

5-1-1970

A translation of Stepan Petrovich Krasheninnikov's *Opisanie zemli Kamchatki* (The description of the land of Kamchatka) by E.A.P. Crownhart Vaughan

Stepan Petrovich Krasheninnikov  
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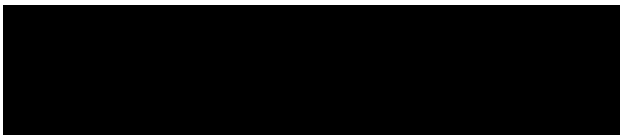
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10.15760/etd.353

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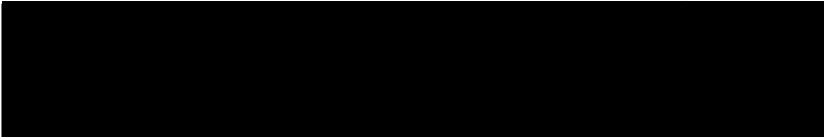


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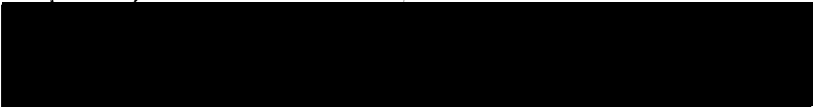


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May 1, 1970.

A TRANSLATION  
OF STEPAN PETROVICH KRASHENINNIKOV'S  
OPISANIE ZEMLI KAMCHATKI  
(THE DESCRIPTION OF THE LAND OF KAMCHATKA)

by

E.A.P. CROWNHART VAUGHAN

A thesis submitted in partial fulfillment of the  
requirements for the degree of

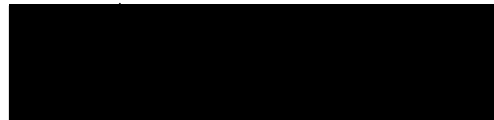
MASTER OF ARTS  
in  
HISTORY

Portland State University  
1970.

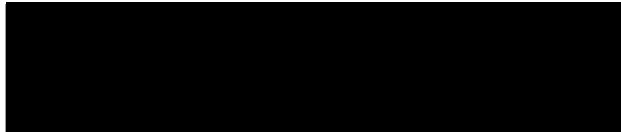
AN ABSTRACT OF THE THESIS OF B. A. P. Crownhart Vaughan for the  
Master of Arts in History presented May 1, 1970.

Title: A Translation of Opisanie Zemli Kamchatki by Stepan Petrovich  
Krasheninnikov.

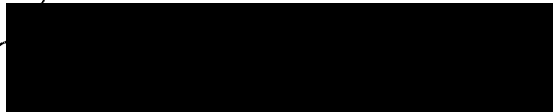
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This thesis is the only complete and unabridged English translation of  
Stepan Petrovich Krasheninnikov's Opisanie Zemli Kamchatki (The Description  
of the Land of Kamchatka), first published in 1755 by the Imperial Russian  
Academy of Sciences in St. Petersburg.

Krasheninnikov (1711-1755) was a member of the Second Bering Expedition  
(1733-1741), one of the most ambitious scientific expeditions of any age. Its  
purpose was sixfold: 1) to explore and map Siberia; 2) to establish whether  
Asia and America were separated by water; 3) to explore Kamchatka; 4) to

chart all waters between Kamchatka, America and Japan; 5) to map the entire Arctic coast from the White Sea around to the mouth of the Kamchatka River; 6) to explore the northwest coast of America. Krasheninnikov, a young Russian student when the explorations began, was assigned to assist the distinguished expedition scientists from the Academy of Sciences. As the years went by and his abilities became manifest he was assigned the responsibility of exploring and describing Kamchatka. Still in his mid-twenties, he walked, worked and recorded three and a half years of scientific notes about this still forbidding land. He included detailed descriptions of the geography and natural history of Kamchatka, ethnographic studies of the native tribes and their language, customs, appearance, beliefs and way of life, and the history of Kamchatka from the first Russian penetration late in the seventeenth century.

His work is a great scientific tour de force which remains the classic treatise on Kamchatka. Although Opisanie Zemli Kamchatki has been published several times in Russia and has been translated into German and French, the only previous English translation is an interesting but very free and drastically abridged version by James Grieve, a Scottish physician in Russian service, which was published in London in 1764 and reissued by photo offset in Chicago in 1962. The present annotated translation includes an introduction which gives some background on Russian eastward expansion, the fur trade, and the two Bering expeditions. A bibliography is appended.

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## PREFACE

This thesis is the only complete and unabridged English translation of Stepan Petrovich Krasheninnikov's monumental Opisanie Zemli Kamchatki (The Description of the Land of Kamchatka) first published in St. Petersburg in 1755. James Grieve, a Scottish physician in Russian service, made an interesting but much abridged English translation which was published in London in 1764 and reissued by photo offset in Chicago in 1962. In 1767 another similarly abridged French edition appeared when Marc Antoine Eidous translated Grieve's English version. French scholars were greatly frustrated by this emasculated version. They were eager for reports of the great scientific explorations surrounding the Bering expedition, but Grieve not only excised nearly half of Krasheninnikov's report but took considerable liberty in the translation. Savants urged the immediate publication of a complete and unabridged French translation. Subsequently M. l'Abbé Chappe d'Auteroche traveled to St. Petersburg to translate the work in consultation with the celebrated historian, Gerhard Friedrich Müller (1705-1783), Secretary to the Academy of Sciences. Müller had provided powerful scientific leadership in the Second Kamchatka Expedition and had assisted in the final editing of Krasheninnikov's huge manuscript. Müller generously worked with d'Auteroche to clarify obscure passages and correct mistakes in the first publications. New footnotes were added to include botanical

identifications made by Peter Simon Pallas, a brilliant young naturalist who had recently joined the faculty of the Academy.

In 1770 this unabridged and enriched French edition was published in two volumes by M. M. Rey in Amsterdam. The present English translation is taken primarily from this rare edition which seems never to have been given the attention planned for it. It has been meticulously checked against the most recent Russian edition published by the Soviet Academy of Sciences in 1949 in Moscow and Leningrad. Apparent discrepancies have been evaluated. For example, a deleted Kamchadal vocabulary has been restored in this English translation. Material excised from the 1949 Russian edition is identified in footnotes, such as Krasheninnikov's remarks about the Koriaks. Certain very helpful footnotes from the latest Russian edition have been included and are identified; they were made by Lev S. Berg, distinguished Russian historian.

The Library of Congress system of transliteration is used here; soft signs and diacritical marks have been omitted. All transliteration has been made from the new simplified spelling adopted by the Soviet government. Non-Russian names have been anglicized: Steller, Spangberg. Certain familiar Russian words such as Cossack have been spelled as commonly used in English. Whenever possible Russian names for plants, fish, animals and birds have been given in English. Russian terms which have no English equivalent such as iasak, promyshlennik, have been explained in footnotes.

The editor is greatly indebted to the Oregon Historical Society which granted generous access not only to the little known eighteenth-century French



edition secured by the Irkutsk Archival Research Group of the Society, but also to related maps and other materials in the North Pacific section of the Rare Books Collection. The Society's library staff have been unfailingly helpful, particularly former and present Chief Librarians Robert Fessenden and Millard McClung and Manuscripts Librarian Jack Cleaver. John E. Tuhy, M.D. generously shared professional knowledge in helping interpret material pertaining to medical aspects of Krasheninnikov's work.

It is impossible to convey my sense of esteem, gratitude and thanks to Professor Basil Dmytryshyn of Portland State University for his extremely generous participation. He has patiently guided every state of the work and has given constant encouragement, counsel, direction and criticism.

## INTRODUCTION

Stepan Petrovich Krasheninnikov (1711-1755) was born into an adventurous age of scientific inquiry. In his short era the great Muscovite dream was realized. Russia ruled from the turbulent Baltic states six thousand miles east through taiga and tundra to the lonely capes of the North Pacific and the Kamchatkan peninsula. Krasheninnikov is one of an exclusive elite, the first generation of Russian-born scientists. His brilliant achievement was the complete exploration and scientific description of a peninsula the size of England. Even today his magnificent work is little known. Kamchatka continues to be remote--ultima Thule.

Krasheninnikov pioneered in an obscure and little evaluated field of history and his monumental accomplishments can only be comprehended within the context of the centuries old thrust of dynamic Russian expansion which climaxed in the Bering expeditions and the penetration of the North American continent.

A direct and immediate cause of expansion from the time of the first Rus settlements in eighth-century Novgorod and Kiev was the pursuit of furbearing animals. Russian nobles needed rich furs to combat bonechilling winters, furs to reward, to overawe and seduce, pelts to barter, cement alliances and win associations. Vladimir Monomakh, twelfth-century Grand

Prince of Kiev, wore a magnificent crown of gold, jewels and sable. His peers, both enemies and friends, wore sable hats; of all furs sable was best. Tsars and boiars through the centuries gathered about their shoulders cloaks and caftans sumptuously lined with sable pelts. Pelts were a basic medium of exchange in medieval Russia. As Moscow prospered her princes used furs to pay for personal services to the state. Peers were rewarded and diplomats bribed. Tsars sent sable gifts to foreign emissaries and rulers, sometimes in lieu of travel expenses. By the seventeenth century the Sable Treasury in Moscow, secure within the Kremlin walls, was the chief repository of government-owned pelts and functioned as a royal reserve<sup>1</sup>.

The European demand for furs accelerated the exploration and acquisition of Siberian lands. Profit from these fur exchanges financed further ventures. Within less than a century the lonely reaches beyond the Urals were spanned. Within decades promyshlenniks were on the offshore islands and the Aleutians, then in Alaska and soon down the coast of North America to the Bay of San Francisco. By the late eighteenth century the Russian penetration of the ill-defined areas of North America had made strong contact with ambitious expansionists representing Great Britain and the new United States. Russia's subsequent policy to divest herself of her holdings on the North American continent gave even greater geographic significance to Kamchatka, a great fog-bound barrier and boundary equal in length to California.

<sup>1</sup> Raymond H. Fisher, The Russian Fur Trade, 1550-1700 (Berkeley & Los Angeles: University of California Press, 1943), p. 1.

In Russia as in America the fur trade flourished in inhospitable northern regions where arctic cold produces pelts with dense soft underfur and irridescent glistening silky guard hairs. On both continents the fur trade advanced along rivers used as wilderness highways. Vast Siberia is laced with a grid of rivers. The huge Ob, Enesei and Lena rivers flow from south to north, and the Amur runs 3000 miles west to east. All have transverse subsidiaries with practicable portages from one system to the next. The Siberian Plain presents no great mountain range to be crossed; only the low slopes of the Urals mark the western approach.

The seemingly simple Siberian system of transportation and fur exploitation had been developed in very early times when European Russia had its own furbearing animals. Kiev, Russia's first state, carried on a significant fur trade as early as the eleventh century. Russian furs went to Byzantium, Bohemia and Hungary. Exchange goods came from such distant lands as Italy and Germany.<sup>2</sup> The trade prospered for two centuries and brought wealth and commercial intercourse to the Dnieper Basin. Early in the thirteenth century the Mongols destroyed trade with Constantinople and virtually paralyzed Kievan commerce. Novgorod, long a rival of Kiev, then became the new center of the Russian fur trade.

Farther north, Novgorod was remote from the Mongol raiders, and her merchants controlled important approaches to the Baltic trade routes. Her

<sup>2</sup> Ibid., p. 2.

leaders prospered as trade flourished with Baltic cities of the Hanseatic League. Yet Novgorod faced the same problem which would later trouble Siberia. A climate which produces prime pelts cannot sustain bountiful agriculture. In order to trade for food Novgorod fur hunters overtrapped. This led to a depletion of supply in an ever-increasing territory. Trappers were gradually forced northeast toward the Dvina River where untapped reaches of virgin forest harbored many fur species. The paths by which hunters gained access to these areas in the northern Dvina, Pechora and Ob watersheds became the familiar road through Siberia. They moved along river courses, portaging from one river basin to the next; they secured vital portages or river confluences with small settlements which would have their later counterparts in the Siberian pallisaded forts or ostrogs.

Novgorod's celebrated fur traders eventually reached and crossed into the westernmost part of Siberia. The methods Novgorod merchants used to obtain pelts became the traditional means by which furs were later acquired in Siberia. The merchants employed their own trappers, traded goods with the natives in exchange for pelts, and wherever possible forced natives to pay iasak, a tribute in furs.<sup>3</sup>

The ascendancy of Moscow marks the second shift in the power base of the Russian fur trade. Although situated on a small river, competitive Muscovites had fortuitous access, through portages, to all the inland water systems of Russia. Her aggressive traders adapted and systematized portages

<sup>3</sup> Ibid., p. 7.

to the Volga, Dnieper and Western Dvina. Implicit in the success of this scheme was Moscow's command of the intricate Valdai Hills river system with access to the Baltic Sea routes, as well as to favorable Black Sea and Siberian passages.<sup>4</sup> Withal, her outlying principalities protected her from the fierce and costly Mongol raids which had destroyed the ambitions of other trading centers.<sup>5</sup> From the beginning it is evident that Moscow's princes chose well. They understood and maximized their favored geographical-economic location beside the Moscow River.

In the guise of supplicants the Muscovites annually dispatched rich gifts to the Mongol Khan living with his horde in the tent-city of Sarai on the Volga. These gifts eventually bore fruit. Prince Ivan I (1325-1341) was given the iarilyk of Grand Prince of Moscow. This powerful seal of office designated Ivan chief tax collector of the Khan, with tacit license to line his own pockets. Soon the Grand Prince was dubbed Ivan Moneybags. As he enriched the Khan's coffers, Moscow's strength grew through aggrandisement and steady consolidation of contiguous lands.

The power of the Golden Horde declined and Moscow grew strong. In 1472 the Grand Prince of Moscow, Ivan III, the Great (1462-1505), married the Byzantine princess Sophia Paleologue. In 1480 he at last brought an end to

<sup>4</sup> Robert J. Kerner, The Urge to the Sea (Berkeley & Los Angeles: The University of California Press, 1942), pp. 35-36.

<sup>5</sup> Andrei Lobanov-Rostovsky, Russia and Asia (Ann Arbor: George Wahr Publishing Company, 1951), pp. 26-27.

Mongol domination. Significantly, he adopted the Byzantine double-headed eagle as his emblem and proclaimed himself tsar of all the Russian lands.

Ivan's subsequent expansion of the fur trade was hindered by two factors. The difficult northern terrain in the Pechora region discouraged Moscow from sending the necessary military forces to sustain advances in that area. To the east, the remnant khanates of Kazan, Astrakhan and Sibir blocked Muscovite expansion east of the Urals. Tatar raids interrupted trade and commerce. Neither Ivan's treaties nor his troops could open the way east.<sup>6</sup>

At last Ivan's grandson, Ivan the Terrible (1533-1584), opened the road to Asia. In 1552 he undertook a conclusive campaign against Kazan at the confluence of the Kama and Volga rivers. With the assistance of a Danish explosives expert he breached the defences of the city and blew up its water cisterns.<sup>7</sup> He then stormed the city and took it. Four years later the tsar's armies conquered Astrakhan. Distant Sibir alone stood in Moscow's way--as yet unscathed. So rapidly had Muscovite power expanded that the primary and classic problem was the lack of sufficient troops to secure frontiers and advance.

Private enterprise came to the aid of the tsar in the person of a wealthy Novgorod trader, energetic Anika Stroganov. An old merchant family, the Stroganovs had many interests. They dealt in salt, caviar, wax and wine; but

<sup>6</sup>J. L. I. Fennell, Ivan the Great of Moscow (London: Macmillan Company, 1961), pp. 178-179.

<sup>7</sup>Ian Grey, Ivan the Terrible (Philadelphia and New York: J. B. Lippincott Company, 1964), p. 101.

their primary interest was furs. They had extensive holdings in the Pechora region which annually yielded a rich harvest. But the furs were diminishing in number and quality. The Stroganovs needed new lands and new enterprises to support their 10,000 employes and 5,000 serfs. Shortly after the conquest of Kazan and Astrakhan Grigorii Stroganov petitioned Ivan IV for lands in the new Kama River region. The tsar granted a twenty-year lease on vast stretches of land along the Kama and its tributaries. The charter authorized Anika Stroganov and his three sons, Grigorii, Iakov and Semen, to establish towns, maintain an army, operate salt mines, and use the land and its produce tax-free. The enterprising Stroganovs soon expanded across their newly acquired lands, but the supply of furs was never enough to meet the demand.

The new commercial class in Europe provided an ever-growing market and the English established the Muscovy Company, an eager purchaser of pelts. Several times the Stroganovs petitioned for new lands to the east and were granted them. By the 1570's their predators were poised eyeing the trans-Ural lands still nominally held by the khanate of Sibir, ruled at that time by Kuchum Khan. Ivan saw the opportunity to grant the Stroganov petition and at the same time rid himself of the nuisance of the Tatar raids from Sibir. In 1574 the tsar signed a charter which conveyed to the Stroganovs nearly half the lands claimed by Kuchum Khan.<sup>8</sup> In order to subdue the land the Stroganovs had to hire an army, which brought to the scene one of the most colorful figures in Siberian history.

<sup>8</sup> Fisher, Russian Fur Trade, p. 25.



Vasilii Timofeevich Olenin, called Ermak, ataman or chief of a band of Cossacks, was a notorious river pirate with a price on his head. The Cossacks were a social rather than an ethnic class; they included men of many nationalities. Some were local tribesmen, others were deserters, criminals and fiercely independent vagabonds and freebooters. They often harassed Russian traders. The tsar was forced to send expensive troops to protect commerce. Ermak's lawless Cossacks were among those the tsar most wished to subdue. With a band of his men, Ermak escaped the tsar's forces by fleeing up the Kama River, where he met Maxim Stroganov, a nephew of Anika.<sup>9</sup> These Cossack plunderers were just what the Stroganovs were looking for. They were immediately hired as mercenaries. Ermak made several exploratory skirmishes against the Tatars and in 1581 he took his men through the Urals to capture Sibir at the confluence of the Tobol and Irtysh rivers.<sup>10</sup> Ermak sent envoys to Moscow with news of his strategic triumph and an immense booty of furs amounting to several thousand fox, sable and beaver pelts. Ivan was dazzled both by the news and by the gift. He decided to venture official support and sent reinforcements to aid Ermak in his conquests. He also sent the Cossack leader a magnificent suit of armor, a brass-trimmed hauberk of chain mail ornamented with the double-headed eagle.

The following year Ermak led his forces and the tsar's troops in a decisive battle against the remnants of the Golden Horde on the Irtysh River.

<sup>9</sup>John R. Forster, History of the Voyages and Discoveries Made in the North (London: J. J. Robinson, 1786), p. 477.

<sup>10</sup>Fisher, Russian Fur Trade, p. 26.

It was significant for several reasons. For the first time Moscow officially took part in the conquest of Siberia. The Cossack defeat of the forces of the khan of Sibir gave the Russians control of the Irtysh River and access to all of Siberia. And the battle gave grim prophecy of the difficulty of provisionment in Siberia. Ermak was unable to carry sufficient food supplies with him. Many men died of starvation during the campaign. Ermak himself was killed. Legend has it that despite his new armor he was wounded and sank into the icy waters of the Irtysh. Ermak became a legendary hero and many wondrous tales were woven about his deeds. From that time on, the Cossacks played a major role in the fur trade and the opening of Siberia. In the early twentieth century Cossacks were still regarded as superb explorers and colonizers.<sup>11</sup>

The Muscovite advance proceeded rapidly along the major river systems, the Ob, Irtysh, Enesei, Lena and the Amur. The fur trade and eastward expansion were inseparable and were simultaneously promoted. The establishment of settlements at strategic locations marks the progress of the fur trade across Siberia. Both state and private enterprise played a part in the fur trade and colonization of Siberia; it is difficult to separate the two. Private fur trappers and traders often accepted assignments from the state, while state employees frequently carried on private trade in furs on the side. There emerges, however, a distinct pattern to the advance and conquest into the Siberian regions.

The quest for furs was a motivation; the river systems were avenues of

<sup>11</sup> Wolf von Schierbrand, Russia, Her Strength and Her Weakness (New York: G. P. Putnam's Sons, 1904), p. 291.

advancement; and a third consideration which remains constant throughout the period of expansion is the character of the indigenous population. Although the native tribes might differ widely in racial background and heredity, some with definite Mongol lines and some resembling the American Indian<sup>12</sup>, they had in common the fact that most were backward, totally illiterate and primitive. Many had barely emerged from Stone Age customs and way of life.<sup>13</sup> The natives were armed only with bows and arrows and simple stone, flint or bone-headed spears. In contrast, the Russians who came into their lands were sophisticated warriors, skilled in the use of weapons and supplied with firearms. The Russian fur traders and explorers shared a common language and culture and were backed by powerful state direction and support. The native tribes were loosely organized, frequently could understand the language only of contiguous bands, and had no tribal federation. In short the natives were no match for the Russians.

Cruelty and slaughter of natives is often concomitant with conquest; the Russians sometimes decimated the native population. Contact with the Russians often killed natives indirectly, through disease, liquor and alien culture.<sup>14</sup> In

<sup>12</sup> Ales Hrdlicka, The Peoples of the Soviet Union (Washington, D.C.: The Smithsonian Institution, 1942).

<sup>13</sup> Terence Armstrong, The Russians in the Arctic (Fairlawn, N. J.: Essential Books, 1958), p. 115.

<sup>14</sup> James R. Gibson, Feeding the Russian Fur Trade: Provisionment of the Okhotsk Seaboard and the Kamchatka Peninsula 1639-1856 (Madison: University of Wisconsin Press, 1969), p. 40.

general, however, it was not in the interest of either the private trader or the state employe to kill the natives who supplied the Russians with furs. The state decreed lenient treatment, but the temptation to take a huge supply of furs, perhaps a tribe's entire winter catch, could overrule state policy.

Private enterprise was represented in Siberia by the traders and the trappers, either privately employed promyshlenniks or the pokruchenniks, trappers who worked under contract to traders. There was considerable overlapping of roles. The trader, either a merchant or an agent, might also engage in trapping. The pokruchennik might do private trapping for his own profit in addition to the work he performed for his employer. The promyshlennik often took on state assignments in addition to trapping. Private enterprise acquired furs through trapping, through sale or trade with natives, sometimes through plunder.

The state sent employes into Siberia for two reasons: to establish order and protect state interests in newly conquered areas, and to procure for the state a rich share of the fur harvest. Highest in rank of the state employes were the voevodas, administrators of towns, ostrogs or districts. They had state-employed staffs. Other state employes were hired mercenaries, frequently Cossacks or foreign prisoners of war who acted as a frontier guard and armed iasak collectors.

The institution of iasak is not unique to the Russians or to the Siberian fur trade, but it is of prime importance. In Siberia, iasak meant the payment by the natives of an assigned number of furs to the Russian conquerors. As

early as Kievan times conquered peoples paid the conquerors a tribute or dan. This might be paid in grain or other foodstuffs, but more frequently in fur pelts. The Tatars had imposed iasak on native tribes during their mounted sweep across Asia. The remnants of the Golden Horde who still roamed Siberia at the time of the Russian advance imposed iasak on native tribes, so that in many cases the natives merely paid the tribute to a new collector. Iasak was always a symbol of submission, defeat and degradation. On rare occasions a chieftain or other important native might be exempted from the payment of iasak in exchange for valuable services rendered to the state.<sup>15</sup> The amount of iasak assigned to each man varied from region to region, sometimes from man to man. There is evidence that at one time iasak was as much as twenty-two sable pelts per man; but records also indicate it was as low as five. Factors involved were obviously the abundance of fur-bearing animals in any area and the degree of resistance offered by various natives.<sup>16</sup> As will be seen in Krasheninnikov's account, iasak in Kamchatka in the 1730's might be as low as one or two pelts per man. Payment was expected in prime sable pelts unless otherwise specified. In general it would not be inaccurate to suggest that iasak was set as high as the traffic would bear. As added incentives, natives were required to take an impressive oath promising compliance. If they were unduly

<sup>15</sup> George V. Lantzeff, Siberia in the Seventeenth Century; a Study of the Colonial Administration (Berkeley and Los Angeles: University of California Press, 1943), p. 91.

<sup>16</sup> Fisher, Russian Fur Trade, p. 56.

recalcitrant or nomadic they were forced to surrender hostages to be kept by the Russians until iasak was paid the following year. Exceptions were made for illness or disablement. Generally only the heads of families were required to pay iasak, although in some cases adolescent boys were also assigned a quota.

Written records were kept almost from the beginning. There were census books which recorded the names of the iasak-paying natives in each settlement, and careful receipts were kept on the amount of iasak collected from each man. Obviously this system was more successful with sedentary tribes than with nomadic groups who could--and did--simply move out of sight when iasak time came each year unless they were forced to redeem important hostages. Iasak was collected at the end of the hunting season in late fall and early winter. Pelts taken at this season were prime; later in the year mating took place and the fur might become worn or damaged; by spring the animals had begun to moult.

The collection of iasak dictated the situation of strategic posts which later became ostrogs and towns. Bands of promyshlenniks and serving Cossacks frequently moved into a new fur area together. Travel was easiest in winter when supplies could be moved by sledge on the frozen rivers or in summer when light boats could move on the water. As the Russians penetrated a new river basin they built a zimove or winter building at a strategic location either at the confluence of two rivers or at a key portage. The zimove was generally a log cabin which could be defended if necessary against natives armed with bows and arrows. The zimove was the winter headquarters for the military and a

central meeting place for the promyshlenniks who set out on their own or in small groups to trap. Frequently the zimove would be enlarged into an ostrog. Iasak might be brought to the zimove or ostrog or if circumstances dictated, an armed band would accompany the iasak collector when he went out into native settlements to collect the tribute. In larger ostrogs where a voevoda had been assigned, there was considerable ceremony each year when the natives brought in their iasak. Pelts were examined carefully; voevodas had instructions from Moscow to accept only prime pelts. This was a time when natives could redeem hostages; however, if the Russians had reason to suspect they might default on the next year's payment, they were required to leave a new set of hostages.

This was also a time when the Russians acquired additional pelts from the natives in other ways. In some areas the natives brought pominki, gifts of pelts for the tsar. These may have been voluntary offerings but were more likely insurance that the natives would continue to receive good treatment from their conquerors. Some pelts were bartered for food or goods; some were bought outright.

In every possible way the state sought to establish a monopoly on the finest pelts. From the private traders the state demanded ten percent of their pelts; this tithe was collected at customs stations strategically located in Siberia. The state sold provisions and equipment to trappers in exchange for pelts; and the state had a monopoly on liquor which they sold in great quantity to thirsty promyshlenniks in exchange for furs. The sale of liquor or weapons to natives was forbidden for obvious reasons.

The activity of the state in establishing administrative and political control over the newly opened areas is a feature which distinguishes the fur trade and exploration of Siberia from the American West. Formal government administration was set up almost as quickly as the fur trade began. The central agency of Siberian colonial administration was the Siberian Prikaz or Department.<sup>17</sup>

The most important administrator in each newly conquered area in Siberia was the voevoda or military governor, appointed from Moscow. He supervised the ostrog or town which grew up as the administrative center for each new area. Often he had control of the uezds, the outlying rural districts. The largest town in each area, such as Tomsk, Tobolsk, Eneseisk, Irkutsk and Yakutsk were given a special status as the chief city of the razriad, a larger administrative unit. The voevoda of each of these cities had some responsibility over the voevodas of the secondary towns in the razriad. The voevoda and his chief military officers were usually nobles. Bureaucrats became clerks and secretaries, and local settlers took on the duties of the sworn men who accompanied iasak collectors.<sup>18</sup>

The intricate administrative honeycomb serves as some indication of the volume of settlers, both agricultural and military, who came in the wake of the opening of new lands. The first exploration and conquest of Siberia proceeded hand-in-hand with the fur trade, and the lure of furs continued to

<sup>17</sup> Lantzeff, Siberia in the Seventeenth Century, p. 3.

<sup>18</sup> Ibid., p. 32.



attract new settlers. In the first part of the seventeenth century a man could sell a pair of black fox skins for enough money to purchase and stock a prosperous farm and still have rubles left over.<sup>19</sup> The hunger for land and for freedom attracted many peasants who would readily accept the rigors of frontier life and a harsh climate to escape serfdom. The institution of serfdom never existed in Siberia. A substantial military force was needed to put down native uprisings and keep order in the new lands. Many of these men, petty nobles, Cossacks, foreign mercenaries or prisoners of war, eventually settled in Siberia and raised families.

The presence of so many persons in a new land required the services of the Church, whose clergy frequently accompanied the larger expeditions into new territories. Church structures were often among the first buildings to be constructed within the fortified walls of the ostrogs. To assure a continuing supply of clergy, monasteries were in time established in frontier regions. Clergy performed many essential duties. They performed baptisms, marriages, and last rites, administered oaths, and educated children. They also brought the Orthodox faith to pagan natives. The clergy were aggressive proselytizers and they offered alluring advantages to natives to signify their desire to accept the faith. A baptized native could be employed by the Russian government, a baptized woman could marry a Russian, and most significant of all, a baptized native was no longer required to pay iasak.<sup>20</sup> Granted, he must now pay a tithe

<sup>19</sup> Fisher, Russian Fur Trade, p. 29.

<sup>20</sup> Lantzeff, Siberia in the Seventeenth Century, p. 179.

in pelts, but the degradation implied in the payment of iasak was eliminated.

In regions of western Siberia administration was closely regulated by Moscow, whose first consideration was to protect her newly acquired territory and her immense income from furs. In 1605 this comprised eleven percent of total state revenue from all sources.<sup>21</sup> But in the more remote regions of northeastern Siberia, not only was Moscow far removed physically in time and space from overseeing the administration of the country, but reliable and trustworthy men were less willing to serve in an area so harsh and savage, and so remote it might take two years simply to reach their destination. In western Siberia supervision was close and key personnel were changed every two years in an attempt to prevent corruption in government. In the far east and northeastern regions officials sometimes served until protests became so loud it was necessary to relieve them of office, or until abuses became unbearable and natives killed the official. Government service in such regions often was regarded as a sinecure and an opportunity to make a rapid fortune through the cruel exploitation of the natives. Krasheninnikov's accounts of the Kamchatka rebellions clearly describes these conditions. These abuses can not be rationalized or excused even under the ancient traditions of kormlenie or feeding, by which government officials in certain areas were expected to arrange for their own subsistency by charging fees and levying taxes of money or foodstuffs on the population under their jurisdiction. Thus in the remote

<sup>21</sup>Fisher, Russian Fur Trade, pp. 113-119.

frontier areas men often took the law into their own hands rather than see justice defeated by delay.

One of the most arresting aspects of the colonization of Siberia is the speed with which it was accomplished. Once Ermak had opened the way, advance across the relatively flat country was incredibly swift. Towns, outposts and ostrogs were established as soon as a region was conquered. Each new settlement became the springboard for the next advance.

The ostrog of Tiumen was established on the Tura River in 1586; Tobolsk, at the nexus of the Tobol and Irtysh rivers, followed in 1587. By 1604 Tomsk was founded on the Ob River, in the same year Tsar Boris Godunov (1598-1605) attempted to bribe an influential boiar, Fedor Mstislavskii into supporting him against the False Dmitrii by offering Mstislavskii the lands in the former khanates of Kazan and Sibir.<sup>22</sup> To the north Berevov and Obdorsk were founded in 1593 and Mangazeia in 1601.<sup>23</sup>

The next great river system to the east was the 3500-mile Enesei and its tributaries, the Lower and Stony Tunguska. These were explored and the ostrog of Eneseisk was established in 1619. Nine years later Krasnoiarsk was built on the Upper Enesei. Within three years, in 1631, the third river system, the 3000-mile Lena, had been explored and trapped and Iakutsk ostrog had been built. The Lake Baikal area was next; Irkutsk was founded in 1651.

<sup>22</sup>Stephen Graham, Boris Godunov (London: Ernest Benn, Ltd., 1933), p. 213.

<sup>23</sup>C. F. Platonov, Boris Godunov (Petrograd: K-VO "Ogni," 1921), p. 58.

After the establishment of the strategic and important ostrog at Iakutsk, exploration was carried out in two directions with two totally different results. The Russians moved south to the Amur River and the Manchurian border, and north and east to the Anadyr-Kamchatka region.

By the time the Russians had reached the Lena River, they were painfully aware of the difficulties of provisioning an increasing number of explorers and settlers in an area so devoid of native agriculture. Thus there was particular interest in searching for more southerly lands which might be colonized with agricultural settlers who would provide foodstuffs, especially grain, for other parts of Siberia. In 1639 the Cossack ataman Dmitrii Kopylov founded an ostrog at the junction of the Maya and Aldan rivers. Two years later Kopylov sent the Cossack Ivan Moskvitin and thirty-one men up the Maya. They founded a zimove on the coast of the Sea of Okhotsk at the mouth of the Ulia River and explored the coast. From the Tungus they heard of fertile land in the Amur Basin.

Reports were sent back to Iakutsk where the voevoda, Peter Golovin, considered the information so important he dispatched the Cossack Vasilii D. Poiarkov and a sizeable force of 132 men to investigate the rumors.<sup>24</sup> Golovin's instructions to Poiarkov are an indication of the thoroughness with which these lands were explored. They also show the quest for scientific knowledge which

<sup>24</sup> The Pacific: Russian Scientific Investigations (Leningrad: Academy of Sciences, 1926), pp. 2-3.

later sent the Bering expedition and Krasheninnikov into Kamchatka. Golovin instructed Poiarkov to "enquire of the natives in detail, about the tributaries of the Zeya, and what kind of people live on the banks of these tributaries, and if they are settlers or nomads, and if they sow crops, and if they have any other wealth, and if there is on the river Zeya silver, copper, or lead ore. . . .

The charts and the report of the route through the mountain range and on the rivers Zeya and Shilka and their tributaries and of the lands, must all be sent to Iakutsk ostrog. . ."<sup>25</sup> Poiarkov lost two-thirds of his men on the expedition. He returned to Iakutsk with a full report and iasak of 480 sable pelts.<sup>26</sup>

In the Amur Basin the Cossacks discovered vast stretches of fertile land, some indeed already under cultivation by the native Amur tribes. But here the Russians did not encounter the light token resistance that had characterized their conquests in other parts of the country. The Amur natives had strong Chinese cultural ties<sup>27</sup> and were in fact tributaries to the Manchu Emperor. The promyshlennik Erofei P. Khabarov led a second Amur expedition in 1649 and enraged the natives by his cruelty and ruthless brutality. The Manchus were apprehensive over the large number of armed men who accompanied Khabarov and helped him force a large iasak payment from natives whom the Manchus considered their tributaries. The Manchus tried to defeat Khabarov

<sup>25</sup> Ibid., p. 3.

<sup>26</sup> Lobanov-Rostovsky, Russia and Asia, p. 57.

<sup>27</sup> Berthold Laufer, The Decorative Art of the Amur Tribes (New York: Publications of the Jesup North Pacific Expedition, 1902), pp. 1-5.

on the Ussuri River but failed; nor were they successful in dealing with his successor, the Cossack ataman Onufrii Stepanov, on the Sungari. For forty years relations between the Manchus and the Russians in the Amur Basin were bloody. Gradually the Russians managed to establish a series of ostrogs in the Amur region, although only Albazin was of considerable size. The Manchus continued to attack the settlements and harass the invaders. By 1658 they were strong enough to reverse the tide. With a large army and a fleet of forty-seven vessels,<sup>28</sup> the Manchus besieged the Russian forces. They killed Stepanov and a large number of his men and forced the remaining 200 Cossacks to flee. They then captured the main Russian settlement, Albazin, and once controlled Amuria.

The Russians, however, would not be easily pushed from an area which offered them agricultural bounty as well as the plum of trade with China. They returned to the Amur with more men and weapons and reestablished all their former ostrogs, while pushing even deeper into Manchuria. Again the Manchus amassed superior forces in an attempt to repulse the invaders. Both sides sustained heavy losses in a series of indecisive battles.

It became apparent at last that the two powers must negotiate. Moscow and Peking agreed to send plenipotentiaries to the town of Nerchinsk, a trading post near the Manchurian border. The Russian delegation was taken aback when they reached Nerchinsk to find the Manchus had brought a veritable army with

<sup>28</sup> Lobanov-Rostovsky, Russia and Asia, p. 60ff.

them. The entire treaty negotiation was threatened by mutual distrust and the difficulties of agreeing on the disposition of troops during the discussion.<sup>29</sup> The diplomats vied with one another in the splendor of their official tents. The Russians were astonished at the luxurious appointments in the Manchu quarters and at the ancient ceremony of Kowtow. The Manchus produced an additional trump card in the presence of two Portuguese Jesuit priests who had come to China in an attempt to establish a missionary route. The two priests acted as liason when neither side could agree. They appear to have advised China and persuaded Russia. After prolonged discussion and debate, the two nations signed the Treaty of Nerchinsk on September 7, 1689. China would not tolerate Russian settlement in the Amur Basin. The Russians were forced to destroy their fortifications at Albazin and to withdraw completely, leaving behind "neither property nor any of their small possessions." The Argun and Gorbitsa Rivers and the Stanovoi mountain range became the boundary line between the two countries. Only by acceding to these demands could the Russians gain trade concessions which would give them a Chinese market for Siberian furs.

The significance of the treaty cannot be understated. Russia lost, for two hundred years, the fertile lands along the Amur River. This had a direct bearing on the subsequent Russian expansion into Kamchatka and her attempts

Joseph Sebes, The Jesuits and the Sino-Russian Treaty of Nerchinsk (1689); The Diary of Thomas Pereira (Rome: Institutum Historicum S. I., 1961), p. 172.

to cultivate agriculture there and on the west coast of America. One will appreciate the significance of Krashennikov's experiments with various seed crops and vegetables which are described in his account.

The Russians had met strong resistance in Amuria, but their movements to the northeast were not so impeded, at least by natives. They did find, however, that the country east of the Enesei and the great Siberian Plain grew increasingly inhospitable. Here they found cold so intense and unrelenting that the ground was imprisoned in permafrost. There were quaking bogs, violent winds, and a plague of mosquitoes that was enough to drive man and beast mad. Only men as tough and intrepid as the Cossacks could have endured. The Cossacks were still in the vanguard of the Russian advance. By 1644 they had established Nizhne-Kolymsk ostrog on the lower Kolyma River in northeastern Siberia. The siren call of furs still led them on. Even in the far reaches of that desolate outpost the Cossacks reported hearing of another river to the east where they might obtain both sable pelts and walrus tusks, prized for ivory. Popov Fedot Alekseev, a fur merchant's agent, decided to explore this possible new source of riches. In 1647 he organized an expedition of promyshlenniks and asked the Cossack Semen Dezhnev (c. 1605-1672 or 1673) to bring his men. The party set out in summer; sixty-three men embarked in four boats. They reached the estuary of the Kolyma River where it discharges its waters into the Arctic Ocean, at that time appropriately called the Icy Sea. The men found the passage so choked with ice as to be impenetrable and were forced to turn back.



The following summer they made a second attempt with ninety men and seven decked wooden kochi, single-masted ships roughly sixty-five feet long with sails made of reindeer hide. When they were becalmed, the men rowed with oars. It appears that the sea was unusually free of ice in the summer of 1648, for the group managed to move out of the Kolyma into the Arctic Ocean and sail eastward. The tiny flotilla managed to stay within sight of each other until they rounded the huge promontory of East Cape. There a great storm separated Dezhnev's koch from Alekseev and the others. In all, four boats including Alekseev's were wrecked. The men were missing and presumed dead. Only recently, in 1937, was a possible clue to their fate discovered. The remains of a 300-year-old European settlement were unearthed on the Kenai Peninsula. Soviet historians have speculated that these settlers, otherwise unaccounted for, may have been the shipwrecked members of the Dezhnev expedition. If so, they were the first Russians to settle the Alaskan coast.<sup>30</sup> In such a case, the Russians discovered the west coast of America nearly one hundred years before the 1741 Bering expedition in which Krashennnikov took part.

Dezhnev's koch managed to double past the great rocky cape, now named Cape Dezhnev. From there he sailed south through what is now Bering Strait. Storms tossed his boat until on the first of October he was shipwrecked at the mouth of the Anadyr River. He built a zimove on the middle fork of the Anadyr

<sup>30</sup> Gibson, Feeding the Russian Fur Trade, p. 24n.

which later became Anadyrsk ostrog. Dezhnev was the first man to cross Bering Strait. In his koch he proved that the continents of Asia and America are separated by a body of water. Dezhnev survived the expedition. Most of his men did not. He made his way overland to Yakutsk where he filed a report in which he described his journey and petitioned the tsar for back pay. The report was never forwarded to Moscow, Instead, it was shelved in Yakutsk and remained buried in official papers there. It was not discovered and made public until nearly a century later, ironically, during the Bering expedition which tried to establish the very fact Dezhnev had proved.<sup>31</sup>

The first known exploration of the Kamchatkan peninsula by Russians occurred in 1696. Luka Morozko, a Cossack from Yakutsk, went among the Koriaks on the Opuka River to collect iasak. There he heard rumors of new lands and possible booty to the south. He traveled as far as the Tigil River on the west coast of Kamchatka. The following year another Cossack, Vladimir Atlasov (?-1711), took sixty Russian troops and sixty Iukagir natives to explore the new land. They traveled by reindeer from Anadyrsk ostrog to the Penzhina River and along the west coast of Kamchatka. At approximately 60° north latitude they cut east across the peninsula and reached the Pacific Ocean near the banks of the Oliutora River. On July 18, 1697 they journeyed as far as the Kamchatka River estuary on the east coast of Kamchatka.<sup>32</sup> These men

<sup>31</sup>See footnote, p. 510, for conflicting opinions on Dezhnev's voyage.

<sup>32</sup>The Pacific, pp. 6-8.

were the first Russians ever to see Kamchadal natives. Two years later Atlasov returned to Anadyrsk where he filed a report of his expedition and a description of the geography of the country through which he had passed. Krasheninnikov's history elaborates on subsequent incursions into Kamchatka prior to his arrival in 1737. For thirty years the country was plundered and oppressed by lawless Cossacks until the natives were roused to open rebellion.

Russian interest in Kamchatka was whetted by two factors. It was obvious from Atlasov's report that this land offered a superb new source of furs. It also appeared there might be land where crops could grow. Kamchatka's Pacific situation gives it the unique advantage of profiting from the Kuro-Shiwo, the warm Black Current of Japan. Thus it has a considerably milder climate along the seaboard than other regions in Siberia at the same latitude.<sup>33</sup> This new land might compensate the Russians in some measure for the loss of Amuria. The difficulty of provisioning Siberia had become critical. Food supplies for Siberia had to be requisitioned from taxable peasants west of the Urals and taken into Siberia by river. In the early 1670's the yearly Siberian deliveries were approximately 528 1/2 tons of flour and groats.<sup>34</sup>

In Moscow a new tsar had come to power who was intensely interested in recent explorations in Siberia and Kamchatka. The vital and energetic Peter the Great had insatiable craving for knowledge of science, exploration; he was

<sup>33</sup>G. W. Melville, In the Lena Delta (Boston: Houghton, Mifflin & Company, 1885), p. 1.

<sup>34</sup>Gibson, Feeding the Russian Fur Trade, p. 62.

eager to build ships and train a navy. His fierce ambition and forceful optimism could galvanize men into action. In a single generation Peter changed Russia's outlook from medieval to modern. The tsar learned much from progressive European countries but he was also impatient to learn more about the huge new regions of his own land which were far greater in extent and potential than all of western Europe.<sup>35</sup>

Atlasov's report on Kamchatka reached Moscow in 1701. Peter's energy for a decade would be expended in battling Sweden and building St. Petersburg. For the moment he had neither time nor resources to devote to the Far East. Not until he had won an unprecedented and decisive victory over the Swedes at the Battle of Poltava (1709) could he afford to think of the East.

Peter was exceptionally fortunate to have superb advisers and recognized good advice. In 1697 Gottfried Wilhelm Leibnitz (1646-1716) gave Peter a list of projects to consider. He noted that it was very important to explore the northeast coast of Asia "to ascertain whether Asia and America are connected or are separated by a strait."<sup>36</sup> When the tsar visited Holland in 1717 other men urged him to investigate the possibility of a passage between Asia and America.<sup>37</sup> Dezhnev's report would have settled the matter, but it was still

<sup>35</sup>Boris B. Kafengauz (ed.), Ocherki Istorii SSSR, Period Feodalizma (Moscow: Izdatelstvo Akademii Nauk SSSR, 1954), p. 681.

<sup>36</sup>The Pacific, p. 9.

<sup>37</sup>G. F. Müller, Voyages from Asia to America for Completing the Discoveries of the North West Coast of America (London: T. Jefferys, 1761), p. ii.

collecting dust in the Yakutsk files.

As soon as Peter returned to Russia he began planning an expedition to explore and map the seas off the easternmost promontory of Siberia. The first men he assigned to this exploration were two Russian officers, both geodesists, Fedor Luzhin (?-1727) and Ivan Evreinov (?-1724).<sup>38</sup> His instructions to them were brief and concise: ". . . go to Kamchatka and farther, as you have been ordered, and determine whether Asia and America are united, and go not only north and south but east and west, and put on a chart all that you see."<sup>39</sup>

Luzhin and Evreinov took two years to reach Kamchatka. They explored the southern tip of the peninsula and the northern Kurile Islands, but were unable to gain any information about a sea passage to America. They returned to St. Petersburg in 1723 and reported their failure to the tsar.

Peter immediately began planning a second, more ambitious expedition. He chose Vitus Bering (1681-1741) to command it. Bering, a Dane, had entered the Russian navy in 1703, the same year Peter began draining the filling swamps to build St. Petersburg. Bering served Russia in the Black Sea, the Sea of Azov and the Baltic. He sailed with the Kronstadt fleet from its inception. Although Bering's promotions had been rapid, he was not satisfied with his rank.

<sup>38</sup>Sven Waxell, The American Expedition (London: Wm. Hodge & Co., Ltd., 1952), p. 13.

<sup>39</sup>Frank A. Golder, Bering's Voyages (New York: American Geographical Society, 1922), v. I, p. 6.

He had retired from Russian service when the tsar called on him to head the Kamchatka Expedition.

By 1724 Peter's health was already failing, but he worked carefully with Bering to plan the expedition. Both knew the importance of selecting capable officers. They searched for geodesists who had had experience in Siberia, reliable naval lieutenants, and carpenters to build a ship and men to crew it. Bering's lieutenants were Martin Spangberg (?-1761), also a Dane, and Alexei I. Chirikov (1703-1748), a Russian.

The tsar did not live to see the expedition set out. He died on January 28, 1725, but left instructions to carry out the expedition as planned. Peter's second wife, the Empress Catherine I (1725-1727), succeeded him to the throne and immediately sent Bering on his way according to her husband's wish. The Empress' formal instructions were as brief and precise as Peter's instructions to Luzhin had been. She commanded Bering: "1. Build in Kamchatka or in some other place in that region one or two decked boats. 2. Sail on these boats along the shore which bears northerly and which (since its limits are unknown) seems to be a part of America. 3. Determine where it joins with America, go to some settlement under European jurisdiction; if you meet a European ship learn from it the name of the coast and put it down in writing, make a landing to obtain more detailed information, draw up a chart and come back here."<sup>40</sup>

<sup>40</sup>Ibid., pp. 9-11.

The hardships of Siberian travel delayed Bering and his company so that it took him three and one-half years to reach the Kamchatka River and build his ship, the St. Gabriel. At last on July 14, 1728, he set sail from the mouth of the Kamchatka River. By the middle of August Bering passed the most easterly tip of Asia and continued north along the coast. The entire time Bering sailed in the strait the weather was overcast. At times dense fogs and mist prevented him from seeing the Siberian coast even at the distance of a few miles. On August 13 the ship was in 64°30'. Bering called Spangberg and Chirikov together for counsel. At that latitude summer is very short. Only a few weeks of good weather remained. Should the ship continue north to survey the coast and search for European settlements or consider the safety of the men first and turn back, lest ice prevent them from returning at all before winter?

Spangberg believed they had fulfilled their mission and should return to the Kamchatka River. Chirikov disagreed. He felt they had not definitely established the fact that Asia and America are separated. He voted to continue north until the question was clearly settled, or at least until they should be stopped by ice. Bering sided with the more cautious Spangberg. He decided to continue north for two more days and then turn back.

Bering returned to St. Petersburg in March, 1730, and made his report to the new Empress Anna. ". . .I concluded that according to all indications the instruction of the emperor of glorious and immortal memory had been

carried out. . ."<sup>41</sup>

Public opinion was against Bering. Critics in St. Petersburg and Moscow charged that he had been faint-hearted and had utterly failed to carry out his orders. His career and his future were at stake.

Fortunately Bering had support in high places. Influential members of the court circle and the group of young foreign scientists whom Peter had brought to Russia approved of his decisions. Emboldened, Bering ignored his critics and concentrated his efforts on the Empress. Not only did he convince her that he had acted wisely on the first Kamchatka Expedition, but urged her to allow him to take a second infinitely larger expedition into Siberia and Kamchatka and to the coast of America.

The newly founded Academy of Sciences in St. Petersburg shared Bering's enthusiasm for a new expedition. They could send scientists along and the Academy's reputation would be established in the international scientific world. As the idea caught fire, the scope of the venture grew to fantastic proportions. It became one of the most ambitious expeditions of all time. The expedition was to explore and map Siberia; to establish definitely whether Asia and America were joined or separate; to explore and chart all waters between Kamchatka, America and Japan; to map the entire Arctic coast from the White Sea to the mouth of the Kamchatka River; to explore all rivers in Siberia which fall into Lake Baikal from the east to find an easier land route to Kamchatka than the

<sup>41</sup> Frank A. Golder, Russian Expansion on the Pacific, 1641-1850 (Gloucester, Mass.: P. Smith, 1960), p. 148.



arduous Yakutsk route; to prospect for precious minerals in all explored areas; to locate harbors and forests which could supply timber for building ships; to establish schools in the port of Okhotsk, as well as a dockyard and ironworks; and to institute a cattle-breeding project to alleviate the food shortage. Furthermore, the true purposes of the expedition were to be kept secret from any persons they met en route. The leaders had two sets of instructions; one set might be shown to curious outsiders, but the real orders were contained in the second set.

Bering again had Spangberg and Chirikov as his seconds-in-command. In addition, three members of the Academy, Gerhard Friedrich Müller, Johann Georg Gmelin and Louis de l'Isle de la Croyere joined the expedition. All three volunteered eagerly. One remarked, "It may be said with truth, that so tedious and long a voyage was never undertaken with more alacrity than this was by all who had a share in it."<sup>42</sup>

Gerhard Friedrich Müller (1705-1783), born in Westphalia in 1705, had come to the Academy the winter Peter the Great died. He taught Latin, history and geography in the gymnasia established by the Academy. He was still in his twenties at the time of the Second Kamchatka Expedition. Müller had just returned from England where he had been made a member of the distinguished Royal Society. The St. Petersburg Academy immediately elevated him to a regular professor. Müller's assignment in the expedition was to oversee the investigations dealing with history, geography, linguistics and ethnology. He

<sup>42</sup>Müller, Voyages from Asia to America, p. 15.

had the task of examining all Siberian archives. He was carrying out this work when he uncovered the lost report of Semen Dezhnev. Müller's work was to cover an area that extended from the western edge of Siberia to Kamchatka, and north to the Arctic Ocean. His work on the expedition immortalized him as the father of Siberian history.

A second member of the Academy was even younger. Twenty-two year old Johann Georg Gmelin (1709-1755) of Würtemberg was already a doctor of medicine and professor of chemistry and natural history. Gmelin's botanical studies from the expedition have been published in his four-volume study, Flora Sibirica; his travels in Siberia during the course of the ten-year study were recorded in his Reise durch Sibirein von dem Jahr 1733 bis 1743.

The astronomer Louis de l'Isle de la Croyère was the third Academician. He proved a pleasant companion but an inferior scholar. His brother, Joseph Nicholas de l'Isle<sup>43</sup>, had just been made the chief astronomer of the Academy and had arranged de l'Isle's appointment to the expedition.

In addition to the foreign scholars, the authorities decided to send twelve young Russian students from the Slavonic-Greek-Latin Academy in Moscow. The twelve were sent to the St. Petersburg Academy to be examined. Only three were accepted. Of the three, one student immediately impressed the professors by reason of his intelligence, bearing, energy and devotion to work.<sup>44</sup>

<sup>43</sup>De la Croyere had led a somewhat irregular life and had been persuaded to adopt his mother's name.

<sup>44</sup>Leonhard Stejneger, Georg Wilhelm Steller, the Pioneer of Alaskan Natural History (Cambridge: Harvard University Press, 1936), p. 105.

Stepan Petrovich Krasheninnikov, the son of a military man, was born in Moscow in 1711. Until the time of the second Kamchatka Expedition all his education had been acquired in Moscow. He had excelled in natural history and was praised for his industrious habits and good character. He was at first assigned to the expedition as an assistant to Gmelin to work on botanical and zoological and mineralogical descriptions. But he soon showed such an aptitude for history and geography that he was allowed to pursue his own interests. Russian officials were delighted to have a native-born Russian scholar among the ranks of the distinguished foreign scientists.

The size of the expedition grew until nearly 600 men were involved. Such a number could not conceivably travel together through the Siberian wilderness. One group must reach Okhotsk and the Kamchatkan seaboard as soon as possible to begin to build ships and make the necessary preparations for the naval expedition. The first group left St. Petersburg in February, 1733. Spangberg and the naval mechanics left soon afterward. Bering and his group departed in April. The Academicians did not leave until August.

The goal for the Academic branch of the expedition was Kamchatka, but their progress across Siberia was necessarily very slow, for they traveled with an immense amount of scientific equipment and stopped frequently to make observations. In addition, both Muller and Gmelin traveled with elaborate supplies of food and wine. Altogether they had thirty-seven loads of baggage. Krasheninnikov traveled with them as they made their way across the endless steppe of Siberia and at last reached Irkutsk in March, 1735.

Using Irkutsk as a home base, the scientists traveled south to the trading towns along the Manchurian border. The following winter was severe and travel exceptionally difficult. In addition to the hardships of climate, the scientists had to combat constant drunkenness among their escorts, frayed tempers and depleted supplies. It was with great relief that they reached Iakutsk in September, 1736.

Relief changed to desperation. The scientists discovered in Iakutsk that the naval expedition members who had preceded them had requisitioned for themselves all available supplies and provisions. It was impossible for the professors to obtain men, provisions or even transportation to Kamchatka. The Academicians were forced to postpone their trip to Kamchatka. Müller was ill and decided to return to a milder climate. Gmelin chose to return with him in hopes of duplicating a number of notes he had lost in a fire in Irkutsk. De la Croyère elected to explore the mouth of the Lena River.

The only hope of retrieving some part of the Kamchatka expedition was to send one completely reliable person ahead to make preparations so the professors could later join him there and carry out their assignment.

Krasheninnikov, now twenty-five, was entrusted with the staggering responsibility. The professors had observed him carefully on the journey; he had made several trips alone and had proved reliable, dependable and resourceful. They gave him detailed instructions to investigate everything which might be of scientific interest and to make preparations at Bolsheretsk ostrog for the arrival of the professors at a later date. On July 8, 1737,

he started out for Kamchatka over the most difficult part of the entire journey. The crossing from Yakutsk to Iudoma Cross and thence to Okhotsk is graphically described without exaggeration by Krasheninnikov himself. The journey took forty-one days. From Okhotsk, Krasheninnikov and his small band of men sailed in the rotten and leaky Fortuna for Bolsheretsk. The desperate voyage which he relates at the end of his account ended when the vessel was wrecked at the mouth of the Bolshaia River during a violent earthquake. The men were lucky to escape with their lives.

Krasheninnikov lost his instructions, his personal possessions and all his equipment in the wreck. More important, he lost a two-year supply of food for the entire group. It is difficult to conceive his desperate situation. Hungry, cold, wet, surely discouraged, he was so ill he could scarcely stand. But Krasheninnikov did not waste time in self-pity or despair. He immediately led his small company to Bolsheretsk ostrog where he begged and borrowed clothing and food for them. Then he began to work.

For three years he traveled Kamchatka virtually alone. In that distant primitive land of mountains, avalanches, quagmires, volcanoes, besieged by hostile natives, earthquakes, mosquitoes and lack of food, Krasheninnikov observed, collected, noted. Seemingly nothing escaped his notice. He observed the appearance of the natives and noted in great detail even such seemingly trivial matters as how their hair was cut and how they sewed their garments together. He described their religion, myths, beliefs, customs and even their language. He analyzed their manner of speaking

and contrasted the tribes to one another. Not content with simply observing their food, he ate it. He candidly remarked it turned his stomach just to watch some of the dishes in preparation. For days on end he lived in the choking smoke of the underground iurts while he recorded every minute detail of Kamchadal festivities.

During these years he collected specimens of animal and plant life, amassed detailed data on the precise distances between stopping places along the various trails in Kamchatka, and often risked his life to journey to some inaccessible place to examine a hot spring or geyser or volcano. He experimented with raising rye and barley to see if Kamchatka might be used as an agricultural station for Siberia.

One can imagine the loneliness this erudite young man must have experienced in a land so remote not one of its inhabitants could have understood his references to Greek history and mythology. He spent days walking the foggy coasts where waves crashed and gulls screeched overhead, but there was no one to converse with nor anyone with whom he could discuss his significant and truly exciting observations.

In September, 1740, this situation changed dramatically with the arrival of a brilliant young German adjunct professor of natural history, Georg Wilhelm Steller. Steller had joined the expedition later than the other scientists. He had made his way across Siberia virtually alone on a journey that somewhat paralleled Krasheninnikov's for raw adventure. Like Krasheninnikov, Steller had a ceaselessly inquiring mind. He was a superbly trained botanist and

a competent physician. Like Krasheninnikov, he did not need to take his own culture into primitive lands. He was perfectly willing to eat native foods and live however he could. His passion was knowledge. He sacrificed everything to it: comfort, sleep, pleasure, friendship. He alienated everyone he met. Dogmatic, impatient, completely lacking in tact, Steller was contemptuous of his subordinates. When he reached Kamchatka his great desire was to accompany Bering on the voyage to discover and explore the west coast of America.

From the moment he arrived in Kamchatka Steller tried to assume command over Krasheninnikov on the theory that as an adjunct professor he had authority over a mere student. He was four years older than Krasheninnikov. For a year he traveled about Kamchatka making notes wherever he went and attempting to institute all manner of reforms to improve the natives. He was curt and peremptory with Krasheninnikov and issued endless written orders. On one occasion Steller sent for Krasheninnikov to make the journey on foot across Kamchatka simply to translate a letter for him.

Steller was obsessed with the desire to accompany Bering. He regarded the younger man as a threat to his plans. He persuaded De la Croyère, who had arrived in Kamchatka at the same time, to issue the order for Krasheninnikov to return to Siberia on the next ship. After spending four endless winters and three mosquito-ridden summers in Kamchatka, Krasheninnikov may not have resented the order.

Bering's voyage is so well known it is unnecessary here to describe it

in detail. Steller sailed with Bering on the St. Peter and has the distinction of being the first scientist ever to set foot in Alaska. The observations he made in a single day on the new continent have astounded scientists for two centuries. After the grim shipwreck on Bering Island, Steller helped save the lives of many of his shipmates who were dying of scurvy. He nursed the dying Bering until the captain's death on December 8, 1741. After Steller reached the mainland, he spent many months making observations and notes in Kamchatka. When he finally undertook the long journey back to Russia, he died en route at Tiumen in 1746.

Krasheninnikov returned to Siberia and rejoined Muller and Gmelin. The latter two asked to be released from their orders directing them to Kamchatka and never journeyed there. Krasheninnikov's reputation as a scientist was firmly established as a result of his ten years with the Second Kamchatka Expedition. Immediately upon his return to St. Petersburg he was made an adjunct of the Academy, and in 1750 was promoted to become professor of natural history and botany. After Steller's death Krasheninnikov was given the botanist's Kamchatka notes and was requested to combine Steller's research with his own and to write an account of the description and history of Kamchatka. The resulting classic was published by the Academy of Sciences in 1755. Krasheninnikov did not live to see his work in print.

The rigors of the Second Kamchatka Expedition took many lives: Bering, Steller, Gmelin in 1747, then Krasheninnikov in 1755 at the age of forty-two. His name has been given to a cape on Karaginsk Island, to an island



off the coast of Kamchatka and to a mountain near Lake Kronotsk. His greatest monument is his magnificent work, Opisanie Zemli Kamchatki (The Description of the Land of Kamchatka), which follows. For this he will be remembered always.

## PART ONE

### KAMCHATKA AND THE NEIGHBORING COUNTRIES

There has long been some knowledge of Kamchatka, but for the most part this has consisted only in the certainty that a country of this name existed. Nowhere was there any accurate information to be found concerning its geographical location, its terrain and its inhabitants.

At first it was believed that the land of Esso was contiguous to Kamchatka; this opinion was widely held for a long time. Then it was discovered that these two countries are separated, not only by a large sea, but also by a number of islands situated between them. This discovery, however, still did not ascertain Kamchatka's exact location, and until now Kamchatka has only been vaguely indicated on maps through conjecture.

This is easily seen by looking both at old maps and even at those drawn in our own time.<sup>1</sup> Even the Russians did not begin to know Kamchatka until they had conquered it. The first knowledge we had of Kamchatka was very limited. It was only through the two expeditions that were made, and especially,

<sup>1</sup>The French cartographer Joseph Nicholas Delisle, a member of the St. Petersburg Academy of Sciences, in 1731 prepared a map for the second Bering expedition purporting to show the North Pacific regions. Frank A. Golder first reproduced the map in Bering's Voyages (2 vols.; New York: American Geographical Society, 1922-1925), II, 72. --Ed.

the latter, that we acquired a more extensive knowledge of the geography of this country. By order of the Admiralty exact charts were drawn of the east coast of Kamchatka as far as Cape Chukotsk, and of the west coast as far as the Gulf of Penzhin, and from Okhotsk to the Amur River. The explorers also ascertained the location of the islands which are located between Japan and Kamchatka, as well as those between that country and America. The expedition of the academicians of the St. Petersburg Academy of Sciences made astronomical observations to determine the correct location of this little known country.<sup>2</sup>

<sup>2</sup>The 1949 revised Russian edition includes: "The reports described various places both as to their natural environment and their political history. Here only that information is given which pertains to geography and political history. The remaining observations will be separately published." --Ed.

## CHAPTER I

### THE LOCATION OF KAMCHATKA, ITS BOUNDARIES AND TERRAIN

The country which is now known as Kamchatka is a great peninsula off the east coast of Asia which extends about seven and one-half degrees from north to south.

I consider the beginning of this peninsula to be at the Pustaia and Anapka rivers, located in approximately 59° 30' latitude. The first empties into the Penzhin Gulf, and the second into the Bering Sea.<sup>1</sup> The country is so narrow [approximately eighty miles] here that according to reliable testimony, on a clear day one can make out both seas from the mountains in the middle of the peninsula. The land becomes wider to the north, so I feel this place may be considered the beginning of the isthmus of Kamchatka. Furthermore, the government of this province ends here, and the land above the isthmus to the north is called Zanos,<sup>2</sup> which includes all the country under the jurisdiction of Anadyr. However, I do not completely reject the opinion of those who would establish the beginning of this great cape between the Penzhina River and the Anadyr.

<sup>1</sup>In the original, Eastern Ocean. In the present translation, Bering Sea is used throughout. --Ed.

<sup>2</sup>The area referred to as Zanos extends from Anadyr to Kamchatka.

The southern extremity of the Kamchatkan peninsula is called Cape Lopatka because of its resemblance to the shape of a man's shoulder blade. In reference to the distance in longitude between St. Petersburg and Kamchatka, astronomical observations indicate that Okhotsk is 112 53' east of St. Petersburg, and that Bolsheretsk is no more than 14 6' from Okhotsk, also to the east.

The shape of the Kamchatkan peninsula, according to the limits I have given, is elliptical. Its greatest width is estimated at 415 versts<sup>3</sup> between the mouths of the Tigil and Kamchatka rivers, which are linked by the middle course of the Elovka River, which rises in the same region as the Tigil and flows in the same latitude.

Bering Sea borders Kamchatka on the east and separates it from America. The country is bounded on the west by the Sea of Okhotsk<sup>4</sup> which begins at the southern tip of Kamchatka and the Kurile Islands and extends northward between the west coast of Kamchatka and Okhotsk, which are 1000 versts apart. The northernmost part is called the Penzhin Gulf because the estuary of the Penzhina River is there. Thus this country has America as its neighbor to the east; to the south it borders on the Kurile Islands which extend southwesterly to Japan; and to the southwest its neighbor is the Empire of China.

The Kamchatkan peninsula is very mountainous; the hills extend in an unbroken chain from the north to the southern cape, and they separate the country

<sup>3</sup>A verst is a measure of linear distance equal to 3500 feet. --Ed.

<sup>4</sup>In the original, Penzhin Sea. In the present translation, Sea of Okhotsk is used throughout. --Ed.

into two nearly equal parts. This range branches out into lateral chains which extend to the shores of the two oceans. The river courses lie between these. Lowlands are found only near the sea, where the mountains are far off. There are deep valleys between the mountains.

In some places these ranges extend far out into the sea, and this is how they came by the name of nos, or cape; there are more of these capes on the east coast than on the west. All the gulfs or bays which are enclosed between these capes are usually referred to as seas, and each has its own name: for example, The Sea of Oliutor, Sea of Kamchatka, Beaver Sea, etc. I will give a more detailed description of this when I describe the coast of Kamchatka.

The reason why this peninsula was named Kamchatka will be explained later, when the peoples of Kamchatka are discussed. I will limit my remarks here to saying that in general there is no name for these various nations, but rather, each area is named for the people who live there, or for whatever natural feature seems most prominent there. Even the Kamchatka Cossacks use the name Kamchatka only to refer to the Kamchatka River and the land around it; thus, following the example set by the natives, they refer to the southern part<sup>5</sup> of the Kamchatkan peninsula as the Land of the Kuriles, since these are the people who live there. The west coast from the Bolshaia River to the Tigil is simply called The Coast; the east coast, which extends to Bolshepetsk

<sup>5</sup>In several documents the part of Kamchatka from the Kamchatka River south to Cape Lopatka is referred to as Cape Kamchatka.

ostrog<sup>6</sup> is called the Beaver Sea, because of the sea beavers<sup>7</sup> which are found here in greater numbers than anywhere else. Other places from the mouth of the Kamchatka River and the mouth of the Tigil to the north are named for the Koriaks who inhabit them. The east coast is called Uka, after the Uka River; and the west coast is called Tigil, because of the Tigil River. Thus, when in Kamchatka one speaks of going to The Coast, or going to Tigil, one means the two areas designated by these names.

Kamchatka is drained by a large number of rivers; however, none except the Kamchatka is navigable, even by very small boats such as the large canoes called zaisankas,<sup>8</sup> which are used at the forts located around Irtysh. The Kamchatka is deep enough to allow small vessels to ascend it from its mouth for 200 versts or more upriver.

The natives of this country claim that before the conquest of Kamchatka, several Russian navigators who were shipwrecked on this river ascended it in a

<sup>6</sup>Ostrog, a rectangular fortress with a wooden stockade. Within the stockade were various buildings such as barracks, warehouses and a church. For fuller descriptions see Terence Armstrong, Russian Settlement in the North (Cambridge: Cambridge University Press, 1965), p. 195; Raymond H. Fisher, The Russian Fur Trade 1550-1700 (Berkeley and Los Angeles: University of California Press, 1943), p. 35; and George V. Lantzeff, Siberia in the Seventeenth Century (Berkeley and Los Angeles: University of California Press, 1943). --Ed.

<sup>7</sup>Sea otter, latax lutris. --Ed.

<sup>8</sup>These are named after Lake Zaisana, through which the Irtysh River flows.

small boat called a koch<sup>9</sup> as far as the mouth of the Nikul River, which is presently called the Fedotovshchina, after the captain of this small vessel, whose name was Fedot. The largest rivers after the Kamchatka are the Bolshaia, the Avacha and the Tigil; Russian colonies have been established on their banks, since these are the most favorable locations in the country.

Kamchatka is also filled with lakes; there are so many around the Kamchatka River that it is not possible to traverse the area in summer; some are very large. The largest are: Lake Nerpich, which is near the Kamchatka River, Kronotsk, the headwaters of the Krodakyg River, Lake Kurile, the headwaters of the Ozernaia River, and Lake Apalsk, which is the source of the Bolshaia River.

There are a few places where one finds a great many volcanoes and hot springs in a small area, but this will be more fully discussed later.

<sup>9</sup>The kochmara, or koch, was a decked wooden vessel, with one sail and oars, which could carry about ten men and six tons of cargo; they were flat-bottomed and had a shallow draft and could be portaged. Armstrong, Russian Settlement, p. 36. --Ed.



## CHAPTER II

### THE KAMCHATKA RIVER

The Kamchatka River, which the natives call the Uikoa, or big river, rises in a flat area filled with marshes and begins its course to the northeast; then it turns eastward and bends abruptly southeast; it empties into the Bering Sea; its mouth is in  $56^{\circ}30'$  north latitude, as it is marked on our new maps. The distance from source to mouth, if one were to draw a straight line across the Cape, is 496 versts,<sup>1</sup> and in its course it is fed by many large and small rivers which empty into both its shores. Some are comparable to our largest rivers.

Two versts from its mouth, on the right bank, there are three deep bays which are quite large, and where ships can safely winter, as has been proven several times. The ship Gabriel<sup>2</sup> found safe harbor there for several winters. The bays are situated along the seacoast toward the Kurile Islands. The first bay nearest the mouth of the Kamchatka River is three versts long, the second is six, and the third, fifteen or more. The distance between the river and the

<sup>1</sup>By new measurements. The distance is greater by the old reckoning; this will be discussed later.

<sup>2</sup>The St. Gabriel, a ship built by Bering at Upper Kamchatka ostrog in 1728. --Ed.

first bay is only twenty sazhens;<sup>3</sup> between the first bay and the second, about seventy, and between the second and third, about a half verst. The Kamchatka at one time emptied into these very bays, but its mouths became choked with sand, which happens nearly every year, and the river carved another channel to the sea.

On the right bank of its mouth, one can still see a signal beacon, which was built during the last Kamchatka expedition 1725-1728 ; and three versts from the mouth, on the left bank, barracks for the sailors were built. All around one finds sheds and huts and balagans [summer huts] which the natives live in during the summer when they come to fish. A short distance away, on an island in the river, a church was built, which resembles the Monastery of the Savior in Irkutsk; there are also barracks in that area, which the State ordered built, and a salt evaporator.

Six versts from the mouth of the river on the left bank is a large lake which the Russians call Nerpich and the Kamchadals call Kolko-Kro. In the lake are a great many seals, known in this country as nerpy, for which the lake is named. The seals come from the sea by way of an arm of the lake which empties into the river. The width of the lake, from south to north, is twenty versts; and its length extends almost all the way out to Cape Kamchatka, which juts so far out into the sea between the mouths of the Kamchatka and Stolbovskaia rivers that according to the reports of the Kamchadals, it takes at least two days to go all the way around it in springtime with good dogs. One would not

<sup>3</sup>A sazhen is a measure of length equal to seven feet. --Ed.

be mistaken in estimating its circumference at 150 versts, since it is not difficult to travel seventy-five versts a day at that season of the year.

The arm through which the lake is drained is almost as large as the Kamchatka River, which raises the question as to whether the lake runs into the river or vice versa; the latter opinion seems more likely, since the river has changed and has made its channel on the same side as the arm of the lake has its natural channel. The same situation exists at Okhotsk, where the Kukhtui River, which is as large as the Okhota River, empties into the left bank of the latter near the sea and follows its course to the coast, never flowing straight, but always alongside, southeasterly.

In regard to the rivers which empty into the Kamchatka, I will only mention here those which are worth consideration because of their size, or for some other reason.

