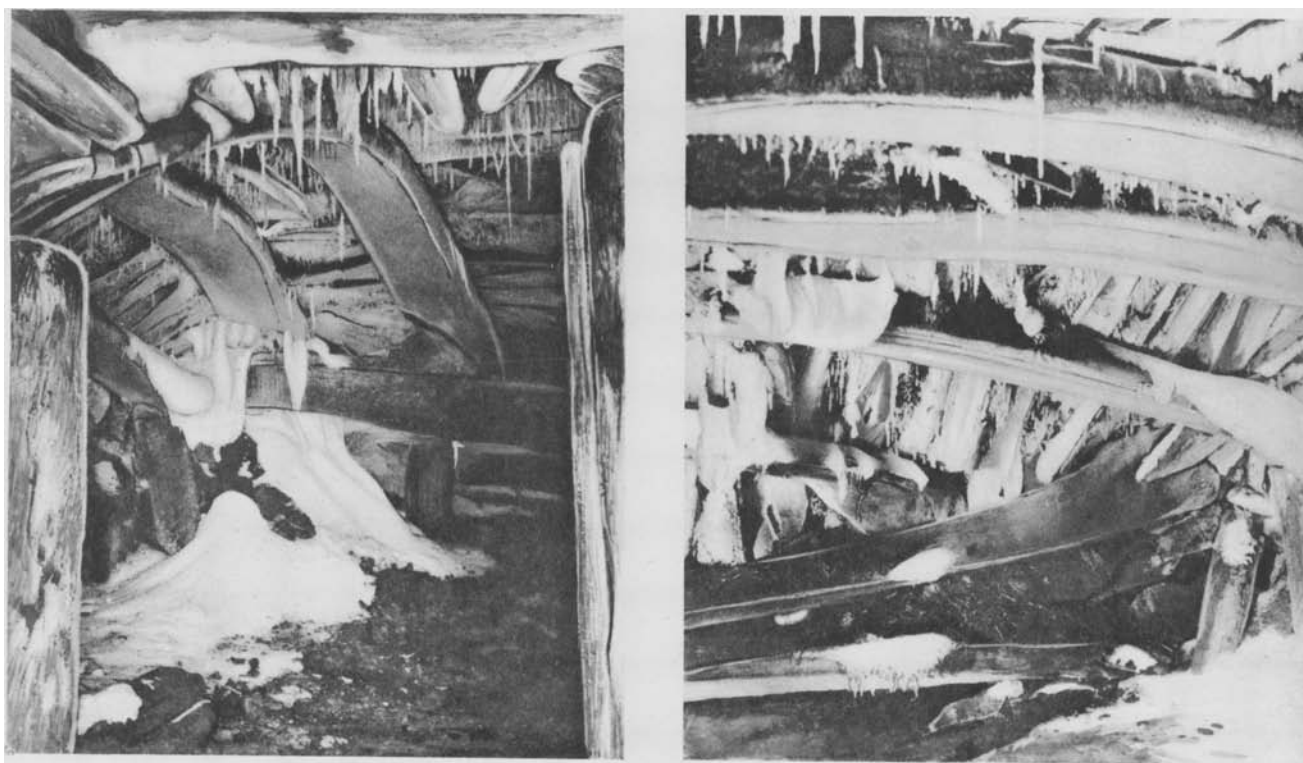


Fig. 4. Summer Shelter of Eskimo.



Fig. 1. Boat-Supports in Uñi'sak.



Figs. 2, 3. Interior of an Underground House at Nu'nligren.

The Chukohee.

population of the island was due, for the most part, to the unwholesome condition of the houses.

So, upon the whole, we must admit for this part of northeastern Asia two principal types of house. One is the "jaw-bone house," which in ancient times existed in many places along the Arctic and the Pacific shores, but which at present has almost altogether gone out of use. It is more or less similar to the habitations of the Eskimo in America, and of the Koryak and Kamchadal in Asia. Another type is the double skin house, the "genuine house" of the Chukchee. It is also ancient, and the Chukchee consider it as characteristic of their tribe. Outside of the Chukchee territory, setting aside its recent adoption by the Asiatic Eskimo, it occurs only among the Reindeer Koryak.

Snow-House. — The vaulted snow-house, which is typical for the Eskimo tribes, does not occur anywhere on the Asiatic coast. Of all the tribes of northeastern Asia, only the Kerek, who have no sufficient supply of wood or skins to construct adequate winter houses, utilize snow as building-material. Their half-underground house has a frame roughly constructed of such poles and pieces of wood as they can find on the shore. Crooked branches of stunted willow and birch trees are placed between to fill in the spaces, and the whole is lined, from within with such skins as they can scrape together, and from without with sod and loose earth. A long, low, narrow passage made of similar material forms the entrance. It is divided into three parts, closed by skin curtains. This structure is used in spring and summer as it is; but in the fall it is covered with a thick layer of snow several feet deep, and fashioned into a well-defined round or rectangular form, which gives to this house some outward likeness to the Eskimo snow-house.

The interior arrangements are much like those of the houses of other branches of the Maritime Koryak. The lack of a roof-entrance with its characteristic tree-ladder, however, gives it a peculiar feature. On that part of the shore no logs fit for the purpose can be found. Thus the use of the tree-ladder ceases suddenly on this part of the Asiatic shore for want of material. Farther to the northward and eastward, across Bering Strait, along the American shore on the Arctic and Pacific Oceans, are found various types of houses. Still farther to the south, in America, after the forest border is reached again, the square roof-entrance and the notched tree-ladder re-appear in exactly the same shapes as among the Koryak and Kamchadal in Asia.

Cellars and Boat Supports. — Underground cellars were and are used in all Chukchee villages for storing provisions. They also have supports made of bone of the whale in their walls, and the entrance consists often of a square frame with a shoulder-blade cover. Sometimes a vacant underground house is used for a cellar.¹

Supports for boats, spare tent-covering, etc. (Plate XVIII, Fig. 1), also

¹ See also Nordenskiöld, I, p. 405.

racks for drying seal-meat and fish, are still constructed of bone of the whale, or the people make use of old structures of this kind, because jaw-bone will last for a very considerable time, even in the open air.

Such frames usually consist of four stout uprights firmly embedded in the ground, with cross-bars tied to their upper ends, and a platform made of poles, or of bone of whale, laid across the bars. Some of these simple structures were erected on the cliffs overhanging the sea. During the winter-time, if any of the seal-hunters were overtaken by a storm on the open ice, these platforms served as beacons: the women ascended them, carrying burning lamps under their transparent overcoats of walrus-gut, and stood there for hours, shouting, and displaying their lights to guide the wanderers. Over the platform a light bunch of feathers, called paggo'lhin ("vane"), was suspended from a thin staff. It was consulted by the hunter in observations of wind and weather. Such vanes are still in use among the Maritime Chukchee, and even among those who are settled on the Middle Anadyr.

HOUSEHOLD UTENSILS.

FURNITURE. — The Chukchee houses have little furniture. In the outer tent as well as in the inner room the people sit on outspread skins with their legs crossed, and crouch or lie flat on their stomachs, as described above. Sometimes three-legged stools (Fig. 101), fashioned in one piece from the

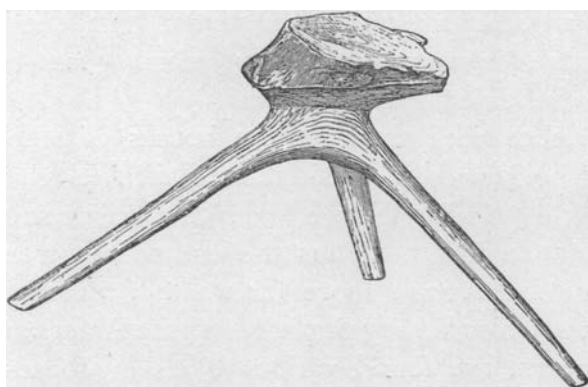


Fig. 101 ($\tau\frac{1}{2}\frac{0}{4}$). Three-legged Stool. Height, 41 cm.

butt of a tree with its roots or from a pair of large reindeer-antlers cut off with the top of the skull, are used in the house or outside, as, for instance, when sealing in winter. Tables consisting of large square wooden boards with four legs about three inches in height are used. These, however, are copies of the tables seen in Russian houses.

LAMP. — The chief appurtenance of the inner room, of both the Reindeer and Maritime divisions of the tribe, is the lamp, which gives light and heat. The lamp used by the Reindeer people is small and round in shape, and is made either of clay (Plate xx, Fig. 1; also Fig. 102, *a*¹) or of sandstone hollowed out with an adze (Fig. 102, *b*). Since the appearance of iron, old saucepans and pieces of cast-off kettles, battered into the shape of a bowl, are used for the same purpose. Wooden bowls having one edge covered with sheet-iron are also used as lamps. The lamp is usually placed in a shallow wooden bowl, standing,

in its turn, on a tray (Fig. 102, *a*³). Sometimes this bowl and tray are made of one piece (Fig. 102, *a*³). Another tray serves as a support for the whole. All these vessels serve to catch the drippings of oil. The material used for lighting is either blubber, or, in all inland regions, the tallow tried out of the reindeer-bones, which have been crushed with a stone hammer. The latter material is the better, because reindeer-tallow is very hard and contains a large proportion of stearine. It burns with a soft bright light, without smoke or odor. The wick is made of sphagnum thoroughly dried and spread in a thin narrow layer across the front edge of the lamp. To burn properly it requires continual trimming, which is done with a slender chip of wood. Instead of sphagnum, rotten wood or thin half-burnt shavings may be used. The lamp inside has a bridge, flat and inclined backwards. Its edges do not reach the sides of the lamp, and the middle has a deep cleft almost to the level of the bottom. The fuel, blubber, or tallow is placed behind the bridge, and the lamp is set in its wooden bowl somewhat obliquely. The slant causes the oil oozing from the blubber, or the melting tallow, to flow down to the wick along the walls of the lamp or through the cleft in the dividing ridge. Pounded blubber is sometimes used in the lamp to make the extraction of the oil easier. Oftentimes the lamp is simply filled with oil, and placed on the tray in a horizontal position, though it is then much more apt to smoke. The seal-oil lamp also gives off a strong unpleasant smell, offensive even to the natives.

The ordinary lamp of the people, both Maritime Chukchee and Eskimo (Fig. 103, *a*), is larger than that used by the Reindeer people. It has an oval, almost rectangular shape, and is made of clay. The bridge is vertical. For cooking, still larger lamps, with two bridges (Fig. 103, *b*) and moss wicks arranged on both sides of the lamp, are used. The bridges are often divided in the middle. The lamp is placed horizontally on a large wooden dish, and the kettle suspended over it from a peg. Round lamps of clay and sandstone are also used, and sometimes are put in a large round kettle-shaped vessel of clay, with one side cut out in a half-circle (Fig. 104, *a*) to give a better support to the oblique position of the lamp.¹

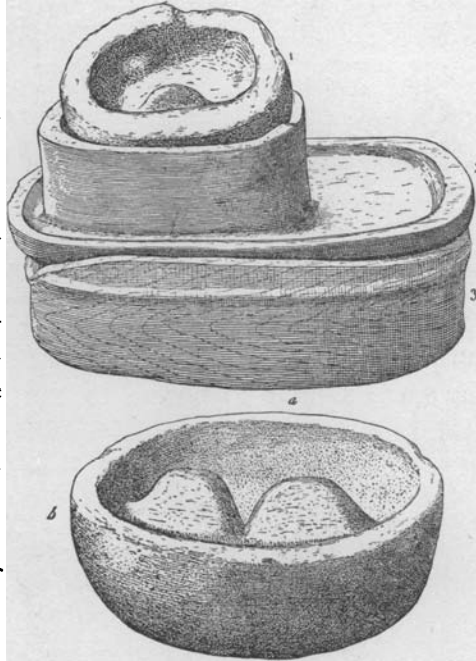


Fig. 102, *a* (ᑭᑭᑭᑭ ᑭᑭᑭᑭ ᑭᑭᑭᑭ), Clay Lamp with Wooden Stand; *b* (ᑭᑭᑭᑭ ᑭᑭᑭᑭ), Stone Lamp. $\frac{1}{4}$ nat. size. Reindeer Chukchee.

¹ Compare the illustration in Hough, *Lamp*, Plate 15, Fig. 3.

KETTLE. — The old women still have a vivid recollection of the clay kettles which were used in former times, and two of these were made for

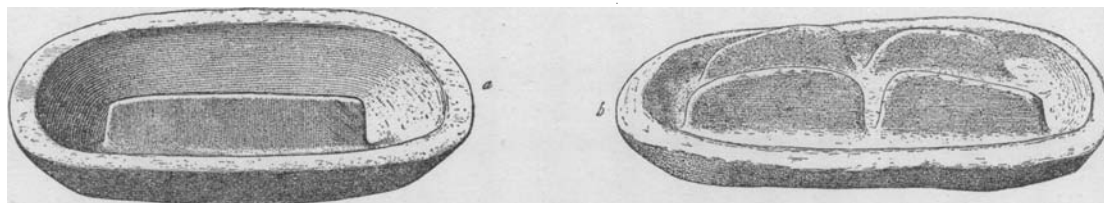


Fig. 103, *a* ($\frac{60}{3734}$), Clay Lamp of Indian Point Eskimo (length, 29 cm.); *b* ($\frac{60}{8495}$), Cooking-Lamp made in Mariinsky Post (length, 36.5 cm.)

me, — one in Mariinsky Post (Fig. 104, *b*), and the other in Indian Point. They are similar in shape to the soapstone kettles of the American Eskimo,¹

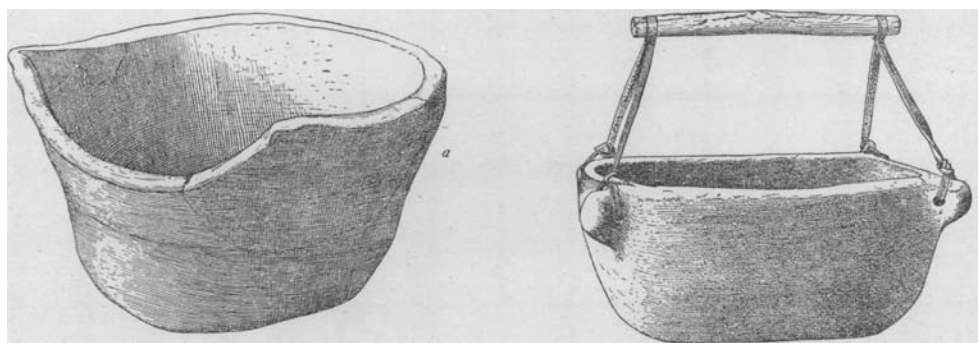


Fig. 104, *a* ($\frac{10}{7883}$), Clay Stand for Lamp (height, 15 cm.), Indian Point Eskimo; *b* ($\frac{10}{7892}$), Clay Kettle made in Mariinsky Post (height, 8.5 cm.).

except that the clay walls are necessarily thicker and clumsier. Some clay kettles from St. Lawrence Island, also of the same shape, are among the collections of the National Museum in Washington. Some fragments which I found on Baron Korff's Bay demonstrate that the Koryak of the Pacific coast must have used similar kettles. Some of these fragments have the same texture as the Chukchee kettles described above. The others, as well as some fragments from the ancient "jaw-bone houses" of the Asiatic Eskimo, are too thin to be considered as parts of such kettles, and indicate that other shapes were also in use.

The kettles and the lamps of my collection are not baked. When being manufactured, they are covered with a coating of reindeer or seal blood, sometimes mixed with ochre, and well dried before the fire. After this they are filled with oil and left to stand for several days, during which time the oil penetrates the pores of the clay. This makes the kettle less brittle. In ancient times the kettles and some of the lamps may have been baked. At least, some of those from St. Lawrence Island, mentioned above, are well baked, and I was told by Mr. W. Hough that some of them which he had

¹ Compare the illustration in Hough, *Lamp*, Plate 9, Fig. 4.

occasion to test display baking not less complete than any earthenware of American make. Some of the fragments from Baron Korff's Bay seem also to have been baked.

I am not aware of the occurrence of any soapstone kettles or lamps on the Asiatic side,¹ but the customs of the Chukchee concerning the taking from the cliffs of pieces of sandstone fit for the manufacture of lamps correspond to those of the American Eskimo regarding soapstone. Thus every piece of sandstone has to be "bought" from the cliff with a little blubber or with a small piece of tobacco-leaf. The man going for sandstone has to strip to the waist, or in winter at least to take off his outer coat, or else the displeasure of the "owner of the place"² will bring on a heavy storm.

The clay kettle of northeastern Asia, as well as the soapstone kettle of arctic America, is evidently one of the contrivances of the Maritime people. Its elongated rectangular form is adapted to the shape of the lamp over which it was hung in cooking. Perhaps in former times a square frame of poles connected by cross-bars was used to suspend it, as is the case with the American Eskimo. The Chukchee woman, when cooking out of doors, often builds, instead of the wooden tripod generally used in Siberia, a square frame of sticks with cross-pieces at the top. Nowadays, however, the clumsy clay vessels have long been superseded by copper and iron kettles and teapots. No special frame is used for them in the sleeping-room, and the kettles are suspended simply on a peg or a hook fastened to the wooden frame of the wall.

I have already spoken about the hooks used for hanging the kettle in the outer tent. The Reindeer Chukchee of the Omolon employ for this purpose a special pole, which is fastened in an upright position near the hearth, with the upper end protruding through the vent-hole. The pole is made from the slender trunk of a larch-tree, and one of the branches is retained. The line of the kettle-hook is tied to it. The pole is called "single Jack," "single man" (*yanra'-la'ul*), and is used also in some of the Koryak camps.

BONE-BREAKING SET. — Another important household utensil, especially with the Reindeer Chukchee, is the bone-breaking set (Fig. 105), which consists of several stone mauls (Fig. 105, *b*), a large flat stone upon which to lay the bones, and a flat cylindrical vessel made out of walrus-hide, and serving as a receptacle for the broken bones (Fig. 105, *a*).

The stone maul (*ri'pe'ñi*) is oblong in shape, with a groove in the middle, and a short handle tied to it by means of strong lashings. It has exactly the same form among the Markova Russianized natives, who call it *manga'uda*, a word which is supposed to belong to the old Chuvantzy language. It is one of the most familiar of the kitchen tools, and is especially used for split-

¹ W. Hough, in *Lamp* (Plate 17), calls one of the Siberian specimens of the National Museum a soapstone lamp, but on closer investigation it proved to be also sandstone.

² See Chapter XII; cf. also p. 101.

ting marrow-bones to extract the marrow from them; it is also used for breaking all kinds of bones from which tallow is to be extracted, and for crushing all kinds of frozen meat, fish and blubber, which form some of the standard items of Chukchee fare.

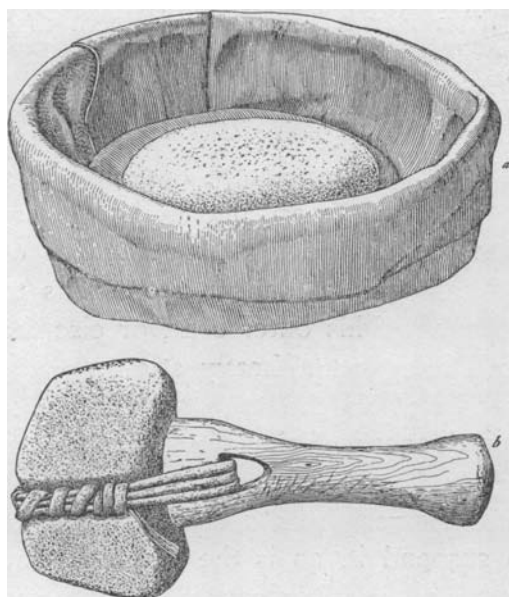


Fig. 105. Bone-Breaking Set. *a* ($\frac{10}{8} \frac{14}{8}$), Flat Stone and Hide Bucket (height of bucket, 10 cm.); *b* ($\frac{1}{8} \frac{1}{8}$), Stone-Maul (length, 25 cm.).

WATER-SUPPLY. — One of the great needs of the Chukchee household in winter-time is a sufficient supply of water for cooking and drinking, especially at present, when the drinking of hot tea has almost entirely superseded the eating of hard snow, which was usual in former times. Cooking over the lamp, even in an iron kettle, is at best a slow process, particularly so if the kettle is filled with snow or ice that must be first melted and then heated. The process is considerably shortened when begun with water instead of ice or snow. When a river

or lake is near by, and the ice is not too thick to be broken through, water is taken from a hole in the ice. Otherwise the largest vessel in the house is kept full of ice all the time. This dissolves gradually. The vessel is usually hung up to escape casualties, and a large wooden dish is put under it to catch the drippings.

The movable sleeping-room of the Reindeer Chukchee is not suitable to melt ice in. For the night-time a kettleful of ice-cold water or of broth cooled with pieces of hard snow is put inside for the benefit of the inmates. Its place is on the skin in front of the lamp, where nobody is allowed to sleep. Because of the general lack of room, the kettle is often upset by the foot of one of the inmates, and the contents are spilled over the sleepers. This arrangement presents another proof that the movable type of sleeping-room is a comparatively recent variation from the stationary type, and is not thoroughly adapted to the conditions it has to meet.

DISHES, BOWLS, ETC. — Wooden trays and dishes, bowls, and dippers (Fig. 106, *a-f*) of various sizes are made of wood, and used by the Chukchee for the purpose of serving food and drink. Those with sides of bent pine-wood sewed together, and fastened with pegs to a flat bottom (Fig. 107), are brought from Alaska across Bering Sea or from St. Lawrence Island. In several tales there appears, as an object of luxury, a carved drinking-cup of sheep-horn (Fig. 108). Such cups are even now valued more highly than the imported hardware. Drinking-tubes made of the leg-bones of swans (Fig. 109) are

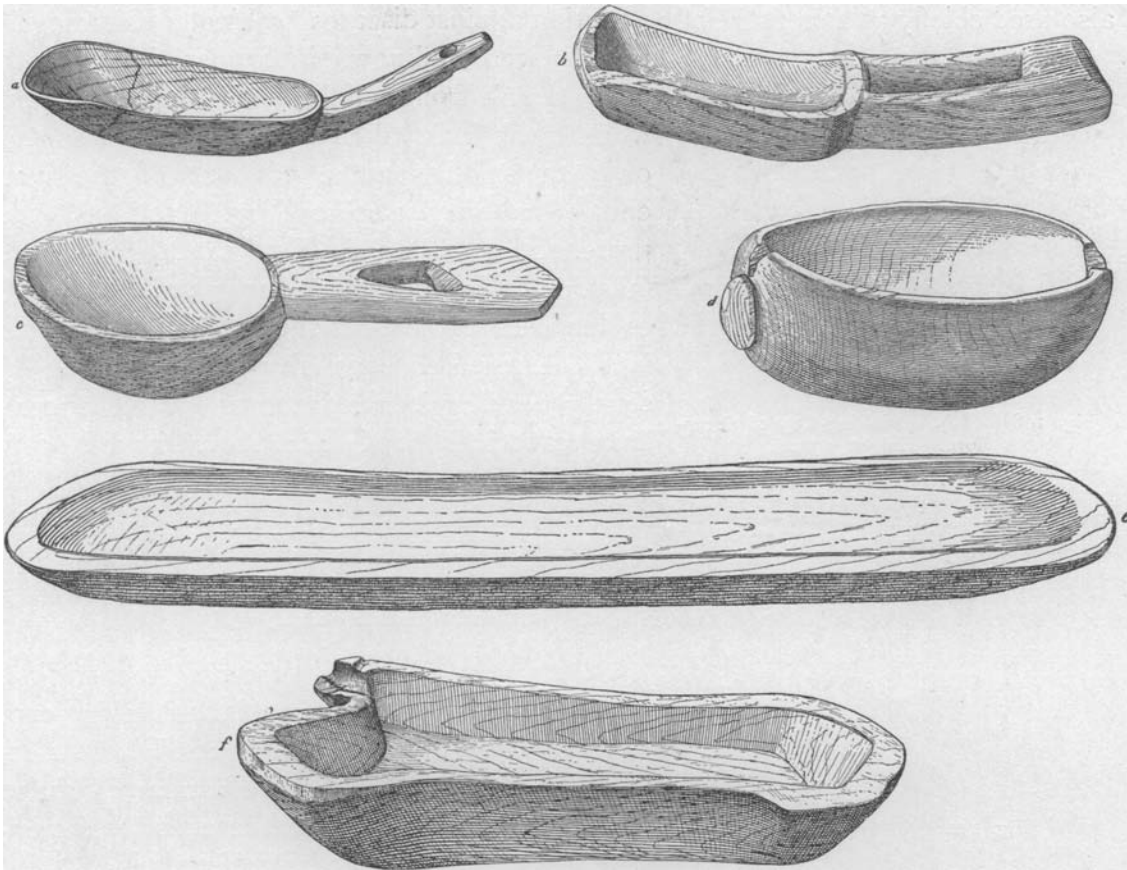


Fig. 106, *a* ($\frac{19}{8124}$), Dipper (length, 19 cm.); *b* ($\frac{19}{8583}$), Bailer (length, 25 cm.); *c* ($\frac{19}{8137}$), Dipper (length, 19 cm.); *d* ($\frac{19}{8606}$), Bowl (diameter, 22.5 cm.); *e* ($\frac{19}{8145}$), Tray (length, 73 cm.); *f* ($\frac{19}{8445}$), Dish (length, 38 cm.).

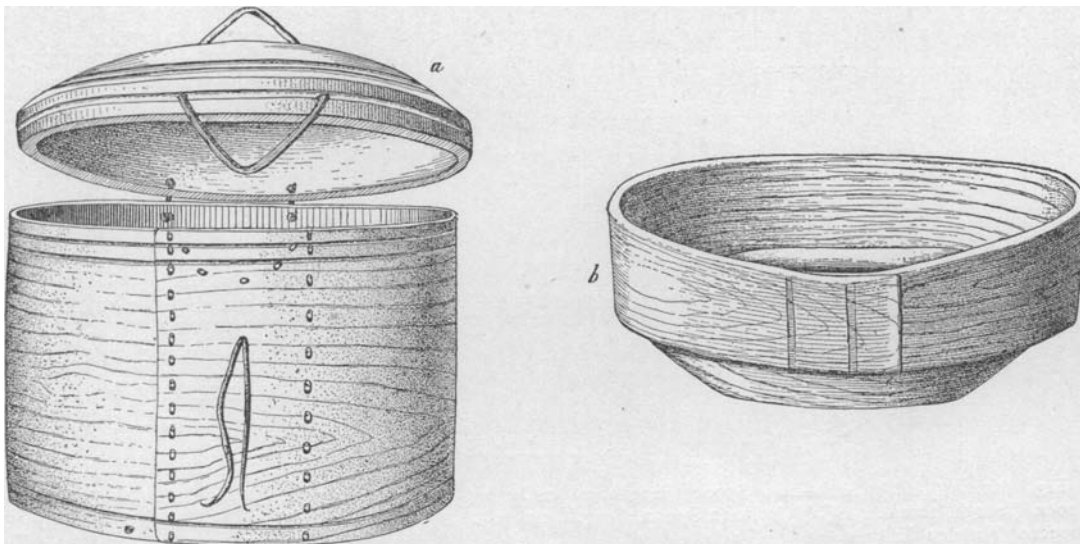


Fig. 107, *a* ($\frac{19}{7178}$ b), Vessel of Bent Pine for Cooked Meat (height, 20 cm.), Indian Point Eskimo, Alaska make; *b* ($\frac{19}{8178}$), Dish of Bent Pine (length, 23.5 cm.), Mariinsky Post, Alaska make.

also used chiefly as a measure of precaution against diseases "subject to shunning."¹

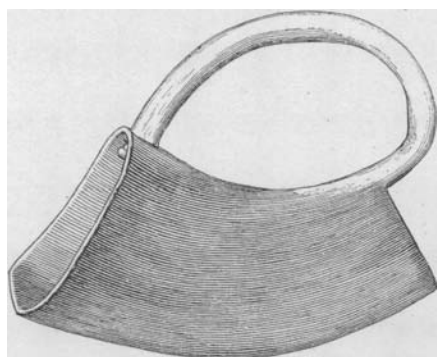


Fig. 108 ($\frac{1}{2}$ nat. size). Drinking-Cup of Sheep-Horn. Height, 17 cm.

Spoons were unknown in former times, broth being drunk from small cups of various shapes, while mush was taken simply with the fingers or with small spatulæ cut out of the rear end of a marline-spike (Fig. 110). At the present time, spoons (Fig. 111, *a*, *b*, *c*) are fashioned of wood, sheep-horn, bone, or ivory; or a piece of cast-off sheet-metal is wrought into the required shape by hammering or by simply bending it with the teeth. Many spoons have capacious bowls and short handles, call-



Fig. 109. Drinking-Tube. $\frac{1}{2}$ nat. size. (From a sketch.)



Fig. 110 ($\frac{1}{3}$ nat. size). Marline-Spike with Spatula. $\frac{1}{3}$ nat. size.

ing to mind the original form of the drinking-cup. As a rule, all these utensils are similar in shape to those used by American Eskimo.

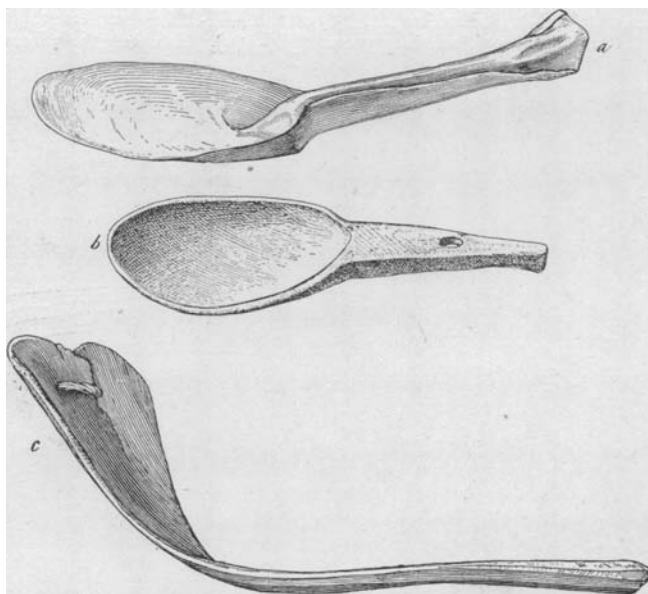


Fig. 111, *a* ($\frac{1}{3}$ nat. size), Sheet-iron Spoon (length, 18 cm.); *b* ($\frac{1}{3}$ nat. size), Ivory Spoon (length, 12 cm.); *c* ($\frac{1}{3}$ nat. size), Bone Spoon (length, 21 cm.). *a*, *b*, Chukchee; *c*, Wute'en Eskimo.

A stout branch of antler, with a spade-like end and several points curved upwards, is used for taking boiled meat out of the pot (Fig. 112, *a*). Fish-skimmers (Fig. 112, *b*) are usually made of wood, and their form is copied from the forms of those used by the Russianized fishermen.

Tooth-picks of whale-bone are sometimes met with. The specimen represented in Fig. 113 was perhaps used also as tweezers for pulling

¹ See p. 41.

out the hair of the mustache. To prevent its being lost, it was stuck through a hole in the belt. Cups of walrus-hide (Fig. 114), for holding oil or mush, are occasionally used.

Every kind of cheap hardware is bought from the traders, especially cups, glasses, and saucers, for tea-drinking. When these are broken into pieces, the Chukchee have a clever way of mending them by keeping the pieces together by means of a combination of iron clasps. This is done, however, in imitation of the Russianized natives. When a man travels alone, he carries his cup and saucer,

often incased in a small round wooden box closely fitting the chinaware. The cups and saucers of the Reindeer people's household are carried along in square wooden boxes, for the most part bought from the Russianized natives or from the Maritime Koryak. The Maritime Chukchee, on the contrary, have little opportunity to work and deal in boxes, on account of the scarcity of wood.

BAGS. — The bags for storing food usually consist, in the case of the Maritime Chukchee, of a complete seal-skin, with all the natural openings carefully sewed up. A rip across the breast forms the mouth of the bag. This kind of bag is used for several purposes, — for floats of harpoon-lines, for holding putrid meat for dog-food, etc. The inland reindeer-breeders, who have little seal-skin, make storage-bags out of old reindeer-skins, but always give them an oblong form with a mouth across the middle. These bags are usually so large that a single bag filled with putrid meat, or with blood mixed with pounded leaves, forms a sledge-load for one reindeer.

Similar bags (Fig. 115) are used for storing clothes and old scraps of skin. The flat narrow pillow-bag of the movable sleeping-room has a similar shape.

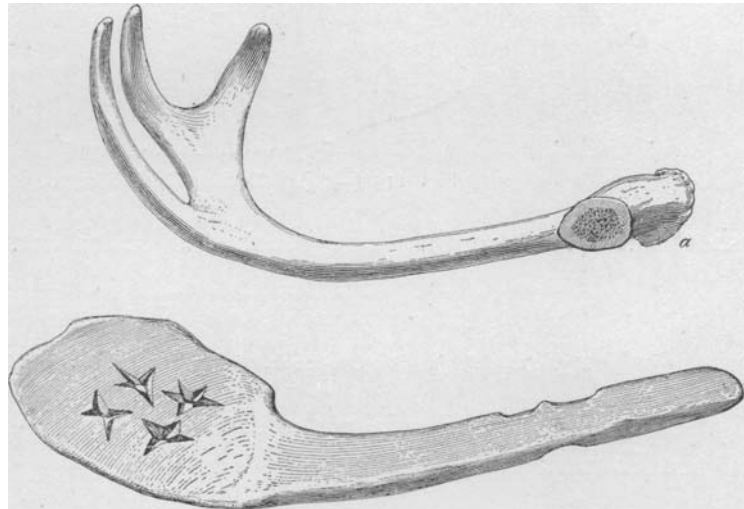


Fig. 112, *a* ($\frac{10}{57\frac{1}{2}}$), Meat-Ladle made of Antler (length, 28 cm.);
b ($\frac{10}{57\frac{1}{2}}$), Fish-Skimmer (length, 31 cm.).



Fig. 113 ($\frac{10}{88\frac{1}{2}}$). Tooth-Pick.
Length, 8 cm.



Fig. 114 ($\frac{10}{61\frac{1}{2}}$). Oil-Cup.
Height, 10 cm.

The bags filled with oil or blubber, on the contrary, are rounded, with

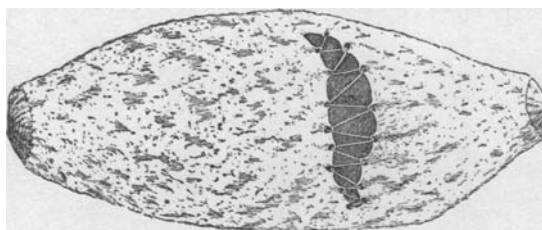


Fig. 115 ($\frac{70}{108}$), Clothing-Bag. Length, 90 cm.

a short slit for a mouth. The blubber is pulled out of the bag with a hook



Fig. 116 ($\frac{90}{384}$). Blubber-Hook. Length, 54.5 cm. Eskimo, Indian Point.

(Fig. 116), which is essentially the same also among the Eskimo, the Koryak, and the Kamchadal.

VIII. — FOOD.

ANIMAL FOOD. — The staple food of the Reindeer Chukchee is reindeer-meat, and that of the Maritime people, "sea-meat," — the meat of sea-mammals. On the whole, the latter is more relished by the whole people, because it is fatter, and because it formed the chief food of their forefathers. The reindeer-breeders have quite a liking for sea-food. This peculiarity may also be observed in the traditions of the tribe. In the tale of Elendi and his sons the old man and his wife risk the safety of their herd in sending their sons to procure some sea-food. After a while, when the enemies have been defeated, the old man is described as sitting in the sleeping-room, eating blubber, the oil dripping down from both sides of his mouth.¹

I myself witnessed that Reindeer Chukchee who had not had any blubber for a long time develop a craving for it, and are ready to pay extravagant prices for it. For this reason every spring, when the traders from the sea-coast visit the Reindeer camps, a continual feasting begins, and blubber and meat of sea-animals are offered to every one as the best of dainties.

On the other hand, the Maritime Chukchee and the Eskimo value reindeer-meat very highly, and call it the "sweet food of reindeer-breeders." In their tales it is often praised beyond any other kind of human food. The Maritime people undertake long expeditions by sea and land to obtain a supply, and occasionally trade some of it to the Eskimo of St. Lawrence Island and of the Diomed Islands. Although the meat is usually in a very poor state, it brings quite a good price. Generally it is bartered for the meat of sea-mammals, because one of the principles of trade in those countries is the interchange of similar articles whenever possible. Cotton is traded for skins, sugar for reindeer-tongues, ready-made shirts for ready-made skin coats, etc.

The Reindeer Chukchee have no opportunity to consume fish in any considerable quantity. The Russianized natives, on the other hand, live almost solely on fish; and therefore the Chukchee who live near these settlements utilize fish, which they reckon as belonging to what is called "alien food."² The Maritime Chukchee also consider fish as rather poor diet.³ They consume it, however, whenever they have a chance to obtain it, and also gather oysters and shells on sandy beaches or in shallow waters.

METHODS OF COOKING. — At present most of the meat is eaten boiled. It is hard to tell how food was prepared in former times. I collected one

¹ Bogoras, *Chukchee Materials*, p. 353.

² See p. 201.

³ Compare p. 146.

tradition among the Reindeer Chukchee, according to which, in olden times, their forefathers had no clay kettles, and the meat was roasted on large flat stones heated for the purpose. The Lamut tell the same story of their ancestors; but such a method of cooking is possible only within the borders of the forest, where the supply of fuel is abundant. On the tundra and on the treeless coast a method of cooking that requires less fuel must always have been in use. Therefore it seems probable that the lamp and the kettle were in use in former times as well as now.

The Yukaghir and the Kamchadal used to boil their meat and fish in bark or wooden vessels by means of heated stones. This method of boiling meat is still used occasionally by the hunter, who carries no kettle, and who may boil his meat in the old way. The Kamchadal of Central Kamchatka extract the fish-oil of *Salmo sanguinolentus* by trying out the fish in a dug-out with heated stones.

At present the Chukchee use little roasted meat. They hardly know how to roast it properly. Fish and lungs, which are sometimes roasted near the fire, are always covered with ashes, charred from without, and quite raw within. The Yukaghir and Kamchadal roast fish and meat very well on thin wooden spits stuck into the ground near the fire.

RAW AND PUTRID MEAT AND CARRION. — Raw, frozen meat is eaten by the Reindeer Chukchee and all the neighboring tribes. The Arctic people consider meat that is raw and hard-frozen just as palatable as cooked meat. I must acknowledge that I soon learned to eat it and to like its taste. Especially when we had to live for a long time exclusively on fat fish, with not so much as a pinch of salt to season it, we found this diet more tolerable when the fish was eaten raw and frozen hard.

Liver and kidneys, heart, tendons of the legs, gristle of the nose, eyes, and marrow are consumed raw summer and winter, immediately after the reindeer has been slaughtered. Blood is also consumed raw, fresh, or half-putrid. The Chukchee are averse to eating other parts of the animal raw; and I know of cases where a herdsman who had no kettle killed one buck after another, and ate only those parts that are considered fit to be eaten raw, leaving all the rest of the meat to spoil.

The Reindeer Chukchee, and especially the herdsmen, however, are not very particular as to their food. They eat the maggots of the reindeer-fly, and various herbs which taste to us unsavory or repugnant. In exceptional cases they gather toadstools and the green, half-liquid dung of the reindeer that has taken to eating leaves in the spring. This is mixed with herbs and a little blood or putrid liver, and eaten raw.

The herdsmen among the Telqā'p people are accused by their neighbors of catching mice and eating them raw, after removing the intestines. During calving-time, when short of drinking-water, they are said to drink the birth-

water of dams. In a similar way the Maritime Chukchee and the Eskimo, while killing a walrus in the summer-time, far away on the open sea, open it, and squeeze out the liquid contained in the intestines.

The Maritime Chukchee eat more raw meat than the reindeer-breeders, because of the difficulty of procuring fuel. Especially in the spring, when the supply of fuel runs short and the snow is very deep, they live almost exclusively on raw meat or blubber, frozen or not frozen, with the addition of some dried meat which is half putrid and tastes bitter. The meat of animals that have died of disease is eaten without aversion. For instance, the Reindeer Chukchee consume reindeer that die of the hoof-disease, fawns that perish from starvation in an unfavorable spring, etc. Late in the spring and early in summer, well-to-do families live almost exclusively on the meat of reindeer that have died of disease, because there is always plenty of it, and it is considered sinful to throw away any kind of food unless absolutely compelled to. During this period, the poor people, who do not lose so many animals, live on slaughtered reindeer. Animals killed by wolves are eaten, but not as freely as those that have died of disease, and children are forbidden to eat of their hearts or marrow.

In former times the meat of reindeer killed by wolves was tabooed, because it was believed that a man who had eaten of such meat would become an easy mark for his foes; but at the present time this custom has lost much of its force.

The Maritime Chukchee consume the carcasses of all sea-animals that are drifted ashore by the currents, so long as they are not too putrid.

Although it would be easy to construct storerooms in the frozen ground, in which meat could be preserved in good condition, the Chukchee are satisfied with their ill-protected cellars, in which the provisions soon begin to become putrid. Therefore both the Reindeer and the Maritime Chukchee live on putrid meat throughout the summer and part of the winter.