As one ascends the Kamchatka River from its mouth, the first river encountered is the Ratuga, or in the native tongue, Orat; I mention it not because of its size, but because a fort was built on its shore called Lower Kamchatka ostrog after the 1731 Kamchatka rebellion and the destruction of the former fort called Lower Shantal ostrog. This river comes from the north, but two versts before its mouth, it turns southwest, completely opposite the course of the Kamchatka River, which in that region flows northeast. At this point the distance between the two rivers is only seventy sazhen, and in certain other places, much less. A half verst below the mouth of the Ratuga the settlement of Lower Kamchatka ostrog begins; the ostrog itself has been built at the end of

the village, with a church and a large number of storehouses and buildings which belong to the Crown; it is thirty versts from the mouth of the Kamchatka River to the ostrog.

Thirty-five versts from the Ratuga on the right bank of the Kamchatka flows a small river called the Khapicha, in Kamchadal, Gychen; its source is a short distance from the Kamchatka Volcano.

Between the Ratuga and the Khapicha the banks of the Kamchatka are very steep and rocky for nineteen versts. This is true of the banks of all the rivers that flow between mountains; but it should be observed that although both banks are very precipitous, one is always more sloping; and in every case, where one bank makes a re-entrant angle, the opposite forms a projecting angle. Steller<sup>4</sup> and I made the same observation in all the valleys which lie between the mountains, and particularly in those which are narrow, where this is much more pronounced, which confirms the opinion of Bourguet,<sup>5</sup> who observed the same thing in the Alps.

Near this river there is a small Kamchadal settlement called Kapichurer; at one time it was very well-known and well populated, but now there are only fifteen men who pay iasak<sup>6</sup> there. Two and a half versts from Khapicha, on the opposite bank, there is a small stream called Eimolonorech, which is

<sup>4</sup>Georg Wilhelm Steller. See Introduction. --Ed.

<sup>5</sup>Louis Bourguet (1678-1742), French naturalist and archaeologist. --Ed.

<sup>6</sup>Iasak, tribute exacted from conquered natives, paid in furs. Fisher, Fur Trade, pp. 30, 49-61. --Ed.

unremarkable except for the fact that it rises at the foot of a high mountain called Shevelicha, situated twenty versts from the Kamchatka River on its left bank.

The natives of this country have as great a penchant for the supernatural and for myths as the Greeks. They attribute supernatural powers to the most prominent feature of the landscape, such as mountains, hot springs and volcanoes. They believe, for example, that the hot springs are inhabited by evil spirits; they suppose that Shelevicha Mountain was situated on the shores of the Bering Sea in the same place where Lake Kronotsk is now located; but because it could no longer endure the nuisance of all the marmots who gnawed on it, it had to move itself to this location. They relate how the mountain made the journey; they say that from time to time smoke pours out from its summit. I cannot attest to this, as I never saw it myself.

The small river Kenmen-kyg, which is six versts from the Eimolonorech, is unusual for two reasons. One, it is part of the Kapicha River and separates from it thirty versts above the mouth of the Kapicha, and two, it empties into a branch of the Kamchatka called the Shvannolom, which is also the name of a small Kamchadal village, as well-known as it is populous. It was built near the mouth of this branch of the river. The Cossacks call this area by a corrupted Kamchadal word, Shevan. This includes the small settlement of Kuan, built near the Kuana River, six versts from the Kenmen-kyg.

Thirteen versts from the Kamaka opposite the mouth of the small river Khotabena, which empties into the left bank of the Kamchatka River, is another

hill which was at one time well-known for a large Kamchadal settlement, which, however, was totally destroyed by the Cossacks when they conquered Kamchatka.

Ten versts from this river, on the left bank of the Kamchatka, there is a village called Pingaushch, in Russian, Kamennii, which once had many persons but today is reduced to such a miserable state that there are only fifteen inhabitants.<sup>7</sup> The villagers brought about their own downfall by their restlessness and seditious inclinations, for they took part in every rebellion in Kamchatka.

The Elovka River, called Kooch by the Kamchadals, may perhaps be considered the largest of all the rivers tributary to the Kamchatka; it enters the left bank of the Kamchatka and rises quite near the Tigil; thus one follows the Elovka to reach the Tigil. One can go by canoe as far as the Ozernaia, which empties into the Bering Sea ninety versts north of the mouth of the Kamchatka; the method of making the crossing follows.

One goes up the Elovka to the Uikoala, which falls into the left bank of the Elovka forty versts from its mouth; then up this river for a day and a half to its small tributary river, the Banuzhulan, which empties into the left bank of the Uikoala; then up the Banuzhulan for one verst to the marshy area where its headwaters are. From this swamp one portages the boats across the marsh for one verst to the Kygychulzh, and then proceeds on this river to the Biegulzh. There are both small streams, and from the latter, one reaches the Ozernaia.

<sup>7</sup> According to the census, there are sixty-nine persons who have been designated as being absolved from the payment of iasak and freed from slavery; they do not live with the toion [chief], and do not know him at all.

The distance from the portage to the mouth of the Kygychulzh is about thirty versts, and from there to the mouth of the Biegulzh, the distance is only about six versts.

It is twenty-six versts if one goes directly from Kamennii ostrog to the mouth of the Elovka. The mountain called Tyim begins at the mouth of the Elovka, and for eleven versts forms the bank of the Kamchatka downriver. Behind the mountain there are two large lakes, Kainach and Kulkholiangyn, which, according to the superstitions of the Kamchadals, were formed in the footsteps of Mount Shevelich, as the spring in the Helicon Mountains was formed in the hoofprint of the horse Pegasus; legend has it that Mount Shevelich arose from its ancient location and on its third leap found itself in the very place where it stands today. In spite of the absurdity of these tales, I do not believe one should completely discount them; it is true that great changes have occurred in these places because of all the volcanoes, the violent earthquakes and the frequent inundations to which this country is subjected. The earthquakes swallow up some mountains and occasionally make new ones appear; it is entirely possible that there once was a mountain in the place where Lake Kronotsk is now; and although Mount Shevelich is very old, nonetheless, since it is the only mountain still standing after all those around it have been engulfed, people could have come to believe it had simply appeared; and perhaps that is how the legend originated. The extraordinary appearance of this country, with mountains spread out here and there with no communication between them, gives rise to the conjecture that this area has undergone great changes. A

small Kamchadal village, Koannym, is located between Lake Kainach and the Elovka. The toion Fedor Kharchin lived there. He was the ringleader of the rebellion.<sup>8</sup> Following his death, the administration of the ostrog was given to his brother, Stepan Kharchin.

Before one reaches the Elovka, three rather sizable rivers are encountered: the Uachkach, the Kliuchovka and the Biokos, which enter the right bank of the Kamchatka. The first is eight versts below the Elovka; the second is four versts below the first; and the third is one verst below the second. The first is worthy of mention because it had a Russian ostrog on its shores, which was destroyed by the Kamchadals in 1731; it was located near the mouth of the river and was called Kilucha. The Kliuchovka is interesting because a monastery of the Savior of Yakutsk and several other buildings in the area were destroyed at the same time as the ostrog, and now nothing remains but a single zimovie<sup>9</sup> and a storehouse. The monastery servants come here to sow barley and vegetables. Barley does very well, and turnips grow very large there. The Biokos is interesting because it flows out of a volcano, the base of which, in this area, extends right up to the Kamchatka River. The Biokos has water in it only during the summer, when the snows melt and run off the mountains. Its water is turbid and milky; the bottom is covered with dark sand, from which it derives

<sup>8</sup>See Part Four. --Ed.

<sup>9</sup>Zimovie, a winter hut. It was often a log cabin, sturdily built to withstand attack. The site of a zimovie frequently became the location for an ostrog. Armstrong, Russian Settlement, p. 195. --Ed.



its name which means black sand. Along this river there are light spongy rocks of various colors and bits of lava. On the small Uachkhach River, which the Russians call a spring, since it never freezes over in winter, the small Kyllush ostrog is located. Before the 1731 Kamchadal rebellion it was quite large and had many people, but now it is in such a deplorable condition that of the great number of persons who once lived there, now only perhaps twelve remain.

The Kamchatka divides into two branches above the mouth of the Elovka; the branch running through the settlement of Totkapen is the more important, for the first Lower Kamchatka ostrog was built there. This is only about three versts from the Elovka. The small river Rezen flows into this branch of the Kamchatka River near this area.

Twenty-four and one-half versts upstream the small river Kanuch runs into the left bank of the Kamchatka. The Russians call it Krestovaia, for a cross stands near its mouth, placed there during the first penetration into Kamchatka. On it are inscribed these words: "Volodimir Atlasov<sup>10</sup> erected this cross July 13, 1697, with fifty-five of his companions."

Above the Krestovaia, the small rivers Grenich, Kru-kyg, Us-kyg and Idiagun empty into the Kamchatka, the Us-kyg into the right bank and the others into the left. The Cossacks call the Kru-kyg, Kruiki, and the Us-kyg, Ushki. The Idiagun is worthy of comment because in autumn the natives and the

<sup>10</sup>See infra, p. 511. --Ed.

Cossacks fish for white fish<sup>11</sup> there; for this reason the natives call this area Zastoi,<sup>12</sup> after the fish which stop there. There are similar places upstream in the same river, one in particular is five versts before the small river Pimenovaia, called Seukhli in Kamchadal, which empties into the left bank of the Kamchatka about twelve versts above the Idiagun.

It is twelve and one-half versts from the Krestovaia to the Grenich, and the same distance beyond to the Kur-kyg, then twenty-five versts to the Us-kyg, and another twelve and one-half versts to the Idiagun.

The Koliu, or Kozyrevskaia, as it is called by the Cossacks, in honor of Ivan Kozyrevskii, who was killed during the initial conquest of Kamchatka, is forty-two versts from the Idiagun, twenty-nine and one-half versts from the Seukhli, and twenty-nine and one-half versts from the Pimenovaia. The Kozyrevskaia enters the Kamchatka from the west, and is considered one of the more important rivers to flow into the Kamchatka. This is not on account of its size, but because of the beauty of its shoreline and the lovely fertile areas through which it flows. Thirty versts above its mouth, there is an ostrog called Koliu.

It is eighteen versts from the Koliu River to the Tolbachik, which is equally large and flows into the Kamchatka River from the right. Along its banks a short distance above its mouth is a volcano and a small Kamchadal

<sup>11</sup>Oncorhynchus kisutch. --L. Berg.

<sup>12</sup>Zastoi, stopping place. --Ed.

ostrog which bears the same name.

Although the small river Nikul cannot be compared with the large rivers we have described, it nonetheless merits attention because the Russians spent the winter there before the conquest of Kamchatka and called it the Fedotovshchina, after their commander; this river runs in the same direction as the Tolbachik, and the distance between the two at their mouths is only fifty-eight versts. The Shapina, or Shepen River enters the Kamchatka from the east and is fourteen versts from the Nikul. It is larger than nearly all the other rivers mentioned here, except for the Elovka. It has five mouths, three above and one below the true mouth; there is a small Kamchadal settlement along its shores that has the same name.

Thirty-three and one-half versts from this river is an important area called Gorelyi ostrog [burned ostrog]; at one time there was a large Kamchadal colony in this place; but the people burned the settlement themselves because of a contagious disease or a plague, which infected them before the country was conquered.

Approximately forty-eight and one-half versts from Gorelyi ostrog is a large Kamchadal settlement, which the Russians call Mashurin. This ostrog, the most populous in the entire country, is situated on the left bank of the Kamchatka River near the mouth of Lake Pkhlaukhchich. There are nine earthen iurts,<sup>13</sup> eighty-three balagans, and several imposing buildings where the toion

Iurt, a partially underground dwelling with an earthen roof supported by poles. Armstrong, Russian Settlement, p. 197. --Ed.

lives with his family.

The Kyrganik, whose headwaters are near the Oglukomina, which empties into the Sea of Okhotsk, is as large as the Shepen and also flows into the Kamchatka through five mouths. There is a small Kamchadal ostrog which bears the same name; it is located on the farthest mouth. The distance to the ostrog if one goes directly is thirty-two versts; but by river, it is more than thirty-eight.

Twenty-four versts before this ostrog, along the shores of the Kamchatka, there is an extremely steep and very nearly perpendicular escarpment called Lotynum. The Kamchadals consider this a kind of oracle where they believe they can learn how long their lives are to be; they shoot arrows, and whoever shoots an arrow that strikes the cliff will have a long life; but whoever shoots an arrow that falls short, will soon die.

The Povyeh must be considered one of the more important tributary rivers of the Kamchatka; its source is not far from that of the Zhupanova River, which empties into the Bering Sea; it has an estuary of four mouths, unnamed, and is particularly worthy of notice since almost opposite its estuary is the Upper Kamchatka. This is on the route travelers usually take when going by river to the Pacific Ocean. The small Kali-kyg River flows below this ostrog; so many beautiful poplar trees grow along its banks that the natives have plenty of wood for all manner of buildings. It is about twenty-four versts from Kyrganik to Upper Kamchatka ostrog.

Although there are many streams between the mouth of the Povyeh and the

headwaters of the Kamchatka, they are quite small; the largest is the Pushchina, in Kamchadal, Kashkhoin, which enters the Kamchatka from the right. It is the first river one encounters beyond the headwaters of the Kamchatka; its mouth is only five versts away. It is sixty-nine versts from there to the Upper Kamchatka ostrog, and the entire distance from its estuary to its headwaters, according to recent calculations, is 496 versts; but according to my own calculations, about 525 versts. The difference is due to the fact that in traveling by water, I had to add versts in all the areas where the distance had previously been measured overland across the headlands to shorten the journey.

## CHAPTER III

### THE TIGIL RIVER

The Tigil River flows in the same latitude as the Elovka, and a direct route from the Kamchatka to the Tigil would be along the Elovka. Thus, before describing the course of the Tigil, I wish first to describe the most important landmarks one encounters as one ascends the Elovka to its headwaters, portages across to the Tigil, and descends that river to its estuary. In this way one will have a clearly detailed description of the route from the Bering Sea straight across the Kamchatkan peninsula to the Sea of Okhotsk.

In the preceding description of the Kamchatka River, the reader was acquainted with the more noteworthy places from its estuary to the Elovka. In this chapter, landmarks will be described from the mouth of the Elovka to the headwaters of the Tigil.

The small ostrog called Koannych, situated between the Elovka and Lake Koannych, is near the mouth of this river. Twenty versts from that ostrog, on the west bank of the Elovka, is the area known as Gorelyi ostrog. A small Kamchadal ostrog called Dachkhon once stood here; the inhabitants were killed by the Cossacks at the beginning of the conquest of the country.

Two and one-half versts from Gorelyi, a small ostrog called Gorbunov is located at the mouth of a small stream called Kygych, which enters the Elovka

from the west. It is only eleven versts as the crow flies from Gorbunov to Karchina or Koannych ostrog.

Six and one-half versts from Gorbunov ostrog one encounters the Uikoal River, on which one can travel by canoe as far as the Ozernaia River, and from there all the way to the Bering Sea. There is a small ostrog, Koliliunuch, on the bank of this river one verst from its mouth; and three versts from there, on the west bank of the Elovka, there used to be an ostrog called Ukharin, below which the little Keiliumche River flows into the Elovka.

Thirteen versts from the Keiliumche River, another river enters the Elovka from the east; this is the Konmentkchuch, or in Russian, the Orlova [Eagle] River. It is called this because there is an eagle's aerie in a poplar tree at the mouth of the river. Nine versts from this same small river there are steep escarpments along the Elovka called shcheki, which are forty sazhen long. The width of the Elovka in this spot is no more than seven sazhen.

Eleven versts from the shcheki the small Leme River falls into the Elovka from the west. Its headwaters are only five versts from its mouth. Along this river one begins to enter the Tigil mountain chain; and by passing in front of the Krasnaia Sopka Red Volcano, one reaches the source of the small Eshkhlin River, which empties into the Tigil. This volcano is almost equidistant from the headwaters of these two rivers; they are no more than ten versts apart. Travelers often wander into this passage, especially during storms, when it is impossible to see the volcano which is used as a landmark. The summit at this place is not craggy and jagged as in other places, but rather is flat and extended.

When no landmarks are visible, it is impossible to decide which way to go.

Twelve versts from its source on the east the Eshkhlin receives the waters of a small river which the Cossacks have named Bystraia [rapid] because its current is so swift. It flows out of the district of Baidar griva, and its length is ten versts from source to mouth.

One and one-half versts below the Bystraia the small river Uchiliagen flows into the Eshkhlin, also from the east; in summer one can follow it to reach the Tigil mountains. There is no other noteworthy landmark on the Tigil between this place and the mouth of the Eshkhlin, except for the escarpment called Keitel, three versts before the mouth of the Eshkhlin on the east bank of the Tigil. This cliff is from ten to twenty sazhen high and about one verst long; its summit is composed of whitish rock and its base is of coal. In summer, but not in winter, vapors are constantly wafted; they fill the air with a most noxious odor which can be detected a long way off.

From the mouth of the Bystraia to the above mentioned cliff the distance is about eighteen versts. The distance from the mouth of the Elovka to the mouth of the Eshkhlin is one hundred fourteen and one-half versts, according to the measurements of the goedesists, but I am quite dubious about this figure, and I only give it here because I have no other.

It took me sixty-five hours to go by dogsled, without hurrying, from the mouth of the Eshkhlin to the mouth of the Elovka, and I feel a quite accurate estimate of the distance can be made by figuring four versts per hour, since one day is usually enough, proceeding at that same pace, to go from the Lower Shantal



ostrog to Kamennyi ostrog, which are sixty measured versts apart. Thus I estimate the distance between the two river mouths at one hundred eighty versts instead of one hundred fourteen and one-half; and if to this figure one adds one hundred twenty-three and one-half versts, which is the distance from the Kamchatka estuary to the mouth of the Elovka, and the distance from the Tigil estuary to the mouth of the Eshkhlin, the width of the Continent of Kamchatka in this place is only two versts different from the figure given earlier, and considering the total distance this is a very minor difference.

From the mouth of the Eshkhlin to the Tigil estuary, which the Koriaks call Myrymrat, there is no other river of any great size except for the Kygyn, which enters the Tigil from the north, five versts above its mouth; the Cossacks call this river Napana, because an ostrog which also bears this name is located along the upper reaches of this river. There are also quite a few Koriak ostrogs along these rivers. When I left Kamchatka, they had established a Russian colony there, but I do not know the exact location.

The principal Koriak ostrog on the Tigil is called Kulvauch; it is located on the southern bank six versts below the Eshkhlin. The toion of that ostrog is Nutevei; he was the head of all the natives along the Tigil when I was there.

As one descends the Tigil below the Eshkhlin estuary, the first Koriak ostrog to be encountered is Aipra, and is uninhabited; it is situated on the northern shore of the Tigil a short distance from the mouth of the Eshkhlin, no more than seven versts from the Eshkhlin.

The ostrog Myzholg is twenty-two versts from Aipra and is on the right

bank of a small river of the same name which spills into the Tigil from the north. There are three small iurts and two winter shelters there; a newly baptized Koriak lives in one of them, and in the other live the soldiers who are responsible for caring for the reindeer herds which belong to the Crown. Since this place is more fertile than others, it is reasonable to suppose that this location was chosen for the new Russian colony.

Eighteen versts from this ostrog is the district called Kokhcha, where there used to be a sizeable Koriak ostrog by the same name which was totally destroyed by the government agent in Kamchatka by the name of Kobelev, because the inhabitants had killed a Cossack named Luka Morozko at the time of the first Atlasov incursion into Kamchatka.

Three versts from this place are the shcheki, the steep cliffs already described, which extend for two versts; at the beginning of the cliffs flow the small rivers Alikhon and the Buzhugutugan. The first enters the Tigil from the north, the second from the south.

As one passes beyond the escarpments toward the mouth of the Tigil, one finds four more Koriak ostrogs. The first is Shipin, a small but old ostrog about ten versts from the shcheki; the second is Myllagan, three versts from the first; the third is Kingel Utink, forty versts from Myllagan; and the fourth is Kalauch, three versts beyond Kingel. The first two are located on the south bank of the Tigil, the third on the bank of the small Kungu-vaem River, which enters the Tigil on the north, and the fourth at the mouth of the small Kalauch River, which flows into the Tigil from the same direction. Of these ostrogs,

Myllagan is of primary importance, since the inhabitants of the others are subject to it; and Myllagan is under the jurisdiction of Kalauch ostrog.

It is fifteen versts from Kalauch ostrog to the mouth of the Napana, and twenty versts to the Tigil estuary in the Sea of Okhotsk.

## CHAPTER IV

### THE KYKSHA OR BOLSHAIA RIVER

The Bolshaia River, called the Kyksha by the natives, empties into the Sea of Okhotsk in 52°45' latitude. It is generally held that its estuary is quite far distant from that of the Tigil which is five hundred fifty-five versts north, and for the most part this distance has been measured. Its headwaters are in a lake one hundred eighty-five versts above its mouth. It is called Bolshaia, because of all the rivers which empty into the Sea of Okhotsk, it is the only one large enough to be ascended by boat from its mouth to its source, although this is not accomplished without difficulty. It has a swift current, not only because of the considerable gradient of the land, but also because of the islands which the river creates and which are so numerous that it is difficult to go from one shore to the other, especially in areas where it flows through flat country. It is so deep at its mouth during flood tides that large vessels can easily enter; it has been observed that during full and new moons, the water rises nine Parisian feet,<sup>1</sup> or four Russian arshins.<sup>2</sup> In its course it receives the waters of many small rivers which empty into it from both sides. Only the more

<sup>1</sup>One Parisian foot, twelve inches. --Ed.

<sup>2</sup>One arshin, twenty-eight inches. --Ed.

noteworthy will be mentioned here.

The first is the river Ozernaia, in Kamchadal, Kuakuach, which is twenty-five versts long. It rises from a lake and flows from south to north parallel to the sea, and empties into the Bolshaia near the sea. The lake from which it flows is fifteen versts long and seven wide. It is so near the sea that during the great 1737 earthquake, its waters spilled into the sea and salt water came into the lake. There are two small islands in this lake; one is two versts long and one and a half wide. These are a refuge for sea birds, such as ducks and several varieties of gulls, which nest here. The people who live in Bolsheretsk ostrog find so many eggs here that they keep supplied with them the whole year.

Between the Ozernaia and Bolshaia rivers there is a bay two versts wide and long; it is filled with water during the high tide, and is dry during low tide. On the west bank of the mouth of the Ozernaia there are several balagans and huts, where the Cossacks live in summer while they are fishing. There are also others similar to these, but more numerous, on the north bank of the Bolshaia one and one-half versts from its estuary; and on the south bank is a signal beacon for sea-going vessels.

The small Chekavina River, or Shkhachy in Kamchadal, is only two versts from the Bolshaia; it rises in the south in a nearby marsh. Warehouses were built here to house supplies during the Kamchatka expedition. Vessels can winter here; they enter on a high tide. At low tide, there is so little water and the channel is so narrow that in places it is possible to jump from one bank

to the other. Vessels become grounded on the bank, but the bottom is so soft they are not damaged.

The small Amshigacheva River, or Uaushimmel in Kamchadal, flows into the Bolshaia from the northeast, nine versts from the Chekavina. The Cossacks named these rivers Chekavy and Amshigach, after Kamchadals who lived on the river.

Five versts from the Amshigacheva; on the north bank of the Bolshaia, there is a small Kamchadal ostrog called Koazhchkhozhu, and below it, a smaller stream by the same name.

Eight versts above this ostrog the Bolshaia receives the waters of the small river Nachilova, particularly worthy of mention by virtue of the fact that there are many pearls to be found there, but they are irregular in shape and of no beauty. Toward the mouth, there is a small Kamchadal ostrog called Chakazhuzh at the juncture of the Elesina River, named for a Cossack's son named Elesin, who lived there.

The Bystraia River, in Kamchadal, Konad, empties into the Bolshaia through three mouths, the lower being six versts from the Nachilova; the middle is two versts from the lower; and the third is one-half verst from the middle. The lower channel is called the Lankhalan, and the middle one, Katkyzhun. The Bystraia is very large; it divides into several forks in the low flat country; but where it flows through mountainous country, it is so narrow that the Kamchadals stretch nets from one bank to the other to trap ducks.

One can take a small canoe from the Sea of Okhotsk to the Bering Sea:

that is to say, from the mouth of the Bolshaia up to the mouth of the Bystraia and along this to its headwaters, from where one has access to the Kamchatka, which rises in the same marsh and empties into the Bering Sea. The Bystraia, however, is choked with wood toward its source, which is why boats cannot approach closer than forty versts to its headwaters; furthermore, this passage is long and arduous because of the swift current in the river and the great number of shoals, reefs, and rapids; at such places it is necessary to get out of the boats and portage overland; it is impossible to make more than ten versts a day. This is what happened during my travels in Kamchatka in 1739. Furthermore, the boats must be portaged across a marsh for about two versts from the headwaters of the Bystraia to those of the Kamchatka. However, there are men who carry all the baggage from one ostrog to the other in summer, and this navigation route would be a great help to the natives, for the Crown forces them to perform this labor, and rather than requiring ten or fifteen men to carry a twenty-pud<sup>3</sup> load, two men could carry it far more easily by boat. This would be a further advantage to their commerce since this would afford an easy and convenient route, whereas now it is only practicable during winter. It is to be hoped that even if this water route should not become a reality, the Crown will no longer exact such onerous work from these people, since the Russian colony in Kamchatka will have enough horses to use for this transport. Horses will be so much more useful that one can easily go by wagon from Bolsheretsk ostrog

<sup>3</sup>One pud is equal to thirty-six pounds avoirdupois. --Ed.

to the upper Kamchatka ostrog; travel by horse is impossible in most parts of Kamchatka because of all the rivers, marshes, lakes and great mountains.

In order to go on foot during summer from Bolsheretsk to upper Kamchatka ostrog, one generally goes up the Bolshaia to the small ostrog called Opachin; from there one has ready access to the Bystraia which can be followed to the headwaters of the Kamchatka; from there, by following the east bank of the Kamchatka one comes to the upper ostrog; where one can cross with canoes. The distance from Bolsheretsk to Opachin ostrog is forty-four versts, and from that ostrog to the Bystraia, thirty-three. From there to the village of Ganalina, beyond which the Bystraia is not navigable, is fifty-five versts. From this settlement to the headwaters of the Kamchatka, it is forty-four versts, and from its headwaters to upper Kamchatka ostrog, sixty-nine versts.

In spring it is also possible to go by dogsled along this same route; but this is rarely done, for although it is shorter to go this way, it is very inconvenient and tedious, since in the whole distance not a single Kamchadal settlement is encountered.

Several settlements are located on the banks of the Bystraia: 1. the small fort Trapeznikov, located on the lower branch of the Bystraia called Lankhalan; this fort has only two buildings; 2. Ostafiev, which is only six versts from its mouth; there are four cabins and two huts here, and two soldiers and five Kamchadals who have been given their freedom;



3. Zaporotskov;<sup>4</sup> 4. Karimov; there is only one building in these; 5. a small Kamchadal ostrog called Karimaev. From Fort Ostafiev to Zaporotskov it is only ten versts; three from that point to Karymov ostrog, and four from there to the small ostrog Karymaev. There were also two Kamchadal settlements which will be discussed later, but they were deserted.

The largest of the small rivers which empty into the Bystraia are the Oachu, the Kygynzhychu, Iangachan, Kalmandoru, Uikui, Liudagu, Kydygu, Pichu, Idygu and Myshel.

The Oacha is seventeen versts from the ostrog Karymaev; it flows west and is about fifty versts long. From the mouth of the Bystraia to the mouth of this small river the country is flat; but up toward its source there are mountains. The Kamchadals call this place Susanguch; they trap ducks there by stretching nets completely across the river.

The Kygynzhychu is three versts from the Oacha, and the Iangachan is only one verst from the Kygynzhychu. The first flows east and the second, west. Opposite the mouth of the latter there is a waterfall twenty sazhen long which the Kamchadals call Ktugyn.

The Kalmandoru is four versts from the Iangachan. It flows westerly; a little below its mouth there is a waterfall called Ichekhunoikhom.

It is approximately six versts from the Kalmandoru to the Uikui, which also flows west. Between these two rivers, and almost equidistant from one to

<sup>4</sup>Steller writes that in Zaporotskov some immigrants have settled near cultivated areas, but this happened after my travel to Kamchatka.

the other is a cataract called Touthizh; there is still another, a little higher than Uikui, called Audangana.

The Liudagu, in Russian, the Stepanov River, also enters the Bystraia from the west; it is fifteen versts from the Uikui to this river. Many poplars suitable for use as building material grow along these shores.

The Kyidygu is five versts from the Liudagu, and the Pichiu, or Popereshnaia, is ten versts from the Kyidygu. All three flow from east to west. At the mouth of this river there was formerly a settlement with the Kamchadal name Kaunych.

The Idugychu, or Polovinnaia, is seventeen versts from the Pichiu; it rises from the eastern shore of a lake, and it takes four days to walk there on foot. It is called Polovinaia because it is halfway along the route from Bolsheretsk to the upper ostrog.

The Myshshel is twenty-four versts from the Idugychu; its course is westerly, and its headwaters, seventy versts away, are not far from the head of the Nemtik which empties into the Sea of Okhotsk. From the mouth of the Myshshel to the source of the Bystraia is about forty versts. A little above the mouth of this river there was formerly a settlement where a Kamchadal named Ganal lived.

From the mouth of the Bystraia, as one goes back up the Bolshaia, the first small river worthy of mention is the Goltsovka, which empties into the Bolshaia from the north, one and one-half versts from the Bystraia. Bolsheretsk ostrog is between these two rivers. There is a small ostrog, Gerasimov, with

one building and one iurt, on the south bank of the Bolshaia three versts from the Goltsovka. One verst farther, on an island in the Bolshaia, there is a small Kamchadal ostrog called Sikushkin, where a Cossack cottage is located.

The small river Baaniu, wich is considered a fork of the Bolshaia, deserves special notice on account of the hot springs in its upper reaches; it flows into the Bolshaia from the southeast, forty-four versts from Bolsheretsk. The ostrog Opachin is at its mouth. According to my calculations, it is about seventy versts from this estuary to the hot springs, which are numerous, particularly on the south bank.

The passage from the Baaniu to the Bolshaia is made across a mountain range; it is not more than fifteen versts. One skirts the mountains as far as the headwaters of the Achkazh River, whose course lies twenty-five versts below the hot springs. Then one descends the Kadydak, which empties into the Bolshaia seven versts beyond the same lake where the latter river rises.

Although many rivers beyond the Baaniu empty into both banks of the Bolshaia, only the Sutunguchu and the Sugach are worthy of comment. The first, whose mouth is twenty-two versts from the mouth of the Baaniu, is significant because one follows it in summer to go to the Kamchatka River; its source is near the source of the Bystraia. The second is sixty versts from the first. One can follow this river to reach the Avacha. Seven and one-half versts before the Sugach, there is a Kamchadal ostrog called Myshku or Nachikin; it is situated on the south bank of the Bolshaia at the mouth of a small stream, the Idshaky-gyzhik. Five versts above this ostrog is a warm water stream which

comes from the north, as do the Sutunguchu and the Sugach. Its mouth is only one-half verst from its headwaters.

## CHAPTER V

### THE AVACHA RIVER

The course of the Avacha, which the Kamchadals call Suaachu, lies to the east; it empties into the Bering Sea in almost the same latitude as the Bolshaia River. Its source is at the foot of a mountain called Bakang, sometimes called Balagan. Its course is one hundred fifty versts from source to mouth. It is almost as large as the Bolshaia, although it does not have as many tributaries. This river is named for the bay into which it discharges its waters, Avacha Bay.

This bay is somewhat circular in shape; it is fourteen versts long and the same distance across, and is surrounded on nearly all sides by high mountains. The opening through which it enters the ocean is very narrow considering its extent, but is so deep that any vessel of whatever size can enter without danger.

There are three large ports in this bay where ships can find safe harbor. The first is called Niakina; the second, Rakovina; and the third, Tareina.<sup>1</sup> To the north is the port of Niakina, presently known as Petropavlovsk harbor because of two hookers which wintered there; but it is so narrow that ships can tie up to the shore. At the same time it is deep enough so that ships larger

<sup>1</sup> According to Steller, the promontory which separates this port from Avacha Bay is sixty sazhen wide, and ten large ships can spend the winter here.

than hookers can anchor there, since the port has between fourteen and eighteen feet of water. By order of the Admiralty, officers' quarters, barracks, warehouses, etc. have been built along the port shores; and after my departure a new Russian ostrog was built there, to which inhabitants from other ostrogs were moved.<sup>2</sup> The port of Rakovina [Crab Harbor], so called because of the prodigious number of crabs found there, is situated to the east; it is larger than Port Niakina, and can easily contain forty ships of the line. Port Tareina is to the southwest, almost opposite Niakina. It is larger than the other two. There are two Kamchadal ostrogs around the bay. The first, Aushin,<sup>3</sup> is on the north shore near the Russian settlement. The second, Tarein, is on the southwest, and the name of the port is taken from it. These two ostrogs are only about one and one-half versts from the bay.

In addition to the Avacha River, there are several others which enter Avacha Bay. The largest is the Kupka. Its mouth is on the south side of the bay, five versts from the Avacha; and four versts above this, on the south, a small river, the Paratun, empties into it. There is a substantial ostrog on the banks of the Paratun, with the same name. A little above this ostrog there is an island in the Kupka where at the time of the 1731 revolt, one hundred fifty natives took refuge; but in 1732 the Cossacks attacked it; most of the settlers were killed, and the settlement was completely laid waste.

<sup>2</sup> According to Steller, forty large vessels can be accommodated here without difficulty.

<sup>3</sup> The Kamchadals call this Ankompo.

North of Avacha Bay, almost opposite the ostrog Karymchin,<sup>4</sup> there are two high mountains; one occasionally belches fire and smokes constantly.

The largest of the small rivers tributary to the Avacha are the Koonam, Imashkhu, Kokuivu, Uavu, Kashkhachu and Kaanazhik-shkhachu.

The Koonam is fifty versts long and flows from the southwest. This river is generally used as a route to go from the Bolshaia to Petropavlovsk. From the small ostrog, Myshku, one goes back up the Sugach to its headwaters, and from there, along a small river with the same name which empties into the Koonam, which can be followed to the Avacha. The passage from the Bolshaia to the Koonam is only twelve versts, and the Sugach mouth is no more than fifteen versts from the headwaters of the Koonam. Eight versts from the mouth of the Koonam there is a small ostrog on its shore, Shiakokul, which the Kamchadals live in occasionally when they are fishing.

The Imashku River, which empties into the Avacha, is eight versts below the mouth of the Koonam. The banks of the Imashku are inhabited by Koriaks who were formerly reindeer Koriaks; but their enemies took off all their reindeer herds and they became settled Koriaks and established themselves here. Their language and religious ceremonies have been kept as they were, perhaps because they have not intermarried with their neighbors.

The Kokuiva is six versts below the Imashku. On the same bank, a short distance from the Avacha estuary, there is an ostrog called Namakshin.

<sup>4</sup>This was named for the toion, Karymchinym.

From the Kokuiva, as one descends the Avacha, it is three versts to the small river Uaav; and from there, about one verst to the Kashkhach; then it is approximately three versts to the Kaanazhik-shkhachi and ten versts farther to the mouth of the Avacha. The Uaav flows from the south, and the others from the north.

The width of Cape Kamchatka, between the mouth of the Bolshaia and Avacha Bay, is much less than between the Tigil and Kamchatka rivers; if measured as a straight line, the distance would be only two hundred thirty-five versts from one sea to the other.



## CHAPTER VI

### RIVERS WHICH EMPTY INTO THE BERING SEA FROM THE AVACHA ESTUARY NORTH TO THE KAMCHATKA, AND FROM THERE TO THE KARAGA AND THE ANADYR

A description of the Kamchatkan coasts has already been given, but as several noteworthy things were omitted, this chapter will give certain supplementary information, particularly in regard to places I traveled to personally, since I took great care not to neglect anything I felt was necessary to make an exact and detailed description of this country.

At that time there were no measurements or observations for the east coast of Kamchatka which would enable me to establish distances between places I visited; thus I had to rely on my own opinion in some instances, and in other cases I had to use the reports of Cossacks and Koriaks who had been there. I followed the coast of the Bering Sea from the Avacha estuary to the Karaga, and the coast of the Sea of Okhotsk from the mouth of the Lesnaia to the Ozernaia, which flows out of Lake Kurile.

The first river one encounters as one goes north from the Avacha is called Kylyty; the Cossacks call it Kalakhtyrka; it flows from the base of the Avacha volcano and its mouth is six versts from Avacha Bay. There is a small ostrog on its shore called Makoshkhu.

Sixteen versts from the Kylyty is the small river Shiakhtau, in Russian called the Polovinaia. Twelve versts from there is the Uzhinkuzh, and then the Nalacheva, which flows out of the lake which bears the same name.

It is six versts from the Uzhinkuzh to the Nalacheva, and the lake from which it rises is not far from the sea. It is seven versts long and four versts wide. Toward the mouth of the Nalacheva there is a small ostrog which is noteworthy because the farthest limit of the department of Bolsheretsk ostrog is in this place. Everything north of here is under the jurisdiction of Upper Kamchatka ostrog.

The Koakach is twenty-six versts from the Nalacheva; the Cossacks call it Ostrovnaia because opposite its mouth, out in the sea a short distance from shore, there is a small rocky island where the Kamchadals go in summer to fish and hunt sea animals. Between the Nalacheva and the Ostrovnaia there is a small cape, and on its point is a small ostrog called Itytkhoch, where the Kamchadals who come down the Ostrovnaia spend the winter.

Six versts from the Ostrovnaia a small river called the Ashumtan empties into the sea; and a short distance above its mouth, on the north, it is fed by the small river Kakchu, also called the Serditaia. The small ostrog Ashumtan was built here. A short distance away Cape Shipunsk begins, which extends one hundred versts out into the sea and is twenty versts wide.

Twenty-five versts from Ashumtan, there is a stream called Kalig, or in Cossack, Kaligary, and on its shore is a small ostrog, Kynnai. This stream rises from a lake situated in the north a short distance from the sea. It is

twenty versts long and six versts wide. Four versts from the mouth of the Kalig, on the south bank, there is a small bay; the small Mupua River empties into it, and this bay marks the end of Cape Shipunsk.

The Shopkhad or Zhupanova River, the largest of all the rivers described here, rises in a mountain chain and is not far from the Povycha, which is a tributary of the Kamchatka. One generally follows this river to go to the Upper Kamchatka ostrog. The Kamchadals call it Shopkhad because formerly an ostrog with that name was located at the estuary; it was given its name by virtue of the multitude of seals which the natives trapped on the ice floes which the sea drives into the coast. Otherwise the name of the river is Katangych.

There are three settlements on the banks of this river. At the mouth is the ostrog Oretynan; thirty-four versts farther on, Kochkhpodam; and twenty-eight versts from there, Olokino. The most significant rivers tributary to the Zhupanova are the Kymynta and the Verbliuzh Gorlo [Camel's Neck]. The first flows from the south and its mouth is two versts below the Koshkhpodam ostrog. It is interesting in that its source is at the base of Mount Zhupanova, which has for a long time emitted smoke in various places, but never flames. Sometimes one can hear a subterranean rumbling noise there. It is five versts from the mouth of this small river to the foot of the mountain. The second is called Camel's Neck because of a valley on its shores which is very dangerous to traverse. It is formed by such high steep mountains that snow slides off at the least vibration, such as that caused by speaking in a loud voice. At these

times huge snow drifts break loose and often engulf persons below. This is why the Kamchadals, who regard any action which exposes them to danger as a sin, believe it is a great crime to speak aloud while crossing this valley. Otherwise this route is quite convenient, and according to my calculations, the distance from the mouth of the Zhupanova to the mouth of the Povycha is one hundred fifty versts.

Beyond the Zhupanova estuary, to the south, there is a bay surrounded by steep mountains. It is four versts long and equally wide, and has three openings, one into the Zhupanova and two others into the sea.<sup>1</sup> It is approximately two versts between the first two openings, and only one verst between the second and the third. The width of the coast which separates the bay from the sea is fifty sazhen.

On the southern bank of the Zhupanova, near the sea shore, there are several pointed rock columns which rise out of the water and make the entrance into this river very dangerous.

The Tungapaul, or in Russian, the Berezova, is thirty-five versts from the Shopkhad. It flows from a chain of mountains, and at its mouth forms a bay which extends about one verst north along a sand bank. There is a small ostrog called Alaun on the north shore of this river.

Between the Shopkhad and the Berezova, two small rivers empty into the sea, the Karau and the Katanych. The first is twenty versts from the

<sup>1</sup>Steller believes that it can accommodate small vessels which do not draw more than four feet of water.

Shopkhad and the second, five versts from the first. Between the Shopkhad and the Berezova the coast is flat and marshy; from there to the small river Kemshch, it is mountainous, rocky, and shelves steeply.

North from the Berezova, the first small tributary river is the Kaliu; two versts from the Kaliu is the La-kyg; five versts farther, the Kede-shaul; and twenty-one versts beyond that, the Kenmen-kyg; another four versts beyond lies the Upkal, and one verst from there, the Izhu-kyg. The Kelkodemech is one verst from the Izhu-kyg. Two versts from the Kelkodemech is the Ipkh, and one verst beyond, the small river Shemech, which empties into a bay seven versts in both length and width.

Two things should be noted about this river; first, there are many large hot springs near its source; and second, pine trees grow on small hills on the south shore of this bay. These trees grow nowhere else in Kamchatka, and so the Kamchadals consider this a forbidden place. Not one of them dares to cut or even touch these trees, convinced by long-standing tradition that such a violation would be punished by a cruel and violent death. It is said that these trees grew atop the bodies of Kamchadals who marched against enemies and were so driven by starvation that they were forced for a time to live on the bark of tamarack or larch, and then died in this place.

The small river Kakan is four versts from the Shemech, and two versts beyond this is another small river with warm water, whose source is three versts one hundred sazhen from its mouth. From its source it is possible, by going straight across a mountain, to reach the source of these hot springs. In

several places on the mountain one can see heavy clouds of vapor rising, and hear the water gurgling; these springs do not appear on the surface of the land, however, although there are a number of deep fissures from which steam gushes as if from an eolipile;<sup>2</sup> the steam is too hot to hold one's hand in.

Beyond this small warm-water river, the coast becomes high, steep and sandy; it has a yellow cast. The mountain is called Tolokon; it extends over three versts forty sazhen, and is strewn with rocks. The river Uachkagach is five versts from the Tolokon mountains; and four versts beyond it is the Akrau; one verst from there is the Kokch, and a short distance beyond, the Kenmen-kyg. Six versts from there is the Shakag; and the Patekran is four versts from there. Then if one follows the Eshko -kyg for two versts, one finds the Vachaul. One and one-half versts beyond this is the Ikhvai. One and one-half versts farther is the Kushkhai, and then the Kemshch or Kamashki, where the mountainous stretch of coast ends. The distance from the Kushkhai to the Kemshch is about eight versts. The former rises at the foot of Chachamokozh Mountain, fifteen versts from its mouth. A short distance from this mouth, on the south shore, there is an ostrog which bears the same name as the mountain.

There is no route more difficult than this in the entire length of the east coast; from the Shemech to the Kemshch. The terrain is mountainous and forested, and there are as many hills and valleys as there are rivers. In these steep places one must be careful not to slip and crash into trees as one

<sup>2</sup>A simple steam-powered reaction motor, described as early as 150 B.C. by Hero of Alexandria. --Ed.

slides down the mountain slopes. This often happens and is very dangerous.

Twenty-nine versts from the Kemshch is the famous Kroda-kyg or Tamarack River. It rises from a large lake on a steep mountain, and from this height, cascades in a waterfall. One can easily walk under the falls without getting wet. This lake is usually called Kronotsk; it is about fifty versts long and forty versts wide; it is about fifty versts from the sea, and is surrounded by high mountains, of which two, situated on the shores of the Kroda-kyg near its source, are higher than the others. The first, on the north bank, is called Kronotsk Volcano; the other has no known name.

There are a great many fish in this lake, such as the goltsi and malmi,<sup>3</sup> as they are called at Okhotsk; they differ considerably from sea fish, being larger and of a better flavor. Their flesh is rather similar to ham; for this reason they are given as very desirable presents throughout Kamchatka. Several small streams empty into this lake; their headwaters are near those which empty into the Kamchatka River. Many rivers empty into Lake Kronotsk which then unites with other rivers and empties into the Kamchatka.

There is a small Kamchadal ostrog called Eshkun on the north shore of the Kroda-kyg, and seven versts north of this ostrog is the village of Krotkanach, located on the stream Eell.

The river Kromaun or Kromauna is one verst from the Eell, and the Gekkaal is six versts from Kromaun. The Chide-kyg is four versts from the

<sup>3</sup>Dolly Varden trout. --Ed.

Gekkaal; one verst farther on is another stream which has the same name. Two versts beyond lies the Kakhun-kamak, and one verst from this, the Kanu-kukholch. Eight versts from this, the Keiliu-gych flows, and then another with the same name, no more than two versts away. Although this river is no longer than the others, it is worth commenting on: first, because the last ostrog in the department of Kamchatka is located on its shores; and second, because five versts north of its mouth, Cape Kronotsk begins, called by the natives Kuraiakun, which, according to the Kamchadals, extends as far out into the sea as Cape Shipunsk. It is about fifty versts across.

The Beaver Sea begins at this cape, and extends to Cape Shipunsk. The coast, from the Kemshch to Cape Kronotsk, is everywhere flat and sandy.

The small river Eshkagyn flows southeast two versts from the farthest extremity of Cape Kronotsk; fifteen versts beyond, as one continues along the cape, is another river, the Ezhka-kyg, whose source is near the stream Kooboloton, on the south shore of the Beaver Sea. By crossing Cape Kronotsk, fifty versts from south to north, one passes through mountains and reaches the small river Shoau, which empties into the sea on the other side of the cape.

Five versts from the Shoau there is a small river called the Aan, whose source is far distant. At this point the coast becomes low and sandy.

Twelve versts beyond, another small river, the Koebilch, empties into the sea; the Kuzhumt-kyg is ten versts from there. Sixteen versts from this latter river is the Kro-kyg, then the Annangoch and the Koabalat or Chazhma. It is about four versts from the Kro-kyg to the Annangoch, and



about the same distance to the Chazhma.

The source of the Chazhma is near the Shameu, which empties into the Beaver Sea. The Kamchadal village Kashkhau is on the banks of a small tributary stream to the north, and is under the jurisdiction of the lower Kamchatka ostrog.

Sixteen versts from the Chazhma is the Chineshisheliu, whose source is at the foot of a high mountain called Shish [needle]; there is a Kamchadal settlement on its banks.

There is no river from the mouth of the Chineshisheliu for one hundred versts to the Kamchatka. The coastline is mountainous and extends out into the sea for almost the whole distance to the Kamchatka River.

The first river beyond the Kamchatka to enter the sea is the Unagkyg, which rises in a lake ten versts long by five wide. The Cossacks call it Stolbovskaia, because from its south shore one sees three rocks in the sea, near the coast; one rock is fourteen sazhen high, and the other two somewhat less. They look as if they might have been broken off by a violent earthquake, or by the floods which occur frequently in this country; it is not long since a part of this coast was washed away and carried with it the Kamchadal settlement, which was situated on the point of the cape. The Kamchadals then created the legend that this ostrog was destroyed by sea dolphins because of a dispute between them and the Kamchadals over a knife which the dolphins demanded.

Cape Kamchatka extends into the sea between this river and the Kamchatka; this was mentioned earlier. The sea between this cape and Cape Kronotsk is

appropriately named the Sea of Kamchatka.

From the mouth of the Stolbovskaia, there is a water route to the Kamchatka. One follows this river for fifteen versts to a lake with the same name, where its source is; then one goes about ten versts across the lake to the mouth of a stream called Tochkalnum, which spills into the lake; one follows this stream to a place where it is necessary to portage the boats. From there, after a portage of two versts across a marshy area to the Pezhanych or Perevolochnaia, which feeds Lake Kolko-kro, one follows this stream to the lake, from where it is possible to follow a fork to the Kamchatka River.

In winter it is possible to go from the Stolbovskaia River to the Kamchatka via a straight route without a detour; this course is no more than forty versts long. This route lies entirely through flat level country and is therefore often flooded; the waters of the Stolbovskaia River easily spill over into the Kamchatka, and Cape Kamchatka, like Cape Karaginsk, becomes an island.

Twelve versts from the Stolbovskaia is a small river named the Alten-kyg, which the Kamchadals consider a favorite place for the dolphins which are enemies of the grampus; they call them kasatka; they contend these creatures come into the river in order to sally out together on a whale hunt.

The Uavadach is three versts beyond the Alten-kyg, and five versts from there is the Urilechin, and eight versts farther, the Ezhengliudema. A short distance from this river is the Khoel-ezhengli, which means Great Stars. From here it is two versts to the Kumpanulaun; then the rivers that

lie beyond are the Kolotezhan, the Khoshkhodan, the Karagach, Tokoled (big), Kolemkyg (small) and lastly, the Ozernaia, or in Kamchadal, the Kooch-azhga; this latter rises from the foot of Mount Shishila. From Kumpanulaun to Kolotezhan, the distance is about one verst, and nearly two versts from there to the Kozhkhodan; it is three versts to the Karagach, one-fourth-~~verst~~ to Tokoled, and eight versts to the Ozernaia, named thus because it flows through a lake about eighty versts from its mouth.

The Uku rises from the same lake as the Laten-kyg; it empties into the Ozernaia near the sea, where Cape Ukinsk begins, which in the Kamchadal tongue is called Telpen; it extends seventy versts out into the sea.

The small Keliugych (Gorbusha) is two versts from the mouth of the Ozernaia, and the Kakeich, which has an ostrog of the same name on its banks, is three versts from the Keliugych. In this ostrog I had an opportunity to see the ceremonies of the feast celebrated by the Kamchadals after their great seal hunt.

Twenty versts from the Kakeich the small Kuguiguchun flows, which empties into a bay which has been carved into the continent for a distance of ten versts; it is about thirty-seven versts between the mouths of this small river and the Ozernaia; they are twenty versts apart near their headwaters.

Seven versts from the Kuguiguchun there is the small well-known Ukinsk Bay,<sup>4</sup> about twenty versts in circumference, which ends at the north in Cape

<sup>4</sup>Steller locates this in 57°.

Ukinsk. There are three rivers which empty into this gulf, namely, the Engiakyngytu, the Uku-vaem, and the Nalacheva or Ulkadengytu. On the shores of the latter two, there are two ostrogs, the first is Balaganum, and the second is Pilgengylsh. This marks the beginning of the domain of the settled Koriaks; the country is inhabited by Kamchadals up to this point.

The Tymylgen or Kangalatta falls into the sea twenty versts from this same bay; it flows for a distance of about ten versts near the sea, and in this length it receives two rivers, the Iishta and the Nona. The first flows from the south, the second from the north. The mouth of the Iishta is only one-half verst from that of the Tymylgen, and the mouth of the Nona, two versts.

Twelve versts from the Nona, there is a village called Kyigen Atynum (the high ostrog); the name is derived from the fact that in this place there was an ostrog built of earth on a high hill which was inhabited by Koriaks. Two versts from here is a small ostrog called Uakamelian, situated on the river of the same name, which empties into the Tymylgen from the north.

The Chanuk-kyg, whose source is near the headwaters of the Pallana, and which is no more than eighteen versts from the ostrog Uakamelian, is considered one of the most important rivers, not so much on account of its size, which does not exceed the Uka, as because of the fact that the toions who govern that ostrog are of Russian ancestry; and for this reason it is called Rusakova. The name of the Russian ancestor is unknown; it is only known that the Russians who lived in this area for some years after the nomad Feodot, established themselves in that place.

Between the Rusakova and the ostrog previously mentioned, exactly equidistant between them, is the small river Enishkegech, or Kipreinaia in Russian, which empties into the same bay as the Rusakova; this bay, from the mouth of the Rusakova, extends ten versts south. There are three Koriak settlements on the Rusakova. The first, six versts from the mouth, is in the town Aunup-Chanuk; the second is sixteen versts from the mouth on the north bank; and the third is on the south shore a short distance from the second.

Five versts from this town is a small territory called Unkaliak (the evil stone spirit); the Koriaks say that this particular spirit lives there. Whoever passes this way for the first time must offer a pebble to the spirit or else they believe the devil will bring ill fortune to their journey; as they toss these stones one on top of the other, there is a considerable pile of them,

A short distance from this town the small Tenge River empties into the sea, and three versts beyond that, there is the beginning of a bay which extends seven versts north and penetrates five versts into the interior of the continent. The river Nungyn, whose source is a short distance from the source of the Pallana, empties into that bay; the Cossacks named it Pankara, because of the Koriak ostrog with the same name which was located on the south side of this gulf, but has since been abandoned by its inhabitants who have relocated on the north side of the gulf where, on a high hill, they have built an ostrog they call Khangot, surrounded by an earthen rampart one sazhen high and one arshin wide, fortified from within with a double row of stakes placed close together. These are fastened with crosspieces, and two bastions with embrasures have

been built on each side. There are three entrances, one on the east, a second on the west, and the third on the north. The Koriaks propose to abandon this ostrog in order to move into another one which they have recently built inside this bay, called Uakang-atynum. This was the first ostrog I saw which had been fortified by the natives. In other towns, the ostrogs are nothing more than earthen iurts surrounded by a number of balagans, like towers without any outer fortification; there are no others like that to the north; one finds not a single Koriak settlement which is not protected by ramparts, as well as by its advantageous situation. They say that they fortify their settlements to safeguard them from Chukchi raids. However, as the Chukchi have never come to attack them in these places, there must be some other reason why the Koriaks take such precautions, and it is easy to see that the reason is to protect themselves against the traveling Cossacks. Moreover, the places where they are most on their guard are the very places where the Cossacks travel most frequently.

Forty versts beyond the Nyngyn River is the Ualkal-vaem. The Koriaks call it Shcheka [cheek], because Kut, whom they look on as a god, was the first to live along its shores. During his stay there, he always put a whale jawbone in front of his iurt; and in the god's memory, the natives still place a tree there instead of a whale jaw. The Cossacks call the river Kutova.

Four versts from its mouth is a small river, the Piitagych, which comes from the north and empties into the Ualkal-vaem; it rises in a small lake only about two versts from its mouth. The lake has no name, although it is worthy of comment because the Koriaks, in order to prove that Kut lived here, point

out an island in this lake which has a gentle indentation on each side. They claim that Kut usually came there to get birds' eggs, and that the declivity was formed at the time of a quarrel between him and his wife over certain eggs they were gathering together. The wife, they say, had the good fortune to find the larger ones, while her husband could only find small ones. He became very angry, and felt his wife's good luck was causing his bad luck, and wanted to take her eggs away from her; but she resisted him, and Kut took vengeance on her by dragging her around by her hair. Such are the strange notions these backward natives invent about the being they look on as a god.

Ten versts beyond the Ualkal-vaem is the small Kitkitanu River which empties into a small bay. About midway between the mouths of these two rivers there are two small bays which are connected by a narrow channel. At the entrance to the bay which is nearer the Ualkal-vaem, on a very sharply shelving steep bank, there is a small ostrog called Entalan, surrounded by an earthen rampart. There is only one entrance on the side facing the sea. There is a small island in the sea opposite Entalan, where people who live in the ostrog go during the summer.

At the north end of the bay into which the Kitkitanu empties, there is the small ostrog Izhyngyt, built on a very high bank and fortified with an earthen rampart one and one-half sazhen high. The inhabitants of this ostrog are subject to the toion Kymgu whom the Cossacks call Rusak. There are two entry gates, one on the east and the other on the south. Beyond this ostrog a low cape begins; it juts out into the sea for five versts, and its width beyond

the ostrog is about eight versts.

Beyond the cape there is a bay eight versts wide which cuts into the shoreline about ten versts. It is as wide at its mouth as it is in the middle, whereas all the other bays I have seen have a very narrow entrance.

The Karaga River empties into this bay through two mouths. Its headwaters are near those of the Lesnaia, into which one generally moves from the Karaga. On the south bank of this river there is a high hill, and on its summit stands the small ostrog Kytalgyn, in which every balagan is surrounded by a pallisade. On the same river, but independent of this ostrog, are two Koriak villages. The first is eight versts from the mouth of the Karaga on the shore of the small Gaul River, which flows north into the Karage; the second is ten versts away on the shore of a lake. There is another small lake eight versts away which deserves comment because it casts up on its shores round balls of a clear green substance, similar in appearance to the little glass beads we give to children. When these beads are touched to the forehead, they cause the face to swell up, according to the natives. They also say that there is a small white fish to be found in this lake, about three vershoks<sup>5</sup> long, but they consider it a sin to catch any of them.

Steller described a very large lake near Karaga which, according to what people told him, is interesting for three reasons.<sup>6</sup> First, its waters rise

<sup>5</sup> One vershok equals 1.7 inches. --Ed.

<sup>6</sup> Steller believes there is a subterranean connection between this lake and the sea.



and fall with the sea tides, although at the present time no communication has been found between the two. Second, in this lake there is a species of ocean fish which the Kamchadals call niki, which never comes into the rivers, but which in July is cast up on the ocean shore in such numbers that the beach is covered with them several feet deep. Third, there are many shells to be found here, which the Koriaks used to gather, and which they called grains of white glass; but as soon as someone picked them up, he was afflicted with an infection or swelling. They believed that this ailment was brought about by these glassy grains, and thought that evil sea-spirits sought to avenge themselves on the natives in that fashion, and so they gave up hunting for pearls.

As I traveled in that area, however, not only did I never see such a lake, I did not even hear of anyone else who had seen it, although I made every effort to inform myself accurately while I was among the natives, of everything which might merit attention. Perhaps this may be the small lake I have just mentioned, which might have been pointed out to Steller as a large lake, in which these dangerous balls are found and the forbidden fish so much respected by the natives. This thesis conforms well to the facts Steller reported; but in this case it is not necessary to attribute the rising waters in this lake to a subterranean stream, since there is an arm of the lake through which it empties into the Karaga, four versts from its mouth, through which the lake may rise during high tide and fall at low tide. And it is not in the least unusual that the Cossacks, who reported this to Steller, never saw this arm until now; for these men do not have much curiosity about things they have not seen. It is quite

possible that there are pearls in the lake, since pearls are found in a number of lakes and streams in Kamchatka. But if one reflects on the similarity between the fear the Koriaks have of these globes, and the fear Steller says they have of the pearls, it would appear that one of us misunderstood our interpreters and mistook the glass beads for pearls, or pearls for beads. My opinion seems to me more plausible, since my interpreter was intelligent and clever, and could tell the difference between pearls and glass beads, besides which their green color, which is never found in shells, would prevent one from thinking them pearls; however anyone who mistook beads for pearls could easily believe he had seen oyster shells.

Opposite the mouth of the Karage, forty versts from the coast, is Karaginsk Island; the lower end is opposite the river Nyngyn, and the upper is across from Cape Koutu. The island is inhabited by Koriaks, who however are not recognized by the others as being part of their tribe. They are called Khamsharen, "descendants of dogs," because according to their tales, Kut at first created only dogs in this place, who were then metamorphosed into men. These island people live so much like animals, and their way of living is so disgusting, that they can be forgiven this fable; for the customs of these islanders seem as barbarous and wild to the Koriaks as their own customs appear to civilized nations.<sup>7</sup> There are one hundred of these island people, and perhaps even more; but only thirty pay iasak. The others run off and hide

<sup>7</sup> This sentence, "These island people . . . to civilized nations," has been excised from the 1949 Russian edition. --Ed.

in the hills when it comes time to pay tribute. One can travel from the mainland to this island in summer in baidars<sup>8</sup> made of seal skins; but no one goes there in winter.

Eighty versts from the Karaga flows the river Tumlatty, whose source is a short distance from that of the Lesnaia. Twenty versts from the Tumlatty is the Gagengu; and eight versts from that, the Kychigin flows, called the Vorovskaia by the Cossacks.

Cape Koutu juts out into the sea for fifteen versts and is located ten versts from the last-named river. Its greatest width is one hundred fifty sazhen; the upper extremity of Karaga Island is opposite the cape.

Eighty-five versts from this cape one encounters the Anapka River, whose source is near that of the Ikynnak or Pustaia River, which empties into the Sea of Okhotsk; the mouth of the former is in the gulf called Ilpinskaia, which is five versts long, and three versts wide.

The mountain chain where these rivers rise is quite low and flat in comparison with other mountains; it is about fifty versts from the two seas. The Koriaks consider this place the narrowest part of the isthmus which unites Kamchatka to the mainland, and which extends as far as the Tumlatty and beyond.

Fifteen versts from the Anapka is the small Ilpinskaia River, and four versts farther from its mouth is Cape Ilpinsk, which extends into the sea for

<sup>8</sup>Baidar, a coracle covered with seal skins. --Ed.

ten versts. This cape, near the continent, is very narrow, sandy and so low that waves wash over it. It is filled with rocks, quite large and high near its tip. Across from it, out in the sea, is a small island called Verkhoturov.<sup>9</sup>

The small river Alkaingyn flows north about thirty versts from the Ilpinskaia, and empties into a bay. It extends along the coast for twenty versts, and into the interior for ten versts. Cape Govensk begins here; it is thirty versts wide and extends seaward sixty versts. On the very tip of this cape is a small ostrog called Govink, inhabited by Oliutores.

Forty versts from the Alkaingyn is the Kalalgu-vaem or Govenka, which empties into a bay six versts long and the same distance wide.

Thirty versts from the Kalalgu-vaem flows the large river Uiulen or Oliutura, whose headwaters are near those of the Pokachinsk.

On the banks of this river the Russians twice built the Oliutorsk ostrog: the first was built by Afanasiev Petrov, a native nobleman [syn boiarskii] of Iakutsk, on the south bank a short distance above the mouth of the small river Kalkina, which flows into the Oliutura from the south. The second was built much below the first, by Major Pavlutski,<sup>10</sup> who was sent to put down the

<sup>9</sup> Steller, in his Description, locates an island opposite Oliutor Bay, about two miles out into the sea to the east. He says only black fox are seen on this island. The Oliutors only take these animals in the most urgent circumstances, and believe that all kinds of misfortunes will befall them. That island is undoubtedly Verkhoturov, since no other island is known between there and Karaga Island.

<sup>10</sup> Dmitri Ivanovich Pavlutski brought the fierce Chukchi under control, 1731-1733. He was later sent to Kamchatka under Colonel Vasilii Merlin. See Leonhart Stejneger, Georg Wilhelm Steller (Cambridge, Mass.: Harvard University Press, 1936), p. 217n. --Ed.

Chukchi rebels; but these ostrogs were soon abandoned and burnt by the Oliutores. It is a two-day journey by canoe from the mouth of the Oliutora to this latter ostrog.

Beyond the Kalalgu-vaem is the small river Telichinskaia, which the Cossacks call the Kultushnaia, and then the Ilir. From the Kalagu-vaem to the Telichinskaia is twenty versts, and it is the same distance from the latter to the Ilir. Half-way between these two rivers there is a small Oliutor ostrog called Telichak.

Cape Atvalyk or Oliutorsk begins at the Ilir and extends eighty versts out into the sea. Its tip is opposite Cape Govensk. The sea between these two capes is called the Oliutor Sea.

Beyond the Ilir, as one moves toward the Anadyr, one encounters three small rivers, the Pokatcha, Opuka, and the Katyrka. I cannot give the exact distance between their mouths, since I found no one in Kamchatka who had been in these places; I only know, through the description which Müller<sup>11</sup> gave me, that the Pokacha rises in the same place as the Glotova, which empties into the Oliutora from the northeast, and that from the mouth of the Kalkina, where the first Oliutor ostrog was built, to the Pokacha, it is a five-day trip with reindeer, making thirty or forty versts per day.

Cape Katyrsk is between the Katyrka and Anadyr rivers; it is filled with rocks. Its tip is in the same place as the end of the Anadyr sand bank,

<sup>11</sup> Gerhard Friedrich Müller. See Introduction. --Ed.

opposite the estuary of this river, situated in  $64^{\circ}45'$  latitude. The distance from Petropavlovsk harbor to the Anadyr estuary, according to observations made during the maritime expedition, is  $19^{\circ}20'$ .

The coast, from the southern point of the Kuriles, or Kurilskaja Lopatka, to the tip of Cape Chukotsk, which, according to these same observations lies in  $67^{\circ}$  latitude, is almost completely mountainous, especially in the places where the capes extend into the sea.

## CHAPTER VII

### THE RIVERS WHICH EMPTY INTO THE BERING SEA, FROM THE MOUTH OF THE AVACHA SOUTH TO CAPE LOPATKA IN THE SEA OF OKHOTSK TO THE TIGIL AND PUSTAIA RIVERS.

There is no large river from the Avacha estuary to Lopatka or the southern extremity of Cape Kurile, because the mountain chain which divides Kamchatka extends to the Bering Sea. Thus the coast in this area is precipitous, filled with rocks, with capes and bays where ships can anchor only if absolutely necessary. Near Avacha Bay there is a small mountainous island called Viliuchinsk. As for bays, there are two which are larger and safer than the others, namely Ashachinskaia and Zhirovaia. The former lies in the same latitude as the river Opala, which will be described; the second is almost midway between the first and Cape Kurile.

The small Ashacha River, which flows from the base of a mountain with the same name, empties into Ashacha Bay. There are still two other small streams which empty into the Bering Sea. The first is the Pakiusi, and the second, Gavrilova. It is twenty-eight versts from Cape Kurile to the Gavrilova, but only two versts from there to the Pakiusi.

Cape Lopatka, which is called Kurilaskaia Lopatka by the Russians, and Kapur by the Kuriles, is the southern tip of the cape of Kamchatka which separates the Bering Sea from the Sea of Okhotsk. It has been named lopatka

because it resembles the shoulder-blade of a man.

Steller, who was there, says that its elevation is only ten sazhen above sea level; this means that it is subjected to frequent large floods; thus there are no settlements until one moves twenty versts inland, except for those where a few hunters spend the winter trapping common fox and arctic fox. When drift-ice carries sea otter with it, the Kuriles, who at such times lie in wait along the coast, assemble in great numbers. For a distance of three versts from the tip of this cape, nothing but moss grows, and there are no rivers or streams, only a few lakes and marshes. The soil is composed of two strata; the lower is rock, and the upper is tundra. The frequent inundations have left the surface full of small hillocks.

As one moves beyond Cape Lopatka along the shore of the Bering Sea northward, the first small river to be encountered, according to Steller's description, is called the Utatumpit. It empties into the Sea of Okhotsk, and rises at the base of the same mountain as the Gavrilova River, which empties into the Bering Sea; but according to my information, between Cape Kurile and the Utatumpit there are seven other small rivers, namely, the Tupitpit, Pukaian, Moipu, Chiputpit, Uripushpu, Kozhouch, and Moipit.

Two versts from the Utatumpit the small Tapkupshun empties into the sea; on its shore there is a small ostrog, Kocheisk; and three versts farther is the small river Pitpui, which rises from a rather large lake which is separated from the sea by a high mountain. The Russians call this river Kambalina, because in its mouth are found many kambala [brill]; the same name has been



given to the lake where it rises, and to the mountain which is between the lake and the sea; but in the Kurile tongue it is called Mutepkup. On the banks of Lake Kambalinsk there is an ostrog of the same name, where Kuriles live. The width of Cape Kamchatka in this place is not more than thirty versts, and the mouth of this river seems very near the mountains situated to the east, which form the coast of the Bering Sea. It is twenty-seven measured versts from Cape Lopatka to the Kambalina, but Steller suggested it was about thirty-five.

One verst from the Kambalina is the Chiuspit; three versts from there, the Iziaumpit; and three versts from that one is the Chuichumpit, on the bank of which is a small ostrog called Temty.

Thirty-six and one-half versts from the Kambalina, and twenty and one-half versts from the ostrog Temty, the river Igdig enters the sea; the Russians call the river Ozernaia, since it rises in the famous Kurile lake which is thirty-five versts from its mouth. This lake, called Ksuai in the Kurile tongue, is in the midst of three mountain chains, of which the first extends from Mount Kambalina eastward; the second forms the east coast; and the third, which is on the southeast, forms the coastline of the Bering Sea.<sup>1</sup> To reach the ocean, one must cross this third mountain range called Giapaach. It is only nineteen miles if one takes a direct route from Lake Kurile to the Avacha River on the ocean coast, but this route is extremely difficult, since one must cross eleven

<sup>1</sup>I am using Steller's observations here, since I have never been on Lake Kurile.

very high mountains, some of which are so steep that one can only descend with ropes.

The rivers which feed Lake Ksuai or Lake Kurile are the Iachkuumpit, which rises near the mountains and whose mouth is on the south bank of the source of the Ozernaia; the Giligisgua, which enters the lake a little more to the south than the first: there was once a small settlement with the same name nearby. Between these two rivers there is a startlingly white crag, which is called Iterpine. The Pitpu is the first to enter the lake from the north, toward the Ozernaia. The names of the streams which feed the lake from all directions are the Animin, Mipuspin, Siaush, where the cape begins on which Kurilsk ostrog is built. Beyond this lie the Lomda River, the Gagicha, Gutamachikash Bay, the rivers Kruvipit, where white fish enter, Kir and Pit. The last cape, Tuiumen, extends into the lake beyond the ostrog Kamak. From there moving northward, one encounters the rivers Kutatumui, Uachumkumpit, Katkumui, Tateiumi, Gichirgiga, and Urumui. In spite of the large number of rivers which empty into the lake, the Ozernaia is the only one which rises from it to empty into the sea. The Kuriles on the other islands call it Pitzam.

The lake is surrounded by rather high mountains; the highest, which has the shape of a sugar-loaf, is called Uiniguia-kazach; it is located opposite Kamak ostrog. The one which is to the southeast, and which must be crossed to reach the ocean, is called Giiapoakch (the mountain with ears), because there are two rocks on its slopes which have some resemblance to ears. The mountain which one crosses as one leaves Temty to go to the lake is called

Taichurum; the one called Chaaukhch (Red Mountain), is at the mouth of the lake on the south.

Steller adds that on his trip from the Iavina to the Ozernaia he saw two mountains on each side of this river, both of which had emitted smoke for a long time. In another place he says that they are on the left bank of the same river, but he does not indicate their name or their number. Although I traveled to the Ozernaia in 1738, I did not see these mountains; but I did see the hot springs on the banks of the Ozernaia in two places: twenty versts from its mouth several of them flow into the Pauzha, and others into the Ozernaia; all are on the south bank. According to Steller, nine versts from the mouth of the source of the Ozernaia (but he does not say on which side) there is a high white mountain which resembles boats standing upright; this is why the Cossacks call it Boat Mountain.

The natives tell the story of how Kutkhu, the god and creator of Kamchatka, lived for some time in this place before he left the earth; he used stone boats on the sea or on the lake to catch fish, and when he left, he placed his boats on these mountains. They hold these in such awe that they are afraid even to go near them.

The small river Ishkhachan or Iavina is fifteen versts from the Ozernaia. On its shore there is a Kurile settlement called Aruchkin, and below the small Aangan River which flows from the south; its course lies a short distance from the sea, and it empties into the Iavina.

Ten versts from Aruchkin, there is another settlement on the small

Kankhangach River, which empties into the Aangan from the east. This Kurile village is called Kozhogchi.

Seventeen versts from the Ishkhachan the small Kylkhta River flows, which the Cossacks call Koshogochik; the Kurile village Konpak is on its shores ten versts from its mouth.

Sixteen versts from the Kylkhta is the large river Apanach or Opala, which is considered to mark the boundary of Kurile territory. Its source is at the base of Opala Volcano, which is higher and better known than all the other mountains around the Sea of Okhotsk. Navigators can see it from two seas and use it as a landmark; it is eighty-five versts inland from the sea. Steller says that the Kamchadals have great respect for this volcano, and speak of it with awe; not only are they afraid to climb this mountain, but they are even afraid to approach its base; according to them, there are many spirits called gamuls in that area; there are also many sable and fox. The Kamchadals further assured him that on the summit is a large lake, and that all around it one can see many bones from the whales these gamuls or spirits have eaten.

There are two Kamchadal villages along the Opala River; one is a short distance from its headwaters, and the other about halfway between its mouth and its source.

A large number of small rivers empty into the Opala, but only one is significant, the Nynguchu, which enters it on the southeast, near its mouth; it is as large as the Opala, and its source is very far away. The Cossacks named it the Golygina because during the first Russian penetration into these places, a

Cossack by the name of Golygin disappeared without trace. According to Steller, there are two large mountains at its headwaters, one called Otgazan, which in their language means a cut forest, because the forebears cut a large amount of timber; and the other is called Saanu, the nourishing, because their ancestors caught much wild game there. The small ostrog Kuuiukchen is fourteen versts upriver from its mouth.

From the mouth of the Opala to the Bolshaia, there is not a single river which empties into the sea, although the distance is eighty-five versts.

The coast is low and flat from Cape Kurile to the Kambalina River, and from there to the Ozernaia, it is so steep and mountainous that it is impossible to approach the sea. From the Ozernaia to the Opala, it is also mountainous, but the mountains are not nearly so steep; they spread out into hills toward the sea, whereas from the Opala to the Bolshaia, the coast is so low and level that it is nothing but a plain, where one can not make out the least hill near the sea.

Beyond the Bolshaia estuary, the first river is the Uut, which the Russians call Utka; it flows out of a mountain range; and from the Bolshaia to its mouth, the distance is twenty-three and one-half versts. Approximately midway between these two rivers, a small stream flows into the sea, which some call the Iitpu or Vituga. Fourteen miles from the mouth of the small river Uut there is a small Kamchadal ostrog called Usaul.

Forty-two and one-half versts from the Uut the Khchukyng enters the sea; the Russians call it the Kykchik; it is much larger than the Uut and has many more fish in it. Because of this there are three Kamchadal ostrogs on its shores.

The first, called Chaapyngan, is fourteen versts from the sea. The second, Kygymunt, is three versts beyond the first, and the third, known as Chachamzhu, is eight versts from the second. The first is the largest, and the others are subordinate to it. The Khchu-kyg flows parallel to the sea about ten versts to the north. This is true of nearly all the rivers which flow in sandy areas of the coast.

Between the Uut and this latter river, there are two other small rivers, called the Kungan and the Muukhin, which rise from a marsh, and not from the mountain range, as do all the other large rivers. From the Uut to the Kungan, the distance is eleven versts, and from the latter to the Muukhin, about seventeen versts.

Six versts from the mouth of the Khchu-kyg is the small river Uchkhyl, which empties into the sea; and an equal distance from the latter is the Okshush, beyond which flows the small Nymta or Nemtik, which rises in the ridge of mountains. On its shores is a small Kamchadal settlement known as Sushazhuch; it is fifteen versts from the sea.

Twenty-two versts from the Nymta is the Igdykh (princely); the Cossacks for some reason call it Koio. There is a settlement called Maiakyna the same distance from its mouth.

Sixteen versts from the Igdykh is the small river Kaikat. Five versts away is the Shaiktu. Three versts from the latter the Tyzhmauch empties into the sea, and ten versts lower is the Enuzh, which does not flow into the sea as the others do, but rather its mouth is in a bay called Chkanygych, which extends

from the mouth of the Gyg southeast to where the Udu or Kumenzhina empties. The Cossacks called the Gyg the Vorovskaia (Thieves' River), because the Kamchadals who lived along its shores often revolted and killed the men who came to levy iasak on them.

From the Enuzh to the mouth of the Gyg, it is approximately sixteen versts; Chkanygych Bay, which has already been mentioned, extends northward from the mouth of the Gyg for twenty versts; its width is about a half verst, and it is inland fifty to one hundred sazhen.

Twenty versts from the mouth of the Gyg, on its shores, there is a fort where Kamchadals live; it has the same name as the river.

Eight versts from the mouth of the Gyg is the river Kozhaglo, and three versts from there is the Entoga; four versts from the latter lies the Kystoinach. All these small rivers rise in marshy areas and empty into the Bay of Chkanygych.

Nine versts from the Kostoinach is the river Kygazhchu, which the Cossacks call Briumkina, after a Kamchadal who lived there. It is particularly interesting since it marks the beginning of the jurisdiction of the Upper Kamchatka ostrog, along the Sea of Okhotsk. All the areas just mentioned are under the jurisdiction of the Bolsheretsk ostrog.

Thirteen versts from the Kygazhch the small river Nukka or Kompakova enters the sea; there is a small Kamchadal ostrog on its shores called Shkuazhch. In winter there is a trail along this river which leads to the Kamchatka River, but it is seldom used.

Thirty-six versts from the Nukka, one finds the small Tylusa or Krutogorova

River, and on its banks the Kamchadal ostrog called Takhlaatynum. Eleven versts before the ostrog is the river Kshua, which rises in the marsh and empties into the sea.

Twenty-four versts from the Tylusa there is a sizeable river which the Kamchadals call Sheagach, and which is generally referred to as Oglukomina. It rises in a mountain range at the foot of a mountain called Skhanugan, that is, piston, and empties into the same bay as the Tylusa. As one ascends the river, there is a Kamchadal ostrog thirty versts above its mouth called Takaut. Persons who go to Kamchatka generally supply themselves here with whatever they need to cross the mountain range; the way lies along this river. One ascends the river to its headwaters, and after passing the chain of mountains, goes down to the headwaters of the Kyrgen, which empties into the Kamchatka. From the Kyrgen one keeps close to the shores of the Kamchatka as far as the upper Kamchatka ostrog. All the country between Takaut ostrog and the mountain range is a desert one hundred ten versts long. It is sixty-five versts from the mountains to Upper Kamchatka ostrog.

This trail is very difficult and very dangerous, since the greatest part of it must be made by river, which in many places does not freeze over because of the swift current and the springs; one must hug the shore and sometimes go along the very edge of the ice. If the ice breaks, there is no hope of saving oneself; it is impossible to reach dry land, for the banks of the river in this area are filled with steep rocks.

It is not always possible to cross the mountain range; one must wait for



calm weather, otherwise it would be impossible to see the trail, and one would undoubtedly fall into a crevasse from which it would be impossible to extricate oneself. Sometimes it is necessary to wait at the foot of the range for ten days or even more for favorable weather. When one can see not a single cloud on the summits of the mountains, it is considered safe to cross the range; even small clouds are considered a certain warning of an impending storm.

An entire day is necessary to cross the mountains in winter. The most dangerous place is the summit which the Cossacks call grebnen or cockscomb. It extends for thirty sazhen and is in the shape of an upside-down boat. It is very difficult to cross this place, even in good weather, particularly because it is so steep the snow can not stick, and the trail is covered with ice. In order to cross this place, the Kamchadals put sharp spikes under their snowshoes. Often they are overtaken by storms and lose their lives.

There is another great risk, that of being buried under the snow, either while climbing or descending. The valley through which the trail leads is very narrow, and the mountains are very high and steep. The snow breaks loose at the least vibration. This is an inevitable danger wherever the trail leads through deep narrow valleys.

It is necessary to climb this mountain on foot, for dogs have much difficulty keeping their footing even with a light load; when one descends, only one dog is left harnessed to the sled, and the others must be led down, otherwise it would be impossible to hold them. To prevent the sled from slipping and falling on top of the animals, leather runners are attached to it. Although this

route is very difficult, it is nonetheless the way that is generally used to go to Kamchatka; and there is every reason to suppose that it would be still more difficult and perilous if one crossed Kamchatka from one sea to the other.

Thirty-four versts north of the Sheagach River is the Icha, which rises in the mountains and empties almost in the middle of the bay called Chkanich. It extends north for five versts along the coast. Twenty versts from this river is a Kamchadal ostrog called Oaut.

The Petaai, which the Cossacks call Soposhnoia, rises at the foot of a high mountain called Akhlan. It is thirty-two versts and three hundred sazhen from the Icha. The small Kamchadal ostrog which has been built on one of its banks is called Sigikan.

Fifty versts from the Petaai is the Moroshechnaia, then the Belogolovaia, and the Tulagan, which the Cossacks call Khariuzova. From the Moroshechnaia to the Belogolovaia, it is twenty-nine versts; from this last named to the Tulagan, twenty-six. By skirting the shores of all these rivers, one can reach the Kamchatka River, but this route is only used in cases of dire necessity.

Forty versts from the mouth of the Moroshechnaia and the Belogolovaia, there are two ostrogs; the first is called Adagut, the second, Milkhiia. On the banks of the Tulagan, which is larger than the others, there are also similar small ostrogs. The first, Saskhalyk, or Kivrin, is thirty versts from the mouth; the second, whose name I do not know, is twenty-six versts from the first; the third, named Guntyn-Makailon, is twenty-six versts from the second. It is also called Briumkin, from the name of its toion.

Sixteen versts from the Tulagan lies the Kavran; seven versts upstream from its mouth there is an ostrog which has the same name.

There are seven small rivers between the Kavran and the Okolo-vaem, which is forty-four versts away. 1. Lilgulch, five versts from the Kavran. 2. Gavan, two versts from the Lilgulch. 3. Cheliumech, one verst from the Gavan. 4. Tynyukhlinu, five versts from the Cheliumech. 5. Galing, three versts from the fourth one. 6. Kaiuachu-vaem, six versts from the Galing. 7. The Atliu-vaem, four versts beyond the Kaiuachu.

At one time there was a Kamchadal colony on the banks of the Okola-vaem, which no longer exists. This river is interesting, because a short distance from its mouth Cape Ksybilgin, or in Russian, Cape Utkolotsk, juts out into the sea for a distance of thirty versts; it is twenty versts wide. On the south shore of the cape is the Kuachmin River, and on the north shore the Nuteelkhan, which is estimated to be fifty versts from the Tigil.

A short distance from the mouth of the Okola-vaem, near the coast, there is a small island which is very steep and hilly. In 1741 there was an attack against the Koriaks who had killed seven Russians, one of whom was a sailor under Commander Bering.

As one goes north from the Tigil, the first river is the Vetliun, to which the Cossacks have given the name of Omanina, a distinguished Koriak who formerly lived there. It is nineteen versts from the mouth of the Tigil to this river. Four versts from its mouth there is a small Koriak ostrog called Guichugen, on the bank of the stream Kitinshon; three versts before one reaches

the Omanina, one encounters the Koriak village Tyngen.

Forty versts north of the Vetliun is the small river Buchkog; the small river Katkhana enters it from the southeast near its mouth. Thirty-six versts from there is the Vaem-palka; the small ostrog Miniakuna is located on its banks. It was surrounded by an earthen rampart, now completely collapsed. The ostrog is almost deserted; the Koriaks who lived there have moved to other places.

Thirty-five versts from the Vaem-palka, the Kaktanu-vaem flows. Near the mouth of this river, there is a rocky headland which extends north for two versts. Three versts above this head, on the north shore of this river, is a small ostrog called Gyrachan. Between these same rivers there are two streams called Urgi-vaem and Tagyttegen, which empty into the sea; the first, fifteen versts lower than the Kaktan; the second, six versts from the first.

Thirty-three versts from the Kaktan flows the Kacheit-vaem, which rises in a lake situated in the mountains. The length of this lake, from south to north, is twenty versts, and it is seventeen versts wide. Five versts below the lake there is a famous cataract called Pilialian. Because of this the Cossacks named this river the Pallana, instead of the Pilialiana. The Koriaks have settlements on its shores in three different places. The first is located a little above the cataract; this is the small ostrog Annakov, which the Cossacks call Upper Pallansk. The second is Angavit, or Middle Pallansk, and the third is Onotoineran, or Lower Pallansk. From the mouth of the Pallana to the lower ostrog it is about five versts; and from this ostrog to the second, fifteen. The

second ostrog is situated in a location which has natural protection and is so steep that it can only be climbed on the face, and then by no more than three men abreast.

From Lower Pallansk ostrog it is one and one-half versts to the east bank of the Kacheit-vaem. On a high craggy cliff there was formerly a Koriak ostrog called Enmetaing, where Ivan Kharitonov and a considerable number of Cossacks under his command were killed. I will give the details of this later.

Between the Kacheit-vaem and the Kaktan, two small rivers empty into the sea, the Kammu and the Chichkhatu. The first is two versts from the Kaktan, and the second is fourteen versts from the first. Near the mouth of the Chichkhatu, there is a small ostrog which the Koriaks call Kamengagin; the Cossacks call it Piatibratnoi [the Five Brothers].

Forty-four versts from the Pallana, there is the river Kinkilia, and on its shores there is a small ostrog with the same name. Twenty versts from the Kinkilia is the Uemlian, called the Lesnaia by the Cossacks. This river rises near the Karaga; for this reason there is a trail which follows the Uemlian to the Bering Sea, as was noted above. The distance across, from its mouth to the mouth of the Karaga, is about one hundred fifty versts according to my calculations, for it took me altogether three days to make the journey.

Thirty-two versts before the Uemlian the small river Togatug empties into the sea. The only settlement on the Uemlian is a Koriak village called Necha.

Between the Uemlian and the Podkagina, the distance has been calculated

by the geodesists at one hundred twenty-six versts. The Koriaks report that there are eleven small rivers between the two larger ones. 1. The Iovva-vaem (Gagara), which is seven versts from the Uemlian. 2. The Kalka, twelve versts from the Iovva. 3. The Teug-vaem, ten versts from the Kalka. 4. The Khaikaktylian, twelve versts from the Teug. 5. The Mainga-kaktylian, seven versts from the fourth. 6. The Gylten, ten versts from the preceding river. 7. The Ketenine, six versts from the Gylken. 8. The Tintigin, which according to the Koriaks is no smaller than the Uemlian. It is twelve versts from the Ketenin. 9. The Kamengelchan, one verst from the Tintigin. 10. The Palga-vaem, which is one verst from the Kamengelchan. 11. Finally, the Ketaulgin, which is fifteen versts from the Palga.

The Podkagina, or Podkagirnaia, is considered the last; its shores are inhabited by the Koriaks who are under the jurisdiction of the Kamchatka ostrogs. This river is seventy-seven and one-half versts from the Pustaia, and I consider it as the limit of the west coast of Kamchatka. The Koriaks only settle on this river after they have taken part in a rebellion, or when they have committed murders and run off in order to try to avoid the punishment they deserve, or when they seek to elude pursuers, which happened at the beginning of the year 1741. They assassinated several Russian merchants who had journeyed from Anadyrsk to Kamchatka with goods; after the Koriaks had stolen and plundered everything possible, they took refuge on the banks of the Pustaia, and abandoned their real settlement, which was on the banks of the Podkagina.

The coast from the mouth of the Bolshaia to the Pustaia is low, flat, and

sandy as far as the Sheagach River, so that ships have often run aground without being damaged.

Beyond the Sheagach the coast begins to rise, but without being rocky; but beyond the Khariuzova, the coast is mountainous and edged with rocks and reefs, which makes it very dangerous for ships.

## CHAPTER VIII

### RIVERS WHICH EMPTY INTO THE SEA OF OKHOTSK, FROM THE PUSTAIA TO THE PENZHIN; FROM THERE TO OKHOTSK OSTROG, AND TO THE AMUR RIVER.

Our present knowledge concerning the coast of the Sea of Okhotsk from the Lesnaia River to the Penzhin River and to Okhotsk ostrog is more detailed than formerly, because in 1741 a new route was established to go to Kamchatka, and post stations were set up in convenient places; however these positions and the distances are not as exact as those previously given, for these have not been measured, and there have been no astronomical observations on this coast. There is indeed no expectation that such will be made, as long as the fierce Koriaks who live on the coast of the Sea of Okhotsk are not brought under submission. These natives are dangerous; they have committed many murders, have persistently opposed the Russians and have offered considerable resistance.

Although they may sometimes appear quiet and peaceful one must always be on guard against them and take great care, for one's life is constantly in danger; for this reason little time has been spent in surveying this region. Furthermore, such work would give rise to a number of suspicions in such barbaric people.

Beyond the Pustaia, the first river one finds is the Talovka, of which the mouth is shown on the maps to be approximately in  $60^{\circ}$ ; but it should be



shown to be in a higher latitude, because according to the geodesists, it is more than seven hundred versts from the Tigil River to the Talovka, and the Tigil and Kamchatka Rivers have estuaries that lie in  $56^{\circ}$ .

Between the Pustaia and the Talovka, there are three other rivers called the Nekan, the Memecha and the Golaia. It takes two days to travel from the Pustaia to the Nekan; one day is enough to go from the Nekan to the Memecha, or from there to the Golaia.

Fifty versts from the Talovka is the Penzhina River, which is significant because its name has been given to that part of the sea. Some suppose that its headwaters are near those of the Mainom, which empties into the right bank of the Anadyr; however others are certain, with more reason, that its headwaters are near those of the rivers which empty into the Kolyma.

According to trustworthy reports, its estuary is in the bay of the same name. Thirty versts from the sea a small ostrog called Aklansk has been built on the Aklan River, which empties into the right bank of the Penzhina. Several Russian Cossacks live in this ostrog; they were left here to man the station as well as to conquer the Koriaks who pay no iasak. The first winter dwelling was built in 1689.<sup>1</sup>

Each year soldiers were sent to collect iasak, but this practice has now been abandoned because of the distance involved. This place has long been famous, because two government agents who were en route to Anadyrsk ostrog with the

<sup>1</sup> The 1949 Russian edition gives 1787 as the date; this must be a typographical error. --Ed.

iasak they had collected in Kamchatka were killed here with a sizeable party of Cossacks.

From the Talovka to the mouth of the Penzhina, the coast extends northwest, and from there turns to the southwest.

One can go from the Penzhina to the Egacha or Aracha River in four days of travel, and from the latter it takes two more days to go to the Paren, which rises near the Aklan. Six days from the Paren one encounters the Chondon, and then the Izhigi. Between the Chondon and the Paren is Cape Tainotsk, which extends so far out into the sea that from its point one can make out the coast of Kamchatka. Many settled Koriaks live on this cape, who have not yet been made to pay iasak.

Beyond the Izhigi, a journey of two days, the small river Toinosova empties into the sea; on its banks there is a small Koriak ostrog called Tainotsk. It is a one day trip from this river to the Naekhy, and from there, two days to the Tavatima, from where one day's travel will bring one to the Villiga. From this river it is also a one-day trip to Cape Kanalen. Between the Villiga and this cape, there is a bay called Keligi, and it takes half a day to go around it.

A day and a half away is Cape Levuch; the gulf which separates it from Cape Kanalen is called Kananiga.

From Cape Levuch it takes a half-day to reach the Tumana, and only one day from there to the Mezezepana; there are two capes in between, Iabugun and Iopana. From the Mezezepana, it takes a half-day to reach the Gedivagoi

River, and from there it is the same distance to the Guguli; near this river there is a cape where red earth is found.

The Guguli is a day away from the Gelvigei. From there to the Taktama it takes a half-day of travel, and from the Taktama to the Makacha, one day by dogsled or by boat. Between these rivers and the Taktama, one find Cape Ennetkin and Iret Bay, into which a small river with the same name empties. From there it takes one day to go with dogs on a straight route to Iamsk ostrog.

After a two-day journey, one comes to a large river, the Iama, which flows west from the foot of Mount Enolkan, or Babushka [Grandmother]; it empties into a rather large gulf called Kinmaanka. A short distance from the mouth of this river, in 1739, a Russian ostrog was built which has a tower seventy sazhen in circumference. Inside, there is a chapel and a iasak collection station, and four barracks where six promyshlenniks<sup>2</sup> lived. A little below this ostrog, several settled Koriaks live on an island, and they are under the jurisdiction of the above-mentioned ostrog.

The three small rivers, Uktoia, Zozaiia, and Atauzem empty into this gulf, in the inner curve of which there is a small island, whose name no one can tell me; its mouth is about thirty sazhen wide, and it is situated to the southwest.

At the mouth of Iamskaia Bay the sand bank called Chingichu begins; it extends all the way to Cape Kaitevan. There is no indication of the distance to

<sup>2</sup>Promyshiennik, a term used to refer to a man who practiced a trade. The Siberian promyshiennik was a privately employed fur trapper and trader active in the exploration and conquest of new lands. See Fisher, Russian Fur Trade, p. 30; Armstrong, Russian Settlement, p. 61.

this cape, but it is presumed to be no more than ten versts, since all the capes already mentioned, and those to be described hereafter, are not far apart in mountainous areas of the coast.

It is scarcely more than a half-day trip from Cape Kaitevan to Cape Iapon. The bay between them is called Epichichik; two small rivers, the Gittigilan and the Kapkichu, empty into it. The first has its mouth near Cape Kaitevan, and the second near Cape Iapon. People fish at the mouth of the Gittigilan.

A day's travel from Cape Iapon brings one to Cape Cheian, and between these capes, there are many places where the water is very deep and full of whirlpools. The natives call these taliki.

The deep places are between the Cheian River and the great Cape Penetkin; it takes a half-day to go from Cape Iapon to this place.

After one has passed beyond this cape, one finds five small rivers called the Vevvoia, Mittevoia, Beletkin, Koete and Timelik; the first empties into the sea near the cape. It takes half a day to go from the first to the second; from the second to the third, the same; a day from the third to the fourth; and from the fourth to the fifth, a half-day.

Beyond these lies the Lenkiol River, which empties into the small Kemetang Bay; and after that, a stream called the Babushkin, which rises at the base of Mount Enolkan. It takes two days to travel from the Timelik to the Lenkiol, and one day from there to the Babushkin.

Two and one-half versts from this stream, the small river Butigivai

empties into the sea, and immediately beyond is Cape Opokoch, beyond which is the small bay called Lengelval, where the Koriaks who are called the middle Koriaks live in summer.

Lengelval Bay ends at Cape Kugman; it is not more than three versts from Cape Opokoch to this place; and from there to the winter settlement of the middle Koriaks on Iagvinichun Bay, the distance is about three versts.

Uivan Bay is six versts from this settlement; it is fed by a small stream, only remarkable because seal hunts are frequently held at its mouth.

Ten versts from the mouth of this stream is the small river Billingenno; eighteen versts beyond that lies the Aukinega, and fifteen versts farther, the Evlungan, and finally the Asiglan, whose name in the Koriak language is Uegina-vaem. These two rivers are not more than about fifteen versts apart.

A short distance from the mouth of the Asiglan there is a winter village of the middle Koriaks, who are under the authority of a minor prince whose name is Tellik.

Fourteen versts from the Asiglan the Nukchan empties into the sea; it flows from the northwest, and is noteworthy for two reasons: first, because along this river, in addition to handsome trees, some very large poplars grow, which the Koriaks in this area use to make their huge canoes. Second, the mountain range called Nukchanunin, where the river rises, thirty versts above its mouth, forms the frontier between the Koriaks and the Tungus, or the Lamuts.

From the Nukchan River to the Ola, seventy versts away, there is no other large river. The Ola empties into a small bay. Six versts from this

river is Cape Kolderentín, where oil is found; in this country it is called rock butter. Five versts from this cape the Konzhién River falls into the sea; and an equal distance away is the Darinla River. Seventy-five versts beyond is the small river Otakich; seven versts away, opposite its mouth, is the Chebu River. A short distance from its shore is the island called Chalun or Armansk. Four versts beyond the mouth of this last river, there is a small area called Largabem, where the Koriaks go to hunt seals.

Fifteen versts from Largabem, there is the first mouth of the Almaná; the second is located ten versts farther. This river empties through these two mouths into the interior of a rather large gulf, which has the same name as the river. The channel through which it is connected to the sea, is precisely in the middle of the two mouths of this river; its width is twenty-five sazhen, and its depth is five feet. In the middle of this gulf there is a small island called Teledek, where the Lamuts have their summer settlement; their winter iurts are built on the shore of the gulf, a little beyond the first mouth of the Almaná. Thirty-six versts from the last mouth of this river, the Ena River, or the Zadavléna, flows in its course.

Four versts from this river one finds the Tauí, which in the Lamut language is called the Kutana-Amar; it separates into several forks and empties into a rather large bay called Omokhton. The main forks are the Amunka, Gorbei and Kutana. It is sixteen versts from the first to the second; and only two versts from the second to the third. There are several Lamut summer settlements located between the mouths of these rivers; the winter settlements

are about nine versts from the Kutana, in the neighborhood of Mount Azederittina, on the left bank of the Tauí River.

Tausk ostrog is located on the Amunka fork, and in this ostrog there is a chapel, a house for the government agent, seven dwellings where the officials live, and another small building where the Lamut hostages are kept under guard. This ostrog, which was formerly called a zimovie, has been in existence since 1717. It is not more than one verst from the Amunka to the Ena.

The coast from Paren to the Almaná is very rocky and mountainous; from there to the Tauí, it is low and sandy.

Fifteen versts from the Kutana fork, Cape Tongorsk begins, which is the upper point of Omokhton Bay.

The small river Boi-gebhu flows twenty-four versts from this cape; ten versts beyond that, lies the Avlemon, and one verst from there is the Amtulala. One verst from the Amtulala there is the Ulkan River, and one verst beyond it, the Olkotan. All these rivers enter Matikleí Bay.

Beyond these rivers lies the Bodlie, then the Amdittal, the Amkor, the Achatla and Volemka rivers, which are not more than one verst apart. A short distance from the Volemka, Cape Urekchan begins; one and one-half versts beyond that, the river Matil, and after that, the Matikleí; it is not more than two versts from the first to the second, from which the bay derives its name; and from the latter to Cape Lamaru, where Matikleí Bay ends, it is eighteen versts.

From there to the river Ina, a distance of one hundred fifty versts, there

is no large river. The Ina, called the Inga-amar in the Lamut tongue, empties into the middle of Ust-Insk Bay. At the mouth of this river there is a winter settlement and a navigation light for ships, so that as they return to Kamchatka they can easily recognize the port of Okhotsk. As one ascends the Ina, one finds a rather large number of Lamut settlements on its shores.

Beyond the Ina lies the Ulbeia, and then the small Uirekan. From the Ina to the Ulbeia, it is about eighteen versts; and from there to the Uirekan, about fifty; at the mouth of the latter, there is a winter settlement, but it is almost entirely abandoned.

One verst from the Uirekan flows the Mytkas; two versts beyond, the Brakani, then the Bogaia, a river which does not freeze over, which is five versts from the Brakani.

From the Bogaia to the Kukhtui, which empties into the Okhota opposite Okhotsk ostrog, there are only two rivers, the Gerbu and the Ochi. The first is nine versts from the Bogaia, and the second is four versts from the first; and the Kukhtui is six versts from the Ochi. This river flows from the same mountain range as the Orol, and is about two hundred versts long; it empties into the Okhota, quite near the sea, a short distance from the mouth of the Bulginsk fork. At the confluence of these two rivers, there is a rather large bay, into which seagoing ships can enter. This river is especially important to the port of Okhotsk because of the larch or tamarack, and other trees necessary for building ships; these trees grow in greater abundance on its banks than on the Okhota.



The Okhota has three mouths, the new, the old, and the Bulginsk Fork. It is two versts and two hundred sazhen from the new to the old mouth, and from the old to the Bulginsk Fork, it is one verst three hundred sazhen. There is water in the new mouth only during very high tides; but even then ships cannot enter.

The new Okhotsk ostrog has been built between the new and the old mouth, almost on the edge of the sea, and the former one, which is now called the old ostrog, is six versts from the sea. This place is called the Port of Okhotsk, or commonly, Lama. Under its jurisdiction are Kamchatka and the coast of the Sea of Okhotsk to the Chinese frontier; it is from here that agents are sent to collect iasak from various natives; the iasak is first taken to Okhotsk, where it is evaluated, and then sent to Irkutsk.

Okhotsk previously had no jurisdiction over the other ostrogs; it was a very small village in the department of Yakutsk; it has become larger and more important since sea crossings to Kamchatka have been attempted, and its present condition is due to the efforts of General Skorniakov-Pisarev<sup>3</sup> and the late Count Devier.<sup>4</sup> It is much better built than all the other ostrogs. The buildings are for

<sup>3</sup>General G. G. Skorniakov-Pisarev, prominent under Peter I, was exiled to Siberia after Peter's death by Prince A. D. Menshikov. He became commandant of the Okhotsk ostrog, but proved such a poor administrator he was relieved of command by a ukase of the Empress Anna, April 13, 1739. Stejneger, Steller, p. 208. --Ed.

<sup>4</sup>A. M. Devier, also called Count de Viere, was a young Portuguese whom Peter I met in Holland and took to Russia. Under Peter, Devier became a count and a lieutenant-general, but he incurred the enmity of Prince Menshikov, and after Peter's death was exiled to Siberia. He proved a capable administrator, and was appointed commandant of the Okhotsk ostrog to replace Pisarev. Stejneger, ibid., p. 208; James R. Gibson, Feeding the Russian Fur Trade (Madison: University of Wisconsin Press, 1969), p. 44. --Ed.

the most part good-looking and orderly, especially those which belong to the Crown, which were used as living quarters for the officers of the Kamchatka Expedition. At the time I was there, there were not yet either a church or a fortress; but it is probable they will soon be built.

Although that part of the country is as barren as Kamchatka, the people who live there have a great advantage over the Kamchadals in regard to the necessities of life; they spend half as much for merchandise brought from Iakutsk, especially for grain and other food supplies which are plentiful here. Much livestock is brought here each year, whereas in Kamchatka the only meat available is wild game and reindeer, and even that is rather rare; only at the dwellings of the well-to-do men does one find bread, and then only on feast days; fish is as abundant here as in Kamchatka, since all species known in the country are to be found in the Okhota river, with the exception of chavycha,<sup>5</sup> which is brought here from Kamchatka.

The most essential thing lacking here is that there is no pasture land, so that the natives cannot raise livestock. They have tried to do this several times around Taui, but with no success; nearly all the animals died. Only time will tell whether the natives who have been brought from Iakutsk and who are now established on the shores of the Mundukan, Dzholokon, Meta and Malchikan rivers, which empty into the Okhota River, will be more fortunate. This lack of livestock is in some way compensated for by the herds of reindeer which one

<sup>5</sup> King salmon. --Ed.

can more easily get from the Lamuts than from the people in Kamchatka.

Nevertheless, they are more used for draught animals and for travel than for food. Dogs are also used, but less commonly than in Kamchatka.

At the time I was there, there were four ships: the Fortune, which I took in 1737 on the Bolshaia River, and which was wrecked shortly after that; the Gabriel, which was used for some time for foreign trade; the galley Okhotsk, and a small ship which was still in the dockyard, were the other two.

Formerly the crossing from Okhotsk to Kamchatka was made only once a year, in autumn, when the agents in charge of collecting iasak made the trip. The ship they used would winter on the Bolshaia River, and the following year would return with the agents and the iasak they had collected. The crossing is now made whenever necessary.

The sea route from Okhotsk to the Bolshaia River is directly southeast; however, it is necessary to sail more southeast by east in order to approach the coast of Kamchatka before reaching the Bolshaia, and the distance from one to the other is one thousand one hundred versts.

From Okhotsk ostrog to the Amur River, whose headwaters are within the Russian Empire, these are the rivers which empty into the sea.

The first is the Urak, whose mouth is twenty-four versts from that of the Okhota. Provisions intended for the Kamchatka Expedition were transported on flat boats on this river to Okhotsk; this was the reason that fifty versts from its mouth a dockyard was established, with the same name as the river, where sailors and the Cossacks from Okhotsk built boats every year for that purpose,

and carried their provisions from Iudomsk Cross to that place by horse, reindeer, or on sleds. The navigation is extremely arduous and costly, and causes a great loss of time and sometimes of men, for the river is extremely swift, filled with rocks and rapids, and there are places where the water is very low; it is only in spring, or when there has been heavy rainfall, that one does not face this last difficulty; but as a large head of water runs off very rapidly, not a moment must be lost when conditions are favorable for boats to leave; if one loses an opportunity, one must wait a long time for another chance. This trip has never been made, even in favorable weather conditions, without losing some boats which became lodged on the rocks, or others which were wrecked in the rapids. This river is so dangerous that there was only one soldier in Siberia who dared undertake the responsibility of piloting a boat on it. As a reward he was given the rank of sergeant. One can judge the swiftness of the river by the report of Captain Walton,<sup>6</sup> who took only seventeen hours to come down the river from Urak to the mouth, in spite of the time he lost getting around several obstacles which halted him at the rapids, and rescuing and pulling off boats which were hung up on the rocks.

Thirty versts from Urak dockyard, as one goes up the Urak River to the mouth of the Korshunovka, which empties into its left bank, there is a Guard Station for the Okhotsk Customs House, where all travelers are stopped to see

<sup>6</sup> Captain William Walton, an Englishman, commanded the Gabriel on Spangberg's 1739 expedition to the Kurile Islands and to Japan. Stejneger, Steller, p. 189. --Ed.

that they are not carrying spirits, Chinese tobacco or other contraband merchandise, which they have not declared.<sup>7</sup>

The Urak River empties into a bay with the same name, which is two versts long and two hundred sazhen wide.

One and one-half versts from this same river, the small river Uluktur empties into the same bay.

Four versts from Urak Bay, there is a small river, the Chilchikan, whose mouth forms a bay; and twelve versts beyond, the Tongus River empties into Chilchikan Bay, which is connected to Lake Tonor through a narrow channel; the lake is twelve versts long.

Eight versts from this lake, the small river Marikan empties into the sea, and two versts beyond that place there is another stream called the Andis; both empty into Marikan Bay, which is about eight versts long and only one hundred sazhen wide. From there it is a day's trip on land to the Ulia River, which empties into a separate bay fifteen versts long and about one-half verst wide. At the mouth of this river a signal beacon has been set up, so that ships which come from Kamchatka, can more easily recognize the Port of Okhotsk, when the wind blows them off shore from the Amur River.

Then follow the small rivers Kunirkan, Otingri, Gorbukan, Turka, Mana, Alongda, Kulukli and Itymich. It is a two-day trip overland from the Ulia to the Kunirkan; the others are not more than one day apart.

<sup>7</sup>The Russian government constantly tried to protect its monopoly on the sale of liquor, but smuggling was inevitable. Natives were forbidden to buy tobacco; smoking was considered a fire hazard and an unacceptable custom. Fisher, Fur Trade, p. 77. --Ed.

It is the same distance from the Itymich River to the Unchi; from there one comes to the Chengeide; beyond that river lies the Lentekana, after which one comes to the small rivers Kekri, Talpi, Vangai and Asanki; from the latter it takes one day by land to go to the Rock called Toktekisha, where the Tungus gather in the springtime.

From Toktekisha, it takes another day to go by land to Simita Rock, and at the same distance beyond that place, one comes to Odianama or Odianskaia Bay.

Two versts from this bay is the rock Ulkat, where the reindeer Tungus camp in the spring. From there it is a one-day trip by land to the small Tokti River. Beyond that lie the rivers Kikkirkan, Nirumule, Kokalni, Kemkera, Eikan, Mukdizi and Nelva. From the Tokti to the Kikkirkan, the distance is only about five versts, and the others are a day's journey apart. From the Eikan to the Mukdizi, and from there to the Nelva, the distance is not more than two versts; three versts before one comes to the small Eikan River, there is a rock called Motokan, where there are said to be many sea bears.<sup>8</sup>

A half-day's travel overland takes one from the Nelva to the Ulkan River, from where it takes a day to reach the large river Aldam; and from there it takes the same amount of time to reach the Malim; from there it is two days to the Ezioga and one day to the Uia; Murukamskaia Bay is the same distance from the latter river; the small Murukan River empties into this bay.

<sup>8</sup>Fur seals. -- Ed.

A day away from the Murukan, lies the Nangtar, where the Tungus fish. Five days' travel beyond is the river Muting, from where it takes a day to go to the Nema; and from there two and one-half days are needed to reach the Mulgorikan; from that river to the Medeia and to the two small rivers called Dzholong, it is only a one-day trip; from the farther of these two rivers with the same name it takes a day and a half to go to the Kranga. From the Kranga to the Chalgacha, and from there to the Ud River, the journey takes only a half-day.

The Ud rises a short distance from the Zeika; its mouth has been located on the Russian map at  $57^{\circ}45'$  latitude, beyond  $162^{\circ}$  longitude. However, it appears that there is a mistake here, since on the same map Udsk ostrog is located at  $58^{\circ}$  latitude and  $160^{\circ}$  longitude; but according to the new astronomical observations, it has been ascertained that Udsk ostrog is situated in  $55^{\circ}30'$  latitude, and slightly less than  $153^{\circ}$  longitude; for this reason it is possible to locate the mouth of the Ud River with Udsk ostrog, without the fear of any great error, at the same parallel, that is, at  $55^{\circ}30'$  latitude; for according to that same general map, the distance between Udsk ostrog and the mouth of the Ud is only a quarter of a degree: they were less mistaken in placing Okhotsk on the map, since that ostrog is nearly in  $162^{\circ}$  longitude, whereas according to Lieutenant Krasilnikov's<sup>9</sup> astronomical observations, it should be shown to be in  $160^{\circ}$ ; in regard to latitude, there is only a slight difference.

<sup>9</sup> Andrei Krasilnikov, a geodesist, and former student at the St. Petersburg Observatory, accompanied Bering's second expedition as assistant to the geographer, Louis Delisle de la Croyere. Golder, Bering's Voyages, I, p. 32.  
--Ed.

It is easy to see, by all of the foregoing, that the coast from Okhotsk to the Amur River, without mentioning the difference in longitude, is poorly determined on the map, since according to the observations just mentioned, Okhotsk is located much farther east than the mouth of the Ud River; consequently the coast should extend not to the south, but more to the southwest.

Udsk ostrog is located on the north bank of the Ud River, seven days' travel from its mouth, figuring ten or twelve versts per day; and this applies to all the distances which have been estimated between the places previously mentioned.

The buildings in that ostrog are a church dedicated to St. Nicholas, a iasak collecting building, and ten dwelling places for the inhabitants. This ostrog is under the jurisdiction of Yakutsk, from where agents are sent to collect iasak.

There are seven Tungus tribes who pay iasak at this ostrog, namely, the Laligirsk, Goigansk, Oddiansk, Oginkagirsk, Butalsk and the Kitigirsk; the iasak which these people are obliged to pay amounts to eighty-five sable and twelve fox per year.

This ostrog was formerly inhabited only by soldiers; but in 1735 ten families of farm workers were moved here to clear the land; however I have heard that there is no indication that grain will grow here, because the land is not suitable.

Beyond the mouth of the Ud, after eight versts and two hundred sazhen along the coast, one comes to the small Ulikan River. Two versts three hundred



sazhens from this river the Sonika flows. Five versts from the Sonika is the Kalamashin. Two versts one hundred fifty sazhen from that, one comes to the Avlaia, a stream, and two versts beyond that, the Tilla River. Ten versts from there is the Tillatikan. Six and one-half versts from there is the Elgekan, and eleven versts two hundred sazhen from the latter, the Torom, where people used to trap many fine sables on the shore.

Fifteen versts from the Torom flows the small river Agl; a four-day trip brings one to the Mamba, which empties into a rather large bay. Opposite the mouth of this river, ten versts from the coast, there is an island called Bear Island, which is eighteen versts long and six wide. Beyond the mouth of this river Cape Mamzhinsk extends into the sea, and beyond it lies the small Uiu or Oiu River, which is a day's trip from the Mamba. East of this cape is an island called Feklistov which used to be winter quarters for hunters. This island is about ten versts long and the same distance wide; one can go by boat to the island from the cape in one day. West of this island there is a large deep bay, in which there are whales, seals, and fish called beluga.<sup>10</sup> The island is full of rocks and woods; there are fox and sables there, but they are inferior to those found on Shantar Island.

Shantar Island is much larger than Feklistov Island, and is located farther out in the sea. The southern tip of Feklistov hides the northern tip of Shantar; so that from far off these two islands appear to be but a single island. It takes

<sup>10</sup>Sturgeon. --Ed.

three and one-half days to go completely around Shantar Island in boats, and three days to cross the island on foot. In the middle of this island there is a range of mountains which lie north to south, where small rivers flow both east and west. The largest of these are the Anabarina, Iakshina, Kabanova, Galba, and Barin.

The mouth of the Anabarina is opposite the mouth of the Tugura, which will be described shortly, and which was given the name of some hunter whose winter dwelling was in this place.

The small Iakshina River, on the north, is a half-day's journey from the Anabarina. As one leaves the Iakshina and follows the coast from the north to the south, one comes to Romskaia Bay, which is from ten to twelve versts long; the distance from the Iakshina River to this bay is about twenty versts.

The small Kabanova River is fifteen versts from this bay; and about eight versts beyond and to the east there is a bay which is from fifteen to twenty versts long, which receives two small rivers which rise near the Anabarina and the Kabanova.

Opposite this bay, on the east side, a short distance from the island, there is a very high craggy mountain; one can go around it in a boat in one day. Directly opposite these crags, there is a large low island called Goloi [barren], because there are no forests there.

From the aforementioned bay, one can go in a half-day to the Galba River, from where it takes the same length of time to go to the Tai; and from there it is seven versts to the Barin, from which one rounds the tip of Shantar Island and

in one day can reach the small Anabarina River.

On Shantar Island there are not only forests, but many different animals, especially fox, sable, ermine, wolves and bear. The principle birds are swans, ducks and geese. In the gulfs there are brill, fish called lenek, malma, kharius, kambala and kunzha. Many berries of different kinds grow there.

A half-day away by boat, to the south, there is an island about twelve versts long and the same distance wide called Khudoi-shantar, or Barren Shantar, a name which was given to it because it is devoid of trees; however it has not always been this barren, since at one time it had plenty of trees, and many sables were trapped there; but since the forests were burned due to the negligence of the Giliaks, who left a fire without putting it out, there are only arid mountains; all the animals were destroyed.

From Barren Shantar Island, a half-day away by boat, one comes to Belochii Island [Squirrel Island]; it is the same size. There are also a large number of animals here, especially squirrels, from which it derives its name. It is located south of Barren Shantar Island.

Six versts from Squirrel Island, there is a small island to the southeast; and south of this island, there is another small one, which absolutely bristles with rocks; it is so high that one can make it out from the mouth of the Ud River. It is a half-day away from Squirrel Island.

Beginning from Shantar Island, in the narrows which separate all these islands, there are many long rocky points, rather high, and reefs hidden beneath the water, which makes the passage in these narrows extremely dangerous.

As one goes along the coast from the Oiu River to the Amur River, the first small river which empties into the sea is the Manmachin, which is two days away from the Oiu.

Half a day away from the Manmachin is the Aimakan. From there it is a two-day trip to the Tugur or the Tukhuru-bira, which flows within the Chinese possessions; its mouth is shown to lie in  $54^{\circ}25'$  latitude on the Chinese maps, and the domain of the Russian Empire extends to  $55^{\circ}$ ; this river empties into a large bay. Opposite its mouth, a short distance off shore, there is a small rocky island called Kebut-khada, or mountain. The coast between the Tugur and the Amur is inhabited by the Giliaks, who are subjects of the Emperor of China.

The small river Ule-bira flows into the same bay, and is not more than eighteen versts away from the Tugur. Beyond the Ule-bira, one finds the small river Guele-bira, whose mouth is shown to be in  $53^{\circ}51'$  latitude on the Chinese maps. Cape Cheinekansk, which projects into the sea for more than sixty versts, begins at the mouth of this small river.

Its width, from the mouth of the Guele-bira to the mouth of the Amur River, extends over almost an entire degree to the southwest. This large cape is the same width almost for its entire extent, with the exception of several small capes which extend into the sea. It lies north to south. The Chinese have not given a name to its northern extremity, but the southern, which has two promontories, has two names. The one which projects farther is called Langada-Oforo, and the other is Miangada-Oforo.

Thirteen versts from this cape, there is an island in the sea which is forty versts long. Its width in the middle is twelve versts. This island is shaped like a half-moon, with the middle exactly opposite the cape; it is so formed that there can be no doubt that it was once joined to shore. A short distance from the southern end of this island, there is another small rocky island called Guiadzi-khida.

From the southern extremity of Cape Cheinekansk, that is, from Langada-Oforo, the coast extends southwest to the mouth of the Amur River.

Forty versts from the Langada-Oforo, the small Ningai-bira River flows; its course lies through a mountain range called Tsikhuk-alan, which extends toward the sea in the middle of Cape Cheinekansk. Beyond the mouth of this river, a large promontory called Dulai-gada-oforo projects into the sea; and beyond this cape, near its tip, the promontory called Tiakhun-oforo extends into the sea.

Fifty versts from the Ningai-bira, the small river Kandagan-bira flows; its source is near the Guele-bira. It empties into two capes, the one to the northwest is called Tianga, and the one to the southeast is called Fituga.

The Amur River, or as it is called in this country, Sakhalin-ula, is fifteen versts from the Ningai-bira; according to the Chinese maps, at  $52^{\circ}50'$  north latitude it empties into a large gulf which is between Langada-oforo and Ritsiga-oforo, and on those maps is located in  $52^{\circ}10'$  latitude.

The nearest place to Ritsiga-oforo where one can pass is a large inhabited island which extends from northeast to southwest over a distance of approximately

four and one-half degrees . Its upper extremity is in the same degree of latitude as the Ule-bira River; and the lower, on the Chinese maps, is in  $49^{\circ}50'$ . The width of the narrows between Ritsiga-oforo and this large island is shown to be only thirty versts .

The coast from the Ud River to the Amur, with the exception of the promontories and capes which project into the sea, runs almost directly from north to south .

## CHAPTER IX

### THE KURILE ISLANDS

The term Kurile Islands includes almost all those islands which lie one after another toward the southwest from Cape Kurile to Japan. Their name comes from the people who live on the islands closest to Kamchatka, which the natives call Kushi, and the Russians call Kuriles.

It is difficult to say exactly how many islands there are. If one goes by the report of the Kuriles from the southernmost islands, and of the Japanese themselves, who have been shipwrecked on the coast of Kamchatka, there are twenty-two. Perhaps they do not count the smallest islands, for according to the account of Spangberg,<sup>1</sup> who went as far as Japan, it seemed that there were many more, which is both difficult and perplexing when one tries to reconcile the Russian names which Spangberg gave these islands with the Kurile names which are known through the reports of the natives, with the exception, however, of the first two islands and the island called Kunashir, the one closest to Matmai; Spangberg retained the native names for these islands.

The first, and the closest to Cape Lopatka, is called Shoumshchu; its

<sup>1</sup>Martin Petrovich Spangberg, a Dane, served in the Russian navy; he was second-in-command on the first Bering expedition, and on the second expedition was charged with mapping the coast of Japan and the Kurile Islands, Stejneger, Steller, pp. 95-97. --Ed.

length from northeast to southwest is fifty versts, and its width is thirty. It has many mountains and lakes and marshy areas, which give rise to many small rivers which flow to the sea, among which there is one where various species of salmon are found, as for example, the red, the white, gorbusha, goltsi, etc.; but they are not found in sufficient quantity to furnish food for the natives during winter.

On the southwest point, that is, around the narrows between the first and second Kurile Islands, there are Kurile villages in three different places: the first is on the bank of the small river Ashi-khurupishpu; the second is on the banks of the Khorupishpu, a half-verst from the first; and the third is on the shores of the small Moerput River, which is not more than one verst from the last river. Altogether there are only forty-four inhabitants. Some pay iasak in sable pelts and fox skins, but most of them pay in sea beaver.<sup>2</sup>

The people who live on this island, as well as those on Cape Lopatka, are not true Kuriles, but are Kamchadals, who at the time of certain dissensions, and particularly after the arrival of the Russians in Kamchatka, separated from the others and came to live on this island and on Cape Lopatka. They intermarried with the natives on the second island, and this is how they came to be called Kuriles. Actually, not only did they adopt many Kurile customs, but they became quite different from their forbears, for the children who were born of the union of these different peoples, are better looking, have darker hair, and

<sup>2</sup>Sea otter. --Ed.



hirsute bodies.

The strait between Cape Lopatka and this island is fifteen versts wide; one can cross it in three hours with boats when the weather is fair; but in addition, another condition is necessary for the crossing: one must wait for low tide, for during high tide, waves come into strait over a distance of several versts with such power and force that even when the sea is calm the waves are covered with froth and are twenty to thirty sazhen high. The Cossacks call these waves suvoem or suloem, and the Kuriles, according to Steller, call them kogach, that is, mountain ridge. They use this word to describe the spine of a fish. They also call the waves kamui, or god; they fear the waves and look on them with respect; when the waves pass over, they throw small artistically carved figures into them, in order to ensure safe passage and not to be swamped; at such a time the pilot makes some incantation or spell. This will be treated more fully when the Kurile people are discussed.

The second Kurile Island, called Poromusir, is twice as large as the first; it lies northeast to southwest and the channel which separates it from the first is not more than two versts wide. A ship can anchor there during a storm, but not without danger, for the bottom of the strait is nothing but rock, and there is no place where one can anchor with confidence. If a ship has the misfortune to slip its anchor, it is in the greatest danger of being wrecked, for the coast is very steep, rocky, and the strait is so narrow that it is impossible to avoid the rocks. One of our ships unfortunately was wrecked there in 1741.

This island is also very mountainous, filled with lakes intersected by

small rivers, as is the case on the first. On these two islands, one sees only small cinders and brushwood which the natives use instead of wood to burn. All along the coast they pick up different kinds of driftwood which the sea and the waves carry from America and Japan and toss up on the shore; sometimes they find camphor wood; they brought me large pieces of this wood.

The natives on this island are true Kuriles, who came here from Onnekuta Island, which is quite well populated; but the exact reason for their migration is not known. Steller says that the natives of the most distant islands come from Onnekuta Island to take the women and children away from these islanders, and carry them off; perhaps this is the reason they were obliged to leave the place they were born to go live on this deserted island. They never forget their birthplace, however, for they come here often and live here sometimes for a year or two without leaving.

All the natives say that trade was formerly carried on between the inhabitants of the two islands just mentioned and the more distant Kurile Islands. The latter brought various vases of lacquered wood, swords, silver rings which these people wear in their ears, and cotton goods; and in exchange they were given eagle plumes, which they used to feather their arrows.

This seems all the more likely, since on the second Kurile Island I saw a lacquered tray, a cup, a Japanese sword and a silver earring, which I sent to the Kunstkamera.<sup>3</sup> It is certain that the Kuriles could only have obtained these

<sup>3</sup>The Cabinet of Curiosities, a museum of natural history founded in 1713 in St. Petersburg by Peter I. --Ed.

from Japan.

The Kuriles on the second island live on the southwest point, on the shore of a lake which is about five versts in circumference and is the source of a small river called the Petpu, which empties into the sea. These two islands are subject to frequent violent earthquakes and fearful inundations. There were two earthquakes and two floods in particular which were worse than the others. The first was in 1737, at approximately the same time that I came to Kamchatka; and the second was in November, 1742. I will discuss the first elsewhere and will give all the attendant circumstances. As for the second, I know only that it was violent and caused much injury to the natives; it occurred after I had left Kamchatka, and Steller makes no mention of it.

On the west coast of the island I just spoke of, there is a deserted island, designated on maps by the name Anfinogen, but the Kuriles call it Uiakuzhach, which means "steep rock;" the Cossacks call it Alaid. This island is about fifty versts off the coast of the continent. Its shape is round; it is comprised of a single high mountain which can be seen in clear weather from the mouth of the Bolshaia River. The people who live on Cape Lopatka and on the two aforementioned islands, go there by canoe to fish or hunt sea lions and seals, which are very numerous there. In clear weather, one can see smoke rising from the summit.

Steller relates the following story about Alaid. The Kuriles who live near the large lake of the same name told it to him. This mountain was once located, they say, in the middle of this lake, and because it was so high it shut out the light from all the other mountains around it; they were indignant and

quarreled with it, so that it was obliged to leave and move into the sea; however, so that it might leave a memorial of its stay in the lake, it left its heart there, which in the Kurile language is called Uchichi or Nuchgunk, and in Russian, Serdtse-kamen [rock heart]. Actually, this rock is located in the middle of Lake Kurile, and is conical in form. The mountain's route lay along the course of the Ozernaia River, which was formed at the time of the mountain's trip, since when the mountain arose, the water in the lake rushed out with it and made a path toward the sea. Although the young men of the country ridicule these absurd tales, according to our informant, nonetheless the old men and women consider them completely true; from this one can judge how outlandish their ideas and beliefs are.

Steller adds, that in addition to sea lions and seals, there are red and black fox and mountain sheep, but sea otters and fur seals are rarely seen, since they do not venture into the Sea of Okhotsk, unless they have strayed there.

The third Kurile Island is Sirinki, since Alaid is not included as one of the Kuriles. Its location is off the southwest tip of Poromusir. The strait which separates them is five versts wide. In the Russian Atlas this island is referred to as Diakon. The Kuriles from the first two islands sometimes travel to the third island to look for sarana, and to trap birds for food.

The fourth Kurile Island is called Onnekutan, and is not as large as Poromusir. It lies northeast to southwest. It takes one day to go there by boat. It has a rather large number of inhabitants; they are descended from the Kuriles on the second island, as has been explained; these people, even whole families,

sometimes travel to visit people on Poromusir, and voluntarily pay them tribute in beaver and fox pelts; from this it may be presumed that the other people on this island would not refuse to pay tribute if men were sent to subdue them and assure them of the clemency of Her Imperial Majesty, and of the powerful protection they could have against their enemies, who come to raid them from time to time. For the rest, nothing is known, and the only account we have is that of the Japanese who were taken to St. Petersburg and who said that they were captured on Onnekutan Island by the Cossacks from Kamchatka, and that they were certain it was deserted.<sup>4</sup>

Neither Steller nor I had the opportunity to inform ourselves in detail about the other Kurile Islands; and for that reason I will here present the observations Müller sent to me; they were furnished to him by the Japanese who were shipwrecked on the coast of Kamchatka and were taken prisoner there.

Müller and I are not in agreement on the number of islands, for he considers Onnekutan as the sixth, and not the fourth; this must mean that he counts the small islands, which the Kuriles do not do.

According to Müller's description, beyond Poromusir, or the second of the Kurile Islands, Sirinki follows, which he considers the third; Uiakhkupa is the fourth; Kukumisha or Kukumiva is the fifth. The first and the last, that is, Sirinki and Kukumiva, are small; the one in the middle, Uiakhkupa, is the largest: it is noteworthy because of a very high mountain which in good weather is visible from the estuary of the Bolshaia River.

These islands form a triangle; Uiakhkupa is more to the north and west

<sup>4</sup>See infra, p. 538. --Ed.

than the others; Sirinki, in respect to the preceding island, is to the southeast and in the same latitude as Poromusir; but Kukumisha is slightly more to the south than Uiakhkupa. It appears that these islands are the ones which are shown on the general map in the Russian Atlas under the names Diakon, Saint Iia, and Galante, which are set in a triangle, although their position does not precisely agree with the description I just gave.

The sixth Kurile Island, according to Müller, is called Musha or Onnikutan. The seventh is Araumakutan. It takes a half-day to go there by boat and is not inhabited; the only thing of interest about it is that there is a volcano there as in Kamchatka.

The eighth is Siaskutan; it is separated from the seventh by a strait of the same size as the previous one. It has several inhabitants who have not so far been made to pay iasak.

West of this island lies the ninth, called Ikarma; and beyond that one, to the southwest, one finds the tenth, which bears the name Mashauchu; both are small and uninhabited. To the southeast of Siaskutan, there is a small island called Igatu, which is the eleventh.

The twelfth is called Shokoki; it lies south of Siaskutan, from which it is so far distant that even in midsummer when days are long it would be difficult to reach it in half a day even using the lightest boats. There is a report that the Japanese do some mining there, and that they load an ore onto large ships; but no one knows what kind of ore it is.

The thirteenth island and those that follow, up to the eighteenth, are

called Motogo, Shashova, Ushitir, Kitui, and Shimushir; Ushitir lies somewhat to the east, and the others, like those before, are situated in a direct line southward; in less than twelve hours, one can go by boat through the straits that separate them; but it is difficult to cross from one to another because the current is very strong at both high and low tide, and if a cross wind is blowing, the fury of the waves and current carries boats out into the open sea, where they are generally swamped. This is the reason why people who live on these islands only cross the straits in springtime in fair weather.

Motogo, Shashovo and Ushitir have no features of interest; on Kitui certain reeds grow which are used to make arrows. Shimushir is larger than any of the islands which precede it, and it has quite a few inhabitants. These people resemble the Kuriles on the three previous islands, but they are not subject to Russia or to any other power. The navigators who were sent there seventeen years ago by Peter the Great caught a glimpse of this island; no Russians had penetrated farther before the second Kamchatka expedition.

The island called Chirpui is the eighteenth; it is situated to the west opposite the strait which is between the seventeenth and the nineteenth; it is uninhabited; but the inhabitants of the island just before it and the ones which lie beyond, come here to take birds or to gather roots. There is a very high mountain here. The inhabitants of Kitui say they have heard cannon fire from this island, but they do not know the reason for it; they add that at one time there was a Japanese ship which was wrecked on the coast, and that the people who lived on the next island returned the men from the ship to the Japanese, in

exchange for ransom.

The strait which separates Shimushir from the next island, which is called Iturpu, is so wide that it is impossible to see one island from the other; but from there to Urup, which is considered the twentieth, and from there to the twenty-first, called Kunashir, the straits are much narrower. The twenty-second and last is near Japan, and the Japanese call it Matmai. Müller has said nothing of the width of the strait which separates it from Kunashir, but there is every reason to believe that it can not be very wide, especially on the west; I will discuss the reason for this below.

Matmai is the largest of all the islands, and Kunashir is the second largest. Iturpu and Urup are also sizeable islands, and are larger than any which precede them. These four islands are well populated. The islanders on Iturpu and Urup are called Kykh-Kuriles: they have their own language, and resemble the people who live on Kunashir; but it is not known whether they speak the same language, and whether there is a similarity between the language of the Kykh-Kuriles and the Kuriles of Kamchatka and those on the neighboring islands.

One thing which should be mentioned is that the Japanese refer to all the people who live on these four islands by the general term of ezo; from which one can conclude that the people who live on Matmai are of the same race as the people who live on the first three islands, and that the same language is spoken on these four islands; and this may also serve to correct the error of the geographers who gave the name Ezo to a large land situated northeast of



Japan, whereas it is actually made up of the islands just mentioned; this moreover agrees with the accounts of the Dutch, who were sent in 1643 to explore the same land.

It was the people who lived on the islands Iturpu and Urup who formerly carried on trade with the natives who lived on the islands near Kamchatka over a period of twenty-five or thirty years. Some of them had been taken prisoner on Poromusir and had been led off to Kamchatka; perhaps that was the reason that all trade and navigation between these islands was broken off. These prisoners were very useful in clarifying and correcting the reports various persons had given about the Japanese; and they gave us some new information.

It was from them that it was learned that the Kykh-Kuriles, who live on the islands of Iturpu and Urup, live in complete independence. As for the island of Matmai, we have known through the accounts of European travelers and of the Japanese, that it has for a long period of time been under the domination of Japan. They also told us that there are many Kuriles and Kamchadals on these islands who are slaves.

The first islands and the latter ones have almost no wood, except for those which are situated on the west coast, where there is an abundant supply of it; this means that all manner of wild game is found there. The rivers, where large ships can enter the estuaries, provide good anchorage and a safe harbor. For this reason Iturpu is preferable to the others.

The inhabitants of Kunashir go to Matmai to buy Japanese fabrics, both silk and cotton, and all kinds of iron utensils for domestic use which they take

to Iturpu and Urup. On these two islands they make a linen from nettles, which the Japanese buy from them; they also sell them furs from animals which they take on the islands near Kamchatka, or which they have on their own islands; they also sell dry fish and whale blubber, which the inhabitants of Matmai use in their food; and they even take these to Japan, if one can rely on the tales European voyagers tell.

Matmai lies southwest to northeast. On the southwestern tip of the island the Japanese have set up a strong garrison, probably to protect the island and safeguard it from the Chinese and from raids by the people who live in Korea. A short distance from there, at the far end of a strait which separates the island Matmai from Japan, there is a Japanese town which has the same name where there are weapons, cannon, and a large supply of ammunition. New fortifications were recently built here; the Japanese who live on this island are for the most part bandits.

The accounts of the Japanese who were shipwrecked on the shores of Kamchatka in regard to the strait which separates Matmai from Japan agree with the accounts of the European voyagers, which we were familiar with; that is, that this strait is very narrow in places and extremely dangerous because of the large number of rocky capes which jut into the sea on both shores, and because at both high and low tide the current is so swift that if one loses a moment or allows his attention to falter for an instant, the boats will be broken on the reefs or carried out to sea.

It is known that the Dutch, after they had left the islands just mentioned,

found a small island to the east to which they gave the name Staten Island, and that as they continued to the east, they made out a large body of land which they called Company Land, which they thought was united to the North American continent. The Japanese accounts, and the explanations given by the inhabitants of the island of Ezo, have not shed any light on that; but it appears that Company Land is the same as the land which was discovered by the Spanish Captain de Gama, and that it should be considered an island rather than a continent, because America, according to all the observations made between Japan and New Spain, can not extend this far west at this latitude.<sup>5</sup>

There is no fault to find with Müller's accounts, except the general location of the Kurile Islands, which do not extend to the south, as he said, but to the southwest, one after another in a line, as I have reported, and as they have been placed on the Russian map. The new maps and the accounts which have been given by the Japanese indicate that the Strait of Tessoï, which is off the coast of the Chinese empire and extends south-southwest, is separated from a cape with the same name which is the western tip of one of the islands of Ezo, and that it is not more than fifteen versts wide. If these islands lay toward the south, as Müller suggested, this strait would be considerably wider. If Spangberg's description of the Kurile Islands agreed with Müller's, then we would know precisely how large they are, how they lie, and the exact distances

<sup>5</sup> For detailed explanations of the mapping controversy, see Golder, Bering's Voyages, II, 69-72; and Leo Bagrow, History of Cartography (London: C. A. Watts & Co. Ltd., 1964), pp. 173-176. --Ed.

between them. As it is, we can only guess at these questions.

Of the four islands which make up the land of Ezo, Spangberg has given proper names to only two: Matmai and Kunashir. It appears that the islands Iturpu and Urup are indicated under the names Zelenoi and Tsitronnoi [Green Island and Citron Island]; and as all these islands with the exception of Matmai are so well known that we are not unaware of either their size or their location, it cannot be doubted that Cape Tessoï is the northwestern tip of the island of Matmai, which could not be made out by the Russians except from the east coast of Japan. Although the situation from southwest to northeast which Müller gave for this island in his account gave rise to some doubt, this doubt can be erased by placing the tip of Matmai which is closest to Japan on the Chinese side, from southeast to northwest, and on the side of the Kurile Islands, from southwest to northeast, as it is shown on the Chinese maps, where they have, however, made an error in not separating the islands of Ezo.

The strait between Matmai and Japan, according to the new maps, is twenty versts wide in some places, and much less in other places, but the beginning of the island of Japan or Nifon is placed slightly beyond the fortieth degree of latitude.

The accounts of the number of trees to be found on the islands near Japan are confirmed by Steller, who says that in general, the farther west from America the islands are, the larger they are, more fertile, and abounding with fine fruits and different kinds of trees, such as lemon, lime, bamboo, Spanish reed, and poisonous herbs that have roots as yellow as saffron and as

large as rhubarb. These poison grasses are known to the people who live on the first Kurile Island, who buy them from these islanders and use them to poison their arrows. These islands also produce vines. Walton, on his return from Japan, had me taste some wine which he had been given by one of the people there. He also brought back some karakatits, which are very common there. Steller says that there are many other kinds of fish, as well as swallows, eagles, cuckoos and mackerels. He adds that the island of Kunashir is covered with pine trees, larch and firs, but it lacks good water; the water is muddy and ferruginous. There are many wild animals, especially bear, whose skins the natives use to make costumes which they wear on feast days.

The natives of this island, according to his report, wear long garments of silk and cotton; they let their beards grow, and they are very ill-kempt. They live on fish and whale blubber; their beds are made of the pelts of wild goats called musimon, which are found in abundance on this island. They recognize no sovereign, although they are close to Japan. The Japanese travel there every year in small boats, and take them all kinds of iron utensils, pots and kettles of copper or cast iron, laquered chests, laquered wooden cups, leaf tobacco, and silk and cotton fabrics, which they exchange for whale blubber and fox pelts; however the fox on this island are very small and quite inferior to those on Kamchatka. The natives of Kunashir warned the Russians to beware the natives of Matmai, because they have large caliber cannon, which they call Pig. They were also asked if they had not come from the north, and if they were not the people who were so famed for their power and their conquests,

who were in the process of conquering the rest of the world.

The language used by the islanders of Kunashir is almost the same as that spoken on Poromusir; this was confirmed for Steller by a Kurile named Lipag who had been Captain Spangberg's interpreter at the time of his voyage to Japan; from this it may be concluded with some certainty that the language of the islands of Iturpu and Urup differs very little from that of the Kuriles.

It is known that the natives of these islands call themselves Kykh-Kuriles, and that Kurile is a word corrupted by the Cossacks, who said Kurile instead of Kushi, which is the real name of all the natives of these islands; this is why it is likely that if the people on Iturpu and Urup distinguish themselves from others by adding Kykh to their name, they should be called Kykh-Kushi, rather than Kykh-Kuriles.

## CHAPTER X

### AMERICA

Since there does not yet exist any certain and detailed account of that part of America which lies east of Kamchatka, we might have dispensed with describing it here and waited for the publication of the accounts of voyages to the coast of America. However, in order to follow our plan to give the reader some idea of all the lands near Kamchatka, we intend to make public certain materials taken from Steller's notes.

The region of America which we now know to be situated between the fifty-second and the sixtieth degrees of north latitude, extends from southwest to northeast, and is in all places almost equidistant from Kamchatka, approximately thirty-seven degrees of longitude. This is true because the coast of Kamchatka, from Cape Lopatka to Cape Chukotsk, with the exception of the gulfs and capes, lies almost parallel to the American coast. Thus it is not unreasonable to suppose that these two continents may formerly have been joined together, especially at Cape Chukotsk, since the distance between this cape and the tongues of land situated opposite it to the east is not more than two and one-half degrees.

Steller based his reasoning on four points. 1. From the shape of the coastlines of Kamchatka and America, it would appear that they had been

violently wrested apart. 2. The number of capes which jut out into the sea for a distance of thirty to sixty versts. 3. The numerous islands which are found in the sea which separates Kamchatka from America. 4. The situation of the islands, and the small expanse of this sea. I leave these proofs to the judgment of persons more clever than I and confine myself to reporting the observations which have been made in the areas around these countries.

The sea which separates Kamchatka from America is filled with islands which lie one after the other opposite the southwest extremity of America as far as the Strait of Anian, and form a chain to it in a manner similar to the way the Kurile Islands do to Japan. This chain of islands lies between the fifty-first and fifty-fourth degrees of latitude, directly east, and begins shortly beyond the fifty-fifth degree from the coast of Kamchatka.

Steller believes that Company Land must lie between the Kurile Islands and the islands near America; but some persons doubt this, for in their opinion, Company Land must be the base of a triangle formed by the Kurile Islands and the American islands, which might be apparent if Company Land were precisely located on the maps.

The climate of the American continent is much milder than is the northeastern extremity of Asia, although America is near the sea and filled with high mountains which are always snow-covered. These mountains are quite different from those in Asia. These latter have crumbled and fallen in, and have long since lost their soundness and internal heat. Also, there are no precious metals to be found there. Neither trees nor shrubs grow there,



except in the valleys, where something in the nature of a woody plant is to be seen. The American mountains, on the other hand, are compact, and their surface is not covered with moss but with fertile soil, which means that the slopes from base to summit are densely wooded with fine trees.

All the plants which grow at the foot of these mountains are varieties which live in dry places, and not in marshlands. The same species are found on the summits as at the base of the mountains, and generally they are the same form and the same size, because the interior heat and humidity are everywhere the same. In Asia, plants of the same species differ so much from each other that one can mistakenly suppose he has found several species, not one, unless he remembers a general rule for these countries, namely, that plants which grow in low country are twice the size of those which grow on the mountains, although they are of the same species.

The coast of America, even that part near the sea in  $60^{\circ}$  latitude, is thickly wooded, whereas in Kamchatka, in  $51^{\circ}$  latitude, only small willows and alders can be found, and even these will not grow closer than twenty versts inland from the coast, and birch generally grow thirty versts inland. Fir trees, which yield pitch, grow along the Kamchatka River fifty versts or even more from its estuary; and in Kamchatka, no trees at all are to be found in  $62^{\circ}$ .

Steller believes that America extends from the latitude just indicated to  $70^{\circ}$ , and perhaps even farther; that the country is protected and sheltered on the west by Kamchatka, and that this is the principal reason that so many trees grow there; whereas the Kamchatkan coast, especially along the Sea of

Okhotsk, is not at all wooded, undoubtedly because of the strong north winds which sweep across it. If areas located from the southern point toward the north are more fertile and more forested, it is because Cape Chukotsk and the land opposite provide shelter from the violence of these winds.

For the same reason more fish swim up the rivers in America than in Kamchatka. On the twentieth of July in America a prodigious number were seen, whereas in Kamchatka at the same time the first are only beginning to appear.

There is also to be found on the coast of America an unknown variety of raspberry, which has berries of an unusual size and flavor. In addition were seen honeysuckle, blueberries, blackberries, red bilberries, and crowberries in as great quantity as in Kamchatka.

The natives find a rather large number of wild animals which they can use; seal and sea otter, whales, sharks, marmot, and both red and black fox, which are not so wild as elsewhere, perhaps because so few of them are taken.

The known birds include magpies, crows, sea gulls, cormorants, ducks of the variety called Uril, swans, ordinary ducks, loons, woodcocks, Greenland pigeons, michagatki or northern ducks, and more than ten other species unknown to us. They are easily distinguished from European birds by their much more intense coloration.

The natives of this country are as wild as the Koriaks and the Chukchi; they are thickset, stocky and robust; they are broad shouldered, of medium height; they have long black hair which they wear in a dishevelled fashion;

their countenance is flat and swarthy; the nose is sharp but not overly large; their eyes are black as coal; and they have thick lips, a slight beard and a short neck.

They wear a shirt with sleeves which reaches below their knees. Instead of belts, they use cords which they tie below the waist. Their trousers and boots or shoes are made of seal skin tanned with alder bark; they are much like those of the Kamchadals. From their waist they hang iron-bladed knives with hafts like the ones our peasants carry. Their hats are of woven grass, like those of the Kamchadals; they are not pointed, but shaped like a parasol, and are colored green and red, and are ornamented in front with hawk feathers or with grass shredded and curled into a plume, such as are worn by the Americans near Brazil. They live on fish, sea animals and sweet grass, which they use as the Kamchadals do; they also dry the bark of poplar and fir trees. In times of desperation they eat this bark not only in Kamchatka, but in all of Siberia and even in several parts of Russia as far as Viatka, a town near Tobolsk. They also gather piles of a seaweed which resembles leather straps and is long-lasting. They do not use spirits or tobacco, which indicates that they have had no trade with Europeans.

They consider it a particular kind of ornamentation to pierce holes in their cheeks and to insert various colored stones or pieces of ivory. Some put pieces of slate about two vershoks long in their nostrils; others wear bones of the same size under their lower lip; there are some who wear similar decorations on their forehead.

The natives of the islands near Cape Chukotsk, who have contact with the Chukchi, are very likely of the same ancestry as the American natives, since they also consider it ornamental to insert bones into their faces.

After Pavlutski's battle with the Chukchi, there were found among the dead several of these islanders who had two small sea horse teeth inserted under their noses, in openings especially made for that. As a result of this, the natives call them Zubati, which means "men with big teeth;" and according to what the prisoners said, they had come not to help the Chukchi, but only to watch how they fought against the Russians.

From this it may be concluded that the Chukchi speak the same language as the islanders, or at least that there is such similarity that they can understand each other without an interpreter; and it greatly resembles the Koriak language, since the Chukchi tongue is derived from it and differs from it only in dialect, so that Koriak interpreters can speak with them without any difficulty. In regard to Steller's statement that not one of our interpreters could understand the American language, this could be because of a great difference in dialect, or in pronunciation, which can be observed not only among the uncivilized natives in Kamchatka, but even in Europe among people who live in different provinces. There is not an ostrog in Kamchatka whose language is not different from that spoken in the next ostrog, and persons who live several hundred versts apart have much difficulty in understanding one another.