When the Reindeer people drive their herds to the summer pastures, ten or fifteen animals are slaughtered for summer provisions. The meat is simply hung in the tent, where it is easily accessible to carrion-flies and other insects. After several days it is placed in a pit dug in the centre of the tent, and covered with sod. Later on, when the pit is opened, the stench is so strong that it is disagreeable to the natives themselves, who avoid staying in the tent until the pit is covered over again.

The Reindeer Chukchee do not let any part of the carcass of the reindeer go to waste. They eat the gristle, and consume the half-digested moss of the paunch.

Blood is eaten fresh, mixed with herbs or dried meat. It is also preserved in large bags. It is frozen in winter, and fermented in summer. The ears, the gristly part of the nose, and the rims of the hoofs, are singed over the

fire, cut into pieces, and thrown into the blood. The guts are also chopped and thrown into the blood. The same is done with fish-heads and such bits of meat as are not consumed immediately. This mixture does not readily become putrid, on account of the fermentation that is going on in the blood. Bags filled with fermented blood, and putrid meat of slaughtered or dead animals, are stored up by thrifty families for winter use. These stores are gradually consumed during the cold season, although the Chukchee prefer to use fresh meat, and sell them at a low price to the Russians for dog-food.

The Maritime Chukchee store away bags of seal-blood prepared in the same manner, but their supply is not so abundant as that of the reindeer-breeders. Walrus-meat, whale-skin, and the like, are cut into square pieces and stored in underground cellars. Whole carcasses of seals and walruses are often stored for several months, and afterwards eaten or used for dog-food, although they generally become quite putrid. Blubber is stored in bags. Oil is extracted from chopped or pounded blubber by protracted boiling. The blubber is not chewed, as is done by the Central Eskimo in America.

In spring, about the middle of April, the Reindeer Chukchee dry some of their meat in the open air. Under the combined action of the warm breezes of noon and the frost of night, quite large pieces become thoroughly dry, and keep much of their savor and softness. The dried meat is slightly smoked over the hearth in the tent. Unlike the Lamut and the Yukaghir, the Reindeer Chukchee do not care to dry meat in summer, because at that season the meat must be cut into thin strips and strung on lines, which is considered too much work. The Maritime people dry some seal-meat in summer. It is sliced thin and hung on long poles, which form a drying-rack. Whenever a whale drifts ashore, quantities of whale-meat are sliced thin and hung on poles or strung on lines, or, if the weather is favorable, spread on skins or on dry smooth rocks. The Chukchee fishermen at the mouth of the Anadyr dry their fish on racks made in imitation of those of their neighbors, the Russianized natives.

The drying is done very carelessly. The meat or fish is seldom protected from rain. It becomes soft, and so full of maggots that often they can be gathered by the handful on the ground below. When it is at last dry, it is as hard as wood, and almost as tasteless.

TABOOS. — There are several restrictions connected with animal food. The Reindeer Chukchee abstain from the meat of the wolverene and black bear, of all the species of *Canis*, and of most birds of prey. The large owl of the tundra (*Strix nyctea*) and its large eggs are eaten. Milt of reindeer is supposed to cause the impotency of men and the flabby breasts of women, and is tabooed for young people of both sexes. The same taboo exists concerning the tongue and the gastrocnemius muscle of the sacrificed fawn.

The Maritime Chukchee eat all kinds of animals except a few birds, such

as the eagle and the raven. To kill the former would bring a dense fog. In times of want, meat of foxes and wolves is often eaten, and the popular saying for a man born of a poor family is that he has been raised on fox-meat.¹

VEGETABLE FOOD. — Vegetable food of various kinds is used by both branches of the tribe, though rather as a substitute in cases of scarcity of meat than as a relished change.

I have already mentioned the moss extracted from the paunch of the reindeer. It is a soft greenish mass of the consistency of thick gruel. The women strain it through a piece of old net. The coarse shreds of moss that remain in the strainer are placed back in the paunch, and smoked for a long time over the hearth. This method of preparation, however, is used principally by the Tungus. The Chukchee throw away the shreds and keep the green gruel, which they use for preparing a soup by boiling it with some blood, fat, and chopped guts of reindeer. In former times this soup formed the usual breakfast of the Reindeer people. The moss-gruel was stored in great quantities and used throughout the summer, but at present tea is gradually superseding the old moss-porridge.

Poor people still store a couple of bags for winter use every year, but the greater part is left unused. In the fall, when the Chukchee have their great slaughtering, the poor fishing-people of the Russian and Yakut settlements of the Kolyma take some of it for dog-food without pay. With it they thicken the fish-soup prepared for the dogs.

Leaves of stunted willows are gathered early in summer, pounded into a pulp, mixed with moss-gruel, and put into bags, in which the mixture is allowed to ferment. After fermentation it tastes sour, and is eaten with putrid meat, like a salad, though not in large quantities.

Leaves of *Polygonum polymorphum*, *Oxyria digina*, *Claytonia acutifolia* Willd, and several other plants, are used for the same purpose, or are eaten raw, mixed with blood or putrid liver, or some animal food of similar kind. The Maritime Chukchee pound these leaves and store them for winter use, without admixture of moss-gruel. They eat also several kinds of seaweed which are found on the seashore. This is gathered only when animal food is scarce, but children eat it raw while playing on the beach.

The inner bark of the thickest roots of stunted willow is also utilized as food. In olden times it was much more important than at present, as may be judged from an ancient saying: "The people come to life in spring because the roots of the willow begin to thaw." The bark is stripped off, thoroughly pounded, and then mixed with fresh or putrid blood, and eaten raw or boiled as a kind of soup. The women also put some of this bark into the fermenting blood, which is stored for winter use.

¹ For the eating of dog-meat, see p. 101.

The roots of *Claytonia acutifolia* Willd, *Hedysarum obscurum*, *Polygonum viviparum*, *Polygonum polymorphum*, *Pedicularis sudetica*, *Potentilla fragiformis*, *Oxytropis*, various species of *Carex*, and several others, are used by the Chukchee. They are the only vegetable food that is really relished. During the summer women often go digging roots (Plate xix, Fig. 1). They use a digging-pick, which in former times consisted of a handle with bone point (Fig. 117, *b*) or simply of a sharp-pointed piece of antler (Fig. 117, *c*), while at present it has an iron point tied to a wooden handle (Fig. 117, *a*).

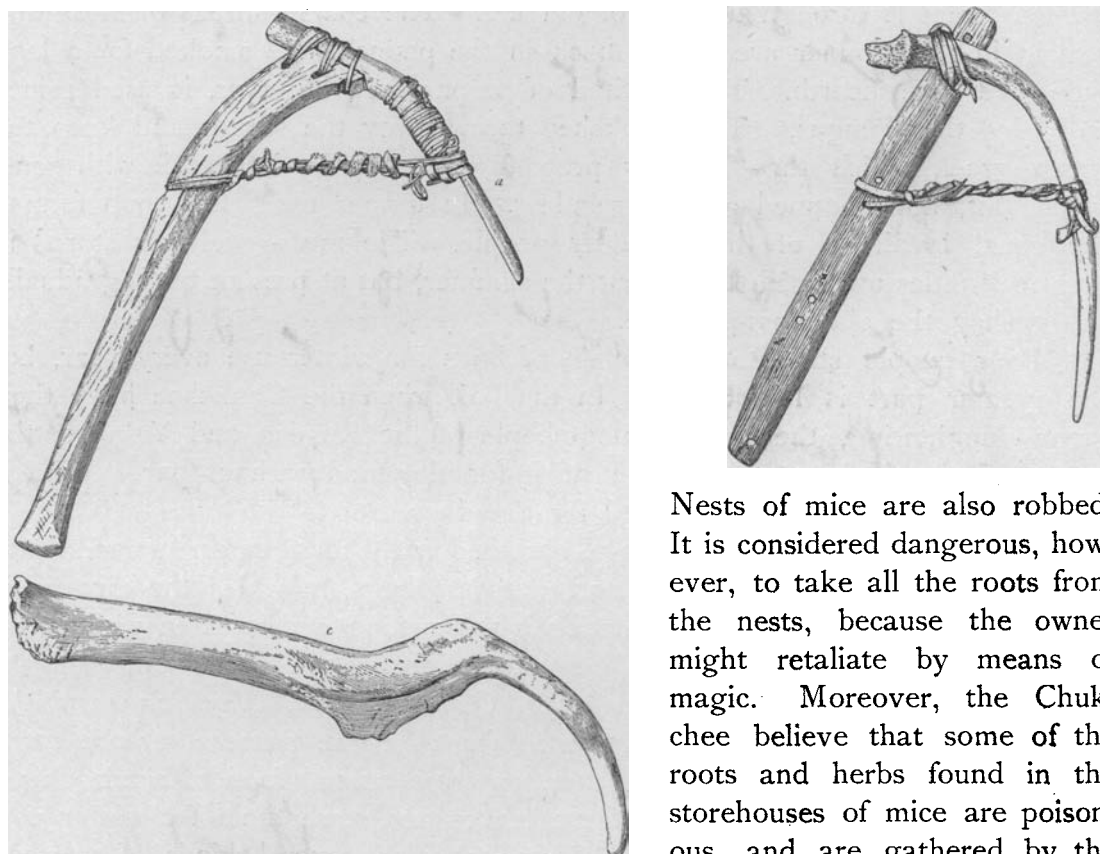


Fig. 117, *a* (8188), Root-Digger with Iron Point (length of handle, 57 cm.); *b* (8187), Root-Digger with Bone Point (length of handle, 51 cm.); *c* (8188), Root-Digger made of Antler (length, 36 cm.).

Nests of mice are also robbed. It is considered dangerous, however, to take all the roots from the nests, because the owner might retaliate by means of magic. Moreover, the Chukchee believe that some of the roots and herbs found in the storehouses of mice are poisonous, and are gathered by the mice partly for the purpose of poisoning the robbers, partly as an intoxicant, like fly-agaric

(*Agaricus muscarius*),¹ which is used by man.

Roots are eaten raw, added to meat-soup as vegetables, or pounded fine, together with the choicest meat and tallow, and made into a pudding, which is considered the most delicious dish of the Chukchee bill of fare.

Berries are gathered and eaten on the spot. They are very seldom stored, since the tundra is not very rich in berries. Those occurring most frequently are *Empetrum nigrum* and *Rubus chamæmorus*.

¹ See p. 141, footnote.

On the whole, vegetable food is much more used by women and children than by men. In tales, men living in solitude are always described as hunting animals and procuring animal food. A solitary woman is more frequently described as gathering herbs and roots, laying in stores of vegetable food, and often it is told how she brings up on it several small children.¹

DISHES. — The Chukchee bill of fare is not very varied. Boiled meat forms the staple food, and the brisket is considered the best part of the animal. The head of the animal is generally eaten first; and the other parts are prepared in order, going backward along the body. There are a few more elaborate dishes. First of all is *ki'vlet*, a kind of soup, which is made of blood mixed with fat, chopped guts, and edible roots if on hand. This soup is cooked in large quantities at all the principal ceremonials. It is used for sacrifices, and eaten by the guests as the chief course of the feast. Another dish is made of pounded flesh mixed with fat and roots and boiled with a small quantity of water into porridge.

Pounded meat mixed with fat, and sometimes also with edible roots, is boiled in water, and then well kneaded and formed into large round balls, which in winter are frozen hard, and form the chief travelling-provisions of the Chukchee. A man going alone on an expedition of any kind will take along a ball of frozen meat-pudding and a few sticks of frozen marrow. Meat-pudding is prepared in quantity for ceremonials of a social character; for instance, for weddings. It is the customary present which is interchanged between the families of the groom and of the bride.

The Chukchee women do not care to prepare these dishes for every-day consumption, especially because boiled reindeer-meat is, after all, the dish best to their liking. Among the Koryak and the Kamchadal, puddings are prepared chiefly of roots, stalks of herbs, and berries pounded and mixed with oil; but the country of the Chukchee is too poor to yield vegetable food in sufficient quantities. For sacrificial purposes, however, puddings are made of pounded leaves and herbs of the plants named, and on these occasions some such pudding is eaten by the people.

The ordinary meals of the Chukchee consist of solid food only. Like all the other tribes of northeastern Siberia, they drink tea after the meal. Broth is taken afterwards as a cold drink, for which purpose it is often cooled with slabs of snow. According to reports of former travellers, they ate much snow to quench the thirst; but, owing to the introduction of tea, this custom has fallen off to a great extent.

TEA, TOBACCO, AND OTHER FOODS. — The people of northeastern Siberia use compressed "brick tea" almost exclusively, and drink it very strong and black, when their supply is sufficient. They have no milk, and practically no sugar; nor do they add tallow or rye-meal, as do the people of southern Siberia.

¹ See, for instance, Bogoras, *Chukchee Materials*, p. 258.

Roasted rye-meal is sometimes used in the north as a substitute for tea, but it is not much liked by the people. They drink tea in large quantities three or four times daily, sometimes as much as forty large cups a day; but it does not seem to affect their nervous system. This is due to the fact that compressed tea, being prepared of the refuse leaves mixed with sheep or ox blood, contains but small quantities of the alkaloid. Europeans travelling in that country generally consume nearly as much tea without ill effects. Tea is considered by the people as a substitute for food. Its chief importance, however, is that it presents an excellent means of restoring heat after travelling or walking out of doors in the cold. It is considered to be healthy; and the natives believe that in the summer-time, when camping on the damp tundra, plenty of hot strong tea keeps off cold and fever. For all these reasons, scarcity of tea is considered almost everywhere as nothing short of a calamity, which, however, befalls the people almost every year for several weeks, whenever the arrival of the merchant caravans is retarded by blizzards or by swollen rivers.

As substitutes for tea, leaves of the sweet-brier, of *Epilobium angustifolium* and of various berries, such as *Rubus chamæmorus* and *Rubus arcticus*, are used.

As stated before, the principal meal of the Chukchee is in the evening, after all the people have entered the sleeping-room. At this time the Chukchee eat much and ravenously. They swallow large quantities of meat, gnaw the bones, and try to outdo each other in quickness. Nevertheless the Chukchee do not seem to be greater eaters than their neighbors; and my cossacks and other companions, after a long day spent in travelling through the cold weather, ate just as swiftly and ravenously as the natives. There are some exceptionally great eaters among the Chukchee, although I myself met such a one only among the Russianized Yukaghir of the Kolyma. I was told about one Reindeer Chukchee of the Telqä'p tundra who was able to consume at one eating a two-year-old reindeer-buck. I was told that before a meal the skin on his stomach lay in large folds, which he gathered up with his belt. He could stay without food for two or three days. Then, after a sumptuous meal, his stomach would be enormously distended, so that the skin would look quite smooth, and he would spend a whole day motionless digesting.

The Reindeer Chukchee, as well as the Lamut and the Koryak in Kamchatka, occasionally use as food a kind of white clay, which is called nu'te-e'çen ("earth-fat"). This, of course, is eaten only in moderate quantities, mixed with broth or with reindeer-milk.

Pitch from the larch-tree is used as chewing-gum, as is done by many other tribes. For the same purpose the Maritime Chukchee and the Eskimo make a preparation of seal-oil by boiling the dregs from the oil till they become quite ductile and sticky. A small piece is steeped in fresh seal-oil just before chewing it.

The Chukchee like to try every kind of "alien food," and even become accustomed to condiments, like mustard and pepper. They even offer sacrifices of sugar, bread, etc., to the spirits, supposing that they are also fond of new kinds of food. In cases of voluntary death, the self-doomed man often declares his last wish to be to taste "alien food." In the next world, he argues, there will be no place for other tribes, so this will be his last chance to taste foreign foods.

I have already mentioned the passion for tobacco among the native tribes of northeastern Siberia. It is stronger in the Kolyma country, possibly because tobacco is more difficult to get there. Among the Chukchee very few people are met in that region who do not use tobacco in some form. Even children three years old, who are just toddling about, are seen smoking. Mothers give their pipes to suckling babes to quiet their crying.

"The tobacco-weed knows no shame," says a proverb of the Russianized Yukaghir. Of the same nature is another common saying in this tribe, which refers to their girls selling their virtue for a stem of tobacco.

Scarcity of tobacco is felt as keenly as a food or tea famine. The same term is used to express all three ideas in local Russian and in the native languages. When tobacco gives out, the people use the black deposit which gathers inside of the pipe-stem. Indeed, one of the reasons for making pipes with cleft stems is for the convenience of extracting this nicotine deposit, which is stored in a bag for future use. It is considered especially suited to chewing, and during prolonged hard work it drives away drowsiness and fatigue more effectually than genuine tobacco. More commonly they use for chewing small pieces of tobacco-leaf without any preparation. The stamens are considered to be less desirable than the broad part of the leaf.

Tobacco for smoking is cut fine with an ordinary knife on a small board of the same shape as a woman's tailoring-board. Two parts of tobacco are then mixed with one part of wood to weaken it properly. The wood used is dry poplar or aspen bark, or pieces of young willow, which are scraped fine and rubbed with the fingers. The Russian leaf-tobacco is too strong, though a few people use it without mixture. The so-called "Turkish" tobacco, which in reality is grown in southern Russia and in the Crimea, is used pure, because it is much weaker. The same may be said of Manchurian tobacco and the lighter American tobaccos. All strong American tobaccos are smoked with a mixture of wood.

The receptacle for tobacco in the bowl of the pipe is extremely narrow, and each dose for smoking is therefore very small. The smoker consumes a pipeful at once by several prolonged puffs. The northern smokers, in consequence, refill their pipes almost every ten minutes. After a long period of abstinence, a passionate smoker, on consuming his first pipe in this hasty manner, often becomes so giddy that he falls unconscious. This is particularly noticeable among the young men and women.

Tobacco-pipes of various shapes are used. The oldest and simplest pattern (Fig. 118, *a*, *b*) has the stem made of two parts, unequal in size, the narrower part forming the bottom. The stem

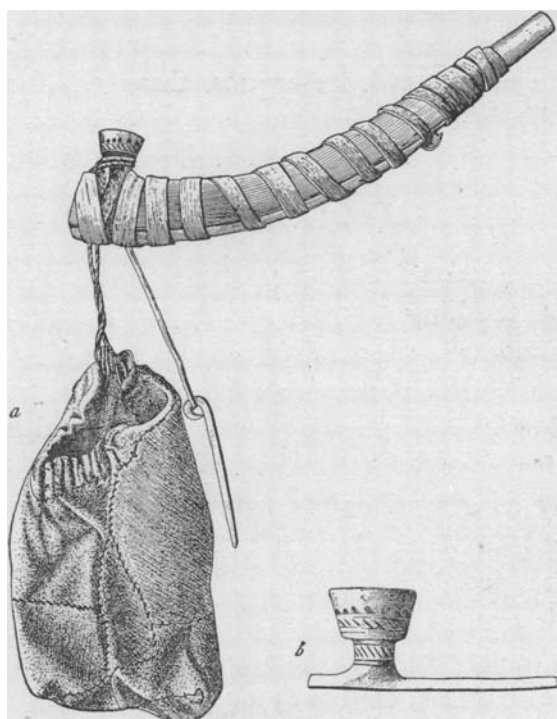


Fig. 118 ($\frac{10}{7\frac{1}{2}}$). Chukchee Pipe with Cleft Stem.
Height of bowl, 2.5 cm.

is held together by being wound with a strip of leather. The bowl (Fig. 118, *b*) is made of tin or pewter, and is more or less similar to Chinese patterns. Indeed, brass pipes of Chinese make are found widely distributed among all tribes of eastern Siberia, and have undoubtedly influenced the native manufacture. Other pipes have a bowl of tin or pewter, with a round wooden stem. They are joined in a manner similar to that shown in Fig. 118, *a*, but the stem consists of a single piece (Fig. 119, *a*). It has a hole in the butt-end, closed with a stopper, which allows the deposit to be extracted.

A few pipes in the collection have bowls of the same shape made of bone, or stone roughly hollowed out with a chisel. Other pipes (Fig. 119, *d*) are made of a single piece of wood, with a very small bowl and bulging stem. All along their lower side are round holes closed with stoppers. Through these holes the black residue from the pipe is extracted. Some of these pipes are quite large. On the Kolyma I saw an old woman who carried her pipe on her shoulder like a club, and indeed it might have been used as a weapon. A Koryak pipe in Mr. Jochelson's collection is about 60 cm. long.

Some single-piece pipes are ornamented with patterns inlaid with pewter (Fig. 119, *b*, *c*). The bowl and the mouth-piece are of pewter, and are cast in wooden mantles (Fig. 120). The wooden part of the pipe, with its surface grooved for inlaying, is interposed between the end moulds, which are connected by a paper tube. The metal parts are thus all cast at the same time, the pewter being poured into the bowl-end of the mould. The pipe is afterwards finished with a knife and a file.

One style of pipe (Fig. 121 *a*, *b*) has an ivory bowl, and a stem made of wood. Its shape is nearer to that usual among Europeans, and may be an imitation. The bowl is adorned with very clever carvings. This work is rare among the Chukchee, but the Koryak pipes display a great variety of carved patterns.

With the pipe are kept a stout iron pin to clean the bowl, and a small tobacco-pouch made of leather and sometimes adorned with crude embroidery.

All the pipes described resemble the pipes of the Alaskan Eskimo. This may be seen by comparison with Nelson's plates.¹ Some of the Alaskan Eskimo pipes, however, have the body of the bowl higher, and the rim wider and more flattened. The difference was pointed out to me by the natives. Furthermore, American pipes carved of ivory retain the same form as the simpler pipes; while the Asiatic carved pipes, as noted before, resemble the civilized form. The Asiatic Eskimo have pipes quite similar to the Chukchee patterns. The ivory pipes of St. Lawrence Island, on the other hand, already show quite an American shape. Their stems, moreover, are engraved with pictographic etchings (Fig. 122), while on the Asiatic side the pipe-makers use only relief-work.

The use of snuff is found rather among the Russianized natives than among the Chukchee. Tobacco for this purpose is ground in a very small wooden mortar (Fig. 123) by means of a long, heavy, wooden pestle. The



Fig. 119, *a* ($\frac{10}{17}$), Pipe with a Tin Bowl (length, 17.5 cm.); *b* ($\frac{10}{37}$), Ornamental Pipe (length, 26 cm.), Eskimo, Indian Point; *c* ($\frac{10}{88}$), Ornamental Pipe (length, 23 cm.); *d* ($\frac{10}{17}$), Wooden Pipe (length, 45 cm.).

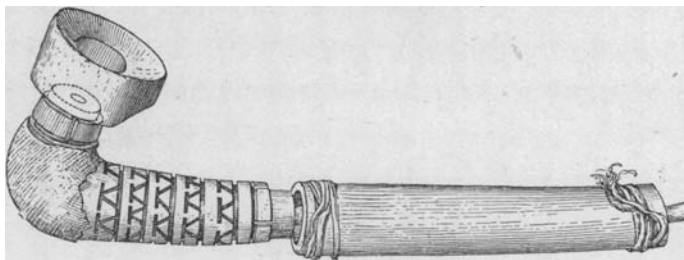


Fig. 120 ($\frac{10}{88}$). Wooden Mantle for casting Pipe. $\frac{1}{4}$ nat. size.

¹ Nelson, Plates LXXXVIII and LXXXIX; also Fig. 94, p. 281; and Fig. 95, p. 284.

mortar is placed on the ground, between the operator's feet. The small end of the pestle is put into the mortar, while the other end is moved slowly

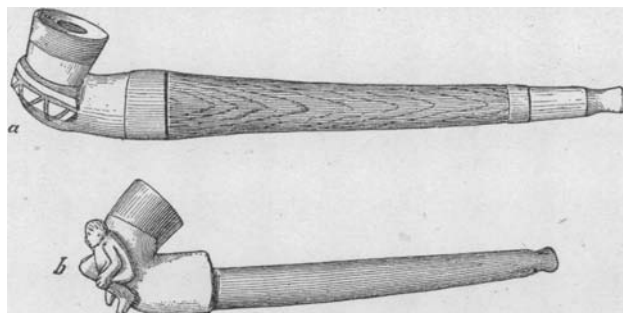


Fig. 121, *a* ($\frac{10}{1548}$), *b* ($\frac{60}{1288}$). Pipes with Ivory Bowls. Length, 18 cm., 20 cm.

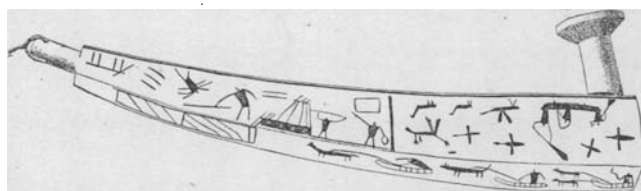


Fig. 122 ($\frac{60}{1585}$). Ivory Pipe. Length, 23 cm. Eskimo, St. Lawrence Island.



Fig. 124 ($\frac{10}{1073}$). Birch-bark Snuff-Box, Markova make. Height, 7 cm.

around with the hand. Mortars used by various tribes of northeastern Asia resemble those used by the Alaskan Eskimo. Some white ashes of poplar-wood is added to the tobacco, and often a pinch of pulverized glass, to increase the irritation of the snuff. On the Pacific coast, ground tobacco is used very generally, but for chewing rather than for snuffing.

The Chukchee buy snuff-boxes from the Russianized Yukaghir or the Maritime Koryak. These boxes are made of birch wood or bark (Fig. 124),



Fig. 123 ($\frac{10}{5363}$). Mortar and Pestle for grinding Snuff-Tobacco. Length of pestle, 116 cm.; height of mortar, 6 cm.

and sometimes are ornamented with geometrical designs scratched in with a knife or impressed in the soft bark with sharp stamps. The Chukchee use these boxes for holding snuff, chewing-tobacco, and any small objects which they are afraid of losing. Occasionally a lump of sugar gets in with the mixture, and its sweetness is improved, to their taste, by the additional tobacco flavor. The Koryak, the Kerek, the Russianized Yukaghir, and also the Chukchee of the Kolyma, make snuff-boxes of the same styles, using wood, antler, and ivory. The same is true of the Alaskan Eskimo. Many of the shapes represented by Nelson¹ have their counterparts in Asia.

I have met men and women who used tobacco in all three ways at the same time. Usually, however, snuff is only used when smoking cannot be continued because it causes a cough, or for some other reason. Taking snuff is considered a cure for rheum, weakness of the eyes, and even dulness of hearing. In the Kolyma region, smoking and chewing are of equal importance, but on the Pacific chewing is much more general.

INTOXICANTS. — Fly-agaric is the only means of intoxication discovered by the natives of northeastern Asia. Its use is more common in the Koryak tribe, as agaric does not grow outside of the forest border. For the same reason only the Southern Pacific Chukchee — e. g., those around the Anadyr, Big River, and Opuka River — are supplied with the intoxicating mushroom. They do not compare with the Koryak, however, in their passion for agaric.

The Russianized natives of the Anadyr until recently shared in the consumption of this intoxicant, but now they have almost wholly given up its use. The reason of this change is that they consider the strong intoxication produced by this stimulant as shameful for a Christian. They also realize that the consumption of fly-agaric involves some danger. With a person unaccustomed to its use it may even cause death. The abstinence from agaric is also noticed among the northern Kamchadal, and to some degree among the Maritime Koryak of northern Kamchatka, though all of these people gather it assiduously in order to trade it to their less civilized reindeer-breeding neighbors.

Fortunately for the tribes consuming the fly-agaric, it grows only in certain places, and the supply is often limited. The mushrooms are usually dried up and strung together in threes, that number being an average dose. Some of the natives of course require much more to produce any effect. The intoxication may be followed by sickness, or the after-effect may be very slight. When eaten, the mushrooms are torn to small shreds, and these are chewed piece by piece, and swallowed with a little water. Among the Koryak the woman chews the mushroom, and offers the ready quid to her husband to swallow.

I witnessed a few times the progress of intoxication by means of agaric. The symptoms are analogous to those produced by opium or hasheesh. The intoxication comes on rather suddenly, in about a quarter of an hour after

¹ See Nelson, Plate LXXXVI, Figs. 5, 6, 20, 23, p. 270.

the consumption of the mushrooms. Usually the person remains awake; but the natives say that if a person falls asleep immediately after eating mushrooms, they will work more effectively, and in a short time he will awaken more thoroughly under their influence. The intoxication has three stages. In the first the person feels pleasantly excited. His agility increases, and he displays more physical strength than normally. Reindeer-hunters of the Middle Anadyr told me that before starting in canoes in pursuit of animals, they would chew agaric because that made them more nimble on the hunt. A native fellow-traveller of mine, after taking agaric, would lay aside his snow-shoes and walk through the deep snow hour after hour by the side of his dogs for the mere pleasure of exercise, and without any feeling of fatigue. During this period the agaric-eater sings and dances. He frequently bursts into loud peals of laughter without any apparent reason. It is a state altogether of noisy joviality. His face acquires a darker hue and twitches nervously; his eyes are now contracted, and again almost bursting from their sockets; his mouth puckers and grins or spreads into a broad smile.

Flashes of the second stage often appear early, shortly after the first traces of intoxication become visible; indeed, all three stages are frequently intermingled. This is noticeable especially among elderly inveterate agaric-eaters. During the second stage the intoxicated person hears strange voices bidding him perform more or less incongruous actions; he sees the spirits of fly-agaric and talks to them. He still recognizes surrounding objects, however, and when talked to is able to answer. All things appear to him increased in size. For instance, when entering a room and stepping over the door-sill, he will raise his feet exceedingly high. The handle of a knife seems to him so big that he wants to grasp it with both hands.

The spirits of fly-agaric have an outward appearance similar to that of the actual mushrooms, and the agaric-eater feels impelled to imitate them. For example, I saw one man suddenly snatch a small narrow bag and pull it with all his might over his head, trying to break through the bottom. He was evidently imitating the mushroom bursting forth from the ground. Another walked around with his neck drawn in, and assured every one that he had no head. He would bend his knees and move very quickly, swinging his arms violently about. This was in imitation of the spirits of fly-agaric, who are supposed to have no necks or legs, but stout cylindrical bodies which move about swiftly.

The spirits of fly-agaric are fond of playing practical jokes on men under their influence. They begin with asking for homage either for themselves or for surrounding objects, — the hills, the river, the moon, etc. Then they show some of the objects under a delusive aspect. When asked why this strange change has occurred, the spirits answer that it portends danger to the man's life unless he makes obeisance in a particular way. To illustrate.

An intoxicated man, while talking to me reasonably enough, suddenly leaped aside, and, dropping on his knees, exclaimed, "Hills, how do you do? Be greeted!" Then he stood up, and, looking at the full moon, asked, "O Moon! why are you waning so fast?" He told me that the spirits answered, "Even so will your life wane, unless you show the moon your bare buttocks." This he did, and then, suddenly recovering his senses, began to laugh at his foolish actions.

In the third stage the man is unconscious of his surroundings, but he is still active, walking or tumbling about on the ground, sometimes raving, and breaking whatever happens to come into his hands. During this period the agaric spirits take him through various worlds and show him strange sights and peoples. Then a heavy slumber ensues, lasting for several hours, during which it is impossible to rouse the sleeper. How persistent are the spirits' commands is shown by the following instance of a man, who, when about to retire, was ordered to lie down in the midst of his dog-team. Although he was attacked by the dogs, we could not keep him away from them. He finally succeeded in staying with the dogs all night.

On awakening, a general weakness and heavy headache ensue, accompanied by nausea, often violent vomiting. The drunken state can be renewed by a single mushroom. In this manner inveterate agaric-eaters keep up their intoxication day after day.

Drinking the urine of one who has recently eaten fly-agaric produces the same effect as eating the mushroom. The passion for intoxication becomes so strong that the people will often resort to this source when agaric is not available. Apparently without aversion they will even pass this liquor around in their ordinary tea-cups. The effect is said to be less than from the mushrooms themselves.

I have already spoken about the amount of trade in strong liquors carried on in northeastern Siberia. The Chukchee, as well as all other inhabitants of the country, are eager for a chance to drink spirits. In all my journeys through these countries I met people in only two places who knew nothing about strong liquors. In one case they were some Maritime Koryak in small villages on the northern border of the Kamchatka district. These people were far from the Kamchatka towns and from Gishiginsk trading-settlements. At the same time, they were so poor that nobody sought to bring liquors to them. The other case was that of the Kerek of the southern shore of Anadyr Bay.

On the other hand, I hardly met a single adult man or woman among the Chukchee who would refuse a drink of spirits. Younger people, of course, have little chance to taste them. When offered drink, they consider it their duty to pass the treat to their elders. Occasionally they will moisten their lips with the liquor to indicate that they have partaken. With the older

people the offering of a single drop when liquor is scarce is considered a quite acceptable treat. They feel that it adds to the general enjoyment. The Chukchee do not approve of diluting alcohol with much water. I have witnessed them drink large glasses of 95% alcohol, one drop of which was sufficient to make my mouth burn for several minutes. Even the unrefined alcohol of the Kolyma country is drunk undiluted when possible. The so-called "principal chief" of the Reindeer Chukchee, previously mentioned,¹ died suddenly in 1898 on the day of his arrival at the town of Sredne-Kolymsk, after a generous drink of unrectified alcohol.

The Reindeer people are more eager for liquor than the Maritime. This may be because they have less chance to satisfy their craving. When they know that there is some strong liquor within their reach, most of them are ready to pay an exorbitant price for it. I was assured by many that if necessary they would be quite ready to give a piece of their own flesh for a drink.

Small wooden kegs, in which the liquor is brought from the Russian settlements, are carefully washed with hot water, and if possible boiled in large kettles. I have seen people sitting around a keg, which finally refused to yield any more, weep bitter tears over the end of their festivity.

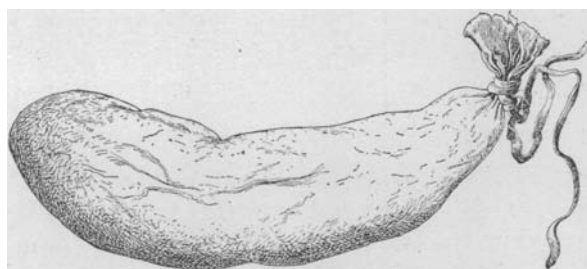


Fig. 125 (тѣлѣ). Bag in which to carry Strong Liquors.
Length, 37 cm.

Between the native villages and camps the liquor is carried in bags made of the stomachs or bladders of various animals (Fig. 125). The bags resemble those used by the Alaskan Eskimo for carrying water

or oil,² but they do not have an ivory nozzle, and are merely tied around the neck with a string.

The Maritime Koryak and the Kamchadal sometimes distil a kind of brandy from berries of *Vaccinium uliginosum*. They use for this a large iron kettle with a wooden cover pasted over with dough. An old gun-barrel serves as a condenser. This art was learned from the cossacks, though at present the latter are strictly forbidden to distil in private any strong liquor. The Chukchee, however, do not have enough berries for this purpose, or the skill to thus distil them.

¹ See p. 73.

² Nelson, p. 73.

IX. — MANUFACTURES.

WORK IN STONE. — Stone tools and weapons are no longer used in northeastern Asia by the men. The more conservative women have preserved some of the implements, and even sought to increase their importance by connecting them with religious ceremonies. This was the case with the kitchen stone hammer among the Chukchee.

In the remotest parts of the country, — for example, among the Kerek, — stone adzes and knives were discarded within the remembrance of the living generation, not more than fifteen or twenty years ago, according to statements of older people made to me in villages of that tribe.

Among the Chukchee and the Asiatic Eskimo stone implements of this class disappeared more than half a century ago. Their character can be ascertained only from specimens found in old houses and on burial-places.

By comparing these implements with those found in other parts of northeastern Asia, it seems that the harpoon-heads, spears, and arrows of the whole region were usually made of flint, slate, obsidian, and sometimes of quartz. The pieces of obsidian occasionally found in the country at the present time are regarded as lightning arrows and balls which from time to time drop from the sky. The arrow-points made of obsidian are generally ruder than those made of flint. By carefully chipping off thin pieces the natives seem to have often made the flint arrow-heads with quite symmetrical outlines and sharp edges.

The slate implements were flat, and had their edges rubbed down with another stone. To assist in fastening these to the shaft, the Chukchee made holes in the slate, using a slender drill, and working alternately on opposite sides until the blade was pierced. One of the slate specimens in the Museum has a circular mark on each side, showing how they had started to drill holes.

The slate blades were rather weak and ineffectual. I was told by the older people that a fresh blade was usually placed in the whaling-harpoon after each blow, on account of the old one being spoiled. Slate was more appropriate for knives, and fragments of these are found in almost every old "jaw-bone" house. Regarding stone implements used at present in woman's work, see p. 217.

Bone, ivory, and antler were used also for all kinds of weapons, such as harpoons, arrows, etc. After the appearance of iron, they held their ground much better than the stone tools. Of the specimens found in old Chukchee and Eskimo houses, only a few bear traces of having been made with stone tools. Most of them were fashioned with iron knives. Even now the bodies

of harpoon-points are cut out of bone almost exclusively. The same is true of the butts of harpoons which are used for breaking ice. Bone arrow-heads are also common in those parts of the country where the bow is still used.

A bone instrument still in universal use is the marline-spike (Fig. 126).

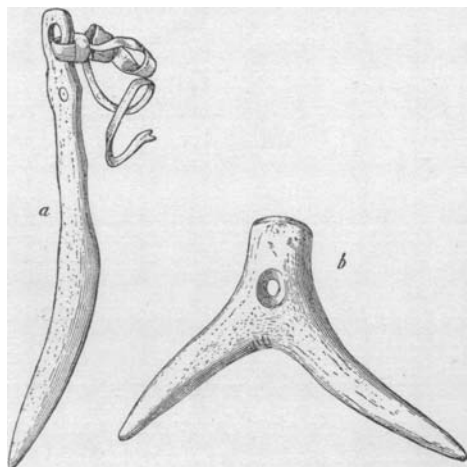


Fig. 126, *a* ($\frac{70}{8787}$), *b* ($\frac{70}{8787}$). Marline-Spikes. Length, 14.5 cm., 10 cm.

It has several variations in shape. Some show two-pointed branches¹ (Fig. 126, *b*); others, a small spatula at the rear end.²

Since iron nails are not used, and everything about the sledges, boats, etc., is fastened by lashing and tying with thong, the marline-spike is a very important tool, and is required whenever knots are to be untied.

WORK IN WOOD. — Of the instruments now used for working wood, the iron adze (*ga'tti*) serves for chipping and hewing. In contrast to the Lamut and the Yukaghir, the Chukchee are unskilful with the axe, and use it only for felling trees and preparing wood for fuel. The adze is used in all joiner's

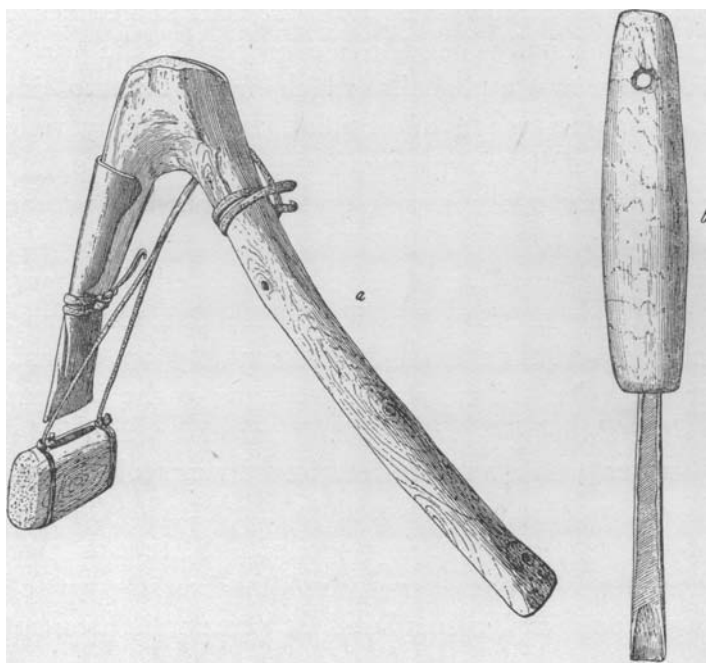


Fig. 127, *a* ($\frac{70}{8787}$), Iron Adze (length of blade, 15 cm.); *b* ($\frac{70}{8787}$), Gouge (length, 22.5 cm.).

work, even fashioning runners and hewing out tailoring-boards. The strokes are light, and not very effective.

The adzes in general use (Fig. 127, *a*) are made chiefly by the Russianized Yukaghir blacksmiths, and are sold to the Chukchee. The rear end is bent into a tube, forming a socket, in which the wooden handle is inserted. Those used in the maritime villages are sometimes made from old American files beaten flat with a hammer and lashed to the handle.

Adzes, as well as other iron tools of the Chukchee, often have a protecting sheath of wood over the blade, to prevent blunting

¹ Compare the Ainu marline-spike ($\frac{70}{8787}$ g) in the collections of this Museum.

² See Fig. 110, p. 190.

when not in use. The form of the sheath is not like that of the Alaskan Eskimo represented by Nelson¹ as adapted to arrow-heads, harpoon-points, and working-knives. For long, slender weapons and tools the Chukchee use sheaths of skin, often simply the leg-skin of a fawn taken off like a stocking (see Fig. 74, *k*, p. 156.).

The gouge (*lu'mine*) is used chiefly for scooping out shallow mortises in the sledge-runners, in which the ends of the ribs are inserted. The edge of the gouge (Fig. 127, *b*) is protected by a wooden sheath.