These are the points of resemblance between the Americans and the Kamchadals. 1. The facial characteristics are the same. 2. They gather

and prepare sweet grass in the same way, which has never been observed anywhere else. 3. They both use the same wooden utensil to light fires. 4. Their hatchets are made of stone or bone, which led Steller to believe, with good reason, that the Americans formerly had some contact with the Kamchadals. 5. Their clothing and hats are made like those of the Kamchadals. 6. They both use alder bark to tan pelts.

All these similarities give rise to the presumption that natives of both countries have the same origin, which, as Steller so well put it, could help solve the familiar question as to where the natives of America came from; for even supposing that the American continent had never been joined to Asia, these two parts of the world are so close that it cannot be denied that it is entirely possible that the natives of Asia crossed over to America to live there; and this is all the more likely, since in the short distance which separates these two continents, there are many islands which would have favored such a migration.

Their weapons are the bow and arrow. As there was no opportunity to see their bows, it is not possible to say how they are made, but their arrows are considerably longer than those of the Kamchadals, and are very similar to those used by the Tungus and the Tartars; the ones which our men found were painted black, and so highly polished that there can be no doubt that they have iron tools.

The Americans put out to sea, as do the Koriaks and the Chukchi, in baidars made of skins, which are about twelve feet long and two feet high; the bow and the stern are pointed, and the bottom is flat; the interior is made of

poles, joined at the ends, and held in place with pieces of wood. The skins with which they are covered appear to be seal skins, colored cherry red. The place where the person who steers the baidar sits is circular, and about two arshins from the stern; there is sewn there a skin which opens and closes like a purse by means of cords attached around it. The American sits here with his legs stretched out, and fastens this skin around his body, so that the water can not get into the baidar. They have only one oar, several fathoms long; they use both ends of it with such agility and so successfully that head winds do not prevent them from going out, and they are not even afraid of being at sea in storms, whereas they are alarmed at the sight of our large ships tossed by the waves, and shout warnings to those who are in the ships to be careful lest they tip over, which happened to the Gabriel several years ago when she sailed toward Cape Chukotsk. These baidars are so light they can be lifted in one hand.

When the Americans see strangers approach, they row out to them, draw near, and make a long speech. It cannot be positively said whether this is with the idea of casting some kind of magic spell, or of giving honor to the strangers they are receiving. The same custom has been observed among the Kuriles. Before they approach the strangers they paint their cheeks black and place tufts of grass in their nostrils. They appear very civil and quite friendly when they welcome strangers. They behave in a friendly and familiar fashion, regard them with a steady gaze, treat them politely and give them presents of whale blubber and the sticks of pigment they use to paint their cheeks, undoubtedly in the belief that these gifts will be as desirable to the strangers as to themselves.

Navigation in the areas around this country is not dangerous in spring and summer, but it is so perilous in autumn that there is scarcely any day one can embark without risking his life; the storms are so frightful there, and the winds so violent, that sailors who have spent forty years at sea have assured me that they have never seen storms of such fury.

The most certain indications that one is not far from land in this part of the world are these: 1. When many kinds of sea weeds are seen floating on the ocean. 2. When a certain variety of sea weed is seen, which people in Kamchatka use to make cloaks, covers and small bags. This grass only grows near the coast. 3. When flocks of gulls or cormorants are seen, and herds of sea animals, such as seal. Although the seal has an opening near the heart called foramen ovale, and likewise the ductus arteriosus Botalli canal, which enables it to stay underwater for a considerable length of time so that it can easily go far away from the coast to look for food in deep waters, nevertheless it has been observed that seal rarely go farther than ten miles from shore. 4. The most certain indication that land is near is when Kamchatkan sea otter is seen. It eats only shell fish and because of the formation of its heart, cannot stay under water more than two minutes. It is impossible for these animals to live more than one hundred sazhen or even less from shore; they always stay close to the coast.

Several islands near Kamchatka have not yet been mentioned, which do not lie in the same line as the ones previously described, but are located farther to the north, especially Bering Island, which is at present so well known to the

Kamchadals that many of them go there to trap sea otter and other animals.

This island lies between  $55^{\circ}$  and  $60^{\circ}$  latitude, from southeast to northwest. The northeastern<sup>1</sup> extremity, which is almost opposite the estuary of the Kamchatka River, is about two degrees distant from the east coast of Kamchatka, and the southeastern tip is approximately three degrees from Cape Kronotsk. The island is 165 versts long, and the width varies. It is from three to four versts wide from the southeastern point of the island to a very steep and inaccessible rock fourteen versts away. From this rock to Sypucha Bay, the width is five versts. It is six versts wide between this bay and another rock called Beaver Rock; and near the small Kitovaia River (Whale River), it is five versts wide; beyond that, it gradually grows wider. Its greatest width is opposite North Cape, and there it is twenty-three versts wide. This cape is 115 versts distant from the point just mentioned. In general it may be said that the length of this island is so out of proportion to its width, that the author doubts there can be another like it in the world; he swears at least that he has never seen or heard of one similar to it; he adds that the islands which can be seen near American, and all those which lie to the east, have somewhat the same proportion.

Bering Island is composed of a mountain range separated by many deep valleys which lie north and south. The mountains are so high that they can be seen on a clear day half way to Kamchatka.

<sup>1</sup>Both the French and Russian editions refer to the northeastern extremity; in context, however, it is clear that the northwestern extremity is meant. --Ed.



The Kamchadals have for many years believed that opposite the Kamchatka River estuary there must be land, because there is always a fog bank there, no matter how clear and cloudless the sky elsewhere may be.

The highest mountains on this island are only two versts high, if they were to be measured in a straight perpendicular line; their summits are covered with a half foot of ordinary yellowish clay; and furthermore, the rocks of which they are composed are the same color. The principal range is serried and continuous, and the nearby mountains are broken by valleys, where small rivers flow and eventually empty into the sea on both sides of the island. It has been observed that the mouths of all these streams are either in the south or the north, and that their course, beginning at their headwaters, is either southeast or northwest, along the length of the island.

There are no plains near the principal range, except toward the coast where the mountains are rather far off; and even here these flat areas are not more than a half-verst or one verst long. It is interesting that these plains exist near each small river. There is this difference, that when promontories or capes near the sea are low, the plains behind will be quite extensive; but where the promontories are steep, the plains are more confined. One sees the same thing in the valleys. When they lie between high mountains, they are narrow, and the streams are small. The reverse is true of valleys which lie between low mountains. Where the mountains which make up the principle range are steep and rocky, one will always find, a verst or half a verst away, either the sea, or lakes from which streams flow which empty into the sea.

These mountains are made up of the same kind of rock, but in places where they are parallel to the sea, the capes or headlands which extend into the sea are composed of hard rock of a light greyish color, which can be used as grindstone. Steller, who finds this noteworthy, believes that it is only the sea water which causes this change.

The coast is so narrow in several places on the island, that it is very difficult to go there when the tide is in; one must wait until the tide is out. There are two places where passage is impracticable. The first is near the southeastern tip of the island, and the second is near the northwestern tip. This situation is undoubtedly the result of some earthquake or flood, or of wave action which has washed away part of the coast; or perhaps it was caused by a landslide from the mountains, brought about by extreme cold and thawing snow. The piles of rocks and crags which are to be seen around such places are an incontrovertible proof of this.

The coastline on the southern part of this island is more jagged than on the north, where it is possible to go along everywhere unimpeded, with the exception of an inaccessible rock and the point of the northern cape, which is very steep and is surrounded on its sea face by rocks which rear up like columns.

In certain places there are such astonishing outlooks that at first glance one might believe he was seeing from afar the ruins of a city or of some vast edifice. This is especially true in a place called the Cave where rocks look like walls, stairs, bastions, and boulevards. Behind the cave in various places one can see high pointed rocks, some of which resemble pillars, and others,

ancient town walls. Some form arches and doorways, which one can walk through; they seem to be more a work of art than a game of nature.

Another fact that has been observed here is that if there is a bay on one side of the island, on the opposite side there will be a cape, and that wherever the shore on one side is gently sloping and sandy, on the other side it will be rockbound and broken. In places where the coast winds and twists, it will be observed that shortly before, the shore is always very steep for a distance of one or two versts. When the mountains lie close to the principal chain, they are steep, and have sharp, columnar rocks on their summits. They are full of fissures and crevasses, created in successive stages by earthquakes. It has been observed that the highest mountains have cones formed of the same material as the mountain itself, but more delicate, pure, and lighter. This is also true of the Baikal mountains and of those on the island Olkhon.

Steller received similar rocks from Anadyrsk; they were of a greenish color, and transparent. He was assured they had been found on the summit of a mountain, and that when they were broken off, others were formed in their place. They seem to be created by some internal earth movement, particularly by pressure toward the center. Thus they may be regarded as a kind of crystal, or as a pure mountain matrix which is extruded from the center in a liquid state and then hardens when it is exposed to the air.

On the northeast side of this island, there is no place for even the smallest ships to find shelter, with the exception of one spot eighty sazhen wide; a vessel can drop anchor there, but only in calm weather, for in some

places, from two to five versts off shore, there are rock reefs which look as if they had been put there on purpose so that one can walk dry-shod at low tide out to the deepest places. When the tide begins to come in, the waves roll in at this place with such noise and frenzy that one cannot see or hear them without being frightened. They are covered with foam and break against the reefs with an appalling roar. The water is milky white.

In this anchorage, there is a large bay on the north side. There are rocks in the sea which appear to have been broken off from the beach cliffs, and there are columnar pinnacles and other characteristics which give weight to the idea that the island was once wider and longer than it is now, and that these rocky pinnacles are debris from it. 1. The rocks which are in the sea have the same strata as the mountains. 2. Between the rocks traces of a riverbed can be seen. 3. The veins are black or greenish, and resemble those which are found in the rocks which make up the island. 4. We are assured that wherever the mountains fall in gentle slopes toward the sea, and where the shore is sandy, the sea floor also has a gentle slope. Consequently the sea is not very deep near the coast. On the contrary, where the coast is steep, the depth of the sea is often from twenty to eighty sazhen, but around this island, and even below the steepest crags, the water is shallow. Thus it may be concluded from this that these rocky pinnacles were not here formerly, but that the shore had a gradual slope, and that at a later time it was washed away by the seas, or was broken off by earthquakes. 5. In less than six months, one place on this island completely changed form because a mountain

crumbled into the sea.

The southwest part of the island is totally different from the part just described. Although that part of the coast is more rockbound and more broken and interrupted, there are nonetheless two places there where flat boats, which we call scherbottes, can come up to the shore, and can penetrate even into lakes through branches which flow from them.

The first such place is fifty versts, and the second, 115 versts, from the southeastern point of the island. The latter one can easily be seen from the sea, because at that very spot the coast bends from north to west. On the cape itself there is a river which is larger than any other on the island and which at high tide is seven feet deep. It rises from a large lake, one and one-half versts from its mouth; and since it becomes deeper the farther in from the sea one goes, ships can easily ascend it all the way to the lake where there is a safe anchorage, surrounded, as if by walls, by high mountains which give shelter from all winds. The principle landmark for recognizing this river from the sea is an island seven versts in circumference, located to the south, seven versts from its mouth. From this spot, as one moves west, the coast is low and sandy for a distance of five versts. There are no reefs near the coast here, which is easy to see, since there are no places where the water seethes when the wind blows.

From the mountains on this island, two other islands can be seen to the south. One has a circumference of seven versts, as just mentioned; the other to the southwest, opposite the very tip of Bering Island, from which it is fourteen

versts distant, is formed of two very high rocky crags, separated from each other. Its circumference is about three versts. From the tip of Bering Island, which is to the northwest, when the weather is fine and still, one can see very high snow-capped mountains to the northeast. They appear to be 100 to 140 versts away. It was reasonable for Steller to suppose that this was a headland on the American continent, rather than an island for the following reasons.

1. These mountains, considering their distance away are higher than the ones on the island.
2. At the same distance, on the east side of the island, similar snow-covered mountains can be seen, whose height and extent would lead anyone to believe they were part of the American continent.

From the southeastern tip of Bering Island, still another island can be seen to the southeast; but it can be clearly made out. Its location appears to be between Bering Island and the continent, whose coastline seems very low. From the west and the southwest, it has been observed that there is always fog above the mouth of the Kamchatka River when the weather is calm; from this it may be concluded that Bering Island is not far from Kamchatka.

North of Bering Island there is yet another island which is from eighty to one hundred versts long and which lies parallel to Bering Island, that is, from southeast to northwest.

The strait which separates these two islands is about twenty versts wide on the northwest, and close to forty on the southeast. The mountains on this island are not so high as those on Bering Island. Both ends of this island have many crags and pillar-shaped rocks which jut out into the sea.

The climate on this island is similar to that of Kamchatka, except that it is more severe and harsher because the island is completely unsheltered, and is very narrow and treeless. The winds are so violent in the deep narrow valleys that it is almost impossible to keep one's footing. Observations indicate that the strongest winds come in February and April; they blow from the southeast and the northwest. In February the weather was very clear and the cold was bearable; in April, the weather was also clear, but it was extremely cold.

The largest flood-tide comes at the beginning of February, when the wind blows from the northwest; the second comes in mid-May and is caused by rain and melting snow. These floodtides, however, are quite minor compared to some which left marks which indicate they must have been at least thirty sazhen high, for thirty fathoms above sea level there are many tree trunks and entire skeletons of sea animals which the sea cast up. This led Steller to conclude that in 1737 there was a flood on this island similar to the one in Kamchatka.

Earthquakes are quite frequent, several tremors having been felt in one year. The most violent occurred at the beginning of February and lasted for six minutes. There was a west wind at the time, and the earthquake was preceded by a loud noise and a strong subterranean wind. The wind swept from south to north.

The most interesting minerals on the island are the mineral waters which are so pure and mild that they are very healthful. They have been seen to produce very beneficial effects on invalids. Every valley has a small stream;

more than sixty have been counted, of which some are from eight to twelve sazhen wide and two sazhen deep; there are a very few which at high tide are five sazhen deep. Most are choked with sandbanks at the mouth. The steepness of the valleys causes the rivers to flow swiftly, and means that as they near the sea they divide into several forks.



## CHAPTER XI

### TRAILS IN KAMCHATKA

There has already been some mention of various places one passes in going from one ostrog to another, when distances were given; but perhaps it may also be useful here to review what has been said earlier, so the reader may see at a glance how much time is required for these various trips, without having to reread everything in detail.

The natives of this country generally use three trails to go from Bolsheretsk ostrog to Upper Kamchatka ostrog. The first is along the Sea of Okhotsk. The second follows the shore of Bering Sea. The third is along the Bystraia River.

By way of the first, one reaches the Oglukomina River, ascends that as far as the principal chain of mountains of the same name. Then one crosses the mountains and comes to the Kyrganik river, on which one can go almost all the way to the Kamchatka River, and from there, up that river to the Upper Kamchatka ostrog.

On the second route, from Bolsheretsk, one must move up the Bolshaia River as far as Nachikin ostrog from which point one crosses a small mountain range and reaches the Avacha River and Petropavlovsk harbor; from there as one follows the coast of the Bering Sea northward, one comes to the Zhupanova

River, which can be followed upriver all the way to its headwaters; from there one crosses a chain of mountains to reach the Povycha River, which one can descend to its mouth, opposite the upper ostrog.

The third trail from Bolsheretsk leads up the Bolshaia River to a small fort called Opachin, from where one crosses the meadows to reach the Bystraia River, and then takes that river up to its source; from there one can go down the Kamchatka River to Upper Kamchatka ostrog.

The first two routes are much used in winter, and one can go by foot on the third during summer. The distances on the first and last have been measured, but only part of the second. The distances will be given here in versts, and have been taken from the local government agencies of this country; this will indicate the distance from one place to another.

First Route, Following the Trail Which Lies  
Along the Sea of Okhotsk

	versts	sazhens
From Bolsheretsk ostrog to Fort Trapeznikov	2	100
Fort Trapeznikov to Utka River	21	200
Utka River to Kykchik River, as far as the village Akagishev	42	250
Kykchik River to Nemtik River	25	0
Nemtik River to Kola River	22	0
Kola River to Vorovskaia River	51	0
Vorovskaia River to Briumka River	24	0
Briumka River to Kompakova River	13	0
Kompakova River to Krutogorova River	36	0
Krutogorova River to Tareina on the Oglu-komina	24	0
Tareina to the Oglukominsk mountains	110	0
Oglukominsk Mountains to Upper Kamchatka Ostrog	65	0
Total	486	50 [sic]

## Second Route, Following the Coast of Bering Sea

	versts
Bolsheretsk to Apachin Ostrog	44
Opachin to the small Nachikin ostrog	74
Nachikin to Paratunki ostrog on the Avacha River	68
Paratunki to Petropavlovsk	16
Petropavlovsk to the small Kalakhtyrka River	6
Kalakhtyrka River to Nalacheva Ostrog	<u>34</u>
Total	242

From the Nalacheva, one spends the first night on the shores of the Ostrovnaia River; the second on the Zhupanova in the small fort Oretyngan; the third, after ascending the Zhupanova, with the toion Kanach; the fourth at Oloka; the fifth in a wilderness region; and on the sixth day one reaches Upper Kamchatka ostrog.

## Third Route By Way of the Bistraia River

	versts
From Bolsheretsk, ascending the Bolshaia River to Opachin ostrog	44
Opachin to Upper Ford	33
Upper Ford to the village Akhanicheva	22
Akhanicheva to the village Ganalina	33
Ganalina to the headwaters of the Kamchatka	41
From there to Upper Kamchatka ostrog	<u>69</u>
Total	241 [sic]

Travellers generally spend the night in the places indicated above, except when the distance is short, for instance five or six versts, in which case they do not stop at all. Although Oglukominsk ostrog is far distant from Upper Kamchatka ostrog, the journey can be made in three days when the weather is good, and two nights are spent in the wilderness.

There are also other routes from Bolsheretsk to Upper Kamchatka ostrog, both along the Sea of Okhotsk and the Bering Sea, since almost any river which empties into either of these two seas can be followed to Kamchatka; but as it is only the Kamchadals who take these routes, or the Cossacks, in emergencies, it has not been thought necessary to detail them here, since they cannot be regarded as frequently used trails.

One can go from Bolsheretsk to Lower Kamchatka ostrog by way of Upper Kamchatka ostrog, or better yet, by following the coast of Bering Sea. From Upper Kamchatka ostrog, one can go down the length of the Kamchatka River, except in places where it is very circuitous; to avoid such places, one portages.

The following statement will indicate the distance from Upper Kamchatka ostrog to the lower one.

Route from Upper Kamchatka ostrog to Lower  
Kamchatka ostrog, Via the Kamchatka River

	versts	sazhens
From Upper Kamchatka ostrog to the Kyrganik River	24	
Kyrganik River to the small ostrog Mashurin	32	
Mashurin to Nakshin ostrog	87	
Nakshin to Golka River	33	
Golka River to the small Talachev ostrog	26	
Talachev to Ushkov	16	
Ushkov to the settlement Kriukov	25	
Kriukov to the settlement Krestov or to the Krestovaia River	25	
Krestov to Gorbunov	26	250
Gorbunov to Kharchina	11	
Kharchina to Kamennii ostrog	27	
Kamennii to Kovanokov	16	
Kovanokov to the Kamaka River	6	
Kamaka River to Kapicha River	8	250
Kapicha River to Sheki Rocks	9	
Sheki Rocks to Obukhov village	17	250
Obukhov to Lower Kamchatka ostrog and to the church of St. Nicholas	7	250
From Upper Kamchatka ostrog	397	
From Bolsheretsk	833	50

The other route from Bolsheretsk to Lower Kamchatka ostrog has only been measured as far as Nalacheva, as previously stated; thus it is impossible to say whether it is shorter or longer than the first. There is every reason to suppose there is no great difference between the two.

The principal stopping places, where one usually stays overnight on this route, are Opachin, Nachikin and Tareina, which are all small ostrogs; Petropavlovsk harbor which was previously called Aushin ostrog; and the rivers Ostrovnaia, Zhupanova, Berezova, Shemiachik, Kamashki, Kronoki and Chazhma. There are small Kamchadal settlements on the shores of all these rivers.

From the Chazhma River to the Kamchatka, the trail leads across uninhabited mountains. One reaches the Kamchatka River very near the village Obykhov, which is seven and one-half versts above Lower Kamchatka ostrog. One spends only one night in the wilderness.

There are two routes to take from Lower Kamchatka ostrog to the northern part of Kamchatka, to the very boundaries of the uezd<sup>1</sup> of Kamchatka. The first crosses the Elovka to reach the Sea of Okhotsk. The second follows the shore of Bering Sea. One route proceeds up the Kamchatka River to the mouth of the Elovka, then up the Elovka to its source. From there it crosses a mountain range to reach the headwaters of the Tigil, then down the Tigil to the sea. From there it is not far to the Lesnaia and Podkagirna rivers, where

<sup>1</sup>Administrative district. --Ed.

the uezd of Kamchatka ends.

If the weather is not bad enough to slow the traveller, he can go from Lower Kamchatka ostrog to Lower Tigilsk ostrog, otherwise called Shipin, in ten days, without hurrying. The first night is spent on the shores of the Kamaka River in a small ostrog; the second, at Kamennii ostrog; the third, at Kharchina; the fourth, at Nefeda, and the following day one goes as far as the Tigil mountains. On the third day one reaches Niutevin ostrog, and Myzhogol on the fourth; the ancient village of Shipin on the fifth; and on the sixth day, the Koriak settlement of Tyngen, which is only thirteen versts from the mouth of the Tigil River.

From this river one proceeds north and spends the first night at Omanina, the second at Vaempalka, the third at Kaktan, the fourth at a place called Piatibratov [Five Brothers]; the fifth night is spent in the middle ostrog on the Pallana River, the sixth at Kinkila, the seventh at Lesnaia, and on the next day one reaches Podkagina ostrog.

In ten days one can also go by the second route, and without undue haste reach the Karaga River, whose source is not far from the headwaters of the Lesnaia. From Lower Kamchatka ostrog, one must go nine versts down the Kamchatka River, and from there across a plain to the small ostrog Kyipyngan, where the first night is usually spent. The second lodging place is at the small ostrog Aguikunche, commonly called Stolbovsk. The third night is spent in the wilderness; the fourth on the small Kakeich River, in a fort with the same name. The fifth night one spends in Shevan ostrog; the sixth in Bakhatanum



ostrog on Ukinsk Bay, or on the banks of the Nalacheva River, which is just six versts from that ostrog. The seventh night one stays with the toion Kholiuli on the banks of the small Uakamelian River. The eighth night is passed on the shores of the Rusakova, the ninth on the Kutovaia, and the tenth in Kytalgyn ostrog, which is three versts from the Karaga.

To go from Upper Kamchatka ostrog to the Tigil, one also follows the Elovka, although there are other ways to go. The first route crosses the Oglu-komina mountains to the ostrog with the same name; from there one turns northward along the coast of the Sea of Okhotsk. The second route follows the Krestovaia to reach the Khariuzova. By the first route one can reach the Tigil in ten days. The first night is spent at the foot of the mountains; the second beyond the mountains. Both nights are spent in the wilderness. The third night one stays at Oglukominsk ostrog. On the fourth night one is on the banks of the Icha. The fifth night is passed at Soposhnaia, the sixth at Moroshechnaia, the seventh at Belogolovaia, the eighth at Khariuzovaia, the ninth at Kavran or Utkolok, and on the tenth day one reaches the shores of the Tigil. If it takes longer to go on this route, it is less because of the distance (for it is not more than fifty versts from Utkolok to the Tigil), but because of the difficulty of the trails. As one crosses Cape Utkolotsk, for instance, one is constantly in very steep precipitous places.

The other route takes eleven or twelve days. The traveller descends the Kamchatka River. The first stop is at Kyrganik, the second at Mashurin ostrog, the third on the banks of the Shapina. The fourth night is spent at

Tolbachik and the fifth in Kharkachev ostrog. On the sixth night one is at Krestov, from where one goes up the Krestovaia, then down the Khariusova to the ostrog with the same name. It is likewise a three day trip from Upper Kamchatka ostrog to Oglukominsk and Khariusovaia ostrog. From there one reaches the Tigil on the next day or the day after, as previously stated.

The route which follows the Elovka to reach the Tigil is the longest of all. It takes two weeks to make the trip. From Upper Kamchatka ostrog it takes seven days to reach Krestov. The eighth night is spent in Nalacheva ostrog. On the ninth day one reaches Kharchin, from where one goes up the Elovka, then down the Tigil to a Koriak settlement called Tyngen. This takes six days.

The journey from Bolsheretsk ostrog to Cape Lopatka generally takes nine days. The first night is spent on the sea shore near the mouth of the Bolshaia; the second, in the wilderness; the third, on the banks of the Opala. The fourth night is passed in a iurt on the shores of the Koshegochik. On the fifth night one stops on the Iavinaia; the sixth night, a short distance from Kozhokchi, seven versts before one reaches the Ozernaia River. On the seventh night one is on the shores of Lake Kurile; the eighth night is spent at Kambalina, and on the ninth day one reaches Cape Lopatka. From Bolsheretsk ostrog to this latter place, the distance is 210 versts 300 sazhen, a trip which is easily made in four days. The Cossacks in this part of the country never pass an ostrog without stopping, both to carry out their orders and to rest their dogs. I went from Kozhokchi to Bolsheretsk ostrog, and arrived early in the morning of the

third day without strain. It is about 150 versts from one place to the other, as will be seen below.

Route from Bolsheretskoi Ostrog to Cape Lopatka

	versts	sazhens
From Bolsheretsk ostrog to the mouth of the Bolshaia		
River	33	
The Bolshaia to the Opala River	85	
Opala River to Koshegochik or Kilgta River	18	
Koshegochik River to Zhavina or Iohkachan River	15	
Zhavina River to Ozernaia River	15	
Ozernaia River to Cambalina River	36	300
Cambalina River to Cape Lopatka	<u>27</u>	
Total	229	300

## PART TWO

### THE ADVANTAGES AND DISADVANTAGES OF KAMCHATKA

It is difficult to generalize as to whether the disadvantages of Kamchatka outweigh the advantages. On the one hand, the country has neither grain nor livestock. It is subject to frequent earthquakes, floods and storms. The only diversions are to gaze on towering mountains whose summits are eternally covered with snow, or, if one lives along the sea, to listen to the crashing of the waves and observe the different species of sea animals and consider their intelligence and constant battles with each other. If one considers only these things, it would seem more appropriate for this country to be inhabited by wild animals than by human beings.

But on the other hand the air is pure and the waters healthful; there is neither excessive heat nor cold; dangerous diseases such as the plague, recurring or malignant fevers, small pox and the like are unknown; thunder and lightning do not devastate the country; and no one is ever bitten by a rabid animal. Considering these facts, one must conclude that this country is no less fit to be lived in than other countries which may have an abundance of other things, but exposed to all these ills and dangers. Moreover, in time many of the inconveniences in Kamchatka can be remedied. They are already trying to compensate for the lack of grain by cultivating the land. The Empress, in her

wise and farsighted goodness, has long since sent several peasant families into this country, with adequate numbers of horses, livestock, and all necessary agricultural supplies. The quality and the quantity of forage in this country leave no room to doubt that the herds will increase in a short time.

When I was in Kamchatka, in the ostrog on the Bolshaia River, I saw several cattle which had multiplied from a single pair which the late Pavlutski brought there in 1733. If ever trade is reestablished with the island of Ezo [Japan] or with the maritime provinces of the Empire of China, a trade which is most appropriate because of the location of this country, the people in Kamchatka would then be supplied with all the necessities of life. There is enough wood to build ships in Kamchatka and at Okhotsk; and for purposes of trade the Kamchadals could supply furs, seal pelts, reindeer hides both tanned and untanned, dried fish, blubber from whales and seals, and other goods of this nature. There are also ports where a number of ships might anchor, such as Petropavlovsk. The situation of this port is favored by its extent, its depth, and the way nature formed it and sheltered it from all the winds; indeed it would be difficult to find another like it in the entire world.

In regard to the dangers which plague this country by reason of earthquakes and floods, this is a disadvantage which has been observed in many other places which however are not considered any the less fit to be inhabited because of this. My readers may judge of all this for themselves as they read a detailed description of the country. This second part will picture the advantages this country enjoys, and those it lacks.

## CHAPTER I

### THE QUALITY OF THE SOIL IN KAMCHATKA, THE CROPS AND THOSE WHICH DO NOT GROW

In Part One I described how the Kamchatkan peninsula is surrounded by ocean on three sides, and how there are more mountainous wet regions than there are level dry areas. Here I will speak of the quality of the soil, of the areas which could be cultivated and those which are not suited to it; I will discuss the fertile and the unproductive lands, and when the seasons commence in each region. There is a great variation in temperature in this country, according to the latitude of a particular area and its distance from the sea.

The Kamchatka River surpasses most of the other rivers both by reason of its size and because of the productivity and the fertility it gives to all the lands its waters touch. On its shores there are a great many roots and berries which appear to compensate for a lack of grain. Various trees grow along its banks too, and some could be used to build both houses and ships.

Steller believes that spring and winter grain would grow near the source of the river, especially around Upper Kamchatka ostrog, and near the headwaters

of the Kozyrevskaia River, as well as in other places in that same latitude. The peninsula is very wide there, and although there is a heavy snowfall, it melts in good time. Furthermore, it is drier in spring there than in places closer to the sea, and there is not so much fog.

In regard to grains, such as oats, rye, barley, etc., experiments repeated in two ostrogs, one at the source and the other at the mouth of the Kamchatka River, have proved that barley and oats will grow there quite well. The domestics at the Monastery of Our Savior of Iakutsk, which has been established in Kamchatka for a long time, sow seven or eight puds of barley, and reap such an abundant harvest that they have enough meal and flour not only for themselves, but even enough to distribute to the natives who live around them, in times of need. However, they have to work the soil by hand. Time will tell whether winter grain will succeed there.

In regard to garden vegetables, some do better than others. The most succulent, such as cabbage, peas, and salad greens, produce only leaves and stalks. Cabbage and lettuce never form a head; peas grow and blossom in autumn, without forming pods. On the other hand, vegetables which need a great deal of moisture, such as turnips, radishes, horseradish and beets do very well there. When I say that the juiciest potherbs do not succeed at all, that does not mean this is true everywhere in Kamchatka, but only on the Bolshaia

River and the Avacha, where Major Pavlutskii and Lieutenant Krasilnikov and I experimented. I do not know whether anyone has tried to grow cabbage, peas, and salad greens on the banks of the Kamchatka River. If it is true, as Steller believes, that in areas up around the headwaters of the Kamchatka River, grains such as rye, oats, and even wheat will grow as well as in other countries at the same latitude, then there is no reason to doubt that all kinds of vegetables could also grow there. Although vegetables which need a great deal of moisture grow everywhere, they do particularly well on the banks of the Kamchatka River.

The largest turnips I saw on the shores of the Bolshaia River were not more than three inches in diameter, whereas on the Kamchatka I have seen them grow to four or five times that size.

All over the country without exception, grasses are taller and have more sap than anywhere in the Russian Empire. On the banks of the rivers, in the marshlands and in places near forests, they grow taller than a man; and they grow so quickly that they can be reaped at least three times during a single summer. There are few countries where forage is better or more suited to pasturing herds, which Steller justly ascribes to the humid climate and to the spring rains. For this reason the stalks of these plants are long and thick, so that at first glance the hay seems rather poor; however the prodigious size of the livestock, their weight, and the abundance of milk they give both in winter



and in summer proves the contrary is true. The humidity allows the hay to keep its sap well into autumn. As the cold condenses the juices, it prevents the grass from becoming dry, coarse and hard, so that even in the middle of winter it is still filled with nourishing sap. Since the grasses are tall and thick, a great deal of hay can be cut from a small plot of land. In addition to this, during the entire winter the herds find enough forage to eat, because the snow never entirely covers the areas where hay grows. This fact makes it quite difficult to travel by sled in these areas even at times when the trail is negotiable everywhere else.

In other places around the Bering Sea and northward, as well as in the southern part of Kamchatka, the land is not suited either to grazing or to cultivation. The shores of the sea are rocky, sandy, or swampy, and the valleys through which rivers flow are not extensive enough to make it possible to sow grain, even when there are no other obstacles; and little hope can be held for the soil along the Sea of Okhotsk, especially in regard to winter grain, for the terrain is swampy and uneven.

Some distance inland from the sea there are some higher places, and several forested hills which look as if they might successfully be cultivated; but in this climate the snowfall is heavy from the beginning of autumn, even before the earth is frozen, and it sometimes stays on the ground, compacted by strong

winds, until the middle of May, which means that summer crops of oats, barley, etc., can not be sowed. The climate is also injurious to grain which is sowed before winter, for when the snow melts, it washes away the seed or destroys it. Nothing can be sowed before mid-June, and that is the time when the rains usually begin; it rains until August. Sometimes it rains so steadily that fifteen days will pass without the sun appearing. The rains make the grain grow in a very short time, but since summer is so short, there is not enough warmth to allow it to ripen. Steller believes, nonetheless, that barley and oats might be successfully planted, if the earth were properly cultivated and prepared; but that is quite doubtful, and only time will tell whether he is right. The one thing which is certain is that several others and I experimented with sowing barley along the Bolshaia River; it was a delight to look on because of its height, its abundance, and its great stalks and spikes; the stems grew more than an arshin and a half, and the spears were more than a quarter of an arshin long; but we did not have the satisfaction of seeing it mature, for at the beginning of August an early frost killed it while it was still in flower and when it was just beginning to set.

I believe I should comment on the fact that the lowlying areas which are exposed to floods and are not fertile, and which extend a considerable distance inland from the Sea of Okhotsk, appear to be composed of an accumulation of

earth carried by the sea; this is quite obvious when one examines the various strata to see how the surface of this land has been built up over the course of time.

The shores of the Bolshaia River, where this is apparent, are high sheer bluffs where one can see the various strata of clay, sand, mud and silt. Six feet below the surface of the ground I saw the remains of many trees of a species unknown in this country, which leads one to believe that all this vast moss-covered tundra and marshland, where no trees but small willows and birch will grow, were at one time covered by the seas, which perhaps retreated gradually as happened on the northern coast.

Steller's suggestion is very helpful in explaining the cause of the sterility of the land in the areas near the sea and far from the mountains. He observes that the land near the Sea of Okhotsk does not freeze more than one foot deep, and that it is soft for an arshin and a half; below that there is a stratum of ice which is very difficult to break through; below that there is a soft liquid mud, with rock beneath, which undoubtedly extends from the mountains to the sea. This is probably responsible for the sterility of the soil in this country, where trees will not grow and where the land is covered with moss and full of hummocks.

Steller compares it to a sponge filled with water. He suggests that since the moisture cannot seep into the depths of the earth and the humidity on the surface only increases more and more, it is impossible that the soil should be of any other quality.

Although it would not be possible to cultivate the soil everywhere in this country, there are some places along the Kamchatka River, such as near the source of the Bystraia, which might be able to supply grain not only to the people of this country but even perhaps to Okhotsk.

When forests are burned to fertilize the land, one must be very careful to make sure the smoke does not cause the sable to leave. Sable cannot bear smoke. This happened on the Lena River. It used to be that one could trap many sable in the woods near that river, but in order to find any today, one must go all the way up to the headwaters of the rivers tributary to the Lena.

There are very few forests in the Kurile country or on the southern cape of Kamchatka; nor does one find more as one goes farther north, where the coast is low and marshy. Only willows and alders grow along the banks of the rivers, even as far as twenty or thirty versts inland from the sea. This scarcity of trees is the reason why it is difficult to make certain very necessary things. In summer the Russians as well as the Kamchadals take their families to live along the seashore. In order to prepare salt and to fish, they have to

bring wood in from twenty or thirty versts away, which involves a great deal of difficulty and a loss of time. It takes no less than two or three days to find wood, and even then they can bring back very little. The swift current in the rivers and the number of sand banks mean that the wood cannot be floated; the men can bring with them only as much as they can fasten to a small fishing boat. If they overload the boat, they cannot control it and run the risk of being caught in the current and stranded either on the rocks or on the mud banks which lie along the shores of the rivers. Sometimes the sea casts driftwood up on her shores, which helps alleviate the dearth of wood. The natives gather this carefully, but it is so waterlogged that even when they dry it, it never burns well; it only smokes, which is harmful to the eyes.

Thirty or forty versts inland on several high places, alders, birch and poplars grow; these are used everywhere except in Kamchatka for building homes and boats. These trees grow near the headwaters of rivers, and they can be transported downstream with infinite care in the same way wood is taken down rivers to burn, that is, by fastening it to both sides of a boat. The result is that the crudest building costs at least one hundred rubles, and generally more. Even a very small fishing bark will not sell for less than six rubles. In areas where the mountains are closer to the sea, wood may be had with less trouble, providing the rivers are navigable and the transport is easy.

The best in the country, considering its scarcity, is that which grows along the Bystraia River, which empties into the Bolshaia River below Bolsheretsk. ostrog. The birch trees grow so large there that Spangberg used them to build

a good sized sloop which he named the Berezovka, or Bolsheretsk, and which he used for several long voyages. I think it will not be out of place to relate here the observation someone made about this ship. When it was launched it sank as low into the water as if it had already taken on a full cargo. This undoubtedly indicates the nature of this wood, which takes on more moisture than other resinous woods. At first it was feared it would never be seaworthy, and that the least load would cause it to sink to the very bottom; however, the exact opposite proved true, for when the cargo had been stowed aboard, it did not draw any more water than formerly; and there was never a ship which sailed better or could tack more neatly, except for the brig Michael, which was thought to be superior.

The east coast of Kamchatka is more richly wooded. The finest alder and birch grow in abundance near the ocean, on the mountains, and on the plains. The larch and tamarack forests are found only beyond the Zhupanova River; they extend as far as the mountains where the headwaters of the Kamchatka River are to be found. One also sees tamarack along this river as far as the mouth of the Elovka, and up the latter river almost to its source. Fir trees also grow in these places, but they are neither tall enough nor of sufficient girth to be used in carpentry or in boat construction.

Around the narrow isthmus which joins the peninsula of Kamchatka to the continent, there are no trees to be seen except for small cedars which grow only as tall as a man, and sometimes not even that tall, and birch, alders, and stunted poplars. This area is not suitable for habitation except by the reindeer

Koriaks, who allow their herds to graze there.

Autumn and winter last more than half the year, so that there are only four months of spring and summer. Trees do not leaf out until June, and the white frosts begin as early as the first days of August.

Winter is moderate and constant, so that one experiences neither bitter cold nor the great thaws as in Iakutsk. The mercury on Delisle's thermometer<sup>1</sup> always stood between  $160^{\circ}$  and  $180^{\circ}$ . He only remarked that in January it dropped to  $250^{\circ}$ , which happened because of an extraordinary cold spell which lasted for two weeks. That month is always colder than any other, and the mercury generally stands between  $175^{\circ}$  and  $200^{\circ}$ . The Kamchadals assured me, however, that they had never experienced a cold as bitter as that which attended my visit to the country. Since I was a student, they had the absurd notion that I was the cause of the cold, because they call a student shakainach, which means frozen; but it is difficult for me to believe that the winters preceding were any milder, because during the four years I spent in Kamchatka, the temperature remained constantly cold. The worst parts of winter are the frightful wind and snow storms which completely blanket all the buildings with snow. These blizzards are most frequent at Lower Kamchatka ostrog.

Spring is pleasanter than summer, for although it rains occasionally, there are often beautiful days. The ground is covered with snow until May, which

<sup>1</sup>Joseph Nicholas Delisle, member of the St. Petersburg Academy of Sciences. Delisle's thermometer registered  $150^{\circ}$  as the freezing temperature of water, and  $0^{\circ}$  as its boiling point. --L. Berg.

in our climate is considered the last month of spring.

Summer<sup>2</sup> is most disagreeable. It is cold and rainy because of the fog during this season and because of the snow which nearly always covers the nearby mountains. It often happens that fifteen days or even three weeks will pass without sunshine. During the time I was there, there was only one week of good weather. There is no day, whether the weather is fair or not, when one does not see a morning fog or haze, which lasts until dissipated by the sun as it moves toward the south. This fog and the nearby mountains cool the air so much in areas near the sea that it is absolutely impossible to dispense with furs. It has been noted that neither rain nor thunder are at all violent. The rain falls in a fine mist; thunder is only heard as a distant rumble; the flashes of lightning are rather feeble. At Bolsheretsk ostrog, where it is slightly warmer than it is near the sea, the mercury in the thermometer stood between 130° and 140°; during an unusual heat wave which occurred during two successive years in July, it rose to 118°.

The fluctuation and inconstancy of the summer weather not only makes the land unproductive, but it prevents the natives from preparing fish for their winter diet. Thus there are few years when they do not want for food during spring; for of the several thousands of fish which they hang up to dry, sometimes only one can be retrieved; the constant humidity causes the worms to get at them.

<sup>2</sup>This refers particularly to the area of the Bolshaia River along the coast of the Sea of Okhotsk, for elsewhere summer is pleasant enough, as will be noted below.



This is the reason that during times of scarcity, fish are very expensive, even the fish which dogs and bears eat.

Summer is quite different in the areas which are distant from the sea, and particularly around Upper Kamchatka ostrog, since from April until mid-July, the weather is consistently fair and calm. The rains begin after the summer solstice and continue until the end of August. A great deal of snow falls during the winter. There are few raging winds, and they soon blow themselves out. Although there is perhaps no greater snowfall than along the shores of the Bolshaja River, it is deeper because it is softer.

The weather is generally pleasant and fair during autumn, except at the end of September, when there are frequent thunderstorms. The rivers usually freeze over at the beginning of November. They are so swift that it takes an intense cold to freeze them. The prevailing winds during springtime on the Sea of Okhotsk are principally from the south, southeast, and southwest; in summer, from the west. In autumn winds blow from the north and the northeast. They are variable in winter until the equinox, but after that, the winds from the northeast and the east prevail until the end of March. These winds make spring and summer very humid until the solstice. At such times the air is very foggy and misty, and there are few fair days. In September and October, as well as in February and March, the weather is much better and more conducive to long journeys. During November, December and January, there is rarely a single fine day. At that time there is a heavy snowfall accompanied by blustering winds, known in Siberia as the purga. The east and

southeast winds are the most violent and last longer than any others. Sometimes they blow so violently for two or three days at a time that it is impossible to keep one's footing. The worst winds occur during these three months, and they blow many ice floes against the coast near Cape Lopatka and Avacha Bay. There are many sea otter on these ice floes and hunting is excellent at such times. North winds, in summer as well as in winter, bring the most beautiful and agreeable days and the fairest weather. In summer the south winds and those from the southwest are often followed by rain; in winter they bring heavy snowfalls. Elsewhere the cold may be less intense at such times, but the air is always heavy and oppressive and misty; in summer it is likely to be foggy. The same thing is true at sea, as the members of the American expedition observed, both on the east coast and on the north coast; and Spangberg also noted this on his voyage to Japan.

At this season of the year it is as difficult and dangerous to navigate these waters, as it is unpleasant and uncomfortable on land. The fact that the temperature in Kamchatka conforms to that on the open sea so far away is generally attributed not only to the location of the country, in regard to neighboring countries or to the width of the continent and the extent of the sea, but also to the great and vast expanse of the southern ocean. There is great variety in the weather in various parts of Kamchatka at the same time of the year. The northern part of the country, since it is protected by the southern part, is more fertile, and the climate is milder. The nearer one is to Cape Lopatka, the heavier and more oppressive the atmosphere is in summer; and

in winter the winds are stronger and more constant. Sometimes the weather may be warm, pleasant and calm for several days around the Bolshaia River, while on the southern point the people cannot venture out of their iurts, because this neck of land is so narrow and vulnerable to every wind, except in the bay regions. On the other hand, around the Sea of Okhotsk, the farther north one goes, the less rain there is in summer, and less wind in winter. Around the mouth of the Kamchatka River and at the Upper Kamchatka ostrog, the seasons and the winds vary a good deal.

Hurricanes, which sweep out of the east and the southeast, are as violent in this part of the country as near the Sea of Okhotsk; but although the prevailing winds in summer are from the west and the northwest, and occasionally from the east, nonetheless compared to the Sea of Okhotsk area, the weather here is more often fine and calm than stormy. As one goes from the Bystraia to the Kamchatka River, one is very much aware of the difference between the east and west coasts of Kamchatka. Along the Sea of Okhotsk the air is always oppressive, heavy, full of fog and mists; whereas the other coast seems like another world; it is much higher, and the air is much clearer and fresher.

The snowfall is always greater on Cape Lopatka than in the northern part of Kamchatka, so that if twelve feet fall on Cape Lopatka, there may be only four feet around the Avacha and Bolshaia Rivers. Furthermore, it is much lighter in the north, and not compacted, since it is not blown about by such violent winds. Around the Tigil and Karaga Rivers, generally not more than a foot and a half of snow falls. All of this clearly indicates the reason why the

Kamchadals live on fish, and do not keep herds of reindeer as the Koriaks do, to provide their subsistence. However, fishing is so poor on the east coast north of the Kamchatka River and on the west coast 400 versts from the Bolshaia, that there would not be enough to feed these people, if these voracious natives (the Kamchadals) were not accustomed to eat whatever they could find that their stomachs could digest. Although there is sufficient forage for reindeer in Kamchatka, the depth of the snow prevents them from being able to graze. This is the reason they are unable to keep reindeer, even those which belong to the Crown and were used on expeditions. I have been told that wild reindeer which live in these same places do find enough forage to stay alive; but they are free to wander and can search out their food more easily, and also have a stronger constitution than the domesticated animals.

The sunlight, as it is reflected by the snow in springtime, produces such an unusual effect that the natives at this time of year are as tanned and swarthy as the Indians. Some of them have eye trouble because of it, and some even lose their sight completely. Those with the most sensitive eyes experience such pain that they cannot bear the light. As a result of this, the natives, in order to protect their eyes from the blinding light of the sun, wear a headband of birchbark with small slits to see through, or else a band of woven black hair. The actual cause of this light is that the snow is so compacted by the wind that it becomes as hard as ice and the sun's rays cannot penetrate it; they are reflected, and because of the brilliance of the snow, they are very painful to the eyes and are quite unbearable.

Steller reports that he was compelled to devise a remedy; it was so effective that in six hours he cleared up the inflammation and completely healed persons whose eyes were impaired. He took the white of an egg and mixed it with camphor and sugar, beating it in a pewter basin until it was frothy, and then applied it to the affected eyes. He states that this remedy is efficacious for all sorts of eye inflammations which result from a similar cause.

Since the air is very cold, it hails as much in summer as in autumn, but the hail is never larger than the size of lentils or small peas. One rarely sees lightning; this occurs only at the time of summer solstice. The Kamchadals believe that lightning flashes are spirits they call gamuli, which, as they heat up their iurts, hurl out the half-burned logs, as the Kamchadals do.

It seldom thunders, and when it does, it sounds very far off. No one has even been killed by lightning. I have difficulty believing the Kamchadals when they say that before the Russians came, the thunder was much more violent, and several persons were hit by lightning. When the Kamchadals hear thunder, they say Kutkhu batty-tuskeret, which means: Kutka, or Biliuchei, is pulling his canoes from one river into another. They believe this causes the sound they hear. They also believe that when they pull their boats up on the shore, this god hears the same sound, and that he fears their thunder as much as they fear his. At such times they keep all the children inside; but when they hear a bolt of lightning, they think that the god is very angry, and that he is repeatedly beating his drum against the earth, which produces the noise and the lightning. They believe that rain is the urine of the god Biliuchei and of the

spirits who are subject to him. They also believe that the rainbow is a cloak made of wolverine pelts, richly bordered in various colors, which the god generally dons after he has urinated. In an attempt to imitate the quality and the beauty of these colors, they trim their garments with various colors similar to those in the rainbow.

When anyone asks them where the winds originate, they reply with great assurance that they come from Balokitg, who was created from the clouds by Kutkha and given human form, and that this god gave him Zavina-kugagt for his wife. Balokitg, they say, has very long curly hair, which he uses to generate the winds at will. When he decides to beset a part of the country with windstorms, he shakes his head over that region for as long a time, as vigorously as he judges necessary to produce an appropriate wind. When he stops, the air becomes calm and still, and the weather is fair. The wife of this Kamchatkan Eolius always puts on rouge when her husband is away, so she will be more beautiful for him when he returns. When he comes home, she is transported with joy; but if he spends the night away, she is grief-stricken and weeps with regret at her wasted efforts to beautify herself. This is why the weather is gray and overcast until Balokitg returns. This is the way in which they account for dawn and dusk, preferring absurd tales to a true explanation.

In the densest fog, it is impossible to see a thing; and as for snow, I strongly doubt that there is a greater snowfall anywhere than in Kamchatka between 52° and 55°. When it begins to melt in springtime, the rivers overrun

their courses, and the whole countryside is inundated. It is very cold in winter at Bolsheretsk and Avacha, but not unbearable; and it is much warmer at Lower Kamchatka ostrog than in various places in Siberia which are situated in the same latitude.

The worst hazards in this country are the terrible windstorms; they are violent beyond description. I have thought fit to include certain observations here.

These violent windstorms, which usually come from the east, are generally preceded by heavy and oppressive air. Since I had no thermometer, I could not determine whether the sea air was warmer than at other times, as I believe may be true. Hurricanes which start in the east come up from the south. There are many volcanoes and hot springs between Cape Lopatka and the Kamchatka River, but it seems likely that the windstorms are caused not so much by the proximity of these to the sea and by the narrow width of the continent, as by subterranean fires and the emission of hot air.

In regard to other advantages and disadvantages in this country, one might say in general that its primary wealth lies in its variety of fur-bearing animals and its prodigious abundance of fish; but on the other hand there is a dearth of iron and salt. The first lack might be remedied by bringing in iron from some distant place, and the second, by making salt from sea water. However, the difficulty of transporting iron and of evaporating salt, causes both items to be very exorbitant in price. A common hatchet is not to be had for less than two rubles, and one must have friends to be able to buy a pud of

salt for four rubles.

In a subsequent chapter we will discuss the various fur-bearing animals and other animals, fish, birds, and the minerals which are to be found in this country.



## CHAPTER II

### VOLCANOES, AND THE DANGERS THEY POSE FOR THE NATIVES

There are three principal volcanoes in Kamchatka: Avacha, Tolbachinsk, and Kamchatka. The Cossacks who live here call them gorelym sopka; the Kamchadals on the Bolshaia River call them agiteskik, and the other Kamchadals, apagachuch.

Avacha Volcano is a considerable distance inland from the north shore of Avacha Bay, but its base extends almost to the bay itself. All these very high mountains, from the base to the middle of their height or even farther, are composed of other mountains, ranged one above the other, as in an amphitheater. The slopes of the mountains are generally wooded, but the summit is usually made up of barren rock and is covered with snow.

Avacha Volcano has for a long time emitted smoke without interruption, but it only belches fire periodically. The worst eruption, according to the Kamchadals, was in the summer of 1737. The eruption lasted twenty-four hours, and at the end it sent out such a maelstrom of ash that all the surrounding area was covered with cinders and ash as much as one vershok deep. This eruption was followed by a violent earthquake, which was felt around Avacha, on Cape Lopatka, and on the nearby islands. It was accompanied by tidal waves and a great flood.

The earthquake began on the sixth of October, at about three o'clock in the morning, and lasted approximately fifteen minutes. The shocks were so violent that a number of Kamchadal iurts and balagans were completely destroyed. All the while the ocean shuddered with dreadful roaring sounds, passed its usual limits, and a tidal wave swept up over the earth to a depth of three sazhen; then it immediately retreated and rushed out a considerable distance. The earth shuddered a second time, and the sea rose as violently as before. As it receded this time, it moved out so far that one could not even see the water. It was on this occasion that down in the depths of the water in the strait between the first and second Kurile Islands people could see a mountainous ridge which had never been seen before, although there had previously been severe earthquakes and floods. At the end of a quarter of an hour, frightful shocks were felt, much worse than before. The sea rose thirty sazhen and flooded the entire coast; the waters remained as briefly as the first time. The sea was in a state of great agitation for a long while, rising and falling. Each temblor was preceded by a terrifying rumble, similar to the booming one hears underground. The natives lost everything, and many died horribly. There were places where meadows became hills, and fields became lakes or bays.

The earthquake was not felt as violently on the coast of the Sea of Okhotsk as along the Bering Sea. The natives at Bolsheretsk noticed nothing extraordinary, and did not know whether or not the estuary of the river had been flooded. No one there could give an account of it. Probably the flood, if indeed there was one,

was much less noticeable on the Bolshaia River, for the balagans on the sand banks were not affected, and not one of them tipped over.

At that time we were sailing from Okhotsk to the mouth of the Bolshaia River. As we landed on the fourteenth of October, we felt the earthquake. At times it was so violent that we could scarcely keep our footing. We felt occasional earth tremors until the spring of 1738. These were much stronger on the islands and at the tip of Cape Lopatka and on the shores of the Bering Sea than they were in areas more distant from the sea. The Bolsheretsk Cossacks who were then in the Kurile Islands told me that at the first shock, they fled with the islanders to the mountains and abandoned all their possessions, which were lost. They said that all the Kurile dwellings on the islands were destroyed.

Toibachinsk Volcano is located on a tongue of land which lies between the Kamchatka and Toibachinsk Rivers. It smoked for a number of years. At first it began smoking from its summit, according to the Kamchadals; but after forty years it stopped; now the mountain spews out fire from a sharp rocky summit which connects it to another mountain. At the beginning of the year 1739, for the first time, it emitted a storm of flame which consumed all the forests on the nearby mountains and reduced them to ashes. Then it erupted in the same place like a cloud which expands and grows larger and larger; the ash rained down, and blanketed the snow-covered earth for fifty versts in every direction. At that time I was on my way from the upper to the lower Kamchatka ostrog; the ash on the snow was nearly a half-inch thick, and I was obliged to remain at Mashurin ostrog and wait for a fall of fresh snow.

There was nothing out of the ordinary in this eruption, except for several mild tremors which were felt before and after the eruption. The strongest that we felt was in December, 1738, when we were going from the Bolshaia River to Upper Kamchatka ostrog. We were not far from Mount Oglukominsk, and we had just stopped for noon.

We first heard a tremendous roar in the trees, which we thought heralded a severe tempest; but when we saw our cooking pots tip over, and felt ourselves jolted in the sleds where we were seated, we realized what was happening. There were three tremors, one minute apart.

Mount Kamchatka is not only the higher of the two which have just been mentioned, but is the highest of any in the country. For two-thirds of its height it is composed of several tiers of mountains, in the same way as Avacha Volcano; its summit makes up the other one-third of its height. The base of this mountain is very broad. The summit is extremely steep. There are deep clefts on all its slopes reaching into the interior of the mountain, which is hollow. The tip of the summit is slightly flattened, because when the volcano erupts, the edges of the crater crumble and fall in.

One is aware of its amazing height when it can be seen in fair weather from Upper Kamchatka ostrog, 397 versts away, although no other mountains can be made out, even those such as Tolbachinsk, which are closer to the ostrog.

When a storm is raging, this mountain is often observed to be surrounded with three cloudbelts, but its summit rears so high above the upper belt that it appears to compose a quarter of the height of the mountain.

Dense smoke continually rises from its summit, and for the last eight or ten years it has emitted flames as well. No one knows exactly when it began to erupt fire and ash, but they think it was eight or ten years ago. According to the natives, it spews out volcanic ash two or three times a year, and sometimes in such quantity that the earth is covered one vershok deep for a distance of 300 versts.

Although it now erupts fire only for a week at a time, or even less, it emitted flames uninterruptedly for a three-year period, from 1727 to 1731. The natives assert that during that period it never once ceased throwing out flames. However, none of these eruptions was as frightening and dangerous as the last, which occurred in 1737.

This dreadful eruption began on the twenty-fifth of September, and lasted for an entire week; it was so severe that the natives who were fishing near the mountain thought they were going to die at any moment. The whole mountain seemed a single flaming rock. Flames could be seen in the interior, leaping across fissures, sometimes shooting out like rivers of fire whose waters rumbled with a terrifying roar. A sound issued from the mountain that seemed like thunder, a frightful crash, as if the fire had been stirred up by the strongest tremors, which caused great terror everywhere. Night only made the natives more horrified. In the darkness and the silence, everything they saw and heard seemed more terrible. The eruption ended as usual by hurling out an enormous amount of ash, but little of it fell on the countryside because a strong wind carried most of it out to sea. This volcano hurled out pumice stone and bits

of fused and vitrified matter; much of this was found in a small river called the Biokos.

On the twenty-third of October, at around six o'clock in the evening, there was another earthquake which was so violent at Lower Kamchatka ostrog that several Kamchadal dwellings were tipped over. Stoves collapsed in the Cossacks' quarters, the church bells peeled, and the beams of the new church were badly cracked. The tremors lasted, with some interruption, until the spring of 1738. These were of course much less violent than the first. No floods were noted in the area. Steller believes that earthquakes are more violent near mountains which throw out flames than near those which do not erupt fire any longer, or which have never flamed.

Besides these mountains, I have also heard of two other volcanoes which emit smoke, Zhupanov and Shevelicha. However, there are many other volcanoes north of the Kamchatka River, some of which smoke, and others give off flames. There are two in the Kurile Islands, one on Paromusir, and the other on Alaid. Steller made the following observations.

1. It is only isolated mountains which emit flames, rarely those which are part of a mountain chain.
2. All these mountains are similar in appearance; consequently their interiors must be composed of the same substances, which would seem to contribute to the production of combustible material and to the effects of the conflagration.
3. One always finds lakes on the summits of mountains which once emitted smoke and flame and are now extinct, and from the formation of these lakes, one may reasonably conclude that when the

mountains burned to the base, the waters opened up a passage and filled an empty space. This could explain the origin of volcanoes and of hot springs.

The Kamchadals regard Mount Kamchatka as the dwelling place of the dead; they say that when it emits flames, it means the dead are heating up their iurts. According to them, the dead live on whale blubber, trap whales in a subterranean sea, and burn whale oil for light. They use whale bones instead of wood to heat their homes. To support their belief, they say that some of their countrymen have gone into the interior of this mountain, where they saw the habitations of their forebears. Steller says that they consider this mountain the home of spirits. When anyone questions them, he adds, about what goes on in this spirit world, they reply that the spirits cook whales. If they are asked where the spirits got the whales, they reply that the whales came from the sea, that the spirits leave the mountain at night and take so many whales that some bring back as many as five or even ten, one on each of their fingers. If they are asked who told them all these things, they reply: Our fathers told us this. As proof they offer the whale bones, which actually are found in large numbers on all the volcanoes. They have similar tales to account for the flames which belch out of the mountains. As for the diversity of their ideas, one should not be surprised. It is rare to find many of them who agree on anything. They think that other mountains, where the snow never melts, are inhabited by special spirits, whose leader is named Biliuchei or Pilliachuch. Because of this they are afraid to go near volcanoes or high mountains. They say Pilliachuch is drawn by partridges, or by black fox. If someone thinks he sees the tracks, he will have good fortune in his hunting for the rest of his days. These tracks

are actually only various marks left by the wind on the surface of the snow.'

Not only the Kamchadals, but the Cossacks as well, regard the eruption of volcanoes as a presage of a bloody war, and they back up their superstitions with many examples. They say that it never once happened that an eruption was not followed by much bloodshed. They assert, moreover, that the more violent and long-lasting the eruption, the more cruel, bloody and deadly the war will be.

I am told that there are two mountains which have stopped emitting flames. The first is Mount Apalsk, from the base of which the Opala River rises. The second is Mount Viliuchinsk, where the Viliuchik river has its source. As the foot of this mountain there is a lake where during March, April and May, a great many herring are caught in a special way. I will describe this presently.



## CHAPTER III

### HOT SPRINGS

I noticed hot springs in six places. 1. Near the Ozernaia River, which arises from Lake Kurile. 2. Near the Paudzh River, which empties into the Ozernaia. 3. On the small Baan River, which is supposedly one of the sources of the Bolshaia River. 4. Near Nachikin ostrog. 5. Near the mouth of the Shemiachinsk River. 6. Near the source of this river.

The hot springs which are found along the Ozernaia rise from its south bank in small rivulets, of which some empty directly into this river, others follow their course along its banks; after they meet some distance away, they form a single stream which empties into the Ozernaia. These springs are the smallest and the least warm of all; Delisle's thermometer which normally stood at  $148^{\circ}$ , only rose to  $65^{\circ}$  when it was immersed in the hot springs.

The springs on the Paudzh are not more than four and one-half versts from the former. They rise from a flat elevated hill located on the east bank, the plateau forms a small plain about 350 sazhen long by 300 wide. This hill juts into the river like a kind of promontory and forms a very steep river bank; its three other sides slope gently.

Several of these springs gush like water fountains to a height of a foot or a foot and a half, and most of them with much noise. Some are like small

lakes, from which tiny streams run off and join together, forming little islands; then they finally empty into the Paudzh. There is a small lake which is particularly worthy of note: a spring rises there which has an opening of two sazhen. On these tiny islands there are many fissures and crevasses; some are small, others larger. Some are more than a half arshin in diameter. These latter do not spout water, but give off a vapor with as much energy as an eliopile. One can easily recognize all the places where there were once such springs, for there is clay of various colors, which the water washes along with that from the bottom of the crevasses. There is also brimstone to be found there, particularly around the springs which only give off vapors.

There are also geysers which spew out of this steep cliff which are as much as two sazhen high.

It should be noted that the rock which forms this bank, and perhaps forms the entire hill, is round, very hard outside, but so soft inside that it can be powdered in the hands like clay. Thus there is every reason to suppose that the clay which comes out of the spring is nothing but stone, softened by moisture and heat; it is the same color as ordinary clay, and has an acid taste, and is gummy and doughy. When one breaks it apart, or when pieces break off, one can see a good deal of white mossy alum. The color is a mottled blue, white, red, yellow and black, like marble; and all the colors are much more vivid when the clay has not been completely dried out.

Opposite the promontory, there is a small island in the Paudzh River where there are also hot springs to be found which run in small streams, but

they are much smaller than those mentioned previously.

The various degrees of heat which were observed in each of these springs, on Delisle's thermometer, were 10, 20, 50, 60, 65, 80, 88, 93, 95, 110, 115 and 116. When the thermometer stood in the open air, it registered 136 degrees.<sup>1</sup>

The springs around the small Baan River are no different from those on the Paudzh; they rise from both shores. On the south bank there is a large elevated plain, and on the north bank there is a ridge of steep rocks which extends almost out into the river; thus the springs on the south bank form small streams which empty into the Baan, and those on the north fall from the height of the rocks, except for a single one which is about eighty sazhen away from the other springs; the cliff is a greater distance away from the river. The river course, mouth to source, is no more than forty-five sazhen.

In the midst of the springs on the south bank of this river, there is one place filled with fissures and openings of various diameters where the water gushes out with a loud noise to a height of about two arshins.

The thermometer, which in the open air stood at 185°, rose to 15° when it was immersed in these springs.

The springs on the Bolshaia River form a rather considerable stream which runs through a very narrow valley between two chains of gently sloping mountains. Its banks are marshy, and the bottom is stony and moss-covered. It is 261 sazhen from the mouth to where the hot stream enters the Bolshaia.

<sup>1</sup>The Russian edition locates each of these hot springs on a map showing a portion of the Baan River. --Ed.

Near the source, the mercury in the thermometer rose to  $23 \frac{1}{2}^{\circ}$ ; but as one moved toward the mouth, the heat diminished slightly, so that at the place where it emptied into the Bolshaia, the mercury stood at  $115^{\circ}$ ; in the open air it registered  $175^{\circ}$ .

The hot spring which is found near the small Shemech River, and which empties into the Bering Sea, is much smaller than those just described. It is three sazhen wide at its mouth; its depth in some places is a half-arshin, and its course is about four versts eighty-eight sazhen. It flows swiftly between high mountains. It has a rocky bottom, covered with green moss which floats on the surface of the water and around the banks in calm places. The heat at its mouth is the same as the water during summer. Near its headwaters there are grasses and shrubs growing in March; there were even some in flower.

West of this spring, as one goes toward the hot springs which are near the Shemech, one crosses a large mountain range; and east of it, just below the crest, there is a meadow which in some places is covered with round grayish stones, where nothing grows. Hot fiery fumes escape from the ground with great force and a noise similar to the sound made by water thrown on a fire. I was digging there in the hope I might reach water, but there was only a half-arshin of soft loose earth, and beneath that was bedrock, so I was unable to carry out my plan. However there is no doubt that sooner or later the water forces an opening. This area is probably the source of the stream which empties into the ocean, for these springs rise from mountain crevasses, and this plain is precisely opposite the headwaters of the stream. The same thing may be true

of the springs which run into the Shemech on its left bank, since they are found at the base of this same mountain, on its west flank, in a very deep valley surrounded by high mountains which give off plumes of smoke in several places. This valley has a prodigious number of hot springs which eventually unite into a single stream.

There are two large craters which should be noted. One is five sazhen in diameter, the other is three. The depth of the first is one and one-half sazhen; the second is one sazhen. One can see the water seething in great bubbles as in an enormous cauldron; there is so much noise it is impossible to hear anyone speak, even in a loud voice. A dense vapor is given off, so that one cannot see a man standing seven sazhen away. One can only see the boiling of the water if one lies down on the ground.

These two craters are only three sazhen apart and the terrain is like quicksand, so that anyone who steps on it must be careful not to sink into it.

These springs are different from all the others, in that there is a black substance similar to Chinese ink which floats on the surface of the water. When it gets on the hands, it is very difficult to remove. There is clay here, of various colors, as is true of all the other hot springs. There are also lime, alum and sulfur. The water in all the springs I have described is cloudy and smells like spoiled eggs.

The Kamchadals believe all the hot springs, as well as the volcanoes, are the homes of demons, and they are afraid to go near them; but they are more fearful of the volcanoes. They wouldn't even tell the Russians about the hot

springs, for fear they would be obliged to take them there. It was purely by chance that I found out about them. I was already a hundred versts away from them when someone mentioned them to me. I retraced my route so I might investigate something so interesting. I ordered the natives of the small ostrog Shemiachinsk to tell me the true reason they had not pointed out the springs to me. It was with the greatest reluctance that they were persuaded to come with me. They would not approach the springs. When they saw us go up to these springs, drink the water, and eat meat we had cooked in them, they thought we would die on the spot. Then when we returned without mishap, they ran back to their settlement to tell about our excessive temerity. They could not recover from their amazement, nor could they imagine what sort of extraordinary beings we were, that the demons could not harm us.

It should be mentioned that there are no hot springs from the mouth of the Kamchatka River northward along its west bank, nor from the mouth of the Ozernaia, although there is a good deal of pyrite, sulfur, iron ore, and rocks with alum and sulfur salt, which is also true around Oliutor ostrog, as Steller remarks.

Because of the frequent earthquakes, Steller believes that the country is honeycombed with caverns and caves, and with combustible material which is ignited by internal agitation, and produces the great changes in the land, such as the scars which have been observed on the shores of the Beaver Sea, in the massive rocks which have been separated from the continent, and in the several islands located in the strait which divides Asia from America. He attributes

the cause of the enkindling of these combustible materials to the salt water of the ocean which forces its way through the subterranean caves, mixes with the inflammable substance and ignites it.

It has been observed that the earthquakes generally occur at the time of the equinoxes; when the sea is most violently agitated, and particularly in spring, when the tides are strongest. This is so well known by the Kamchadals and the Kuriles that they always dread the first days of March and the latter days of September.

Two rather singular things must be mentioned. 1. There is no iron in this country; although it appears there may be some ore mixed with other substances such as earth and clay; and if sulfur is mixed in with this, it could easily be the cause of the subterranean fires I just spoke of. 2. No one has yet discovered a salt water spring, although there was every reason to believe we would find some, considering the rather small size of the Kamchatkan peninsula, the likelihood of a subterranean communication with the sea, and the number of mountains and springs. To the list of springs described above should be added those which prevent the rivers from freezing over. There are so many in Kamchatka, that every river, even in the bitterest cold, has large areas where the water does not freeze. This is also true in the tundra, and particularly around the mountains, which means that it is not possible to cross them in summer without getting one's feet wet.

Springs whose waters flow together to form a single stream, such as the small Kliuchovka River which empties into the Kamchatka, never freeze over.

There are fish all winter long in the Kliuchovka. This small river has the special advantage of furnishing fresh fish, not only to the Kamchadals who live in the area, but for the whole Lower Kamchatka ostrog. In this country it is very rare indeed to have fresh fish at that season of the year. This could also be the reason that all the waters in that area are so healthful. The natives drink cold water when they eat fish fried in oil, and experience no discomfort; elsewhere this would cause dysentery.



## CHAPTER IV

### METALS AND MINERALS

Since the Kamchatkan peninsula is mountainous one might easily suppose there would be various metals and minerals, especially those which are used in daily life, such as iron and copper, which are abundant all over Siberia; however neither of these has yet been discovered there. Obviously it is unnecessary to state there are no mines in Kamchatka, for in the first place the natives have not the slightest knowledge of how to prospect, and secondly, the Russians who live there take very little trouble to cultivate the earth, much less to search for ores. This is because they are sent so many iron and copper utensils and other necessities that not only do they have enough for their own use, but they make a considerable profit by selling them to the Kuriles and the Kamchadals for twice their price, or even more. In the third place, it is so difficult just to eke out a livelihood that no one is able to spend time wandering about to look for minerals, or digging in the earth for metal ore. Fourth, areas where minerals are found usually are difficult to reach, and in some places almost inaccessible; and furthermore the poor weather and storms present obstacles to developing such resources. To carry out such an enterprise, it would be necessary for men to pack in all their supplies on their backs, since in summer one can not use dogs. However, in spite of all this, one should not despair of some day discovering

minerals in Kamchatka, if only people will take the trouble to search them out.

A copper mineral was discovered near Lake Kurile and Zhirovaia Bay. Persons have observed sand mixed with iron on the shores of several lakes and small rivers, which would seem to indicate that there are minerals in the mountains from which these lakes and rivers rise. Natural sulfur has been picked up around the Kambalina and Ozernaia Rivers, and on Cape Kronotsk. The best and the clearest comes from the Oliutor River, where it trickles down rocks; and sulfur is found nearly everywhere in pyrites near the sea.

These are the commonest kinds of soil. White chalk occurs in great quantity around Lake Kurile. Tripoli and red ochre are found along the Bolshaia and near the small ostrogs of Nachikin and Kuchenichev. Near the hot springs there is crimson colored earth, but rarely any ordinary ochre in the rock. Small bits of cherry-colored crystal can be found, although it is somewhat rare, on the mountains; and near the Khariuzov River there are larger pieces of another kind of crystal or of green glass, similar to ordinary glass, which the natives use to make knife blades, hatchets, spearheads, and arrowheads. The Russians call it natural glass, and the Kamchadals on the Bolshaia call it nanag. It is referred to as laach by the natives at Lower Kamchatka ostrog, and as tzezuning, by the people on the Tigil. It is also found in the copper mines near Ekaterinburg [in the Urals], where it is called topaz. There is a similar kind near the Khariuzov River; it was formed on a rock.

In this area there is another kind of lightweight stone which is white, like an earthen bolus. The Kamchadals use it to make mortars and stone lamps in

which they burn whale and seal oil for light. All along the coast there is a hard, iron colored stone, porous as a sponge, which becomes light and red in the fire. On the mountains there is a great deal of light stone which has a color similar to brick; if it were porous, it could be called morskaia penka rouge, because of the resemblance.

The natives find transparent stones near the headwaters of the rivers; they are hard, and can be used in place of flints. The ones which are semi-transparent, and milk white, are called carnelians by the Russians, who give the name hyacinths to the ones which are yellowish and translucent, like coral or like bits of glass. Many of these are found along the rivers near Tomsk.

True jewel stones have never yet been found in this country.

As for the rest, the material which forms the mountains in Kamchatka is very permanent and hard; the mountains wear down but rarely form yawning chasms, the way Siberian mountains do. In places where this happens, a large amount of Siberian oil<sup>1</sup> is found. In several places, such as near the Sea of Okhotsk, Lake Kurile, and the Oliutor River, there is a soft earth with an acid taste which is called bolus. The Natives use it as a sovereign remedy for diarrhea or dysentery.

I sent many samples of all these things to be placed in the *Kunstkamer*.

I must not forget to mention yellow amber, which is found in great quantity near the Sea of Okhotsk, particularly near the Tigil River and north. I gathered a great deal of it, which I sent with the other natural history specimens.

<sup>1</sup>Oleum petrae, lac lunae.

## CHAPTER V

### TREES AND SHRUBS, ESPECIALLY THOSE WHICH THE NATIVES USE AS FOOD

The principal and most useful trees are larch<sup>1</sup> and white poplar<sup>2</sup>, which are used in the construction of buildings and fortifications. The Kamchadals also use this lumber to build homes, barks, and even small seaworthy ships. Larch grows only along the banks of the Kamchatka River and along some of its smaller tributary streams. Elsewhere white poplar is used, which grows in abundance. There are neither pine<sup>3</sup> nor black poplar<sup>4</sup> in Kamchatka; very few fir<sup>5</sup> trees grow there, only in one place near the small Berezova River. Although there are a good many birch<sup>6</sup> trees, these are seldom used, except for dog sleds or other such items, because in humid areas near villages the tree grows in a twisted fashion, and cannot be used, and it is too difficult to bring in others. The natives use birch bark a great deal. They peel it off the tree when it is still green, cut it

<sup>1</sup> Larix Larix dahurica. --L. Berg .

<sup>2</sup> Populus alba.

<sup>3</sup> Pinus.

<sup>4</sup> Populus nigra.

<sup>5</sup> Picea.

<sup>6</sup> Betula.

in small pieces with little hatchets so that it resembles noodles, and chew it with dry caviar. They enjoy this concoction so much that in any dwelling place in winter one will see the women seated around a large birch log, busily cutting bits of bark off with little bone hatchets. The birch sap is then fermented with the bark, which makes it somewhat sour and more palatable. Kamchatkan birch is different from European birch in that it is a deeper gray, rougher, and filled with large knots and burls, which are so durable they can be used to make all manner of food containers.

Steller observed that the white poplar is as porous and as light as dried willow bark, a condition he attributes to the salt sea water. The ash, when it is exposed to the air, changes into a heavy reddish stone, which becomes heavier the longer it is left in the open. If one breaks open the rocky material after it has stood outdoors several years, one can see ferruginous particles inside.

Willow<sup>7</sup> and alder<sup>8</sup> are common trees in Kamchatka. The natives use willow bark for food. They use alder bark for tanning hides. The wild cherry<sup>9</sup> grows there, as well as two species of hawthorn<sup>10</sup>; one bears red fruit and the other, black, which the natives eat in winter. There are also a good many

<sup>7</sup> Salices.

<sup>8</sup> Alni.

<sup>9</sup> Padus foliis annuis.

<sup>10</sup> Oxycantha fructu rubro et nigro.

mountain ash trees<sup>11</sup>; an excellent preserve can be made from the fruit.

The best wild food the natives find is the nut of the small cedar or stone pine which grows profusely both on the mountains and on the tundra. This tree differs from a regular cedar only in that it is infinitely smaller, and instead of an upright growth pattern, it sprawls on the ground; for this reason it is called slanets. Its nuts are half the size of regular cedar nuts. The Kamchadals eat them without peeling off the husks. The fruit of this tree, as well as that of the wild cherry and the hawthorn, is very astringent, and if it is eaten in excessive amounts, will cause stomach cramps. The chief virtue of this arborescent shrub is that it can cure scurvy. Everyone on the Kamchatka expedition proved this fact; to counteract this disease they used almost no other remedy except the tips of the tiny cedars, which they used to make a beverage by allowing them to ferment and then making a drink similar to kvas, which they drank like tea. They gave standing orders that a great cauldron of this was to be kept on the fire at all times.

There are very few red currants, raspberries and arctic brambles in Kamchatka; those which do grow are far away from villages and no one takes the trouble to pick them. They make much use of the black berries of the honeysuckle<sup>12</sup>; they have a pleasant flavor and are used to ferment a liquor which is made from herbs; a brandy can be made from this. They also use the

<sup>11</sup>Sorbus aucuparia.

<sup>12</sup>Lonicera pedunculis bifloris, floribus infundibili formibus, bacca solitaria, oblonga, angulosa.

bark when they distill grain spirits, because it makes it stronger. There are quite a few junipers<sup>13</sup> everywhere, but the natives do not use the berries, although they carefully gather a number of other kinds of berries, such as cloudberry<sup>14</sup>, whortleberry<sup>15</sup>, cowberry<sup>16</sup>, cranberry<sup>17</sup>, and black crowberry<sup>18</sup>. When they are in season, the people preserve them and make a brandy from them, except for the berries of the cranberry and black crowberry, which are not suitable.

Steller says that the fruit of the black crowberry is good for scurvy. The natives also use it to dye faded old yardage; it imparts a cherry red color to fabrics. Certain knavish swindlers boil the fruit of this shrub with alum and fish blubber and use it to darken the pelts of sea otter and poor sable; it gives them such a brilliant shiny luster that one could easily be deceived and cheated of several rubles.

Herbs and roots which grow abundantly in this country, along with fish, help to make up for the lack of cereal grains. The principal plant is the sarana

<sup>13</sup> Juniperus.

<sup>14</sup> Chamaemorus. Raii Syn.

<sup>15</sup> Vaccinium. Linnaeus, Flora Suecica.

<sup>16</sup> Vaccinium. Linnaeus, Flora Suecica.

<sup>17</sup> Vaccinium. Linnaeus, Flora Suecica.

<sup>18</sup> Empetrum.

lily<sup>19</sup>, which they use instead of flour and porridge. It should be classed in the lily family, and since I have never seen it anywhere except in Kamchatka and Okhotsk, I shall describe it.

This plant grows about a half-foot tall; the stem is slightly thinner than the quill of a swan feather. It has a rosy color around the root, and is green on top. It has two rows of leaves along the stem; the lower row is composed of three leaves, and the upper has four, arranged in a cross; their shape is elliptical. Above the second row, there is sometimes a single leaf directly under the blossoms. On top of the stem there is a deep cherry red flower; only rarely are there two of them. They resemble a fire lily, only they are smaller, and are divided into six equal parts. In the center of the flower there is a triangular pistil, with a rounded tip, as in other lilies. Inside the pistil are three cells which enclose the flat reddish seeds. These are surrounded by six white stamens, which have yellow tips. The root, which is the actual sarana, is almost as large as a garlic bulb and is made up of several small somewhat round sections. It blossoms in mid-July, and is then so profuse that the entire countryside seems covered with it.

The Kamchadal women and the wives of the Cossacks dig up the root in the fall, but even more, they dig up the nests of field mice which they dry in the sunshine. When they have more than they need, they sell them for four to six rubles per pud. Sarana, baked in an oven and crushed with cloudberries,

<sup>19</sup> Lilium flore atro-rubente. Gmelin.



blueberries or other berries, can be considered the Kamchadals' principal food, and the best in flavor. It has a pleasant taste, slightly sour, and it is so nourishing that if a person were to eat it everyday, he would scarcely realize he had no bread.

Steller noted five varieties. 1. Kemchiga<sup>20</sup>, which grows near the Tigil and Khariuzovka Rivers. It is shaped like a pea, and has almost the same flavor when it is cooked; but neither Steller nor I have ever seen the plant in bloom. 2. Sarana, which has already been described. 3. Ovsianka<sup>21</sup>, which grows all over Siberia. It is a red lily with curly blossoms. The bulb is made up of many cloves. 4. Titikhpu<sup>22</sup>, which grows near the Bystraia River; and again, neither Steller nor I ever saw it in bloom. 5. Matteit<sup>23</sup>.

Sweet grass<sup>24</sup> is considered to have as many uses in everyday life as sarana; the Kamchadals use it not only for preserves, broth and various kinds of talkusha, but they can not do without it for all their superstitious ceremonies. The Russians, almost as soon as they reached this country, realized that spirits

<sup>20</sup>Claytonia tuberosa Pall. --L. Berg.

<sup>21</sup>Lilium radice tunicata, foliis sparsis, floribus reflexis, corollis revolutis. Gmelin, Flora Sibirica.

<sup>22</sup>Lilium dahuricum. --L. Berg.

<sup>23</sup>Bulbi Satyrii. --L. Berg.

<sup>24</sup>Sphondilium foliolis pinnatisidis. Linnaeus.

could be made from it; and today the Imperial Treasury<sup>25</sup> sells nothing else.

This plant is very similar to our beet. The root is thick, long, and divided into several parts; it is yellowish outside and white inside. It has a bitter taste, strong and sharp, like pepper; the stem is hollow, has three or four nodes, and grows approximately as tall as a man. The coloration is green and a reddish shade, with fine short white down along the nodes. There are five or six leaves near the root, sometimes as many as ten; they are very similar to the leaves of beets or parsnip. They grow on sturdy, round, hollow, green stems, are strewn with small red flecks, and covered with a fine fuzz. A similar leaf grows out of each node on the main stem, but it has no pedicule. The flowers are small and white, like the blossoms on beets, parsnips, fennel, or other plants of this variety. Each blossom has five petals; the outer ones are larger than the others; the ones inside are the smallest; the side petals enclose the middle. The tips of the petals are pointed, somewhat heart shaped. Every blossom has two ovaries, each one supported by two slender short stalks. They are surrounded by five slender white stamens which rise above the blossom; they have green tips. These flowers generally are shaped like a plate, for the stalk in which the umbel is enclosed is longest at the brim, and is shorter inside than outside. Each joint or node gives rise to small stalks which bear flowers. The seed is precisely like beet or parsnip seed. This plant is very common all over Kamchatka. Kamchadal women prepare it in the following fashion.

<sup>25</sup> All land in Siberia was in the public domain; government monopolies, including the sale of spirits, were under the jurisdiction of the Imperial Treasury. --Ed.

They cut stems which have leaves closest to the root, for the main stem is not used, perhaps because it is impossible to gather enough of them while they are young, and it is easier to take stems or pedicles which have not dried out when they have attained the proper height. After the outer husk has been rubbed off the stalks with a shell, they are suspended in the sunshine a slight distance apart, and then are tied in little packets of ten stalks each. The standard measure, which is called a plastina [plank], is composed of ten to fifteen such bundles. When they begin to dry out, they are put in net bags; and after several days, they are covered with a fine powder, which probably comes from the interior of the plant. The powder or the sap of this plant has a flavor similar to licorice, and is not unpleasant. Thirty-six pounds of this plant, dried, will produce only a quarter of a pound.

The women who prepare this plant wear gloves, because the sap is so poisonous it causes serious swelling wherever it happens to touch one. This is the reason that the Kamchadals as well as the Russians, who eat it in springtime while it is still green, chew it without letting it touch their lips. I witnessed one case where a man saw others eating this green herb and wanted to taste it too, but did not take the precaution of holding it between his teeth. Instantly his lips swelled up and were covered with pustules, as well as his chin, his nose and his cheeks, wherever the herb had touched. The pustules soon broke, but the swelling and the scabs lasted for a week.

This is how spirits are made from this plant. First of all, several large bundles or packets of it are put in hot water; this is then allowed to ferment with

honeysuckle berries or blueberries. The vessel is carefully covered and capped, and is placed in a warm spot and kept there until fermentation has ceased; while it is working, it ferments and bubbles with so much movement and noise that one can perceive the agitation. They also make another liquor called braga, in the same way as the first; only as much water is used as is necessary to steep the herb, and over this water is poured the first liquor which was fermented, called prigolovok. Braga usually takes twenty-four hours to make; fermentation is complete when the bubbling action ceases. Into a boiler are put the herbs, along with all the liquid which is destined to be made into spirits; it is covered with a wooden lid, through which is passed, instead of a pipe, the barrel of a gun. The first spirits which are distilled are as strong as ordinary vodka. If this is distilled a second time, it becomes so strong that it will corrode iron. Only the rich can afford the stronger spirits; the common people only buy the liquor which has been distilled once, which is called raka; however, this is not inferior to any liquor.

From two puds of this plant, one can usually make a vedro<sup>26</sup> of raka, or first-distilled spirits. Each pud costs four rubles or more.

The residue which remains in the boiler after the spirits have been drawn off, is generally used instead of berries to make the first liquid ferment, since it is sufficiently acid. Any which is left over is given to the livestock, who eat it eagerly; it helps to fatten them up.

<sup>26</sup>A vedro contains sixteen pints. --Ed.

A liquor made from this plant, when the bark has not been stripped off, will cause serious heart depressions.

According to Steller, this liquor has the following qualities. 1. It is very penetrating, for it contains acid spirits and is consequently very pernicious to the health; it tends to coagulate the blood. 2. It is very intoxicating; people who drink it become devoid of all sensation, and their faces turn quite blue. 3. Even when someone drinks it in small quantities, he will be tormented all night long with wild terrifying dreams, and the next day will still experience a sense of unease and agitation, as profound as if he had committed some crime. It has also been observed that men who have become intoxicated on this liquor, appear to sober up when they drink a glass of cold water, but then immediately fall into such a state of drunkenness they cannot stand up.

This plant has the virtue of killing lice. The Kamchadals have no other recourse than to moisten their hair with the juice which they draw from the plant in springtime, and then to wrap up their heads carefully. Many Kamchadals, who wish to have children, never eat this herb, either dried or fresh, being convinced that it will prevent them from begetting infants.

The willow herb<sup>27</sup>, which grows all over Europe and Asia, is the third most widely used plant in the diet of the Kamchadals. They cook it with fish and with meat, and use the green leaves instead of tea. Its principal useful part lies in the core of the stalk. They separate the stem into two parts, scrape it with

<sup>27</sup>Epilobium. Linnaeus, Flora Suecica.

shells, and make packets of it which they place in the sunshine to dry. It then acquires a pleasant flavor, which somewhat resembles the dried gherkins of the Kalmuks. The Kamchadals use it in all their foods, and when it is fresh, they eat it for dessert, like preserves.

A palatable and very nourishing broth can be made from this plant; it is a kind of kvas, as good as could be wished. They also make a rather strong vinegar by boiling six pounds of dried willow herb with one pud of sweet grass and allowing it to ferment.

Spirits are more full-bodied and better when they are distilled from sweet grass in an infusion of willow herb instead of water.

The Kamchadals heal the navel of newborn infants with this herb, which they chew and mix with saliva. They use the husk powdered and mixed with the chopped stalk instead of green tea; there is some similarity in taste. For this same purpose the Kuriles use a shrub<sup>28</sup> which has blossoms that resemble those of the strawberry, only they are yellowish and do not produce fruit. This is called "Kurile tea;" it has an astringent quality which makes it very useful for treating dysentery and colic.

Wild garlic<sup>29</sup> is considered not only a necessary food, but also a medicine. Both the Russians and the Kamchadals gather it in great quantity. They chop it up fine and dry it in the sun and save it for winter, when they cook it in water.

<sup>28</sup>Potentilla caule fructicosa. Linnaeus.

<sup>29</sup>Allium foliis radicalibus petiolatis, floribus umbellatis. Gmelin, Flora Sibirica.

They stir it for some time, and then use it in a dish which is similar to a stew. This plant is as effective a remedy against scurvy as cedar buds. Actually, from the time when this herb makes its appearance from beneath the snow, there is no longer any need to fear scurvy. The Cossacks on the first Kamchatka expedition, who were working under Spangberg to build the Gabriel, told me some rather amazing stories. The constant dampness of this country made them susceptible to such dreadful attacks of scurvy that they were unable to work. When the snow melted and this herb appeared, they ate it greedily; but then they became so broken out with scabies and with pustules that their captain thought they were all infected with a venereal disease.<sup>30</sup> However, after fifteen days he saw that the scabs had dried and that they were completely healed.

Meadow-sweet<sup>31</sup> and pepper-saxifrage<sup>32</sup> should be added to the list of plants the Kamchadals use for food. The latter is the stalk of a plant which is hollow and filled with sap like angelica.

Meadowsweet is a species of ulmaria. It has a thick root which is black outside and white inside. It sometimes puts forth two or three stalks which grow as tall as a man. It is at least an inch thick near the root. The stems are slenderer near the top. They are green, slightly furry on the exterior, and hollow inside. The leaves are borne on long stems which grow out of the stalk; they are round, and are divided into seven unequal jagged parts. The top is

<sup>30</sup>The Russian edition refers to this as the French disease. --Ed.

<sup>31</sup>Ulmaria fructibus hispida. Steiler.

<sup>32</sup>Chaerophyllum seminibus laevibus nitidis, petiolis ramiferis simplicibus. Linnaeus.

green and glossy, and the underside is whitish, fuzzy, and strewn with large reddish veins. At the spot where the stems grow out of the stalk, there are two leaves similar to those previously described, except that they are slightly smaller. The stems or small stalks are triangular, rosy in color, tough and furry, and have a small canelure above. The blossom at the end of the stalk is similar to that of the mountain ash. Each blossom is the size of a kopek and has five tiny white leaves enclosed in a calyx, which likewise has five downy leaves which hang below. There are four elliptical pistils in the middle of the flower; the edges are flattened and the tips are downy. When the plant has reached maturity, there are two rather long seeds contained within the pistils. The pistils are surrounded by ten white stamens which rise above the blossom and are also white at the top. It blossoms toward mid-July, and the seeds are ripe by the middle of August. The root, stalk and leaves of this plant are all very astringent.

The Russians and the Kamchadals eat the young stalks of the plant in springtime, just as angelica is eaten in our villages, and they make up bundles of it every day. They save the root for winter and use it to make the edible paste called *tolkusha*. While it is still green it is eaten with fish roe or dried caviar. Steller compares its flavor to certain apples called sheptai which grow in Asia.

Another common plant is called pepper-saxifrage. It has leaves very similar to those of the carrot. People eat the stalks in spring, but it is not used as much as meadow-sweet, although it tastes very much like carrots. Usually the leaves are allowed to sour like cabbage, and then are used to make a beverage



which is drunk in place of kvas.

There is still another plant in Kamchatka called spiderwort.<sup>33</sup> It grows plentifully along the rivers. The root has a bitter and unpleasant taste; it is as thick as one's finger, and about two inches long. It is black outside and white inside. Occasionally it will bear five stalks, but more often two or three; these stalks stand a quarter of an arshin high and as thick as a goose quill, and are a shiny yellow-green color. At the tip are three oval leaves arranged in a star pattern, and from the center rises a tiny stem a half-inch long which bears the blossom. The calyx has three green elliptical leaves. The flower is white. The pistil which is in the center of the blossom has six facets; it is yellow with a red tip, and encloses three cells which hold the seed; it is surrounded by six yellow stamens which are as large as the pistil itself. When the seed is ripe, the pistil becomes as large as a walnut, but it is soft, fleshy, and has a flavor as pleasant as a somewhat tart apple. This plant blossoms in mid-May. The Kamchadals eat the root green or dried with fish roe. They eat the fruit as soon as it is picked, since the meat is so soft it can't stand overnight without spoiling.

The plant iikum or sukui<sup>34</sup>, which is called makarshina root in Russian, grows abundantly in the mountains and on the tundra. The Kamchadals eat the roots green, ground up with fish roe. It is considerably less astringent than the European variety; it has a great deal of sap and a nutlike flavor.

<sup>33</sup>Tradescantia fructu molli eduli.

<sup>34</sup>Bistoria foliis ovato-oblongis acuminatis. Linnaeus.

Groundsel<sup>35</sup> is a plant with a leaf similar to hemp, and a blossom like pot marigold, only smaller. When the leaf of this herb is dried and cooked with fish, it imparts to the broth the same flavor as if it were made from wild ram.

Mitui koren<sup>36</sup> is a root which grows on the first of the Kurile Islands; the Yakuts call it zardana. The Kuriles cook it in the fat or oil of fish or seal, and consider it a very delicious food.

These are the principal plants and roots most frequently used by the Kamchadais, but there are many others which grow on land or are cast up on the shores of the sea which are eaten green or saved for winter; this is the reason Steller refers to these people as "eaters of everything" because they actually do eat everything from dried herbs to the poisonous amanita mushroom, even though the former have no savour, and the others are very dangerous. He adds, however, and rightly so, that the wisdom of the natives in this country, their knowledge about the properties of various plants, and the use they make of them for food, remedies and other needs, is so amazing that it would be difficult to find such knowledge not only in other primitive peoples in other remote parts, but perhaps even among persons in more civilized lands. They know every plant by name; they know its own particular properties, and they understand its different uses according to the diverse places where it grows. They know so precisely when each plant should be picked that even Steller was astonished.

<sup>35</sup>Jacobaea Cannabis folio. Steller.

<sup>36</sup>Radix Hedysari flore albo. --L. Berg.

The Kamchadals have this advantage, that they are able to find their necessary food and remedies at all times and in all places; there is not one plant, of all that grow in this country, whose properties they do not know, whether useful or harmful.

Still other plants should be mentioned which are used as much for medicine as for food. Along the coast there is a tall white plant<sup>37</sup> which looks like wheat. It also grows in the sandy countryside around Strelina Lodge<sup>38</sup>. This grass is woven into mats which are used both as bed coverings and as curtains. The best covers are made in squares or other shapes which are laced together with whalebone or baleen, cut into small strips. This grass is also used to make cloaks quite similar to the old mantles which were once worn in Russia; they are slick on one side and shaggy on the other, so the rain will run off. Of all the articles made from this grass, the finest and the prettiest are the tiny bags and small baskets in which the women keep their little trifles; they are made with such artistry that no one would believe, at first glance, that they were made of grass. They are ornamented with baleen and varicolored wools. When the grass is still green, they make it into large bags to hold fish, sweet grass, willow herb and other foodstuffs. This plant, as well as several other large grasses, is also used to roof over their huts and their summer and winter dwellings; they cut it with a kind of reapinghook or sickle made of the scapula of a whale which they

<sup>37</sup>Triticum radice perrenni spiculis binis lanuginosis. Gmelin, Flora Sibirica.

<sup>38</sup>The country estate of the Russian Imperial family, located outside of St. Petersburg. --French edition.

whet against stone until it is so sharp they can cut a great deal of grass in a very short time.

The grass called bolotnaia which grows in marshy areas somewhat resembles sedge (Cyperoides); it is prepared in autumn by being carded just as flax is, with a many-toothed comb made of seagull bone. The plant is used in the following ways. 1. Newborn infants, instead of being placed in swaddling clothes, are wrapped in this grass, which is like cotton-wool. 2. It is used to line infants' swaddling-clothes; when it becomes wet, it can be changed. 3. It takes the place of stockings; the natives wind it about their legs so deftly that it clings like a legging. 4. As the native women believe that heat in the reproductive organs is the cause of fecundity, they employ this plant to produce that effect; they use it particularly during their periods. 5. It is also used instead of charcoal to make a fire. 6. During their feasts, they use it to make garlands and crowns which they place around the necks and on the heads of their idols. 7. When they make offerings, or when they kill certain animals, they place a crown of this plant on the victim so it will not be angry and complain to their ancestors. They used to place the same kind of crown on the heads of their enemies, among whom they numbered the Russians. They would make the crowns, cast some magic spell over them according to their superstitious customs, and attach them to the end of a pole. This herb is called tonshich and miataia trava by the Cossacks, egei by the Kamchadals on the Bolshaia River, and iimt along the banks of the Kamchatka River.

The most widely used plant in this country is the nettle. Since neither hemp

nor flax grows here, it is the only material available for making nets for taking fish, which make up for the lack of grain. The nettles are cut during September, or even in August; they are tied in bundles and dried underneath the balagans or summer huts. When the fishing season is over, and they have gathered their supplies of berries and roots, they devote themselves to the preparation of the nettles. They cut them in half, adroitly strip off the outer covering with their teeth, beat it, clean it, spin it between their hands, and wind the fiber about a spindle. The fiber which is not twisted is used for sewing, but they twist the filaments they plan to use for making nets. In spite of this precaution, the nets do not last for a whole summer, not so much because of the way in which they are used as because the people do not know how to prepare the nettles properly; they neither boil the thread nor ret the nettles.

The following plants should be included among those with medicinal properties.

The first is sweet gale<sup>39</sup>, which grows in swamplands around the Bolshaia River. The Kamchadals use a decoction of it to make ulcers suppurate. They say this infusion causes a sweat and forces all the bad humors from the body.

Dryad<sup>40</sup> grows plentifully all over the country. It is used as a remedy for swelling and lassitude of the limbs.

Andromeda<sup>41</sup> is not as strong in Kamchatka as in other parts of Siberia. The Kamchadals use it to treat venereal diseases, but without any effect.

<sup>39</sup> Myrica gale. --L. Berg.

<sup>40</sup> Dryas. Linnaeus.

<sup>41</sup> Andromeda foliis ovatis venosis. Gmelin.

There is a plant called sea-oak<sup>42</sup>, cast up on shore by the sea, which is boiled with sweet grass; the resulting beverage is taken to stop dysentery.

Sea-raspberry, crushed very fine, is used to hasten childbirth.

There is another seaweed, an alaria<sup>43</sup> which is tossed up on the shores of Cape Lopatka; it resembles whalebone. The Kuriles infuse it in cold water and drink it to counteract severe colic and cramps.

The plant called water dropwort<sup>44</sup> grows near the rivers and the sea. This is one of their most efficacious remedies for backaches. It is used in the following manner. They heat up the iurt as hot as possible so that the invalid is sweating freely; then they rub his back with this plant, being very careful not to touch the kidney region, for if they touched this area, the sick person would swiftly die. This treatment assuages them.

Mention should be made of the root called crowfoot<sup>45</sup>, which is known not only to the Kamchadals but also to the Koriaks, the Iukagirs and the Chukchi. All these natives steep their arrows in the juice which comes from the crushed root of this plant. The wounds made by such arrows are incurable; they become livid about the edge, the skin swells around the puncture, and after two days, the

<sup>42</sup>Quercus marina.

<sup>43</sup>Species fuci.

<sup>44</sup>Cicuta aquatica.

<sup>45</sup>Anemoides et Ranunculus.

injured person is certain to die, unless the poison is sucked out of the wound.

Huge whales and sea-lions which have been even slightly wounded with these poisoned arrows cannot remain in the sea for very long; they hurl themselves up on the shore with frightful bellowing, and die in great agony.

## CHAPTER VI

### LAND ANIMALS

The great wealth of Kamchatka consists of the number of animals to be found there, such as fox, sable, arctic fox, hare, small marmot, ermine, weasel, large marmot, wolverine, bear, wolf, wild and domestic reindeer, and mountain ram or wild goat.

The Kamchatka fox has such a dense, beautiful glossy pelt that it is much preferred to the Siberian fox. Fox from Anadyr, according to persons who have been there, are even better than Kamchatka fox; but this is doubtful, for if it is true, as Steller suggests, that Anadyr fox do not stay in one place for any great length of time, and that sometimes they are plentiful in Kamchatka but scarce in Anadyr, then it may be supposed that the same fox move freely back and forth between Anadyr and Kamchatka. It is true, however, that in Kamchatka one rarely finds fox in their burrows.

Almost every kind of fox can be found here: red, fire-colored, the ones with a black band across the chest or a black chest and the rest of the body red, those with a black cross, chestnut, black, etc. Once in a while a white fox is found, but only rarely. It is interesting to note that the handsomest fox, such as the dark chestnut, the ones with a black chest and red body, and the fire-colored ones, are the most wily and crafty. This fact has been confirmed for me not only



by the Kamchadals but also by Russian hunters. I have personally seen one of the most capable of all the Cossack trappers in this area spend two whole winters in pursuit of a black fox who lived in the tundra not far from Bolsheretsk ostrog. In vain did the trapper use every trick of his trade; he could never catch the fox.

To trap fox one generally uses poison, traps, or a bow and arrow.

The poison is composed of meat or fish which has been allowed to ferment with nux vomica; cakes of this bait are scattered over the most recent tracks of the fox.

Baited traps are placed on small mounds of snow; the instant the fox begins to eat, the trap snaps shut. Two or three traps will be placed on the same elevation to take the finest fox. It has been observed that certain fox, especially those who have had previous experience with traps, or who have been slightly wounded, will not risk entering the traps. Such a fox will dig the snow away, spring the trap, and eat the bait without being captured.

Different kinds of traps are placed on the same rise; some hit the animal over the head or on the back, and others trap the paws, etc.

In order to kill fox with a bow and arrow, the trappers take the same precautions as in setting traps, and study the height at which the bow should be set. After it has been strung, it is attached to a stake set into the ground at some distance from the trail where the fox spoor is; across the track a string is stretched, which springs the bow as soon as the animal touches it with his paws; the arrow is released and pierces its heart.

These methods are used by the Cossacks. As for the Kamchadals, they

use none of these tricks, for they rarely kill these animals. There is no other fur they prefer to the pelt of ordinary dogs. Moreover, when they do wish to kill some animal, they can do so by hitting it with a stout club. Before the conquest of Kamchatka, there were so many wild animals, according to reports, that when the natives wanted to feed their dogs, they had to chase the other animals away from the feeding troughs. This is possibly true, since even today there are still a great many animals, and one often sees them near dwellings where they have entered during the night with no fear of the native dogs, either because the dogs can not catch them, or have not been trained to do so. While I was at Bolsheretsk, one man trapped several near his cabin, in a pit where he had soured some fish. The best and most productive time to hunt fox is when the earth has frozen and the snow begins to fall, for then they can not dig up the rodents' nests they eat, as they can when the ground is soft.

The Kuriles who live on Cape Lopatka trap fox in a very particular manner. They use nets of whalebone, made with a very fine mesh. They stretch a net over the ground and secure the middle of it to a small stake, to which they tie a live swallow. Then they pass a cord through the small rings around the net, and the huntsman who holds the end of the cord hides in a ditch. When the fox springs on the bird, the hunter pulls the cord and traps the fox. The animal is captured like a fish in a net.

Kamchatkan sable are superior to any in Siberia because of their size, their deep fur, and its glossy beauty. Their only drawback is that they are not as dark as the ones from the Olekma and Vitim regions, and this fault is so

important that they cannot be compared in any way with sable from these two places.

For this reason very few are sent to Russia; they are nearly all sent to China, where the pelts are dyed and darkened very well. Sable from the Tigil and Uka regions are considered the most beautiful in the country by the Kamchadals, and it is difficult to find any even at thirty rubles for a pair. Steller notes that the most inferior sable in all Kamchatka come from Cape Lopatka and Lake Kurile. These sable, however, even the poorest, have very dark bushy tails, so that the tail alone sometimes sells for more than a whole sable. In this region there used to be a prodigious number of sable. One trapper could easily take seventy or eighty in a year; but since they valued sable skins less than dog skins, they killed sable less for their pelt than for their meat.

When the Kamchadals were conquered, instead of arguing over the sable iasak demanded of them, they made much fun of the Cossacks who would give a knife for eight sable pelts, and a hatchet for eighteen. It is quite true that when Kamchatka was first conquered, there were some agents who made as much as thirty thousand rubles in one year, and even more, through trade in furs. It is still true that one sees more sable here than in any other country; everyone who has been in Kamchatka knows that in the more remote areas there are more sable tracks than there are squirrel tracks near the Lena River. If the Kamchadals were as skillful at this kind of hunting as the Lena trappers, Kamchatka would furnish immeasurably more sable; but they are so lazy that they will trap only as many as they need to pay their iasak and their debts. Anyone who kills five or

six sable in a winter is considered a very clever trapper. Some men can not even trap as many as they need, and so when iasak time comes, they are obliged to borrow from their chiefs, or from the Cossacks, and then must work all the following summer to pay off their debt.

The equipment which the Kamchadals use to hunt sable include a net, a bow with some arrows, and a tinder-box. When they find a sable hidden in the ground or in the trunk of a tree, they stretch their nets all around, so that it is impossible for the animal to escape from its hole or from the tree trunk where it is hiding. When they see a sable up in a tree they kill it with arrows. They use the tinder-box when they have to use smoke to make the sable leave its burrow.

They take with them only enough food for one day, and return home in the evening. The best trappers, for greater convenience during the hunting season, move off into the mountains some versts distant from their dwellings. They build small iurts there, half sunk into the ground, and spend the winter in them with their entire family, because sable are generally found in such places in much greater numbers than elsewhere.

They have no superstitious practice in the sable hunt, except that they never take the trapped animals back in to their dwellings themselves; they toss them into the iurts through a hole in the top. The trappers of the Vitim and Olekma regions, on the other hand, do have superstitious practices, depending on the difficulty of the hunt, as will be discussed later.

Although there are a great many arctic fox<sup>1</sup> and hare, no one takes the trouble to catch them, perhaps because their fur is worth very little. When by chance one finds them in traps set for fox, their fur is used to make coverlets. The arctic fox of Kamchatka are worth no more than hare from Turukhansk.

Kamchatkan hare are even poorer; their pelt is not strong, and the fur pulls out easily. In discussing hare from Turukhansk, Steller says that some dishonest merchants sew fox tails to them, and sell them under this guise. This deceit is only discovered with difficulty, even by the ablest connoisseurs.

There are also many marmot<sup>2</sup> in Kamchatka. The Koriaks use their skins to make garments. They are highly esteemed, because they are warm, light in weight, and beautiful. Steller compares the fur from the back of a marmot to the plumage of a multi-colored bird, particularly when seen from a distance. He further states that he has seen marmot both on the Continent and on the islands off America. Like a squirrel, the marmot sits on its hind legs and eats with its forepaws. Its diet consists of roots, berries, and cedar nuts. These animals are lovely, and a pleasure to watch. They have an extraordinary whistle for the small size of their bodies.

No one hunts ermine<sup>3</sup>, false ermine<sup>4</sup>, or common marmot<sup>5</sup>; they are only

<sup>1</sup>Isatis. Gmelin.

Alopex lagopus. --L. Berg.

<sup>2</sup>Marmotta minor. Gmelin.

<sup>3</sup>Erminicum maius. Gmelin.

<sup>4</sup>Erminicum minus. Gmelin.

<sup>5</sup>Marmotta vulgaris. Gmelin.

killed by accident; thus ermine can not be included among the furs of the Kamchadals. False ermine or weasels usually live in storehouses and granaries, and eat rats.

Wolverine<sup>6</sup> are quite common in Kamchatka, and are much valued for their fur, so that when a Kamchadal wants to say that someone is richly attired, he says that he always wears clothing made of wolverine fur. The women wear the white part of the fur of this animal in their hair, like an ornament made in the shape of a crescent or a horn; this is considered a fine adornment. Nonetheless, so few wolverine are killed that when anyone leaves the country, he brings some pelts back from Yakutsk, as merchandise highly prized by the Kamchadals. The fur of the white wolverine which is tinged with yellow is the least desirable by European standards, according to Steller, but is the most beautiful to the Kamchadals, for that they say that their god himself could only be clothed in such furs. There is no more gallant and pleasing gift they can make to their wives and concubines than such pelts. This meant that formerly such skins sold for thirty to sixty rubles, and in exchange for the two white pieces for their wives to wear on their heads, they would even give a sea otter pelt, or sometimes two. The coquetry of the Kamchadal women is manifested by the desire to imitate nature, who has given two white plumed ornaments to certain black teal, known in this country under the name of mychagatka. Areas where wolverine are most plentiful are around the Karaga, Anadyr and Kolyma rivers. Their skill and

<sup>6</sup>Mustela rufo-fusca, medio dorsi nigro. Linnaeus, Fauna Suecica.

cleverness at killing reindeer is well known. They carry some of the moss the reindeer eat up into trees and drop the moss onto the ground. If a reindeer comes along under the tree and starts to eat the moss, the wolverine hurls itself on its back, scratches out its eyes and claws the reindeer so viciously that the animal can not stand the pain, beats itself against the tree, and falls dead on the spot. Then the wolverine tears it to pieces, and buries it carefully in different places, so that other wolverine will not find it; it eats nothing until everything has been hidden away. These animals also kill horses in the same way along the Lena River. They can easily be tamed, and their antics are very amusing.

Many tales have been told of the voracity of this animal, of how when it has finished eating it squeezes itself into the crotch of a tree and deliberately eases its body by regurgitating everything it has devoured; this should be considered a fable. Tame wolverines stop eating when they are full; perhaps there is some other kind.

In Kamchatka there are a great many bears and wolves. In summer the bears, and in winter the wolves, graze in packs over the vast tundra in this country. The Kamchatka bear is neither large nor ferocious; it will never attack a man unless someone comes up on it while it is asleep. Even then a bear will rarely kill a man, being content with ripping the skin from the nape of the man's neck, slashing him across the eyes, and leaving him on the ground. When the bear is aroused to a fury, it will rip one's flesh to shreds, but will not eat it. In Kamchatka one comes across quite a few men who have been treated in this manner. They are commonly referred to as dranki or "the flayed ones." One

thing that should be made clear is that the Kamchatkan bear will never harm women. In summer, when the women are out gathering berries, the bears follow them around like domestic animals. Occasionally the bears will eat the berries the women have picked, but that is the only harm they do.

When schools of fish come into the river mouths, the bears come down from the mountains in regular herds to the sea and find a good place to take the fish. Since there is such a huge quantity of fish, the bears become particular in their choice, and only suck the brain from the head, leaving the rest of the fish on the bank of the river. But when the fish are scarce in the rivers and there is no forage available in the tundra, the bears do not hesitate to eat anything they can find on the shore; quite often they will even break into the Cossack huts along the shore to steal their food. They should be indulged, however, since they are content to eat the fish they find in the huts, and do not harm people. It is customary to leave an old woman in each cabin.

The Kamchadals have two techniques for hunting bear. The first is to kill them with arrows. The second is to take them by surprise in their lairs. This is how that is done. When the men find a den, they gather together a large amount of wood. Then, at the entrance to the den they pile up logs and tree trunks; the bear pulls the wood back inside his den so that his exit will not be blocked. The bear continues this until his den is completely filled up and he can no longer move about. At this point the Kamchadals make an opening into the den from above, and kill the bear with spears.



The Koriaks and Oliniors hunt bears in another way. They look for forked trees, and attach a running knot to the fork, with some meat as bait. When the bear tries to grab the meat, the knot tightens over his head or his front paws.

In Siberia bear are hunted in the following ways. 1. They are shot with guns. 2. They are crushed to death by logs piled one on top of another in such a fashion that as soon as the bear touches the pile, the entire mass falls on it and kills it. 3. A pit is constructed, with a sharp stake, burned and polished, set into it so that the end is about a foot out of the ground. The pit is covered with small branches and twigs, which form a kind of lid which can be raised with a rope, like a deadfall. The end of the rope is placed along a bear trail, some distance away from the pit. When the bear comes along the trail and becomes entangled in the rope, the lid falls on the pit; the bear is frightened and runs toward the pit, falls inside, and falls on top of the stake which runs him through. 4. They are also trapped by means of boards which have iron hooks set into them. Such a board is placed along the bear's customary route, and in front of the board a trap is set, similar to the ones previously described. The bear, being startled, runs away, and inevitably steps on the plank. This is a singular sight. The animal realizes his paw is caught on the iron hooks, and in order to free himself, beats on the board with all his might with the other paw, which also becomes trapped. Then he rears up on his hind legs, holding the board in front; the board, in addition to the pain it causes the bear's paws, prevents him from seeing the trail. The bear is compelled to stop, and stands there, uncertain of what to do. He becomes enraged, and pushes at the plank with his hind paws; and then these

are also caught on the teeth of the board. The bear then falls on his back, and with hideous wails, waits to be put to death. 5. The peasants who live on the banks of the Lena and Ilim rivers have a still more curious manner of taking bear. They attach a large block of wood to a rope, with a running knot at the end. They place the block on the bear's trail. The bear feels the rope tighten, and as he moves forward a little, realizes that the block of wood is hindering him. The bear becomes furious, pulls the massive piece behind, and drags it up to some high spot, where he takes the block into his paws and throws it as hard as he can. The weight of the wood topples the bear; he falls head first and kills himself. And if the bear does not die the first time, he repeats this activity until he is dead.

This method, which is used in Siberia, is similar to the technique employed by the Russians, who suspend a tree trunk by a stout rope from a tree where bees have made a hive. The bear tries to climb the tree, and pushes aside this obstacle. At first he pushes gently, but the suspended log swings back and hits the bear. This infuriates the animal, and he hits it harder, so that it swings back and delivers him a more violent blow. This keeps up until the bear is knocked senseless or is so exhausted that it falls from the tree to the ground.

It is widely known that bears can be intoxicated by a mixture of spirits and honey, and that they can be hunted with dogs, so it would be pointless to discuss these methods here; but there is one way of hunting them which is worth mentioning. Trustworthy men have assured me that a certain hunter, without any assistance, killed bears so huge and formidable that no one would dare go after them even

with many helpers and with dogs. This man had no weapons to use against the bears other than a knife and an iron blade about a half-foot long, attached to the end of a thong which he wound about his right arm up to the elbow. Then, taking his lancehead in one hand and his knife in the other, he crept up on the bear. When the animal saw the hunter, he reared up on his hind legs, as they generally do in such cases, and hurled himself on the man, roaring fiercely. The hunter was so daring that he thrust his right hand into the animal's maw, and lodged the blade there in such a way that the bear could not close his mouth, and was in such agony that he could not make any resistance, although he faced certain death. The huntsman led the bear around wherever he liked, and with the other hand could use his knife to stab the animal at will.

The Kamchadals consider it such an honorable deed to kill a bear, that a hunter who has been successful is obliged to play host to his neighbors, and to serve them the meat of the animal. They hang the head and the thighs on the roofs of their huts, as trophies. The pelt is used to make beds, covers, hats, mittens and collars for their dogs. Both the fat and the meat are considered delicious to eat. When the fat is rendered, Steller says it is so clear and pleasant in flavor that it can be used instead of oil in making a salad. In spring the Kamchadals protect their faces from the sun by wearing over them a covering made of the intestines of the bear. The Cossacks use the same thing instead of glass for their windows. Kamchadals who go off to hunt seals in winter make soles for their shoes out of bearskin, so they will not slip on ice. The scapula of the bear is used to make a scythe, with which they cut the grass they use to cover

their winter and summer huts; and they also use the grass to make tonshich and other useful things.

Bears are very fat from June until autumn, but they become very lean and thin in spring. A frothy liquid has been noticed in the stomachs of bears that have been killed in spring, which has led the Kamchadals to believe that they eat nothing in winter, and only live by sucking their paws. One rarely finds more than one bear in a den, or so Steller says. When the Kamchadals want to growl at their lazy dogs, they call them keren, which is their word for a bear.

There are a great many wolves in Kamchatka, and their fur is highly esteemed, because garments made of it are not only very warm, but are also considered very rich and beautiful; however, in spite of these facts, the Kamchadals kill few wolves. These animals are similar to the European variety. Because of their voracious appetites, they do more harm to the natives than can be recompensed by the value of their hides. They kill both wild and domesticated reindeer, in spite of every precaution and vigilance. They are very fond of reindeer tongue, as well as of the tongues of whales which are cast up on the seashore. Sometimes they eat fox and hare which have been caught in traps, to the chagrin and detriment of the Kamchadals. White wolves are very rare, and are more highly prized than gray. Although the Kamchadals are disgusted by nothing, and consider edible everything they find, they never eat the meat of either wolves or fox.

Reindeer and mountain sheep may be considered the most useful animals in Kamchatka, because their skins are generally used for clothing. There are

many of these animals, but the natives kill very few of them, being both maladroit and lazy.

Reindeer live in the tundra, and mountain sheep live high on the mountains; for this reason hunters who go after these animals leave their homes at the beginning of the spring season, take the entire family with them, and go to live in the mountains until December, so that they may spend all their time hunting.

The mountain sheep<sup>7</sup> is quite similar to the goat in its gait, and to the reindeer because of its fur. It has two horns which are twisted like those of an Orda ram, only larger. A ram which has attained its full growth will have horns which weigh from twenty-five to thirty pounds apiece. These animals are as fleet and sure-footed as roe-buck, and as they run they carry their heads high so their horns rest of their backs. When they prance about on mountain slopes with the most frightening precipices, they leap great distances from one rock to another, and scale the sharpest peaks. Their fur is very warm; the fat on the back is as thick as that on a reindeer and is considered, along with the meat, as very delicate fare. The horns are used to make spoons and other small ladles; the Kamchadals even carry whole ones on their belts, and use them as utensils when they travel.

Three kinds of rats have been observed. The first is known on the banks of the Bolshaia River as nauschich, and in Kamchatka as tewelchich.<sup>8</sup> The second

<sup>7</sup> Ovis nivicola Eschscholz L.B.

<sup>8</sup> Microtus kamtschaticus. Pallas. L.B.

is called chelagachich. The third is chetanauschu<sup>9</sup>, which means "red rat" in the Kamchadal language. The first has rather reddish fur and a very short tail. They are nearly the same size as the largest European variety, but they make a different sound; the cry is somewhat like that of a suckling-pig. In other ways it resembles the hamster. The second variety is much smaller; it is the kind ordinarily found in houses, which runs about fearlessly, eating anything it can steal. The third kind has certain drone-like qualities; it lays up no food supply of its own, but steals from the first variety of rats, which live in the tundra, forests and mountains. These are present in prodigious numbers.

The first variety have nests which are large, clean, grass-covered, and divided into various rooms or cells. In some chambers they keep cleaned sarana, and in others, sarana which has not been cleaned; still other rooms contain various roots they have gathered during the summer by virtue of great diligence and quite extraordinary activity, so that they will have enough to eat during the winter. On fair days, they carry the roots outside to dry. In summer they live on berries and anything else they can find in the fields, never touching the provisions they have put aside for winter. There is only one way to find their holes, which is to brush aside the loose dirt above.

Sometimes, in addition to sarana, one will find skrypuna root<sup>10</sup>, zaviaznoi<sup>11</sup>, shelamain, burnet and crowfoot, as well as cedar nuts which the

<sup>9</sup>Clethrionomus rutilus jochelsoni. J. Allen. L.B.

<sup>10</sup>Anacamperos vulgo faba crassa.

<sup>11</sup>Bistorta.

Kamchadal women gather in autumn; this is a time of feasts and games for them.

The remarkable thing about certain rats<sup>12</sup>, if one can rely on the stories that are told, is that they move from place to place, as the Tatars do, and at definite times; they will vanish from Kamchatka for several years, so that not one is left, except for house rats. Their emigration presages a particularly rainy year, and a bad hunting season; and when they return, it means there will be good weather and an abundant hunt; the news is spread about the countryside as important tidings.

These animals gather together in prodigious numbers, and usually leave in spring. They move due west, and although it is very difficult for them, they swim across lakes and rivers and even gulfs. Many of them drown. When they have managed to swim across a river or a lake, they collapse on the shore as if they were dead, until they have recovered from their exhaustion and have dried off; then they continue their march. The greatest danger they face is to become the prey of wild ducks and of certain voracious fish<sup>13</sup> which devour them. When the Kamchadals see them in this exhausted condition on the shores of the rivers and lakes they will do everything possible to save them, rather than harm or kill them.

From the Penzhina River they go southward, and by mid-July they reach the area around Okhotsk and Iudoma. Sometimes there are so many of them, it

<sup>12</sup>Lemmings. --Ed.

<sup>13</sup>A salmon called mykyz. --French edition.

takes two whole hours for them to pass by. They usually return in October; it is astonishing what a vast distance they travel in one summer. And it is equally amazing to think of the order and unity they observe in moving together, and the foresight they display in choosing a favorable time to set out.

The Kamchadals believe that when there are no more rats to be seen, they have gone to distant lands beyond the sea. They think that certain shells, which are shaped something like an ear, and which are found in large numbers on the shore, are the vessels on which the rats set out to sea; thus they call this particular shell a rat-baidar.

Some persons have assured me that when these animals leave their holes, they cover over their provisions with poisonous roots in order to poison other rats who might come to steal the food; they also say that if the rats' winter provisions are stolen, the animals will choke from chagrin and despair, and will thrust their necks into a crevice or into the forked branch of a shrub. This is the reason the Kamchadals never completely rob them of their food supply, and even place in the rat holes some dried fish eggs or caviar, to bear witness to their interest in the conservation of rats. But although the truth of these facts has been certified by eye witnesses, there is still some room for doubt and we feel one should wait for more reliable proof, for one must not believe all the tales the Kamchadals tell.

Dogs are considered necessary animals in Kamchatka, and are as well cared for as are reindeer among the Koriaks, or as sheep, horses, and livestock by other peoples. The Kamchadals use dogs in place of horses, and most of



their garments are made of the pelts of these animals.

The dogs of Kamchatka are not in the least different from those of our peasants. They are generally white, black, spotted black, or gray, like wolves; one sees fewer which are fawn-colored or other shades. They are said to be very wiry and to live longer than other dogs, which can be attributed to their light diet, which consists only of fish.

When spring comes and dog sleds are no longer used, everyone unharnesses his dogs and turns them loose; no one worries about what will happen to them, and so they wander wherever they will and eat whatever they can find. They root about in the tundra and catch rats, and as the bears do, they catch fish along the banks of the rivers.

In October, everyone gathers his dogs back together, tethers them outside his balagan and keeps them tied up until they become lean, so that they will be more agile and in better condition to be harnessed.

In winter they are fed opana and fish which has been caught in summer for this express purpose. Opana is made in the following way. Into a large basin is put as much water as is needed for the number of dogs; then instead of meal they stir in sour fish which has fermented in pits and is taken out with a ladle; they add fish or iukola and the whole thing is heated up with red-hot stones, until the fish is cooked. Opana is the best food one can give dogs, and the thing they like best.

Once in a while opana is made without sour fish, but it is not so nourishing. Dogs are only fed in the evening, so that they will sleep better and more quietly.

During the day when they are made to work, they are given nothing at all to eat, because they would be too full and lazy. They never eat bread, no matter how hungry they may be. They would rather eat their bridles, the leather straps and the harnessing of their sleds, or even their master's food, if they could snatch it.

Although the Kamchatkan dogs are very friendly toward their masters, they are much to be feared when one is on a journey. 1. If the sled-driver or the master falls off the sled and can not jump on again, neither words nor shouts can stop the dogs; the man must run on foot after the dogs until the sled tips over or catches on something and the dogs can go no farther. At such times the driver must grab the sled and not let go, and let himself be pulled along on his belly until the dogs stop from fatigue and exhaustion. 2. On steep and dangerous downhill slopes, especially on river banks, it is necessary to unhitch most of the dogs. If one does not take this precaution, there is no way to stop the dogs, since even those which are most fatigued will show an amazing vigor at such times; and the more hazardous the slopes, the faster they will rush downhill. The same thing happens when they pick up the scent of reindeer, or when they draw near a settlement and hear the barking of other dogs.

In spite of all these drawbacks, one can not get about in Kamchatka without dogs. Even if there were enough horses, it would be impossible to use them in winter because of the depth of the snow, and because of the rivers and mountains which divide this country. Horses could not even be used in summer, since there are many places where one can only go on foot because of all the lake and marshes.

Dogs have an advantage over horses because during the worst storms when

it is impossible to see the trail or even to open one's eyes, they will rarely stray off course; and if this does happen, they will cast about from one side to the other and quickly pick up the trail by scent. When it is totally impossible to continue, which does indeed happen often, dogs keep their master warm and protect him; they will lie down quietly beside him. In addition to this, dogs can sense when a storm is pending, and will give certain indications of this. When the sled-driver sees dogs who are resting en route scraping away at the snow with their paws, he had better hurry to a village as quickly as possible, or at least to some place where he can take shelter, if he is too far away from a settlement.

Dogs also take the place of sheep in this country; their skins are used for every kind of garment, as has already been mentioned. The people are very fond of the fur of long-haired white dogs; they use it for borders on their cloaks and wraps, no matter what materials the garment is made of.

In another chapter I will describe how the Kamchadals use their dogs for hauling, how they are harnessed to a sled, the manner in which they are broken in, and the load and the weight they can pull.

Dogs which are used for hunting reindeer, wild mountain sheep, sable, fox, etc., are fed largely on a small variety of rook. The Kamchadals feel that this food gives the dog a better nose, and that the dog becomes better suited to hunting and even to catching birds in moult.

In addition to dogs, there are also cows and horses in Kamchatka, but no other domestic animals or birds.

According to Steller, one could breed swine there with no difficulty, since

they are very fecund and there is more nourishment for them in Kamchatka than in other places in Siberia. The country would be very suitable for goats; there is no doubt they would multiply quickly.

Kamchatka and the areas around the Bering Sea and the Sea of Okhotsk have no suitable grazing lands for sheep; the damp climate and grass which has too much sap in it causes a kind of pulmonary ailment which kills them off in a short time.

Around the Upper Kamchatka ostrog, and along the banks of the Kozyrevskaia River, the land is suitable for raising these animals because the climate is dryer and the pasture lands are not so watery, but it would be necessary to put in a large supply of hay for winter, for the snow is so deep at that season that herds can not go out into the countryside to find food. According to Steller, this is also the reason that from the mouth of the Ilga River to Yakutsk there are few sheep in some places, and none in others.

## CHAPTER VII

### HUNTING THE VITIM SABLE

Although the sable hunt in the Vitim region bears no relation to a description of Kamchatka, it is worthwhile to make some mention of it here, so that one can learn of the different methods various hunters use to trap them, and also so that one can see all the difficulties that must be surmounted in various places.

If a Kamchadal spends one day hunting without taking a sable, he will lie about sulking for two weeks or longer, without returning to the hunt; the hunters of the Vitim region, on the other hand, who spend almost the entire year under inconceivably fatiguing conditions, consider themselves very fortunate if they take ten sable apiece, or even less, during their entire hunting season. It is true that ten Vitim sable, even of mediocre quality, are worth more than forty sable from Kamchatka; however Vitim hunters often return without having trapped any, while the Kamchadals find them with no difficulty, so that if the latter spent a hundredth part of the effort of the Vitim hunters, they would make a most considerable profit, since there are as many sable in Kamchatka as there are squirrels on the banks of the Lena River. The sable hunting industry in Vitim is all the more worthy of description, since it is much more difficult. This means that the trappers have invented various ceremonies which they observe more

scrupulously than any of their customs, because they believe that such observations will make the sable hunt easier and more productive.

Before the Russians conquered Siberia, sable were plentiful all over the country, especially around the Lena River, in a valley which begins at the mouth of the Olekma and continues downriver along the Lena to the small Agara river; this is a distance of thirty versts.

Sable were still plentiful for some time after the conquest of Kamchatka, but today there are no more, for they have left their old grounds and have retreated into deserted forests or onto the high mountains farthest from areas where there are Russian settlements. Thus it is absolutely impossible to give a detailed description of the hunt here, since one must rely on hunters who do not willingly disclose their superstitious ceremonies, and who are unable, because of ignorance, to report things worthy of remark. Some vital detail may seem unimportant to them, or vice versa. It was only along the banks of the Lena that we met men who seemed reliable to us, and who could tell us everything we wished to know, although they protested that their talk could not enlighten us. The following details are based on their reports. The information is taken for the most part from my notes made through my interpreter Iakhontov, edited by Dr. Gmelin after my departure from Kamchatka.

These trappers go off to hunt sable along the Vitim River; they go up near its source, and along two rivers both of which are called Mama, which empty into the Vitim on its left bank; they ascend as far as Lake Oron, which is to the right of the Vitim; they even go above the great cataract, where there is hope of

having a better hunt. The most beautiful sable are found around the small Kutomala River, which falls into the right bank of the Vitim, and above the great cataract; it is also good along the small Petrova River, which empties into the right bank of the Lower Mama; but sable which are taken below these places, along the Vitim and Mama rivers, are of much less value, and hunters all agree that the closer one goes to the sources of these rivers, the finer the quality of sable to be found. The most inferior are found near the mouths of the rivers. The poorest of all are found along the small Koikodera River which falls into the left bank of the Lower Mama. If one can rely on the reports of hunters who have times trapped sable along the Mama which flows into the Ud, sable are of poor quality in areas where cedar, pine and fir grow; the finest are to be found where larch or tamarack grows; however, there are also fine sable to be found in areas where this kind of tree grows along with birch and fir.

Sable live in holes, as do other animals of this species, such as marten, stone-marten, fitch, ermine and others. Their nests are either in hollow trees, or under tree roots, or in the trunks of moss-covered trees, or on high rock-strewn places one sees frequently along the rivers which fall into the Lena, which are called arantsy.

Promyshlenniks along the Ud say that sable also make nests in trees; the nests are made of moss, twigs and turf. They stay in their holes and nests for a twelve-hour period, in winter as well as in summer, and during the other twelve hours they go out in search of food. In summer before the berries are ripe they live on fitch, ermine, squirrel, and especially on hare; but when the

fruits have come to maturity, they eat blueberries and cowberries, and even more, they like the fruit of the mountain ash. Trappers are very unhappy when this latter fruit is abundant, for it causes a kind of gall which makes the sable scratch against trees and results in patches of hair falling out of their pelts. Hunters sometimes must lose a good part of the winter waiting for the sables' fur to grow back.

In winter sable catch birds, hazel-grouse and black grouse. They will catch such creatures any time they can find them. When snow covers the ground, the sable take cover in their holes for two or three weeks; after this period they leave their burrows and go out to mate; this generally occurs in January. Their mating period lasts three or four weeks. When two males seek to mate with the same female, they become very jealous over her and engage in great fights with each other; this continues until one male is the victor and chases off his rival. After the mating period is over, they return to their holes for another week or two. Sable give birth to their young toward the end of March or the beginning of April, either in their holes, or in the nests they have made in trees. They usually have three to five young, which they suckle for four to six weeks.

Sable are hunted only during winter, for they moult in spring, and their hair is very short in summer. Sometimes the fur has not yet grown back by winter; in such a case, the sable is referred to as nedosobol, or imperfect sable. Such sable are not taken, for they bring a very low price.

The promyshlenniks, both the natives and the Russians, set out on the sable hunt toward the end of August. Some of the Russians go out themselves,



and others send hired men. Some are referred to as pokrucheniki, others as poluzhenshchiki. The former are furnished with traveling clothes, provisions, and all necessary hunting equipment. When they return, a third of their catch is given to the employer, and they keep two-thirds for themselves; they give back all the hunting equipment except for any food which may be left. The poluzhenshchiki divide the profit of the hunt equally with their employers. These men hire out for five to eight rubles and furnish their own provisions and equipment.

All the hunters assemble into artels<sup>1</sup> composed sometimes of six, sometimes of forty men; at other times the number is as high as fifty or sixty. In order to economize on the expense of getting into sable country, they build a kayak or covered boat for three or four men. They try to find men who speak the native tongue and who also know the places where sable can be found; they hire guides at their own expense and give them a share of the pelts they take.

Each hunter puts on board the boat about thirty puds of rye flour, one pud of wheat flour, one pud of salt with a quarter of a pud of gruel. They take along a luzan, gloves made of animal skins; and in place of hats, they take a long homespun hood. In addition to this, each pair of hunters takes a net, a dog and seven puds of food for the dog, a wooden trough for making bread, and another container filled with yeast. As far as other equipment is concerned, such as small sleds, snowshoes, skis, etc., which will shortly be described, these

<sup>1</sup>An association for common work. --Ed.

things are not prepared until they have reached their destination.

The luzan is a short cloth mantle which is left open on the sides; it is made without sleeves, the back comes only to the waist, and the front is much shorter; it slips over the head by means of a shirt-like opening. The front of the luzan is trimmed with hide, and there is a thong running through the edge which the hunter can pull to fasten the garment under his chest. This covering is worn to keep the snow off their clothing.

The nalokotniki are sheepskin sleeves which are put on under the kaftan at hunting time, for the trappers never use fur coats on such occasions. The nakochetniki are sheepskin edgings which they wear with the wooly side out, and put on over the sleeves so no snow will fall on their gloves. The obmet is a net thirteen sazhen or more long and two arshins wide, which is used to trap sable.

The burnia is a birchbark vessel, wide, rather tall, with two compartments. In the upper compartment, near the opening, there is a small mouth, so that it resembles a small beer container with a wooden bung. In this vessel is placed the dough which is used to make bread, and the starter is poured on top of that.

The starter which is used to make sourdough bread is prepared in the following manner. Flour is placed in a kettle and water is added to it, until it has the consistency of gruel; then it is heated over the fire until it becomes thick and breaks the surface with large bubbles; when it is thoroughly cooked, it is poured into the vessel on top of the dough previously placed there. The hunters take better care of the starter and the sourdough than of any of their other

foodstuffs, for fear they might lack it. The best nourishment they have is bread and kvas; when they have no starter or dough they fall ill and die because they must eat unleavened bread; also, they can easily make kvas from the starter, since it is only necessary to add water to it.

They also take firearms along, but only a few, since they are only used in autumn, when they are in their winter huts; when they go off on the hunt, they never load them.

They go up the Vitim River by cordelling their boat. From there they move into the two Mama rivers, or they may go up the Vitim to Lake Oron. When they reach suitable places, they build living quarters, if they do not find any already made there. They gather together in this area, and wait there until the rivers are frozen over.

Meanwhile they choose a chief, someone who is experienced in this kind of hunting. They pledge him complete allegiance. He divides the group into small bands, and appoints a leader for each band, except for his own, which he himself rules. He designates for each band the area where they are to hunt at the beginning of winter. This division never changes, for even when the entire company is made up of only six men, they never all go to the same place.

After the chief has given orders, each band digs pits along the way to the area designated for them, and in these they place provisions; three small bags of flour for each pair of men. This is done so they can use these on their return trip, in case they run out of food. When they can leave provisions in their cabins, they likewise bury them in pits which they dig nearby, so that the natives will not

loot them, if they should happen on the cabins while the hunters are gone.

Before the beginning of winter, the head chief sends all the trappers out to hunt and fish to bring in a supply of food. In especially prepared pits they trap wild animals such as reindeer, elk and Siberian stag. They fence off the areas around the pits, as the location permits, so that the wild animals have no other way to go except to follow the path which leads into the pit. If, for example, they were to dig a pit on a hill, they would place fences on two sides of the pit, and across it, as long as the lie of the land would permit. The pit is covered over with small fir branches or with some other mossy branches; and in order to keep the branches and the moss from falling into the pit, they place poles over the hole, and they try to make the exterior look as natural as possible, so the animal will not be afraid to approach. They trap medium-size animals with snares, such as fox, lynx, wolves and others; small animals and birds are taken with nets and nooses. They also kill various animals they chance upon with guns and arrows. If they start off by killing a bear or a squirrel, they consider this a very good portent for their hunting; but if they only kill a woodcock, or some ermine, this is a very bad sign.<sup>2</sup>

When the snow begins to fall and the rivers are not yet frozen, all the huntsmen, with the exception of the chiefs, hunt sable with dogs and nets in the areas near their huts; but the head chief and the leaders of the bands remain in

<sup>2</sup> In the 1949 Russian version, a description of dog sled construction follows. The present translation follows the French edition and includes the material in Part Three, Chapter IX. --Ed.

the huts, busy making small sleds, snowshoes and skis for the entire group.

When the rivers do freeze over, and the weather is good for hunting, the head chief assembles the entire group in the winter quarters; after saying prayers, he sends each band, under its leader, into the areas designated. Each leader leaves one day before the others in his group and prepares the stopping place, so that when his band arrives everything will be ready; then the leader goes ahead to prepare a new stopping place.

When the head chief sends the bands out from the winter quarters, he gives various orders to each leader. First of all he instructs them to prepare the first stop in honor of some church whose name he gives them, and other stops in the name of and in honor of saints whose icon they carry with them, so that the first sable they trap will be set aside for the churches. These are called the tithe sables. They are given to the hunters who carry the icons on their person.

And finally, the head chief orders each leader to keep a sharp eye on his band, so that they remain honest, do not hide anything for themselves, nor eat anything secretly. He also recommends that they follow the example of their predecessors and not call a crow, a snake or a cat by its real name, but refer to them as "the high one," "the bad one," etc.

They believe that the sable is a very smart animal; according to them, if hunters disobey their orders, the sable will make fun of them. In such a case it will enter a trap, spoil as much as it can, or eat the bait. Because of this, hunters feel the animal has not only intelligence, but a superhuman penetration, as if these animals knew that the hunters had disobeyed their orders, and the

sable, in order to revenge their breach of trust, played this trick on them, by deliberately not falling into the trap. This ridiculous notion is so firmly entrenched in their minds, that rather than taking any wise council which might free them from this stupid superstition, they seem very unhappy if anyone interferes to give them such advice. They are firmly of the opinion that breaking the rules will cause them as much grief as if they were to steal. In order to show how far the credulity of these hunters goes, suffice it to say that if any one of them calls something by a forbidden name, he will be as severely chastised as if he had committed a great sin.

No one is punished until the hunters return to their winter quarters; this is the reason the head chief orders the leaders to report to him every infraction of his orders; and he commands the hunters to watch over their leaders with the same attention.

After all the necessary orders have been given, the leaders and the hunters leave the winter quarters on their snowshoes, and in suitable equipage, take the routes designated. Each has a small sled called a narta, some with dogs, others without. The sled is usually loaded with a cooking pot, in which there is a vessel with a scopp; this is used to make piroshki when they are off on the hunt; they also use it for a cup and a large spoon. To prevent the cauldron from falling off the sled, there is a small curved board in front of the sled. In back of the kettle there is a bag of flour which weighs four puds. Behind the sack, there is the burnia with the leavening. And behind this, they place a quarter of a pud of meat or fish for bait; in back of the bait there is a kind of kneading trough filled with

bread already cooked, and then the quiver with the arrows. Near the quiver is the bow, and they fasten their bedding on top, with a small bag filled with all kinds of small utensils they may need. All of this is tied on top with rope. They pull the sled by means of a leather shoulder-belt which they fasten over the chest, or harness to a dog if they are using one.

As they move along they use a wooden staff to lean on; it is a half-sazhen or more long. At the lower end is a cow-horn, which helps keep them from slipping on the ice. A little above this, there is a small wooden ring wound about with thongs so that the end of the staff will not sink too far into the snow. The upper end is wide, shaped like a spade, round and curved above, so one can use it to shovel away the snow, and flatten it out when they are setting the traps. They also use this shovel to scoop snow into the kettle when they are cooking food, for when they are in the mountains, all winter long there is neither a stream nor a spring nor a river to be found.

The head chief, once he has sent out all the groups, sets out with his own band. When they reach their stopping place, they make huts for themselves, and bank up the snow around them. The chief goes in front without a sled, so that he can choose a good place for the second halt; he does this every day during the entire hunting season.

The hunters notch trees all along their route so they can recognize the trail, without fear of becoming lost. After they have spent the night at a stopping place, the next morning the hunters all spread out in various places. They choose two or three promising locations near valleys and rivers, where they

set their traps. They can set up to eighty traps in each place. They notch the trees in order to remember where they have set traps.

Traps are set up in the following manner. The trapper chooses a small space near some trees; he surrounds this place with pointed stakes of a certain height, which are covered over with small sticks so the snow will not fall inside. A very narrow entryway is left, above which is placed a heavy balk, suspended only by a light bit of wood; the instant a sable touches this in order to take the bit of meat or fish used as bait, the rocker drops and kills it. The hunter is now always content with placing one trap near a tree; sometimes he places two. The second will then be set on the other side of the tree, in the same fashion as the first.

The promyshlenniks remain in the place where they made their halt until they have arranged a sufficient number of traps; each trapper must make twenty per day, so they make that many at each stopping place where they are sable. When no sable are to be found, they move on without setting any.

After ten stops have been made, each leader sends half of the men in his band back to pick up the provisions which were left along the trail or in the winter quarters. The leader assigns one of them to be in charge. He himself continues ahead with the rest of his men, making stops and setting traps.

Since the men who have been sent back to collect the supplies travel with empty sleds, they pass five or six stopping places in one day. When they reach the cache, each man takes six puds of flour, a quarter of a pud of bait, which may be either meat or fish, and then they make their way back to join their



leader.

When they are en route back to the group, they stop at all the places the group previously used as halts and examine all the traps in the area. If these have been covered over with snow, they brush them off. If there are sable in the traps, they are skinned; but in each group, even in the group which has been sent back for provisions, no one but the leader has the right to skin the sable.

If the sable are frozen stiff and thus can not be skinned, the men thaw them out by putting them next to their own bodies in their blankets. The pelt is not graded, nor do they blow on the fur to judge the quality of it, until after the animal has been skinned. While the skinning is taking place, all the trappers present maintain complete silence, and watch with great attention, so that nothing catches on the stakes. After the sable has been skinned, the body, which is called the kuringa, is laid on small dry branches. Then the body is removed and the branches are set afire, and are carried three times around the body of the sable to incense it. After this ceremony is finished, the body is buried either in the snow or in the ground.

If the men take a great many sable, they carry them to the chief, but they worry about meeting up with any Tungus or other savage people, who often steal their catch; thus the pelts are placed in green logs, which they cut and hollow out for just this purpose. They plug the ends of the logs with snow, which they wet with water so it will freeze. They cache these logs in the snow near the huts where they have stopped, and pick them up when the entire group returns from the hunt.

When the trappers return with the provisions, the chief sends the other half of the group back to pick up more supplies, this second band performs in the same way along the trail as the first did.

If they see that sable are not being caught in the traps, they use the nets they have brought along. The most essential thing in the entire hunt is to find sable spoor; the hunters have a singular understanding of this. When they find fresh tracks, they follow them to the burrow where the sable has entered. Then the trapper lights some decayed wood, and placed it at the mouth of all the holes, so the smoke will penetrate down inside. When the sable hides so deep in the burrow that the smoke can not reach him, the trapper spreads his net over the place where the tracks ended; he then waits a short distance away for two or three days with his dog, and keeps the fire going all this time. If the sable attempts to flee from its burrow by that opening, it will assuredly be caught in the net. The trapper is apprised of this by the sound of one or two tiny bells attached to a small rope which is stretched over two sticks between the net and the place where he is seated. The sable tries to free itself from the net, the small rope is jerked, and the bells jingle; then the trapper sets his dog on the sable which is entangled in the net and cannot defend itself. Sometimes the hunter takes the sable by hand without using a dog; but if the sable should wriggle out of the hunter's hand, it frequently escapes, because if it leaps free in an instant when the hunter is not watching it can easily get away and a dog is not swift nor agile enough to catch it. Burrows with a single exit are not smoked, for the sable flees from the smoke and dies in the burrow, so deep inside that

it can not be retrieved.

If the sable track vanishes under the roots of a tree, the net is stretched around the tree so that if the animal tries to escape while the ground is being dug up, it will be trapped. If the spoor leads to several trees, and the sable can be seen the men try to kill it with arrows called tamara, which have blunt tips. If these are not successful, other arrows are used, which are somewhat sharper; and if necessary, they will even employ the kind of arrows used to kill large animals. If the sable cannot be seen in the tree, they fell the tree, and place the net where they judge the top of the tree will fall, which one can estimate by standing off from the tree on the side where the men are chopping, and bending back his head until he can no longer see the top of the tree; the nets are then placed two fathoms beyond that spot. The men stand at the foot of the tree, and when it falls, the sable is frightened at the sight of the hunters and tries to leap off and is thus taken in the net. Sometimes it happens that in spite of the tree falling, the sable will not run off. In such a case the hunters examine all the hollow parts of the tree to find it. A sable who has been taken in a net or a trap and escapes will rarely allow itself to be caught a second time.

If during a sable hunt the men should happen to kill other animals with their arrows, and this leads them to suspect there may be other such animals in the vicinity, they will set new traps such as snares, running nooses, etc., around those which have already been set to trap sable.

When the hunters who have been sent after provisions return, the chief sends off the hunters who have remained with him; these latter, when they have

taken the supplies from the winter quarters, distribute them, that is, they leave a certain amount of them in convenient places, where they will not be overlooked on their return. When they return with the supplies, they stop, as the other group did, at all the places where traps have been set; then at every tenth stop they cache part of their provisions. When these have all been distributed, they rejoin their leader. Upon their return, the leaders of the bands themselves return to the hunt, and on their way they stop to examine all the traps which they set as they went on ahead. They fill them up so that in summer no sable will be caught in them. They also gather up the tree trunks in which the sable pelts were hidden by the men who had been sent off to pick up and distribute the provisions; this is the extent of their duties.