The bow-drill was an instrument much used before the appearance of iron to make holes in shafts for fastening spear-points, etc. To cut in two a piece of ivory or hard wood, a number of holes were drilled side by side in a straight line. Curiously enough, this method is still used by civilized peoples for dividing steel armor-plate. The reason is evidently the same as with the primitive man, — a lack of other tools adapted to cutting through the solid material.

At the present time the Chukchee bow-drill (Fig. 128) always has an iron point. It is set in a stout wooden shaft, the top of which forms a strong pin. This passes through a circular hole in the middle of the head-cap, so that the latter can be held fast while the shaft revolves in it. Another pin prevents the cap from slipping off.

The bow may be straight or curved, but, unlike that of the Alaskan Eskimo, is always without carving or other ornament. It is made of wood or antler, and arranged so that the string passes two or three times around the shaft of the drill. Sometimes the string is put through a hole at about the middle of the shaft. The operator places his left hand on top of the head-cap of the shaft, and saws with the bow with his right hand. The forward-and-back movement of the bow causes the drill to revolve rapidly.

In the so-called pump or weighted drill (Fig. 129) the bow is a straight wooden stick, narrow at the ends, and broad in the middle. The shaft of

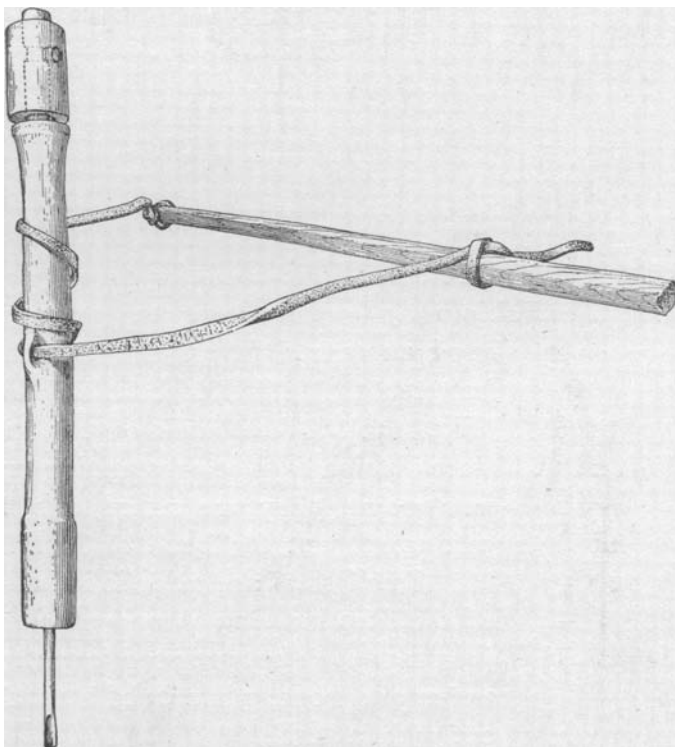


Fig. 128 ($\frac{7}{8}$ to $\frac{1}{4}$). Bow-Drill. Total length, 48 cm.

¹ Nelson, Plate LXV, Fig. 2, p. 108.

the drill is thinner, and passes through a hole in the middle of the bow. The

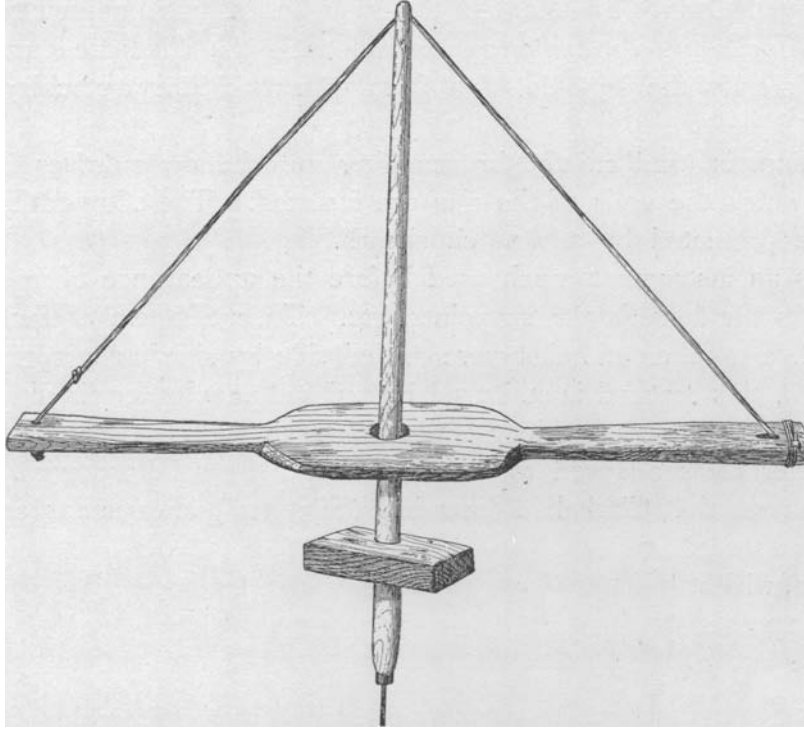


Fig. 129 (ᑭᑦᑲᑦᑲᑦ). Pump-drill. Length, 62 cm.

string runs through a hole in the upper end of the shaft, so that the bow hangs below the middle of the shaft. On the lower end of this shaft, between the bow and the iron point, is fastened a flat block of wood. The drill is rotated by pressing down on the bow after the string has been twisted around the shaft. The momentum partially rewinds the string. This drill is more effective than the ordinary bow-

drill described before. It is used for drilling bone and even for sheet-iron.

The Eskimo at Indian Point and on St. Lawrence Island until recently



Fig. 130 (ᑭᑦᑲᑦᑲᑦ). Small Drill. Length, 19 cm. Eskimo, Indian Point.

used another drill, which was turned between the palms without any bow (Fig. 130). Two drills of this kind were obtained. Notwithstanding their iron point, they are suited only for soft wood, not for bone or ivory.

Small saws are made in imitation of the Russian and American forms (Fig. 131). They are used for cutting antler and bone, while wood is usually cut with a knife.

For whittling, carving, and finishing all kinds of wood-work, the "crooked knife" is used by the Chukchee, the Koryak, the Yukaghir, and the Eskimo.

The blade is made of a thin tapering piece of iron or steel from three to ten centimetres long, set in a slender wooden or ivory handle. It is fastened to the handle with a peg, or simply tied to it by a thin strip of leather (Fig. 132, a, b, c).

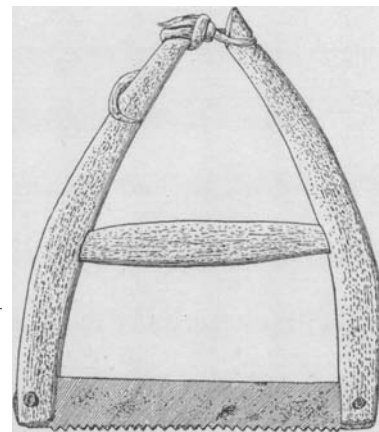


Fig. 131 (ᑭᑦᑲᑦᑲᑦ). Iron Saw. Length of blade, 9.5 cm.



Fig. 1. Chukchee Woman digging Roots.



Fig. 2. Chukchee Woman scraping a Skin.



Fig. 3. Chukchee Man getting Fire with a
Wooden Fire-Drill.

The Chukchee.

This knife is similar to the crooked knife of the Alaskan Eskimo.¹ It is used with the same characteristic motion of the hand toward the body which the Chukchee employs when using the ordinary knife. The Russian and the Russianized Yukaghir, on the contrary, move the knife away from the body.

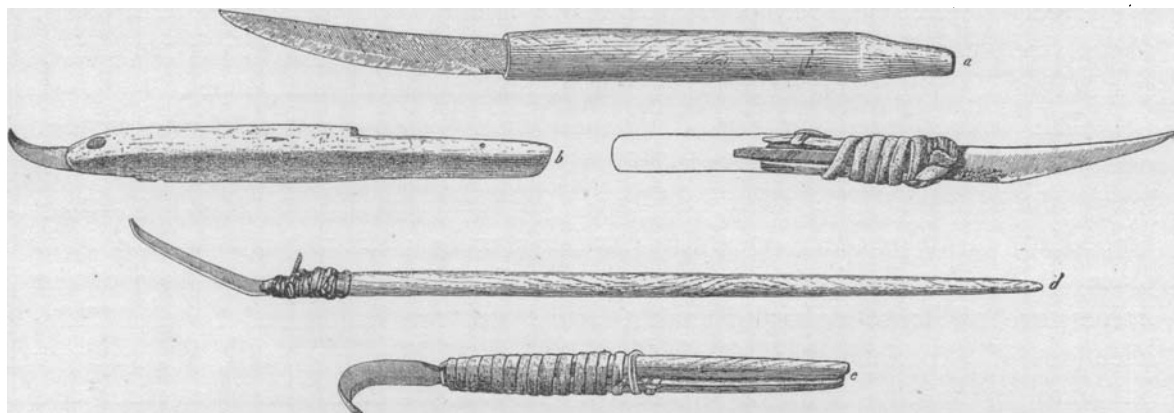


Fig. 132, *a* (ᑭᑭᑭᑭ), *b* (ᑭᑭᑭᑭ), *c* (ᑭᑭᑭᑭ), *d* (ᑭᑭᑭᑭ), Long Crooked Knife of Russianized Natives in Markova (length, 68 cm.); *e* (ᑭᑭᑭᑭ), Knife for hollowing out Spoons (length, 21 cm.).

A knife quite similar in shape to the Chukchee crooked knife (Fig. 132, *d*) is used by the Russians on the Kolyma and Anadyr for the special purpose of finishing the hollowed tree-trunks scooped out for canoes. This knife is often grasped with both hands, and it is moved away from the body, as are the other knives used by these tribes. An adze of peculiar shape is used by the Russians for the rougher part of this work. One variety of this crooked knife (Fig. 132, *e*) is commonly used by all tribes of northeastern Asia for scooping out spoons.

Neither the Chukchee nor the other tribes have special tools used only for carving or engraving ivory or bone. This work is done with various knives, crooked or straight, but those with short slender blades are preferred.

Fig. 133 represents a knife used for carving ivory from the village Tr'Iliran of the Olutora Koryak. It has a double-edged blade, rather thin and broad, inserted in a slender piece of wood, and wound all around with leather.



Fig. 133 (ᑭᑭᑭᑭ). Knife for carving Ivory. Length, 13 cm. Olutora Koryak.

With most tribes of northeastern Asia the stout straight knife (Fig. 134), carried in the belt or tied to the hip, furnishes the chief tool, because it is adapted to so many uses. The Chukchee, however, prefer to use the crooked knife for regular work. The straight



Fig. 134 (ᑭᑭᑭᑭ). Straight Knife. Length, 26.5 cm.

¹ Compare Nelson, Plate xxxviii, Figs. 21, 23, p. 94.

knife serves for ordinary cutting, or is used by reindeer herdsman for slaughtering-purposes. It is also used for carving and cutting meat at meals. The kind of meat usually consumed by the Reindeer and by the Maritime Chukchee is so tough that it is quite impossible to get along without a knife.

Every adult member of a Chukchee family, and each child after he is about five years old, has his own eating-knife. Often these knives are simply small bits of iron, rudely set in a handle, and unfit for many uses.

The knives used by the Chukchee differ chiefly in size. The smaller one is called *rê'ččêt-vá'le* ("belt-knife"). The blade has a stout back and a long pointed end. The other end has a slender round stem, which is deeply embedded in a wooden or antler handle, usually without pegs to hold it in place. The handle is often notched to afford a better grip. Most of the knives are of Russo-Yukaghir make; some also are hammered by the Chukchee out of American steel files of small size (cf. Fig. 132, *a*). A sheath or scabbard is usually made of a piece of ground-seal hide folded together and roughly sewed or laced with a thin strip of leather (see Fig. 83, p. 161).

Knives made by the southern Yakut and brought over to the Kolyma by merchants are the most convenient for the Reindeer Chukchee, because their narrow blades make them fit for stabbing animals, while a deep groove along the blade allows the blood to flow freely from the wound. The Maritime Chukchee use American cutlery chiefly.

The Chukchee usually carry their knives in their belts, while the Lamut and the Russo-Yukaghir have the scabbard fastened to the hip by means of a loop of leather, and a toggle formed simply by a knot of the string.

The double-edged knife of the usual Eskimo form does not exist at present in northern Asia. Among the more ancient stone blades there are some which clearly belong to this type. The blade represented in Fig. 135 is from the village Wute'en of the Asiatic Eskimo. It is made of slate, and is slightly convex on both sides. One side has a slight ridge near the point. Two holes are drilled in the bottom for fastening it to the shaft. They were probably made with a stone drill-point.

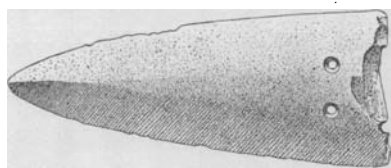


Fig. 135 ($\frac{100}{1000}$). Slate Knife. Length, 12 cm. Eskimo, Wute'en.

Knife-sharpeners are made of slender pieces of sandstone of fine grain. At Indian Point I found such a sharpener, made of jade, and pierced through at one end for convenience in fastening it to the belt. It was said to have come from King's Island. In the Koryak villages of western Kamchatka, knife-sharpeners are made of pieces of petrified wood, which is frequently found on the seashore near the mouths of rivers.

Large whetstones for sharpening tools are made of square blocks of smooth-grained sandstone, which is found in various places about the country. A few revolving grindstones have been bought from the Russians and Americans.

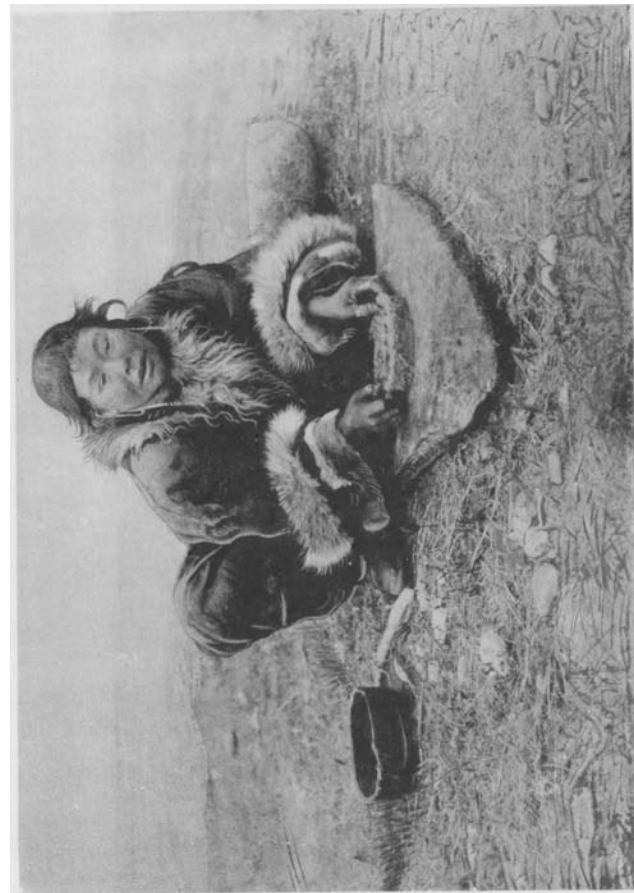


Fig. 1. Chukchee Woman making a Clay Lamp.

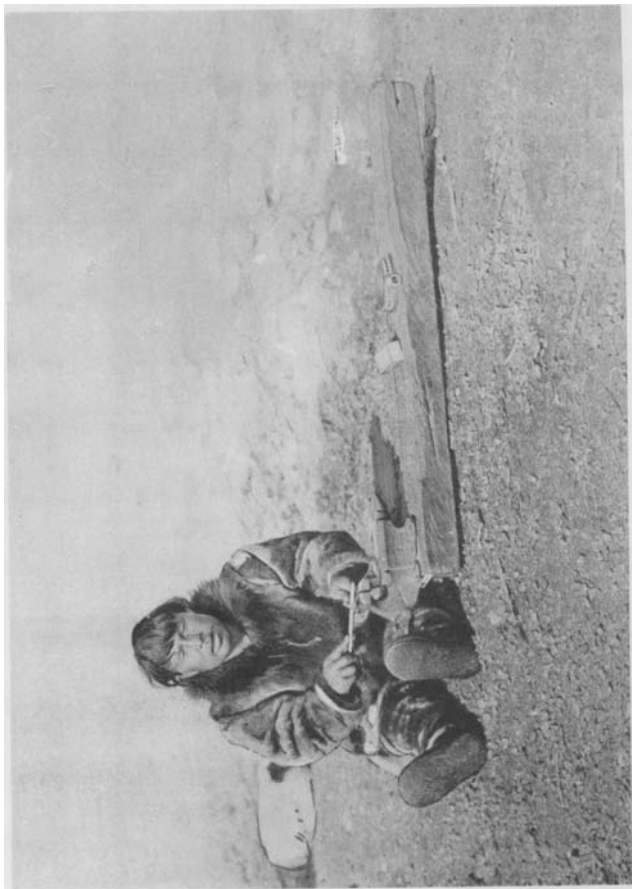


Fig. 2. Chukchee Man working in Iron.



Fig. 3. Chukchee Woman lousing her Husband.



Fig. 4. Chukchee Children.

The Chukchee have little chance to split logs in their treeless country, and indeed they prefer simply to hew wood with their light adzes, though sometimes it takes a day to cut a single sledge-runner. They have learned, however, from the Yukaghir, who have more skill in handling wood, how to split wood by means of wedges made of the same material.

WORK IN IRON. — Work in iron has been but little developed up to the present time. This is explained by the difficulty in preparing charcoal, an indispensable material for the smith. The Chukchee work chiefly on cold iron with file and hammer (Plate xx, Fig. 2). A few clay forges with large bellows have been observed. Their form is directly copied after that used by Russianized natives.

The Chukchee bellows in the collection (Fig. 136) are made of seal-skin, with boards on the top and bottom. A barrel of an old gun is inserted for a nozzle. The bellows are worked simply with the hands. Among the



Fig. 136 (ᑭᑭᑭᑭ). Bellows. Length, 119 cm.

Russianized natives and the Koryak a string is sometimes tied to an iron eye fastened to the handle of the bellows. This string is passed over a smooth beam; and the operator can thus work the bellows by pulling the string, and does not need to bend over. The eye on the side of the specimen illustrated in Fig. 136, however, is hardly placed in the proper place for such an arrangement. Iron is cut with files bought from traders. Sometimes a stout iron saw of native make is also used for this purpose (Fig. 137).

The Reindeer Chukchee of the Kolyma are quite unable to mend their iron tools and articles they use. They are compelled to seek the Lamut or the Russians for the most trifling cases. Reindeer-Chukchee blacksmiths are exceedingly few in number, and throughout the tribe the craft of the smith is esteemed as the height of human cleverness.

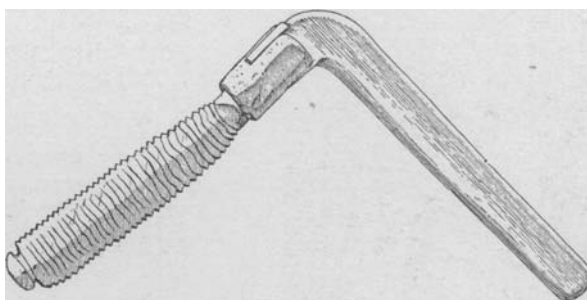


Fig. 137 (ᑭᑭᑭᑭ). Saw for cutting Iron. Length of blade, 12 cm.

In one of the Chukchee tales¹ borrowed from the Russians, and curiously adapted to their own ideas about the civilized world, the hero is a young son of the great Sun chief; i. e., a prince. He is described as handsome and clever, with a face "like that of a blacksmith."

The Maritime Chukchee on the Pacific side are better acquainted with

¹ Bogoras, Chukchee Materials, p. 324.

methods of working iron. I met one who was able to turn broken Winchester rifles into firelocks, to mend gun-barrels, and to forge steel springs and traps.

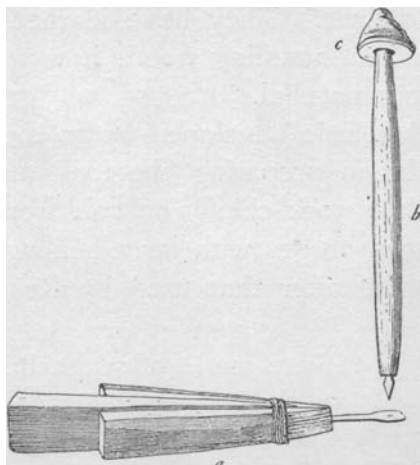


Fig. 138, *a* ($\frac{70}{888}$), *b* ($\frac{70}{888}$), *c* ($\frac{70}{888}$). Implements for drilling Eye-Holes in Broken Needles. $\frac{1}{2}$ nat. size.

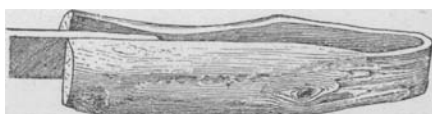


Fig. 139 ($\frac{70}{888}$). Wooden Tongs. Length, 11.5 cm.

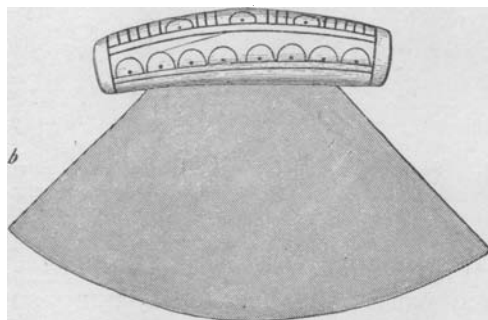
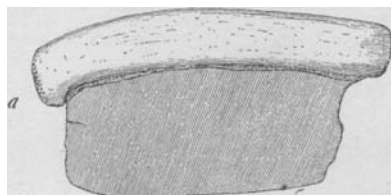


Fig. 140, *a* ($\frac{70}{888}$), *b* ($\frac{70}{888}$). Woman's Knives. $\frac{1}{3}$ nat. size. *a*, Chukchee; *b*, Eskimo, Indian Point.

Then a long cut is made in the skin from the lower lip backward along the

A distinct branch of iron-work is drilling out new eye-holes in broken needles. It is accomplished with a very slender drill (Fig. 138, *b*), turned either by hand or by a light bow. A small head-piece of ivory (Fig. 138, *c*) is used with it. The needle is held in position by a small awl-holder (Fig. 138, *a*), and wedged tight with a piece of wood. According to Steller,¹ the art of drilling needle-eyes was known to the Kamchadal before the appearance of the Russians.

For tongs I have seen the Chukchee use a piece of wood whittled in the middle and then folded together (Fig. 139). The ends served as prongs, with which they picked small pieces of iron out of the coals.

WOMAN'S WORK. — The work of women consists chiefly in skinning and carving the carcasses of animals, preparing the skins, cutting and sewing garments. The butcher-knife used by the Maritime Chukchee and Eskimo women is similar to the semilunar woman's knife of the American Eskimo. It is called among the Chukchee *pe'qul*, and among the Asiatic Eskimo *ū'laq*. Modern specimens (Fig. 140, *a*, *b*) are all of iron; but in ancient dwelling-sites I found a few blades of slate and obsidian, which evidently were used for the same purpose (Fig. 141, *a*, *b*). The butcher-knife is used chiefly for cutting and chopping blubber. Its shape is not adapted to carve reindeer carcasses with their long, thick bones. The women of the reindeer-breeders, therefore, use for this purpose a stout knife of the common straight form.

In putting up a reindeer-carcase, the antlers are taken off with the top of the skull by means of an adze or an axe.

¹ Steller, p. 320.

under side of the animal. The skin is peeled off with the hands, beginning with the abdomen. Afterwards the head and the legs are cut off, and the intestines and blood removed. The carcass is then divided into seven parts, — two hams, two shoulders, the brisket, the back together with the pelvis, and the neck. The brisket is considered the best part of the deer.

When taken off from the animals' bodies, all skins are cleaned of bits of meat or sinew with a knife. The inner membrane is also removed. Then the skins are stretched by various methods, and allowed to dry. The peltries are always taken off whole. They are turned inside out, i. e., the hair side in, and pulled over a wooden drying-rack, sometimes simply over a wooden block roughly fashioned to the proper shape.

The drying-rack in use among all the tribes of northeastern Asia is formed of two sticks tied at their tops in such a way that they can be easily brought together (Fig. 142). A third stick is attached across the lower portion of the rack. One end of the cross-stick may be easily untied, allowing the rack to be folded and inserted in the skin. After that, the rack is stretched within the skin, and the cross-piece retied in its former position.

Reindeer-skins are stretched on the ground, and their edges are held with stones. Sometimes they are pinned to the ground with wooden pegs, which allow more strain in stretching, and make the skin larger when dried. Seal and walrus skins are stretched with cords on rectangular frames quite similar to those used in Alaska.¹ Cords are passed through holes cut in the edge of the skin. When dry, they are folded in compact elongated packages (Fig. 143), for the most part identical with those represented by Nelson.² Reindeer-skins are simply folded in two or rolled together and tied with a piece of cord.

Tools for scraping the skins have the same shape among the Chukchee, the Koryak, the Yukaghir, and the Kamchadal. The typical one has a blade of a round flat piece of flint (Fig. 144, *a*) or obsidian. The edge is roughly flaked, while the butt is firmly fastened in a hollow scooped out of

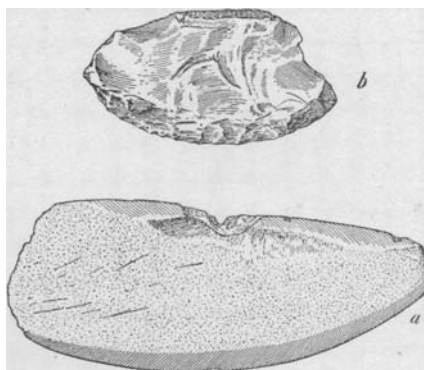


Fig. 141, *a* (ᑭᑭᑭᑭ), Woman's Slate Knife; *b* (ᑭᑭᑭᑭ), Woman's Obsidian Knife. $\frac{1}{2}$ nat. size. Eskimo, Wute'en.

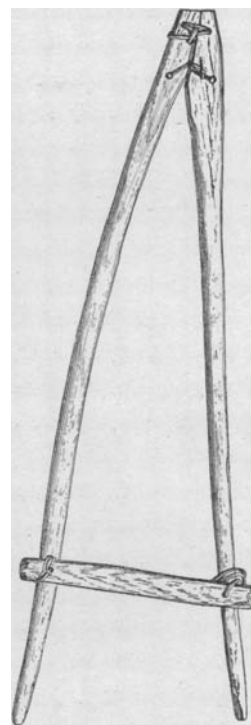


Fig. 142 (ᑭᑭᑭᑭ). Drying-Rack for Peltries. Length, 103 cm.

¹ Nelson, Fig. 32, p. 116.

² Ibid., Fig. 33, p. 117.

the middle of a curved wooden stick. The scraper is very strong. It is worked with both hands over a skin, a portion of which is spread on a smooth narrow board resting against the knees (Plate XIX, Fig. 2).

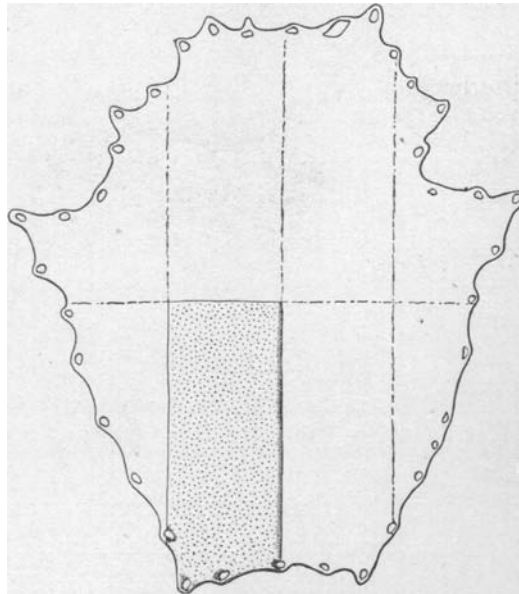


Fig. 143 ($\frac{7}{8}$ nat. size). Method of folding Seal-Skin. $\frac{1}{8}$ nat. size.

Along with the stone scraper there has come into use an iron instrument of exactly the same shape (Fig. 144, *b*). Originally adapted for finer work, the iron scraper is now gradually superseding its stone prototype in general use.

The women of the Lamut and Russianized Yukaghir use iron scrapers of two different forms, — one of them probably an imitation of a stone scraper (Fig. 145); and the other, of one made of bone (Fig. 146). Both forms also occur among other tribes.¹

An ivory scraper, oval or semilunar

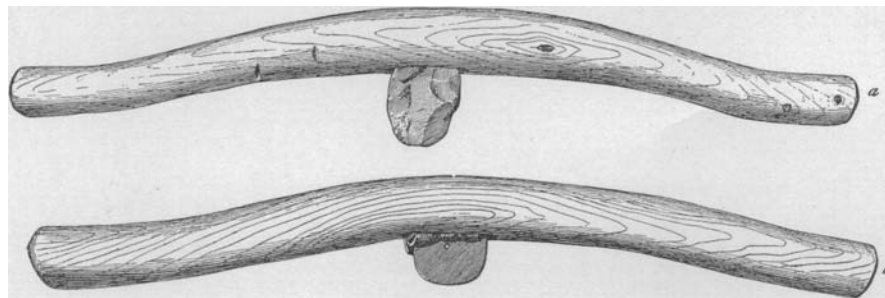


Fig. 144, *a* ($\frac{7}{8}$ nat. size), Scraper with Stone Blade (length, 64 cm.); *b* ($\frac{7}{8}$ nat. size), Scraper with Iron Blade (length, 53 cm.).

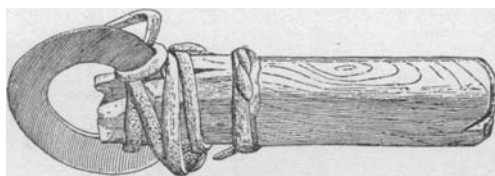


Fig. 145 ($\frac{7}{8}$ nat. size). Scraper. Total length, 18.5 cm. Lamut.

in shape, and hollowed in the middle (Fig. 147, *a*, *b*), is used by the Chukchee as well as by the neighboring tribes for squeezing out the guts of sea-animals, which they use as material for various kinds of coats. The form of the scraper is similar to that used by the American



Fig. 146 ($\frac{7}{8}$ nat. size). Scraper. Total length, 59 cm. Lamut.

¹ Compare Teit, Fig. 127, p. 185; and Fig. 128, p. 186.

Eskimo.¹ The Koryak and the Kamchadal use for this purpose a piece of sheet iron or copper bent or beaten into the same shape (Fig. 147, *c*). This implement also serves for squeezing the juice out of the stalks of fireweed (*Epilobium angustifolium*) and other edible plants. Various shells are likewise adapted by the people in Kamchatka to these uses.

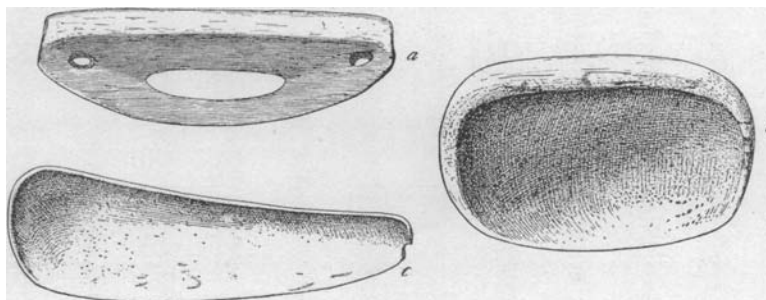


Fig. 147, *a* ($\frac{1}{2}$ nat. size), *b* ($\frac{1}{2}$ nat. size), Ivory Scrapers; *c* ($\frac{1}{2}$ nat. size), Scraper made of Copper. $\frac{1}{2}$ nat. size. *a*, Chukchee; *b*, Eskimo, Indian Point; *c*, Maritime Koryak of northern Kamchatka, Pallan.

Skins are prepared with or without the hair on. For rubbing the skins the Chukchee women use mainly reindeer-dung and human urine, and sometimes meat-broth. Other tribes apply oil, putrid liver, fish-eggs (fresh, putrid, or dried, and subsequently soaked in water), bran, etc. Nevertheless the reindeer-skins of Chukchee make are softer and better dyed than those of any of their neighbors. The usual process begins with folding a fresh skin with the flesh side in, and leaving it in this state over night. If dry, the skin is previously soaked in water. In the morning the flesh side of the skin is scraped with the iron scraper and trampled with the feet, the right heel being covered with the back part of a short summer boot, the toe of which has been cut off at the instep to allow freer motion of the foot. The skin is then smeared over with reindeer-dung, and again left over night. After that, it is scraped a second time and trampled with the heels. A vessel filled with urine and some alder-bark cut fine is warmed for an hour over an ordinary lamp. When the liquor is sufficiently saturated, the inside of the skin is well rubbed with it, and the skin is hung up in the sleeping-room to dry. After drying, it is again gone over with the scraper, and all tough places are dampened with urine, scraped, and dyed anew.

With the largest skins the scraping is repeated several times. Each time the skin is left to dry over night. The scraping is begun with the stone scraper, and continued with the iron one. The more scrapings the skin has undergone, the softer and finer it becomes in the end.

The dyeing with alder-bark is considered quite indispensable for every part of the reindeer-skin, even for the tough strips taken from the legs, which are used for boots and mittens. This process makes the skin softer, and corresponds somewhat to tanning. The dyed skins will keep off dampness much better than those with a white inner side. The skins prepared by women among the Russianized natives, which have the inner side either left

white or dyed with alder-bark dissolved in water instead of urine, are much poorer in quality than those of the Chukchee.

The chief drawback with all these skins is their complete unfitness to stand moisture. Even slightly damp skins, when drying, will become crumpled and as hard as wood. Faults of this kind can be partially corrected by fresh scraping and dyeing, but even then the skin is in much worse condition than it was before.

In currying reindeer-skins the Chukchee women do not manifest much skill. This work is neglected because the curried leather is comparatively little used among the Chukchee. For currying, the skin is soaked and left for twenty-four hours folded together. Then the hair is scraped off and the skin is dried. Such scraped skins are brought by the Chukchee to every fair, because they are much lighter than those with the hair on. In the further process of preparing the skin, it is smeared with any one of the materials mentioned above, then scraped again, and bleached in the wind or dyed with yellow ochre. The Russianized natives even wash the finest curried skins with soap, and then dry them in the air, giving them a snow-white appearance.

Most of the curried skins are smoked for a couple of days over the hearth or in a special shed which is employed for extra cooking, scraping of skins, etc. The women among the Russianized natives often make a temporary tent of a few sticks, covering them with skins they are going to smoke, and build a smouldering fire inside. A structure of this kind is called a "bath," in reference to the fact that the Russians in that country still take sweat-baths inside of the tent sometimes, much in the same way as the American Indians do.

The best curried leather of Chukchee make is the *rette'm*,¹ i. e., the covering of the outer tent, especially the upper parts, which get a continuous smoking from the hearth inside. This leather does not shrink after rain, and is waterproof to a considerable degree. The tent-covering has the hair closely cropped. In making clothes, this hair, if necessary, is scraped off with an iron scraper. Because of the previous smoking, it comes off easily. Often, however, it is left on.

The dressing of seal-skins has not developed to the same degree as that of reindeer-skins, because the former are utilized only for boots, bags, and purposes which do not require so much care in preparing the material as is necessary for clothing. Walrus and thong-seal skins, after they are dried, do not undergo any further process. The thong-seal skin is used with the hair on for soles of boots, to make the boot warmer. The walrus-hide is split in two with a thin broad knife, while the hide is tightly stretched on the drying-rack (see Plate XIII, Fig. 1, p. 170).

When used for covering a boat, the walrus-hide does not receive any

See p. 170.

additional preparation. It is simply soaked in water, then cut and sewed in the shape required, and pulled over the frame.

The skins of small seals that are used with the hair on are prepared by merely scraping their inner side with an iron scraper. A little blubber which is left on the skin helps to make it softer. These skins are not dyed, and are used for spring boots and trousers, also for bags of every kind. The seal-skin trousers and boots are very tough, and wear much better than those of reindeer-skin, especially in damp weather, for they are not spoiled when dried after being wet.

The skins prepared for summer boots are folded wet, with the hair side in, and allowed to lie for a night or two. Then they are well scraped on both sides. To make the skin black it is rubbed with coal mixed with oil, or sometimes with the black dust gathered from whetstones. Often the skins, when scraped, have the epidermis left on, which has a natural black color, and does not need artificial blackening.

The snow-white, parchment-like leather used for ornamental purposes is obtained by bleaching the well-scraped skins in the air for a long time. The best season for this is the early spring. Sometimes such leather is dyed with alder-bark, and then it takes on a deep russet color. The best white and russet parchment is obtained from the gullets of large seals, which are treated in the same manner.

The soft fur of the young of the spotted seal is dyed a handsome red color by using the inner bark layer of the larchtree, boiled with alderbark. This skin is cut in narrow strips, which are sewed together in long thin tassels for the adornment of clothes, sledge-coverings, etc. (Fig. 148, *a*, *b*), often with a bead or two on the upper or lower end, as shown in Fig. 149.

A small round piece of skin to which a tassel is fastened is used as an amulet.

Long tassels made of strips of brown leather, with white ringlets sewed

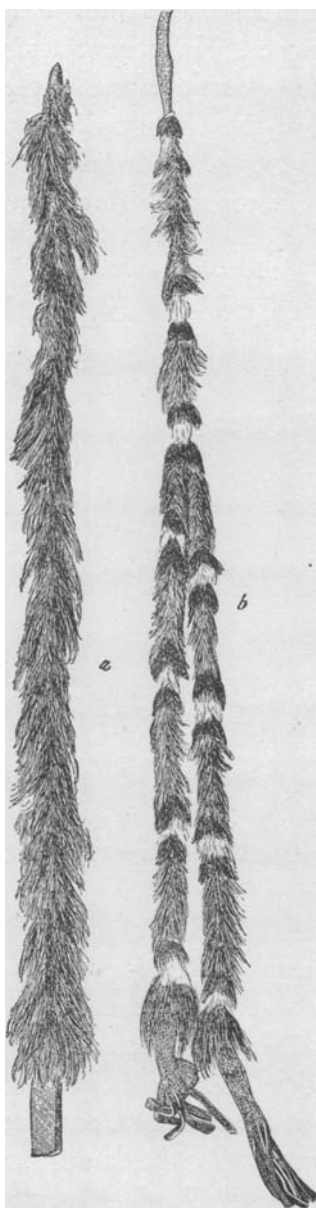


Fig. 148, *a*, *b* ($\frac{70}{875}$). Fur Tassels. Length, 48 cm., 53 cm.



Fig. 149 ($\frac{70}{875}$). Tassel with Beads. Length, 28.5 cm.

on at intervals (Fig. 150, *a*), or tassels of small strips of fur alternately white and black (Fig. 150, *b*), are likewise used as amulets or to adorn objects connected with shamanism.¹

TAILOR-WORK. — For cutting skins in making garments a special knife is used. This knife is called the "woman's knife" (ñā'wan-wal, a word which resembles the name of the Eskimo knife used for the same purpose). In recent times this knife is made of iron. The blade is curved, and rather broad in the middle. The handle end of the blade projects as a small stem, which is set in wood (Fig. 151, *a*) or fashioned into a handle (Fig. 151, *b*). This knife probably developed

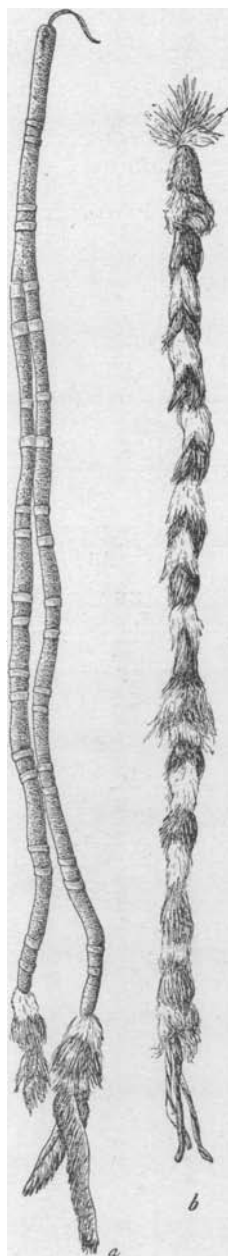


Fig. 150, *a* (ᑭᑭᑭᑭᑭ *a*),
b (ᑭᑭᑭᑭᑭ). Tassels used
for Shamanistic Purposes.
Length, 90 cm., 46 cm.