During the time they are off hunting, in order to bake bread they scrape the snow off the surface of the earth and leave a space about one sazhen square or slightly larger; on this they place four wooden beams on which they lay dirt, packed down so it will hold together. This is reinforced with rocks in the four corners, and then a large fire is built. As soon as this boarded area is heated up, they take out all the firebrands and coals; then the area is swept clean with a broom and the bread is placed there. On top of the posts or rocks, along both sides of the boarded area, they place cross pieces, and on top of those they lay glowing coals so that the bread will be cooked through.

They do nothing on feast days; they neither hunt nor do any other work, except for those who are sent to pick up and distribute provisions; such men never stop to rest.

When they return to their winter quarters, the men remain there until all the other bands have come in; then the leaders of each group give an accounting to the head chief of all the sable and other animals they have killed. They also tell him of each infraction of his orders that has occurred in each band. After the offender is questioned, he is punished according to the gravity of his offense. Certain offenders are tied to a post, and while the other hunters are eating, the offenders must bow to them, declare their misdeeds, and ask pardon. Others are punished by being given no food but the dregs of kvas. Anyone who is convicted of theft is soundly beaten; and rather than giving a thief his share of the goods, his own things are divided up among the men, for they believe that the thievery has been injurious to the hunt and that had it not taken place, they would have taken a much larger number of sable.

They live in their winter quarters until the rivers are navigable; while they wait for this, they prepare the pelts of the sable they have trapped.

When the rivers are navigable, they re-embark on the same boats they used before; they give over the sable which had been promised to the churches or to God; others are sent to the Imperial Treasury; the rest are sold. The money from the sale of the sable pelts is divided equally among them; and each man received the money from the sale of any other animals he has trapped, such as squirrel, ermine, bear and fox.

When other persons hunt sable, it is a little different from the Russian way: less preparation is required, but there are still many superstitions attached to the practice.

The reindeer Tungus hunt sable with their entire family. The Yakuts send out only the men on the hunt; the women remain home in the iurts with the children. There are rarely more than six men in each band. Each group chooses its own leader, to whom they pledge complete obedience. The wealthy Yakuts do not personally go out to hunt; they hire mercenaries, whom they furnish with clothing, food, and horses; they also pay their iasak, and take in their women during their absence.

When a man makes his own preparations for going on a hunt, he sacrifices a one or two year old cow with certain superstitious ceremonies. At this time a shaman goes to the foot of a nearby tree and cuts the image of a human figure, which resembles their major idol whose name is Baibaiania, who rules over the animals and the forests. After the cow has been killed, the shaman smears the figure with the blood of the victim and makes the wish that the hunters may see each day of their season as sanguine as the image of the idol, which is then completely covered with blood. At the same time this sacrifice is made the shaman also invokes other idols who are believed to watch over the safety of men, so that they will protect and take care of the hunters as well as their families who remain at home. He also abjures the evil spirit who carries off small children to do no harm to those who have been left at home. So that their entreaties may be more favorably received, they present a bit of the sacrificed cow to the idols, and to the evil spirit as well. In order to know in advance how successful the hunt will be, they toss in front of the idol Baibaiania a large spoon, like the ones they use to eat with; if the spoon falls so that the side one eats from is uppermost,

they regard that as a sign that the hunt will be fortuitous; if it falls the opposite way, this is considered a bad omen. After these preparations, all the bands leave on horseback together to go off on the hunt, and each person leads two or three relay horses loaded with provisions, which consist of beef and butter.

On the first day of the trip, they make every possible effort to kill several animals or birds. If they have the desired success, they consider this as a very happy prognosis for the hunt. They cache supplies from place to place along the route, perhaps a week or ten days distance apart, so they will have enough to live on as they return.

When they reach their appointed sable hunting grounds, which is not until November since they travel slowly in order to hunt along the way and add to their food supply, they also kill all their horses for meat during the hunting season. They separate into pairs at the halting point, and all around the area they place traps and bows which are self-shooting; they watch these very carefully. If it happens that sable or other animals turn aside from a trap or a bow, they move them, and put them on the animal's tracks.

The traps which the Yakuts use in hunting are quite similar to those Russian hunters use. In addition to the traps and the bows which are self-shooting, the Yakuts follow the example of the Russians and use clubs and arrows to kill sable in trees, or to kill them when they leave their burrows. They do not use nets; for this reason, when they find that a series of sable tracks disappears into a burrow, they smoke the openings of all the nearby burrows. The smoke forces the sable to leave his den, and then the hunters kill it with arrows, or set their

dogs on it.

They hunt for a three-month period, setting out in all directions from the stopping place where they will all return eventually. They all leave together around the first of March, either on foot or in boats, and return in April. They pick up all their furs, and divide them equally among themselves.



## CHAPTER XIII

### MARINE ANIMALS

The term marine animals refers to such animals as are considered amphibious in Latin, for although they spend most of the time in water, they do sometimes come out onto land, and bear their young on land; whereas whales, porpoise and other such animals which are never seen on shore will not be discussed in this study, although some persons do consider them marine animals. These will be mentioned in a following chapter, which will be devoted to fish. All naturalists now agree that the whale is not a marine animal, but a true fish.

These marine animals can be divided into three separate classes. In the first are included all those which live only in fresh water, that is, in rivers and lakes, such as the otter. In the second group, those which live both in rivers and in the sea, such as seals. And in the third class, those which do not live in fresh water at all, such as sea otter, fur seal, sea lions, etc.

Although there are boundless numbers of otter in Kamchatka, their pelts are never cheap; even a mediocre one costs one ruble. They are generally taken with dogs, during a blizzard when they go far away from the rivers and wander in the forests.

Their pelts are used to ornament clothing, but even more to preserve sable skins, since otter pelts do not change color. It has been observed that sable pelts

keep much better when they are wrapped up in otter pelts.

There are many seals in the seas around Kamchatka, especially at the time the fish start to go upriver. At such times the seals follow the schools of fish in groups, not stopping at the river estuaries, but going far upstream in such numbers that there is not a single small island near the sea whose shores are not covered with these animals. The result is that one can not approach such places in native boats without great danger, for when the seals see a boat, they dive into the water with such impulsiveness that they make huge waves, and it is almost impossible for a boat to avoid being overturned. Nothing is more unpleasant to someone who is not accustomed to it than the bellowing of these animals; it is continuous and quite extraordinary.

Four species of this animal have been noted. The largest, which the natives call lakhtak, inhabit the Sea of Okhotsk and the Bering Sea, and are found from 56° to 64° latitude; it is different from the other species only in its size, which equals that of the largest bull. The second kind is the size of a one-year-old bull; these seals are various colors, their fur being like a tiger skin; the back has round spots of uniform size and the underside is a yellowish-white; all the young are as white as snow. The third species, smaller than the others, has rather yellow fur, with a great round cherry-colored mark which takes up almost half the surface; this species is found in the Bering Sea. They have never been seen in the Sea of Okhotsk. The fourth variety is found in large lakes such as Baikal and Oron. These latter are the same size as the ones at Arkhangel; they have whitish fur.

All these animals are very hardy. I personally saw one which had been hooked in the Bolshaia estuary hurl itself with fury and frenzy on our men, although its skull had already been fractured in several places. I also observed that when it was pulled out of the water up on the river bank, it tried desperately to escape into the river; when it realized this was not possible, it began to wail; and when the men began to club it, it went into a great rage.

Seals never go more than thirty miles from the coast, so when sailors see them, they realize they are near land. According to Steller a seal was found in Kamchatka which had been wounded on Bering Island, which indicates the distance between this island and Kamchatka.

These animals live in the sea, near gulfs and rivers which are large and full of fish. They will go as far as eighty versts upriver to follow fish. They mate on the ice in springtime, in the month of April, and sometimes they also mate either on land or in the sea when the weather is calm; they mate in the same way as humans do, not as dogs do, which many writers have supposed. The females generally give birth to only one offspring at a time, and they suckle it with both udders. The Tungus give their own infants milk from this animal in place of medicine. The cry of the old seal is similar to the noise a person makes who is retching. The young ones groan like men who are suffering and grumbling. At low tide they stay on dry land on the rocks and play at pushing each other into the water. When they are angry they bite each other cruelly. They are sly, timid and quite agile, considering the way their bodies are proportioned. They sleep very soundly and when they are awakened by a man they are very frightened.

When they try to flee from something, they regurgitate in front of themselves to make the path more slippery. They spit up sea water, not a whey matter, as some persons have supposed, who have prescribed this as a medicine. The only way they can move about on land is to cling to something with their forefeet and hoop their bodies forward. They climb rocks in this same way.

There are various methods of capturing seals. 1. In rivers and lakes they are killed with firearms, but they must be hit in the head, for twenty shots would have no effect in any other part of the body, because the ball would spend itself in the animal's fat. I cannot quite believe the story I have several times been told, that when a seal is wounded in its blubber, it experiences a certain pleasurable feeling. 2. They can be taken by surprise while they are asleep on the seashore or on certain islands, and can be clubbed to death. 3. They can be harpooned on the ice when they come out of the water, or when they sleep with their muzzles against the ice and the heat of their breath melts the ice in places. Hunters use this melted opening to kill the animal with their harpoons. A long thong is attached to the harpoon, by means of which the animal is recovered, after the hunter makes a large enough opening in the ice. 4. The Kuriles kill these animals from their baidars when the seals are asleep on the surface of the sea, but they choose calm weather for this. 5. The Kamchadals also harpoon them. They approach very quietly downwind, wrapped in sealskins. They also kill seals when they swim near shore. 6. When the seals take their young out on the ice, the hunters spread a piece of white cloth over the front of a small sled, and push it gradually in front of themselves and separate the beasts from

their holes so that they cannot escape; then all at once the hunters throw themselves on the animals and easily club them to death. 7. In the area around the Kamchatka River, which is more than sixty versts north of the mouth of the Bolshaia and empties into the Sea of Okhotsk, the natives take seal in a way that is both unusual and clever. Fifty or more of them gather together, and when they see a great many seals going upriver, they stretch very strong nets across the river in two, three, or four places. Some of the men, armed with spears and clubs, wait in canoes at each net, and others stay on the river to frighten the seals with loud cries and chase them into the nets. As soon as the seals become entangled in the nets, some of the men club them, and others haul them up on shore. Sometimes as many as one hundred seals will be taken at one time by this method. The animals are then divided equally among the men. The natives who live on the banks of this river furnish blubber from these animals to Bolsheretsk ostrog every year. It is used for lighting and for other purposes. It has been observed that the third and the sixth methods are practiced only on Lake Baikal, and are not used at all on the banks of the Kamchatka River.

Sealskins in Kamchatka are not as expensive as it might seem they should be, considering how widely they are used in this country. The largest pelts are used to make the soles of shoes. The Koriaks, the Oliutors and the Chukchi use them to make canoes and baidars of various sizes, one of which can hold thirty men. Such baidars have an advantage over wooden boats in that they are both lighter and faster.

All over Kamchatka both the Russians and the Kamchadals make candles from their fat. The blubber is also considered such a delicate food that the Kamchadals cannot do without it at their festivals. They eat the meat cooked and dried in the sun. Sometimes when they have a surplus of it, they prepare it and then smoke it in the following manner.

First of all they dig a pit of a size in proportion to the amount of meat or fat they have. They spread stones over the bottom, and then fill it with wood and start a fire on top. They heat up the pit until it is as hot as an oven. Then they heap up all the coals in one pile, spread green alder wood over the bottom of the pit to make a bed, on which they place the blubber and the meat separately, and spread alder branches over each layer. When the pit is finally filled, they cover it with turf and dirt, so that the steam cannot escape. After several hours they take out the meat and the fat, and save it for winter. This method of preparation makes the seal meat and fat better tasting and more delicate than if it had been boiled, and it will keep an entire year without spoiling.

After the meat has been taken from the heads of the seals they have a celebration, and behaving as if they were hosts and very intimate friends, they hold the following ceremonies, which I had an opportunity to see during 1740 in the small ostrog Kakeich, situated on the small river of the same name, which empties into the Bering Sea. First of all they brought in a vessel shaped like a small boat which held the seal heads crowned with tonshich and sweet grass, and put the whole thing down on the ground. Then a Kamchadal entered the iurt carrying a bag woven of grass in which there was some tonshich, sweet grass

and bits of birch bark; this he placed beside the heads. Meanwhile two men rolled a large stone toward the wall which stands in front of the entrance to the iurt and covered it with small pebbles while two other took the sweet grass which had been brought in the bag and made small bunches of it. The great stone signified the seacoast, and the small pebbles were waves; the sweet grass, tied into small packets, represented the seals. Then they brought in three containers of tolkusha<sup>1</sup>. They made small pellets of it, in the middle of which they placed the grasses representing the seals. From the birch bark they made a boat-shaped vessel, filled it with tolkusha, and covered it with the bag of grass. After some little time the Kamchadals who had placed the bundles of grass representing the seals into the tolkusha took the pellets and the canoe vessel and pulled them across the sand, as if they were on the sea, to show the other seals how pleasant it is to come to the Kamchadals, since they have a sea in their cabins. They maintained that this would persuade the seals to allow themselves to be captured in great numbers.

After the bunches of sarana which represented the seals had been pulled across this imaginary sea for several minutes, they were returned to their former place, and then taken out of the iurt. An old man followed them; he took a small container of tolkusha out of the iurt, left it in the wall outside, and returned. The others shouted four times the word lyngulkh, but I do not know precisely what this word means nor why they shouted so loudly. The only thing

<sup>1</sup>A kind of minced meat made with fish roe, kiprei, and cowberries mixed with seal fat. --French edition.

I was told was that they had observed this ceremony for a very long time .

This done, they came back into the iurt and for the second time pulled the make-believe seals over the sea of sand, as if they were being buffeted and tossed on the waves . Then they left the iurt and shouted kuneushit alulaik, which means, "May the wind of good fortune which brings us the seals blow on the coast;" for when the winds rise offshore, this is generally a time when the best hunting of marine animals occurs .

When they had re-entered the iurt, they pulled their seals, or rather, the grasses which represented them, over what they called the sea; and then they placed in a bag the heads or the jawbones of these animals . All the fishermen present put a bit of sweet grass on these heads, each spoke his name, and complained that the seals had not come in large enough numbers to these people who entertained them so well and were lavish with presents to all those who did come .

After this they provided their traveling guests with what they supposed to be all necessary provisions, and carried them over to the ladder . An old man placed more tolkusha over them, in the bag, and begged them to take it to any of their ancestors who had been drowned in the sea, whose names they bore . Afterward, two Kamchadals who had played major roles in the festival began to divide up the pellets of tolkusha with the grass seals, and gave two pellets to each fisherman . The latter took the pellets, climbed up on the iurt, and cried uenie, which means "you." This is how they call each other when they go on seal hunts . They came back in, took the sarana seals from the pellets of



tolkusha, threw them into the fire, ate the tolkusha, and begged the seals to come visit them more often, since they were tired of not seeing them. Meanwhile the cup of tolkusha which had been taken outdoors was brought in. The men extinguished the fire, divided the tolkusha, and ate it. Finally, one Kamchadal took the bag which had held the seal heads, put the little birchbark boat inside, and put in with it a glowing coal. He went out, threw away the bag, and brought back only the coal, because this is the symbol of the torch with which one accompanies guests at night, which is brought back to the house. After they had escorted their guests, they ate the fish, the tolkusha and the berries, as if these were the leftovers from a meal which they had just served to real guests.

Walrus are rarely seen near Kamchatka, and only in northern areas. Most are taken near Cape Chukotsk, where these animals are larger and more numerous than in any other place. The price their teeth will fetch depends on the size and the weight. The most expensive are the ones which weigh about eighteen pounds, so that two of them weigh one pud; these are very rare, however. It is even rare to find any which weigh three to a pud, that is, twelve pounds each. Common teeth are those weighing five or six pounds, so that it takes five, or even from six to eight, to equal one pud. Smaller ones are seldom sold. The merchandise is graded according to the number of teeth in one pud, and they are sold as "eight to a pud," or five, or four, etc. The outer covering of the walrustusk is called bolon in Siberia, and the inner core is referred to as shadra. The pelt, the meat and the fat are all used in the same way as are seals. The Koriaks make a kind of cuirass from walrus; I saw an example of one in the

collections of the Kunstkamera. I will explain how it is used in a subsequent chapter on native armor.

Sea lions<sup>2</sup> and fur seals differ very slightly in their external appearance from seals and walrus, and can be considered to belong to the same species. Some persons call sea lions sea horses, since they have a mane. Their bodies are similar to seals' bodies, but they are larger than walrus. They weigh from thirty-five to forty puds. They have a bare neck, with a small mane of rough and shaggy fur. The rest of their fur is brown, the head is medium-size, they have short ears; the end of the muzzle is likewise short and upturned, like a mastiff. Their tusks are very large. They have very short fins in place of feet. They usually stay near rocks in the ocean; they climb up high on the rocks, where they can be seen lying about in great numbers. Their roar is both extraordinary and frightening, much louder than that of seals; and this is very helpful for sailors, because when there is a mist or a dense fog, the sound serves as a signal which keeps the ships from running aground on the islands and reefs where these animals take shelter.

This animal has a frightening appearance, seems hardy, is stronger and larger than a fur seal, has a more powerfully built body, and when it faces danger can summon up a fury equal to that of a lion; however, it is so timid that it will quickly flee into the ocean the minute it sees a man. If it is awakened by a blow or a shout, it becomes so alarmed that as it tries to flee, it stumbles at

<sup>2</sup>Leo marinus. Steller.

every step, breathing in great sobs, because its trembling limbs will not obey. But when it sees that there is no possible means of escape left, it will turn on anyone who stands in its way with great courage, shake its head, become quite ferocious and make such frightful bellowing sounds that no matter how intrepid a person may be, he must run for his life. This is the reason that the Kamchadals never trap them at sea, for they know the sea lion will turn over their boats along with all the men inside, and they will perish. They are also afraid to attack them on land, and usually kill them only if they can take them by surprise, or profit from an instant when they find them sleeping. The only ones who dare go near them are hunters who have great confidence in their own strength and ability, and even these use great caution, and always approach against the wind. They harpoon them in the chest just below the front fins. The harpoon is attached to a long rope made of sea lion hide, and is held by other fishermen, after it has been wounded several times around a stake in order to secure it. When the wounded animal takes flight, it is attacked with new harpoons. While it is still far off, they shoot arrows at it, and when at last it is at bay and has lost its strength, it is killed with spears or with clubs. When fishermen find one asleep on the sea, they use poisoned arrows, and then beat a hasty retreat. The sea lion cannot bear the pain caused by the salt water entering the wound, and moves up on shore. The men either kill it there, or in case the terrain will not admit of this, they let it die of its wound, which happens within twenty-four hours.

The sea lion hunt is so honored by these natives that the person who kills the most is considered a hero. For this reason a number of Kamchadals perform

this work in spite of all the attendant dangers, both to procure sea lion meat, which they consider very delicious, and to gain glory. Two or three sea lions weigh down their canoes so much that they are almost entirely sunk into the water; but when the weather is calm, they are so skillful that they never sink, although the water is sometimes right up to the edge of their boats.

They consider it dishonorable to throw any animals they have taken back into the sea, no matter how great a danger they may be in. This means that in a heavy sea these fishermen are often swamped in the water, and when their strength is exhausted, they can no longer bail out the water from their boats. They go off on this kind of fishing in miserable baidars, as far as thirty or forty versts, to a deserted island called Alaide. Frequently, blown off course by bad weather, they will drift for three, four, or even eight days without a compass, suffering all the distress of hunger, without seeing land or even an island. In spite of this they manage to survive these dangers and return, with no other guide but the moon and the sun.

Both the fat and the meat of the sea lion are very good, particularly the fins, which taste somewhat like glazed meat. Their blubber is not as oily as that of whales and seals; it is firm, and resembles that of the fur seal, both in odor and taste. The fat of young sea lions, in the opinion of some, tastes more like mutton, and has some similarity to marrow. Others disagree, and feel that both the meat and the fat of all sea animals has an unpleasant odor. The hide is used to make thongs, soles, and footwear.

Each male has two, three, or even as many as four females. They mate

in August and September, as do fur seals. The gestation period is about nine months, and the young are born around the first part of July. The males are always very gentle with the females, and never are as rough with them as fur seals are with their mates. The males exhibit extreme pleasure when the females caress them; they will do anything to please the females and gain their affection, they stroke them and gyrate around them. The males and females are so careless with their young that they often smother them while they are sleeping or sucking. They experience not the least bit of grief at seeing them die. The young are not so gay and lively as those of fur seals; they sleep most of the time. Even when they play by scrambling over each other, they seem to do this without pleasure. In the evening, the males and the females with their young go into the sea and swim tranquilly without going far from shore. When the little ones become tired, they climb up on their mothers' backs and rest. She then dives into the water, and tosses the lazy little one into the water below her to teach it to swim. They have had the experience of being thrown into the water, but instead of swimming, they founder about in their haste to reach shore. Young sea lions are twice as big as young fur seals.

Although these animals are very much afraid of men, they become less timid, particularly during the period when their young are still swimming badly. Steller stayed six days on a rock to watch them. From his shelter he saw all their comings and goings.

These animals were calm near him; they observed his actions, and watched him without running away, although often he walked into their midst, took their

young away from them, and even killed them in order to make a description of them. They remained calm, and did not attack him; they concerned themselves only with mating, quarreling over the land, and battling over the females. One of them fought for three days for a female, and had more than one hundred wounds.

Fur seals, rather than becoming involved in these combats, try to move out of the way and readily yield their position. They do not prevent the baby sea lions from playing with them, but they do not dare make any resistance to the fathers and avoid them as much as possible. The sea lions, on the other hand, enjoy mixing with the fur seals very much. The oldest ones have grey heads, obviously are very old. They scratch their heads and ears with their paws or hind fins, as fur seals do. They rear upright, swim, sleep, and move in the same way. The big ones bellow like bulls, and the little ones bleat like lambs. The old ones have a strong odor, which is, however, not as unpleasant as the odor of fur seals. In winter, spring and summer, they do not inhabit any places other than their own grounds, such as Bering Island, rocky places, and certain steep areas. For the most part, they go in company with fur seals. They are seen in great numbers around the coast of America, and there are always some around Kamchatka, but they never go beyond 56° latitude.

The principal area for hunting these animals is around Cape Kronotsk, the Ostronovaia River and Avacha Bay. They are also found around the Kurile Islands, and nearly always as far as Matmai. Captain Spangberg on his marine chart indicated a certain island which he called "Palace of Sea Lions," because

of the quantity of these animals and also because the island is edged with very steep rocks which resemble a castle. They are never seen in the Sea of Okhotsk.

They return to Bering Island in June, July and August to rest, bear their young and raise them, and to mate. After this, they can be found in greater numbers around Kamchatka than near America. They live on fish, and possibly on seals and sea otter and other animals. In June and July the old ones eat little or nothing; they do nothing but rest and sleep, and thus become extremely thin.

Fur seals<sup>3</sup> are half the size of sea lions. The shape of their body is similar to that of the seal, only the chest is larger and heavier, and they are shorter toward the tail. They have a long snout, their teeth are larger, their eyes are on the surface of their heads, like cows; they have short ears, their paws or fins are black and hairless; they have blackish fur mottled with gray, and the fur is short and breaks easily; the young have bluish fur.

They are taken in spring and in the month of September around the Zhupanova River, when they move from the Kurile Islands toward the coast of America, but only in small numbers. The catch is much better around Cape Kronotsk, because the sea between this cape and Cape Shipunsk is much calmer, there are more bays for them to withdraw into, and they stay in this area for a long period of time to give birth to their young. Indeed, all the females which are caught in spring are pregnant and ready to give birth. The mothers are cut

<sup>3</sup>Ursus marinus. Steller.

Callorhinus ursinus. Linnaeus. --L.B.

open and the unborn baby sea cat is taken and skinned.<sup>4</sup> From the beginning of June to the end of August, they are not seen at all; this is the time when they take their young and go back to the south. The natives who hunt them find it very difficult to understand where the sea cats come from in spring, and where they go in such large groups when they are fat and the females are parturient. They do not understand why in autumn they are so thin and feeble. This leads them to believe that the animals which arrive from the south so plump and return to the same place in spring, must not come from far away, for if they did, they would not be so fat, for the fatigue of a long voyage would make them thin. They do not know where the animals come from, or where is it they return to. From the fact that they both come and go from Cape Kronotsk and the estuary of the Kamchatka River, the natives have concluded that opposite the Kamchatka River and Cape Kronotsk there must be either islands or the mainland a short distance away.

These animals move from one place to another, as certain birds of passage do, such as geese, swans and other sea birds; and as salmon do in the fish world; and as certain land animals do, namely the arctic fox, hare, and Kamchatkan rats. Arctic fox move about because of a lack of food such as birds, or to give birth, or because they are shedding; their vulnerable condition and the fact that it is impossible for them at such times to defend themselves against their enemies are the reasons why they choose the remotest possible places. Fish

<sup>4</sup> In trade these are known as viuporotski. --French edition.



move to new places to lay their eggs and look for deeper lakes and bays. Fur seals move onto the numerous deserted islands which are to be found between Asia and America, from 50° to 56°; the principal reason is so that the females may give birth. Then they may rest there to recover their strength so they can feed the young for three months, so they will be in condition by autumn to follow the mothers when they return. They suckle their offspring for two months. They have two udders between their hind fins or paws, similar in shape to those of sea otter. They have just one infant at a time; only rarely do they have two. They cut the umbilical cord with their teeth, as dogs do, and eat the placenta greedily. The young come into the world with eyes open; their eyes are as large as those of a young calf. They have thirty-two teeth when they are born. These animals have two tusks on each side, but they do not show until the fourth day. When they are born, they are dark blue-black, almost the color of the neck of a peacock. In four or five days they begin to become chestnut brown between the hind feet, and after a month the belly and flanks turn black. The males are much heavier and darker when they are born, and they continue to be darker than the females, who turn almost gray as they grow, with several brown spots between the front paws. The females are so different from the males in size, shape and strength that a poorly informed observer, who did not examine them carefully, might think they were of different species. Also, the females are very shy and have none of the ferocity of the males. They have great tenderness for their young. The males stay together in a group with their young on the shore, where they almost always go to sleep. The young, a short time after their birth,

begin to play various games; they climb over each other, hit each other, and when one of them knocks over another, the male who is there rushes up, murmuring, separates them, and licks the victor. He tries to upset him with his muzzle; he is much more affectionate toward a young one who resists courageously, and applauds joyously, so to speak, to have a son worthy of himself. He punishes the lazy ones and the clumsy ones. So it happens that some always stay near the male, and others near the female.

Each male has from eight to fifteen or even as many as fifty females. He guards them jealously, and if a fur seal so much as approaches the female to caress her, he flies into a great rage on the spot. Although there are several thousand of these animals on the same shore, nonetheless each male has his own distinct family: that is, his females, his young, both male and female, along with the young one-year-old fur seals who do not yet have a female; thus one family might have as many as 120 of these animals. They also swim at sea in large groups. All the ones who have their own females are still strong and vigorous, but the old ones live alone and spend their time sleeping, without taking any nourishment.

The first ones that our men saw on Bering Island were the old males, extremely fat and ill-smelling. These old animals are very fierce. They stay in the same place for an entire month without eating or drinking anything. They sleep all the while, and lunge with astonishing ferocity at anything that passes in front of them. They are so obstinate and bullheaded that they would rather be killed than give up their places; thus the minute they see anyone approach, rather

than allowing him to go by unmolested, some of them rush up to attack the person while others stand by, ready to take up the battle. When it is absolutely necessary to go in front of them, one must be prepared to give battle. If someone throws a rock at one of them, he will grab it as if it were a dog, shake it in a great rage, and utter frightful bellows as he hurls himself on the person who threw it. In vain does one shatter their teeth or put out their eyes; they will not move from their position because of such an injury. Indeed, they would not dare move, for if they retreated a single step, the animals who were only spectators of the combat would attack and tear the retreator from limb to limb. If it happens that one of these animals moves back, immediately the others move forward to prevent his escape. Then an absurd thing happens; each of these animals thinks the one next to him is trying to get away, and starts to attack him. These duels become so widespread that over the space of a whole verst or more one sees bloody combats on every side, and nothing but horrible bellows can be heard. While they are busy fighting each other, one can walk among them without fear. If two of these animals attack a single one, the others will come to the aid of the weaker one, as if they were indignant over an unequal fight. Sea cats who swim on the sea at this time raise their heads above the water so they can see the outcome of the battle; then in turn they become enraged, make for shore, and go to add to the number of the combatants.

Steller, who had a Cossack with him, attacked a sea cat; he put out its eyes, set it free, and then infuriated four or five of these animals by hurling rocks at them. When the sea cats began to pursue him, he took refuge beside

the one he had blinded. This latter one heard the cries of his companions, and not knowing whether they were simply sunning, or were in pursuit of another one, attacked them. Meanwhile Steller chose an elevated place to sit, and observed a battle which lasted for several hours. The blind one attacked all the others, without even realizing which ones were defending him, at which point all the others joined forces against him as their common enemy. He could find safety neither on land or sea. They would pull him out of the water when he plunged in, and they mistreated him so grievously that he became totally exhausted. At last his strength failed, he fell to the ground, and expired, heaving great sobbing groans. His corpse immediately fell prey to the arctic fox, who tore the still quivering body from limb to limb.

When only two are engaged in combat, the battle sometimes lasts an entire hour. When they become exhausted, they rest, lying down side by side; then they suddenly arise, like duelists, and begin fighting again without budging from the positions they have chosen. They fight with their heads, raised upright, trying to avoid the other's blows. When both combatants are equally strong, they use only their fore paws, but when one begins to weaken, the other seizes his rival in his teeth, and throws him down on the sand. The spectators then rush to the aid of the victim, like mediators. The wounds from biting are as deep as any that might be made with a saber. Near the end of July, there is scarcely one of these animals which is not covered with wounds. The first thing they do after fighting is to go into the water and wash their bodies.

They generally fight for any one of several reasons. The major fights,

and the bloodiest, are for possession of the females, either when one male steals another's female, or wants to ravish the young females from another's family. The females who are present at the combat are always on the side of the victor. The males also fight if one takes another's place, or when one male, pretending he is moving about because he hasn't enough room, approaches a female belonging to another male for the purpose of caressing her. These caresses make the true possessor of the female very jealous. Lastly, the third reason for fighting occurs when certain ones move in to act as mediators by separating battling comrades.

These animals are extremely gentle with their young. The females are very much afraid of the males, who are so harsh that they tyrannically punish them over the smallest trifling circumstance. If, when anyone attempts to take a baby away from its mother, she does not carry it away in her mouth, the male fur seal leaves the abductor and hurls himself on the female. He seizes her in his teeth and throws her down on the ground several times, beating her against the rocks, until she is senseless and is lying on the ground as if she were dead. As soon as she regains her senses, she goes up to him, licks his feet, and lets great tears fall on her breast. Meanwhile the male goes to and fro, constantly gnashing his teeth, and rolling his eyes which are blood-red. He shakes his head like a bear. Finally, when he realizes that his young has been taken away, he himself begins to weep so copiously that his chest is bathed in his tears. These animals also cry when they are badly wounded, or when they are angered and are preparing to avenge themselves.

Another reason for the springtime retreat of the fur seal to the east and to deserted islands is very probably that by sleeping and resting and fasting for three months, they hope to get rid of all the fat they have put on, as bears do, who spend the entire winter without eating. Actually, during the months of June, July and August, the old sea cats do nothing but sleep on the shore, or rest lying down, motionless as stones. They watch each other and bellow. They yawn and stretch, but neither eat nor drink. The young ones, however, mate during the first days of July, particularly in the evening. An hour before they copulate, both the male and the female go into the sea and swim quietly together; they return to shore and then mate at the tide line. They are so little on guard that they will not see anyone approach unless one strikes them.

This animal has various tones to its cry. When it is lying on shore or when it is at play, it bellows like a cow; when it fights, it bellows like a bear; when it conquers an enemy, it sounds like a cricket; when it is overcome or wounded by an enemy, it cries like a cat or like a sea otter. When it comes out of the water, it usually shakes itself and rubs its chest with its hind paws to dry off its fur. The male nuzzles the female's nose as if they were kissing. During the hottest part of the day, it waves its front paws to and fro, just as dogs wag their tails when they lick their masters. Sometimes they sleep on their backs, sometimes on their stomachs, like dogs. Sometimes they curl up in a ball; at other times they stretch out with their paws under one side.

No matter how soundly they sleep, or how quietly one may creep up, they

waken instantly. Whether it is their sense of hearing or of smell which alerts them remains to be discovered. The old fur seals, or those which have reached full growth, rather than flee at the sight of a single man will prepare to fight; however, if one whistles, they will go away, even if there is a group of them. The same thing happens if they are suddenly attacked with a great deal of commotion; they will dive into the water, swim away, and look in amazement at the ones who took them by surprise who are now moving about on shore. They swim so fast that they can easily travel more than ten versts an hour. When they are harpooned, they drag the boat full of fishermen through the water so rapidly it seems the boat is flying, rather than forging through the waves. It frequently happens that they tip over, and that the men in the boat drown, particularly if the man at the rudder is not sufficiently experienced and quick enough to steer the boat on the same course as the animal.

These animals swim on their backs, so that their hind paws can be seen from time to time, but never the front ones. Since they have a special opening called the foramen ovale, they can remain under water for a long time; when their strength begins to give out, they raise themselves out of the water a little in order to take a breath. When they swim at play near shore, they swim either on their backs or on their bellies; they swim so close to the surface of the water, that one can always see where they are swimming; often they do not even move their hind paws in this position. When they leave the shore to go into the water, or when they dive back in after they have come up for air, they somersault like all large marine animals such as otter, sea lions, whales, and the grampus.

They crawl on the rocks like seals; they cling with their fore paws, and hunch up their bodies and lower their heads, so they can pull themselves along with greater ease. These animals, particularly the females, swim so rapidly that I do not believe any man, even the swiftest runner, could go so fast. If they could run as fast as they swim, they would kill many persons; even so, it is always dangerous to fight with them on a level place, because it is very difficult to get away from them; one can only get out of danger by climbing up on some high place where they can only crawl up slowly.

There are so many of these animals on Bering Island that the shores are covered with them. To avoid them, one must frequently abandon the most convenient path and go across rocks or other difficult places.

Sea otter are much afraid of them; they are rarely seen together, and the same is true of seals. Sea lions, on the other hand, will willingly move as a group into the midst of fur seals, who in this case are the ones who have something to fear. Sea lions always take over the best places, and fur seals rarely dispute out of fear of their cruel mediators. It has been observed that sea lions take advantage of such occasions to attack them. Fur seals do not even dare prevent their females from playing with sea lions.

It should be remarked that fur seals are not found all over Bering Island, as are sea cows, sea otter, seals and sea lions; they are only found near the southern coast of this island, which is the side opposite Kamchatka. The reason for this is that this is the first land they come to after they leave Cape Kronotsk and move east. The only ones to be seen on the northern coast of this island are



the ones who have strayed away.

Following is a description of how the fur seals who spend the winter on Bering Island are trapped. First their eyes are put out by being struck with rocks, and then they are beaten with great clubs. But these animals are so tough that two or three men have a hard time killing them even after delivering more than two hundred blows to their heads with huge clubs. The men have to stop to get their breath two or three different times. Even though the animal's teeth are broken and their brains are nearly beaten from their heads, they still stand on their hind feet and defend themselves. One man wanted to find out how great their endurance was, and left one animal in such a condition; it lived more than two weeks, during which time it remained in one place like a statue.

These animals are rarely seen along the coasts of Kamchatka, so that they must be taken at sea with large baidars. The instrument used is a harpoon, and is similar to a small spear; it is affixed to the end of a long pole so it can be used like a dart or a javelin when one draws near the animal. But the iron part of the harpoon is not permanently attached to the sleeve, and remains in the body of the animal, the wooden handle easily slipping out. A long rope is attached to the harpoon and is used to pull the wounded beast back to the canoe. One must be very careful, however, that the animal does not grab the end of the baidar with his fore paws and tip it over. In order to prevent such an accident, some fishermen stand ready with hatchets to chop off the animal's front flippers if it tries to grab the boat. At the same time the men will beat the animal on the head and on the paws with clubs. When it is dead, the men pull it into the boat. They

only hunt the females and the young animals. Not only are they afraid to attack the large males and the old ones, but they are very careful to stay out of their way when they see them. Many of these animals die of old age, but most lose their lives in battle with each other, so that in some places the whole coast will be covered with bones, as if there had been huge battles there.

Sea beavers or sea otter<sup>5</sup> have no resemblance to land beavers; they have only been given this name because their fur has some similarity to true beavers, and the quality of the down is equally fine. They are as large as fur seals. Their body is similar to that of the seal. They have an almost bear-like head. Their front paws are similar to the paws of land animals and their hind ones are actually a kind of flipper. Their teeth are small, and they have a short flat tail which is pointed at the end. Their fur, which is at first as black as tar, and very bushy, becomes gray when they are older. The young ones have long brown fur which is extremely soft. Only the old males are called otter; the females are called matkas or mothers. Beavers who are one year old or less are referred to as koshloks; those which are young and do not yet have black fur are called medvedkams, or little bears.

The sea otter is the mildest of all marine animals. It never makes any resistance to hunters, and only saves itself by running away if it can. The females are very tender with their young; they carry the little ones who have not yet learned to swim on their chests; they enfold them in their front paws, which means the mothers must swim backward, until the little ones are strong enough to swim alone. When fishermen follow them in baidars, the mothers will

<sup>5</sup> Lutra marina.

never abandon their young to the hunters except as a last resort; and even after they have given them up, if the mothers hear the little ones cry, they immediately dash up and allow themselves to be taken as if they wished it. This is the reason why the hunters make every effort to take or kill the little ones, since they are certain that afterward it will not be difficult to take the mother.

There are three methods of taking them. 1. With nets which are spread among sea kale<sup>6</sup> in areas where a great deal of sea vegetation grows, and where sea otter remain at night and during violent storms. 2. Large baidars are used to hunt them in calm weather, and they are killed with harpoons in the same way as fur seals and sea lions. 3. They are also killed in springtime on the ice floes, when the strong west winds blow them toward the coast. This latter kind of hunt is a treasure-trove for the coast natives, especially when the ice is strong enough so that they can use skis on it. They go off eagerly, and kill a huge number of sea otter who move across the ice looking for fissures where they can dive into the water. It even happens sometimes that the sea otter mistake the noise of the wind in the woods for the sound of waves (so violent are the windstorms) and come right up to Kamchadal settlements, where they will fall into a iurt through the upper opening. However, the winds do not blow ice floes toward the coast in this way every year; when it happens, it is a good year. The Kamchadals, the Cossacks and the merchants all reap considerable profit from it. With these pelts the natives can purchase from the Cossacks everything they

<sup>6</sup>Fucus marinus. --French edition.

need, and the Cossacks trade them with the merchants for other goods, or for cash. The merchants take them, and make a good profit in their turn. The time when such a hunt occurs is the best time to levy iasak, for often the Kamchadals will give a sea otter pelt instead of a fox or a sable, although one is worth five times as much as the other. The truth is that each sea otter pelt will sell for ninety rubles, or even more along the China frontier. It is only recently that sea otter bring such an exorbitant price; formerly they would sell for only ten rubles in Iakutsk. They are not used in Russia, but the Moscow merchants will buy from the Siberian Prikaz any that are brought there, and then will send them to their agents on the China frontier. In spite of the great expense of transporting them, and any loss involved, considering the great distance from Moscow to the Chinese border, they manage to make a considerable profit. The Kuriles used to consider these animals as worth no more than seals and sea lions, until the Russians apprised them of their superior quality; even today they will willingly exchange a sea otter pelt for a dog skin, which is warmer and sheds water better.

There are still other animals in these seas, among which are the beluga, the sea cow, etc. Since the beluga is very common, it is unnecessary to describe it here. The sea cow does seem to merit a description, since many naturalists, including the famous Artedi<sup>7</sup> still cannot agree whether this creature should be

<sup>7</sup> Peter Artedi (1705-1735) developed the system of Ichthyology in 1738; his work was used by his friend and fellow-student, Linnaeus, as a basis for the generic names of fishes. --Ed.

classed as a fish or a marine animal. Some consider the sea cow a fish of the same species as the whale. Others place it in the ranks of the sea animals. Klein, the Secretary of the city of Danzig, and a member of the London Academy, agrees with the late Steller in his description of marine animals.

These opinions are based on equally plausible reasoning. The former maintain their position by stating that the manatee or sea cow has no feet, or at least that it is not a quadruped as seals, sea otter, fur seals and lions are; that it is hairless, and has a tail as other fish do. The other naturalists consider the fore paws or flippers of this animal as feet, and base their opinion on this, declaring that the animal does have feet and that moreover it gives birth to its young and nourishes them from its mammaries, and that the animal can be tamed.

The first opinion is reasonable because of the fish-like tail and the two fins; the second, because of the mammaries, which are not found in any species of fish.

In regard to the statements about the birth of manatees, this is not only true of whales, but also of several large fish, such as the akul<sup>8</sup>. According to these facts, this animal is mid-way between a marine animal and a fish. I place it with marine animals, however, and my opinion is based, apart from the above, on the fact that this animal has a kind of neck on which it can turn its head, which is not true of any fish.

This animal never comes out of the sea to go on land, as some suppose. It always stays in the sea. Its skin is black and as thick as the bark of an old

<sup>8</sup> Canis carcharias. --French edition.

oak; it is rough, coarse, hairless, and so strong and tough that it is difficult to cut it with a hatchet. The head is small in proportion to the body; it is somewhat elongated, and is pointed from the top to the muzzle, which is so upturned that the mouth appears to be underneath. The snout is white and very tough, with white moustache whiskers up to five vershoks long. It has an average-size mouth, and there are no teeth; rather, there are two white bones, of unequal size, and rough; and is in the upper jaw, and the other in the lower. The nostrils are near the tip of the muzzle; they are more than one vershok long, and equally wide. They are double, and are coarse and hairy inside. The eyes of the manatee are black and are placed precisely in the middle of the space between the ears and the snout, almost on a line with the nostrils. The eyes are scarcely any larger than those of a sheep, which is a fact that should be noted in so colossal an animal. Sea cows have no eyebrows nor eyelids, nor ears; in place of ears they have such tiny openings that it is difficult to see them. One can only make out the neck with difficulty, because the body does not seem to be separated from the head; however, as I have said, these animals have vertebrae which enable them to move their head. They can bend their heads the way cows do to graze. The body is round, like a seal's, but it narrows toward the head and the tail and is larger and wider in the middle. The tail is heavy and thick, slightly curved at the tip. It is somewhat similar to the vane of a whale or to the fins of fish. The manatee has two paws or flippers immediately below its neck; they are about three quarters of an arshin long and are used in swimming, moving, holding on to rocks, where it can cling so tightly that when one tries to pry it

off with hooks, its skin comes off in pieces. It has been observed that sometimes the paw or flippers are cleft at the tips, like the hoof of a cow, but this is not natural and only happens accidentally. The females have two mammaries on the chest, which does not occur in any other marine animal. The manatee is about four sazhen long, and weight approximately two hundred puds.

These animals travel in groups, and like to stay in bays where the sea is calm, especially around river estuaries. Although the sea cows always have their young swim ahead of them, they protect them from every side, and maneuver them so that they are always in the middle of the herd. At ebb tide they come so close to shore that one can kill them with clubs or harpoons, and in fact even touch them on the back, which Steller said he did. When they are tormented or struck, they rush back to the sea but come back before long. They live in groups and seldom go far from each other. Each group is made up of one male and one female, one of their offspring which is already partly grown and another which is still very small. This leads to the belief that each male has only one female. They generally give birth to the young in autumn. They seem to carry the young for more than a year, and give birth to only one at a time, which may be deduced from the small size of the hornlike tusks they have near the belly and from their mammaries, of which there are two.

It is most unusual that these animals have such a voracious appetite, for they eat continually; they never raise their heads out of water, and never take the least precaution for their safety, so that one can move into their midst in a canoe, walk over the sand, and pick out one and kill it.

This is the way in which they swim. They raise their snouts out of the water for four or five minutes, and snort like horses. Then they swim quietly, first with one foot in front, and then the other, like bulls or sheep in a pasture. The middle part of their body, that is, the back and the sides, are always out of water. Flocks of gulls alight on top of them in order to peck at the insects in their hide. One sees crows do the same thing on the backs of pigs and ewes.

Manatees eat all sorts of marine grasses indiscriminately, but preferably the following. 1. Sea kale<sup>9</sup>, which has leaves similar to those of Savoy cabbage. 2. Sea weed<sup>10</sup> which resembles Brussels sprouts. 3. Seaweed<sup>11</sup> which looks like leather straps. 4. Seaweed which resembles curly cabbage<sup>12</sup>.

After they have spent a day in one place, the shore will be covered with a vast amount of roots and stalks. When they are full, they turn over on their backs and go to sleep. At flow tide, they move back out to the sea, so they will not be stranded on shore. In winter, they are often crushed by the ice floes which the winds blow toward the shore. The same thing happens to them in violent storms when the waves toss them onto rocks. These animals are so thin in winter that one can count their ribs and vertebrae. They mate in springtime, especially in the evening when the weather is calm. Before coupling, they make various

<sup>9</sup>Fucus crispus brassicae Sabaudicae folio, cancellatus.

<sup>10</sup>Fucus clavae facie.

<sup>11</sup>Fucus seuticae antiquae Romanae facie.

<sup>12</sup>Fucus longissimus, ad nervum undulatus.



demonstrations of tenderness and affection. The female swims to and fro calmly, and the male follows her until she consents to satisfy his desire.

They are taken with great iron harpoons that look like the arms of a rather small anchor. A long heavy rope is attached to the harpoon. One very sturdy and vigorous man gets into a boat with three or four oarsmen. They pay out enough rope to reach into the herd of these animals when the harpoon is hurled. The harpooner stands in the prow of the boat and throws the harpoon at a sea cow. Some thirty men stand on shore holding the rope which is attached to the harpoon, and using this rope they pull the animal toward them. This is only accomplished with great difficulty, for the animal will hang on to anything it can with its paws. At the same time the men in the boat club it and stab it until its strength is completely exhausted.

Some persons have seen these animals cut up alive, and make no resistance except to flap their tails, heave great shuddering groans and sighs, and clutch something in the water with their front paws with such tenacity that the skin was shredded from the paws.

The old manatees are easier to take than the young ones, because the latter are much more agile. Moreover since the young ones do not have so tough a hide, the harpoon hook does not hold as well.

When the animal is wounded, it flops about in the water with great agitation; the others near by all move together to come help him. Some of them try to tip over the canoes with their backs. Others hurl themselves on the rope in order to break it. Still others try to pull the harpoon out of the body of the wounded

animal by using their tails; and sometimes they succeed in doing this.

The affection between the male and the female is quite remarkable. After the male has unsuccessfully tried everything in his power to rescue the female who has been dragged up on shore, he follows her, oblivious to the way the men club him; sometimes he even hurls himself toward her with the speed of an arrow, although she is already dead. The male may even remain atop the body of his mate for two or three days.

This animal does not actually bellow; it only sighs deeply. When it is wounded it utters great groans. Neither can it be stated with any certainty how acute is its sense of hearing and of sight, for it seems to make scarcely any use of these two senses. Perhaps these senses are lacking, or are poorly developed, since the animal always has its head in the water.

There are so many of these animals around Bering Island that they alone would provide sustenance for all the inhabitants of Kamchatka.

Although the meat of the manatee is very difficult to cook, it does have a very good flavor, and is quite similar to beef. The lard from the young ones is very much like that from pigs, and their meat is like veal, so much so that it would be difficult to tell the difference. The meat from the young ones is easily cooked; a fine broth is made from the juice. It expands so much when it is cooked that it is twice the size it was when raw. It is impossible to cook the fat near the head and the tail properly, but the meat from the belly, the neck, the back and the sides is very good. Some persons think the meat from this animal cannot be salted, but they are mistaken; it can easily be salted, and is no different from any

other salted meat.

Besides the marine animals I have just mentioned, Steller saw an extraordinary marine animal near America, one which he had not known until that time. He described it in the following way.

This animal is about two arshins long; its head resembles a dog's; its ears are erect and pointed; it has long hair, like a beard, on its lower and upper lips; its eyes are large; the shape of the body is round and rather elongated; it is somewhat heavier toward the head and a little thinner near the tail; it is completely covered with a very thick fur, gray on the back and white mixed with russet under the belly; but in the water the animal seems to have the coloring of a cow. The end of its tail, which is a kind of fin, is divided into two parts, the upper appearing longer than the other; Steller was very surprised, however, not to find either feet or flippers as in other animals.

Its exterior appearance is similar to an animal which Gesner<sup>13</sup> in his History of Animals calls a sea ape. This name suits it, according to Steller, as much because of its resemblance to a sea ape as because of its unusual inclinations, its apish antics and its agility. It swam all around their ship, and spent more than two hours looking first at one thing and then at another with an air of amazement. Sometimes it came so close that someone could have touched it with a pole; and at other times it swam away, especially when it

<sup>13</sup> Konrad von Gesner (1516-1565), German-Swiss naturalist. Historia animalium was a five-volume zoological study which became the foundation for modern zoology. --Ed.

noticed movement on the ship. It raised a third of its body out of the water, and remained upright, like a human, without changing its position, for several minutes. After it had regarded them fixedly for about half an hour, it plunged like an arrow under the ship and reappeared on the other side, but then immediately darted under the water again and came back up in its original place. It repeated this antic nearly thirty times. During this time a great piece of sea vegetation from the coast of America drifted up. The bottom part was hollow and shaped like the neck of a bottle; the top came to a sharp point. The animal dived beneath it and grabbed it, and then holding it in his mouth, swam near the ship, and with this piece of seaweed performed every little trick the most charming monkey might have done. An unusual fact has been observed which pertains to all sea animals: the more they play in the water during a calm, the more likely it is there will follow a violent storm.

## CHAPTER IX

### FISH

We will follow the same order in speaking of fish as we observed in the description of plants and roots. And thus we will here consider only those fish which are eaten by the natives of this country, or those which are known everywhere because they exist in large numbers and are frequently caught, but not eaten. In the future, when time permits, there will be a special book devoted to a detailed description of fish and of plants.

We shall begin with the whale, both because it is so much larger than any of the other fish, and because it should be placed in sequence immediately after marine animals; indeed some persons do classify it among these, because of the fact that its structure is the same, and because of the manner in which it mates and gives birth to its young.

There are a great many whales<sup>1</sup> both in the ocean and in the Sea of Okhotsk; they are easy to see when the weather is calm, because of the spouts of water they eject from an opening on their heads. They often come so close to shore that it would be possible to kill them with a gun. Sometimes they come in to scrape their bodies, perhaps to rub off the shells which are so numerous all over their bodies; the creatures inside the shells cause the whales great discomfort.

<sup>1</sup>Physeter Aut. (Balaenoptera physalus. --L. Berg)

One of the reasons for believing this is that when they keep their backs out of water for some time, they patiently allow great flocks of gulls to light on their backs and peck at these shells. When these fish go into the river mouths, they enter on a high tide; I have seen two or three of them together at one time.

They are from seven to fifteen sazhen long; there are some which are larger, but they never come near the coast. I have been told about a ship which once set out from Okhotsk to Kamchatka with full sail in good weather, which was stopped by running onto a sleeping whale; this could certainly never have occurred if it had not been an enormous animal.

It is impossible to say how many species of this animal there are, for few of them are taken in Kamchatka, except in the northern parts where the settled Koriaks and the Chukchi hunt them. Although dead whales are frequently washed up on shore, neither Steller nor I ever saw a whole one. This is due to the haste and the avidity of the natives who, as soon as they find a whale, hide it as carefully as if it were a treasure until they have had a chance to cut off the blubber. In 1740 the tide swept one into the mouth of the Bolshaia River; it would have come right into the bay if several Cossacks had not seen it and rushed out to it to cut off the choicest morsels before it even came up on land. By evening nothing was left of it, not a scrap of meat or bone. At that time I was at Bolsheretsk ostrog; when I heard that a whale had been seen on the sea, I went there the next day; but, to my great amazement, I could not even find the carcass, for the natives, who had been forbidden by local Russian officials to cut up any whale until it had been examined, were so afraid of being punished for their

disobedience that they had hastily hidden the skeleton so there would be left no bit of evidence which could be used against them.

Steller remarked that the ocean carried more whales up to shore near Cape Lopatka, around Avacha, Cape Kronotsk and the mouth of the Kamchatka River, than the Sea of Okhotsk cast up on the western shore of this country, and that this happens more often in autumn than in springtime.

Each of the tribes which live along the coasts has a different manner of taking whales. The Kuriles around the southern point and the Kurile Islands chase them in boats, looking for places where they are accustomed to sleep and to rest. They stab them with poisoned darts, and although this wound is at first unnoticed in such a huge animal, it soon causes unbearable agonies. They toss from side to side and utter dreadful groans; then their bodies swell, and soon after they die.

The Oliutors take them with nets, which are made with thongs of leather from walrus pelts, smoked dry, as thick as a man's arm. These are spread out in the mouth of some bay in the sea, and are weighted at one end with huge rocks which leave the other end free. The whales are caught in these nets as they swim after fish, and then it is simple to kill them. The Oliutors approach them in their boats, and tie other ropes around them while their women and children on shore express their delight by dancing and joyous shouting, praising the fishermen for such a fine catch. Before the whale is drawn up on land, they perform certain magic ceremonies. When the ropes have been well attached on shore, they don their finest garments and bring out of their iurts a wooden whale

about two feet long. They build a new balagan and carry this wooden whale to it, all the while speaking magic words. They light a lamp and leave a man on duty to see that the flame does not go out all during the hunting season, from spring until autumn. After this, they cut up the whale they have taken into pieces which they prepare in the following manner, as if it were a most delectable delicacy.

They dry the lean meat in the air, until it breaks easily. After the hide has been stripped of any fat, they beat it with mallets until it becomes supple enough to make soles of shoes, which is a very good use for it. They also dry the blubber in smoke, as was previously described in the passage on seals.

The intestines are thoroughly cleaned and filled with the oil which was collected at the time the whale was cut up, or which they later tried out over fire; they have no other receptacles to put the oil in except for these intestines.

When the time in spring best suited to this fishing arrives, the Oliutors begin to bring out their nets, and this is the occasion for their greatest feast which is celebrated in their earthen iurts with several magic practices and ceremonies. They kill some dogs while they beat on a kind of drum; then they fill a large vessel with *tolkusha* and place it in front of the entrance called the *zhupana*, the opening cut into the side of the earthen iurt. They solemnly carry the wooden whale from the balagan into the iurt, and utter loud cries. They cover over their iurts so that no light can be seen. When the shamans take the wooden whale out of the iurt, they all shout together, "The whale has fled into the sea." When they are outside the iurt, they look for the tracks of the whale



on the *tolkusha*, as if it had actually left by the opening at the side of the *iurt*.

The Chukchi, who live from the mouth of the Anadyr River as far as Cape Chukotsk, take whales in the same way as Europeans do. They go to sea in large boats cased with sealskin. Each of these boats holds from eight to ten men. As soon as they see a whale, they row toward it as fast as possible. They hurl a harpoon into it, attached to a very long rope. The rope is coiled inside the boat so it can be more easily paid out when the animal dives into the depths. Near the harpoon they fasten an air-filled whale bladder to the rope, so they can tell where the wounded beast has sounded. The boat is drawn nearer the whale by means of the rope. Then a second harpoon is thrown, and this continues with harpoons being hurled from various boats until the whale is exhausted and all the harpoons have been cast. Then the men begin to shout and clap their hands, which has the effect of startling the whale so that it makes for shore, pulling the canoes behind it. When they are close in, they redouble their shouts, and the whale is seized with fright and throws itself up on the sand; at this point the Chukchi can kill it at will with no risk to themselves. All during this catch the wives and children on shore make great show of their joy, just as the wives and children of the Oliutors do. Steller reports that whales are taken in this same fashion along the islands between Cape Chukotsk and America.

The Chukchi take so many whales that they never eat dead whales that are washed up on shore, the way other tribes do; they only take the blubber, which they use for their lamps. And in spite of the fact that the Chukchi have great herds of reindeer on which they could live without having to find other nourishment,

they are nevertheless better fishermen than their neighbors, and take more whales and marine animals than other tribes nearby. There are two results to this; they consider blubber the most delicious possible food, and, even more important, for lack of wood, they heat their iurts with moss mixed with this fat. They make shirts from the intestines, just as the American natives do, and they also use the intestines in place of containers, as the Oliutors do.

Steller said he learned from reliable sources that several times harpoons with Latin inscriptions had been found in the bodies of whales which had been washed up on the shores of Kamchatka. He felt these whales had been wounded off Japan, where they are taken in the same way as in Europe. It is practically impossible, according to the presently known position of America, that these dead whales should have come from that country. It is hard to believe that over such a great distance of sea so strewn with islands they would not have been cast up on some other shore. And furthermore how is it possible that the Kuriles, the Kamchadals and even the Cossacks could have said that the harpoons had Latin inscriptions? The natives in this country are illiterate and thus have not the slightest notion of the difference between letters. And before our arrival there was not even a Cossack who knew what Latin letters are.

The Kamchadals all make great use of whales. They use the skins to make the soles of their boots and their ropes, and they eat the meat and the fat, which is also used for lighting. The whalebone is used to sew their boats together; and it is also used to make the nets with which they take fox and fish. From the lower jawbone they make runners for their sleds, knife handles, rings and chains

used to fasten the dogs, and other items.

The intestines are used in place of barrels and other containers. The nerves and veins are used to make heavy ropes for the poles in traps. The vertebrae are used as mortars. The best parts of the whale to eat are the tongue and the flippers; and I also found the blubber cooked with sarana rather good, but my opinion should not be considered infallible, for a hungry man is not a good judge of the excellence of a particular dish.<sup>2</sup>

But this great abundance of whales washed up on shore can also be deadly for the natives, and indeed whole villages have died from this cause. In April, 1739, I witnessed the horrible ravages this food caused. At that time I was following the east coast going from Lower Kamchatka ostrog to Bolsheretsk ostrog. On the banks of the Beresova River there was a small ostrog called Alaun. On the second of the month I stopped there to eat, and I noticed that everyone I saw looked pale and drawn, and they looked as ill as if they were just recovering from some disease. When I inquired what the trouble was, the village chief told me that before my arrival, one of them had died from having eaten the blubber of a poisoned whale, and since they had all eaten some of it, they were all afraid they would meet the same fate. After about half an hour, one very strong and robust Kamchadal, and another who was smaller, began to complain, saying that their throats were on fire. The old women who act as

<sup>2</sup>The following paragraphs, through the description of the grampus, follow the French edition, in which certain material has been rearranged into a more logical sequence than in the original. --Ed.

their doctors placed them opposite the ladder and tied them with ropes, presumably in order to prevent them from passing into the other world. The women stood on each side of them, holding sticks which they used to throw live coals out of the iurt. The wife of the sick man came up behind him and spoke several words over his head in a low voice to prevent him from dying; however it was of no avail, and both men died the next day. The rest of them, so I was told later, took a long time to recover. This mishap did not surprise me in the least. I am only amazed that it does not happen more frequently. What would have happened if they had eaten the flesh of the poisoned animal? But the Kamchadals give so little thought to this danger that they seem to prefer to risk death rather than be deprived of the pleasure of eating the blubber of these whales.

The kasatka<sup>3</sup> or grampus, which is plentiful in these waters, is also very useful to the natives, for this fish kills whales, or else pursues them so that they are stranded live on shore. Thus the natives have more than enough to eat.

Steller observed this animal battles whales, both while he was at sea near Cape Lopatka and while he was on Bering Island. When it attacks, its frightful bellowing can be heard several miles away. If the whale tries to escape by taking refuge near shore, the grampus follows it without harming it until it has assembled several of its companions; then they chase the whale out into open water, where they fall on it mercilessly. Whales killed in this manner and then cast up on shore have never been reported as being partially eaten, which leads

<sup>3</sup>Orca Auct. (Orca orca. --L. Berg)

one to the conclusion that the enmity between the whale and the grampus is simply a natural antipathy which means that they can not get along together at all.

Fishermen are so much afraid of this animal that they never shoot arrows at it, and in fact they do not even dare go close to it, for if it decides to attack, it will turn over the canoe. If they see one of these animals coming near, they make a kind of offering to it, and abjure it to do them no harm, but to treat them with friendship.

No one ever fishes for grampus, but if the wind happens to blow one ashore, they use the fat in the same way as they would whale blubber. Steller said that in 1742 eight of these animals were blown ashore at the same time near Cape Lopatka, but that bad weather and distance prevented him from going to see them. The largest was only four sazhen long. Their eyes are small, and the mouth is large and lined with huge sharp teeth with which they wound whales. It is not true, however, as some persons believe, that this animal, when it dives under whales, slices open the whale's belly with the pointed fin on its back. There is a very sharp kind of fin about two arshins long, which looks like a horn or a bone when the animal is in the water, but this is soft and is only composed of fat with not a single bone in it. This animal is quite fat and has almost no flesh, but the fat is much softer than that of the whale.

There is another animal in these waters which resembles the whale, only it is smaller and slenderer. The Russians call it a wolf, and the Kamchadals give it the name cheshkhak. The fat is of such a nature that it passes undigested

through the human body, and when one eats it there is no taste. The natives never eat it; they give it to guests whom they dislike or wish to make fun of; it is considered a remedy for constipation. The entrails, the tongue, and the meat of the cheshkhak can be eaten; they are not harmful.

After discussing whales, mention should be made of the fish called mokoe<sup>4</sup>, or akul [shark], as it is called in Arkhangel, since it is similar to the whale in size and is also viviparous. For these reasons some persons class it with the whale. This fish resembles a sturgeon when its immense mouth is closed, for it has a similar skin, tail and head; but the principal difference is that it has terrible teeth, sawlike and sharp as a sword. Its size is about three sazhen, and in other seas some can be found which weigh up to a thousand puds. The Kamchadals eat the meat of this fish with great pleasure, for although it is tough, they find it very good and quite flavorful. They make great use of the intestines, and especially the bladder which they use to hold rendered fat. When they take these animals, they never refer to them by name, for fear that the fish will ruin its bladder and be of no use to them. They also believe that the body of this fish will move about after being cut up into bits, and that if its head is placed upright, it will turn its eyes toward whatever place its body is taken. The teeth are sold under the name of serpent tongues.

Some of the other fish which have been seen in these waters include the skate or flying fish (skat), the wolf-fish (suka), conger eels (ugrei), lampreys

<sup>4</sup> Canis carcharias. Auct. (Carcharodon carcharias. --L. Berg)

(minoga), sculpin (byka) and another variety referred to as rogatka. Less common fish in Kamchatka include the cod (vakhnia), stickleback (khakhalcha), eelpout (morskaia nalima), and the greenling (terpuk); however the natives make little use of all these fish and eat them only in case of a famine or catch them only to feed to their dogs.

Flounder (kambala) grow to be as long as one-half arshin, and are caught in large numbers in nets, but the natives consider them unfit to eat and throw them back; some of them do save the fish to feed to their dogs. Steller observed four different species; one had eyes on the left, another on the right. The ones with eyes on the left have dark coloring on top, with scattered little spines like tiny stars, but below they are whitish with small bony ones in much smaller quantity. One of the other varieties of flounder has the same coloring on both sides and has only tiny spines near the gills. The second kind is one color all over and has little bony spines on both sides. The third is also one color all over, and in Russian is called paltus.

The vakhnia<sup>5</sup> is a distinct species of cod. It is a half-arshin long and its body is round with three fins on the back; it is the color of copper when it first comes out of the water, but it immediately changes to a yellow color. The flesh is white, but it is soft and has a disagreeable flavor; the natives however prefer it to other fish which have a much better flavor, because it is the first fresh fish they catch in spring and during the time they can take this fish, they cannot find

<sup>5</sup> Onos s. Asinus Antiquorum.

anything better. They take a prodigious number of them and dry them in the sun without cleaning them; they simply hang them from a cord made of the bark of trees. In winter they feed them to their dogs, but some persons also eat them.

The stickleback<sup>6</sup> is a member of the sculpin family of fish, and only differs from it in that the stickleback has only one long spine on its sides which sheathes it like a cuirass. They are rarely seen in the Sea of Okhotsk, but are so abundant in the ocean that occasionally they are washed up on shore to a depth of two quarters of an arshin. The Kamchadals take them with round nets in the mouths of the small rivers which flow into the sea. They dry them on mats and save them for winter so they can give them to their dogs to eat. The broth which is made with these fish has the same flavor as if it were made with chicken; this is why the Cossacks and the Kamchadals cook them in water, as one would cook ershei<sup>7</sup> in Russia.

Sea turbot is much like the kind found in rivers, although neither the head nor the belly is so large; the skin is black and speckled with small white spots. I have seen the greenling<sup>8</sup> but as it had been dried, it was not possible for me to tell if the colors were as Steller had described them. According to his description, the back is blackish and the sides rosy, speckled with silver spots

<sup>6</sup> Obolarius aculeatus. Steller.

<sup>7</sup> A small fish similar to the perch which is found in the Neva River.  
--French edition.

<sup>8</sup> Dodecagrammos. Steller.



of which some are square in shape, others are oval and still others are quite round; it resembles a perch. It was given the name terpuk<sup>9</sup> because its scales looked very unequal and terminated in a very sharp kind of small teeth. This fish is taken near the Kurile Islands and Avacha Bay with hooks which are made of gull bones or of wood. It is much prized because of its flavor.

There are a great many other kinds of fish in these waters which are unknown in other areas; but as the natives do not use them for food and in fact do not even know them, I shall not discuss them here, since my plan is only to mention those fish which these people use for food, in place of grain.

The principal fish and the one which the Kamchadals have the greatest abundance of, is the salmon. There are various species. In summer, they swim up the rivers in runs. These fish are used to make the food called iukola, which they use in place of bread. This is also the fish used to make porsa<sup>10</sup>, which they use to make pirogis, hotcakes, blinis and cakes. They take the fat from this fish, cook it, and use it in place of butter; they also make a glue of it for domestic use and for other purposes.

Before discussing each of these fish separately and describing their size, shape the flavor of their flesh, and at what time they go up river, there are several general observations which can be made about fishing. Here is an amazing indication of the wisdom and providence of the Supreme Being, who has

<sup>9</sup>Terpuk means a heavy metal file or rasp. --Ed.

<sup>10</sup>The natives dry the fish, and then pound it until it is reduced to a meal, which is called porsa. This is made all over Siberia. --French edition.

provided in such an admirable fashion everything that is necessary to the natives of these lands which produce no grain, have no domestic animals nor fish in the rivers. Kamchadals subsist only on these ocean fish, not on freshwater fish, as is true elsewhere.

All the fish in Kamchatka swim upriver in such huge throngs in summer that the rivers swell and overflow until evening when the fish stop coming into the river mouths. When the water recedes, so many dead fish are left on the shore that even a great flood could not wash up so many. On the following days this causes such a contamination and stench that disease invariably follows unless the foulness is blown away by the winds which blow continually and serve to purify the air. If one thrusts a harpoon into the water, it is rare that one does not hit a fish.

Bears and dogs take more fish with their paws at such times than one could ordinarily take in a net; this is the reason they do not use seines in Kamchatka, but simple nets, because of the difficulty they would have pulling seines out of the water with such a heavy catch of fish; no matter how strong and heavy the threads, they would certainly break.

All the fish which go up the rivers are varieties of salmon and are known under the general term of red fish. Nature has created such a difference between them that there are almost as many species to be found in Kamchatka as naturalists have observed in the entire world. However there is no fish in Kamchatka which lives more than five or six months except for the Dolly Varden. All fish which have not been caught die at the end of December, so that not a single one is left

in the rivers except in deep spots and in the warm springs near Upper Kamchatka ostrog where they can be found during almost the entire winter. These fish live such a short time for these reasons. 1. They come in such multitudes that they undoubtedly are unable to find enough to eat. 2. Since the current in the rivers is very swift, they have great trouble ascending the rivers and so they soon weary and succumb. 3. The rivers are not very deep, and are very rocky, so that there are no good places for the fish to rest.

One fact which should be noted in all these species of salmon is that they are born and die in the same river; that they grow to full size in the sea, and that they spawn only once in their lifetime. When they feel the desire to mate, natural instinct leads them to swim upriver and find a favorable place. When they have found a quiet sandy spot, the female, as Steller observed, hollows out a small hole with her fins which are just below her gills; and then she waits over this hole until the male comes and begins to rub his belly against her. Then the roe are expelled from the female and are fertilized at the same instant by the milt of the male. They continue this activity until the small hole is filled with sand, after which they continue on their way, mating frequently in accessible places. The roe and the milt which remain in the bodies of the female and the male become their own nourishment, just as persons who have consumption live on their own substance, and die as soon as they can no longer do this.

Quite different observations have been made in Siberia. Salmon which swim up deep muddy rivers whose headwaters are far away live in the rivers for several years and spawn every year, because they can find a great many

river insects to eat. In winter they withdraw into deep holes, which they leave in spring in order to go still farther upriver. They spawn in the mouths of small rivers, and they are generally caught in such places in summer.

Young salmon go back out to sea in spring and remain there, according to Steller, until they have attained full growth; they return the third year to spawn. Several points on this subject should be mentioned. 1. A fish which is hatched in the Bolshaiia River lives in the sea off the mouth of this same river, eating whatever the sea provides. When spawning time comes, it goes into no other river than the one where it was hatched. 2. Each river where this fish spawns, each year furnishes an equal amount of the same species of fish. In the Bolshaiia River one finds king salmon, but these are never found in the Ozernaia which flows out of Lake Kurile, although the bottom of this river and its estuary are similar to the Bolshaiia River. 3. People fish for salmon in the Briumkina, the Kompanovaia and even in the Icha Rivers, but the salmon are never seen in any other river. 4. Another unusual fact is that although the fish which go upriver during August have enough time to spawn, there is not enough time for their offspring to grow large enough to return; thus they take with them a one-year-old fish of their own species, which follows the male and the female until their spawning time is over. When the older fish have deposited their spawn in the holes and have covered it over, they continue to swim upriver; but the year-old fish, which is no larger than a herring, remains near the spawn and guards it until November, at which time it swims back to the sea with the young. Salmon undoubtedly do the same thing in Europe.

This difference in age has led naturalists into a twofold error. 1. By considering only their age, they have made two species out of one. 2. They have decided it is a hard and fast fact that all species of red fish, because of their spawn, do not have any sufficiently constant markings to make it possible to distinguish one species from another. These errors could easily be avoided if they examined the natural marks which distinguish the fish from one another.

Each kind of fish goes upriver every year at a fixed time. One may perhaps see three or four species at the same time in August, but each species keeps separate, and never mixes with the others.

At this point I should mention which fish are included under the designation red fish, which ones go upriver, and at what time they do so. It has never been observed that there is any change in this regard, that one variety of fish may be the first to appear in a particular river one year, but come later in the following year; so it is that the Kamchadals know this unvarying cycle and call the fish after the month in which they take them.

The kind salmon is the largest and the best of all the fish in this country, and it is also the first one to leave the sea and enter the rivers. It is very similar to the salmon, only it is much larger. It is about one and one-half arshins long, and weighs as much as two and one-half puds; thus it is easy to judge its girth. Its width is nearly a quarter of its length. It has a pointed snout, and the middle of the upper jaw is longer than the lower one. Its teeth are different sizes; the largest are three-twentieths of an inch, and they become still larger when the fish is in the river. The tail is not forked, but even. The back is a

bluish color, with tiny black speckles, like ordinary salmon. The flanks are silvery; the belly is white, and the scales are oblong and small. The flesh, either raw or cooked, is always red.

They swim upriver with such vigor and speed that they raise waves in front of themselves. When the Kamchadals see them from afar, they leap in their canoes and put out their nets. In likely places, they make small slightly raised bridges from which they can watch the course the fish takes on the river. This fish never swims in such large schools as others. Iukola is prepared from this fish nowhere in Kamchatka except on the very shores of the Kamchatka River. It is so rare, that it is not wasted on everyday occasions, but is generally saved for special feasts. The fish however is so fat that it rapidly turns sour and spoils.

The Cossacks generally salt this fish and preserve it to eat, but they only salt the head, the belly and the back, cut in long strips about two fingers wide. The meat on the sides lies in layers; it is tough and dry. The belly and other parts, however, have a delicate and agreeable flavor; at least, there is no other fish to be found in this country which tastes as good. If, when this fish is dried in the sun, it is not better than sturgeon, it certainly is not inferior to it. King salmon do not enter all the rivers; of the rivers which discharge into Bering Sea, the Kamchatka River and Avacha Bay are the only places where they can be found. Of rivers which empty into the Sea of Okhotsk, only in the Bolshaia River and very few others do they appear. Since these rivers have bays at their estuaries, and also are deeper and calmer than other rivers, my opinion seems not

altogether devoid of likelihood. Steller believes that this fish does not go north beyond the fifty-fourth degree of north latitude; it is indeed a fact that there are none in Okhotsk, and that salted fish are taken there from Kamchatka as gifts.

The nets that are used to take this fish are made of thread the weight of string, and the mesh is two and one-half inches across. The season for this fish begins at the middle of May and lasts about six weeks. They also take sea otter with these nets, although the animals are much larger than the fish, they do not put up as much of a fight.

The Kamchadals are so fond of this fish that they manifest great joy when they eat the first ones they catch. Nothing makes the Russians who live in this country more unhappy than this Kamchadal custom. The Kamchadal fishermen who are so pleased with themselves never take their masters the first of these fish; they never fail to eat it themselves, in spite of all the threats. They have the superstitious belief that a fisherman would be guilty of a serious sin if he did not personally eat the first of these fish he caught. When this fish has been cooked over a fire, it is called chuprik.

The blueback is properly called a red fish, but is known at Okhotsk as a niarka. It is about three-quarters of an arshin long, and weighs up to fifteen pounds. It is a flat fish, and the flesh is red like that of a salmon. The head is very small, the snout being short and pointed; it has small reddish teeth; its tongue is blue, and it is white along the side. The back is bluish, with red and black speckles; the flanks are silver; the belly is white; and the tail is deeply forked, and accounts for almost one-fifth of the length of the fish. The scales

are large, round, and are easily stripped from the skin. This fish is found in all the rivers which discharge into the Bering Sea and the Sea of Okhotsk; they ascend these rivers in large schools. They are taken at the beginning of June. Although the iukola which is made from them has a pleasant taste, it spoils quickly, especially around the Bolshaia River, where the weather is generally very foggy and humid during the time the natives are trying to dry it; and so they usually have to eat it salted. They also remove the fat when they cook it.

Two things should be mentioned in regard to this fish. 1. A certain number of these fish go all the way up to the headwaters of the rivers, as if to explore them and serve as a guide for the other fish; they swim so rapidly that they cannot be seen en route. This is the reason people fish for them up near the headwaters before any are taken at the river mouths. 2. This fish will willingly enter rivers which rise from lakes, but is only rarely found in others. Steller suggests that this is because the waters are roiled and muddy.

Red fish do not stay in the rivers for a long time; they try to return into lakes, and stay in deep areas until the beginning of August. Then they move in close to shore and try to enter several small rivers which flow through lakes. It is in these small rivers that the fish are taken in nets, from a dam which has been made for this purpose.

The dog salmon is the third variety; it is larger than the blueback. The flesh is white; the head is oblong and flat. The snout is snub; the teeth become like dogs' teeth after the fish has lived in the rivers for some time. The scales which cover the gills are silvery with black tips. The tongue is sharp, with



three points at the tip. The tail is somewhat forked. The back is a greenish brown, and the flanks and belly are similar to the other fish; there are no speckles on the skin.

Iukola which is made from this fish is referred to as household bread, since this fish is so much more abundant than the others. Furthermore, the season when it is taken is much dryer and better suited to preparing it; thus it does not spoil as does iukola made from king salmon or the blueback.

This fish is found in all rivers, both those which fall into the Sea of Okhotsk and those which empty into the Bering Sea. The natives begin to fish for it during the first part of July, and the season lasts until mid-October; however this fish does not swim upstream all during this time, only for a period of about two or three weeks. In autumn it is taken near the headwaters of rivers in deep holes, where the water is still.

The humpbacked salmon follows the dog salmon and sometimes comes at the same time; it is very much more abundant than the others. It is flat and about one and one-half feet long; the flesh is white. It has a small head, a pointed snout which is sharply upturned; the teeth are small; the back is bluish with round black speckles; the flanks and belly are the same as other fish; the tail is slightly forked and is blue, strewn with round black speckles. It is called humpback because when the males become thin, a great hump forms on their backs, however the females, who are much smaller, do not develop a hooked snout nor do their backs become humped. Although this fish does not have a bad flavor, the natives have many other better tasting fish and thus they think

so little of it that they only use it to feed to their dogs.

The last fish of this variety, which swims upriver in schools, is called the silver salmon, because when it is in the water it appears to be a silvery color. It is quite similar to the dog salmon, both in size and shape. The principal difference is that the dog salmon has no spots, and the back of the silver salmon is speckled with small black spots which are rather long or oval in shape. The flavor of its flesh is far superior to that of the dog salmon. It can be considered the best of all the white-fleshed fish of this country.

In common with the blueback, this fish will only enter rivers which rise from lakes; and for this reason they can be netted until December, or taken from dams with harpoons near lakes and near the mouths of the small rivers which discharge there. The young silvers, one year old, who go along with the older fish to watch over the eggs and guide the newly hatched fish to the ocean, are considered by the natives to be a different variety, and are called mylkchuch. When the mature fish have deposited their eggs, they take great care to find a safe place to live. They search out deep holes filled with mud, which will not freeze up in water. They swim upriver as far as possible toward the warm springs, and remain there until far into autumn, and even until the middle of winter. They particularly like to linger in the springs near the lakes of the Bolshaia River and the Opala, where they are taken in great numbers. Men also fish for them throughout the entire winter near the springs which rise in the south and empty into the Kamchatka River, and especially near the place where the old Lower Kamchatka ostrog used to be located. This fish is very important

to the natives, who live on it. I myself was near these springs at the end of February, fishing for it. It was not very plump, and did not have as much flavor as during autumn.

Even when salted and dried, this fish is as good as when fresh. The belly in particular, when it is smoked, has a fine flavor, and I remember that there was one man in this area who knew how to smoke them to perfection. The silver salmon is taken with the same kind of net as the dog salmon and the blue back. The line of which it is made is about half as heavy as that used to make nets to take the king salmon, and the mesh is not more than about an inch and a half wide.

All the varieties of fish just mentioned change color, waste away and become thin and unrecognizable when they are in the rivers; the snout becomes hooked, the teeth become longer, and the entire body is covered with a kind of gall. The king, the blueback, and the silver turn from silver to red. The same is true with the dog salmon, only it keeps its spots or black streaks. The fins and tails become a very dark red. In short, if one of these fish in this condition were to be compared with one of the same species which had just entered the river, one would never believe they belonged to the same species unless one were aware of the extreme change which takes place. Only the humpbacked salmon does not turn red, but it loses its silver coloring and dies.

It is imperative to mention the determination all these fish, particularly the humpbacked salmon, have when they ascend the rivers. When they encounter places where the current is swift, any fish who is not strong enough will wrestle

with the waves for a while as it tries to reach some shallower place where the water is not so rapid. If he is not strong enough to accomplish this, he will seize the tail of a stronger fish in his teeth and cross the rapids with this help; one catches few fish who do not have a bitten tail. One can observe this spectacle from the time the fish enter the rivers until autumn. Those fish who are not strong enough to go farther will die with their snouts gripping the shore rather than turn back to the sea.

The salmon, which is included in the class of fish who move in schools, ascends the Kompanova and Briumkina Rivers, and even the Icha; but although I have often heard this said, I have never seen it personally. Steller writes that when the young fish of this species return to the sea it sometimes happens that during a severe storm they lose the mouth of their own river and ascend another one the following year; this is the reason that occasionally one will find more fish than usual in certain rivers, and that six or even ten years may pass before fish are again seen in the rivers whose mouths they could not find; the same kind of circumstance may put them back in the original river. But he adds that if anyone were to suppose the opposite, that every year the autumn storms must carry away these fish from the rivers in which they were hatched, his reply is that all storms do not have this effect, only those which occur when the young salmon are entering the sea for the first time. If they leave the rivers in calm weather and are in very deep water, no storm can carry them away from the mouth of the river they have just left, since even the most violent agitation can not be felt at a depth of sixty sazhen.

There are still other species of red fish which will ascend any river, indiscriminately, at any time. When they have spent the winter in a stream, they return to the sea. Steller says they live four or even six years.

The first of these is the Dolly Varden. When they leave the sea and enter a river, they have round bodies, and their color is as bright as silver.

The upper part of the snout is flat or blunt and slightly forked; and the lower part is sharp and slightly curved toward the upper. When they swim up the river, they become flat and their flanks become spotted with round red speckles of various sizes; the largest are smaller than a silver kopeck, or about the size of a lentil. The belly and lower fins turn bright red, except for the spines, which remain white; and then they are quite similar to our lokhi, which is salted and taken from Olonets to Saint Petersburg; however the color of the belly is much paler in these latter.

The largest fish of this species, which live for five or six years, leave the sea to go up the Kamchatka River, from which they gain entrance into the small rivers which discharge into it; they then reach the lake from which these small rivers rise. They remain there quite a while, and they grow to the same size as the king salmon, but they rarely weigh more than twenty pounds. Large ones are also found in the Bystraia River; they are one arshin long and six vershoks wide. They are brown with a red belly; they have very long teeth and the lower part of their jaw is turned up in a sort of button. They appear to be a different species. The three-year-olds who have spent only one year out of the sea during winter, have large heads, are a silvery color with very small

scales, and have small red speckles. The ones which are only two years old and which penetrate the rivers have a rather long round body with a small head. They are very plump, and their flesh is a rosy white color and is very good. The ones who were hatched in the autumn and are taken at the beginning of winter or in spring are as white as snow and have no speckles.

In regard to their growth, it has been observed that the first year they grow in length and very little in girth; the second, less in length but much more in girth and weight; the third year, the head alone grows considerably; and in the fourth, the fifth and the sixth, they increase in size twice as much in girth as in length. Perhaps the same thing is true of all species of trout. During the fourth year, the lower part of the jaw curves and becomes bifurcated.

This variety swims upriver along with the humpbacked salmon, and they are taken in the same places with the same nets, which are made with fine line and have mesh no larger than one inch in size. While the Dolly Varden is in the rivers, it lives on the spawn of other fish, which makes it very plump. In autumn, it ascends small rivers, and leaves them in springtime. On both occasions, there is very good fishing with nets, and particularly from the dams which are constructed in the rivers. The fish which are caught at the beginning of autumn are salted, and those which are taken during a freeze are kept frozen throughout the winter.

There is another variety of fish called the salmon trout. It is the same size as the blueback; the head is of moderate size, and the scales are large; the gills are silvery and mottled with tiny black spots, and there is also a large

red spot on each one. Its jaw is like that of the Dolly Varden, that is, the upper part is not pointed, but is obtuse and upturned, and the lower part is forked or hooked. The jaws have two rows of teeth. The back is black, specked with round or oval spots. On each side of its body there is a wide red band which extends from the head to the tail; and it is this which distinguishes it from all other species. According to Steller, it devours all kinds of insects, and will even eat rats when they are swimming from one side of the river to the other. It is very fond of cranberries, so that when it sees one of these bushes on the shore, it will leap out of the water in order to get hold of the leaves and the berries. This fish has a very fine flavor; one does not find as many of this variety as of other kinds of fish, and it is not known when they enter the rivers or return to the sea. This leads to the belief that they may swim upriver under the ice; this is also Steller's opinion.

The third variety is the char. It is about three feet long; its head makes up one-seventh of its length; the jaw is short and pointed and bristles with teeth. The back and flanks are black, marked with large yellow spots, some of which are round and others oblong. The belly is white; the lower fins and tail are blue; and the flesh is white and has a very fine flavor. There are few of these fish in Kamchatka in comparison to Okhotsk, where whole schools enter the Okhota River; it is only rarely seen in rivers in Kamchatka and is thus highly prized.

A fourth variety is the grayling; it is known in Siberia and all over Russia; but the Kamchatkan grayling has longer back fins than the others. Steller says that they enter the rivers before they freeze over, but I have never seen any in

this country.

There is also a variety of small red fish which is similar to the Dolly Varden, only the head is larger and the upper part of the jaw is slightly curved back, rather than the lower. The sides are strewn with bright red speckles, like the Dolly Varden. One rarely sees any more than three vershoks long.

Among the small fish which the natives live on, there are three kinds of smelt called the khagach, the inniakha, and the uiki. The khagach is the true smelt. The inniakha is slightly different; it is plentiful in Lake Nerpich, but not as abundant as the uiki. The Bering Sea occasionally casts so many of these ashore that they cover an area of one hundred versts, on foot deep. Uiki can easily be distinguished from other species of smelt by a rough stripe down each side; they are no larger than the true smelt. They almost always swim three abreast, and they are so tightly joined together by this shaggy stripe that if one is caught, it is difficult for the others to get away. The Kamchadals dry them as they do the fish called khakhalcha, and use them in winter for dog food. They themselves will also eat them if necessary, although this fish has a disagreeable flavor.

The last kind of fish which the natives use as food is the herring, which in Kamchatka is called the belchuch, or small white fish. It is found in the Bering Sea, and only rarely comes into the estuaries of rivers which discharge into the Sea of Okhotsk; thus I have not happened to see more than ten of these fish. In the Bering Sea this fish is found in such prodigious numbers that a single net will bring in enough to fill about four salting barrels. These are identical to



herring from Holland; this has been confirmed by Steller's report.

During the fall season they move into large lakes where they give birth to their young and spend the winter. In spring they return to the sea. It is worthwhile to describe catching this fish; this takes place in Lake Viliuchinsk, which is not more than fifty sazhen from the sea, and is joined to the sea by an arm.

When the herring come into the lake, this arm is soon filled and closed by the sand which the severe storms deposit there; this means that any communication between the lake and the sea is completely cut off until the month of March, at which time the level of the lake rises because of the runoff from melting snow and opens a passage into the sea before the ice on the lake has thawed. This happens regularly every year. The herring which want to go back to the sea at that time swim every day to the entrance of this arm or passage, as if they were looking to see if it were open. They remain there from morning until evening, when they return to the deepest parts of the lake. The Kamchadals who know this cut a hole in the ice at that spot, and stretch their nets there, after they have placed several herring in the middle to attract the others. They then cover over this opening with mats and leave a small hole, so that one of them may hide and watch to see when the herring come up to the net. As soon as he sees them come, he alerts his companions. Then they uncover the opening in the ice and draw out the net filled with a huge number of fish. The Kamchadals tie them up in packets tied with strings of bark, place them on their sleds, and take them away. The foregoing is an account of how fish are taken while there is still ice

on the lake; in summer, they are taken with nets in the river mouths.

The fat is extracted; it is infinitely better than that of any other fish; it is as white as Finnish butter<sup>11</sup>. For this reason it is sent from Lower Kamchatka ostrog, where the fat is rendered, to the other ostrogs, where it is considered an excellent product.

In regard to the various ways of preparing this fish for the table, this will be described in due time.

<sup>11</sup> Even in the eighteenth century Finnish butter was considered the finest. This tradition was climaxed in 1945 when a Finnish biochemist, A. A. I. Virtanen, received the Nobel Prize for chemistry for research in the preservation of cheese and butter. --Ed.

## CHAPTER X

### BIRDS

There are a great many birds in Kamchatka, but the natives make less use of them for food than they do of roots and fish. The reason is that since their primary occupation is fishing, they are not trained to hunt birds. Fishing is so essential to them and is so profitable, that it would be as foolish for them to stop fishing in order to go off hunting birds, as it would be for our peasants to give up their ploughs.

Birds are most plentiful around the Lower Kamchatka ostrog. There are many of them on the shores of the lakes in that area, as was mentioned earlier in describing the Kamchatka River.

Birds will here be divided into three classes. The first class will include sea birds; the second, river birds, or those which inhabit areas near fresh water lakes and marshes; and the third group will include forest and upland birds.

### SEA BIRDS

There are more sea birds to be found along the shores of the Bering Sea than along the Sea of Okhotsk, because the former area is more mountainous and thus better suited to these birds in that it affords them greater safety for rearing their young.

The horned puffin (ipatka)<sup>1</sup> is known to naturalists as the Anas Arctica, or duck of the north. It is found along the coast of Kamchatka, near the Kurile Islands, and even in the Penzhin Gulf, almost as far as Okhotsk. It is the size of an ordinary duck, or slightly smaller; the head and neck are bluish-black, the back is black, the breast and lower part is white; the bill is red and wider at the base, narrower and more pointed toward the tip, with three striations on each side. The feet are red, with three webbed toes; the claws are small, black, and somewhat hooked. The meat is leathery; and the eggs are similar to hen eggs. These puffins make their nests out of grass in rock crevices. They use their beaks to peck violently, and can be dangerous. The Kamchadals and Kuriles wear the bills of these birds around their necks, hanging from a cord plaited from seal hair; they have their shamans put them in place and believe that this will bring them good fortune.

A second species of bird, the tufted puffin, is called the mychagatka<sup>2</sup>, and in Okhotsk, igylma. This bird is in no way different from the former, except that it is black all over, and on its head it has two yellowish-white crests, which hang down from the ears to the neck like two locks of hair. Judging from the description of this bird, there is no other like it.

Steller and I sent several birds of these two species to the Imperial

<sup>1</sup>Alca rostri sulcis quatuor, oculorum regione temporibusque albis. Linnaeus, Fauna Suecica.

<sup>2</sup>Alca monochroa sulcis tribus, cirro duplici utrinque dependente. Anas arctica cirrata. Steller.

Kunstkamera, where they are still to be found. Among Steller's birds, there was one of the third species<sup>3</sup> which is found on the island of Bondena, in Angermania, a province of Sweden, and on the Caroline Islands in Gotland.

This bird is smaller than the ones above mentioned; it is the same color as the horned puffin, and differs only in that its bill and feet are black, and that it has two small white stripes on the front of its head, each of which extends from the eyes to the end of the bill.

The aru or kara<sup>4</sup> belongs to the eiderduck (gagara) family. The eiderduck is larger than the duck; the head, neck and back are black; the breast is blue; the bill is long, narrow, black and pointed. The legs are a rosy black, shading toward red, and there are three toes connected by a black membrane. These are found in prodigious numbers on the rocky islets in the sea. The natives kill them less for their meat, which is tough and has a bad flavor, than for their skins which they use to make capes; they use the skins as much as those of other sea birds. The eggs are considered to taste excellent.

The seagull (chaika) is very numerous in these waters. Their screeching is a great nuisance to persons who live on the seashore. There are two particular varieties here which are never seen elsewhere; the two differ only in their plumage: one is black, and the other, white.

The cormorant is about the size of a large goose. The bill is curved at the

<sup>3</sup> Alca sulcis rostri quatuor, linea utrinque alba a rostro ad oculos.  
Linnaeus, Fauna Suecica.

<sup>4</sup> Lomua Hoiere.

tip, and is narrow, rosy, and about three vershoks long, or even more, and very sharp. It has four nostrils, two of which are similar to those of other gulls; the other two are located near the forepart of the head in tiny pipes, as they are in sea birds who foretell storms, and who, for this reason, are called storm birds or procellariidae by naturalists.

The head is of medium size; the eyes are black; the neck is short and the tail is five vershoks long; the legs are feathered as far as the joint, and from there down are bare, bluish, and have three toes connected by a web of the same color. The claws are short and straight. When the wings are extended, they are more than a sazhen long. Some are different colors, but these are the young, and are not a different species. They are found along the sea coasts, particularly at the time the fish enter the rivers, because they live on fish. They cannot stand upright on their feet, which are placed quite near the tail, as in the eiderduck; this prevents them from balancing their bodies. They are very awkward in flight, even when they have been fasting; and when they have eaten a great deal, they cannot even get off the ground and can only relieve this situation by voiding. The bill and gullet are so large that they can gulp down a whole fish. The meat is very tough and stringy, which means that the Kamchadals will not eat it except in dire circumstances; they only take them for the bladder, which they attach to their nets in place of a float.

They are taken with a hook, as fish are, and the manner of taking them is both strange and unusual. A large wooden or metal hook is fastened to the end of a long cord or line; it is baited with a whole fish, preferably with a Dolly

Varden trout, so that the tip of the hook just passes across the body of the fish, near the back fin; then it is thrown into the sea. As soon as the gulls see this lure on the surface of the water, they flock around and have a long dispute until the strongest one swallows the hook. The bird is then pulled in to shore with the line, and by plunging a hand into its gullet, the bait and the hook are retrieved. In order to take still more of them, sometimes a live gull is attached to a cord, so that the other ones will see it flying so close to shore and will promptly come up to have their share of the prey. One must be careful to tie the beak, to prevent the bird from swallowing the bait.

The Kamchadals use the wing bones to make needle cases and combs for carding nettles and the grass called tonshich.

In addition to the seagulls which we have just discussed, there are other species in this country, such as blue gulls, which are found along the rivers, the tern (martyshki) and the jaeger (rasboiniki), which have a forked tail like swallows. These latter are called "robbers" because they frequently steal the prey from other sea swallows.

The storm birds foretell tempests. They are approximately the size of a swallow, and are completely black, except for the wings, which have white tips. The beak, legs and feet are black. These birds are found near islands. When a storm is brewing, they fly very low and almost skim the surface of the water; occasionally they will even alight on a ship, which tells the sailors that they are in danger of an approaching storm.

In this species we should include the merganser (stariki)<sup>5</sup> and the glupyshi,

<sup>5</sup>Mergulus marinus niger ventre albo, plumis angustis albis auritus. Steller.

for their beaks and nostrils are quite similar to those of the storm bird.

Mergansers are about the size of a pigeon; the beak is bluish, and there are blue and black feathers around the nostrils which resemble hog bristles. The feathers on the head are the same color, with several small white ones which are narrower and longer than the others, which are arranged in a circle on top of the head. The upper part of the neck is black, and the lower is flecked with white and black. The breast is white; they have short wings; the largest feathers are of a black hue and the others are blue; the sides and tail are black; the feet are red and have three toes joined together by a small red web; the claws are small and black. These birds are found near rocky islands; they raise their young in such places and go there at night for safety.

The Kamchadals and the Kuriles capture them much more easily than the large gulls; they put on a cloak they call a kuklianka, and sit down in some likely spot, letting their sleeves hang down. In this position, they wait for evening. These birds then begin to search out holes to creep into in the dusk, and large numbers of them bury themselves under the cloak of the Kamchadal, who has no difficulty in taking them.

The black merganser<sup>6</sup> is one of the birds Steller described. The beak is as red as vermillion; and atop the head is a white curved crest. Steller saw a third variety of this bird in America, which was speckled with white and with black.

<sup>6</sup> Mergulus marinus alter totus niger cristarus, rostro rubro. Steller.



The bird called the glupyshi is about the size of a river gull. They frequent rocky islands, and perch in very steep inaccessible places. Some are a bluish grey, others white, or black. The name glupyshi, or "stupid" was perhaps given them because they so often perch on ships they encounter.

Steller said that the natives on the fourth and fifth Kurile Islands take a good many of these birds, and dry them in the sun. They press the skin to remove the oil, which comes out as easily as whale oil pours out of a cask. They use it, in place of other oil, for light. Steller adds that in the strait which divides Kamchatka from America, and along the islands in that area, these birds are to be seen in such numbers that all the rocks on the islands are covered with them. He saw one the size of a very large eagle or goose. They have a hooked yellowish beak, and the eyes are as large as those of an owl. The coloring of these birds is dark, like umber, with white markings all over the body. One time, two hundred versts off shore, he saw an enormous number of them atop a dead whale which they were eating, which they were living on as if it were an island. I personally, while crossing the Sea of Okhotsk, saw many of these birds, some white and others black; but they did not come close enough to our ship for me to examine them in detail.

The guillemot (kaiover or kaiur)<sup>7</sup> belongs to the same family. It is black, with a red beak and feet. It builds its nest on steep rocks in the sea, and it is very crafty. The Cossacks call it izvoshchiki, a name given to one who rents

<sup>7</sup> Columba Groenlandica Batauorum. Steller.

and drives horses, because it actually whistles as they do. I have not had occasion to see these birds.

The cormorant (uril)<sup>8</sup> is found in large numbers in Kamchatka, and belongs to the species of baklani; naturalists have given it the name of water crow. The cormorant is the size of an ordinary goose; the neck is long, and the head is as small as the species of duck called the krokhal<sup>9</sup>; the feathers are black mixed with blue, except for the thighs which are white and downy. Also, in various places on the neck there are long narrow white feathers like hair. The eyes are surrounded by a fine red membrane, as are those of the woodcock; the beak is narrow, black on top and rosy below. The feet are black, with four toes joined by a web.

As it swims, it holds its neck upright as does the goldeneye (gogoli)<sup>10</sup>; but when it flies, it extends its neck like a crane. Its flight is very rapid, but it has some difficulty getting itself airborne. It lives on fish which it swallows whole. At night, these birds perch in rows on the edges of steep rocks, from which they often fall into the water as they sleep, and become the prey of arctic fox, which are very fond of them and lie in wait at such places. They lay eggs in July; the eggs are green, and the size of a hen's egg; they have a bad taste,

<sup>8</sup>Cornus aquaticus maximus cristatus periophthalmiis cinnabarinis postea candidis. Steller.

<sup>9</sup>Mergus serratus longiroster major. Gmelin. --French edition.

<sup>10</sup>Fuligula pedibus miniaceis. Anas fera capite subrufo minor. Steller. --French edition.

and are hard to cook; however, the Kamchadals scramble over rocks in search of them, in spite of the danger they face of breaking their necks and even of killing themselves, which happens rather often. The birds are taken with nets which enmesh them when they have settled down in some place, or which are spread on the water near shore and entangle their feet. They are also taken in the evening with nooses or running snares attached to long sticks; one approaches them as gently as possible and takes one after another. Although they see their companions being snared, they are not in the least afraid themselves. This is all the more ludicrous in that the ones who have not yet been snared simply shake their heads without changing position; thus in a short time one can take every bird on the rocks, from which one may judge how little endowed with instinct this bird is.

The meat is tough and stringy, but the Kamchadals treat it in such a way that it can be eaten in case of necessity, which sometimes happens in this country. They heat up some pits with a great fire, and when they are thoroughly heated, they roast these birds whole, in full plumage, without gutting them. When they are cooked, they strip off the meat.

The natives believe that the cormorants have no tongue, having exchanged their tongue with the mountain sheep for the white plumes around their necks and on their haunches; nonetheless, one can hear these birds cry in the evening and morning. From far off their cry sounds like a trumpet; but close up Steller compares it to the sound children make on the tiny trumpets which are sold at the Nuremberg Fair.

## BIRDS WHICH ARE COMMONLY FOUND NEAR FRESH WATER

The first and foremost bird of this class is the swan. There are so many of them in Kamchatka, both in winter and in summer, that there is no person, no matter how poor, who does not have them for dinner when he entertains someone. When they are in moult they are taken with dogs and are killed with clubs; but in winter, they are captured on rivers which do not freeze over.

There are seven species of geese in Kamchatka: the large grey goose, the graylag goose (gumenniki), the short-necked goose, the gray goose flecked with various colors, the white-necked goose, the completely white goose, and the foreign brant (nemki).

Steller says they all come in May and return in November. He adds that they come from America, and that he personally saw them during the fall season returning in flocks and flying across Bering Island along the east coast, and in spring he saw them over the west coast. In Kamchatka there are more of the large grey geese, the graylags and the spotted grey geese, than of the other varieties. The white goose is very rare there, whereas along the coast of the Northern Sea, around the Kolyma River and other rivers, they are so common that hunters in these areas kill a great many of them; and it is for this reason that the best down comes from Iakutsk. They are taken during moult, and in a rather strange way.

In the areas where these birds are accustomed to settle, the hunters built huts with two doors, so they can move in and out. In the evening one hunter

puts on a white shirt or coat, and quietly creeps up to the flock of geese. When he thinks they have seen him, he crawls back to the hut; all the geese follow him and also go inside. Meanwhile, he goes out the other side, closes the door, goes around, enters through the first door and kills all the geese inside.

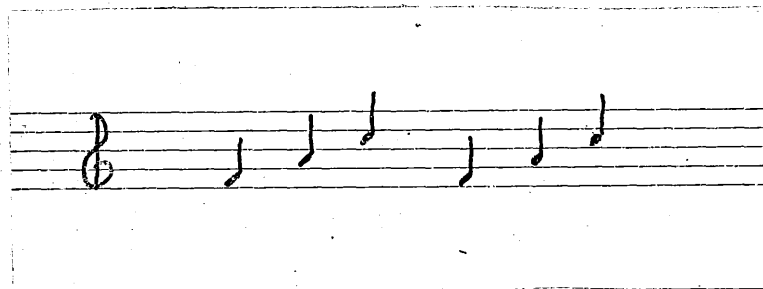
Steller noticed an eighth species of goose during the month of July on Bering Island. They were the size of a spotted grey goose. The back, neck and breast were white. The wings were black; the back of the neck was bluish; the ears were a greenish white; the eyes, black, bordered with a yellow circle, with black stripes around them, and a button or knob such as China geese have. This knob is yellowish, and is not feathered; it has a stripe of bluish-black feathers along the middle as far as the tip of the beak.

These creatures, if one can rely on the word of the natives, are found near the first of the Kurile Islands, but they are never seen on the Continent. There are various ways of taking them when they are in moult. They can be taken by using boats for pursuit, or with dogs, but the commonest way is to dig ditches near the lakes where they live. The ditches are covered with grass. The geese, as they walk along the shore, fall into these traps and cannot get out, for the ditches are so narrow they cannot spread their wings. They are also taken with nets, which will be described later.

There are various kinds of ducks in Kamchatka: the drakes (selezni), sharp-tails (vostrokhvosty), scaups (cherneti), shovellers (plutonocy), penelopes (sviazi), goosanders (krokhali), smews (lutki), goldeneyes (gogoli), teal (chirki), velvet scoters (turpany) and the domestic ducks. Four of these, the drake, teal,

goosander and goldeneye, spend the winter near springs and running water. The others, like the geese, come in spring and return in the autumn. The sharp-tail belongs to the species naturalists call Anas caudacuta s. Harelda Islandica.

These are found in bays and in the mouths of large rivers. They always move about in flocks; they have a most unusual cry, but not at all unpleasant. It is composed of six notes, which Steller wrote down.



Steller says that there are three openings in the lower part of the larynx of this bird, which are covered with a fine loose membrane; the vibration of this membrane causes the various modulations of the notes. The Kamchadals call them aangich because of their song; the same name is given to chant-singers because they also sing various melodies, and some voices can be considered bell-like. Like the aangich, they also sing in the evening and in the morning.

The velvet scoter is familiar to naturalists under the name of black duck. There are fewer of these in Kamchatka than around Okhotsk, where they are hunted at the time of the equinox. The Tungus and the Lamuts gather together as many as fifty or more men and set out in small boats; after they have surrounded

a flock of these birds, they drive them toward the mouth of the Okhota River at tide time. When the sea begins to recede and the bay becomes dry, the Tungus as well as the people who live in Okhotsk fall on these ducks and kill so many of them with clubs that each man carries off twenty or thirty or even more.

No one has ever before noted that there are also stone ducks in Kamchatka.<sup>11</sup>

In summer they live along the rivers and stay in gulf-like recesses. The males of this species are very handsome. The head is of a black as beautiful as velvet; near the beak there are two white spots which extend in a line to just above the eyes and terminate on the back of the head in clay-colored stripes. Around the ears there is a small white spot the size of a lentil. The beak, as well as those of all the other ducks, is wide, flat, and has a bluish color; the lower part of the neck is black mixed with blue. Above the crop there is a sort of collar, white bordered with blue, which is narrow over the crop itself and widens on both sides toward the back. The front of the breast and the upper part of the back are bluish; they are a black shade toward the tail. The wings are banded across with a wide white strip edged with black; the feathers on the sides beneath the wings are clay-colored; the large plumes of the wings are blackish, except for six. Of these six, four are black and as lustrous as velvet, and the other two are white, edged with black on the tips. The large feathers on the second row are nearly black, and the ones in the third row are grey mixed with blue; however there are two feathers which have white spots on the tips. The

<sup>11</sup> Anas picta, capite pulchre fasciato. Steller.

tail is black and pointed; the feet are a light color. This bird weighs about two pounds. The female of this species is not as handsome; her feathers are blackish, and each is a yellowish shade toward the tip, slightly edged with white. Her head is black, speckled with white on the temples. She weighs no more than one and one-half pounds.

In autumn, one sees only the female ducks along the rivers, never the males. The females are quite stupid, and can easily be taken when they are found in likely spots, for instead of flying off when they see someone, they only dive into the water. Since the rivers are not deep and are very clear, one can see them swim under the water, and kill them with a stick; I have personally trapped them this way while in a boat on the Bystraia River en route from Bolsheretsk to the Upper Kamchatka ostrog. Steller saw some of these birds on the islands off America.

Ducks are usually taken with nets, but this hunt demands more skill and effort than is needed to take other kinds of birds. One chooses places where there are wooded areas broken by lakes a short distance apart. The woods are cleared to make an avenue from one lake to another, or from a lake to a river. The ducks usually go there during summer, and it is in autumn, after the fishing season is over, that the natives hunt the ducks. They tie several nets together, and attach the ends to long stakes. In the evening they stretch them in the air at approximately the height the ducks usually fly. The nets are fitted with a cord with which they can be tightened or loosened at will. Several men hold the ends of the cords and pull them as soon as they see the ducks fly into the nets. Once



in a while they fly into the nets in such numbers and with such speed and force that they break them and pass right through. They stretch their nets across narrow rivers in the same way; and this is how they take ducks, particularly along the Bystraia River. This method is known not only in Kamchatka, but throughout almost all of Siberia.

Among these birds should be included the eiderduck, of which there are four species<sup>12</sup>, three large and one small. Of the large varieties, one has a long tail, the second has a small clay-colored spot on the neck, slightly above the crop; the third is described by the naturalist Wormius<sup>13</sup> under the name northern gagar or lumme; and the fourth Marsilius<sup>14</sup> calls the small gagar.

The Kamchadals believe they can foretell changes in the weather by the flight and cries of this bird; they believe that the wind will blow from the direction to which they direct their flight. Their weather forecast does not always prove to be accurate; often the opposite happens.

According to Steller, a nest of cranes was noticed near the Kozyrevska River, but no one ever told me of seeing such birds there.

Among the small water birds in Kamchatka are greenshanks (travinkom),

<sup>12</sup> 1) Colymbus maximus. Gesner, Steller. 2) Colymbus arcticus Lumme dictus. Wormius. 3) Colymbus macula sub mento castanea. Steller. 4) Colymbus sive podicipes cinereus. Eiusdem.

<sup>13</sup> Ole Worm, in Latin Olaus Wormius (1588-1654), Danish naturalist and physician. --Ed.

<sup>14</sup> Luigi Ferdinando Marsigli, in Latin Marsilius (1658-1730), Italian naturalist. --Ed.

various species of woodcock (kuliki), plover (zuek), and Tartary magpies (coroka tatarskaia). They are taken with nooses near the sea. Nowhere in Kamchatka has anyone ever reported seeing ruffs (pigolits) or lapwings (turukhtan).

#### LAND BIRDS

The principal birds to be described here are the eagles, of which there are four species in Kamchatka. The first is the black eagle, which has a white head, tail and feet. It is rarely found in Kamchatka, although they are quite common on the islands between this country and America, as may be seen in Steller's description. They build their nests on top of rocks; these nests, constructed of brush, are six feet in diameter, and approximately a half-arshin high; they lay two eggs at the beginning of July. The young eagles are as white as snow. Steller wished to observe these birds from nearby on Bering Island, and ran the risk of being clawed by the old eagles, for although he did them no harm, they attacked him so furiously that he had a hard time defending himself with a staff. They abandoned the nest where Steller had bothered them, and built a new one in a different place.

The second species is the white eagle, which the Tungus call elo. I saw these at Nerchinsk; they are not white but grey. Steller says these are only seen near the Khariuzova River, which falls into the Sea of Okhotsk.

The third species is speckled with black and white. The fourth is a deep terra-cotta color. The tips of the wings and of the tail have oval spots. These

two species are found in large numbers in this place.

The Kamchadals eat eagles and consider the meat very good. There are also many birds of prey such as osprey (skola), gyrfalcons (belye krechty), peregrine falcons (sokola), goshawks (iasreb), buteos (kobchiki), eagle owls (filin), Asian hawks (soba), hen harriers (lun), crows (borona), carrion crows (borona chernaia), magpies (soroka), nutcrackers (ronzha), greater spotted woodpeckers (pestryi diatel) and green woodpeckers (zelenyi diatel), which have not yet been described. They can not be either killed or trapped, for they will not remain a moment in one place.

In addition to these birds, one also sees a large number of cuckoos (kukushky), dippers (vodianoi vorobei), grouse (tetereby), woodcock (polniki), willow ptarmigans (kuropatka), thrushes (drozdy), crossbills (klesty), pine grosbeaks (shchury), skylarks (zhavoponki), swallows (lastochki) and linnets (chechetki), which the Kamchadals await impatiently at the beginning of spring, since this is when their year begins.

## CHAPTER XI

### INSECTS AND REPTILES

If the intense humidity, the floods and the winds which frequently prevail in Kamchatka did not prevent insects from multiplying, there would be no place where one could take refuge in summer, since there are lakes, marshes and vast stretches of moss-covered tundra everywhere.

Flies are very common in Kamchatka; in summer they damage all foodstuffs, particularly during the fishing season; these creatures so avidly devour the fish which have been hung up to dry that there is nothing left but the skin. There is one variety which exists in such prodigious quantity all over the country that the ground is almost covered with them.

During June, July and August, when the weather is fair, gnats and midges are a great bother; however there are few natives who suffer from them. At this time they are nearly all on the ocean shore, busy fishing, and the cool climate and continuous winds keep most of the insects away.

It is only recently that bedbugs have been found near the Bolshaia River and the Avacha River. They were undoubtedly brought in in chests and in clothing, but they have not yet been seen in the rest of Kamchatka.

The humid air and the winds are the reasons that there are very few butterflies, except in places near the Upper Kamchatka ostrog, where they are

quite common, because of the dry climate and the proximity of the forests. Occasionally a swarm of them will be seen on vessels which are thirty versts off shore, and it is very surprising that these insects can fly so far without rest.

There are few spiders in Kamchatka. The women of this country, who believe that these insects have the power of making them fecund, have a great deal of trouble to find any. They eat them before they allow their husbands to approach them, after they have become pregnant and before being brought to confinement, to make their delivery easier.

Nothing is more bothersome to the Kamchadals who live in iurts than fleas and lice, particularly to the women, who usually have long hair which they tie in small tresses. I have personally seen, several times, some of these women whose only work is to constantly take lice from their heads, one after another. Others, to save themselves trouble, unbraid their hair and comb it with their fingers so that the lice fall onto their garments, and then pick them up in wads. The men remove them from their backs by using little boards or curry-combs made for this very purpose. All Kamchadals usually eat the lice. Chinese women, among the lowest class of people, do the same; this is something I have personally witnessed several times. However, since the Kamchadals were severely rebuked by the Cossacks, and sometimes were even beaten for doing this, many of them have put aside this disgusting custom out of fear of punishment.

Steller was told of an insect which is found on the seashore which is similar to a common louse; it bores beneath the skin and causes such intense discomfort

that surcease is obtained only by cutting it out; thus the natives in this country are very much afraid of these insects.

It is interesting that neither frogs, toads nor snakes are known anywhere in Kamchatka; one does see quite a few lizards, which the Kamchadals consider spies sent by the god of the underworld to look into their actions and foretell their death; for this reason they are very careful to guard against them, and wherever they find them, they cut them up into tiny bits so they will not be able to carry tales back to the one who sent them. If by chance one of these creatures escapes, they fall into deep despair and await death at every moment, and indeed sometimes bring on death by their depression and fears, which only serves to confirm the others in such a preposterous superstition.

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## CHAPTER XII

### TIDES ON THE SEA OF OKHOTSK AND BERING SEA

In giving a description of Kamchatka, one should also mention the tides of the seas which surround the country. I shall limit myself here to remark that ebb and flow tide are the same in these seas as in others; but as I have made certain observations on this matter which are not elsewhere to be found, it will perhaps be useful to relay them to my readers, so they may undertake more exact research on the tides of other seas than has been made up to the present time.

It is a general rule that ebb and the flow occur twice in twenty-four hours, according to the course of the moon, and that the water is highest at full and new moon time; however I do not know if anyone has discovered that the ebb and flow are not equal, and that the sea does not rise and fall at a fixed time, but according to the phase of the moon, as I observed on the Sea of Okhotsk. If this general opinion is true, that the ebb and flow in other seas are equal, and always occur at the same hour, it follows that the Kamchatkan seas are only similar to the White Sea, where I have been assured there is a high tide and a low tide every twenty-four hours, as in the seas of Kamchatka. The natives call it manikha.

Thus I feel it necessary to mention this difference in the tide, how the

ebb and flow occur in this sea, when and how the high tides change into manikha, and these into high tides, that is, how the high tide becomes low, and the low, high. To aid in this description, I shall here give the same observations I made in 1739 and 1740, during three months of each of these years. These observations are confirmed by the findings of Fleet Captain Elagin of the vessel Ivan Fomich, at the mouth of the Okhota River, near the Kurile Islands, and in the Port of Petropavlovsk. They will indicate how the tides rise and recede in these areas when I have had no opportunity to make observations. Although I have only mentioned the changing of the tides which I have personally observed, I have nonetheless learned by word of mouth from this captain that there is a large flow and a small flow in this area, which makes me think that the change there is the same as in the places where I made my own observations.

To make my observations clearer, one must begin by realizing that the water in the sea which enters the bays of the river estuaries at high tide, does not entirely withdraw at low tide, but only according to the phase of the moon, and it is for this reason that these bays, at low tide, sometimes remain dry, and that the only water in the river is that which lies in its natural course, whereas at other times the banks of the rivers are inundated.

All the sea water recedes during low tide at the full and the new moon; but when high tide immediately follows low tide, it rises to nearly eight feet. High tide lasts about eight hours, and then the low tide begins, which lasts about six hours, and the water falls about three feet; and after this comes a flow tide which lasts about three hours, during which time the water does not rise more



than a foot; finally the water falls and recedes to leave the shore dry. This diminution lasts about seven hours.

Following is a description of the high and low tide during three days after the new and the full moon, at the end of which time the high tide diminishes, and the manikha or low tide increases. The sea water, borne by the high tide, completely recedes into the sea during the full and the new moon, as mentioned above; but it is not the same when the period of the last quarter of the moon approaches. At that time the high tide diminishes and the manikha is augmented; and when the manikha diminishes, more sea water remains in the bays. Thus toward the last quarter of the moon, the high tide changes into the manikha, which in turn changes into the high tide; and it has been observed that this change occurs regularly four times a month.

The ebb and flow of the sea present a pleasant sight. When high tide begins, the water rises in the rivers as it gradually enters, and in small waves which moment by moment become larger, extends as far as the area where the curvature of the river forces the waves to turn aside. However, even in the calmest weather a loud and frightening sound can be heard in the mouth of the river, and one sees awesome waves rise which dash against each other, covered with spume and spouting water like rain. This combat between the river water and the sea water lasts until the sea takes the upper hand, and then perfect calm reigns. The sea water enters the river with such violence that its speed even surpasses that of the river. One sees the same phenomenon when the water recedes.

## PART THREE

### THE PEOPLES OF KAMCHATKA

#### CHAPTER I

##### GENERAL REMARKS ON THE INHABITANTS OF KAMCHATKA

The natives of Kamchatka are as wild as their country itself. Some, in the same fashion as the Lapps, have no permanent dwelling place, but move from one location to another, driving their reindeer herds along with them; others establish permanent settlements on the banks of the rivers which empty into the Bering Sea and into the Sea of Okhotsk, or they inhabit the islands situated in the vicinity of Cape Lopatka. Their diet consists of marine animals, fish and various things which the sea casts up on her shores, and on greens which grow along the littoral, such as kale, sea turnips, crabs, etc. The nomadic peoples live in iurts or huts made of reindeer hides, the others in underground dugout iurts. In general, all these natives are idolaters, and are totally ignorant and illiterate.

The inhabitants of this country are divided into three nations: the Kamchadals, the Koriaks and the Kuriles.

The Kamchadals inhabit the southern part of the peninsula of Kamchatka,

from the mouth of the Uka River to Cape Lopatka. They also live on the first of the Kurile Islands, which is called Shoumshchu.

The Koriaks live in the northern regions, and around the Sea of Okhotsk, as far as the Nukchan River and in the vicinity of the Bering Sea, almost as far as the Anadyr River.

The Kuriles occupy the second island of their name, and others, as far as those subject to Japan.

Thus the Kamchadals have for their neighbors to the south the Kuriles, and to the north, the Koriaks. These latter border upon the Chukchi<sup>1</sup>, the Iukagirs<sup>2</sup> and the Lamuts<sup>3</sup>. The Kuriles have the Kamchadals and the Japanese as their neighbors.

One may divide the Kamchadals into two nations, according to the difference in their language; one northern, the other southern. The former live along the Kamchatka River from its source to its mouth, and along the rivers of the Bering Sea from the mouth of the Uka River south to that of the Nalacheva River. This nation may be considered the principal one, since it is less backward in its customs, more civilized, and the same language is spoken everywhere; whereas

<sup>1</sup>The largest tribe of the northeastern paleo-Asiatic groups. M. G. Levin and L. P. Potapov (ed.), The Peoples of Siberia (Chicago: University of Chicago Press, 1964), p. 799. --Ed.

<sup>2</sup>A paleo-Asiatic tribe first encountered by the cossack Ivan Rebrov on the Indigirka River in 1633. Ibid., p. 789. --Ed.

<sup>3</sup>Presently known as the Even tribe. A paleo-Siberian tribe of the Baikal type. Ibid., pp. 101, 670-671. --Ed.

the others have as many dialects as there are settlements.

The southern nation is that which lives on the coast of the Bering Sea from the Nalacheva River to Cape Lopatka, and on the coast of the Sea of Okhotsk, from Cape Lopatka north as far as the Chariuzova River.

The Koriaks are likewise divided into two nations, one called the reindeer Koriaks, the other the settled Koriaks.

The former are nomads and move from one place to another with their herds; the second have permanent dwellings along the rivers, as the Kamchadals do. Their language is so different they cannot understand one another. The reindeer Koriaks even have great difficulty in understanding the settled Koriaks, and especially those who border on the Kamchadals, because they have borrowed many words from them.

For the same reason some also divide the Kuriles into two peoples, the near and the distant. The distant Kuriles are designated as those who live on the second of the islands located south of Kamchatka, and those beyond; and the near Kuriles are those who live on the first island of that name and on the tip of Cape Lopatka. But this division is not absolutely correct; for although the latter differ a little from the Kamchadals in language, custom, and even in appearance, it is possible that they are descended from the Kamchadals whom I call southern, and that the difference which exists between them arises only from their neighborhood, and the trade and the mutual alliances they form with the true Kuriles.

The Kamchadals, whether northern or southern, call themselves itelman,

inhabitants, and in the feminine gender, itelma. These names come from the verb iitelakhsa, which means to live, as Steller has written. Kima-itelakhsa means I live; men, a man, and ma itelakhsan, where does he live? According to Steller, these words came from the language of the Kamchadals who live between the Nentik and Moroshechna rivers. They call His Majesty, koatch-aerem, which is to say, prince brilliant as the sun, and aerem, majesty. Generally they call the Russians brikhtatyn, men of fire, because of their firearms. As they know nothing of weapons, and have no idea of their effect, they suppose that the fire is produced by the breath of the Russians, and not by the gun. In their language they give to the Koriaks the name of tauliugan, and to the Kuriles those of kushin and kuzhin.

The Kamchadals have the singular custom of giving each thing a name which indicates its particular characteristic; thus they take into account only a certain similarity between the name and the effect of a thing. But when they do not know enough to find an immediate similarity between names, they borrow a name from any foreign language and corrupt it so much that it bears not the slightest resemblance to the original thing. For example, they call a priest bogbog, probably because they hear him frequently utter the word bog which means God; a doctor, duktonas; a student, sokeinakhch. They call bread, brikhtatyn-augh, the root or tuber of men who belch fire; a clergyman, ki aangych, that is, a sea duck with a pointed tail, which, according to them, sings like a priest; a clock, kuk; iron, oachu; a blacksmith, oazakisa; a sailor, uchavschinitakh; a caulker, kalupasan; tea, sokosokh; a lieutenant-colonel, who in order to get

information had several of them hanged, itakhzashakh, that is, the one who hangs.

The reindeer Koriaks call themselves tumuguty. They call the Russians, melgytangy, and the Kamchadals, khonchala. They do not know the Kuriles at all. The Koriaks who do not change their dwelling place at all call themselves chauchu; they also call the Russians melagytangy, the Kamchadals, nymylaga and the Kuriles, kuinala.

The Kuriles give themselves the name uivut-eeke. They call those among themselves who pay no iasak and who inhabit the most distant islands, iaunkur, the Russians, siisian, the Kamchadals, arutarunkur. The Koriaks are unknown to them.

The backwardness of these peoples and the ignorance of the interpreter, hindered us from enlightening ourselves about certain other words to which we can assign no meaning. It must be pointed out that we are not referring to any of these tribes by its own name, and that we most frequently avail ourselves of the name given them by their neighbors who have been previously subjugated by the Russians, by adapting the last syllables and reconciling the words a little with Russian pronunciation. It is in this way that we call the Kamchadals in the Koriak tongue, since the term Kamchadal is derived from the Koriak word Konchala, and the name Kurile is derived from the Kamchadal word kuchi. Although there is no certainty as to the origin of the name Koriak, Steller observes with much likelihood that the word Koriak comes from kora, which means a reindeer. When the Cossacks came to these people, they heard them

frequently repeating the same word, and seeing that their entire wealth and wellbeing consists of the reindeer herds, they called them Koriaks, or Reindeer People.

The Chukchi, a fierce and warlike tribe which lives in the region of Cape Chukotsk in northeastern Asia, are referred to by the corrupted term chauchu, a name which is common to all the settled Koriaks. The origin of the name of the Iukagirs, who are contiguous to the Reindeer Koriaks on the north, is unknown. It is believed, however, that it comes from the Koriak word edel, which means a wolf. The Koriaks call them by this name, because they eat only wild animals which they hunt, and the Koriaks compare this hunt to the rapacity of the wolf. But there is only a slight resemblance between the two names; beyond this we do not know the name by which the Iukagirs call themselves, nor the name they give to their neighbors who live in the vicinity of Iakutsk.

The natives of Kamchatka have three languages: Kamchadal, Koriak and Kurile. Further, each language is divided into various sub-languages, according to the difference in dialect.

The Kamchadal language has three principal dialects; the first is used by the northern tribe, the second by that of the south. These two dialects have so little in common that they may be regarded as two distinct languages; but although there is almost no resemblance between the vocabularies, the Kamchadals understand each other without the assistance of interpreters. The third dialect is that which is spoken by the inhabitants of the area near the Sea of Okhotsk, from the Vorovskaia River to the Tigil; it is composed of the two foregoing

dialects and of a number of Koriak words.

The reindeer Koriaks likewise have their particular dialect, just as the settled Koriaks do. Although it is not known exactly how many dialects there are in the Kurile language, since the tribes subject to the Russians speak the same language and do not know that of the neighboring tribe, it is fairly certain that the same variety in manner of speaking exists among the natives who live scattered along the various islands, as has been observed among the southern Kamchadals and in the various small ostrogs of the settled Koriaks.

The Kamchadals speak partly in the throat, partly in the mouth. Their pronunciation is slow, labored, heavy, and accompanied by various unusual body gestures. These people are timid, servile, deceitful and sly.

The Koriaks speak in the throat in a guttural fashion as if they were howling. The words in their language are long, and the syllables are short. There are generally two vowels at the beginning and at the end of their words, for example, uemkai, which means a young reindeer which has not yet been harnessed. The customs of this tribe are consistent with their language, as will presently be seen in this description.

The Kuriles speak slowly and distinctly, easily and pleasantly. The words in their language are soft, and there is no over-frequent concurrence of consonants or of vowels. These people have gentle manners; they are more prudent, and loyal; they are more civilized, more sociable and more honorable than any of the other savages of whom we have spoken.



## CHAPTER II

### CONJECTURES ON THE ORIGIN OF THE NAME KAMCHADAL

Although it has already been suggested that the name Kamchadal comes from the Koriak word Konchalo, it has never been told why the Kamchadals were thus called by the Koriaks and the matter should be clarified at this point.

There are some who maintain that the Russians learned from the natives by means of sign language that they called their river Konchatka, after a famous warrior named Konchat, and that for this reason they gave the name Kamchadal to the inhabitants of this country. We consider this a specious fabrication rather than truth for the following reasons. 1. The Russians had no need to use sign language with the Kamchadals, as they had with them several interpreters from the tribe of settled Koriaks, who understood the Kamchadal language perfectly. 2. The name Konchat is completely unknown to the Kamchadals. 3. Even if it is suggested that there was once a man by this name, his name could not be given to the river, for the Kamchadals do not give men's names either to lakes, rivers, islands or mountains; rather, as we have already remarked, place names conform to some natural feature which the people perceive, or indicate a resemblance to some other thing. 4. The Kamchatka River was not called Konchatka, but Uikual, that is, the Big or Bolshaia River.

It is uncertain why the Koriaks give the Kamchadals the name Konchalo, since the people themselves do not know. But we are led to believe that Konchalo is a word corrupted from Kooch-Ai, which means inhabitant of the shores of the Elovka River, which empties into the Kamchatka, and which is called the Kooch.

The Kamchadals distinguish themselves from other tribes not only by the general name itelmen, but also by the names of rivers and other places where they live. For example, kyksha-ai, inhabitants of the shores of the Bolshaia River; suachu-ai, inhabitants of the shores of the Avacha River; Kooch-ai, inhabitants of the Elovka River; the word ai means inhabitant of the place designated by the word to which it is linked. The word itelmen, as has already been stated, is a general term meaning inhabitant of Kamchatka.

Those who believe that Konchat was a famous warrior of this country are surely misled in attributing to a single person what they should attribute to the valor of all the inhabitants of the Elovka River region. Each one of them is called Kooch-ai or konchat in common parlance. It is quite certain that in bygone times this nation was regarded as warlike, and that they were famed for their valor more than any other tribe of this region. Thus the inhabitants of this land were known, in the same way as the Koriaks, as much by their vicinity as by the name kooch-ai, which the other Kamchadal tribes give them.

In spite of the slight resemblance between the words, I think there will be few who can question the changing of the word kooch-ai into konchalo and the changing of the latter into Kamchadal, especially when one considers how readily not only natives but even Europeans corrupt foreign words in their

language. For example, the Russians, from the word Us-kyg, which means the Us River, have made the word ushki, which means little ears; from the word Kru-kyg, they have made Kruiki, hooks; from the word Uutu,utka, duck; from Kali-kyg, kaliliki, from Kuzhi, Kurile, inhabitant of the Kurile Islands, etc.

As to the origin of the Kamchadals, their transmigration, and the places they at first inhabited, we can make no positive statement. These people are themselves ignorant of this matter, and have no other evidence of their history than fable and tradition. They claim to have been created in the place where they live by the god they call Kutkhu, who once lived in the skies, so they say; they revere him as the creator of their race.

However, the customs of the Kamchadals, their habits, dispositions, outward appearance, manners, language, names, dress and other circumstances, give rise to the belief that these people came in ancient times from Mongolia to settle in the places where they now live. Steller gives these proofs to support his opinion.

1. The Kamchadals have no knowledge whatsoever of their origin; they have lost all tradition and this is why they believe that Kutkhu created them in this country.

2. Before the Russians came, they had no knowledge of nations other than their neighbors, the Koriaks and the Chukchi. They have only in recent times had knowledge of the Japanese and the Kuriles, by means of trade or through the Japanese ships that are occasionally wrecked on their shores.

3. The Kamchadals are very populous, in spite of the fact that every year many perish in the mountain snowstorms, in hurricanes, because of being attacked by wild beasts, because of floods, by suicide, or in the frequent wars they wage against each other.

4. They are well aware of the uses and characteristics of the plants native to their country; this presupposes long experience, particularly in a land where the long winters and short summers leave at most only four months in the year to make these observations. Moreover, they have to use part of this time fishing, which is their principal occupation, on which their winter food supply depends.

5. All the tools and household utensils which they use are different from those of other nations. But considering their needs and the particular circumstances of their way of life, these are made so skillfully that a very ingenious person who had never seen them would have great difficulty in inventing their like. An example is the manner in which they use dogs to pull their sleds.

6. The Kamchadals are uncivilized in their habits; their instincts are animal instincts; their supreme happiness consists in physical pleasure; and they have no conception of the spiritual aspects of the soul.

These are the reasons which further lead us to believe that these people were originally descended from the Mongols and that they do not come either from the Tatars who live on this side of the Amur River nor from the Kuriles, nor from the Japanese. They cannot possibly be descended from Tatars, for surely during their migrations they would not have failed to settle along the banks

of the Lena River, which is presently dominated by the Yakuts and Tungus, since at the time this land was uninhabited, and because of its fertility would have obviously suited them better than Kamchatka. It might be suggested that in fact they did live along the Lena and were eventually driven out by the Yakuts, as were the Tungus who now live between the Bratsks and the Yakuts. But the answer would be that in that case the Yakuts would have at least some knowledge of them, as they have of the Tungus; this however has not been proven. Their manners and physical features are so different from the Kuriles, that it is impossible that they are descended from them.

It also appears that the Kamchadals have no Japanese origins, because they migrated in ancient times, certainly before the separation of the Japanese empire from China; a proof of this is that the Kamchadals have no knowledge of iron ore nor of other metals although more than two thousand years ago the Mongols as well as the Tatars began to make utensils and tools from this metal. Thus it is likely that the Kamchadals were driven into this country by the eastern conquerors, just as the Lapps, the Ostiaks and the Samoyeds were pushed into the far north by the Europeans<sup>1</sup>.

If Kamchatka had been uninhabited during the time the Tungus were driven

<sup>1</sup>Hasak was imposed on the Ostiaks and Samoyeds by the Russians as early as the 16th century. Gradually fur-exhausted lands inhabited by these tribes were settled by groups of Russian peasants and soldiers. The loss of their land and harsh treatment at the hands of some Russian officials caused the natives to move north and east into uninhabited less desirable areas. M. G. Levin and L. P. Potapov (ed.), The Peoples of Siberia (Chicago: University of Chicago Press, 1964), pp. 115-117. --Ed.

from their country, they probably would have taken refuge there, as the safest and most remote place. It seems evident that the Kamchadals were established in the land they inhabit long before the arrival of the Tungus, and that these latter, finding Kamchatka occupied by a populous nation, in spite of their bravery did not dare risk trying to drive out the natives.

Thus it appears that the Kamchadals formerly inhabited Mongolia, beyond the Amur River, and were part of the same nation as the Mongols. This is substantiated by the following observations.

1. The Kamchadals have many words which end, as in Mongol Chinese, in ong, ing, oing, chin, cha, ching, ksi, and ksung. It would be too much to hope that all these Kamchadal words had the same meaning and the same sound as the Mongol words, since the Kamchadal language has several dialects, although it is the language of one people and one country. Furthermore, in order to judge the distinct character of a language, it is enough that a European, although he may not know a foreign language, yet can tell by a man's pronunciation whether his native tongue is German, French, Italian, etc. The difference between words is in itself a proof that the Kamchadal migration took place in the most remote times, and that nothing now remains but a mere shade of resemblance between these languages. Nonetheless, Kamchadal resembles Mongolian not only in a number of words but also in declensions and derivatives. This latter is a particular characteristic, that from one word several others can be formed, and that it links prepositions to verbs.

2. The Kamchadals are small in stature, like the Mongols; like them they

are swarthy; they have black hair, few whiskers, a broad face like the Kalmuks, with a flat nose, irregular features, deepset eyes, sparse eyebrows, spindly legs, protruding abdomen and a slow gait. They are all cowardly, conceited, timorous and servile toward those who treat them harshly, obstinate and contemptuous of those who are kind to them. This is a true picture of the real character of these two nations.

### CHAPTER III

#### THE PREVIOUS CONDITION OF THE KAMCHADAL NATION

This primitive nation had never payed iasak until the Russians conquered this land; they had always lived in complete independence without rulers or laws. The elders, or those who were distinguished for their valor, were preeminent over the others in each ostrog. This preeminence, however, consisted only in that preference was given their advice over that of others. Aside from that there existed complete equality among them; no one might command another, nor would anyone presume of his own accord to punish another.

Although the Kamchadals resemble certain Siberian tribes in their swarthy complexion, black hair, small eyes and flat features, nonetheless they are different in that their faces are not so long nor so hollow-cheeked; they have more prominent cheekbones, they are thick-lipped and have a very large mouth. They are generally of medium stature, they have broad shoulders and are stocky, especially those who live near the sea and whose diet consists of marine animals. In all of Kamchatka we never saw a man of large stature.

They are filthy and disgusting; they never wash their hands or faces, nor do they cut their fingernails; they eat from the same bowls as their dogs and never wash them. They all reek of fish and smell like eiderducks. They never comb their hair; men and women part their hair in two hanks; the women, whose hair



is longer, wear it in several small braids which they plait into two large ones, which they tie together at the end with a piece of hemp and toss over their backs like an ornament. When hair works loose from the braid, they tie it back in place. These people are crawling with such quantities of lice that when they lift up their braids, they scrape off lice into their hands, roll them together, and eat them.

Those who are bald wear hairpieces which weigh up to ten pounds. Their heads then look like hay stacks. The women seem better looking and more intelligent than the men; thus they prefer to choose their shamans either from their wives or from the koekchuchi.

Their clothing is made of hides. They live on roots, fish, and sea life. In winter they live in iurts, and use dogs to pull their sleds. In summer they live in balagans; they move about in large boats or on foot, depending on the dictates of their location. The men carry burdens on their shoulders, and the women, on their heads.

They have a strange idea of God, of evil and of good. Their pleasure consists of idleness and of the satisfaction of their natural desires. They arouse their lust with songs, dances and love tales which they are accustomed to relate. Boredom, responsibilities, troubles, are considered the greatest misfortunes which can befall them; and to guard against these, there is nothing they will not do, even sometimes at the risk of their lives. Their guiding principle is that it is better to die than not to live in comfort, or to be unable to satisfy their desires. Thus they used to have recourse to suicide as a last resort to find happiness.

This barbaric practice became so common among them when they were conquered by the Russians, that the Court sent orders from Moscow to put a halt to it. As for the rest, they live in a carefree fashion; they work when they feel like it; solely preoccupied with the present and with the necessities of life, they give no thought to the future.

They have no knowledge either of riches, of honor, nor of glory; consequently they know neither greed, ambition nor pride; all their desires are aimed toward living in an abundance of everything they want, of satisfying their passions, their hatred, and their vengeance. These vices occasion quarrels among themselves, and bloody wars with their neighbors. These are not at all motivated by a desire for aggrandisement, but by the wish to recover provisions which have been stolen from them, and to revenge themselves for the outrages perpetrated by the kidnapping of their daughters. They in turn ravish the daughters of their neighbors, for this is the quickest method of procuring a wife.

They trade with the sole purpose of acquiring the necessities of life. They supply the Koriaks with sables, fox skins, and long-haired white dog pelts, with dried mushrooms and other trifles. From them they receive clothing made from the skins of reindeer and other animals. They exchange the things which they have in abundance for those which they need, such as dogs, boats, eating and cooking vessels, drinking troughs, yarn, dried nettles for making cloth, and foodstuffs. This trade is carried on with great evidence of friendship. When a Kamchadal wants something which a neighbor has, he goes to see him and openly announces his need, although they may be only slightly acquainted. From that

time on the host, according to tradition, gives him everything for which he asks; but afterward he returns the visit and is treated in the same fashion. Thus each obtains what he needs. This custom will be more fully described later.

The Kamchadals are extremely boorish and live without civilities. They never doff their hats nor bow to anyone. They are so stupid in their discourse that only in their power of speech do they differ from animals. Nonetheless they have curiosity. They believe that the earth, sky, air, water, land, mountains and forests are inhabited by spirits whom they fear and honor more than their god. They make sacrifices to these spirits on nearly every occasion; they carry idols of some spirits with them, or keep them in their dwelling, and rather than fearing their god, they curse him for all their misfortunes.

They do not know how old they are. They count to one hundred, but with such difficulty that they can not go beyond three without using their fingers. Nothing is more amusing than to see them count beyond ten; when they come to the end of the fingers on their hands, they join hands to indicate ten, then continue using their toes; and if the number goes beyond twenty, they do not know where they are, and they cry out, as if in a trance, macha where to take the rest from?

Their year is made up of ten months, some longer, others shorter, and in their division, they have no regard to the heavenly bodies, but only to the nature of their daily tasks, as can be seen in the following table.

1. Chuzhlingach-kulech Month of purification of sins, because during the course of this month there is a festival of purification.
2. Kukamlilinach-kulech The month which breaks the axe, because the great freeze snaps the axe handles.
3. Balatul-kulech The beginning of warm weather.
4. Kydyshkunnych-kulech The days grow longer.
5. Kakhtan-kulech Month of preparation.
6. Kuishe-kulech The month of the red fish.
7. Azhaba-kulech The month of tiny white fish.
8. Kaiko-kulech The month of the kaik fish.
9. Kyzhu-kulech The month of the big white fish.
10. Kikhteru-kulech The month of falling leaves. This lasts nearly until November, or the purification of sins, and this lasts three of our months.

The Kamchadals who live along the banks of the Kamchatka River are the only ones who give the months these names. The folk of the north call them other names, and this is how they count them.

- |                                  |   |
|----------------------------------|---|
| 1. <u>Keluool-kulech</u>         | The month when rivers freeze.                         |
| 2. <u>Kyzhati-kulech</u>         | The month for hunting.                                |
| 3. <u>Chuzhlingeč-kulech</u>     | Month of purification of sins.                        |
| 4. <u>Kukamlilingč-kulech</u>    | The month when axes break, because of the great cold. |
| 5. <u>Kydyshkonneč-kulech</u>    | Month of long days.                                   |
| 6. <u>Shizho-kulech</u>          | The month when seals give birth to their young.       |
| 7. <u>Kuul-kulech</u>            | Month when seals whelp.                               |
| 8. <u>Kozha-kulech</u>           | Month when domestic reindeer give birth.              |
| 9. <u>Kaju-kulech</u>            | Month when wild reindeer give birth.                  |
| 10. <u>Kuilkozhalideč-kulech</u> | Month when fishing begins.                            |

They divide the year into four seasons: adamal, summer; koeleliu, winter; kytkheil, fall; ugal, spring; but they have no understanding of the beginning or the end of these seasons. This is what Steller has written on the subject: "The Kamchadais know that the world did not exist from eternity, but that it had a beginning. The natives on the shores of the Sea of Okhotsk call time, itkuokh or azked, and those on the banks of the Kamchatka River, say etkul or elchich; the origin of these words is unknown. They commonly divide our solar year into two parts, each of six months; thus winter is one year, and summer another. They base this division on the effects of Nature on the land. The course of the moon determines the length of each year; and the interval from one new moon to

the next determines the number of months. The summer year begins in May, and the winter year in November. The southern Kamchadals call the month of May tava-koach, the month of railbirds; tava means the bird of this name, and koach, the moon and the sun. They call this month in this manner because it is the time when rails come in vast numbers to their country. June is kua-koach, the month of cuckoos, because this bird sings at that time; July, etemsta-koach the month of summer; August, kikhzuia-koach because of the fish they catch in the moonlight. September is koazukhta-koach, the month when leaves turn yellow and fall; October, pikis-koach, the month of the lapwing, because at this time when the trees are bare, these birds can be seen, which are hidden from sight when the leaves are on the trees. These six months compose the year of summer, which they consider the first.

"The month of November begins the winter year; they call it kaza-koach, because it is then that they work the nettles, which they pull up, soak, separate into fibers, and dry. December, nokkoo snobil, somewhat cold, to indicate that during this month the weather begins to turn cold. January is Ziza-koach, touch-me-not. At that time, they consider it a great mistake to drink water from the rivers without using a drinking vessel, because they are likely to freeze their lips; they draw water from the rivers with rams' horns, or with vessels made from the bark of trees. February is kicha-koach, because they notice that at this season, the cold makes the wood of the ladders they use to climb into their dwellings very brittle. March is agdu-koach, because the snow begins to melt around their huts, they dig them out, and see the earth beginning to be exposed.

April is masgal-koa ch, the month of wagtails, because the arrival of these birds announces the end of the second year and of winter."

It appears through Steller's account that he spoke with well informed persons, and that the Kamchadals do not all count the same number of months, nor call them by the same names. They do not distinguish days by special names; they know neither weeks nor months; consequently they do not know how many days make up their months and years.

Notable events serve them as an epoch in the division of time, such as the coming of the Russians<sup>1</sup>, the great Kamchadal revolt<sup>2</sup>, the first expedition to Kamchatka<sup>3</sup>. They are totally ignorant of handwriting. They have no hieroglyphics to preserve the memory of events; thus all their knowledge is founded only on oral tradition, which progressively becomes so faulty and full of error that it is difficult to recognize events, much less what the truth is. They are completely ignorant about the cause of eclipses which they call kulech-guzhich; when they occur, they build fires in their iurts and pray to whatever heavenly body is eclipsed to give back its light. They recognize only three constellations: Krankhl, the Great Bear; Dezhich or Izhich, the Pleiades; and Ukaltezhid, Orion. They attribute thunder and lightning to evil spirits, or to men who live in the volcanoes.

The Kamchadals have names only for the principal winds, and they are not

<sup>1</sup>The first Russian incursions into Kamchatka from Anadyr ostrog were led by Luka Morozko (1690) and Volodimir Atlasov (1697-1698). --Ed.

<sup>2</sup>1731. --Ed.

<sup>3</sup>Bering's first expedition visited Kamchatka 1725-1730. --Ed.

in agreement in this regard. The natives of the Kamchatka River call the east wind shangysh, blowing from below; the west wind, bykymykh; that from the north, betozhem; and from the northeast, koaspiul, the meat wind, for this wind blows ice floes onto the beach and many sea animals are killed; the northwest wind, tag, which blows from above; the south wind, cheliukymg. The people who live farther north from the banks of the Kamchatka River, call the east wind kuneushkht, blowing from the sea side; that from the west, eemshkht, blowing from the land-side; the north wind is called tyngylshkht, cold; south, cheliugynk; and the southwest, gyngy eemshkht, season of women, because they say that when this wind blows the skies weep like a woman.

They have no public judges to decide and end their disputes. Each can judge his neighbor according to the law of retaliation. If one man has killed another, he is to be put to death by the kinsmen of the dead one. They punish thieves convicted of several offenses by wrapping birch bark around their hands and setting it afire. Those who are caught for the first time are beaten by those whom they have robbed, and make not the least resistance, after which they are sent off to live alone deprived of all aid and of trade with others as if they had lost their civil rights. When a thief is not discovered, they hold a large ceremony in the presence of their priests, and throw into the fire the spinal cord of a mountain ram; they believe the criminal will experience the same convulsions, that his muscles will contract, and that he will lose the use of his limbs, in the same way as the nerve contracts in the fire.



They never have quarrels over their possessions, their dwellings and their boundaries, since each has more land than he needs, and there is an abundance of water, grasses and animals necessary to their diet on the prairies and in the rivers near their settlements.

They have as many as two or three wives. Some maintain other women, whom they call koekchuchei. These are dressed the same way as the others and do the same work. They are not intimate with the men and behave as if they had an aversion to them.

The Kamchadals do not understand the method of counting by versts, and measure the distance from one place to another by the number of nights spent en route.