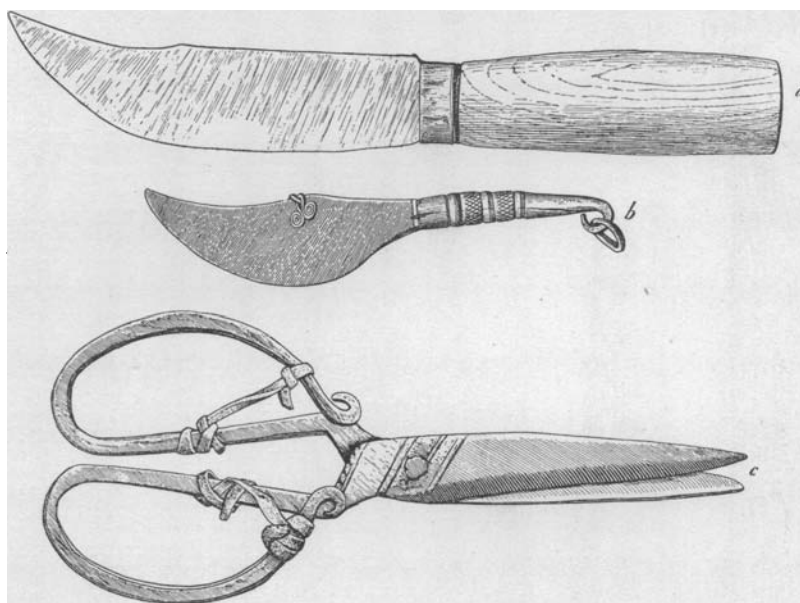


Fig. 151, *a* (ᑭᑭᑭᑭᑭ), *b* (ᑭᑭᑭᑭᑭ), Women's Tailoring-Knives (length, 30.5 cm., 18 cm.);
c (ᑭᑭᑭᑭᑭ), Scissors (length, 20 cm.).

from the same stone implement as the butcher's knife. It may have been copied, however, from the Russians, whose women on the Kolyma and Anadyr use the same kind of knife for tailoring, and have a special Russian name for it, *палемка* (palemka), diminutive form of *пальма* (palma), which means a peculiar small-sized lance with a one-sided blade of palm-leaf shape, much in use among the Russians and the Yakut.

The tailoring-knives in use among the Reindeer Chukchee are either of Russo-Yukaghir or of Maritime Koryak make. The Maritime Chukchee generally employ American cutlery for this purpose.

¹ See chapter on shamanism.

Scissors used throughout northeastern Asia are of a peculiar pattern, common to the Amur tribes, and originating in China, as may be seen by comparing Fig. 151, *c*, with specimens in the Chinese collections of this Museum.

Tailoring-boards of various sizes, and rather long and narrow in shape, are used. The smaller among them are also employed to cut tobacco-leaves and wood-fibre on, in preparing a convenient mixture for smoking. They are almost always plain among the Chukchee, while those belonging to the Lamut or the Yukaghir are often decorated with engraved designs.

Only iron needles are used at present. In sewing hard leather, especially the soles of boots, needles with three edges are preferred, because they pierce the leather more easily. When short of these needles, the women soften the steel of the large round needles, and then hammer them with a stone into the required shape.

Thread is made of sinew of the reindeer's back, which is dried (Fig. 152),

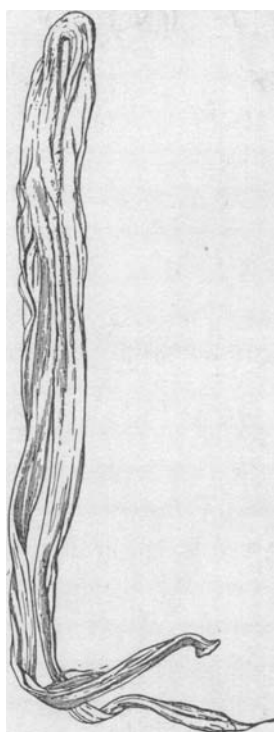


Fig. 152 ($\gamma\gamma\gamma\gamma$ b). Sinew of Reindeer-Back. Length, 57 cm.

then pounded with a hammer, and separated or combed into thin shreds not unlike the fibres of hemp (Fig. 153). The shreds can be easily twisted to a neat strong thread of any length desired. One end of the thread is tied in a knot, and the other worked out very fine for inserting into the eye of the needle. The needle is threaded in Eskimo fashion with a kind of loop, the thin end of the thread being pulled through the eye only a short distance, and twisted around the main thread (Fig. 154).

The women usually sew by pulling the thread towards them, and make an overcast seam.

The thimbles used at present are for the most part made of iron (Fig. 155, *a*¹), and are bought from traders. They are of the plainest kind, and are open at the ends. Ivory thimbles of the same pattern are made by the Chukchee, the Koryak,



Fig. 153 ($\gamma\gamma\gamma\gamma$ f). Pounded Sinew. Length, 34 cm.



Fig. 154 ($\gamma\gamma\gamma\gamma$ b). Method of threading Needle. $\frac{1}{2}$ nat. size.

and the Kamchadal (Fig. 155, *b*, *d*¹). Leather thimbles in similar shapes are also used (Fig. 155, *c*¹).

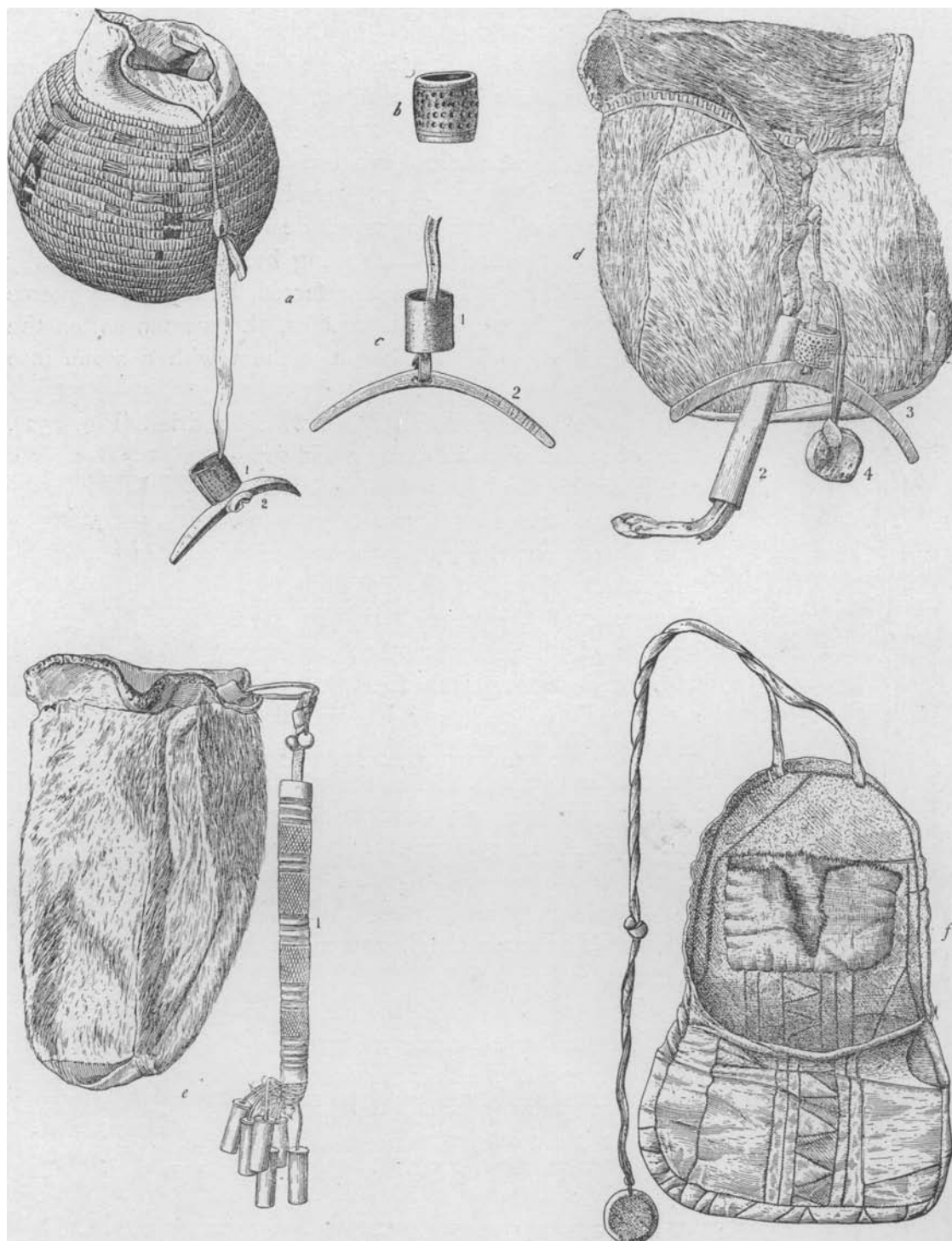


Fig. 155, *a* ($\frac{70}{88}$), Work-Bag with Iron Thimble (1) and Bone Thimble-Holder (2) (height of bag, 13 cm.); *b* ($\frac{70}{88}$), Ivory Thimble (height, 2 cm.); *c* ($\frac{70}{88}$), Leather Thimble with Ivory Guard (height, 2.2 cm.); *d* ($\frac{70}{88}$), Work-Bag with Bone Thimble (1), Needle-Case (2), Iron Thimble-Holder (3), and Painting-Stone (4) (height of bag, 23.5 cm.); *e* ($\frac{70}{88}$), Work-Bag with Needle-Case (1) (height of bag, 24 cm.); *f* ($\frac{70}{88}$), Work-Bag (width 20 cm.), Anadyr Make.

Needle-cases are made in Eskimo fashion, but always of iron or copper. They are long, thin tubes¹ (Fig. 155, *d*², *e*¹), inside of which the needles, thrust into a piece of rag or of thin leather, are kept.

The thimble is slipped on a thin strip of leather fastened to the needle-case, and prevented from falling by a thimble-guard generally made of iron (Fig. 155, *d*³), but sometimes of ivory (Fig. 155, *a*², *c*³).

Rude work-bags are made of the curried leather of the leg-skins of reindeer or of plaited grass (Fig. 155, *a*, *d*, *e*), occasionally adorned with a few pendants of beads or of iron. Their patterns are in general similar to those used by the American Eskimo. The Russianized Yukaghir have work-bags similar in shape to those of the Alaskan Eskimo. Both may be imitations of Russian patterns. Some are made in the Russianized settlements of Anadyr and Kolyma for sale to Chukchee women at the small fairs, and these are now and then imitated by them. A work-bag is represented in Fig. 155, *f*, which should be compared with one figured by Nelson.² When folded, it has a shape similar to another represented by the same author;³ but in place of a buckle a small round pebble is used.

Pouches for holding snuff-boxes and sundry small implements are often worn on the belt (see Plate xxiii, Fig. 1). Their shape resembles that of American Eskimo specimens. For instance, that represented in Fig. 156 is similar to specimens from Alaska in the National Museum at Washington. Other pouches and small bags are made of a seal's flipper or of a swan's foot. Instances like this are met also on the American shore.

Bone or ivory combs are used for shredding grass needed for insoles, and for preparing sinew to be used as thread. Usually the combs have two prongs (Fig. 157, *a*), and are shaped quite like those used in Alaska.⁴ Some, however, have several prongs (Fig. 157, *b*) or a circular head with prongs around it and a wooden handle inserted (Fig. 157, *c*). These are more like other kinds of Eskimo combs used for removing loosened hair from skins.⁵

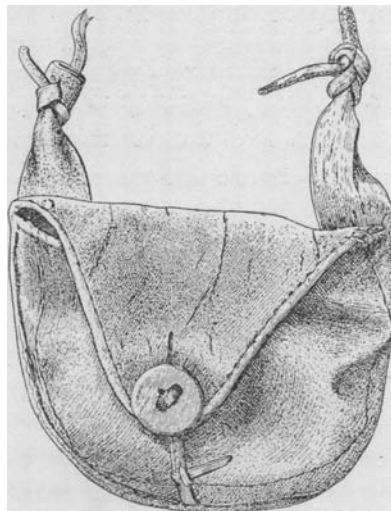


Fig. 156 ($\frac{7}{15}$). Pouch. Height, 10 cm.

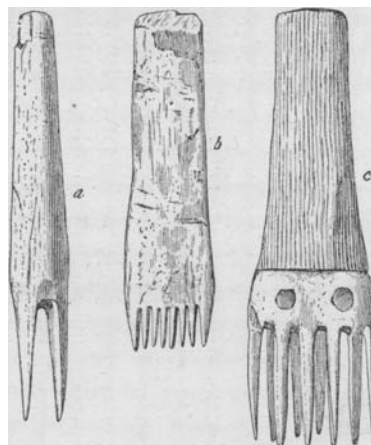


Fig. 157, *a* ($\frac{60}{111}$), *b* ($\frac{80}{111}$), *c* ($\frac{80}{111}$). Combs. Length, 13 cm, 10 cm., 13 cm. *a*, *c*, Chukchee; *b*, Eskimo, Eu'nmun.

¹ Compare Boas, *Central Eskimo*, p. 524.

² Nelson, *Plate XLV*, Fig. 14, p. 108.

³ *Ibid.*, *Plate XLV*, Fig. 15.

⁴ *Ibid.*, *Plate XLVIII*, Figs. 3, 4, p. 104.

⁵ Compare Murdoch, *Fig. 301*, p. 301.

EMBROIDERY. — Skin clothes are ornamented in two ways, — either with embroidery or with appliqué work, formed, like a mosaic, of small squares of black and white skin cut out for the purpose and sewed together piece by piece (see Plate XXI, Fig. 1). In both branches of this ornamental work the women of the Chukchee have but little skill, while those of the Koryak and of the Russianized Yukaghir display considerable taste and great patience. Embroidery is done with the long hair of the reindeer-mane, which is white in color. Often it is dyed red with alder-bark. Thin sinew thread is used for the same purpose, as are also long narrow strips of soft white leather. Koryak women and Russianized native women also use woollen thread and silk bought from traders.

The embroidery patterns used by Chukchee women consist of a few very simple geometrical figures, chiefly straight lines, crosses, and circles, single or double. The circles are said to represent stars. All these figures may be seen on various pieces of embroidery (Plate XXI, Figs. 1-4; also Fig. 158, *a-c*). Occasionally they embellish the trimming of the "dry-shoes," the opening of the sleeves, or the backs of women's frocks, where tassels are fastened.

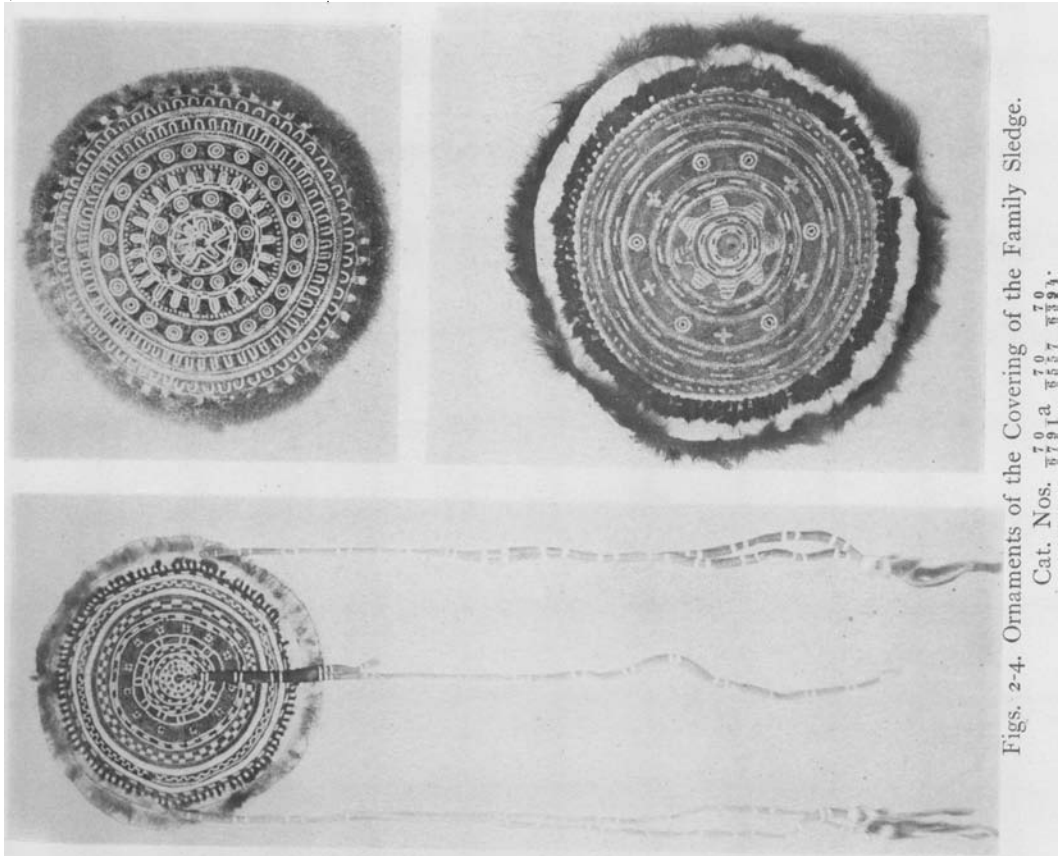
The Reindeer Chukchee women embroider the covers of their family sledges according to their skill. These covers have around their lower part a broad band of leather embroidered with various geometrical designs, and trimmed with fringe and red-dyed fur tassels (Fig. 158, *a-c*).

The triangles seen in Plate XXI, Fig. 1, and in Fig. 158, *c*, were said to represent mountains; and the zigzag-like lines in Fig. 158, *c*, were explained as rivers. A part of the design in Fig. 158, *c*, is apparently copied from the engraving on the iron spear-points, the pattern of which, as noted before, came from the south.

I could not find a single woman able to give full explanations of her own patterns; so that, if they ever had a meaning, it is forgotten by this time.

Above the band on the back part of the cover is fastened a circle about twenty-five or thirty centimetres in diameter, covered all over with embroidery. This is called "the sun," the same name which the Lamut women give to the round metal breastplates that form part of their festive costumes. This round piece clearly represents the sun, which is often embroidered in the middle, and is easily recognized by the prominent rays spreading out from the centre of the circle (Plate XXI, Figs. 3, 4). The tassels which are sewed on in the centre of the sun or all around the disk also represent the rays. The sun is surrounded with many concentric circles, which indicate different worlds. In some of these worlds are seen flying birds and shining stars. The birds are represented by crosses; and stars, by small circles (Plate XXI, Fig. 4). Once in a while a sun-picture is replaced by a moon-picture, which is made in white or red, and crossed with several diagonal lines.

The Asiatic Eskimo adorn their fur shirts with a band of embroidered



Figs. 2-4. Ornaments of the Covering of the Family Sledge.
Cat. Nos. 7001a 7007 7008

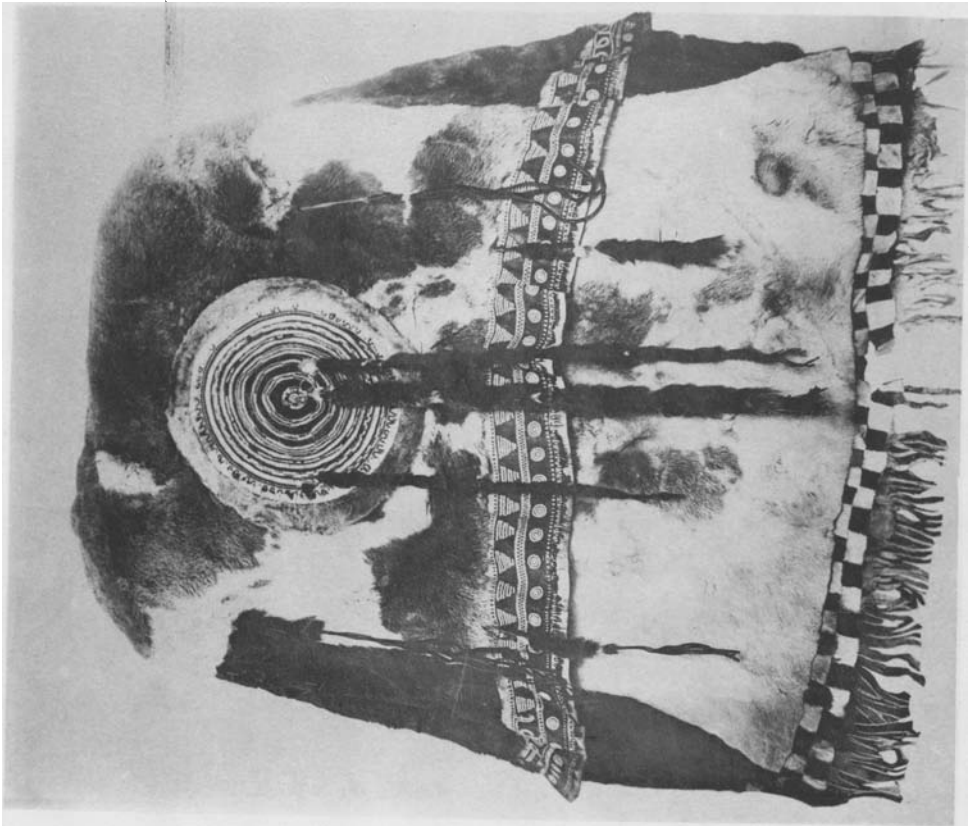


Fig. 1. Covering of the Family Sledge. Cat. No. 8088.

trimming, but this is only a clumsy imitation of the fine work of the Russianized natives. The cartridge-pouches and belts of the Eskimo are also embroidered, while those of the Chukchee are for the most part plain. The quivers of the Reindeer Chukchee, of which there are several in the collection, are also decorated with elaborate embroidery (Plate xxii). The meaning of these figures

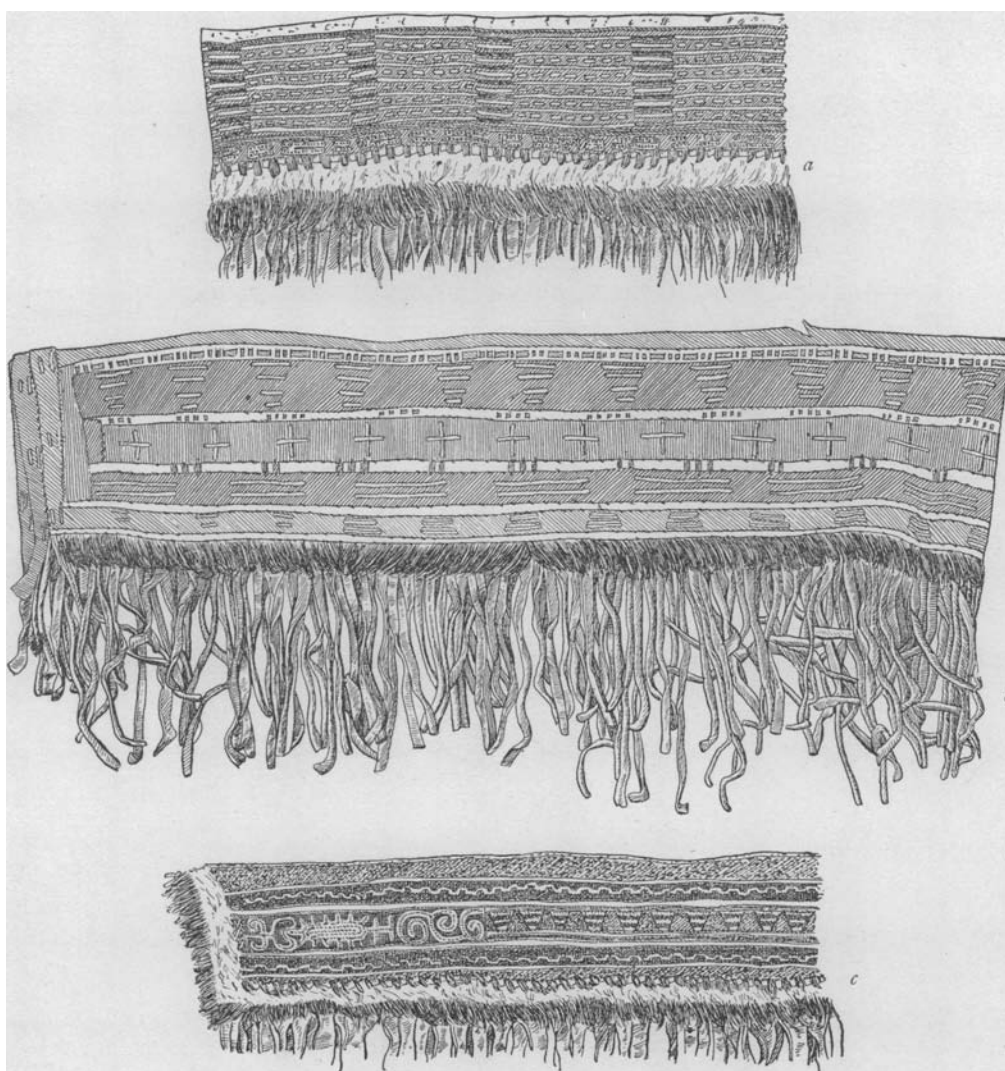


Fig. 158, *a* ($\frac{70}{1718}$), *b* ($\frac{70}{1818}$), *c* ($\frac{70}{1718}$ f). Fringed Bands for Family Sledge Cover. Width of leather band, 14.5 cm., 17 cm., 14 cm.

could not be ascertained, because the work belongs to a former generation. No quivers are made now. These embroidered designs, in their general character, resemble the drawings of the Chukchee, which relate to religion and ideas of creation;¹ and it is possible that the embroidered patterns in question have reference to some cosmogonical ideas.

¹ See Chapter XII.

As to patterns formed of square pieces of skin, the Chukchee women make but very few, using them to decorate caps, hoods, leg-openings of trousers, the upper edges of boots, ear-laps (see Fig. 183, *a*), etc. Among the square pieces of skin they may insert a small bit of red flannel. The whole work is crude and irregular. The patterns made by the Koryak women are much more elaborate. The collections include a coat of Koryak make, with a large band around the skirt formed of several thousand small squares sewed together with untiring patience.

Embroidering with beads is practised very little. Pouches for tobacco and strike-a-lights are often adorned with beads, but most of these pouches are bought either from Lamut or from Alaskan Eskimo. I found among the Reindeer Chukchee a pouch which undoubtedly came from the Athapascan Indians. Chukchee work of this kind is a mere imitation of foreign patterns.

BASKETS AND TRINKET-BOXES. — The work of the Chukchee in mats and baskets is exceedingly limited. I have mentioned rough mats made by the Reindeer Chukchee for covering the ground in their sleeping-rooms. At the mouth of the Anadyr River baskets almost as crude are made of willow-branches, for carrying fish (Fig. 159). One or two of the Chukchee living

on the Middle Anadyr make better baskets of willow-roots, but the style is wholly copied after the work of the Russianized natives of Markova.

Small trinket-boxes are occasionally made of birch-wood, but for the most part are bought from the Lamut or the Russianized natives. Fig. 160 represents a trinket-

box of Lamut make, in the shape most common among all the tribes of north-eastern Asia. It is covered with geometrical designs, and its form is quite similar to that figured by Nelson.¹

THONGS AND CORDS. — Thongs and lines of various kinds are made of skins, which are generally cut in a spiral from the circumference to the centre, so that the whole skin makes one long line.

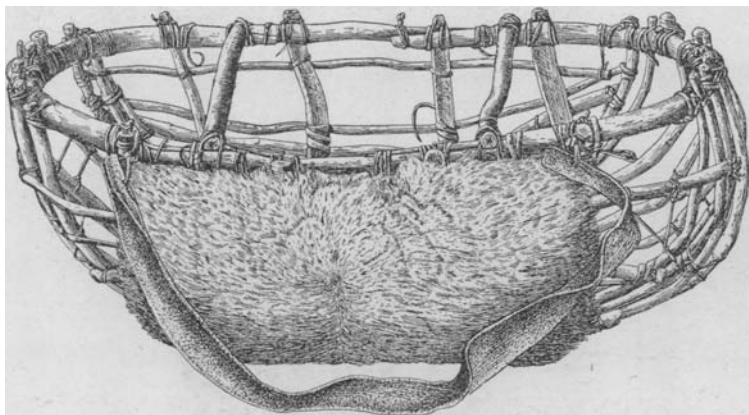


Fig. 159 ($\frac{79}{1557}$). Fish-Basket. Length, 76 cm.

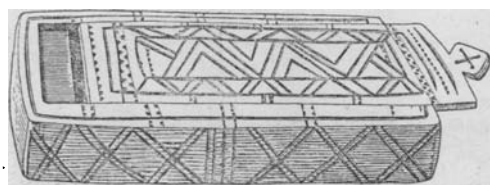
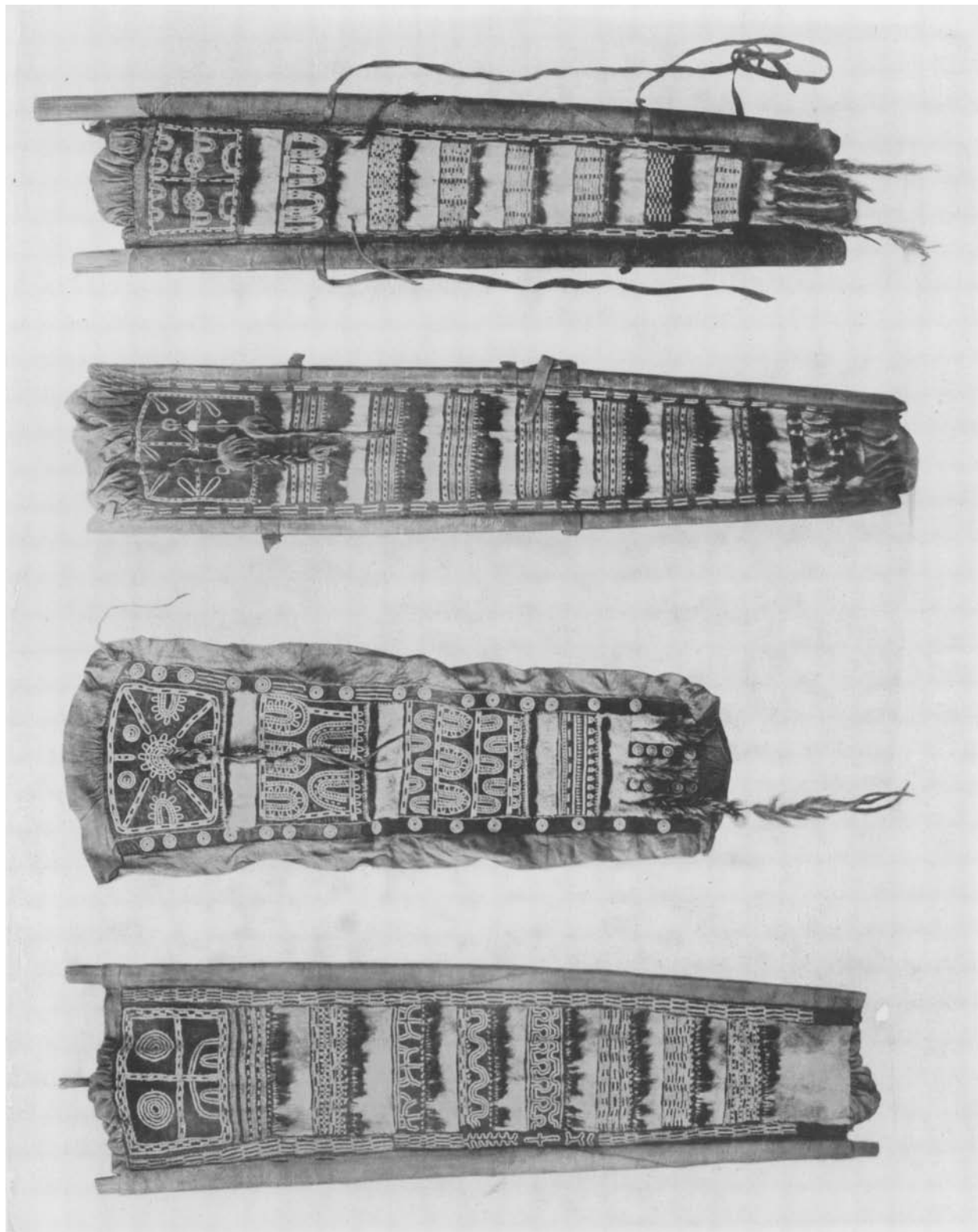


Fig. 160 ($\frac{79}{1557}$ a). Trinket-Box of Lamut Make. Length, 10 cm.

¹ Nelson, Plate LXII, Fig. 10, p. 162.



Embroidered Quivers. Cat. Nos. $\frac{70}{8980}a$ $\frac{70}{7586}$ $\frac{70}{8956}$ $\frac{70}{7033}a$.

The Chukchee.

The poorest of the larger reindeer-skins, those not fit for any other purpose, are clipped of hair with a sharp knife, and then cut into a narrow strip less than half an inch broad. The skins are cut when fresh, or, if dry, they are dipped in water to make them softer and more pliable. The line is stretched out of doors, made as taut as possible, and allowed to dry. This kind of line is called a "leather line" (*ñilhr'lhın*). Among the Reindeer Chukchee it is used for almost every kind of lashing. The best line of this kind is made of the skin of old wild reindeer-bucks. The neck part is so thick that it might be used for boot-soles, and the line made of it is quite strong. When plaited, it is used for lassos (see Fig. 162, *a*). The Maritime Chukchee prepare a similar kind of thin line of the skins of smaller seals. It is called "seal-skin leather" (*mêmičê'čhın*), and it is better in quality than the reindeer-skin line.

The skill of the natives in cutting the skin into narrow lines is very remarkable. Usually one man holds the hide and the line near the cut, and pulls them toward himself, while another makes the cut by steadily drawing towards himself a knife held in an upright position. For a hundred feet of line the hand of the cutter will not change its regular motion or swerve from the proper direction. The entire line seems of exactly the same width.

Stouter line is made of the skin of the ground-seal and of walrus-hide. These are cut in the manner described, either fresh or dry. The line is usually from an inch to an inch and a half broad. The line made of ground-seal skin (*u'neči'čhın*, "ground-seal leather") is best in quality. That of the walrus-hide (*rırka'-ñê'lhın*, "walrus-line") becomes flabby with moisture, and wears out more rapidly. The hide of young walrus gives a line of much better quality. The ground-seal skin line is often dyed black with soot mixed with oil, to make it stand the dampness better. When freshly cut and dried, the line is almost as hard as wood. To make it more pliable it has to be chewed all over, in which process it usually increases in breadth. After that, it is drawn with considerable force across the edge of some immovable object, like the runner of a heavily loaded sledge or one of the larger tent-poles. A special implement of bone or antler is sometimes used in this process (Fig. 161). It contains a hole with sharp edges, through which the line is repeatedly drawn. By means of another hole in the top, the implement is suspended from the house-frame.

For lassos, tent-ropes, and various kinds of cord, the Reindeer Chukchee and the Lamut often use thin plaited "leather line" (Fig. 162, *a*) or plaited sinew (Fig. 162, *b*). The sinew of the legs is chiefly used, because it is too coarse for making thread, but it wears better than the sinew of the back. The twisting is done by hand. The sinew or reindeer-skin rope is often smeared with oil



Fig. 161 (*38827*).
Implement for
softening Thong.
Length, 15.5 cm.

and smoked over the hearth for a day or two to make it less susceptible to moisture.

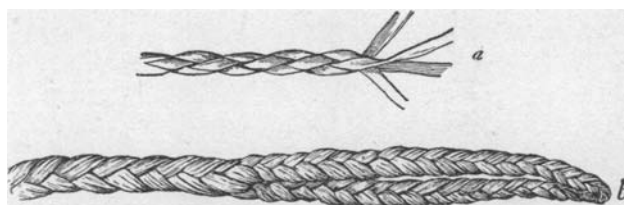


Fig. 162, *a* ($\frac{7}{8} \frac{9}{8} \frac{7}{8}$), Method of plaiting Thong (thickness, 0.5 cm.); *b* ($\frac{7}{8} \frac{9}{8} \frac{7}{8}$ b), Tent-Rope of Plaited Sinew (thickness, 1 cm.).

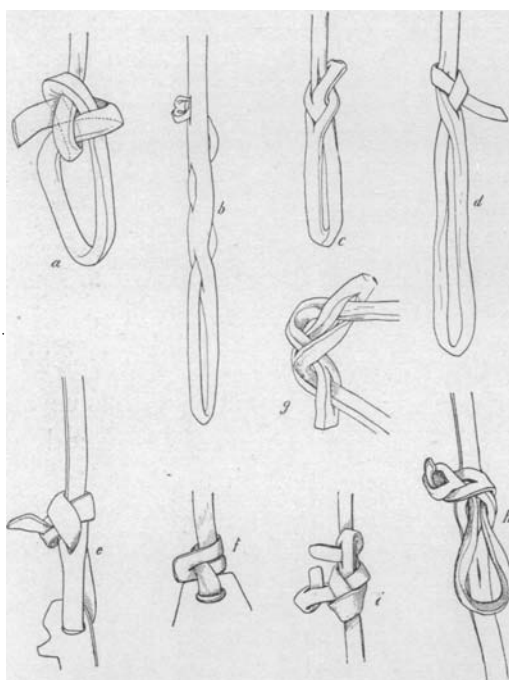


Fig. 163. Knots and Splices. *a*, $\frac{7}{8} \frac{9}{8} \frac{7}{8}$ a; *b*, $\frac{7}{8} \frac{9}{8} \frac{7}{8}$ b; *c*, $\frac{7}{8} \frac{9}{8} \frac{7}{8}$ c; *d*, $\frac{7}{8} \frac{9}{8} \frac{7}{8}$ d; *e*, $\frac{7}{8} \frac{9}{8} \frac{7}{8}$ e; *f*, $\frac{7}{8} \frac{9}{8} \frac{7}{8}$ f; *g*, $\frac{7}{8} \frac{9}{8} \frac{7}{8}$ g; *h*, $\frac{7}{8} \frac{9}{8} \frac{7}{8}$ h; *i*, $\frac{7}{8} \frac{9}{8} \frac{7}{8}$ i.

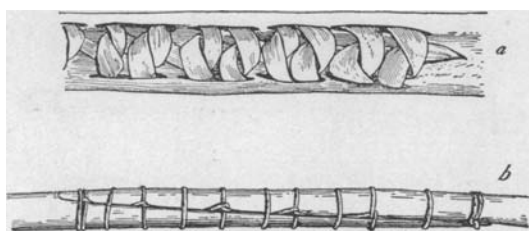


Fig. 164, *a* ($\frac{7}{8} \frac{9}{8} \frac{7}{8}$), Method of splicing Lines (width, 2 cm.); *b* ($\frac{7}{8} \frac{9}{8} \frac{7}{8}$), Method of splicing Ends of Stick (thickness, 1 cm.).

however, whether the people of northeastern Asia did not formerly also use

Most of the knots in use among the Chukchee are either identical or very similar to those used by the American Eskimo. For instance, those represented with those figured by Boas.¹

In Fig. 163, *e* is the same as *d*, with the addition of the peculiar tied-in toggle on the free end of the line, which is a characteristic feature of many Eskimo knots. In Fig. 163, *f* is a variation of *d*; *g* is a splice identical with Fig. 44, *n*, of "Baffin-Land Eskimo." Fig. 163, *i*, is a variation of Fig. 44, *m*, of "Baffin-Land Eskimo." Fig. 163, *h*, represents a thong eye spliced with a line in true Eskimo fashion.

Fig. 164, *a*, shows the way to splice a thin line with a thicker piece of thong. It is employed on reindeer-halters to make their inner side — the part touching the forehead — rougher, thus assisting the action of the ivory prongs in making the animal turn around.

Fig. 164, *b*, shows the method of splicing two ends of a broken stick. It is used on reindeer-whips, and is mentioned also on p. 157.

Fig. 165, *a-f*, shows patterns of buttons and eyes used for various purposes. For other buttons and eyes see Figs. 5, 11, 23, 25.

FIRE-MAKING IMPLEMENTS. — The fire-drill, even at the present time, offers one of the chief means of kindling fire among the Chukchee. It is not certain,

¹ Boas, Baffin-Land Eskimo, Fig. 44, *a*, *c-e*, p. 34.

pyrites and flint for the same purpose. Yukaghir tradition says that the "first ancestor" used to get fire by striking together two stones. One old man related to me that the spark was caught in a tiny sulphur-dish in the same way as is now done. The sulphur at present is bought from Russians, but the natives say that in former times sulphur was found in the Anui Mountains and near Baron Korff's Bay. In a Chukchee creation-myth the Raven first drills fire out of his right foot, by means of his forefinger, then strikes it out of his two thumb-nails.¹ At the present time, however, the strike-a-light, though quite prevalent among the Chukchee, is made of steel and flint, and bought from Russians or Americans.

Among the Maritime Chukchee the fire-drill (u'tti-mi'lhimi, "wooden fire-tools") has gone out of use. Among the Reindeer Chukchee it is still the only means of starting the sacred fire used in many ceremonials. It is also employed in remote places in ordinary life, when the household finds itself without touch-wood, which is necessary for use with flint and steel.

The fire-drill has the same shape both among the Reindeer Chukchee and the Reindeer Koryak (Fig. 166). It consists of a board roughly shaped, usually in

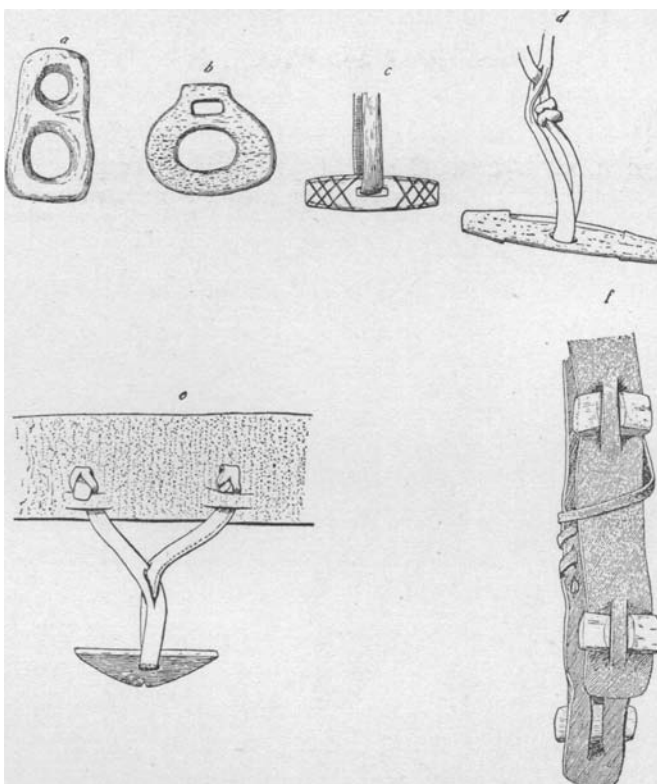


Fig. 165, *a*, ($\frac{70}{8577}$), *b* ($\frac{70}{8577}$), *a*, Bone Eyes; *c* ($\frac{70}{8577}$), Iron Toggle; *d* ($\frac{70}{8577}$), Bone Toggle; *e* ($\frac{70}{8577}$), *c*, Leather Trace and Wooden Toggle; *f* ($\frac{70}{8577}$), *c*, Two Ends of Trace combined with a Loop. *a-c*, $\frac{2}{3}$ nat. size; *f*, $\frac{1}{4}$ nat. size.

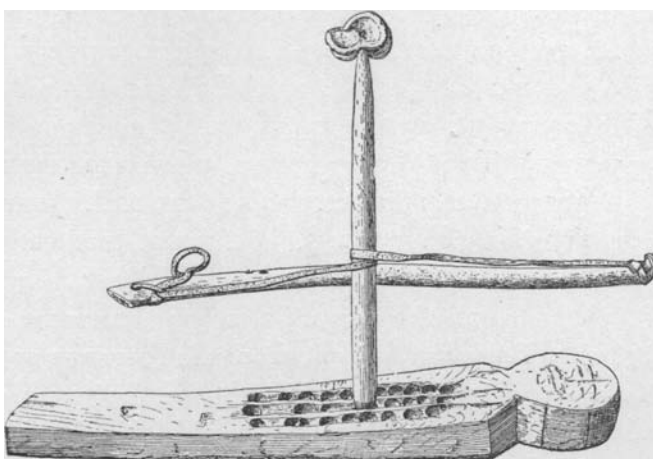


Fig. 166 ($\frac{70}{8577}$). Fire-drill Apparatus. $\frac{1}{4}$ nat. size.

¹ Bogoras, Chukchee Materials, p. 168.

human form (*g'rgir*), a round wooden drill (*ñi'lāq*), an upper piece (*ñirgīčičo'čin*), and a bow (*tiñu'čin*) separate from the drill.

I am not aware of a pump-drill being used for making fire by the Chukchee, as is stated by W. Hough.¹ The fire-drill board for every-day use sometimes has no particular shape, the real *g'rgir* being kept for ceremonials. The board and the drill are usually made of the same wood, on the Arctic coast more frequently of Canadian pine, which is found everywhere along the shore in the driftwood. In the interior they are made of poplar and aspen. To work successfully, both parts must be completely dry. Therefore in damp weather the Chukchee women sometimes have considerable trouble in obtaining fire with this implement.

The board has several rows of holes, marked at first with a knife, and then made deeper by means of the drill. The upper piece is almost always made of the astragalus of a reindeer, while the Koryak use also wood and stone. It is held in position with the left hand or with the breast. The board is kept in place with the foot, while the right hand moves the bow, the string of which winds around the drill (see Plate xix, Fig. 3 opp. p. 198).

Too hard pressure on the top of the drill makes the process slower. While turning in the hole, the drill produces a shrill sound, which is regarded as the voice of the *g'rgir*.

When the wood is dry, smoke begins to rise out of the hole after a few seconds. To produce a flame, however, requires considerable skill. Often to increase the friction, a little coal is put into the hole under the drill. The lighting of the spark is indicated by a rapid increase in the density of smoke, not unlike the steam from boiling water. Then the drill is laid aside, and the board gently swung in the air to keep the spark alive. After that a minute portion of burning charcoal is quickly taken out of the board and put among some dry coals; and the fire is rapidly kindled by swinging it about and blowing it, at the same time feeding it with little chips and splinters of dry wood. The whole process, when the operator is experienced, requires not more than five minutes. The fire-drill, together with the chips and coals necessary for the process, is always kept carefully wrapped in dry skins and hidden in the depths of some voluminous bag to preserve it from dampness.

At present the fire-tools in most common use are the flint and steel (Fig. 167, *a*). They are bought from the Russians or the Lamut, who, while wandering across large territories, usually take the trouble to find the best pieces of flint, and to keep them for barter with the Chukchee. The touch-wood is made of a kind of fungus which is found on the poplar and aspen. This is the same as that used by the Alaskan Eskimo, and represented by Nelson.² The fungus is well boiled in water, and when dried affords excellent tinder, which

¹ Hough, *Fire-Making*, p. 397.

² Nelson, Fig. 93, p. 271.

is very easily ignited. Beyond the timber-line the Chukchee make touch-wood of young willow-catkins, dried, and mixed with powdered charcoal.

The continuous use of the strike-a-light for lighting pipes requires so much tinder that no amount seems sufficient for the winter's supply.

The sulphur-dish is made of wood or ivory (Fig. 167, *b*, *c*), and has the same shape among all the tribes of northeastern Asia. It renders the process of making fire much easier, because the sulphur catches the slightest spark, which can then be immediately transmitted to the tinder.

The sulphur is rapidly consumed, and the dish must be frequently refilled. All tools and materials for producing fire — i. e., the flint, the steel, the sulphur-dish, and tinder — are kept together in a small pouch (Fig. 167, *d*), often embroidered and adorned with pendants and tassels. Careful people carry the pouch on a slender strip of leather around the neck, like a talisman, hanging down under their clothing over the breast. During a heavy rain they even place it under the armpit to keep it free from moisture. Others carry it on the belt or fasten it to their pipe with the tobacco-pouch.

Among the Maritime Chukchee, American matches (ke'we-mi'lhimil, "chafing fire-tool") are much used, and on the Pacific shore they have almost superseded other means of lighting fires.

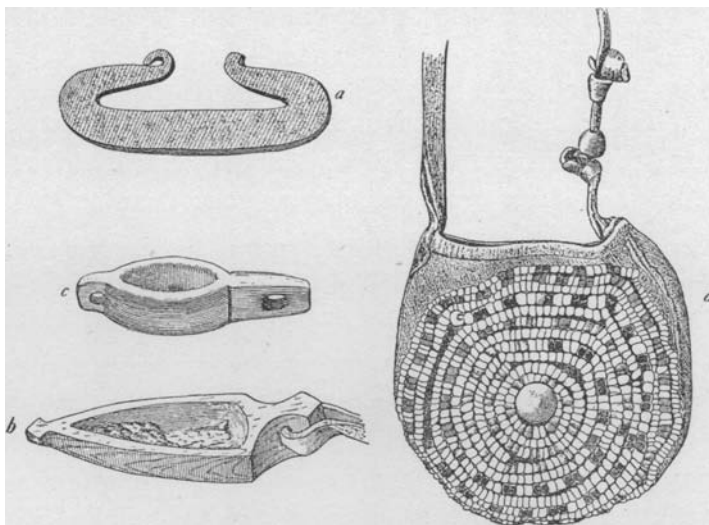


Fig. 167, *a* ($\frac{7}{8}$ "), Steel of Strike-a-Light (length, 7 cm.), Markova Make; *b*, ($\frac{7}{8}$ "), *c* ($\frac{7}{8}$ "), Wooden and Ivory Sulphur-Dishes (length, 6.5 cm., 4.5 cm.); *d* ($\frac{7}{8}$ "), Pouch for Strike-a-Light (height, 10 cm.).

X. — CLOTHING.

There is no particular difference between the clothes of Reindeer and those of Maritime Chukchee, except that the former use better reindeer-skins, while the latter use seal-skins more frequently. Skins of reindeer-fawns are highly prized as material for clothing, because they are very warm and at the same time so light that a man clad in double garments is able to bustle around in the open quite freely. When Middendorff¹ says that in his opinion a good sheep-skin coat is to be preferred for travel, it may be ascribed to the fact that he travelled only with the Tungus. The latter select for clothing either the thinnest summer skins for making their holiday garments, or the heaviest winter skins for making short overcoats, which are put on over the usual clothes for riding-trips in the middle of winter. Moreover, the Tungus usually have only small herds of reindeer, and cannot very well choose their time for slaughtering or pick those animals whose skins are best fitted for clothing, as the wealthy reindeer-breeders of the extreme northeast do. Skins of the wolf, and perhaps also those of the wild sheep, surpass those of the reindeer in their wearing and protecting qualities, but both are too rare to be used regularly as material for clothing.

The Maritime people in these regions, unlike the American Eskimo, use seal-skin but little for coats. This is because seal gives but slight protection against the cold, while, on the other hand, it brings a much better price in exchange for reindeer-skins. For this reason we find that only reindeer-skin is used for winter coats. Seal-skin is more useful for trousers, because it wears better, especially in the damp weather of spring. For spring and summer boots, seal-skin is most serviceable. It is tough, wears extremely well, and affords better protection against dampness and water than any other hide known to these natives.

While the Maritime Chukchee depend on reindeer-breeders for their winter clothes, the latter obtain boots and sole leather from the coast tribes. Late in the spring, when short of seal-skin, the herdsmen will use it only to patch out the uppers of a pair of ordinary reindeer-skin boots, so that they will wear better in the damp snow.

WINTER CLOTHING FOR MEN. — The style of clothes used by Chukchee and Koryak men in winter is admirably adapted to its purpose. It therefore prevails among most of the tribes of northeastern Asia, including the Russians. Even the northern Lamut, who in ordinary life wear narrow coats, and aprons of a peculiar cut common among the Tungus tribes throughout eastern Siberia,

¹ Middendorff, IV, Part 2, p. 1105.

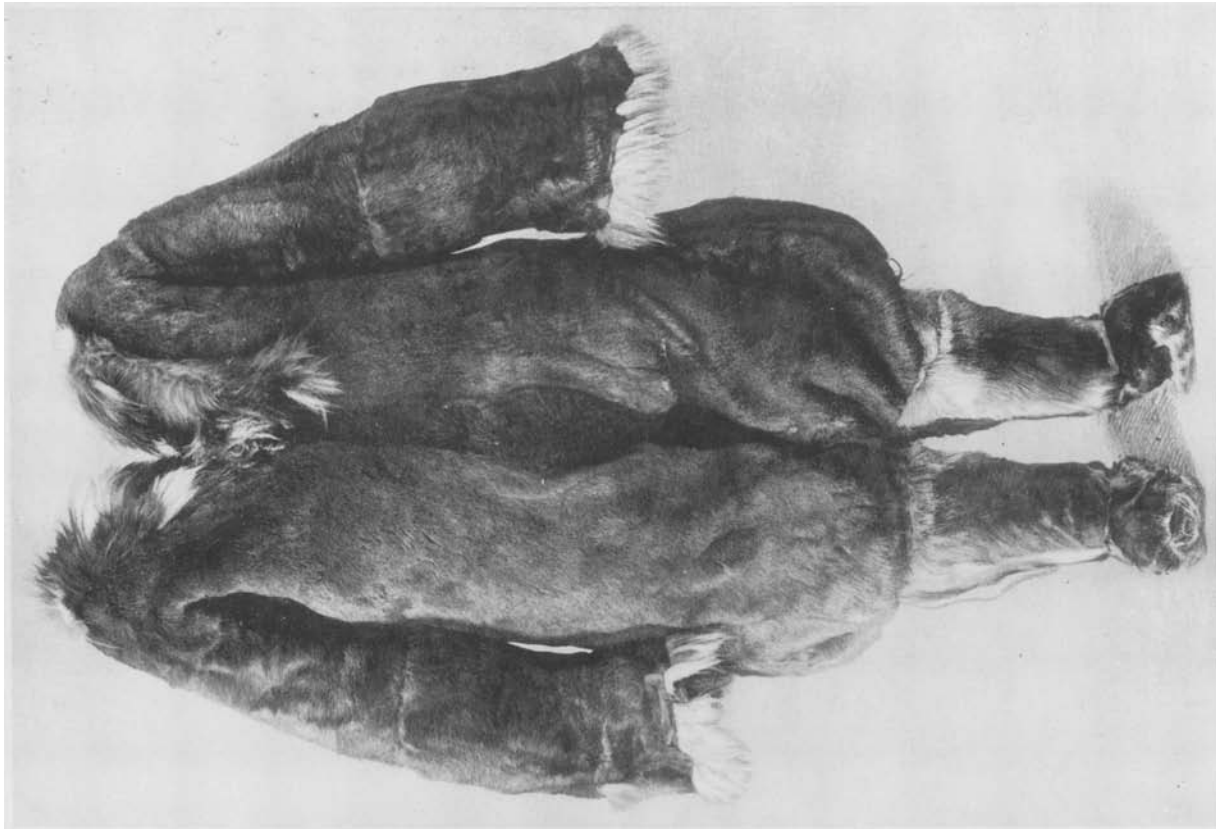


Fig. 2. Winter Clothes of a Reindeer Chukchee Woman.



Fig. 1. Winter Clothes of a Reindeer Chukchee Man.

The Chukchee.

put on the heavy fur shirts of the Chukchee when they drive a reindeer-sledge. Their own clothing does not sufficiently protect them from the heavy wind blowing against their faces, and from the lumps of snow thrown up by the reindeer-hoofs and the runners of the sledges.

Each part of the Chukchee winter garments for men or women is made in two pieces, an inner and an outer one, the former with the hair side in, and the latter with the hair side out. These pieces are worn without being sewed together, in order that they may be separated for drying, but they fit together so exactly as to form practically a single garment. The inner part is usually made of very soft-haired material, so that it will not irritate the skin, and can be worn without underclothing even by a European.

The chief piece of clothing is a heavy fur shirt almost reaching to the knees, with no hood attached, and with a rather large opening in the collar (Plates XXIII, Fig. 1; XXIV, Fig. 2; also Fig. 168). Koryak shirts are longer,

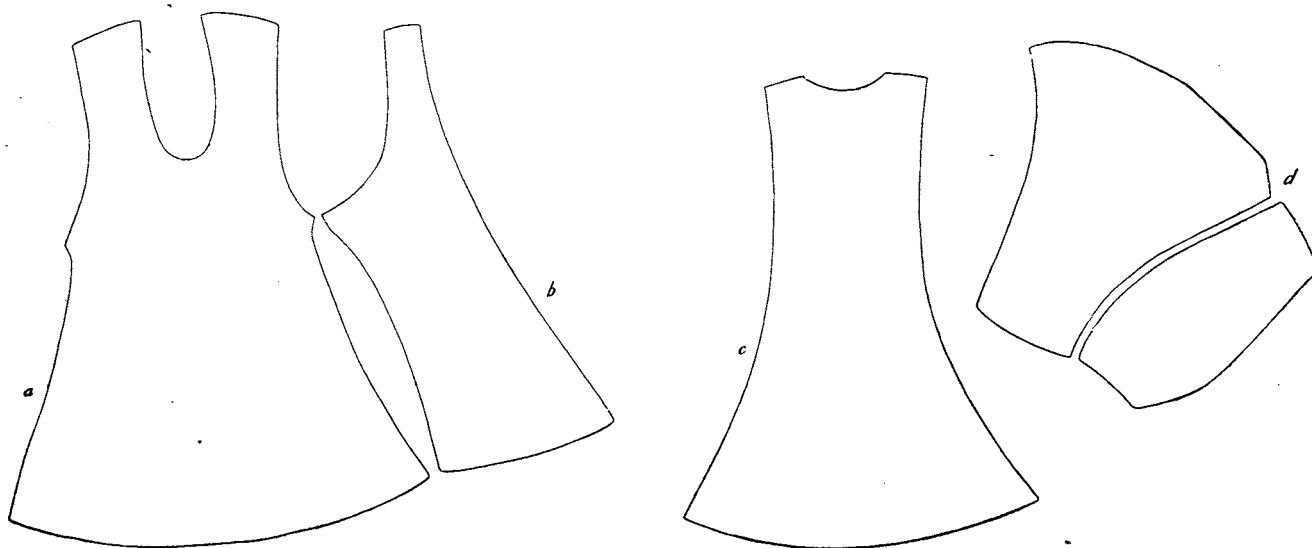


Fig. 168. Pattern of Man's Shirt. *a*, Front; *b*, Side Gore; *c*, Back; *d*, Sleeve.

and often have a hood; but among the Chukchee only the shroud has a hood, which is drawn over the face of the dead body. The shroud is therefore called by them "the hooded garment." The collar of the Chukchee shirt is bound with a narrow piece of skin folded over so that a stout sinew string may be pulled through to tighten the collar as much as desired. The ends of the string come out on the breast. The Chukchee assert that the string is added to strengthen the neck of the shirt in case of a scuffle; otherwise it would give way when pulled hard in wrestling.

The shirts of the Maritime people, (Plate XXIV, Fig. 1) are of the same cut as those of the reindeer-breeders. They often wear cast-off clothing of the Reindeer people, because the herdsman wears his coat only one winter, often only half of this time. After that, the women of his family make him a new

coat, and the old one is sold to the Maritime neighbors. It is still fairly warm and appears well, but in reality the leather has deteriorated and the hair thinned out, so that it offers appreciably less protection from the cold.

The neck of the inner shirt is often trimmed with a broad strip of dog's or wolf's fur, as shown on Plate xxiv, Fig. 2. This may be folded back, forming a thick and warm collar. The lower edges of both parts of the shirt are trimmed with narrow pieces of fur. The inner shirt is a trifle longer, so that the garment appears to have a double row of trimming around the bottom. This trimming is usually of dog-skin, but in the best shirts wolf, fox, and wolverene trimming is used. The last-named is considered the prettiest, wolverene-skin being highly prized among the Chukchee and among the Eskimo on both shores of Bering Sea.

The Koryak fur shirt is trimmed below with a broad strip of fur of the same material as the body of the shirt, but different in color. This strip is commonly bordered with a narrow piece of dark-colored reindeer-skin, and with beaver or otter in garments of the well-to-do. The same method of trimming fur shirts is adopted by the Russianized Yukaghir and Kamchadal, as well as by some of the Chukchee on the Pacific side. On the whole, however, a characteristic feature of the Chukchee shirt, distinguishing it from that of the Koryak, is the absence of this lower strip.

The sleeves of the shirts are full at the shoulder, and narrow at the wrist. The opening is slightly gathered in, and bordered with a narrow strip of fur. If desired, the arms can be drawn out of the sleeves into the bosom of the shirt. Indeed, this is a favorite position with the Chukchee when taking their ease (see Plate xxvii, Figs. 1, 2). The shirt is so ample, that when the arms are drawn in, the man can without difficulty turn in the garment, which then looks more like a small tent. When sleeping in the open without an overcoat, a Chukchee man makes full use of the shelter of his ample shirt. He tightens the belt and then draws in his arms, turns up his fur collar, and draws his head inside, and then pulls the front of his thick fur cap up to the neck-opening. Fortified in this manner, he can sleep snugly in the most severe cold or during a heavy fall of snow. In the morning he will shake off the snow just like an animal after sleeping in the open.

The young people make their upper shirt of thin fawn-skins from the first fall slaughtering. These look smoother and neater than the others. The inner shirt, of course, has to be made of thicker skins. With the simpler clothes the reverse is the case. I have already noted that for colors, dark brown, spotted, and pure white are preferred. The young people, too, have their shirts short, while those of old men reach sometimes considerably below the knees, and are made of the thickest autumn skins. They then look more like heavy overcoats than mere shirts.

The outer trousers (Fig. 169) are made chiefly of the leg-skins of the



Fig. 2. Maritime Chukchee Girl in her Best Clothes.



Fig. 1. Maritime Chukchee Man in Usual Clothing.

reindeer, the hair running downward. By this arrangement the snow does not stick at all to their sleek surface. For the middle of winter the outer trousers are made of thick fawn-skins (Plate XXIII, Fig. 1). Among other advantages, these skins require fewer seams than those made of leg-skins. Since the cold comes in through each seam, this makes a very marked difference in the amount of protection afforded. On the other hand, the leg-skin trousers are not so susceptible to dampness, and are therefore better for spring than those of fawn-skins. Well-to-do people have their trousers made of the leg-skins of the wolf, which combine great toughness and warmth.

The inner trousers are made of soft fawn-skins of varying thickness, according to the season. The Chukchee trousers have no regular belt and are short in the waist, scarcely reaching the navel (see Fig. 170). They are held in place by a sinew string which passes through a hem at their upper edge. Notwithstanding this, they always have a tendency to slip down. The Chukchee men habitually give a peculiar jerk to their bodies to throw the trousers back to the proper place. The trousers are narrow, and fit the calf of the leg tightly. On the lower edge they have the usual gathering-string, which can be drawn tight around the ankle.

The short legs of the Chukchee boots are always put inside the trousers, so that, when the latter are tied, the whole is impervious to snow.

Trousers of seal-skin are worn in spring and in summer by the Maritime people, and by reindeer-breeders who live near the coast. Their cut is exactly the same as that of the trousers of reindeer-skin, and they are often adorned their full length with narrow stripes dyed purple. Those worn by young men often have numerous tassels of the skin of a seal-pup dyed red¹ (Fig. 170). Trousers with many tassels indicate the claim of their owner to a wrestling reputation, from which fact they are called "wrestler's trousers." Wealthy people sometimes have dress trousers, likewise tasselled, and made of the skin of fur-seal, which is extremely rare on these shores.

Winter boots are made of reindeer-leg skin with the hair side out (Fig. 171, *a*). They vary in thickness according to the season. The Chukchee

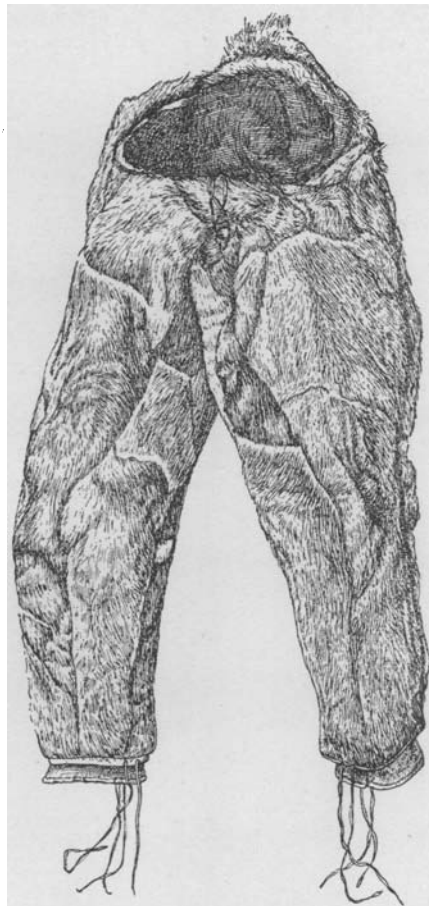


Fig. 169 (нѣтъ). Trousers of Reindeer-leg Skin. Length, front, 68 m.; back, 83 cm.

¹ Compare p. 221.

are very particular about this, and change their boots almost every month. The boots are generally made of black skin, with a narrow strip of white in the vamp. The legs of men's boots are usually short. Around the edge



Fig. 170 ($\frac{10}{11}$). Seal-skin Trousers trimmed with Tassels. *a*, Front; *b*, Back.



Fig. 171, *a* ($\frac{10}{11}$ f), *b* ($\frac{10}{11}$ c). Winter Boots. Length of sole, 26 cm., 27.5 cm.

of the sole is an upright strip of skin, to which is attached the piece covering the top of the foot (Fig. 171, *b*). This gives more room for the toes, and at the same time makes the boot fit the foot more snugly. On account of

this peculiar vamp, the Chukchee winter boot has a square-shaped toe. The same shape is used for the summer boots of seal-skin or curried leather, though the vamp in the latter consists of a plain piece sewed to the sole. Other tribes of northeastern Asia neighboring on the Chukchee generally wear boots with pointed toes. In the Yakut boots the toes even bend upward with a long curved strip, somewhat resembling the well-known mediæval form. The natives are well aware of the peculiar square shape of the toe of the Chukchee boot. In one of the legends of the local Russians about their early war with the Chukchee, a party of the latter is discovered by means of the square-shaped grass insoles which they had thrown into the river flowing past their camp. The soles for the coldest time of the year are made of patches of very tough skin taken from between the four toes of the reindeer's foot. These patches are covered with thick tufts of hair, dirty white in color, and almost as stiff as bristles. They are sewed together, fashioned into a sole, and then well dried. The sole has the hair side out, so that the whole covering of the man, from the crown of his head to the sole of his foot, literally bristles with hair, like the skin of an animal.

In former times the Maritime Chukchee on the Arctic shores used the leg-skins of the white bear for making winter boots, including the soles. This fact was also noted by Nordenskiöld. These parts of the bear-skin are exceedingly tough and covered with thick white hair, so they serve the purpose well. Nowadays, however, the skin of a polar bear brings a very good price either from Russian or American buyers, so the natives have ceased to use it for shoes. Only the elbow-protectors, that form part of the seal-hunter's dress,¹ continue to be made of polar-bear skin. For all other seasons, covering about nine months of the year, the soles of boots are made of thong-seal hide with the hair side in, or of split walrus-skin. The latter is not so durable as ground-seal skin. Notwithstanding the extreme toughness of these hides, the herdsmen wear them out quickly, especially in summer. The inland camps are always in want of hides for making soles. In the Kolyma country thong-seal hides sell for twenty fawn-skins apiece. Even cow's hide, furnished by Yakut traders, is gladly bought at the rate of three reindeer-bucks for one hide. Poor people, unable to procure enough hide for soles, make them of pieces of skin taken from the neck of old reindeer-bucks. This leather is tough enough for soles, especially when taken from wild animals, but it is more susceptible to damage by dampness.

The boot-string is made of strips of curried leather, which are sewed to the boot on both sides, a little behind the ankle (Fig. 171, *b*), and taper towards the ends. In fastening the boot they are crossed over the heel, and then wound around the ankle and tied with a simple knot on the front side of the boot.

¹ See p. 119.

Short socks, made of fawn-skin in mid-winter and of reindeer-leg skin in other seasons, are similar in cut to the boots. They have the same strip passing around the edge of the foot. They are always worn with the hair side in, so that here again the boot and sock form the usual double article of clothing. The Chukchee do not use for their socks very thick fawn-skin, not even in the depth of winter, because it is supposed that a man keeps his feet warm chiefly by motion. Indeed, a herdsman can use only thin leg-skin socks, else his feet will perspire too much. As noted before, this lowers to a considerable degree the protecting-power of clothes. A Yakut, when travelling on horseback, requires extra covering for his feet, because they are exposed to the cold from all sides. He therefore wears over the stockings of fawn-skin short socks of the thick fluffy skin of the polar hare. His boots are often made of the thick curried hide of a horse or an elk. Although these are not so warm as leg-skin, they are better proof against dampness. Russian merchants, officials, and other travellers wear double socks of thick fawn-skin. Their boots are made of leg-skins, have soles of reindeer-sole, and thick grass insoles. They are often extremely large. One pair in the collection has soles 33 cm. long, 15 cm. wide, and 40 cm. around the foot, near the instep. Sometimes travellers wear over each boot a kind of furry bag to further protect them from the cold. These are copied from the Tungus, who, when sleeping in the open, protect their feet by this means.

Insoles of grass are used in all seasons, even with light summer boots, which are worn without socks, because the native boots, with their thin, pliable soles, are unfit to be worn without a grass insole. Tough, long-bladed grass is selected for this purpose. The villages on the most exposed shores procure this grass from the inland country by barter. Grass only partly dried is good for insoles. In the fall women gather quantities of it to last their families throughout the year.

Boots with long legs, reaching to the knee and fastened over the trousers with a gathering-string around the top, are often worn by men, although they really belong to the woman's attire. In many cases men wear them, on the order of a shaman, as a means of concealing their identity, or at the bidding of spirits, as the first step in transforming their individuality from male to female.¹ Leggings of reindeer-leg skin are also used occasionally.

Mittens are made of reindeer-leg skin of various thicknesses. Their cut is the same among all the tribes of northeastern Siberia (Fig. 172). Winter gloves are almost unknown among the Chukchee. At present the Eskimo women at Indian Point make very clumsy gloves in imitation of those of the American whalers. The winter gloves that were formerly made were chiefly connected with the performance of magic. Thus a very rude shamanistic dress² has a left-hand glove attached to it.

¹ See Chapter XV.

² Bogoras, Chukchee Materials, Plate II, Fig. 3.

In funeral ceremonials gloves with only three fingers are used. They are worn by the woman who cuts up the body, in order to keep her hands free from contamination.

Mittens are not made double, because the tough reindeer-leg skin of which they are made would make it impossible to handle anything with a double mitten. During a journey the hands are always kept in motion sufficiently to remain warm. The working-people of other tribes of the country have mittens of the same shape and material. The Russians, on the other hand, have adopted, besides the type described above, another style of mitten, which is made of curried skin, lined inside with soft fawn-skin, and trimmed around the wrist with a narrow strip of fluffy beaver-skin. A little above the wrist the mitten has a cross-slit through which the hand may be conveniently thrust for any special work requiring the use of the fingers. The slit is trimmed with fluffy fur, squirrel or beaver, to keep the cold out. These mittens are really better suited for short walks within the village than for real work or for travelling.



Fig. 172 ($\frac{11}{11}$). Mitten of Reindeer-leg Skin. Length, 27 cm.

The Russian merchants and officials have adopted still another style of mitten, a combination of the two above described. It is double. The outside is made of the soft leg-skins of the white, red, or gray fox; and the inside, of the belly-skins of the same animals. The palm and the inner surface of the thumb are of cloth or curried leather, which makes the mitten fairly flexible in spite of its excessive thickness. The cross-slit above the wrist is usually present, but the mittens are so heavy that no cold enters it. These mittens, I think, are the largest in the world. Those in the collection are 32 cm. long and 15 cm. wide. The thumb is 8 cm. long. The Koryak and the Kamchadal, and even the Gilyak and the Tungus of the Amur River, have, in their turn, imitated in native material various patterns of mittens and gloves made by the Russians. These show a mixture of native and Russian elements. Thus the Koryak have mittens and gloves of curried leather, lined with fur, with a cross-slit under the wrist. The Tungus of the Amur (see specimen, Cat. No. $\frac{70}{915}$) have mittens of the leg-skin of the reindeer, with palms of curried leather and a cross-slit bordered with fur; also mittens of curried leather lined with fur (see specimen, Cat. No. $\frac{70}{923}$).

The Chukchee cap (Fig. 173) fits the head closely, and its triangular flaps snugly enclose the ears. These ends are joined by a band of cloth or curried leather of such length that when they are crossed under the chin the band will hold them in place by being pulled over the crown of the head (see Plate XXVIII, Fig. 2).

The cap of this shape is worn by all the tribes of the country, including the Tungus. The Russians have, besides this cap, a combination of it and

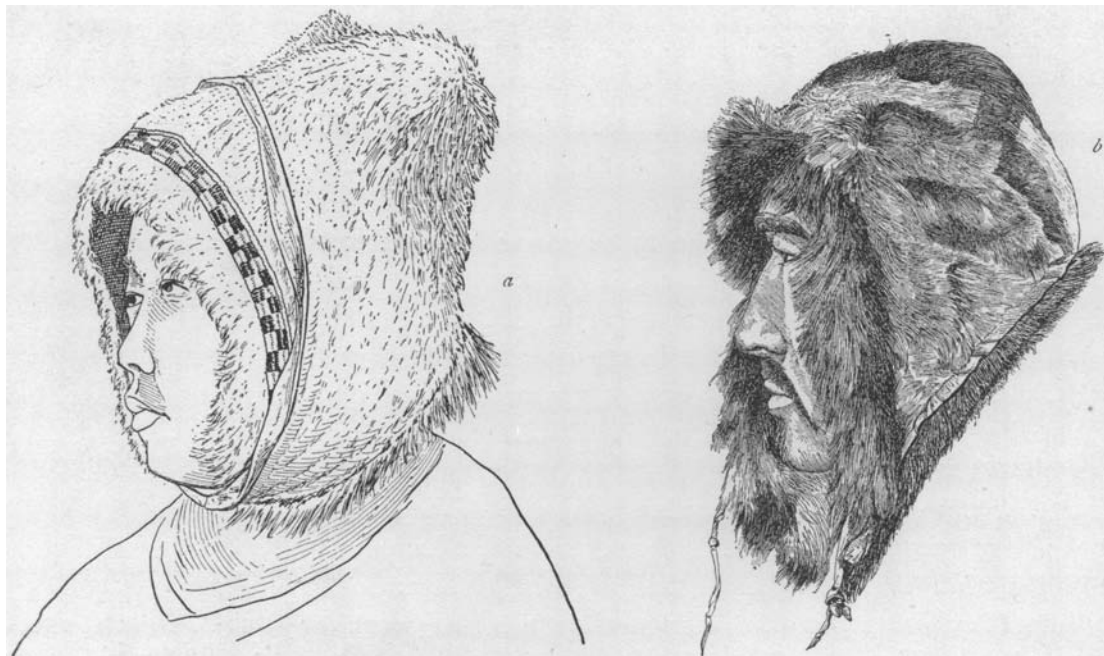


Fig. 173, *a* ($\frac{1}{2}$ d), *b* ($\frac{1}{2}$ f). Caps.

of the round shaggy cap of the cossacks, which, in its turn, is derived from a style worn by the nomadic tribes of the West Asiatic prairies. The Chukchee cap is double, like other parts of their clothing. It is generally made of the leg-skins of various animals, — reindeer, fawns, dogs, wolverenes, etc. It is trimmed on the front with a strip of some handsome fur, and on the back with a narrow strip of thinner skin or leather. Sometimes the front is adorned with a few rows of gay-colored beads. The heaviest cap, worn over this ordinary one in winter travelling, is made of thick reindeer-skin or of the head part of the wolf's skin, arranged in such a manner that the ears stand up on top. These ears are often decorated with small tassels of red-dyed seal-skin or of crimson cloth.

Poor people protect the neck with a kind of short boa (Fig. 174, *a*) made of a narrow piece of reindeer-skin folded together and sewed. The wealthy use scarfs and shawls bought from the traders. Boas of squirrel-tails, made by the Lamut, are much worn by Chukchee men and women, who trade them for reindeer-skins.

The Chukchee men also wear under their chin a kind of square bib (Fig. 174, *b*) made of thin reindeer-leg skin, and fastened around the neck. This protects the shirt from the frost that collects from the breath. All the overcoats of men and the frocks of women are supplied with a similar square piece in front for the same purpose.

A large hood (Fig. 175) of thick reindeer or wolf skin is worn in stormy

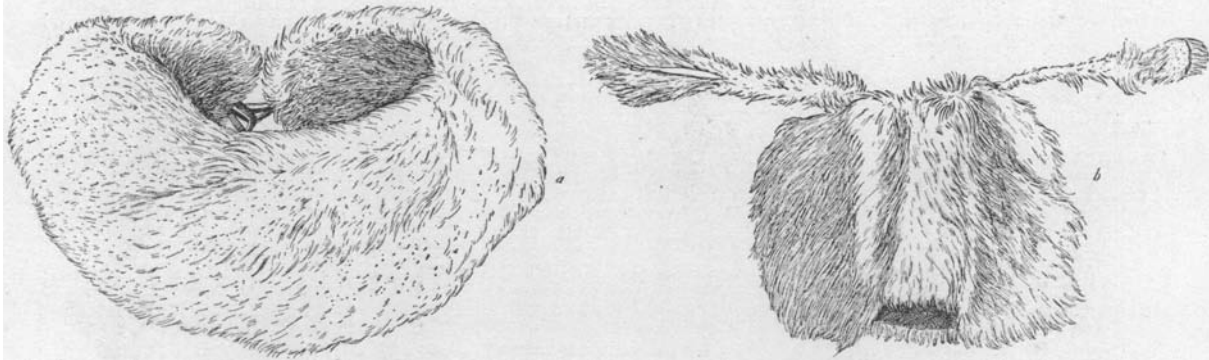


Fig. 174, *a* ($\frac{1}{8}\frac{1}{8}\frac{1}{8}$), Boa of Reindeer-Skin (length, 71 cm.); *b* ($\frac{1}{8}\frac{1}{8}\frac{1}{8}$ g), Bib of Reindeer-Skin (length, 19 cm.).

weather. It covers the head and the shoulders. Many people prefer it to the overcoat, because it may be put on or taken off more readily.

The overcoats worn by the Chukchee are made of various materials, such as reindeer-skins, curried leather, calico of bright pattern, white and blue drilling, flannel, broadcloth, etc. Their chief purpose is to give protection against the wind and to keep the snow from their fur garments. The overcoat of the Koryak and the Russianized Yukaghir, on the contrary, is intended to protect the wearer from the cold. The Chukchee depends for that solely on his regular clothes.

On the whole, the Chukchee and the Asiatic Eskimo are more hardened to the cold than their neighbors

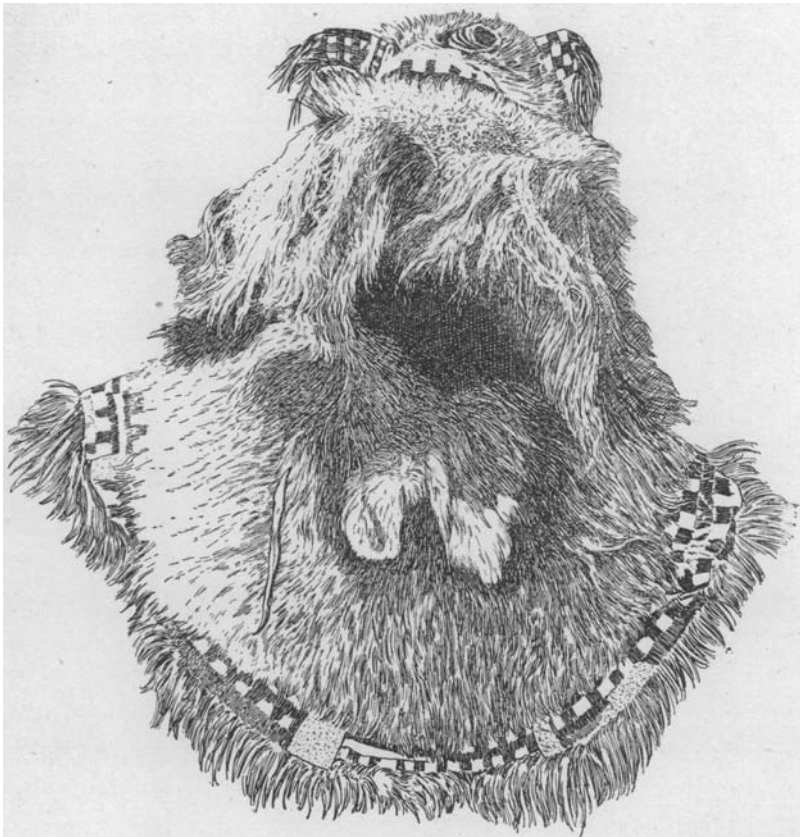


Fig. 175 ($\frac{1}{8}\frac{1}{8}\frac{1}{8}$). Storm-Hood. Length, 95 cm.

on the southwest, because they live in far more exposed regions, with no fuel for fire. They do not even supply themselves with heavy overcoats, and while travelling sleep in the open without extra covering. The Koryak

and the Kamchadal, on the contrary, during a night passed in the open, have a cheerful fire, and protect themselves with heavy double overcoats and sleeping-bags made of thick skins. The Chukchee seldom use fawn-skins for their overcoats, because the hair and skin are not sufficiently tough and durable. Summer skins of full-grown reindeer, with their short slick hair, are most suitable. Thicker skins, employed for this purpose, have their hair previously cropped short. They are worn with the hairy side in. The outside is usually dyed yellow with ochre, or dark red with alder-bark.

Chukchee overcoats are made in the form of long ample frocks reaching far below the knees, with a loose hood, and very full sleeves gathered at the wrists. The lower edge is often bordered with narrow strips of fur or leather. Near the edge the overcoat is trimmed with a band of leather, usually of different color, the reverse side of the skin being turned out.

The overcoats of the southwestern tribes are trimmed along the lower edge with much broader strips of cotton or cloth of bright colors, — white, red, or blue. These are embroidered in various designs.

The belt is made of a piece of tough leather, with a clasp of ivory or of iron. It is sometimes rudely adorned with buttons, bells, or other jingling objects. Fig. 176 represents a Chukchee belt with a big iron clasp. Strips

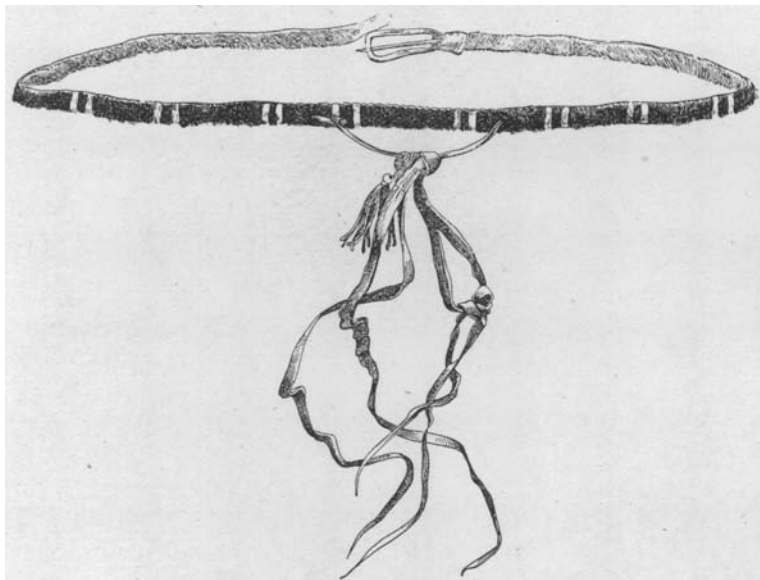


Fig. 176 ($\frac{1}{2}$ m). Belt with Amulet. Length, 125 cm.

of leather tied into knots and sewed on the back of the belt form an amulet, as will be described later. The simplest form of belt is made of an odd piece of thin leather thong, with a small stone that serves as a button. The other end of the belt has a loop which slips over the stone button. In other cases pieces of sinew string or thong, without clasp, are simply tied around the waist to serve as a belt.

WINTER CLOTHING

FOR WOMEN. — The dress of the Chukchee woman does not seem so well adapted to its purpose as that of the man. Its main part, a combination-garment, is found in the same style also among the Koryak and the Kamchadal. Indeed, the curious cut of this garment, with its full, dangling sleeves and somewhat low neck, suggests a remote origin in a milder climate than Arctic Asia (see Plate xxiv, Fig. 2).

The combination-garment (see Plate xxiii, Fig. 2; also Fig. 177) consists of a bodice, large at the shoulders, but rather close-fitting at the waist, and

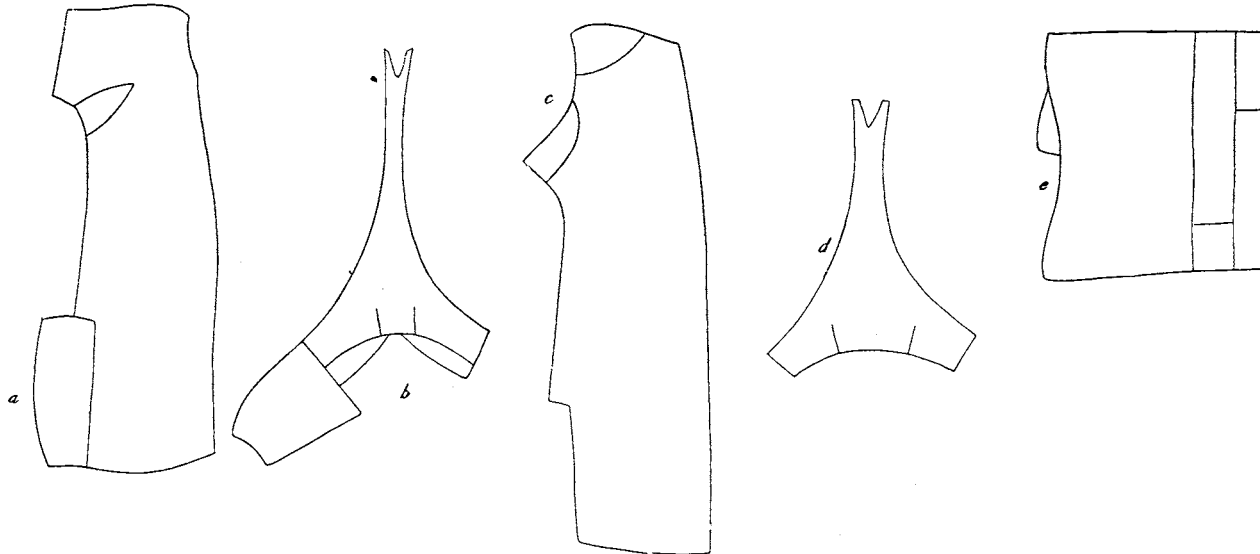


Fig. 177. Pattern of Woman's Dress. *a*, Right Front; *b*, Front Middle Piece; *c*, Left Back; *d*, Back Middle Piece; *e*, Left Sleeve.

passing into baggy trousers that reach a little below the knees. The neck of the bodice is cut quite low both front and back, especially for younger women. To keep off the cold it is bordered with a double or even a triple row of trimming of the thick fur of the dog, fox, or wolf. On the suits of young women these strips of fur are of different hues, contrasting strikingly with each other. Of course this does not prevent the cold winds of the tundra from penetrating under the bodice. The sleeves are very full, and so long that they interfere with the work of the woman. Moreover, they are not gathered in at the opening. On account of these sleeves, the woman, when occupied in several branches of work, has to thrust her right arm and shoulder out of the bodice, while the sleeve is left dangling down the back. This attitude, with half of the bust bare, is one of the most typical for Chukchee women (see Plate xxvii, Fig. 3). The front of the garment opens a short distance down from the neck, and may be fastened with curried leather bands attached to both edges. The garment is without any opening to allow the women to attend to the requirements of nature. For such purposes the body must be entirely removed, allowing the garment to fall down on the knees. In winter the women then cover their naked bodies with overcoats thrown over their shoulders, but in summer they may be seen about the camps quite uncovered. The leg-openings of the breeches are fastened over the boots with a gathering-string.

The boots reach to the knee. The upper edge either has a hem through which a string is pulled (Fig. 178, *a*) or is left rough as in the boots of men.

This is because the boot-legs are generally tucked under the legs of the



Fig. 178, *a* ($\frac{10}{11}$), Woman's Boot; *b* ($\frac{10}{11}$), Woman's Stocking.

breeches. The stockings (Fig. 178, *b*) are also long, and fit the leg snugly. The foot of the stocking is made of fawn-skin, while the leg is often made of the thick skin of the full-grown reindeer. The calves of women bulge out with these stockings and boots. Their baggy trousers also hamper free movement, especially while walking through deep snow. I have heard young girls who have to tend to the herd complain about the inconvenience of the female garb of their tribe. In several cases I knew of herds women adopting man's dress. Even the gait of Chukchee women is influenced by their clothing. The Lamut describe them as walking with legs spread apart. The Chuk-

chee retaliate by saying that the Lamut girls are chained like dogs because their aprons are decorated with iron chains and various metal ornaments.

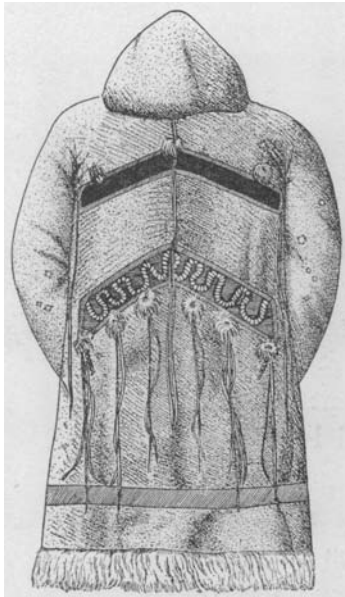


Fig. 179. Woman's Frock.
(From a sketch.)

The material for women's dress is the same as that for the men's; viz., fawn-skins of different thicknesses. The garments are likewise made double, with the hair of the inner piece touching the skin, and that of the other turned outward.

The color preferred is brown with small white spots in the region of the knees. White skins are used but seldom by women.

The woman's overcoat is shaped something like that of the man, only it is comparatively shorter and fuller than the latter (Plate xxv, Fig. 2). It is made of thin summer skins of grown reindeer. The flesh side is worn outside, and is dyed red with alder-bark. The overcoat is adorned with fringe and with patches of fur scattered over the front and back. Sometimes the back is further decorated with strips of colored cloth and rude embroidery (Fig. 179). It shows some similarity to the back of the Samoyed coat pictured by Middendorff.¹

¹ Middendorff, p. 1458.



Fig. 1. Seal-skin Overcoat. Eskimo. Cat. No. $\frac{60}{3553}$.



Fig. 2. Overcoat of a Chukchee Woman, with Tassels. Cat. No. $\frac{70}{7744}$.

The Chukchee.

The Chukchee women wear this overcoat over their usual dress when going for a walk or ride in the open air. It must also be put on in ceremonial dances and performances. The Koryak women wear the overcoat with their ordinary costume, and consider the combination-suit as underclothing.

The Chukchee women sometimes have overcoats made of cotton, but do not wear these so frequently as the men. In the Pacific villages the Chukchee and the Eskimo young women also have overcoats made of thin guts of seal and walrus carefully bleached and quite transparent. They are exceedingly light, and not ungraceful in appearance (Fig. 180). The guts are neatly stitched together in long bands, and the coat is trimmed with tassels and small red tufts of feathers from the heads of crested auks. It is probable that this frock or coat belonged originally to the Eskimo costume. Even now the best are brought from St. Lawrence Island, where seals are plentiful and crested auks also abound.

The Maritime Chukchee, however, have adopted it as a dress for the great fall ceremonial. They believe that the sea-god Kere'tkun and his wife wear overcoats of exactly the same shape. Therefore while bringing sacrifices to Kere'tkun, the whole family, down to the small children, don this garment in imitation of the deity. At all other times these coats are kept in bags.

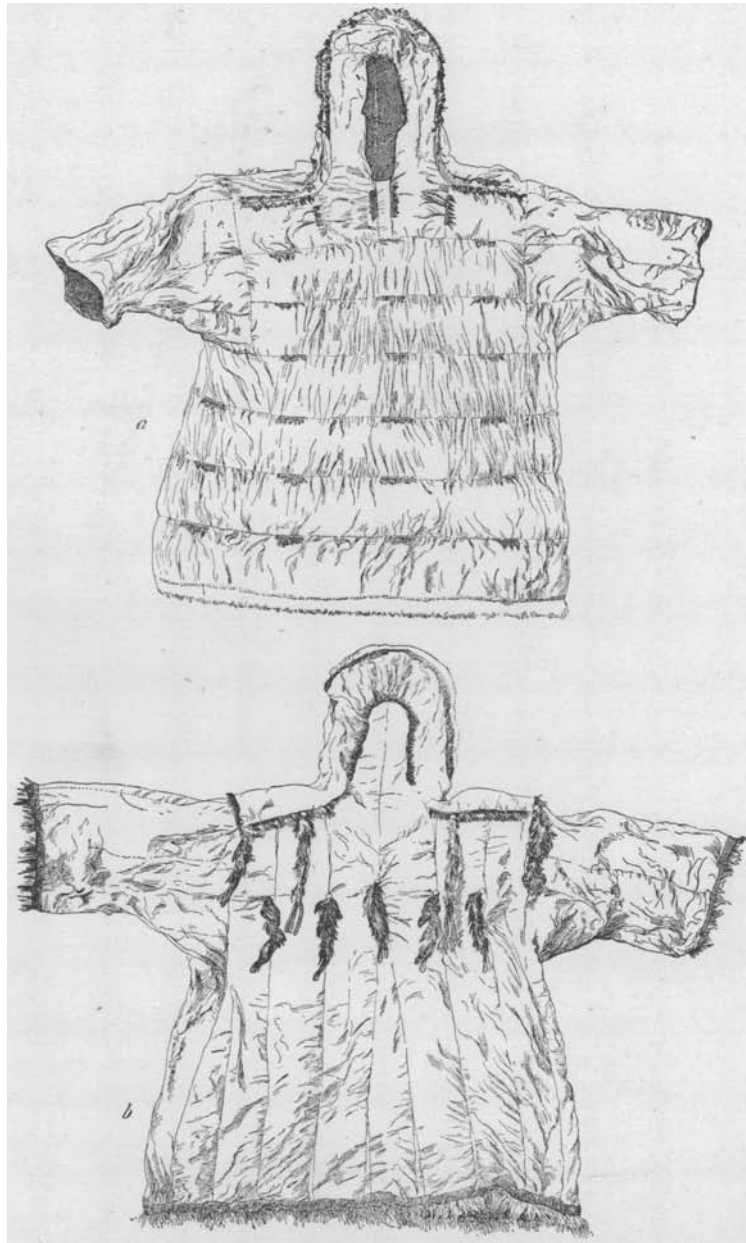


Fig. 180, *a*, *b* (360/885 *a*, *b*). Dress Frocks of Seal-Gut. *a*, Front; *b*, Back. Eskimo.

Women's caps and mittens are quite similar to those of men. The women also tie bright cotton handkerchiefs around their heads, after the manner of the Russians.

SUMMER CLOTHING. — The Chukchee have no special summer garments, properly speaking. Indeed, there is little need for them in those latitudes. Fur clothes are used all the year round; the old, half-worn clothes, which are of little use in the coldest season, being worn during the summer months. Dampness and rain are much more destructive to fur clothing than the dry snows of winter. So the Chukchee, who in mid-winter is clad in clean and handsome furs, in the summer wears the worst clothing he has. Even the well-to-do reindeer-breeders then look exceedingly shabby. The people, who have accustomed themselves to severe cold, apparently consider it not worth while to prepare for the milder, damp weather of the short summer months.

In the summer-time coats are worn either single or double. If single, they are always worn with the hair side in. Among the Reindeer Chukchee, trousers and shoes are made of strongly smoked tent-covering (*rette'm*), which has the advantage of not shrinking after having been wetted.¹ The trousers have the usual cut. The soles of the boots are made of hard thong-seal hide. The boots often have small guards around the front to keep the toes from being hurt by striking against stones and roots that lie exposed during the summer. These shoes are worn with thick grass insoles, but without socks. They fit the foot closely, so that when walking ankle-deep in the numerous bogs and mountain brooks, very little water can remain in the shoe. The soles, moreover, are pierced with two rows of small holes made with a bodkin, to facilitate the outlet of the water. Even after a long walk through water, when a stretch of dry ground is reached, the shoes dry very rapidly under the pressure of the foot. As there are no stockings inside, the feet will be quite dry in half an hour's time.

The summer trousers and boots of the Maritime Chukchee, as has been noted before, are made of seal-skin, which is much more suitable for this purpose than any kind of reindeer-skin. The seal-skin is curried and the epidermis is left on, or the skin is well scraped and blackened with soot. Thanks to the thickness and oiliness of seal-skin, they are nearly impervious to water.

The typical boot reaches to the knee (Fig. 181, *a*), and has clumsy, rather full legs. The large soles are crimped around the edge. This latter process is quite similar to that used by the American Eskimo. Since the Asiatic women have no special boot-sole creasers, they use their teeth for this purpose.

The Koryak women have small ivory knives which are similar to the boot-sole creasers of the Alaskan Eskimo; but, curiously enough, they do not use them in boot-making, but only for tracing patterns on soft curried leather, or cloth for the embroidered fringe of the overcoat. Boots of the style just

¹ Compare p. 220.

described are made on both shores of Bering Sea by the Maritime Chukchee, the Asiatic Eskimo, and the American Eskimo of Alaska. Whaling-crews

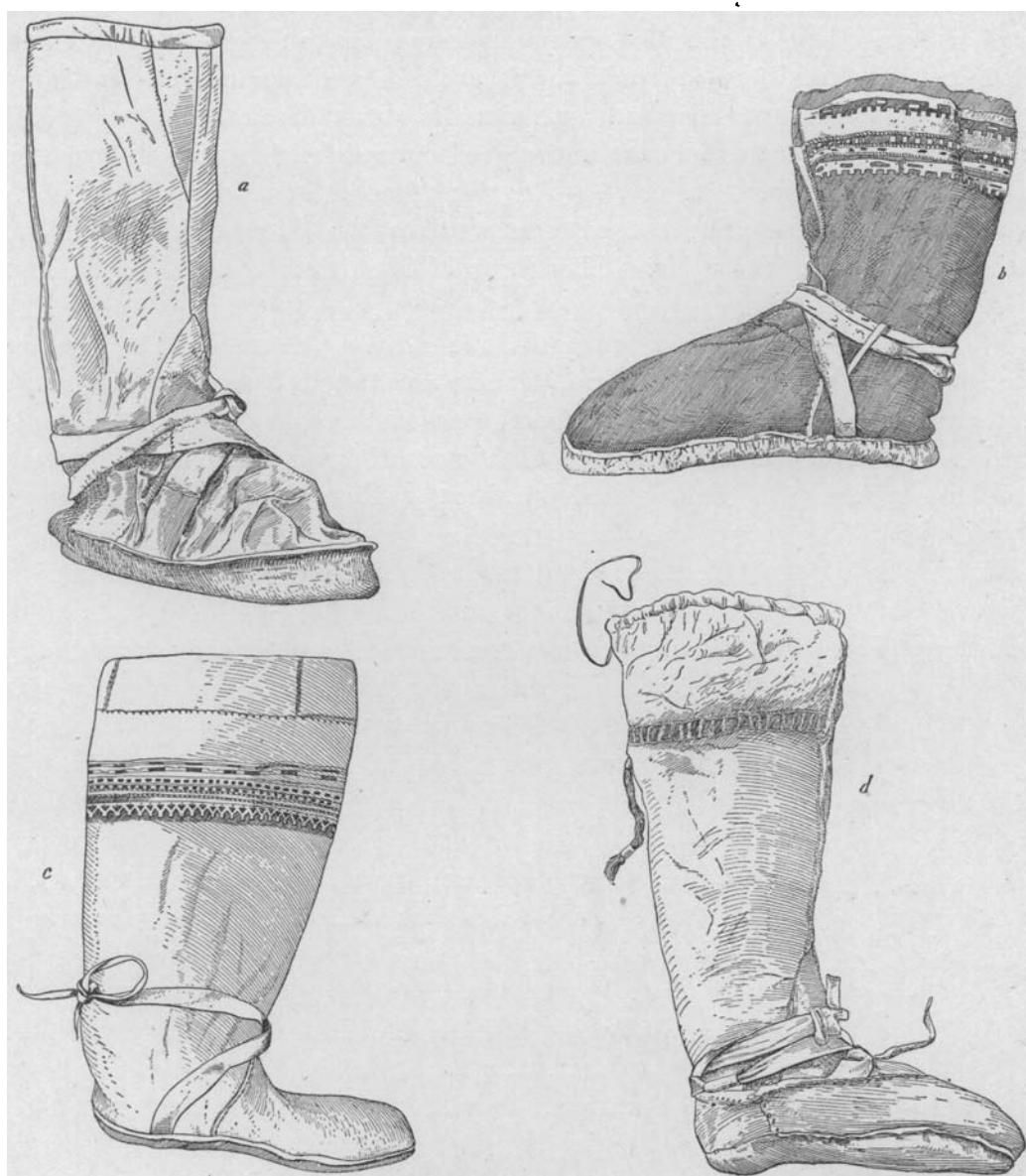


Fig. 181, *a* ($\frac{60}{3500}$), Seal-skin Summer Boot; *b* ($\frac{10}{7627}$), *c* ($\frac{10}{8807}$), Men's "Dry Boots;"
d ($\frac{10}{8848}$), Woman's "Dry Boot."

and miners use them in preference to the civilized form of foot-gear. In Asia they are traded off to the inland camps of Reindeer people, and some of them reach even the market-places of the Kolyma. Some of the seal-skin boots are much longer. Boots and trousers combined, made of curried seal-skin, are occasionally seen. These are useful for seal-hunters and fishermen, who walk constantly through cold water.

Besides the boots and shoes already described, the Reindeer and Maritime Chukchee have the so-called "dry boots" (ke'rgi-pč'e'kit), which are worn at home when resting from the fatigue of travel and work. These boots are of various shapes. One of the most common forms has the legs made of thin slick reindeer-leg skin, and the feet of brown, smoked, and curried rette'm leather.¹ The tops of these are trimmed with narrow strips of crimson-dyed seal-skin or red cloth. Others are made entirely of curried leather and adorned with rude embroidery (Fig. 181, *b*, *c*). The "dry boots" of women (Fig. 181, *d*) bear a close resemblance to the patterns used by the Koryak, the Kamchadal, and the Russianized Yukaghir. This form of boot thus appears to be spread over a very large area.

With most forms of summer boots the strings are attached in the same way as among the Alaskan Eskimo. They are fastened to both sides of the instep, and in tying are crossed in front, passed through two loops placed on each side of the boot near the sole, then crossed behind the heel and wound around the ankle, and finally tied in front. This method of fastening the strings is used for curried reindeer-skin shoes of the Reindeer herdsman, for seal-skin boots of the Maritime hunters, and, among the Koryak, on "dry shoes" and short summer boots made of rette'm.

Mittens (Fig. 182) for summer use are made of seal-skin or curried rette'm leather, and are similar in shape to those worn in winter. Gloves of curried leather are sometimes worn, but are probably copied after Russian and Lamut patterns.

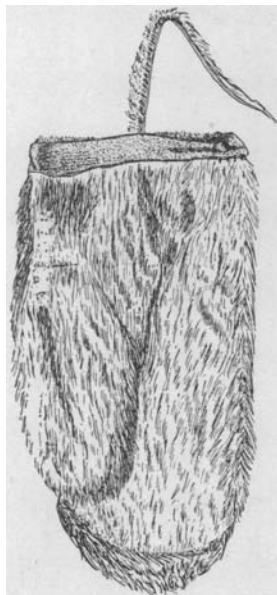


Fig. 182 ($\frac{60}{373n}$). Seal-skin Mitten. Eskimo.

Caps are made either of the thinnest leg-skins of fawns or of curried leather. Large hoods of the latter material, similar in shape to the storm-hoods for winter use, are worn for protection from insects. They are often trimmed with leather fringe around the face and all along the lower edge.

In the spring-time the herdsmen wear light caps without crowns (Fig. 183, *a*). These are more common in the inland camps. The Maritime young men, while foot-racing and indulging in other athletic exercises, sometimes wear crownless caps of a somewhat different pattern (Fig. 183, *b*). A third style is worn by Lamut hunters. This combines the crownless cap with a protector for cheeks and chin. The illustration (Fig. 183, *c*) represents a cap of this last style, seen from the front. Two leather bands — one running across the fore-head, and the other passing under the nose — prevent the cap from slipping off. The pattern in vogue among the Alaskan Eskimo (represented in Nelson's book) does not resemble any of the forms

¹ Compare p. 220.

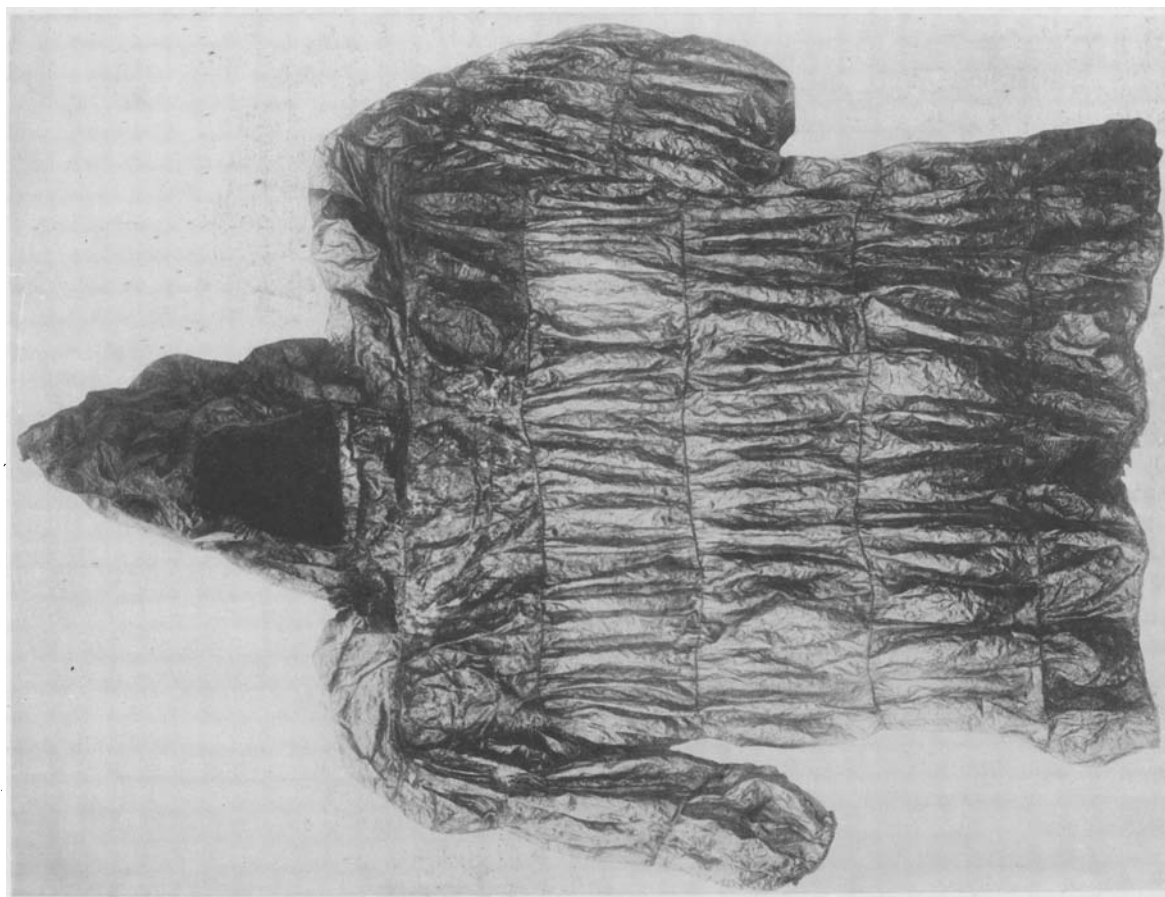


Fig. 2. Overcoat made of Seal-Guts. Cat. No. 772.



Fig. 1. Chukchee Boy's Garment.

The Chukchee.

mentioned, but reminds one rather of the ear-laps used by the Russian cosacks on the Kolyma, which are worn under the parade fur cap to protect



the ears from the cold of winter. These, however, are made of plain cloth, and are not adorned with embroidery, as in Alaskan specimens.

The summer overcoats worn by herdsmen are chiefly made of the skin of reindeer killed in spring, when the hide is thinnest, and the fur is half-shed and in its poorest condition. The hair is scraped off, but the skins are prepared very roughly, because extra care would not show after the coat had passed through the first rainstorm. These overcoats are so stiff that they can be put on only when moistened with water. At the same time, they are very light and convenient for herdsmen.

Overcoats made of rette'm leather (Plate xxviii, Fig. 1), are also worn in summer, but are heavier than those described here. They do not shrink after being exposed to rain, and, if made of the thickest leather, are waterproof to a considerable degree. The Maritime Chukchee and the Eskimo wear waterproof coats made of seal or walrus guts (see Plate xxvi, Fig. 2), quite similar to the American Eskimo patterns. Seal-skin overcoats are used very rarely because of the high value of that material (see Plate xxv, Fig. 1).

CHILDREN'S CLOTHING. — The child's dress is a combination-suit (Fig. 184; Plate xx, Fig. 4), and is called in Chukchee ka'lhê-kê'r ("joint-suit"). It has

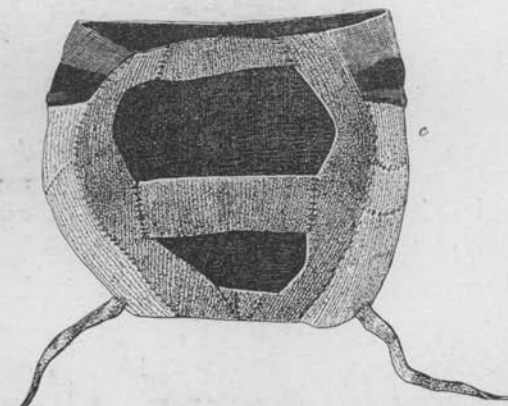


Fig. 183, *a*, *b* (773T *c*), *c* (773T *b*). Crownless Caps. *a*, Reindeer Chukchee, from a sketch; *b*, Maritime Chukchee; *c*, Lamut.

a large hood trimmed with fur. The sleeves and breeches have no openings at all, so that the child's feet and hands are kept warm inside. A square

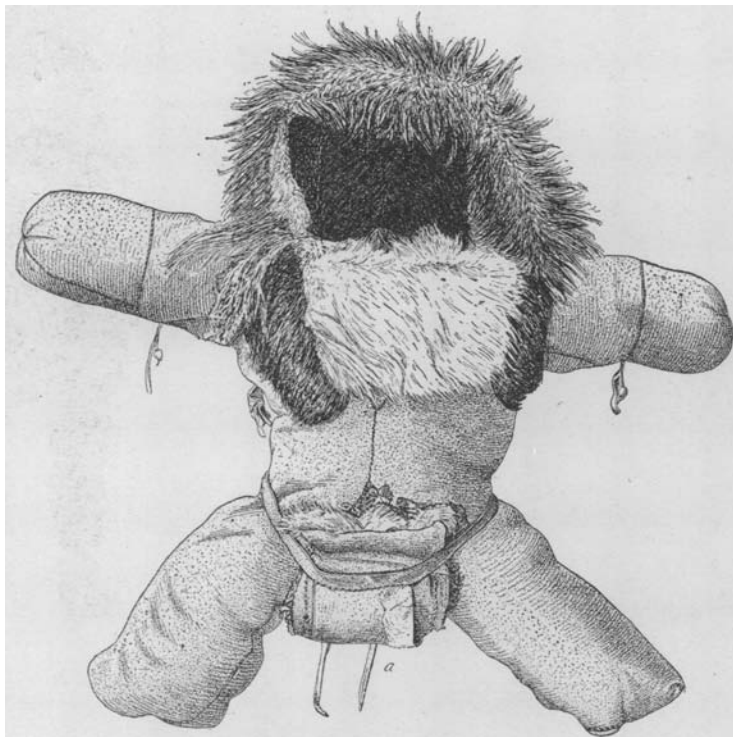


Fig. 184 (a). Infant's Dress.

diaper (ma'ki) is sewed on at the back (Fig. 184, a). It can be tucked between the child's legs, and its ends fastened in front by strings. With small infants this diaper is filled with a mixture of reindeer-moss and hair, which absorbs the excreta and is changed several times a day. This diaper with moss has been adopted by all the tribes of north-eastern Siberia, including the Russians, because of its practical convenience. Its Russian name, *мака* (ma'ka), is taken from the Chukchee.

The combination-suit of new-born infants is made of the softest fawn-skins, the

hair side in. Since at this early age babies are kept out of the open air, the doubling of the suit is unnecessary. A little later double suits made of thicker fawn-skins are used.

The garments of children are trimmed with all kinds of charms and pendants made of beads and strips of leather. As the children grow, the combination-suit undergoes gradual changes. Sleeves are supplied with slits cut on the side some distance from the end (Plate xxvi, Fig. 1). Through this slit the hand may be thrust out and easily drawn back again. When the child begins to walk, the breeches of the suit are also supplied with openings, and short-legged boots of fawn-skin are worn. The use of the breech-cloth is continued after the moss matting becomes unnecessary. Small boys up to about three years of age, walking around with the strings of this diaper untied and dragging behind them in the snow, is a familiar sight in Chukchee or Koryak camps.

At the age of about six or eight years, both boys and girls receive garments of the usual cut; but the latter retain the diaper piece considerably longer, because the regular female garment is not adapted to the child's needs.

LOIN-BREECHES. — The Maritime people, both Chukchee and Eskimo, when in the inner sleeping-room, are accustomed to strip naked except for

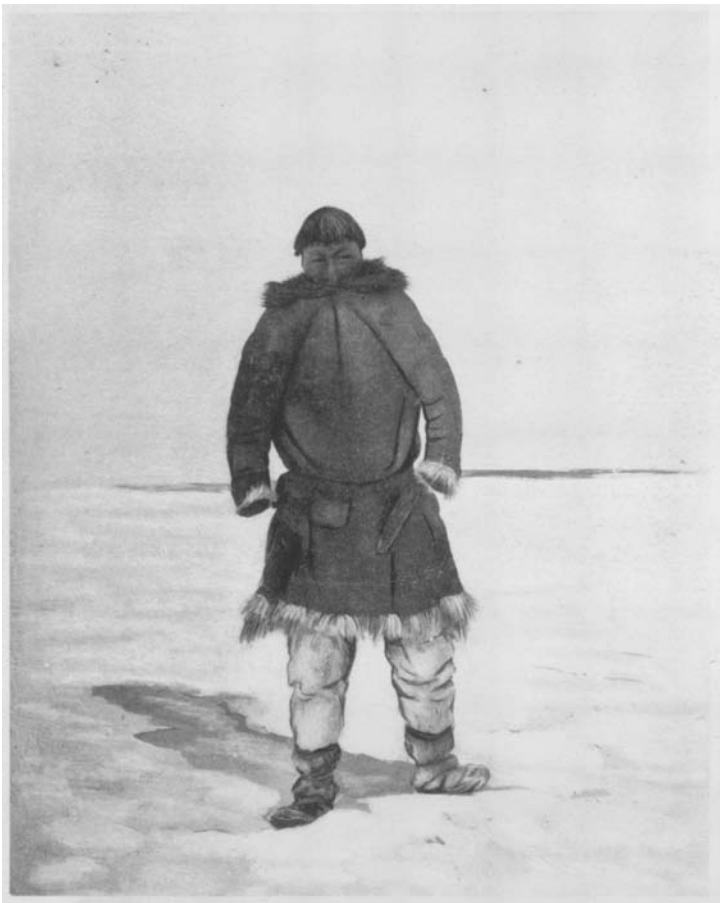


Fig. 1. Chukchee Man in an Attitude of Ease.



Fig. 2. Chukchee Herdsman with Lasso around his Shoulders.



Fig. 3. Chukchee Woman in a Typical Attitude.



Fig. 4. Chukchee Girls dancing.

short loin-breeches. These are used by both men and women. They are made of curried leather (Fig. 185, *a*, *b*) or (in modern times) also of calico or cloth. Many of them are adorned with leather fringe. The men also wear crownless caps (see Fig. 183, *b*). Young boys and girls, when in the inner room, often strip off all their clothing, the girls having only a few strings of beads around their waist as a suggestion of a breech-cloth.

In the Chukchee villages on the Arctic shore, and also in those on the Pacific which lie nearest to East Cape, the inhabitants are familiar with the use of the loin-breeches. The Chukchee in the villages southwest of the Asiatic Eskimo, however, do not wear this garment, and consider it of Eskimo origin. The Reindeer people wear no loin-breeches, since they do not strip naked while in their houses.

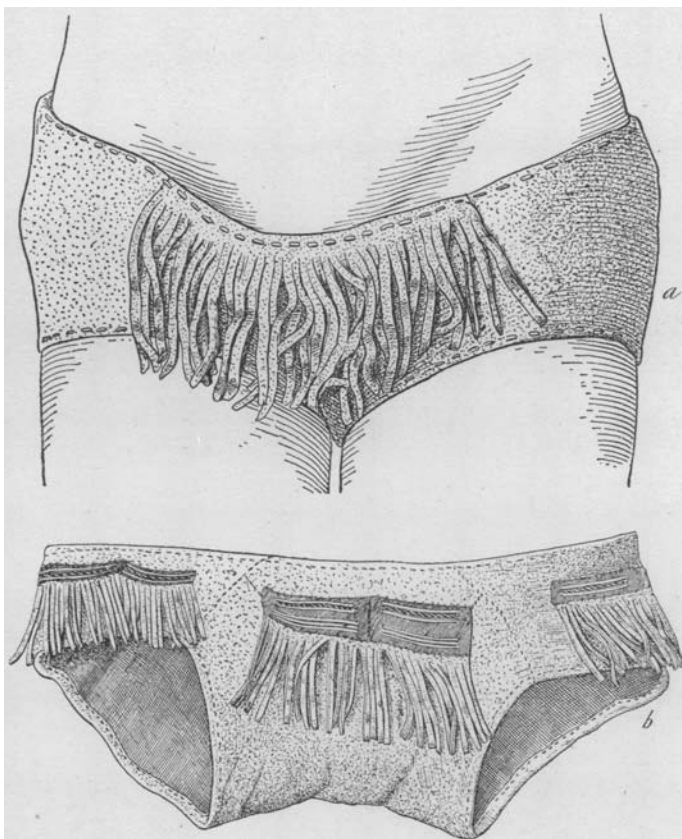


Fig. 185, *a* (ᑕᑭᑭᑭ), *b* (ᑕᑭᑭᑭ). Men's Loin-Breeches.
Eskimo, Indian Point.

HAIR-DRESSING. — Many of the Chukchee men cut the hair on the crown of the head as close as possible, so that it looks almost as if shaven, forming a kind of tonsure (see Plate xxix, Fig. 4). The hair around the tonsure is trimmed to look like fringe, sometimes in a double row (Plate xxx, Fig. 3). On top of the head, on both sides of the tonsure, two long locks are left by some of the men. These locks look not unlike the ears of an animal. The fashion of wearing a tonsure is in use also among the Koryak and among the Asiatic and American Eskimo. Among the Chukchee it is of late years gradually being superseded by the ordinary style of hair-cut.

The tonsure and fringe are resorted to whenever it is thought necessary, for superstitious reasons, to change one's appearance. For instance, a person thus protects himself from the spirits of contagious diseases, or a murderer conceals his identity from the revengeful soul of his victim. From the same motive, usually on command of shamans, men may allow their hair to grow, and plait it in braids after the fashion of women, or leave a few locks on the temples or on the back of the neck, to be plaited into a small braid.

A single white bead is sometimes braided in with the hair at the front of the head (Plate xxix, Fig. 3). This is supposed to serve as a protecting charm, and will be referred to later. On Plate xxix, Fig. 1, will be noticed a small piece of perforated iron.

Women sometimes plait into their hair in front a number of small gay-colored beads merely for ornament. In dressing the hair, the women form two braids on the sides of the head, quite near the temples (Plate xxix, Fig. 2). The braids are adorned with strings of small beads and buttons (see Fig. 188, *g*, *h*, *k*). Married women arrange their braids at the back of the head in a coil, and cover them with a cotton neckerchief in Russian style (Plate xxvii, Fig. 3). Young women and girls leave their braids hanging down over the shoulders, and join their ends together with a narrow band.

The Chukchee allow the mustache and whiskers to grow. Only a few young men pull them out with tweezers, which are probably copied after those of some neighboring tribe. In this respect the Koryak are similar to the Chukchee, while the Lamut and the Eskimo pull out the scanty growth of hair on their faces very carefully.

TATTOOING. — Tattooing is done with a needle, by means of which a thin thread, blackened with soot or with powder, is drawn through the skin. It is practised on girls of ten years or even younger, though it requires considerable endurance (see Plate xxx, Fig. 4). The women of the Reindeer Chukchee are contented with only a few lines (Fig. 186, *a*). Two of these run vertically on both sides of the nose. On account of these tattoo-lines several tales speak of a heroine with a punctured nose as a Chukchee woman *par excellence*. Several vertical lines adorn the chin. Childless women tattoo on both cheeks three equidistant lines running all the way around. This is considered one of the charms against sterility. I know of cases, however, where young women and girls have adorned their cheeks with such lines with no reference to child-bearing. Many women of the Reindeer branch have no tattooing at all.

Of the Maritime people, the Eskimo women, both on the mainland and on St. Lawrence Island, adorn their faces and hands with more or less elaborate tattooing (Fig. 186, *b-e*).

The Chukchee of the Pacific villages south of Indian Point practise tattooing similar to that of the Reindeer people, while in the northern villages more elaborate designs are occasionally used (Fig. 186, *f-h*). In the Arctic villages, so far as I am aware, the tattooing is like that of the Reindeer people.

Men are not tattooed, except in the Eskimo villages and the nearest Chukchee settlements, where a great many have two small marks tattooed on both cheeks near the mouth (Fig. 186, *i*). Nelson suggests that they may be substitutes for labrets, which possibly were worn by the people in olden times.¹

¹ Nelson, p. 52.



Fig. 1. Man practising with a Stone.



Fig. 2. Chukchee Old Man in Heavy Winter Attire.



Fig. 1. Reindeer Chukchee Young Man.



Fig. 2. Eskimo Girl.



Fig. 3. Maritime Chukchee Woman.



Fig. 4. Reindeer Chukchee Man.

The Chukchee.

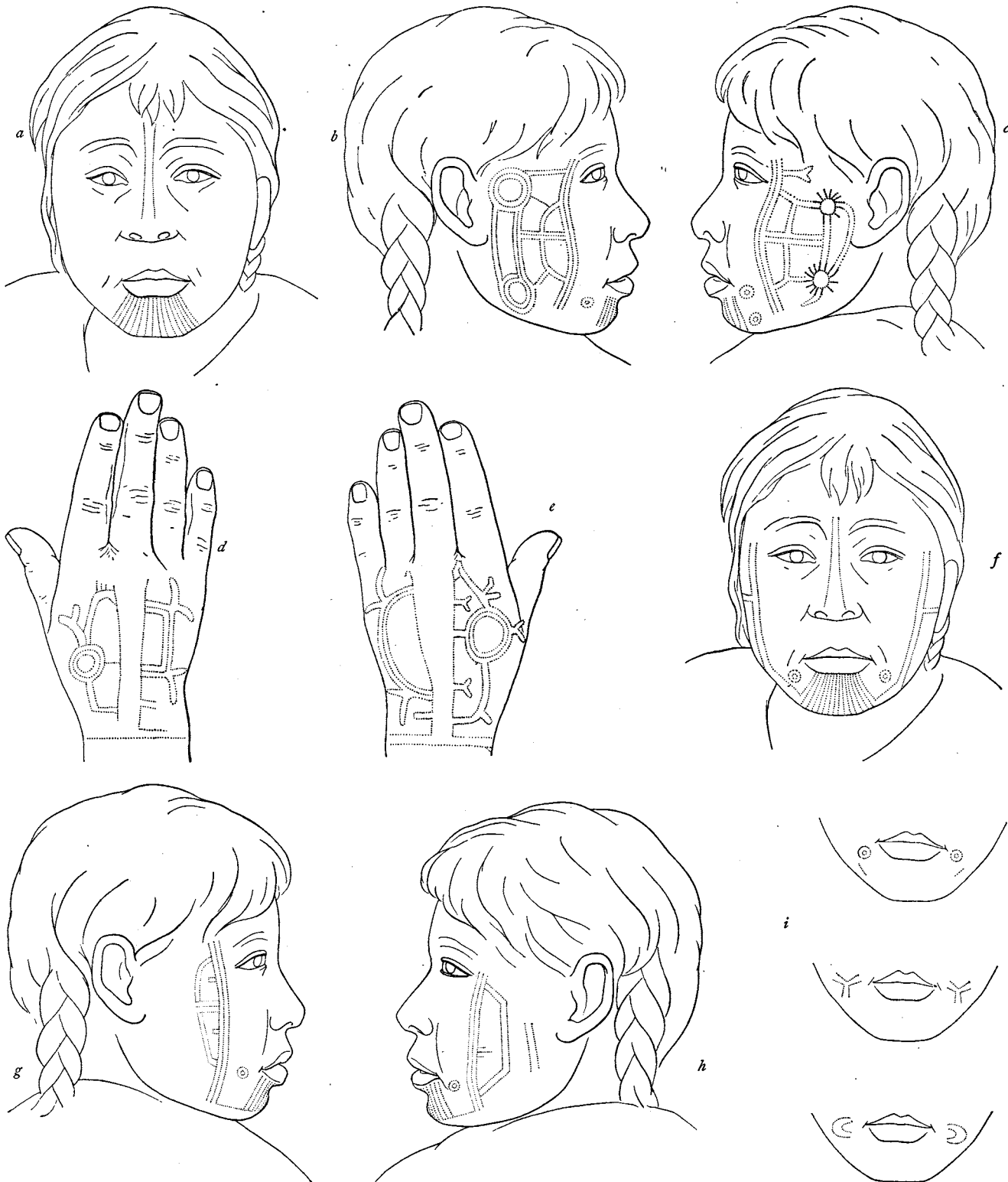


Fig. 186. Tattooing. *a*, Of Reindeer Chukchee Woman; *b*, *c*, *d*, *e*, Of Eskimo Woman; *f*, *g*, *h*, Of Maritime Chukchee Woman; *i*, Of Men (from sketches).

This is probably true, though their position does not quite correspond to the usual position of the labret. These marks are now intended only as charms against spirits. The same is true of other marks, representing human figures, of which I shall speak later. I heard from the Kolyma Chukchee that in ancient times a man, after killing an enemy, tattooed a dot on the back of his right wrist. For each similar performance a dot was added, sometimes in this way forming quite a line of dots running from the wrist toward the elbow. In modern times, among the Maritime people, the hunter who succeeds in killing his first whale or polar bear has a simple mark tattooed near every joint of his limbs.

PERSONAL ADORNMENT. — Chukchee men and women embellish their persons with various adornments of rudest fashion, most of which are regarded as protecting charms or amulets. Most prominent among these are necklaces. The ordinary type is a slender leather band (Fig. 187, *a*), much soiled, often broken in one or two places and retied with ungainly knots (see Fig. 190, *a*). In front is fastened a tiny pouch for the tobacco-quid. An amulet sewed up in a piece of leather may be added, or even a small figure carved of ivory (Fig. 187, *b*). At present, however, beads are considered best suited for this purpose. Some of those who have been baptized add a brass crucifix.

Necklaces of this shape are worn by most of the people (see Fig. 190, *a*), and are put on at an early age. Women wear,

in addition, necklaces made of beads of various sizes and colors, strung together on sinew thread and wound around the neck in several coils (Figs. 188, *a*, *i*; 190, *b*; also Plate XXVII, Fig. 3). These necklaces are often embellished with buttons of brass and porcelain, bottoms of cartridges, heads of brass

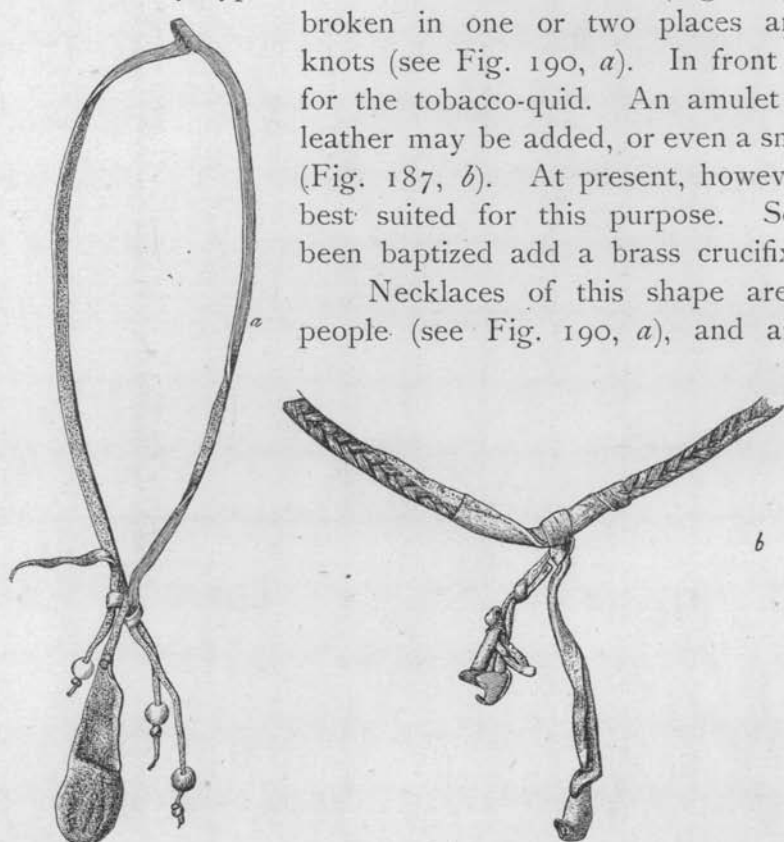


Fig. 187, *a* ($\frac{10}{11}$), Necklace; *b* ($\frac{10}{11}$), Necklace with Ivory Amulet. $\frac{1}{2}$ nat. size.

nails, handles of broken china cups, etc. These trinkets are arranged with poor taste and without any symmetry. Often the necklace of a woman represents a mass of different strings hopelessly entangled. Among the Maritime Chukchee and Eskimo many men wear necklaces of a string of large beads.

The bracelet of the most usual type is made to match the necklace. It is a narrow strip of leather, with a single bead tied to one of the ends

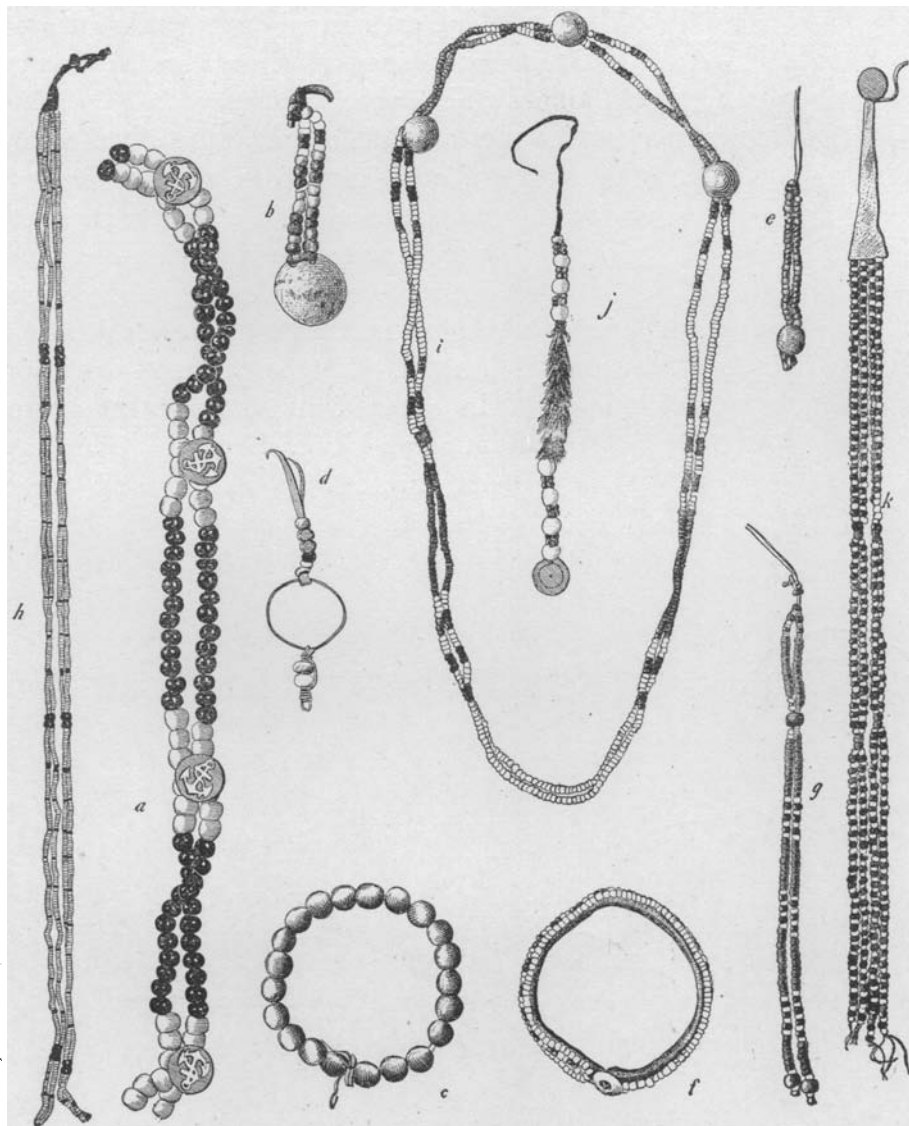


Fig. 188, *a* (Чукч.), Necklace; *b* (Чукч.), Ear-Ring; *c* (Чукч.), Bracelet; *d* (Чукч.), *e* (Чукч.), Ear-Rings; *f* (Чукч.), Bracelet; *g* (Чукч.), *h* (Чукч.), Bead Braids; *i* (Чукч.), Necklace of Small Beads; *j* (Чукч.), Ear-Ring; *k* (Чукч.), Bead Braid. $\frac{1}{3}$ nat. size. *b*, *d*, Lamut style; *c*, Eskimo; rest, Chukchee.

(Fig. 189, *a*; Fig. 190, *a*, *b*). Very few Chukchee are seen without these bracelets on at least one of their wrists. Some add an extra bead or wind the band around twice. Arm-bands of a similar style are also worn (Fig. 190 *a*, *b*). More ornamental bracelets are made of a string of large beads or of small beads sewed in several rows on a strip of leather (Fig. 188, *c*, *f*). Bracelets of iron and brass are also used (Fig. 189, *b*), though these are generally bought from the neighboring tribes. The same may be said of brass, copper, and iron finger-rings (Fig. 189, *c*).

Women often wear around the wrist or over the chest, under their clothing, a string with a few beads on it (Fig. 190, *b*). The men simply use a thin strip of leather or a cord of sinew for the same purpose (Fig. 190, *a*).

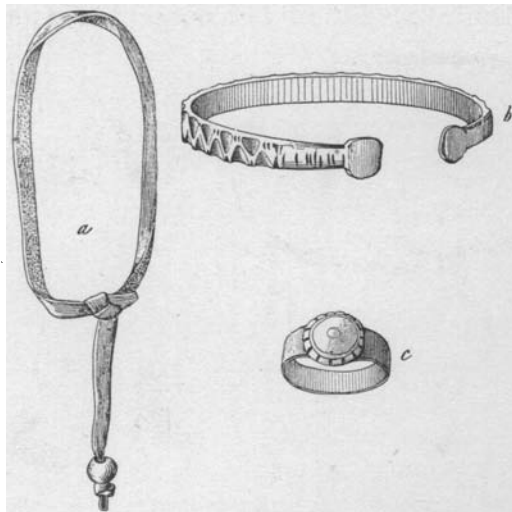


Fig. 189, *a* ($\pi\frac{1}{2}\frac{0}{1}$), *b* ($\frac{60}{333}$), Bracelets; *c* ($\frac{10}{732}$), Iron Ring. $\frac{1}{2}$ nat. size. *a*, *c*, Chukchee; *b*, Eskimo.

Middle-aged men often wear a kind of head-band (Fig. 191, *a*) similar in style to the leather necklace. It is made of a very narrow strip of leather, adorned at intervals with a few large beads and having a few strings of smaller beads hanging from it. These ornaments are also amulets. In olden times the attachments consisted of small blocks of wood. These represented protecting spirits, and were called "wooden manikins" (*otta'-la'ulqaitê*). I

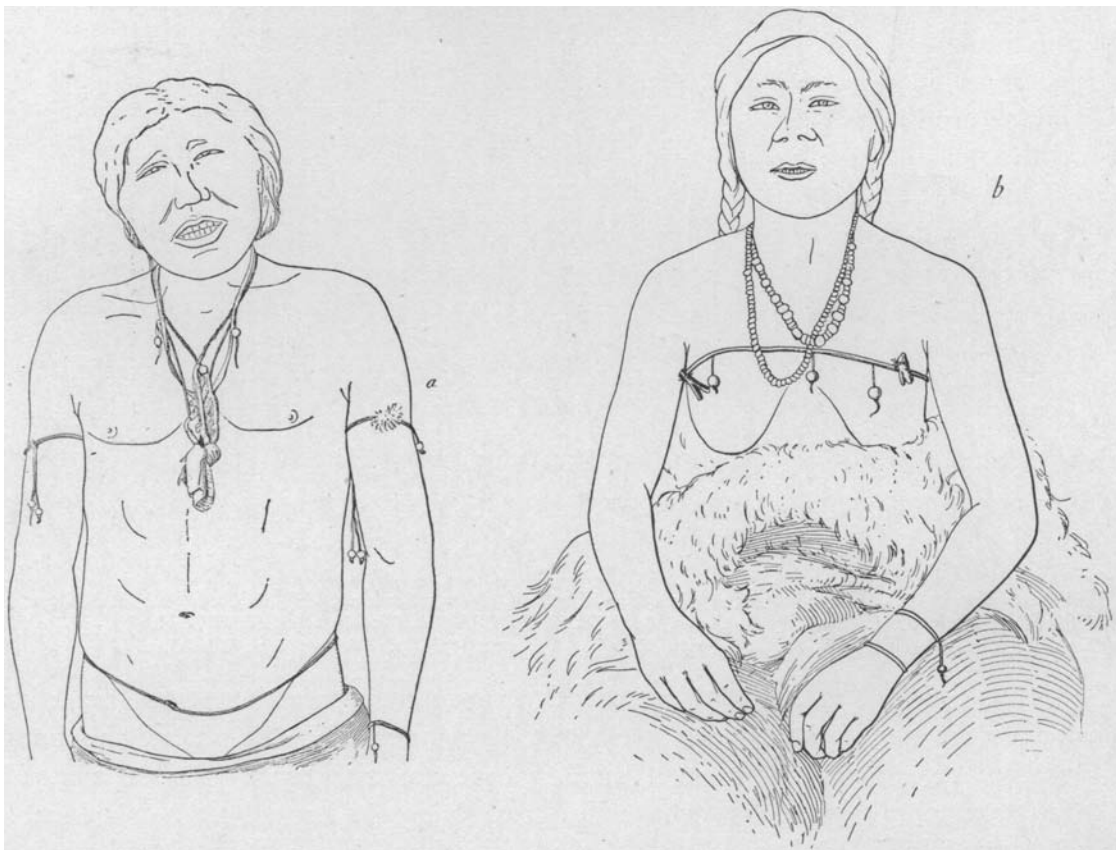


Fig. 190, *a*, *b*. Man and Woman with Necklaces, Arm-Bands, and Breast-Bands. (From photographs.)

saw one head-band of this kind worn by an old man among the Reindeer people on the Wolverine River. Head-bands with wooden images attached are

mentioned in several tales. Similar wooden manikins, forked at one end, may be seen on the breast-band of the women (Fig. 190, *b*). Their shape represents one of the typical images of guardian and assistant spirits, which are much used by the Chukchee. They will be discussed at length, in Chapter XIII.

Ear-rings are usually made of small beads strung on leather or sinew (Fig. 188, *e*, *j*). A larger bead or a disk of silver battered out of a small coin is added at the end (Fig. 188, *b*). Ear-rings of thin silver wire in combination with a few beads strung on leather (Fig. 188, *d*) are also used. The latter two forms are characteristic of the Lamut. Ear-rings of silver wire are similar to those of the Gilyak figured by Schrenck.¹ Ear-rings are fastened by passing a string through a hole in the lobe of the ear and tying a knot in the end of the string to prevent it from slipping out (see Plate xxix, Fig. 3). This method of holding the ear-rings in place is used by most of the tribes of this region. Even the ear-rings of thin silver wire are thus fastened to the ear with a short strip of leather. For greater safety the two rings are often joined by a fine thread passing around the back of the head.

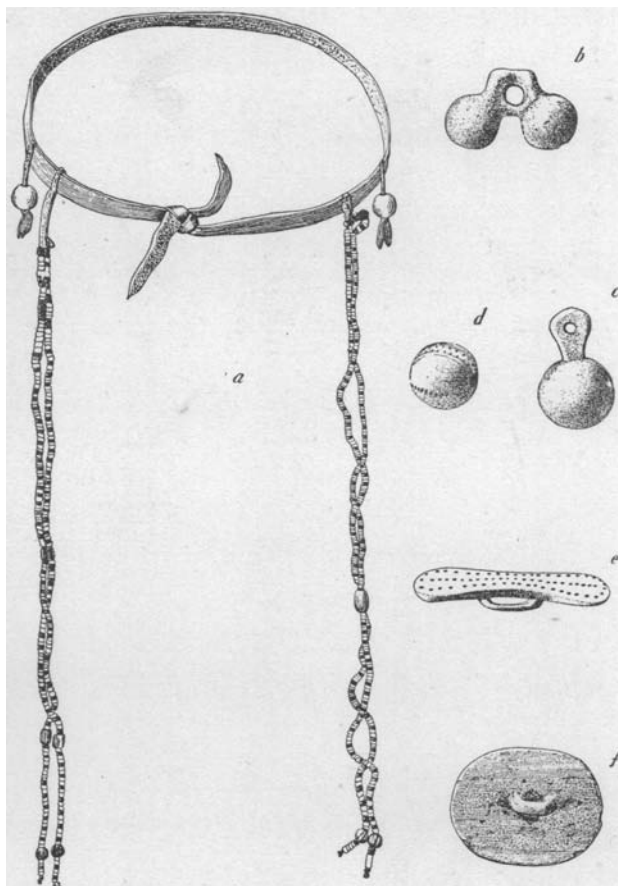


Fig. 191, *a* (710/17), Head-Band; *b* (710/17), *c* (710/17), Ivory Ornaments; *d* (710/17), Ivory Bead; *e* (710/17), *f* (710/17), Ivory Buttons. *a*, $\frac{1}{2}$ nat. size; all others, $\frac{1}{2}$ nat. size.

Many men also wear ear-rings, generally by order of a shaman. These, however, are sometimes fastened simply with a loop slung over the ear.

Single beads on long leather strings are sewed to the clothes at various places, serving at the same time both as a charm and as an ornament. Women frequently have a long pendant dangling from the front of their bodice down as low as the knees.

In earlier times ivory beads and pendants were used for ear-rings and other ornaments. I could find but a few of these, all of which are very carefully made, and seem to be only imitations of glass beads (Fig. 191, *d*). Others (Fig. 191, *b*, *c*) resemble the ivory ornaments for women's jackets used

¹ Schrenck, II, Plate xxix, Fig. 6.

by the Central Eskimo.¹ It is uncertain whether, before the arrival of Europeans, the Chukchee used necklaces made of small objects strung together.

I have heard that necklaces of the vertebræ of fish were worn by children. One of the dolls I collected had a necklace of tiny stones of irregular form tied together on a sinew thread.

Buttons are little known to the Chukchee, since their garments do not require any. Some buttons carved out of ivory are used for clasping belts or for buttoning pouches and work-bags (Fig. 191, *e*, *f*). They may be compared to the buttons belonging to the Gilyak, and illustrated by Schrenck.²

SNOW-GOGGLES. — Snow-goggles of leather and wood (Fig. 192, *a*, *b*) are used by the Chukchee, the Asiatic Eskimo, the Lamut, and other tribes

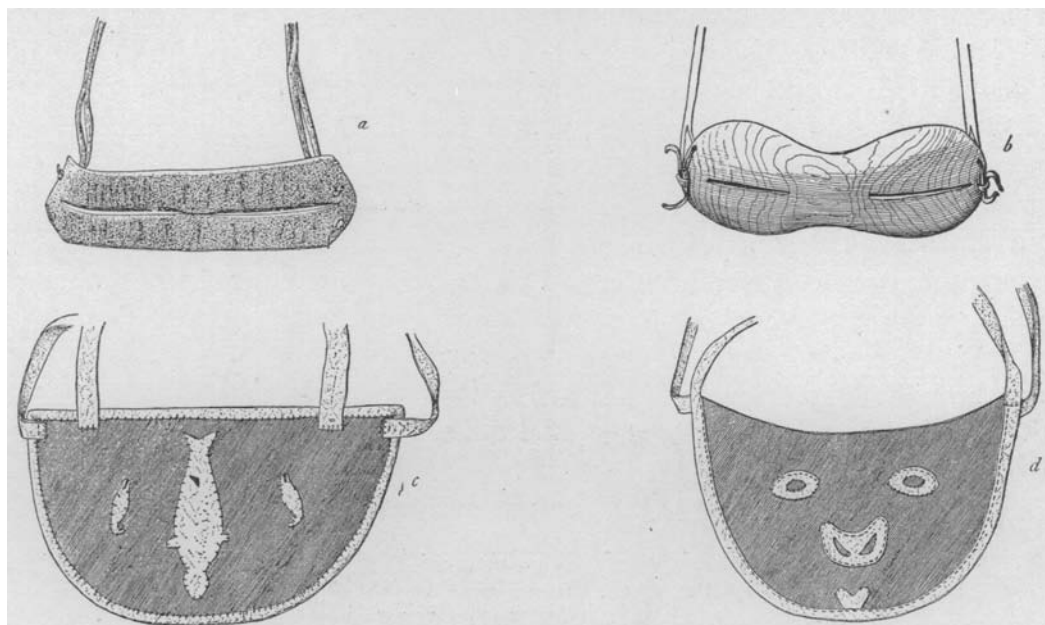


Fig. 192, *a* ($\frac{10}{11}$), Leather Snow-Goggles (length, 14 cm.); *b* ($\frac{10}{11}$), Wooden Snow-Goggles (length, 15 cm.); *c* ($\frac{10}{11}$), *d* ($\frac{10}{11}$), Eye-Shades (width, 22 cm., 23 cm.). *a*, Chukchee; *b*, Lamut; *c*, *d*, Eskimo.

of northeastern Asia. They have narrow slits similar to those in the specimens from the American Eskimo. The Lamut sometimes fashion snow-goggles of the same shape out of thin sheets of silver hammered out of silver coins. Nowadays snow-goggles of Yakut make, covered with a net of horsehair, are bought from Russian traders. Glass goggles from civilized countries are also eagerly purchased. The Chukchee sometimes imitate European snow-goggles, but in place of smoked glass or hair-netting they use round bits of iron pierced with numerous holes.

I once saw among the Reindeer Chukchee an eye-shade used by a man who had weak eyes. It was made of thick leather, and fastened with strings

¹ Compare Boas, Central Eskimo, Fig. 509, *a*, p. 555; and Boas, Baffin-Land Eskimo, Fig. 75, p. 52.

² Schrenck, II, Plate XXIX, Figs. 4, 5.

around the back of his head. Among the Maritime people, owners of boats, who usually sit at the stern steering, put on eye-shades during their hunting-expeditions. The harpooneer also wears an eye-shade. The eye-shades which I collected belong to the Asiatic Eskimo. All of them represent masks at the same time. One has on it the image of a killer-whale and two walruses (Fig. 192, *c*); another, the face of a walrus without tusks (Fig. 192, *d*); a third has two eyes, which are said to represent whale's eyes.

SNOWSHOES, STAFFS, AND ICE-CREEPERS. — The snowshoes used in north-eastern Asia are of two varieties, in accordance with the character of the ground on which they are to be used. Those used within the forest-border, where the snow is soft and abundant, are made of long, thin boards. Those used by the Yakut are narrow, and are not covered with skins. They are therefore called "bare snowshoes." Those used by the Lamut are broader, and covered underneath with slick reindeer-leg skins, the hair turning backward to assist in ascending hills and yet glide along smoothly on the level or down grades. Their length is from 125 cm. to 130 cm.; and breadth, from 24 cm. to 26 cm. The Kamchadal snowshoes are more clumsily made, and covered with seal-skin, which does not serve nearly as well as reindeer-skin. Snowshoes covered with leg-skins (Fig. 193, *a*) are known also among the Reindeer

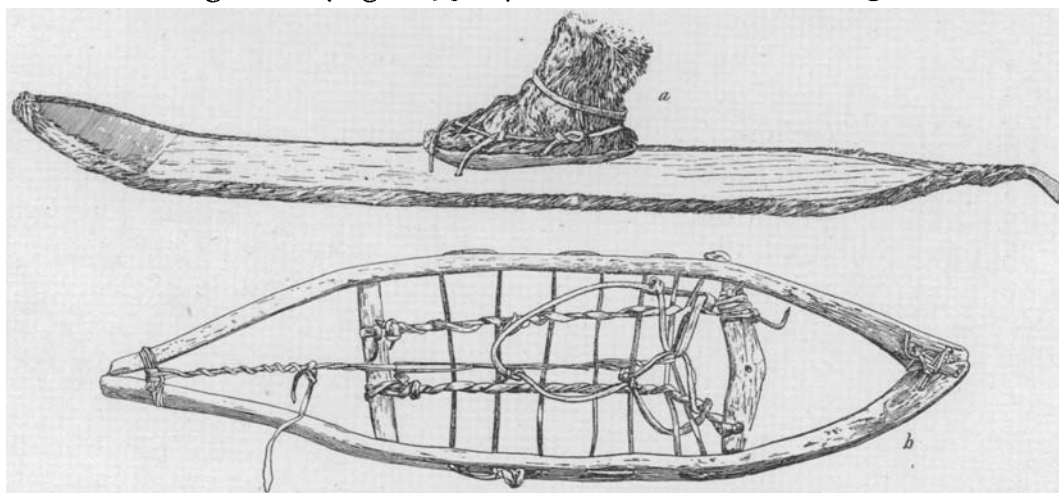


Fig. 193, *a* ($\frac{119}{80\frac{1}{2}}$), Snowshoe covered with Reindeer-leg Skin (length, 128 cm.); *b* ($\frac{119}{80\frac{1}{2}}$), Netted Snowshoe (length, 70 cm.). *a*, Lamut make; *b*, Chukchee.

Chukchee on both the Arctic and the Pacific shores (see Plate xxx, Fig. 2). They are bought either from the Lamut or from the Russianized natives, and are used in winter for travel in the forests. They are very useful in hunting reindeer on the hard-crusts of snow, because their large surface prevents the foot from breaking through the thin crust of the snow.

Nordenskiöld¹ obtained a specimen of these snowshoes from the Arctic Chukchee, and considered them hopelessly clumsy. He says that he could

¹ Nordenskiöld, II, p. 101.

not even admit representing an

any possible use for them until he saw a Japanese picture of an Ainu man driving a reindeer while on such snowshoes (i. e., the snowshoes served as a sledge). The title of the Japanese book from which the picture is taken is given by Nordenskiöld as "Journey to the Northern Part of Japan (Yezo)." It is to be regretted that no more details are given. It is almost needless to say, that, however attractive the picture may be on the pages of the Japanese book, it is altogether fantastic. Ainu do not drive reindeer either with snowshoes or in any other way. My own experience and the opinion of the natives both contradict Nordenskiöld when he speaks of the clumsiness of these snowshoes. The Lamut, who are the best snowshoe-runners in northeastern Asia, achieve wonders with this particular kind of shoe. Several times I had Lamut runners wearing such snowshoes who accompanied my dog-team for miles and miles without any visible strain. The dogs ran in the deep, hard-beaten track. The Lamut runners glided by their side over the surface of the snow. Races on such snowshoes are also run among the Lamut runners, in which they attain a speed equal to that of the fastest race-reindeer.

The other variety of snowshoe, and the one typical of the Chukchee (Fig. 193, *b*), is the so-called "raven feet" (ve'lv-ye'hít; in local Russian, лапки, "paws," which is evidently a translation of the same term). They are made with a wooden frame, rather small in size (60-70 cm. by 16-20 cm.), and interlaced with thongs. The frame is rounded between the two pointed ends. The foot rests on the middle of the net, and is fastened with a loop. The loop for the foot is the same on both kinds of snowshoes.

Netted snowshoes are used by natives when walking on uneven ground, where the other kind of shoe would be quite useless. Herdsmen, for example, wear them when tending the reindeer in the pastures, where the snow is scraped and ploughed up by the feet of the animals. Seal-hunters also wear them in walking on the outskirts of the rugged ice.

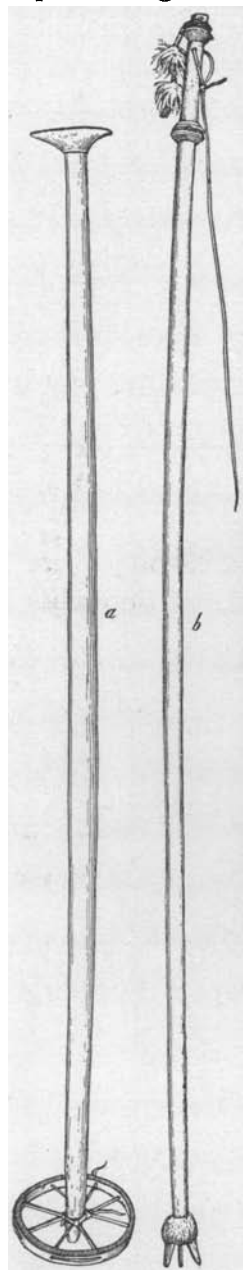


Fig. 194, *a* (ᑭᑭᑭᑭ). Staff of Snowshoe-Runner; *b* (ᑭᑭᑭᑭ), Staff of Foot-Racer. Length of Staffs, about 125 cm.).

Snowshoes having a similar name are in use also among the Koryak. Their construction is essentially the same, only the frame is more elongated. Snowshoes of this kind are also well known in America among the Eskimo and the northern Indians from the Pacific to the Atlantic Ocean.

The runner on snowshoes steadies himself with a long staff. On the end it has a small hoop supported by spokes of whalebone or thong (Fig. 194, *a*),

which prevents it from sinking through the snow. The staff with the hoop is well known among the American Eskimo. In Asia, however, it is used chiefly with the broad snowshoes in walking on soft snow. When travelling with netted snowshoes on hard ground, there is much less need for support. The staff of this form is known through all the Arctic country of the Old World as far west as Lapland.

Foot-racers and even herdsmen in the summer-time use a short staff (Fig. 194, *b*), the lower end of which is tipped with spikes made of antler. Often a couple of nails serve for spikes. While running, the man thrusts the staff as far ahead as possible, and supports himself on it, trying to lengthen his steps. Instead of this staff, runners will often use plain wooden sticks.

Another kind of staff is used in climbing mountains. It has a head of antler or iron, with two large, slightly curved spikes not unlike walrus-tusks. These spikes are used for catching to rocks in the most difficult places. This staff is used mainly among the Kamchadal in hunting sheep or bears on the rugged mountains. A similar form is found among the Lamut hunters. I have also seen specimens among those Chukchee of the Kolyma who live farther to the south.

Chukchee and Koryak, when walking over smooth ice, use ivory creepers identical in shape with those of the American Eskimo (Fig. 195). These are fastened to the sole crosswise to prevent slipping.

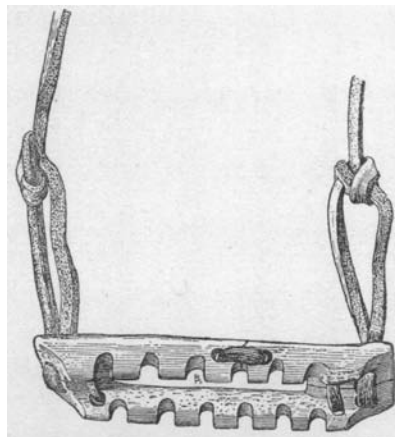


Fig. 195 ($\frac{60}{3887}$ b). Ice-Creeper.
Length, 10 cm.

XI. — GAMES.

ATHLETIC SPORTS. — The Chukchee are fond of all kinds of sports, and indulge in them whenever opportunity is offered. Many of their games are connected with religious ceremonials, as will be described later.

Among the Reindeer Chukchee the chief sport is reindeer-racing. Once a year almost every camp arranges a race. These races are held in circuits, so that the whole neighborhood can visit all in their vicinity. The principal man of the camp, who figures as the host of the race (*ire'lin*), has to supply the prize, which varies from a couple of leaves of tobacco to a beaver-skin or a pack-sledge reindeer. The prize is tied to a tree-branch, which is stuck into the snow. For this reason it is called "the thing stuck in" (*ri'pyo*). The larger the prize, the greater will be the concourse of people at the race, and the longer the stretch to be covered by the contestants, sometimes ten miles and upwards.

There are no particular rules about starting the race. The participants gather in front of the prize in an irregular group. The host gives the signal, and all start off. While some keep to the road, others strike off through the deep snow, trying to intercept the leaders. The race is to a distant point and back again. Until the contestants are on the return stretch they spare their animals. The race begins in earnest on the way back, and becomes very exciting as they near the prize.

The onlookers are very enthusiastic, and meet the racers with encouraging cries or hootings. The winner snatches the prize, and the race is over. Often one or two minor prizes are also put up by other people of the camp. These are taken by the next comers in order. Sometimes there is also a small stake for the last comer, partly in derision, partly (according to a native saying) "to console him for his disgrace." The host takes part in the race, but it is regarded as discourteous if he seriously tries to beat his guests out of the prize. If he comes in first, he will not touch the prize; or, if there is more than one prize, he will take the smallest, leaving the others for his guests.

The Chukchee are passionately fond of reindeer-racing. In the spring, which is the usual season for the sport, some of the young people undertake long journeys to try their reindeer against a possible rival. Doubtful races often lead to quarrels, and even to feuds. I had a chance to observe one of these in 1896 in the East Anui camps on the Wolverine River. Two rivals of several years standing met in a race. When one had almost reached the goal, one of his reindeer suddenly stumbled and fell, thus allowing the other man to capture the prize. A quarrel ensued; and the winner, who had the

reputation of being a shaman, was accused of laming the reindeer by means of secret incantations. The quarrel was quieted down by the other guests. After two days the loser suddenly died. Of course, the other one was accused of using further incantations to kill his rival. He fled in the night to his native country, about five hundred miles away. Two brothers of the dead man followed his tracks in the morning, but were unable to overtake him. It was understood, however, that one of them would seek the supposed criminal the next fall in order to settle the blood score.

The Maritime Chukchee have races with dogs, or, in summer, with skin boats; but both are of little consequence compared with the racing-contests of reindeer-breeders. Chukchee dogs, as I have already mentioned, are of inferior quality. Paddling in skin boats is rather too irregular to allow a spirited contest for any long distance. The Russianized natives frequently arrange private dog-races, with a bet to be paid to the victor. In these races the contestants are allowed to use any means, fair or unfair, even to cutting the traces of their adversaries. The excitement approaches that in reindeer-races.

Foot-races and wrestling usually take place at the reindeer-race meets. The foot-race follows the reindeer contest, over the same track through the snow loosened by the hoofs of the deer. The race is always for a long distance, and often covers several miles. The participants remove their outer clothes, or else they take off their underclothes and wear the outer trousers and short boots without stockings. They carry staffs or sticks, which they rest on the ground to assist them in taking long steady strides.

The Chukchee are not so swift of foot as they are enduring, especially the members of the Reindeer division. I doubt if very many runners among civilized peoples could run several miles, through loose deep snow, wearing heavy fur clothing.

A fair amount of swiftness combined with endurance, however, is peculiar to all tribes of the area described. Some of the Chukchee herdsmen are able to overtake a reindeer-buck running at full speed, while the swiftest of the Lamut hunters claim to be able to keep up with a wild reindeer fleeing for its life. The Russianized Yukaghir of the Kolyma are able to keep pace with a swift-running dog-team for ten or fifteen miles. I saw one man run behind a dog-sledge for forty miles. At the end the dogs were only half an hour ahead of him.

On the spring journey of the chief official of the Kolyma from Nishne-Kolymsk to the Anui fair, the dog-driver is picked out from the best young men of the country. The journey is about two hundred and fifty versts (a hundred and sixty-six miles) long, and is usually covered in about twenty-two or twenty-four hours. The road has many difficulties, being full of long inclines and running through several clearings on the woody hills. The driver has almost no chance to sit down, and has to run all the time by the side of the

swiftly driven sledge, keeping it from tipping over. After twenty-four hours of this painful exercise, the driver is often so tired, that, on reaching the place, he reels like one drunk, and has to be helped into the house.

Of two drivers who took part in the dog-race of 1869, which I mentioned before, the victor so impaired his health by the strain that he never recovered.

The young girls and women among the Chukchee have foot-races of their own, which they are as eager to win as the men. Often foot-races are run by boys, who compete with fellows of their own age.

Wrestling usually takes place after the foot-race, because the wrestlers strip naked to the waist, and they like to have their bodies heated by the previous exercise. If there is no foot-race, the wrestlers will run a couple of miles to get warmed up for their contests. While the couples are wrestling, the rest of the people sit or stand around to judge the matches. Sometimes two or three pairs wrestle at the same time. After stripping, the men, just before the contest, rub their bodies all over with snow.

The rules of the contest require that one man shall assume a posture of passive defence, and the other try to throw him. The first is called "motionless" (u'lvilIn); the second, "the attacking one" (viri'tilIn). If the latter proves unsuccessful, the positions are reversed. Finally there usually follows a rough-and-tumble scramble, in which each of the contestants tries every means to get the better of his adversary. Custom requires that one of the parties be made to touch the ground with both of his shoulders, and kept in this position in spite of his struggles. Three bouts are regarded as settling the match, but the vanquished one often desires to keep on trying his chances. Frequently he becomes greatly excited, and then a violent scuffle may ensue. The victor has to meet the winner of any other contests: but, lest he should become too tired, he will step back after a few matches and return in a half-hour or so to try his chance once more. This continues until the best man is determined, and he takes the stake if there is one. The passions are aroused quite enough, however, without stakes, so that prizes are seldom put up for this sport. Several Chukchee tales describe a peculiar wrestling-match that takes place on a spread walrus-skin, slippery with blubber and made dangerous by having sharp splinters of bone or wood stuck around its edge. Similar details are mentioned also in Eskimo and Indian tales.¹

A wrestling-match is the usual method of settling quarrels among the Chukchee. A man having a grudge against another one will either openly challenge him for a match or he will seek a chance to encounter him in a general contest. In either case, the match sometimes ends in bloodshed, or even death, if the spectators do not interfere in time.

Women also wrestle, but their matches generally end in scratching and pulling hair. Members of alien tribes are also allowed to take part in all of

¹ Bogoras, *Anthropologist*, p. 617.

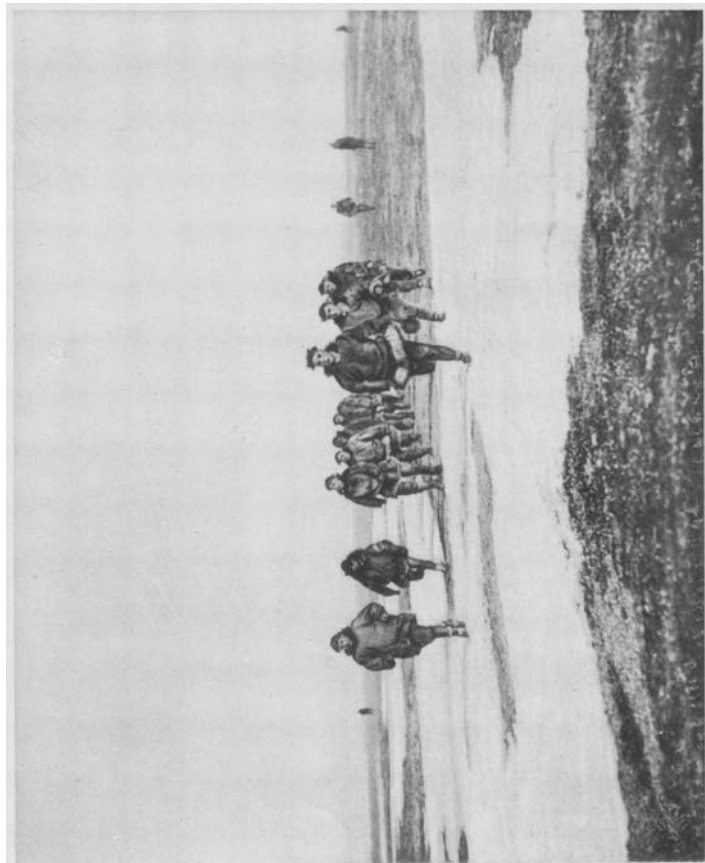


Fig. 1. Foot-Race in Uñi'sak.

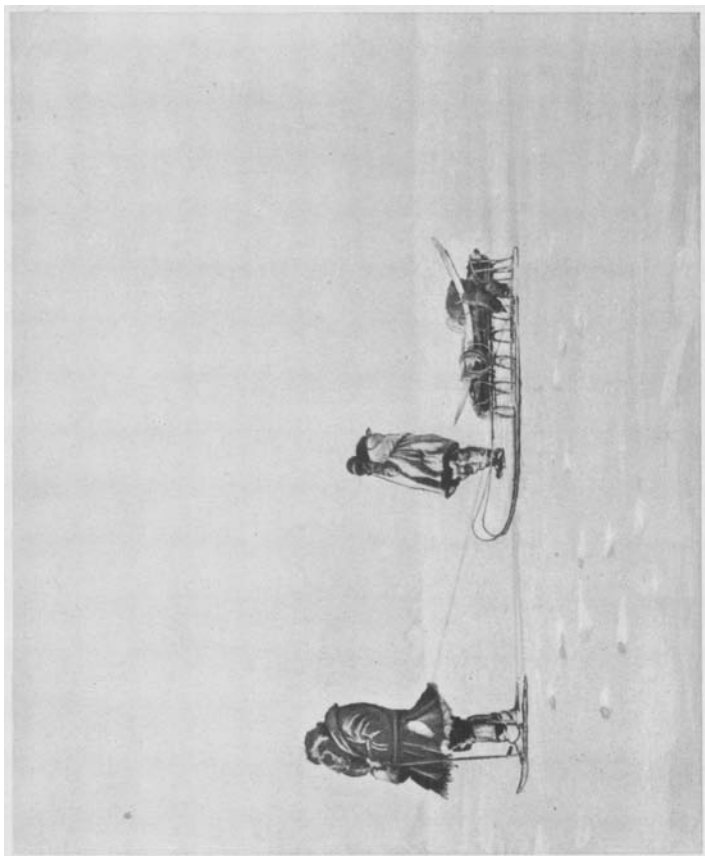


Fig. 2. Maritime Chukchee travelling on Snowshoes.

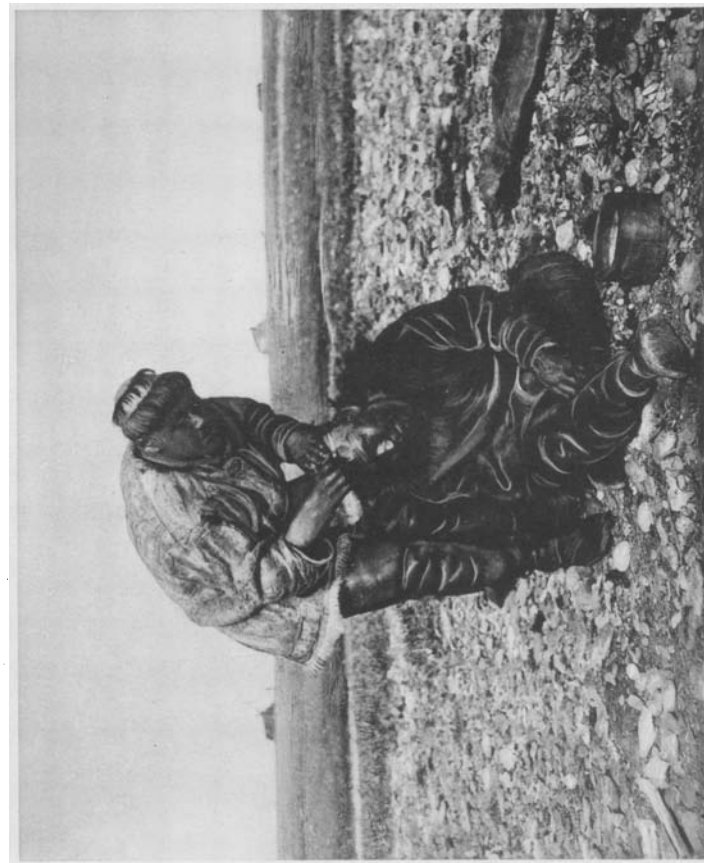


Fig. 3. Shaving. Eskimo.



Fig. 4. Tattooing. Eskimo.



Fig. 1. Wrestling Match at Uñi'sak.



Fig. 2. Eskimo Girls dancing.

the sports described; but if a stranger should be so imprudent as to take the best prize, the people are likely to resent it, and might even try to retaliate in some way.

The Maritime Chukchee and Eskimo have foot-races (Plate xxx, Fig. 1) and wrestling-matches (Plate xxxi, Fig. 1) of the same character as those above described, as well as nearly all the other sports which we shall now take up.

I have already noted the fighting-contests of former times and the physical exercises with stones (Plate xxviii, Fig. 1) and trunks of trees.¹ In all exercises long and continuous running plays the most important part. The common expression for these exercises is "becoming lighter of foot" (*inetvi'rkĭn*). Even at the present time, if a young man is vanquished by an unfriendly rival in a wrestling-contest, he will sometimes train for a whole year, dragging heavy loads, running, carrying burdens, etc., in order to acquire more agility and strength for another contest. Cases of this kind are often mentioned in tales. For instance, in the legend of Talo² it is stated that the hero lies idle in his tent for about a year, eating an enormous amount and storing up fat and muscle. Then suddenly he starts training. At first he is so slow in dragging a small sledge behind him, that the moving train of his family gets far ahead of him, and he reaches the camping-place only late the next morning. He perseveres, however, in his exercises, and from day to day increases his speed and the load he is drawing. On the twentieth day he is able to pull six loaded sledges, and still keep ahead of the moving train. All this time he eats nothing and does not enter his tent, sleeping for only a few hours each night out in the open on the snow. After that he practises other exercises. For whole days he will throw his lance or jump over the tents, across the lakes, or over large forests from one border to the other, until he feels ready to conquer the *Ta'n-nĭt*.

Tossing in blankets is a kind of religious performance with the Maritime Chukchee and Eskimo, and will therefore be described later, in the chapters dealing with this subject. Other amusements of less importance are practised by grown people and children whenever occasion presents, without prizes being offered and without general gatherings.

Jumping-matches are often arranged on the spur of the moment by young people in camps or villages. Each tries to make the longest jump possible, keeping his heels together, and getting a start by a few preliminary jumps.

Arm-pulling, finger-pulling, neck-pulling, and stick-pulling are practised in pairs. For these the contestants lock arms or fingers, have a rawhide loop passed around their necks, or put their feet sole to sole and grasp the same stick, holding it horizontally above their knees. Then they strain and pull until one gives way.

Young women amuse themselves with a game similar to our skip-rope.

¹ Compare pp. 33, 161.

² Bogoras, *Chukchee Materials*, p. 364.

Two women hold the ends of a line, and swing it around regularly, while a third jumps over the middle of it, keeping her knees and heels together. I have not noticed any particular rules about the order of the jumps, like those found by Parry among the Iglulik Eskimo.¹

Another game is a contest in crawling on the knees, which is rather difficult for women, on account of their clumsy breeches. In one sort of race the contestants move around while bending forward and taking hold of the toes of their boots with their hands. In another they crouch on the ground, imitating the motion of the seal.

SONGS AND DANCES. — The dances performed at ceremonials by men or women will be described farther on. Young girls have dances of their own, which are meant to imitate the motions of various animals or certain human actions. They are accompanied by peculiar songs, or rather rhythmical guttural sounds produced by alternately drawing in and letting out the breath. The act of making these sounds is termed "to call with the throat" (*pič-eiñe'rkín*). Two or more girls take positions opposite each other or in a circle (see Plate xxvii, Fig. 4) and in succession produce the sounds, keeping time carefully, and quickly taking their turns one after the other. The singing is begun with low hoarse notes. Imitative sounds are introduced later in a much higher key. While singing, the girls sway the upper part of their bodies back and forth, and then go through various imitative motions in connection with the sounds uttered (Plates xxxi, Fig. 2; xxvii, Fig. 4). Young boys taking part in the dance hold up their hands and snap their fingers, at the same time producing a peculiar clicking sound with their tongues. Each song, with the accompanying dance, has the name of the animal represented.

The most frequently performed are the Raven and The-One-eyed-One dances. The imitative sounds of the former represent the croaking of the Raven. The girls for a while also keep repeating, "Raven, Raven!" in hoarse sounds produced while drawing in the breath. While dancing, the girls hop around, pretend to seek for something, peck at the ground, etc. The song of The-One-eyed-One is accompanied by a few words sung in the same manner as "Raven." It runs like this: "The-One-eyed-One called with his throat till his other eye got out (of the socket)" (*Kowla'íñn pič'eíñei ripe't pí'tqa-lêlanto'ê*). The dancers make faces and squint their eyes alternately, representing The-One-eyed-One. He is supposed to have been an old man who wanted to have a contest of "calling with the throat" with some young girls. In the contest his only eye came out of the socket under the strain.

Among other songs may be mentioned "The Song of the Fox." It is a kind of dialogue between the fox and the bear, and reproduces a widely known tale, in which the fox pretends to heal the bear's wounds with red-hot stones, and finally kills him. The fox speaks in a thin treble voice; the bear

¹ Boas, *Central Eskimo*, p. 573.

answers in a deep bass voice, which gradually weakens. A similar theme occurs in Indian tales.¹

In the dance and song of the geese the motions and cackling of the white-fronted goose (*Anser albifrons*) are imitated. In "The Song of the Fighting Sandpiper" (*Totanus pugnax*) are imitated the quaint motions of those birds in their social gatherings during the early nesting-season.²

Songs of the long-tailed duck (*Fuligula glacialis*), swan, walrus, seal, and of reindeer-rutting, are either imitative songs or are accompanied by imitative dances. One dance is an imitation of the scraping of skins. Another is called "The Boneless One." Its song has the following words: "I became boneless!" (A'ni vai! a'ni vai!). The dance is accompanied by violent jerking motions of the head and arms to pretend that the dancers have no bones at all.

Another class of these songs represents the act of copulation, with a rather queer dance and even with imitative sounds. The dance often ends in two girls lying on the ground imitating sexual intercourse. Frequently young boys also take part in the performance.

CHILDREN'S GAMES, TOYS, ETC. — Boys and half-grown young men of the Reindeer people have a few simple games of their own. Of these may be mentioned swinging on a rope suspended from two trees or around an upright pole, like a merry-go-round. The Maritime people are without these games because they live on a treeless tundra. In another game a block of wood is suspended from a tree by a rope, and the youth try to catch it with their small lassos. Although the block is kept constantly swinging, a good marksman almost never misses his throw.

The scoring runs like this: "1. I saw an elk's track; 2. I overtook the elk; 3. I killed it." The fact that elk-hunting is represented, shows that the play must be of ancient origin.³

A rather curious game represents the Raven chasing a group of small children. At first a mother stands holding on to the children, with the Raven opposite her. He scrapes the ground with his hands, and the following conversation takes place: —

Mother. What are you doing?

Raven. I am digging a hole.

Mother. What for?

Raven. To put pebbles in.

Mother. What do you want the pebbles for?

Raven. To shoot at your children.

Mother. Why will you shoot?

Raven. They have spoiled my corral.

¹ Compare Boas, *Indianische Sagen*, p. 317; see also Bogoras, *Anthropologist*, p. 655.

² The Chukchee call this bird "ceremonial bird" (mũê-ga'LE). The name originated from these social assemblies of the birds, which are regarded by the Chukchee as ceremonial performances.

³ Compare p. 136.

Then the Raven runs after the children, who scatter, shouting, "The Raven's eyes are lean, our eyes are fat!"

A game with almost identically the same details exists among the Russians of the Kolyma. In fact, games similar to this are known throughout the civilized world. It is hard to tell whether in this particular case it was conceived under Russian influence or whether it sprang up independently in connection with numerous Raven legends which play an important part in the mythology of all the tribes living around Bering Sea.

Some of the children's games have an elaborate method of counting the points scored. Thus the curious game of "immersing into syphilis," which I mentioned before,¹ has twenty-four points to score. It is played by two persons, or by two groups of two or three persons each, who try to lasso a block of wood lying on the ground or thrown into the air. Each successful throw counts one. The counting runs thus: "1. I cover you with eruption; 2. I immerse you to the sole; 3. I immerse you to the vamp; 4. I immerse you to the instep; 5. I immerse you to the ankle;" and so on until all the points corresponding to parts of the human body have been named, from the sole of the foot to the crown of the head. The points may be won back one by one, or they may be doubled.

A still more complicated system of counting refers to the succession of various incidents of the reindeer-breeding life. It goes like this: "1. I moved to the first summer quarters; 2. I castrated the bucks; 3. I moved on to the mid-summer quarters; 4. I slaughtered; 5. I prepared boots; 6. I drove (the herd) inland; 7. I carried away the kettles; 8. On the grass border; 9. I got entangled in the grass; 10. I came out of the grass; 11. In the lower bush; 12. I got entangled in the bush; 13. I came out of the bush; 14. In the thickness of the bush; 15. I got entangled in the thickness of the bush; 16. I came out of the thickness of the bush; 17. On the clearing; 18. I prepared inner trousers; 19. I sucked a reindeer-dam; 20. I burned bones." This point forms the climax, and from here begins the return journey, though the names of the stages are generally different from those preceding. The total number of points is thus thirty-nine. They are often followed by syphilitic counting or by another counting having six points and referring to the hunting of wild reindeer or seals. Other plans of scoring refer to the slaughtering of reindeer and to various hunting-pursuits.

Games with elaborate countings are of a lively character. Those who are backward are goaded on with jeers. For instance, in the syphilis play the winners will assert that the losers have lost their noses withal; or in the hunting-play they will taunt the loser with, "You must be hungry [on account of the unsuccessful hunt], cut off your boy's diaper-strings and eat them!" This derision often causes games of this character to end in quarrels.

¹ See p. 41.

Playing ball is more common among the Maritime Chukchee, who live in settled villages, and whose life is more regular than in the scattered, ever-moving camps.

The Chukchee employ both hand-balls and foot-balls, which differ chiefly in size (Fig. 196, *a-d*). The word used for the ball (qe'pel), however, signifies

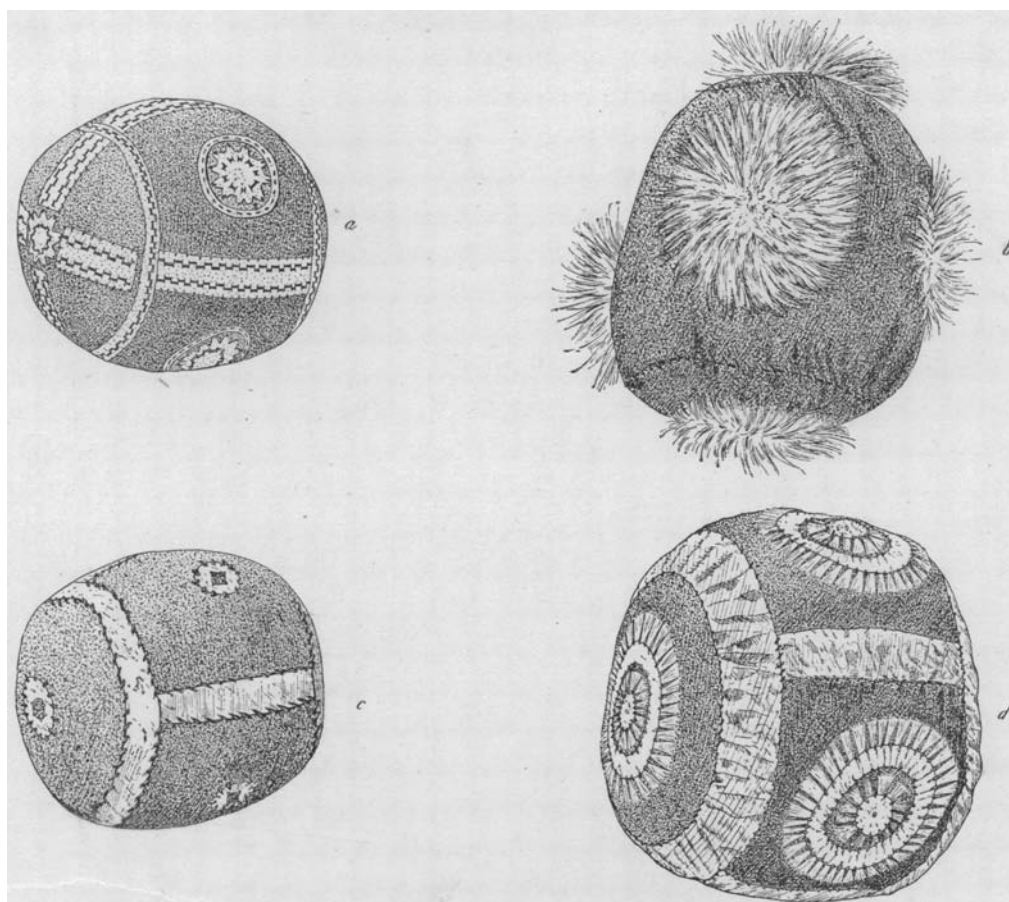


Fig. 196, *a* (88112), *b* (88117), *c* (88114), *d* (88119). Balls. Diameters, 9 cm., 13 cm., 10 cm., 14 cm.
a-c, Chukchee; *d*, Eskimo.

"kick," "kicked thing," and therefore is connected more closely with the foot-ball. The outward appearance of the balls resembles very much that of the balls used by Alaskan Eskimo. There are no particular rules for ball-playing. The participants, mainly young boys and girls, are divided into two parties. The ball is thrown or kicked by one party, while the members of the other party try to catch it. Often the girls take one side, and the boys the other. Still more frequently they all run about, trying to catch the ball as it flies from side to side.

Sometimes a whole reindeer-skin is folded and fashioned into a large clumsy-looking foot-ball, and almost the entire population of the village joins in tossing and kicking it about.

A game which is called o'kkal is played with a slender stick and a number of small wooden hoops of various sizes (Fig. 197, *a*). The hoops

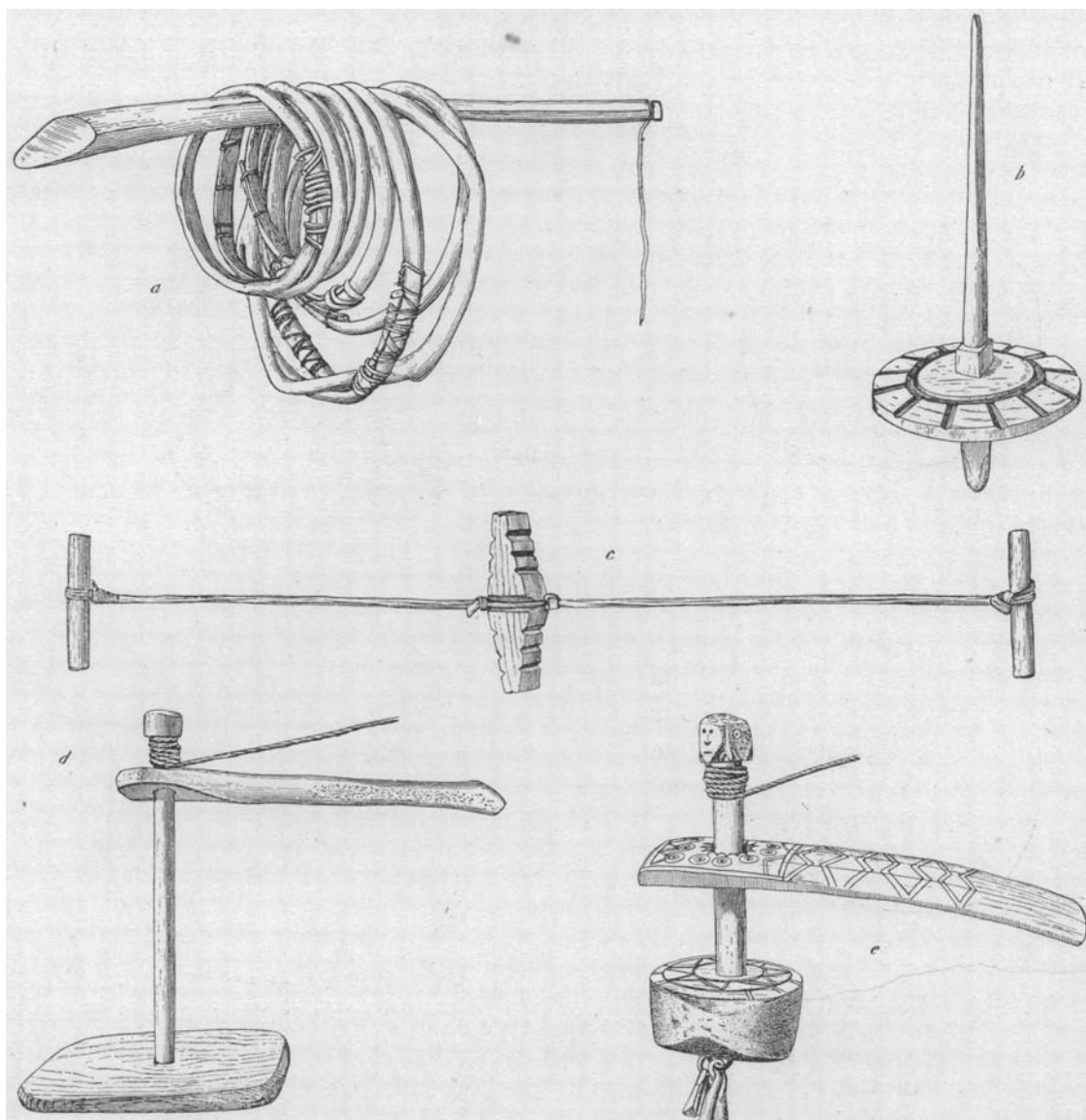


Fig. 197, *a* ($\frac{10}{84\frac{1}{2}7}$), Game with Hoops (length of stick, 32 cm.); *b* ($\frac{10}{84\frac{1}{2}7}$), Top (height, 14.5 cm.); *c* ($\frac{10}{84\frac{1}{2}7}$), Buzz (length, 45 cm.); *d* ($\frac{10}{84\frac{1}{2}7}$), *e* ($\frac{10}{84\frac{1}{2}7}$), Top-like Implements (height, 23 cm., 17 cm.). *e*, Kerek; all others Chukchee.

are thrown upwards in a bunch, and one of the party tries to catch on the stick as many hoops as possible. The hoops caught are taken off in pairs and returned to the general bunch. If there is an odd hoop left over, it is said to be "killed." It is left out of the lot thrown up, and counts one for the lucky catcher. This odd hoop also gives him the right to try again. If no hoop, or an even number of hoops, is caught, the turn is forfeited, and the next party begins to play. After all the hoops have been "killed," the

winner has the right to give the loser a stroke on the palm of his hand with the stick used in the game, for every point he has gained on him. The game is sometimes varied by throwing a bundle of sticks into the air and catching them with the hand as they fall. The scoring and the ultimate reward are identical with those of the hoop-game.

Gambling-games are little known among the Chukchee. I was told that among the Maritime Chukchee on the Arctic shore there is a simple game played for stakes, which consists in throwing a small piece of gristle against a large flat stone so that it will rebound high in the air. The one who catches the gristle gets the stakes, which are usually matches, copper caps, and similar small objects.

At the present time many camps and villages have learned to play cards from their Russian neighbors or from American whalers. Among the Reindeer Chukchee of the Kolyma, passionate gamblers may now be met who have lost their all in play against more clever Russian neighbors.

Children have various toys, most of them small imitations of objects of every-day life, such as little boots, sledges, wooden or ivory dogs and reindeer with the proper harness, snowshoes, bows and arrows. Grasping in each hand a slender willow branch having many offshoots to represent antlers, the boys will gallop up and down, playing reindeer.

Tops (Fig. 197, *b*) are favorite toys. Their shape is similar to that of the American Eskimo top. Buzzes (Fig. 197, *c*) are made of various materials, — ivory, wood, tough skin, and even a piece of dried fish. Much of the ivory carving is also used by children for toys. An implement exactly like that represented by Nelson¹ is used by the Chukchee as a kind of top. A specimen of it was obtained on Anadyr Bay (Fig. 197, *d*). It consists of a horizontal antler handle with one end broadened and containing a hole, through which passes the rod of the top to be spun. This is kept from slipping out of the handle by a knob at the upper end and a square piece of wood at the bottom. The latter forms the body of the top. In spinning the top, a cord is wound around the rod above where it passes through the handle and just under the knob. By holding the top vertically and pulling the string off quickly, it will spin rapidly for a short time with the knob resting on the handle.

I obtained from the Kerek three specimens of the same implement (Fig. 197, *e*). They are made of ivory and adorned with various geometrical designs. The handle is bent slightly downwards. The hole and the knob are serrated, so that in revolving the constant chafing produces a sort of buzzing noise. The knob has four sides, with similar face designs on opposite sides. The implement is used for a kind of game in which four persons take part, two on a side. Two of the faces on one specimen have big round eyes; on the other specimens they are marked with a curved line across the cheeks. These

¹ Nelson, Fig. 31, p. 112.

are called "faces of the spirits." Two other faces are called "the faces of men." The participants stand in a circle, with partners facing each other. The rod is spun in the middle by somebody. When the top stops spinning, the party that is faced by the spirits has lost. The stakes are small, and consist usually of pieces of sinew, single beads, or matches.

Nelson obtained his specimen from St. Lawrence Island. He considers it a cord-spinner, or, rather, a cord-twister, and suggests that the idea of it was borrowed from the whalers, because no other specimen was seen by him anywhere in the regions visited.

Among the collections in the National Museum at Washington, however, I found another specimen of this implement (Cat. No. 63382), labelled "Diomedé Island," and collected also by Nelson. In the sketch in his book the piece with the hole is represented in a vertical position, while the ivory weight is represented as grasped in the hand of the operator for the purpose of setting the implement rotating. In the specimens of my collection the weight does not have a shape adapted to be grasped by the hand.

The implements of the Mexican and Zuñi Indians having a similar shape serve for twisting grass-fibre and horsehair. In this case they have no weight attached, and the piece with the hole in it is no longer used as a handle,

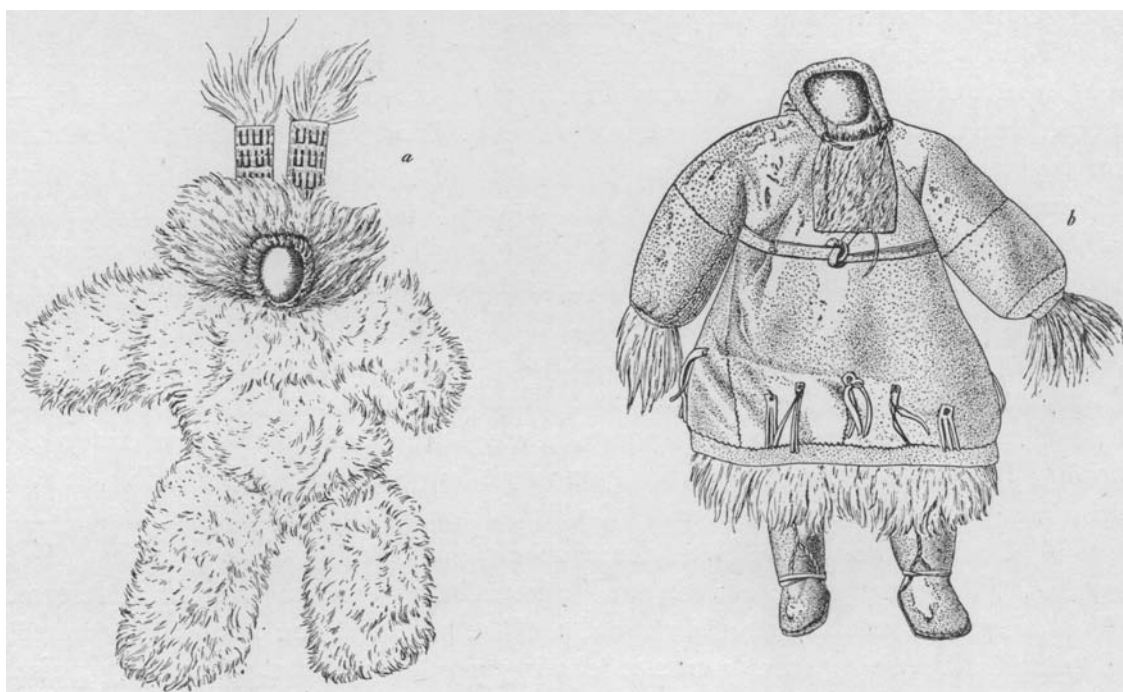


Fig. 198, *a* ($\frac{1}{16}\frac{1}{12}\frac{1}{18}$), *b* ($\frac{1}{16}\frac{1}{12}\frac{1}{17}$). Dolls. $\frac{1}{8}$ nat. size.

but is much longer and heavier, apparently for the purpose of being revolved for twisting cords.

Perhaps the Northern implement has degenerated from some borrowed

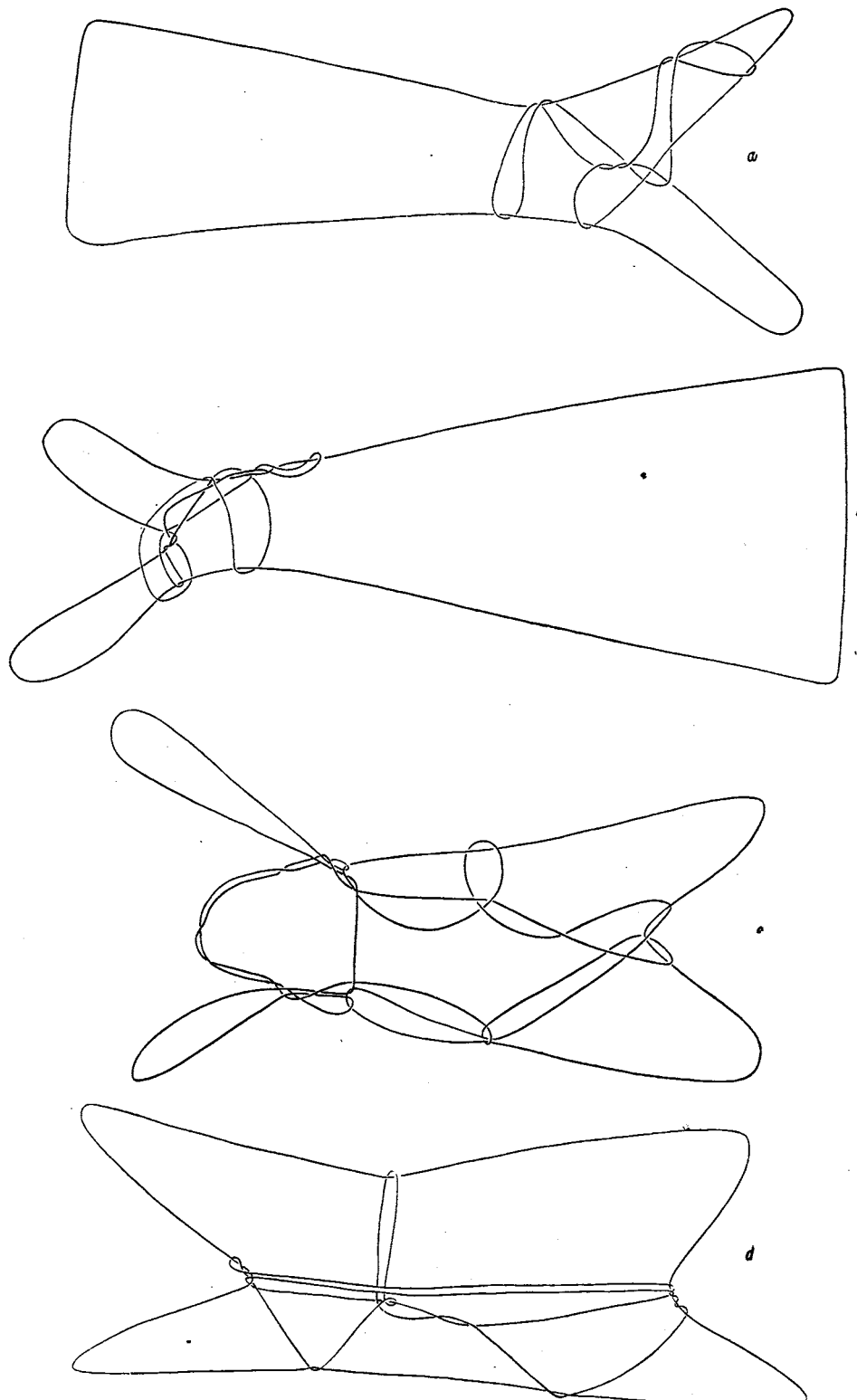


Fig. 199. Cat's-Cradle. (From sketches.) *a*, Wild Reindeer; *b*, Fox; *c*, Whale; *d*, Man in Canoe.

form primarily used for twisting; but whalers could hardly have had anything to do with the introduction of such an implement. The connection is evidently older, and is yet to be traced.

The girls of the Chukchee have small lamps and dishes, and dolls of various sizes (Fig. 198, *a*, *b*), sometimes almost as big as a very small baby. The dolls have clothes that are carefully made, and represent grown persons and children of both sexes. The favorite one is that representing a small infant wearing a diaper and baby-clothes. Some of the dolls pass by inheritance from generation to generation. They are even supposed to be connected with the fecundity of women.

The women and children are fond of making figures by skilfully winding loops of thread around the fingers of both hands. The game is called *yu'ut*, and is somewhat analogous to cat's-cradle of civilized people. It exists among the Eskimo tribes of America, and is mentioned by Boas as occurring among the Central Eskimo,¹ and by Kroeber among the Eskimo of Smith Sound.² In Asia it existed among the Chukchee from the Kolyma to the Pacific coast. In former times it was also known among the Kamchadal and the Koryak. Some of the devices in my collection are very similar to those represented by Boas and Kroeber; for instance, compare Fig. 199, *a*, representing the wild reindeer, with Fig. 525, *a*, in Boas's Central Eskimo, p. 569; Fig. 199, *b*, representing a fox, with Kroeber's Fig. 52, *a*, a dog; Fig. 199, *c*, representing a whale, with Kroeber's Fig. 53, *a*, a narwhal; Fig. 199, *d*, representing a man in a canoe, with a specimen from Smith Sound (Cat. No. $\frac{60}{4892}$ a) in the Eskimo Hall of this Museum.

¹ Boas, Central Eskimo, p. 569.

² Kroeber, The Eskimo of Smith Sound (Bulletin American Museum of Natural History, 1899, Vol. XII, p. 298).

EXPLANATORY NOTE.

Names of native villages and other localities are given in aboriginal form with phonetic spelling. Names of Russian and Russianized villages are printed in the English transcription of the Russian form. In a few cases a literal translation of the Russian name is given. Russian equivalents of native names or of English translations are given in the following lists.

Northern Kamchatka and Adjacent Pacific Shore.

Ki'chin	Кичиги
Qare'nin	Карага
Ewle'wun	Пусторыцкъ
Pitka'heñ	Подкагерно
Ti'lliran	Тилеики
I'ir	Култусно
A'lut	Олюторскъ
I'ipi	Хатырка ¹
Qa'yilin	Хаилино
Cape Alutorsky, Cape Anannon ²	

Gishiga Bay.

Poi'tin	Парень
Vai'kenan	Каменское
Ega'č R.	Шестаковка

Anadyr Country.

Under the Cliffs	У Утесика
Hare Mountains	Ушканій хребетъ
White River	Бѣла рѣка
Red River	Красина or Красная
Pike River	Щучья рѣка
Big River	Большая рѣка

Chukchee Peninsula.

Indian Point	Мысъ Чаплинъ
East Cape	Мысъ Дежневъ
Če'čin Bay	{ Чечинская губа or
Kulu'či	{ Заливъ Адмирала Бутакова
	Колючинъ

The Lower Kolyma.

Forest Border	Край Лѣсовъ
Kei'ñu-we'em ³ (R.)	Медвѣжья рѣка (Bear River)
With the Mosquito	У Комарка
Large Chukchee River	Большая Чукочья рѣка
Small Chukchee River	Малая Чукочья рѣка
Two Brooks	У Двухъ Високъ
Wolverine River	Россомахья рѣка

The Middle Omolon.

Karbaschan ⁴	Small Boat
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The Upper Kolyma.

Shoudon ⁵ River	Лаудонъ or Сухая
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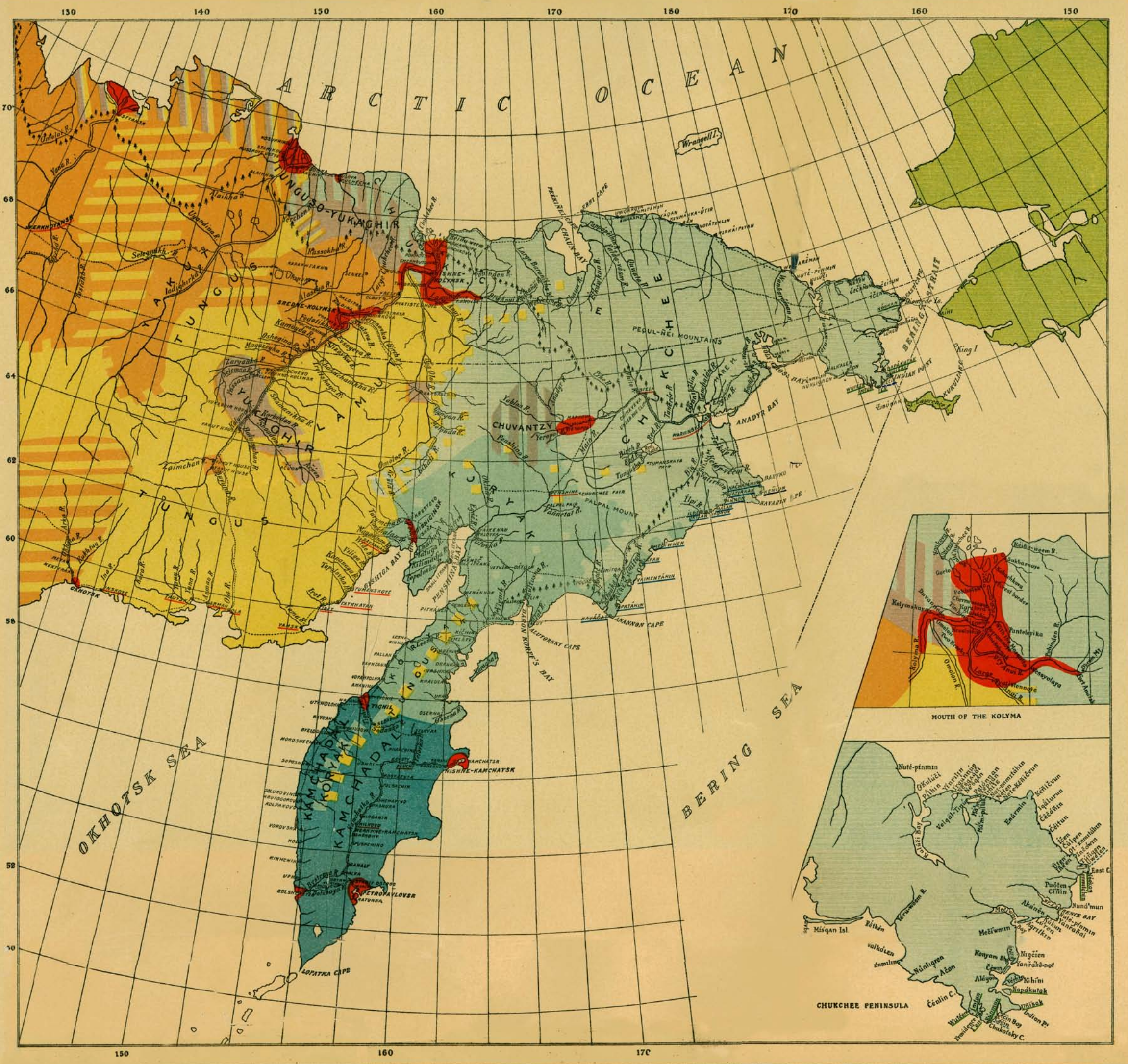
¹ The Russians call by this name the village and the river I'ipi, and also the whole country occupied by that division of the Kerek. The proper river Хатырка, however, lies farther to the east. Its Kerek name is Hat'ykan or Hat'rkan. On the map the Chukchee variety of the name (Vat'rkan) is given.

² On Russian and English maps, Cape Anannon, through a general misunderstanding, has been called Cape Alutorsky; and the real Cape Alutorsky, Cape Govensky.

³ Chukchee. The meaning is the same as in Russian.

⁴ This name, although belonging to a Yukaghir village, is Lamut. It comes from a mountain near by, which has the shape of a boat.

⁵ Yukaghir, meaning "stony." The first Russian name is probably a corruption of it. It is, however, unknown even to the Russian inhabitants of the country, though it appears on most of the maps. The second Russian name means "dry river." The Lamut name of the river is Buks-unda, which means "icy river." Of this last some travellers have made, through mispronunciation, Buyunda, though the real river of this name lies much farther to the south.



Tungus or Lamut. Yakut. Russian and Russianized natives. Eskimo. Chukchee. Koryak. Kamchadal. Yukaghir. Chuvantzy.

Russian or Russianized natives. Eskimo & Chukchee mixed. Eskimo. Kerek. Trade routes.

JESUP NORTH PACIFIC