They take great pleasure in exactly imitating and mimicking other men, in their bearing, voice, movements, gestures; they are also extremely clever in imitating the songs and cries and howls of wild birds and animals.

In spite of their disgusting manner of living and their abysmal stupidity, they are nonetheless convinced that there is no way of life happier and more agreeable than their own. This causes them to regard the Cossack and Russian way of life with astonishment mingled with contempt. They are, however, beginning to grow out of that error. The number of older Kamchadals who cleave to their traditional ways, daily diminishes. The young men have nearly all been converted to Christianity. They are adopting the customs of the Russians, and make fun of the barbarity and superstitions of their forebears. The Empress Elizabeth has appointed a toion in each ostrog, who decides all issues except

those dealing with life and death. These chiefs and the common people have already built Russian style chapels for religious services in several places.

There are also schools; the Kamchadals are pleased to send their children to be instructed. Thus there is every reason to hope that in these ways we will soon see these people rise out of their barbaric condition.

## CHAPTER IV

### THE KAMCHADAL OSTROGS

In Kamchatka the name ostrog means a settlement composed of one or more earthen iurts and balagans. The Kamchadals call them atinum, and the Cossacks, on their arrival in Kamchatka, gave them the name of ostrog, because these settlements had earthen ramparts used as revetments and were fortified in the same way used by the settled Koriaks in the north.

To construct their iurts, they excavate a hole in the earth of about two arshins in depth, which they proportion in length and width according to the number of persons who will live there. In the middle of this hole they set four posts, separated from one another by about one sazhen. On these posts they place large traverse or cross beams to support the roof, leaving in the middle a rectangular opening which takes the place of a window, a door, and a chimney. To these cross beams they attach joists, with the ends resting on the earth. These they interweave with slender poles and lastly cover them with turf and dirt, so that their iurts outside resemble little rounded knolls, although inside they are rectangular.

Two sides are always longer than the other two, and they generally build their hearth on a long side. A little above the hearth they make an opening or a flue, so that the incoming air drives the smoke and fumes out through the chimney.

hole.

In the interior of the iurts along the walls they build benches, on which each family makes its separate living space. They never put benches in front of the hearth, because in this place they store their tools, their cooking utensils and the wooden bowls in which they prepare food for themselves and their dogs. In iurts where there are no benches, they lay turf covered with matting and recline on this. There are no ornaments except for the grass mats, some of which are used to adorn the walls.

The northern Kamchadals have in their iurts two idols called khantai and azhushak. Khantai is carved like a mermaid with a body like a human from head to torso and the rest like a fish tail. It is generally placed near the hearth. They say that they give him this form because there is a spirit by this name. Each year, during the purification of sins, they make a similar one, which they place near the old one, and by counting the number of idols near the fire they know how many years it has been since they constructed the iurts.

Ashushak is a small column with the top shaped like a man's head. This they allow to preside over the utensils in the iurt and regard it as a guardian god who keeps the evil forest spirits from them. This is why they give it something to eat every day, rubbing it and anointing the head and face with cooked sarana root or with fish. The southern Kamchadals have the same idol which they call azhulunach; but instead of Khantai, they have some pegs, or a kind of ship's davit on which they carve a man's head; they call it urilydach.

The Kamchadals climb down into their iurts by means of ladders, one end

of which is placed near the hearth and the other in the chimney aperture, in such a fashion that when the fire is burning, the ladder is scorching hot, and they must hold their breath in order not to be overcome by the smoke. But it does not bother them. They scurry along the ladders like squirrels, although the ladders are so narrow they can use only their toes. The women willingly pass through the smoke with their children on their shoulders, although they are permitted to enter and leave through another opening which is called zhupana. But any man who used this opening would be laughed at and would be looked on as if he were a woman. The Cossacks, who in the beginning could not become accustomed to moving through the smoke, left by the zhupana, set aside for the use of the wives and the koekchuch; and so the Kamchadals looked down on them as if they had been of that sex.

There are some sticks made like pincers called andron, to hurl hot coals outside the iurts; those who hurl the largest ones through the overhead opening are considered the most skillful and adroit.

The Kamchadals live in these iurts from autumn until spring; then they move into the balagans, which they use as homes and as storehouses during the summer. The southern Kamchadals call the iurts tgomkegschich, and the northern peoples call them kuzuch or timuschich. These are made in the following manner.

First of all they implant nine posts about 13 feet tall; they put these in three rows equidistant from each other. They connect the posts with cross bars and on top they place joists to make a flooring which they cover with turf. To make

it rainproof, they build a pointed roof with sticks which they then cover with grass, after having secured the ends of the sticks to the joists below with thongs and ropes. They make two doorways facing each other, and climb into the balaganes with the same ladders they use in winter to lower themselves into their iurts. They build these balaganes not only near their iurts or winter settlements, but also in the places where they plan to spend the summer gathering provisions.

These structures are very convenient for them to keep their fish from dampness, since it frequently rains in this country; they also use them for drying their fish, which they leave there until winter, considering it sufficient protection simply to remove the ladders for this period. If the balaganes were not so high, their provisions would be eaten by the wild animals; and in spite of these precautions, sometimes bears do clamber up the ladders, especially in the autumn, when fish are scarce in the rivers and there are few berries in the country.

In summer when they go off hunting, they build grass huts near their balaganes, in which they prepare food and clean their fish in bad weather. The Cossacks use them when they evaporate salt from seawater.

The large ostrogs are surrounded by balaganes, which makes a pretty sight from a distance, each ostrog resembling a small town, and the balaganes seeming like towers.

The southern Kamchadals who live along the Sea of Okhotsk generally build their ostrogs in the forest, about 20 versts from the sea and sometimes

more, which affords them a safe and advantageous position. But those who live along the coast of the Bering Sea build near the shore.

All the inhabitants of an ostrog consider the banks of the river on which they live as their domain and patrimony. They never leave these banks to go to another river. If several families wish to move out of their ostrog, they build iurts on the same river or on one of its tributaries. This leads to the belief that the banks of each river are inhabited by people who come from common ancestors. The Kamchadals themselves say, according to Steller's report, that Kut, whom they sometimes look upon as their god and whom they call their first father, lived for two years on the shores of each river in Kamchatka, and after begetting children there, he left them in the place of their birth, and that it is from these children that the inhabitants of each river have descended. They claim that Kut went on in this manner to the Ozernaia River, whose source is in the Lake Kurile; that he finished his work there and after drawing his boats up against a mountain, he vanished from Kamchatka.

Formerly the Kamchadals scrupulously avoided hunting except along the rivers which they inhabited and which they considered their own domain; but now those who wish to hunt sea animals go off 200 versts from their settlements and even as far as the southern headland of the Kuriles, Cape Lopatka.

## CHAPTER V

### FURNISHINGS AND UTENSILS

The furnishings of the Kamchadals consist of cups, wooden bowls, baskets or rectangular panniers made of birch bark, boats and sleds. They prepare food for themselves and their dogs in bowls; baskets and panniers are frequently used for drinking vessels. They travel by sled in winter and by boat in summer.

It would be interesting to know how these people who have no knowledge of metals, and are indeed ignorant, backward and too stupid to count beyond ten, have nevertheless succeeded, without the help of any iron implement, in chiseling, carving, cutting, splitting and sawing wood, building homes, making fire and cooking their food in wooden vessels. Necessity is the mother of invention, and man discovers resources in himself when he must satisfy his needs.

Before the arrival of the Russians, the Kamchadals used bone and flintstone instead of metal. Using these, they made knives, spears, arrows, lances, needles and hatchets. They made their hatchets with the bones of reindeer and mountain sheep, or with wedge-shaped pieces of jasper; they fastened them with thongs of curved handles. With these instruments they hollowed out boats and chiseled bowls; but it took so much time they had to spend three years to hollow out a boat, and at least one year to make a large bowl; thus they valued boats and large vessels as much as we value the most beautiful pieces of precious



metal work.

A village which possessed a fine cooking bowl was more highly esteemed than its neighbors, especially if the bowl were large enough to serve a number of guests. They cook meat and fish in these bowls by dropping red-hot stones into them; and there must be plenty of food, for when a Kamchadal is invited to dine with a friend, he alone eats as much as twenty men together.

To this day their knives are still made of mountain crystal, of a shade of green verging on brown; they are pointed and made like spears, with wooden handles. They use the same crystal to make heads for their arrows and their spears, and to make the lancets for bleeding themselves. Their needles are made of sable bones; they are skillfully used to sew their garments, their footwear, and all the trimming and ornamentation which they add.

When they wish to kindle a fire, they take a small piece of very dry wood, pierced with several holes, in which they rapidly twirl a dry round stick until it catches fire. They use dried grass<sup>1</sup> for tinder. Each Kamchadal always carries with him one of these tools wrapped in birch bark. They still prefer this method of making fire to our steel, because they can not make a fire with steel as quickly as they can using their old method. They make so many other implements of iron, such as knives, arrows, hatchets and needles, that in former times, when they were conquered, a Kamchadal considered himself rich and happy if he possessed any bit of iron whatsoever. Even today, when a cauldron breaks in

<sup>1</sup> Cyperiodes, which in this country is called tonshich. --French edition.

the fire, they are very careful to gather up all the pieces; they cold-forge them between two stones and make all manner of small useful tools, such as arrows and knives. All the peoples of Kamchatka and the eastern part of Siberia are eager to have iron; and as some of them took part in the rebellion, especially the Chukchi, the Russians are forbidden to sell weapons to them; these natives have the skill to make spears and arrows out of the pots and kettles which they buy; they also have firearms which they carry off from the Russians, but most do not know how to use them. They are so clever at repairing needles with a broken eye that they can keep on making a new eye right down to the point.

During my stay in the country, I saw only those who prided themselves on living in the Russian manner using iron and copper utensils; the others had kept their wooden implements.

They say that the Kamchadals understood how to use iron before the Russians came; that they owed this skill to the Japanese who live near the Kurile Islands, that these people even came once by sea to the mouth of the Bolshaia, and that the name shishaman given to them by the Kamchadals is derived from shish, which means a small needle for sewing.

There is no doubt that the Japanese used to come regularly to the Kurile Islands in small boats to trade, as I have bought from Kamchadals some silver earrings, a Japanese saber, and a lacquered tray used for serving tea, which could only have come from Japan. But it is not certain that any of their boats ever appeared at the mouth of the Bolshaia River; it is hard to believe that they would subject themselves to so much difficulty and danger by navigating in

unknown territory.

Of all the native artifacts I have seen here, none astonished me more than a chain which was made from a single walrus tusk; it was about a foot long. The first links were larger than the others, as round and as smooth as if they had been turned on a lathe. This chain was brought from Cape Chukotsk on the ship Gabriel. The Cossacks had found it in a iurt abandoned by the Chukchi; its purpose is unknown. But it is amazing that men as untutored as these, with simple stone instruments could make such a chain which would have been regarded in our country as a curious piece of fine workmanship; I believe it must have taken more than a year to make it.

The Koriaks make breast plates of small bones which they tie with thongs. They also have bone spears with three prongs, set in long wooden handles; the bone is so highly polished that it gleams.

We will presently describe their sleds, the manner in which they are made, as well as the dogs they use to draw them. In reference to their boats, we will here mention only the method of construction, the wood that is used, and the areas where they are used.

The Kamchadal boats which they call baty are made in two ways, in two different shapes; one is called koiakhtatym and the other takhtu. The former is exactly the same as our fishing boat; the prow is higher than the stern and the sides are lower.

The latter have the fore and aft of equal height, but the sides are curved, which makes them very unseaworthy. The result is that as soon as a wind comes

up they immediately fill up with water. The Kamchadals use the koiakhtatym only on the Kamchatka River, from its source to its mouth. They use takhtus on the Bering Sea and the Sea of Okhotsk. When these are constructed of boards and hides, they are called baidars, and these are the boats used by the peoples on the shores of the Beaver Sea to hunt sea animals. They split the bottom of these baidars and stitch them together with the horny strip called whalebone, and caulk them with moss or with nettles which have been crushed and beaten. This custom is justified by the fact that baidars which have not been split in this fashion readily open up in the turbulence of the ocean wave action. The Kuriles who live on the islands and those who live on the southern headland of Cape Lopatka make their boats with a keel; they cover them and caulk them the same way.

All the natives of Kamchatka use poplar to make their boats. The Kuriles have no appropriate wood for boat construction and so use driftwood, which they think is blown from the shores of Japan and America and China.

The northern Kamchadals, the settled Koriaks and the Chukchi make their baidars of the hides of the largest variety of seal; they have no iron nor any appropriate wood, and it is easier for them to use hide.

They use the boats for all their fishing and to transport provisions. Two men sit in each boat, one in the prow and the other in the stern. They ascend rivers with poles, but it is so difficult, especially in places where there is a strong current, that they sometimes remain in one place for a quarter of an hour, bent over their poles, without moving forward more than two or three

feet. In spite of these difficulties, the strongest can make twenty versts headway with a fully laden boat, and thirty to forty with an empty one. They usually move upriver while standing up to use the pole, as the Volkhov fishermen do in their dugouts.

The larger boats can carry thirty to forty puds. When the load is light but bulky, for example dried fish, they carry it in two boats joined together by a kind of pontoon made of planks. The difficulty they experience in ascending rivers in boats tied together in this way is the reason that they are not generally used except on the Kamchatka River where the current is not so swift; they use single boats on other rivers. On other rivers they travel downstream using a paromakh. They very seldom go upstream, only when it is absolutely necessary, such as at the end of the fishing season when they must transport all of their belongings and their children, or when they have a very heavy load, such as barrels of fish.

## CHAPTER VI

### THE WORK OF THE MEN AND WOMEN

The men fish during the summer, dry their catch, transport it from the sea to their settlements, dress it and prepare the spoiled fish as dog food. The women clean the fish and spread them out; sometimes they even go out with their husbands to help them catch fish. They spend the rest of their time gathering various grasses, roots and berries and small fruits to be used for food and also for medicine. They use sweet grass; in the old days the only use they knew for it was as a food, but now they make spirits from it; they also use kiprei<sup>1</sup> and grass, from which they weave their matting, cloaks, sacks and other small household items. In short, they have as much responsibility for food gathering as the men do.

In the autumn, the men are busy fishing and killing geese, swans, ducks, etc. They harness their dogs to carts and prepare wood for making sleds and other things. During this period the women gather nettles, put them to soak, crush them, strip off the outer covering and store them underneath their balagans. They go out into the tundra where nothing but moss grows, and from rodent holes take roots of another plant called sarana.

<sup>1</sup> Secale spiculis geminatis. Linnaeus, Flora Suecica.

In winter the men hunt sable and fox; they make fishnets, and use their sleds to carry to their iurts wood and other supplies which they left in their balagans during the summer, and they did not have enough time to bring back in the fall. The women spin; this task is so time consuming that it is difficult for a woman to keep her husband supplied with the thread he will need during the summer. But when there are many women, they spin more than is needed. Then they trade the surplus for other items such as needles, silk, thimbles and scissors.

In spring, when the rivers are navigable and the fish who have wintered in the ocean return, the men are busy fishing or else they go to the beaches to catch a fish called vachnia<sup>2</sup>; these are also found in great numbers in the gulfs and bays. Some even go as far as the Bering Sea and to Cape Lopatka to trap sea otter, and other animals. The women go into the tundra to gather wild garlic and other plants, not only to supply the foods they need at this season, but as a special treat. They love greens so much that in spring they are nearly always munching on them, and although they bring home armloads of greens, it is scarcely enough for one day.

The men also build the iurts and balagans, heat them, prepare food, feed the dogs, play the host when the occasion arises, skin dogs and other animals whose pelts are used to make garments, and they also make household utensils and weapons necessary for making war. The women's work is to prepare the

<sup>2</sup>Onos, Asinus antiquorum, a kind of hake, or sea-pike. --French edition.

pelts and sew them into garments, leggings and footwear. This work is so distinctly their responsibility that any man who had a hand in it would be immediately castigated and accused of performing a demeaning task; thus in the beginning they looked on the Russian Cossacks with scorn when they saw them using a needle and awl. It is also the women who tan the hides, who care for the sick, and who put on religious ceremonies. They prepare, tan and sew pelts in the following manner.

The women have only one method of preparing all the pelts of reindeer, dogs, seals and sea otter, etc., from which they make their clothing. They begin by wetting the inside of the pelt, after which they use a stone knife to scrape off the flesh and fiber which was left when the animal was skinned. Then they rub it with fish roe, either fresh or rancid, twist it and tread it with their feet until it has softened a little. They scrape it a second time, rub it again and keep on with this task until it is clean and soft. The preparation is the same for skins they intend to tan; they are then smoked for a week, and after they have been steeped in hot water to make the fur fall out, they are rubbed with roe, pulled and twisted by hand, worked with the feet, and scraped.

The reindeer and dog skins which they use to make clothing are tanned by rubbing them frequently with the bark of the alder tree shredded into tiny pieces. But they have a special method of tanning seal skins which they use for clothing or for footwear, and the straps which are used to ornament and bind the sleds. After the hair has been removed with hot water, the hide is sewn into a sack, inside out. Into this sack is poured a strong decoction of alder bark and the top is sewed up.



Some time later, the sack is hung from a tree and is beaten with sticks. This operation is repeated several times until the solution has sufficiently penetrated the hide; then it is hung to dry in the air and is rubbed by hand until it is soft, supple and ready to be used. Pelts prepared in this fashion very much resemble morocco leather. The Lamutes, according to Steller, prepare them much better; they call them mandars and charge eight grivnas<sup>3</sup> for them.

As for the seal fur which they use to decorate their clothes and boots, this they dye with cowberries boiled with alder bark, alum and a mineral oil. This color is usually a very intense red.

They sew their garments and footwear with bone needles and instead of thread they use the nerves or sinews of reindeer, which they strip down as thin as necessary.

They make glue from the skins of dried fish, especially whaleskin. They wrap the skin in birch bark and leave it for some time in hot ashes. This glue is as good as the best in Russia.

<sup>3</sup>A coin worth ten kopecks. --Ed.

## CHAPTER VII

### THE CLOTHING OF THE KAMCHADALS

The clothing which the Kamchadals used to wear, and which most still wear today, is made of reindeer hide, dog skin, seal skin and even bird skins. They sew any combination of these skins together.

The Kamchadals usually wear two garments. The Cossacks call the upper one kuklianka; the northern Kamchadals call it koavis, and the southern, kakhpitach. They make this garment in two styles; one is an even length all around, the other is somewhat longer in back than in front. Some are considerably longer in back. The former are called circular kukliankas, and the others are called kukliankas with tail. These garments reach a little below the knee and the sleeves are very wide. The Kamchadals also wear a hood over their caps to protect them from the storms which are frequent in this country. The neck opening of the garment is just large enough to pass over the head; they attach dog skins, with the paws, to the neck of this garment and pull it over their faces in bad weather. The bottom edge of the garment is trimmed all the way around, as are the edges of the sleeves and the hood, with a border of long-haired white dogskin. This border is more highly prized than any other. The back is decorated with strips of skin or cloth, dyed various colors, and sometimes with bands made of thread or of variously painted thongs. The upper garment is worn with the fur

outside, and the lower one with the fur inside; the skin is tanned with alder. For the first they choose furs of the colors they most esteem, either black, white, or spotted. The Kamchadals have taken this garment from the Koriaks. The costume they wore before was actually the same style, but made of skins of dog, sable, fox, marmot and mountain sheep.

There is still another garment called kamlei, which comes from the Koriaks; it differs from the kuklianka only in length; it comes down to their heels and is not tanned.

The handsomest garment the Cossacks and the Kamchadals dress up in is called a parka by the Cossacks, tungak by the southern Kamchadals, and tingek by the northern Kamchadals. It is the same length as a kuklianka, but it is wider at the bottom and fits more closely under the arms. The neck is made like a shirt; the sleeves are narrow. The lower edge, the sleeves and the neckline are trimmed with beaver fur.

These borders are made of a strip or band of tanned pelt, an inch and a half wide. There are three rows of this, cut out in little squares. Each square is sewn with thread of a different color. There is a space left between each square. The first row is sewn with reindeer whiskers. Above and below this strip they add a small red or black strip, varied by a border made from the fur from a dog's ruff; and to all these bands they attach bits of the same pelts cut into points and bordered with colored wool.

Both men and women wear the same clothing except for undergarments and foot coverings. The undergarment which the women generally wear at home

consists of trousers and a camisole top sewn together. The trousers are similar in length and width to those worn by Hollanders; they are tied in the same way below the knee; the camisole ties at the neck. This garment is called khonba; one steps into it. The Kamchadal women wear it summer and winter; the summer version is made of soft white skins with no fur, or of the skin of sea animals prepared like chamois skin. The winter garment is made from reindeer skin or mountain sheep skin. Sometimes they wear the fur outside, and at other times, next to their skin.

The indoors garment which the men wear consists of a wide leather belt which they call makhva; it has a kind of codpiece in front and a leather apron to cover the backside. This girdle is decorated with the fur of seals stained various colors.

All the Kamchadals used to go hunting and fishing in this informal costume and wore no other clothing in summer, but now this is true only among the Kamchadals who live far from Russian settlements; those who live near wear trousers and shirts which they buy from the Russians.

The men wear trousers similar to the women's; they are made of different skins. They come down to the heels, like the trousers of Russian peasants, but they are cut narrower; the style they wear in winter is cut the same as the summer version with the difference that they are wider and that the back has the fur inside and the part around the thighs has the fur outside. The back part is usually made from the shank skin of the reindeer and from the feet of wolves. The part around the thighs and calves is bordered with soft white skin or with cloth, with a slender

thong inserted to tie to the footwear. They let their breeches or trousers hang over the tops of their boots to keep the snow out.

The men's boots are generally different from the women's in that the men's are low but the women's come up to the knee. These boots are made of various hides. Those which are worn in summer and in the rain are made of untanned sealskin with the fur outside. They are similar to those worn by the Cossacks in Siberia and by the Tatars when they cordel their boats upriver, the only difference being that the latter make their boots of horsehide or cowhide. The boots which the Kamchadals wear in winter are usually made from the shank skin of reindeer with the hair always on the outside. The sole is made of sealskin, lined inside with bits of skin from the legs of reindeer, which has long hair, or bear paws. Soles with this kind of lining protect them from cold and also are rough enough to keep them from slipping on the ice.

The finest footwear worn by the Cossacks and the Kamchadals is the ankle boot which rather resembles the boot worn by Russian peasants, tied on with thongs. The sole is made of white sealskin, and the uppers of leather dyed red and decorated like their clothing; the heel covering is of white dog skin and the part which covers the leg is of dressed leather or dyed sealskin. This footwear is so sumptuous that when a young man wears it, everyone supposes he must have a lady friend. In Kamchatka such boots are called zgoeinut and dzilet. Their stockings are made of dogskin and are called chazha; but more often they wrap their feet in tonshich, which they say is as warm as the chazha and also has the advantage of preventing their feet from sweating.

Their headgear is similar to that of the Iakuts; but Steller says that formerly the Kamchadals had round hats without a peak, made of bird feathers and animal skins, similar to the old hats worn by Russian women, the only difference being that the ear pieces of the Kamchadal hats were not sewn to the hat but hung down loose.

In summer they wear hats made of birch bark which they tie in back of their heads; those of the Kuriles are made of crushed straw. The women wear a kind of peruke and look on it as one of their finest ornaments; they used to be so fond of them, according to Steller, that several Kamchadal women refused to embrace Christianity because in order to be baptized they would have to take off this bizarre ornament, and those who had naturally curly hair worn in the form of a peruke would be forced to have it cut off. The young maidens wear their hair in little braids, which they dress with seal oil to make them lustrous. But all this has changed now; the Kamchadal women and girls dress in the style of Russian women; they wear camisoles, skirts, blouses with sleeves, short hair styles, and bonnets and ribbons. The old women are the only ones who still hold to their old way of dressing.

The women always wear gloves when they work, which they never take off. Formerly they never washed their faces, but now they use rouge and powder. For white powder they use a powdered worm-eaten wood, and a sea plant for rouge.<sup>1</sup> After steeping this plant in seal oil, they rub it on their cheeks, which

Fucus marinus abietis forma; pinus maritima s. fucus teres.

take on a ruddy color; they use this principally during the winter when they receive or pay visits. If they see a stranger appear, they all rush off to wash, use powder and rouge, and put on their best clothes. Thus in winter when there is a great deal of traffic they are very busy.

A Kamchadal cannot outfit himself and his family for less than 100 rubles in Kamchatka, and other prices are in proportion.

The Kuriles are better able to afford the expense of clothing than the Kamchadals, for by selling a single sea otter pelt, which even in Kamchatka will bring from fifteen to forty rubles, they can buy as much merchandise as a Kamchadal with twenty fox skins; and a Kurile can trap one sea otter more easily than a Kamchadal can take five fox. The canniest Kamchadal trapper will be hard put to take ten fox in a winter, whereas a Kurile, even in a bad season, takes at least three sea otter, in addition to those which are washed up on the shore during storms. They receive much wealth from these.

## CHAPTER VIII

### THE FOOD AND DRINK OF THE KAMCHADALS, AND THE METHODS OF PREPARING THEM

The food of the Kamchadals consists of roots, fish and sea animals; a description has already been given. I will confine my remarks here to the manner in which they prepare their food. I will begin with fish, which takes the place of bread for them. They make this main staple, called iukola, from various fish of the salmon species. They cut up each fish into six parts; they hang the tail pieces in the air to dry, and it is this dried fish which they properly call iukola. They prepare the back and the belly in a different way, generally by smoking. They put the heads in a pit to rot, until the gristle dissolves, then they eat it like salt fish; they are very fond of this dish, although the stench is unbearable for an outsider. They strip off the flesh which is left, put it in packets, and dry it; they pound it when they are ready to use it; they also dry the large bones for dog food; this is the way in which various peoples make iukola, and generally it is eaten dry. The Kamchadals call it zaal.

A second favorite food of these people is caviar, or fish roe; they prepare it in three different ways. They dry it in the air, or better, they strip off the membrane which encases it and spread it on some grass to dry. At other times they put the eggs into the hollow stems of certain grasses, or roll them in leaves;



in either case, they dry them near the fire. They never travel without taking dry caviar with them, and a Kamchadal who has a pound of it can live for a long time with no other food; he mixes the caviar with the bark of birch and willow and this mixture furnishes him a food which he enjoys very much; but neither of these things can be eaten alone because the caviar is so filled with glue that it sticks to the teeth, and the bark is so dry one cannot swallow it, no matter how long it is chewed.

The Kamchadals and the Koriaks have a fourth way of preparing caviar; the Kamchadals line a hole with grass and put the fresh roe inside; then they cover it over with grass and soil and let it grow rancid. The Koriaks let it sour in skin bags. Both find this caviar as delicious as the Russian variety, which is very fresh.

The third food of the Kamchadals is called chupriki; this is made from various fish and is prepared in the following manner. In their iurts and balagans above the fire place they build, at a height of three arshins, a kind of woven rack on which they lay fish; then they heat up their iurts as hot as an oven and close everything up tight. If they put only a few fish on the rack, these cook quickly and are ready to eat when the iurt cools off; but when they cook many, they have to reheat the iurt several times; they turn the fish over and often make two or three fires. Fish thus prepared are partly baked and partly smoked, and they are most delicious. This method of preparing fish may be considered the best used by the Kamchadals. The fat and juice cook very slowly and are retained in the flesh as if in a sack; when each portion is cut, it breaks away easily. Lastly they remove

the entrails and dry them on mats, cut them into tiny pieces, put them in woven grass sacks; this is what is called the porsa of the Kamchadals. The Tungus around Okhotsk also prepare this food.

The food they consider their greatest delicacy is the rancid fish which they bury and allow to decompose; they find this dish delicious, although the odor is more unbearable than carrion. Sometimes the fish becomes so rotten that they have to use a kind of ladle to scoop it up; then they give it to their dogs and put it into their bowls instead of meal.

Steller says that the Samoyeds cure fish in the same way, but because the earth is frozen it keeps better. The Yakuts prepare it the same way; they dig deep holes and fill them with fish; they sift ashes over them, cover the whole with a blanket of leaves, and then with dirt. This method is preferable to that used by the Kamchadals. The Tungus and the Cossacks of Okhotsk use the same method of preparing fish as the Yakuts, the only difference being that instead of wood ash, they use seaweed ash. They cook fresh fish in cooking vessels and when it has cooled they eat it with a broth which they make from sarana.

As for the meat of sea and land animals, this they cook in troughs with various roots, especially with sarana. They drink the broth in little vessels made of bark or in cups and eat the meat with their hands. They use the general name opanga for all broth, including that for their dogs. They also eat whale and seal blubber cooked with roots or soured in pits in the ground. They slice the blubber, particularly that from seals, into slabs which they cook. They staff as much as possible into their mouths and cut it off next to their teeth with

a knife; they swallow the whole piece without chewing it, as greedily as seagulls gobble down fish.

Their choicest and most delicate dish is selaga; the Cossacks call it tolkusha. They only have it at their festivals; it is nothing more than various kinds of roots and berries pounded together, to which they add caviar, whale and seal blubber and sometimes cooked fish. This dish, made with tart berries and sarana, is quite agreeable and nourishing; but the unsanitary conditions under which it is prepared make it unappetizing, especially when it is in a liquid state. A woman crushes the roots in a foul and unclean vessel and then mixes them with her filthy hands, which become as white as snow in comparison to the rest of her body. In short, a foreigner cannot watch the preparation of this dish without a feeling of nausea.

— Before the Russians conquered Kamchatka, the Kamchadals drank only water. To make merry, they drank water in which they had steeped mushroom. I will discuss this elsewhere. Now they drink spirits, just as do the Russians who live in their country; and they have conceived such a passion for this liquor that they will sell everything they have to get it. They drink a great deal of water after dinner and never go to bed without having a large vessel of it next to them to drink during the night. They put a lot of snow and ice into it so it will not become warm; and although the vessel may have been full at night, there is rarely any water left in it by morning. In winter they amuse themselves by tossing handfuls of snow into their mouths, and a young man who is engaged to be married and who works for his future father-in-law while waiting for the

occasion is hard put to supply him with snow during the summer, since it must be found high in the mountains, no matter what the weather; if he failed in this task it would be a serious offence.

## CHAPTER IX

### THE METHOD OF TRAVEL BY DOG SLED, AND VARIOUS EQUIPMENT

The Kamchadals and the Cossacks use dogs instead of horses for transportation, as has already been mentioned. Here we will only discuss the various kinds of dogs and the equipment.

The dogs of Kamchatka are not in the least different from ours. They are generally of medium size, of various colors, but most commonly they are white, black and gray.

The ones that are used to pull the sleds are castrated; generally four are used to pull one sled, two next to the sled and two ahead. These four dogs are called a narta, just as we call several horses harnessed to one carriage, a team.

The sleds are made of two pieces of curved wood; a length of birch is chosen for this, which has a curved shape; they split it in two parts, and fasten the two together one-half arshin apart by means of four cross-pieces. Toward the middle of this first framework they raise four upright posts in roughly an eleven-vershok square. On these posts they build a seat, actually a webbing, one and one-half arshins long and one-half arshin wide; it is made of light rods and thongs. To make the sled stronger, they fasten a short pole to the front, one end braced on the first cross-piece and the other on the seat frame.

The harnesses used for the sled consist of the following. First, the alaki, or the traces, made of two wide supple straps which go over the dogs' shoulders and are attached to a kind of breast-piece. At the end of each alaki is a small strap with a hook which fits into a ring on the front of the sled. Second, the pobezhnik, a long strap used instead of a pole; one end is fastened with a hook to a ring set into the front of the sled, and at the other end to the middle of a short chain. The dogs are fastened to the ends of this chain, which keeps them from running off. Third, the uzda or the bridle is a strap with a hook and a chain which is fastened to the first pair of dogs; one end is fastened to the sled like the pobezhenik, and thus is longer. Fourth, the osheiniki or collars made of bearskin with the fur outside; these are used only for decoration.

The Kamchadals guide their dogs with a wooden crook one and a half arshins long. They call this pole oshtal. At one end are fastened several small bells which are jingled to make the dogs run as fast as possible. They stop them by driving the pole into the snow. When they want to turn left, they shout uga, and rap on the snow with this pole, or on the sled. They shout khna, khna, when they want to turn right, and the driver at the same time drags his feet in the snow to slow them down. Sometimes this pole, like their sleds, is ornamented with thongs of various colors, for great elegance. They sit on the right side of the sled with their legs hanging over the edge; it is a disgrace to sit inside, or to be driven by someone else, for only women ride in this manner.

A narta of good dogs costs fifteen rubles in Kamchatka; with their harnesses, about twenty rubles. I knew one particular Kamchadal who spent sixty-two rubles

for four dogs.

One can see just from the shape of the sleds that they are very difficult to drive; the driver must be constantly on the alert to maintain balance; otherwise he is likely to tip over since the sleds are very high and narrow. Woe unto anyone who tips over in the wilderness, for the dogs usually will not stop running until they reach home or meet some obstacle. If a person tips over, he must try to hang on to the sled, and then the dogs will soon stop from weariness; they usually have the fault of running at top speed when they sense the driver has fallen, as when they go downhill or cross rivers. Thus one takes the precaution of unharnessing the dogs when going downhill and leading them by the bridle. Only one is left hitched to the sled, and in addition, a chain with thong links is put under the runners of the sled so it will not slide downhill too swiftly.

It is necessary to go on foot on steep hills, for the dogs have difficulty drawing even an empty sled. Four dogs can pull a load of about five puds, not counting the provisions for the driver and the dogs. When the trail is open and packed down, even with this load they can make about thirty versts a day, or one hundred and fifty without a load, especially at the beginning of spring when the surface of the snow is covered with ice and is very hard, and when bone runners are put on the sleds.

When there is a great deal of snow, the dogs cannot travel until the trail has been broken. A guide, called a brodovshchik, goes in front of the sled wearing a kind of snowshoe made of two slender staves separated in the middle by two cross pieces and fastened together at the ends; the front tip is somewhat curved

up. These two staves are webbed with thong, and others are fastened to the cross pieces so one can put the foot on it. The driver puts on his snowshoes and sets out in front and breaks a trail for a distance, then he retraces his steps, brings the dogs up, and in this way continues to break the trail until he reaches his destination. This method of travel is so laborious and slow that one can scarcely make ten versts in a day. One can also use ordinary skis<sup>1</sup> to break the trail, but these are less frequently used. No driver ever sets out on a long journey without skis and snowshoes.

The greatest danger on these journeys is to be overtaken in the wilderness by a blizzard. In such a case one must take refuge as quickly as possible in the woods and stay there with the dogs until the storm has abated; sometimes these storms last an entire week. The dogs remain very calm in this kind of weather, but when hunger strikes them, they eat all the thongs, bridles and harness on the sleds. If a storm overtakes several travelers, they make a kind of hut and cover it with snow; but the Kamchadals rarely make these.

They more often get into hollows which they roof over with small branches; they wrap themselves up in their cloaks or their furs, turn down their sleeves; soon they are so covered with snow that neither feet, hands nor head can be seen. They can curl up under the snow like a ball; but they are very careful not to knock the snow off, because under it they keep as warm as if they were in their iurts. All they need is a breathing hole. If their garments are too tight, or if their

<sup>1</sup> Kamchadal skis were much shorter than modern skis, approximately three feet long. --Ed.



belts are too close, they find the cold unbearable because their clothes become damp and they can not keep warm.

When a storm surprises them in open country, they look for some little hillock and curl up at the foot of it; and lest the snow suffocate them, they get up every quarter-hour to shake it off. But as the east and southeast winds are generally accompanied by wet snow, it often happens that travelers who have become wet in it are frozen or die of cold, for these storms nearly always end with a north wind and a great freeze.

There is also the danger of losing one's life traveling on the rivers at this season. There are many which are not completely frozen over, or if they are frozen, have large holes which do not freeze, even in the deepest cold. As nearly all the trails run alongside the rivers whose banks are steep and rocky, and in some places almost impassable, there are few years which pass without a number of persons dying on these routes. In such places one must go along the edge of the ice; sometimes it breaks, or the sled slips into the water; usually the person drowns because of the swiftness of the river. If some travelers are lucky enough to pull themselves out, the water which has soaked their clothing will cause them to die in great misery unless there is a dwelling place to be found in the vicinity.

On these trips it is necessary to pass through dense willow thickets where there is the danger of having one's eyes scratched out and of breaking arms or legs; for it is precisely in the most difficult and perilous places that the dogs expend all their energy to run faster and rid themselves of their burden; often

they spill the sled and the driver, as previously described.

The best time to travel is during March and April when it is not so bitterly cold, but still the snow is hard packed. But it is necessary to spend two or three nights in the wilderness and it is hard to persuade the Kamchadals to build a fire to prepare food or for warmth. They and their dogs eat only dried fish. They squat on their toes, wrapped up in their cloaks, and cannot understand how a traveler can possibly be cold; they even sleep in this uncomfortable position without feeling cold in the least, and when they wake up they are as warm and cheerful as if they had spend the night in a good bed. This is true of all the people in this country. I have seen some natives lie down at night with their uncovered backs toward the fire, and sleep soundly in spite of the fact that the fire burned out and their backs were rimed with frost.

## CHAPTER X

### KAMCHADAL WAR EQUIPMENT

Before the Kamchadals were conquered by the Russians they had no ambition to increase their power nor to extend their frontiers, but they did wage war, and never a year passed without some ostrog being destroyed. The object of their warring was to take prisoners, especially women. They used the men for hard labor; as for the women, they took them as concubines or as wives. It did not matter whether the reasons for making war were just or not. Sometimes neighboring settlements took arms against each other because of quarrels between their children or because a Kamchadal had issued an invitation to a neighbor and then treated him inhospitably. This last example was considered an injury which could only be avenged by destroying the settlement where the insult has been committed.

In their wars, guile is emphasized more than bravery. In truth, they are so fearful and cowardly that they dare not openly attack an enemy unless forced to do so by dire necessity. This is all the more surprising since these people make little of the circumstance of life, and suicide is a frequent occurrence among them. They attack the enemy settlement at night, which is very easy, since they are never guarded. A handful of men is enough to massacre many persons without running any risk or exposing themselves to danger. They are

assured of such a victory by securing the entrances of the iurts so no one can escape, then holding this position with a club or a long spear, for because of the construction of these iurts, one can only leave single file. Thus a small number of men can easily kill or take prisoner all those inside.

They treat their prisoners, especially those most distinguished for bravery, with the barbarity and inhumanity common to all the peoples in this country; they burn them, hack them into bits, eviscerate them, hang them up by their feet and inflict all manner of outrages and cruelties upon them, all the while rejoicing over the victory they have just won. Several Cossacks suffered these same tortures during the great Kamchatka revolt.

The wars which the Kamchadals carry on among themselves were in no small way helpful to the Cossacks in conquering the whole country, for if the Cossacks attacked some settlement, they did not have to fear that anyone would come to its aid; on the contrary, neighboring villages rejoiced to see how the Cossacks had made themselves master; but they themselves would soon meet the same fate.

In their battles against the Cossacks they used their usual ruses and they caused more casualties this way than by using weapons. When the Cossacks demanded iasak from some settlement they had not yet subjugated, they rarely met resistance; rather, they were nearly always received as friends, with much show of courtesy. They were given fine presents, were entertained, and were refused nothing. After they had been lulled into becoming incautious, the Kamchadals took advantage of the night to cut their throats, or else crept out of their iurts while the Cossacks were asleep, and then set the iurts afire and burned

the Cossacks inside. By these stratagems, in two places they killed nearly seventy Cossacks, which, considering the small number of soldiers who were in the country, may be considered a great loss to the Russians. It even happened occasionally that the Kamchadals found no opportunity to kill the Cossacks when they came to bring them under subjection the first time, and so paid iasak for two or three years, and then murdered them when they came in small numbers to receive iasak.

These ruses were so dealy to the Cossacks that now they must be always on guard. They are never more wary of the Kamchadals than when they are received with great politeness and show of warmth; they consider this kind of reception an infallible indication of false-heartedness. They have the same apprehension when the women leave the iurts at night, for they cannot bear seeing bloodshed, and their husbands never kill anyone in their presence. When the Kamchadals recount dreams in which they have seen dead men, and when they travel afar to visit each other, this is also an indication that they are plotting perfidy or that they are ready to revolt and that several ostrogs or settlements are plotting a conspiracy.

When such an undertaking succeeds, they kill all the Cossacks they meet up with, as well as any of their own compatriots who will not enter into the rebellion. If they learn that troops have been sent against them, they do not prepare to defend themselves by going out to meet them, but rather, they choose the highest and steepest places where they build small forts or ostrogs; they take refuge there and await the enemy. They offer brave resistance to the

attackers by shooting arrows and using all sorts of ways of defending themselves. When they see that the enemy has the upper hand over them, and that they can no longer resist, each Kamchadal cuts the throats of his wife and children, and throws them over the precipice; or else he hurls himself into the midst of the enemy with his weapons in his hands so as not to die without venging himself. In their language they call this action to make a bed for oneself. In 1740, a young girl from Utkolok was brought to me; the rebels there had not had time to kill her when their village was taken in an assault. All the other women, from the oldest to the youngest, had been killed, and the rebels had thrown themselves into the sea from the cliff where they had taken refuge.

There have been only two revolts since the conquest of Kamchatka took place. The first was in 1710 at Bolsheretsk ostrog, and the second in 1713 when troops were sent to bring the Kamchadals at Avacha under subjection.

Many died in both of these rebellions. In the first, the rebels besieged Bolsheretsk ostrog with such confidence that they boasted they could use their hats to smother the seventy Cossacks inside that ostrog. However, thirty-five Cossacks made a sortie; the Kamchadals were unable to hold out against them; they fled and each tried to save himself however he might. In their rush to reach their boats they leaped in so incautiously that many were drowned. On this occasion so many Kamchadals were killed that the river was choked with dead bodies. The rebels at Avacha were no less confident of conquering the Russians who marched against them; they had even brought thongs to tie them up and lead them off in captivity; but the outcome was otherwise; they were

themselves killed or taken prisoner. One hundred twenty Cossacks had been sent on the Avacha expedition, and one hundred fifty loyal Kamchadals, from which can be guessed the number of the rebels, since they were so confident of easily taking all the Russians.

Their weapons consist of bows, arrows, spears, lances and chest protectors. The bow is made of larch; it is stripped of bark, and the strings are made from the sinews of whales. Generally the arrows are three-quarters of an arshin long and have heads made of bone or stone. They have various names, according to the different ways they are tipped. An arrow with a small bone tip is called pinch; if it has a large tip, aglpinch; when it has a flint arrowhead, kauglach, etc. Although their arrows are very poorly and crudely made, they are nevertheless extremely dangerous because they are poisoned; this causes an immediate swelling of a wound. Anyone who is struck by one usually dies within twenty-four hours; the only remedy is to suck the poison from the wound.

Their lances are tipped with bone or flint, as mentioned earlier. Their spears, called ukarel, have four tines; they are attached to a haft which is fastened to the end of a long pole. Their chest protectors are made of matting or of seal or walrus skin; this is cut into strips and fastened one atop another in such a fashion that they can bend like a farthingale. They are slipped on over the left side and tied on the right side, like a camisole. There are two splints or small boards; the one in back is higher; its function is to protect the head, and the other gives protection to the chest.

The dogs and sleds are used only for long trips or journeys; when the distance is not great, they go on foot. In the summer they generally use large boats which can hold several persons.

A very unusual custom is that when they are on foot, they never go two abreast, but always single file; as they walk one behind the other, they follow the same path which thus becomes a deep trough; anyone unaccustomed to it would have great difficulty walking in it; it is only wide enough for one foot at a time, for when these people walk they always put one foot exactly in front of the other, almost in a straight line.

Steller attributes the cause of the intertribal wars that rage between these nations to hatred and the passion to possess things which clouds their judgment. We will comment on his opinion.

He says that although there was formerly no headman for all of Kamchatka and everyone was independent, nevertheless two strong passions, hatred and avarice, were the reasons that the Kamchadals would rouse themselves from repose and tranquillity to make war. They decimated each other from time to time and weakened their numbers considerably. Women, ambition, the desire to dominate, the need for tools and the necessities of life, led them to take arms against each other. In order to be in a position to resist the enemy, they put themselves under the leadership of the oldest, the bravest or the wisest men. When they sought victory they showed their chiefs all the loyalty and zeal he needed to accomplish the goal they proposed; this goal was to increase their power, satisfy their vengeance, take great booty, and divide the spoils from the



enemy equally among themselves.

One still sees among these people certain indications that they had had grand ideas, that they aspired to be conquerors, which caused the nation to be divided into several equally powerful branches. The Koriaks were the first to leave the banks of the Tigil and come into Kamchatka following the west coast to the Bolshaia River. The Shantals followed their example; led by a chief as brave as he was able and wise, whose name was Shandal. This chief had developed a plan to extend his power and attempted to achieve through kindness what could only be accomplished through armed force, namely, to make all Kamchatka tributary. He created two factions; one around the headwaters of the Kamchatka River, which held together until the Russians came; the other, under Kronaki, whose settlements extended as far as Cape Lopatka. The people who lived from the Golygina River to the Kompakova River, broke away from the natives of Cape Lopatka. Although the latter were less populous, they nonetheless surpassed the others in power, valor and intelligence. They attacked several ostrogs and took the women and children prisoner. The mother of the present toion of the first Kurile island, Kupeni, was a slave woman from Ichinsk ostrog, which was destroyed by Cape Lopatka men after the Russians came. These islanders called the Ichinsk Kamchadals their relatives.

Several hills near the Apala River bear the names of battles fought there. The settlers on Cape Lopatka, who are usually referred to as Kuriles, are considered invincible because they attacked their enemies unawares by coming by sea in boats; they immediately returned with their plunder, with no fear of pursuit, for the Kamchadals have no boats strong enough to use in the sea.

As for ambition and desire for conquest, which Steller attributes to the inhabitants of Kamchatka, and which he regards as the cause for the division of this country, this seems to me not wholly devoid of probability, when one considers that there are few nations, however wild they may be, who do not aspire to dominate, or who at least want to become superior over others; a propensity which is evident even in wild animals. However, to carry out such an undertaking, it seems to me that the animals show better judgment and intelligence than one finds among the Kamchadals.

If they make war on each other, take prisoners, seize their goods and provisions, it cannot from this be concluded that they have conceived so grand a plan as forming an independent state. A man such as Shandal has been described to be must rather dream of strengthening his power over the nation and holding it in complete subjection. However one cannot find the slightest trace of such submission, even at the beginning of the Russian conquest of Kamchatka; on the contrary, everywhere complete equality was seen. The division of the Kamchadal nation and its dispersion into the various parts of Kamchatka could come about for another reason, the limited amount of land, or because there were too many people to find enough food for sustenance. Even the name Shandal seems very questionable. I do not believe there ever was a Kamchadal by this name. If this name had ever existed among these people, it would still be used; and I have never heard of a single Kamchadal, man or woman, called by this name in any place in this country. I think that this name is used to include all the Shantal natives; that is, those who live near the small village

called Shantal; as by the name Konchat, is meant all the inhabitants of the area along the banks of the Elovka. Moreover, it is incontestable that the Shantals were formerly a nation so well known and populous that their one ostrog was more than two versts long, and the balagans were built so close together that the natives could go from one end of the village to the other on the balagans. Even today, that ostrog still has more inhabitants than almost any other in Kamchatka.

As for the valor of these people, one can say in general that they are progressively more courageous and intrepid the farther north one goes. Among the Kamchadals, the natives of Elovka and Shantal are considered the bravest; after these, the Kuriles and the natives of Avacha, whom the Cossacks had great difficulty bringing into submission.

## CHAPTER XI

### THE KAMCHADAL BELIEFS ABOUT GOD, THE CREATION OF THE WORLD AND THE TENETS OF THEIR RELIGION

The Kamchadals regard a certain Kutkhu as their god, and believe they are descended from him. They do not know who created the skies and the stars; they say only that they existed before the earth; and they have two opinions about the creation of the earth. Some suppose that Kutkhu created the earth from his son Symskalin, who was born to him and his wife Ilkkhum, while he was strolling with her on the sea. Others believe that Kutkhu and his sister Khutlyzhich brought the earth from the heavens and set it on the sea, which element was created by Utleigyn, who still dwells there today. However, all generally agree that Kutkhu lived in the firmament before the creation of the earth.

The belief of those who acknowledge a sea god conforms to that of the Iakuts, who assign the direction of heaven and earth to different gods. They also admit a god of the underworld; they all believe that these gods are brothers of the god of the heavens. The ancient Greeks and Romans held similar beliefs.

After Kutkhu created the earth, he left heaven and came to live in Kamchatka, where he had a son named Tyzhil-kutkhu, and a daughter, Siduka. When they came of age, they married each other. Kutkhu, his wife and children, wore garments made of leaves and ate the bark of birch and poplar, since earthly

animals had not yet been created and the gods did not know how to catch fish.

One day Kutkhu left his wife and children and disappeared from Kamchatka. No one knows what became of him; they suppose that he went off on skis or snowshoes and that the mountains and hills were formed in his footsteps, because his feet sank into the earth as if into soft loam. They believe that their country was completely flat prior to this time.

Tyzhil-Kutkhu had a son named Amleia, and a daughter called Sidukamshich; the brother and sister married each other when they were grown. They have no further knowledge of the geneology of the gods; they only know their nation is descended from them. Tyzhil-Kutkhu, seeking to enlarge his family, dreamed of ways of providing for his living; he invented the art of making fishnets out of nettles. His father had already taught him how to make boats. It was he who taught the Kamchadals how to make clothing from skins. He created the animals on earth and to take care of them he made Piliachuche, who still watches over them today. He is depicted as being very small in stature, dressed in clothing made from the skin of the wolverine, of which the Kamchadals have many. He is pulled by birds, especially by partridge, whose tracks they sometimes think they can see.

Steller describes these people to us as idolaters. They have many gods, who, according to tradition, have appeared to several of them. In their language, they have no word for spirit; they have no conception of this, nor of the might and wisdom of a Supreme Being.

One cannot imagine anything more absurd than their god Kutkhu. They pay

no homage to him and never ask any favor of him; they speak of him only in derision. They tell such indecent stories about him that I would be embarrassed to repeat them. They upbraid him for having made too many mountains, precipices, reefs, sand banks and swift rivers, for causing rainstorms and tempests which frequently inconvenience them. In winter when they climb up or down the mountains, they heap abuses on him and curse him with imprecations. They behave the same way when they are in other difficult or dangerous situations.

Nevertheless they do have a god they generally call Dustekhtich, and in a way they have the same respect and veneration for this name that the Athenians had for their Unknown God. They erect a pillar, or a kind of column, in the middle of some large flat area and in the tundra. They wrap it with tonschich, and never pass it without throwing a bit of fish to it, or some other morsel; they never pick up the fruits which fall around it, and never kill any bird or animal in the vicinity. They feel they are lengthening their lives through these offerings and that their lifespan would be cut short if they failed to do this. However, they offer up nothing of use to themselves, only the fins, gills and tails of fish, which they would throw away even if they were not given as an offering. They have this custom in common with all Asiatic peoples, who only offer to their gods things they do not personally want, and keep for themselves anything they can eat. Steller saw two of these columns near the Lower Kamchatka ostrog; he found no others elsewhere. On my travels in the north, I myself saw several places where passersby made offerings, as if they believed that evil spirits inhabited these places; but I never saw idols or columns.

They also believe<sup>1</sup> that all dangerous places, such as volcanoes, high mountains, hot springs, forests, etc., are inhabited by devils, whom they fear and respect more than their gods.

They call the mountain gods kamuli, or little spirits. What we call a genie, in Kamchatka is called kamulech. These gods, or as they say, these evil spirits, live in the great mountains and especially in the volcanoes; thus they dare not go near them. They believe that these spirits live on fish which they catch; during the night they come down from the mountains and fly to the sea to look for food; they carry off a fish on each finger and cook them in the Kamchadal manner and eat them with whale blubber using whalebone spoons instead of wooden ones. When the Kamchadals pass through these places, they always throw some bit of food there as an offering to the evil spirits.

The forest gods are called ushakhchu. They are said to resemble men. Their wives bear children who sprout from their backs and who cry incessantly. According to the superstitions of these people, such spirits lead men astray from their paths and drive them mad.

They call the sea god Mitg; they assign to him the form of a fish. His dominion extends over the sea and the fish; he sends fish into the rivers so that they may gather wood to make boats for him, but never with the intention that they should be used as food for men, for these people cannot believe that a god can do them any good.

They tell several stories about Piliachuche, whom we have already mentioned, whom Steller calls Biliukae. They say that he lives in the clouds with several

<sup>1</sup> The following is taken from Steller's notes.

kamulis, that he is the one who makes the lightning flash and hurls thunderbolts and makes the rain fall. They consider the rainbow to be the edging on his garments. They imagine that this god sometimes comes down from the clouds to the mountains and rides in a sled drawn by partridges. They consider it great good fortune to make out the imaginary tracks left by Biliukae; they are nothing but tiny furrows which the wind has left on the surface of the snow; this happens especially during storms; thus they fear this god. They claim that he sends his henchmen to carry off their children in whirlwinds so he can use them as sconces on which to place his oil lamps to light up his palace. His wife is called Tiranus.

They also believe in another evil spirit, according to Steller; they represent him as being very crafty and deceitful; for this reason he is called Kanna. Near the Lower Kamchatka ostrog they point out a very old and lofty alder tree, which is supposedly his dwelling place. Every year the Kamchadals shoot arrows into this tree so that it positively bristles with them.

Gaech, they say, is the lord of the underworld, where men go to live after death. Once upon a time he lived on earth; to one of the first children of Kutova they assign dominion over the winds, and to his wife Savina they attribute the creation of dawn and dusk.

They consider their god Tuila to be the author of earthquakes, being convinced that these occur when his dog Kozei, who pulls his sled when he goes underground, shakes the snow from his pelt.

All the beliefs they have about their gods and devils or evil spirits are



disconnected and so absurd and ridiculous that anyone unfamiliar with these people would have a hard time believing that they hold all these strange ideas as infallible truths; nonetheless, they try their best to make sense out of everything that exists; they even try to understand the thoughts of fish and birds. Their mistake is that they never consider whether their ideas are right or wrong. They accept everything easily, without reflecting on it.

Their religion is primarily based on ancient traditions which they carefully preserve, and they do not want to hear any logical reasoning which might undermine their beliefs.

Steller reports that he questions more than a hundred of them as to whether, when they beheld the heavens, the stars, the moon and the sun, the thought never occurred to them that there might be an all-powerful Being, creator of all things; whom one should love and respect for his beneficence. They all declared that such a notion had never occurred to them and that they did not feel and had never felt either love or fear for such a supreme being.

They believe that God is not the cause of either happiness or of unhappiness, but that everything depends on man. They believe that the world is eternal, that spirits are immortal and will be reunited with the body, and will always be subject to all the vicissitudes of this life with this one exception, that they will have an abundance of everything in the other world and that they will never have to endure hunger.

All creatures, from the tiniest fly, will come to life again after death and will live beneath the earth; they believe that the earth is flat and that underneath

it there is a sky similar to ours, with another earth below, whose inhabitants have winter when we have summer, and summer when we have winter.

As to the rewards of the other life, they say that those who were poor in this life will be rich in the other; and that those who are wealthy here will be poor in their turn. They do not believe that God will punish sins; for evil-doers, they say, are punished forthwith.

This is the tale they recite about the origin of their tradition. They say that in the underworld, where men go after death, there is a large strong Kamchadal called Gaech, who was born of Kutkhu; he was the first to meet death in Kamchatka; he lived alone in the underworld until the moment his two daughters died and rejoined him; then he passed into our world to instruct posterity, and he is the one who told them everything they believe today. Some of their fellowmen died of terror at seeing a dead man return to them, and so from that time on, they abandon their iurts when someone dies, and build new ones, so that if a corpse returns, as Gaech did, he will not be able to find their new dwellings.

They say Gaech is the chief of the underworld. He receives all the Kamchadals who have died, and gives poor dogs and rags to those who come richly dressed and with fine dogs; and on the other hand he makes gifts of beautiful dogs and magnificent garments to those who come in tatters with old dogs. They believe that the dead build iurts and balagans, that they keep busy hunting and fishing, that they drink, eat, and make merry just as they did in this world, except that they do not experience any of the miseries and evils attached to the human condition. They believe that in the underworld one never has to endure

hurricanes or tempests, that snow and rain are unknown, that all necessities are plentiful there, just as was the case in Kamchatka at the time of Kutkhu. They think that this world grows worse day by day, and that everything declines in comparison to what exists elsewhere, for animals as well as men hasten to take up residence in this underground world.

Their ideas about vice and virtue are are bizarre as those about their gods. They regard as acceptable anything that can gratify their desires and passions, and they consider sinful only those actions which make them fear real harm. Thus death, suicide, fornication, adultery, sodomy, gross insults, etc., are not considered crimes; they believe, on the contrary, that it is a great sin to save a drowning man, for whoever rescues him will himself be drowned. It is also a dreadful sin to admit into one's dwelling anyone who has shaken off the snow from mountain travel before eating all his travel provisions; such persons may only enter a iurt after stripping to the skin and discarding his garments as if they were contaminated. They believe that to drink water from hot springs or to bathe in them, or to climb up to volcanoes, is to court certain disaster by committing a crime which heaven will avenge; they have the same idea about several other superstitions which I should be ashamed to speak of.

They consider it a sin to scuffle or to quarrel over sour fish; to have relations with their wives when they are skinning dogs; it is also wrong to scrape off snow from their boots with a knife, to cook the meat of different animals and fish in the same vessel, to sharpen their hatchets or knives while traveling, and other such childish things; they are afraid that these actions will cause them some misfortune.

For example, arguments and disputes over sour fish make them afraid they will meet death; if they have intercourse with their wives during the time they skin dogs; they fear they will get mange; if they scrape off snow with a knife, they believe a hurricane is impending; if they cook different meats together, they are convinced they will be unlucky at hunting, or that they will get boils; if they sharpen their hatchets while traveling, they believe they will be threatened by bad weather and storms. One should not be overly astonished at all this, for there are many such superstitions among all peoples.

In addition to the gods I have mentioned, the Kamchadals also hold sacred various animals and other creatures whom they have some reason to fear. They offer fire at the openings to sable and fox burrows; when they go fishing, they offer prayers and entreaties to the whales and the dolphin with the most flattering words, because these fish sometimes tip over their boats. They do not call the bear or the wolf by name; they only use the word sipang, which means misfortune; in this they resemble our sable hunters, who are very careful during the hunt not to call a number of things by name, lest this bring bad luck to the hunt.

This was the condition of that nation during my first stay in Kamchatka, but today nearly all the Kamchadals have received the Christian faith, as have many of the northern Koriaks, through the vigilance of the Empress Elizabeth Petrovna, and the truly motherly concern she has for all her subjects. In 1741 the Holy Synod sent missionaries to Kamchatka, along with everything necessary to establish a church to convert the natives to the Christian faith; this was so successful that many were baptized. These people have even been inspired to want to educate

themselves, and schools have been established in various places. The Kamchadals willingly send their children, and some are educated at their own expense; all of which leads us to believe that soon Christianity will make great progress in this country.<sup>2</sup>

<sup>2</sup>A major incentive for the natives to adopt Christianity was that as Christians they were exempt from paying iasak. --Ed.

## CHAPTER XII

### THE SHAMANS

The Kamchadals have no specific shaman, as their neighbors do; but women, particularly the old ones, and the koekhchuch, are regarded as sorcerers; it is believed that they know how to interpret dreams. When they make their magic they do not beat on a sort of drum, nor do they any longer dress in special ceremonial robes, as is customary among the Yakuts, Tungus, Buriats and all the other idolatrous Siberian nations. They murmur words in a low voice over the gills or fins of fish, over sweet grass or sarana and tonshich; this is how they claim to cure illness, prevent misfortune, and foretell the future. I have not been able to learn what words they use in their ceremonies, nor the incantations, nor from which God they ask assistance. It was kept from me as a great mystery.

Their principal magic is made in the following manner. Two women<sup>1</sup> sit in a corner and continually intone words in a low voice. One of them ties to her foot a cord made of nettles twisted with red wool, and taps her foot. If it seems that she can easily raise her foot, it is a favorable omen, and a sign that whatever one has undertaken will meet with success; if it appears that she shakes her foot heavily, it is a bad portent. Meanwhile she invokes the spirits with the words

<sup>1</sup> When Krasheninnikov refers to native women, he uses the Russian word baba, which has somewhat the same connotation as squaw. --Ed.

gush, gush, while grinding her teeth. When she has some vision, she cries out, as she bursts into laughter, khai, khai. After half an hour the spirits vanish, and the sorceress wails unceasingly, ishki, they are no longer here. The other woman who assists her mutters some words over her, and exhorts one to fear nothing, but to pay careful attention to the apparitions and to remember the reason for which she made the magic. Some say that when there is thunder and lightning, Biliukae descends into these magicians, and that by taking possession of their senses he helps them read the future.

If a misfortune befalls someone, or if he is unlucky at hunting, he likewise sets out to find one of these old women, or even his wife. She casts a spell and considers the reason for his ill luck; then she prescribes the ways of averting it. She attributes the major cause to his having neglected certain superstitious practices; to remedy this fault, the one who has failed to perform these observances must carve a small idol, carry it into the woods, and put it on a tree.

The shamans also make their magic at feast time or when they are purified of their sins. They then mutter certain words, perfume themselves, wave their arms about, and work themselves into a state of violent agitation. They rub themselves with tonshich, wrap thongs around their bodies, and try to recall to reason those who have lost their minds. They put on other elaborate ceremonies, which will be more fully described in the following chapter.

If a child is born during a tempest or a hurricane, they make magic over him when he begins to talk, and reconcile him with the spirits; this is how it is done. He is stripped completely naked during a violent storm; into his hands is

placed a sea shell; he must hold this shell up in the air and run around the iurt, the balagane, and the dog kennel, all the while addressing these words to Biliukae and the other evil spirits: "The shell is made for salt water, not for fresh water, you have made me soaking wet; the wet will make me perish. You see that I am completely naked and that I shiver in every limb." When this is over, the child is considered to be reconciled with the spirits; otherwise they believe that he is the cause of tempests and hurricanes.

The Kamchadals are so curious about their dreams and place such faith in them that the first thing they do in the morning upon awakening is to recount them to each other; and by these dreams they decide what is going to befall them. They have hard and fast rules for interpreting them, as, for example, if they have dreamed of vermin, they fully expect to see the Cossacks come the next day. When they dream that they have everything they need, they feel this is a sign they are to be the hosts for their people. When they dream they are revelling with a woman, it is an omen of a lucky hunt.

In addition to magic and incantations, they are greatly given to palmistry; they believe it is possible to predict the good or the evil that will befall a man by examining the lines in his hand; but they cloak the rules of this art in great mystery. If a line or mark suddenly appears on someone's hand, or if a blemish suddenly disappears, they immediately consult an old sorceress about it.



## CHAPTER XIII

### FEASTS AND CEREMONIES

All the Kamchadals have but one feast during the year in which they purify themselves of their sins. They celebrate it without fail in the month of November, which for this reason is called the month of purification of sins. Steller is of the opinion that this custom was instituted by their ancestors to thank God for his beneficence; but that in later times this real purpose was obscured by absurd stories. This seems likely, since after they finish their summer and autumn work they consider it a great sin to work, visit each other, or even to go hunting before this feast. If anyone deviates from this rule, he is absolutely obliged to expiate his sin and purify himself. This gives rise to the belief that their ancestors, when they had laid in their food supply for winter, were accustomed to offer to their god the first fruits of their labor and afterward to rejoice together and visit back and forth. When they celebrate this feast, they observe a number of customs, some so trivial they are not worth describing. However, since they always observe them in their ceremonies, I will give an exact description down to the last detail, without omitting even the most trivial event, not because I expect to please the reader, for the account of these silly bits of childishness will be more tedious than pleasing; but in order to show the extent of the superstition and extravagance of these peoples.

As the southern Kamchadals have certain ceremonies unlike those of the northern Kamchadals, I will describe their feasts separately. I will begin with the southern Kamchadals, whom I visited in 1738 and 1739 for the express purpose of observing this. I spent three days in one of the more important ostrogs called Chaapyngan, situated on the banks of the Kyk-chik River.

The ceremony began by sweeping out the iurt, after which two old men, holding a small packet of tonshich in their hands, in a low voice spoke some words over the sweepings from the room and ordered them to be thrown outside. At the end of half an hour, they removed the old ladder from its place; they cleaned the area where it had stood, and one of the old men, after speaking several words in a low voice, put down in that place a small piece of wood entwined with tonshich. After that a new ladder was fastened in place, again several words were spoken in a low voice, and the old ladder was put against the wall. It was not removed until the feast was over.

Meanwhile, all the sleds, dog harnesses, traces, bridles, etc., were taken outside the iurt, for they believe that all this equipment is displeasing to the demons whom they expect for this feast.

A moment later they took into the iurt some dried grass which they scattered over the ladder. Then the old man who had previously spoken the words came up to the ladder with three women; he sat down on the right of the ladder, and the women on the left. Each of them had a mat in which there was some iukola, sweet grass, dry caviar, and seal blubber enclosed in lengths of intestine and cut in pieces. They made a kind of hash out of the iukola which they wrapped in sweet

grass, and after everything had been prepared according to custom, the old man and the old women each sent a man into the forest to cut a birch tree. They tied tonshich to their waistbands, to their hatchets, and to their heads, then gave them the mats wrapped around food to eat on the road; they saved out a bit for themselves.

After this the old man and the women rose up from their places, made a circuit around the ladder, shaking the bundles of tonshich which they held in each hand, and spoke the word "alkhalalalai;" they were followed by the men who were to go into the woods after the birch tree. These latter, after walking around the ladder, left to go into the woods. Then the old man and the women put their tonshich on the hearth and threw any food which was left to the small children as if to make them scuffle over it. The children grabbed it and ate it.

Meanwhile, the women made a kind of whale out of their sweet grass and iukola; this was taken out of the iurt and placed on the balagan. Then the iurt was heated and the old man dug a shallow trench in front of the ladder, brought in a fish wrapped in tonshich and placed it in the trench and spoke certain words. Then he turned himself around three times in the same place. Thereupon all the men, all the women and even the small children did the same thing.

After this ceremony the other old man cooked some sarana in bowls heated with red-hot stones. They believe they can avert the evil spirits with this sarana. Meanwhile, those who had the idols called Urilydach with them wrapped them in sweet grass; and the others made new idols called Itung, and pushed them into the roof above the hearth.

At the same time, one old man of the group carried the trunk of a birch

tree into the iurt and began to make an idol called Khantai. When it was finished, the chief of the dwelling fastened it to the first sweet grass or tonshich. After this offering, the new statue was placed on the hearth beside the old Khantai.

The old man previously mentioned took two small rocks and wrapped them with tonshich and spoke several words over them. He then set them into the ground in the various corners of the chamber, kindled a fire, and placed the small children around the ladder to catch the idols which must be thrown into the iurt through the opening. The children caught them and wrapped them in sweet grass and one of them took the new Khantai idol and dragged it around the hearth by the neck; the other children followed, crying "Alkhalalalai;" then they put it back in the same place.

After this all the old men in the iurt sat in a circle around the hearth. The one who had spoken all the words we have mentioned took into his hands a scoop wrapped in tonshich and addressed the following words to the fire: "Kutkhu has commanded us to offer a victim each year, and this is what we have done. Therefore we pray you to be kind to us, to protect us and to keep us from harm, from misfortune, and from fires." The old man spoke these words not once but several times. Meanwhile all the other old men rose, stamped their feet, clapped their hands and cried, "Alkhalalalai." When this ceremony was concluded, all the old men left their places and joined hands and began to dance, crying out "Alkhalalalai." When this ceremony was concluded, all the old men left their places and joined hands and began to dance, crying out "Alkhalalalai," which was repeated by everyone in the iurt.

During this shouting, the women and girls began to leave their corners, all the while making their eyes fierce, twisting their mouths and making grotesque faces; they approached the ladder and raised up their hands. Then they made strange motions and began to dance and shout with all their might, after which they fell to the ground one after another, as if they were dead. The men carried them away and put them in their places where they stayed, lying as if bereft of all feeling until an old man came to speak certain words in a low voice over each one of them.

This spectacle seemed stranger and more bizarre to me than the witchcraft of the Yakuts, since there the sorcerer alone enters into a kind of frenzy, instead of this being communicated to everyone in the dwelling, as happened here. The women and girls over whom the old man had spoken the words shouted a great deal and wept as if they were experiencing an intense grief, or as if they had been overwhelmed by a great misfortune.

Meanwhile the old man made his magic over the ashes and then twice tossed them high into the air with a scoop, and then everyone in the iurt did the same thing after him; finally this same old man filled two bark baskets with ashes, and sent two men to carry the ashes out of the iurt. They left through an opening not generally used called the shopkhad, and poured the ashes on the path. After some time they stretched around the iurt a rope made of grass to which they had tied some tonschich in various places.

The day was spent in this ceremony; but in the evening the ones who had been sent out to find a birch tree returned, and were joined by a certain number

of Kamchadals who had gone out. They brought back to the iurt one of the largest birch trees, which had been cut close to the roots. With the birch they began to pound on the entrance to the iurt, at the same time stamping their feet and shouting as loud as possible. Those inside the iurt replied in the same fashion.

This shouting continued for more than half an hour, after which a maiden in an ecstasy of madness hurled herself out of her corner and swiftly darted up the ladder and seized the birch tree. About ten women ran up to help her, but the toion of the dwelling stood on the ladder and kept them from moving the birch. Eventually the tree was lowered into the iurt and when those below could reach it, all the women took hold of it and pulled it, dancing and making wierd cries; but those on top of the iurt outside pulled it back forcibly. After this all the women fell to the ground, as if they were possessed of a devil, except for the young girl who had first seized the birch; she continued to hold on and never stopped shrieking until the end of the tree was on the floor. Then she fell down as if she were dead, just as the other women had done.

The old man brought all the women and girls out of their spells the same way as before and revived them promptly by speaking words in a low voice over them. There was only one girl over whom he lingered for a considerable length of time. This girl came back to life, began to cry that she was deathly ill, and then confessed her sins and accused herself of having skinned some dogs before the feast. The old man consoled her, urged her to bear bravely the grief she had brought upon herself by not being purified of her sins before the feast and for not having thrown fish gills and fins into the fire.

After an hour or an hour and a half, eight sealskins were thrown into the iurt, in which were wrapped iukola, sweet grass and some lengths of intestine stuffed with seal blubber. Then into the fire were thrown the four mats which had been given with the provisions to the men who had been sent to look for the birch tree. The chips from the birch were inside the mats and also the rest of their provisions. All the Kamchadals present divided among themselves the fish which was in the skins, the sweet grass and the blubber. They spread out the pelts at the foot of the ladder, and from the birch chips they made two idols with pointed heads in honor of these demons who they believe possessed the women while they were dancing. They called these idols kamuds. The sealskins just mentioned had been saved since autumn for these demons, from the time when the Kamchadals went out hunting seals; for this reason they are not used for any other purpose; they are content only to sleep on them.

When they had carved fifty-five tiny idols, they stood them side by side and began to smear their faces with cranberries, and then presented them with three bowls of crushed sarana and placed a tiny spoon in front of each idol. They left this food for some time and when they felt the idols were surfeited, they themselves ate the sarana. Then they made grass hats and put one on the head of each idol and around the neck they fastened sweet grass and tonschich; they tied them up into three packets which two men threw into the fire while shouting and dancing. At the same time they burned the little birch chips which had been left over when they carved the idols.

Around midnight one Kamchadal woman came into the iurt through the

shopkhad, carrying a kind of whale strapped to her back; she had made it out of sweet grass and fish at the beginning of the feast. This woman began to crawl around the fireplace followed by two Kamchadals who carried some lengths of intestine stuffed with seal blubber wrapped in sweet grass. These two men uttered cries like the croaking of crows and beat on the whale with the lengths of intestine. When the woman had moved beyond the hearth, all the children in the iurt jumped on her and broke up the whale she was carrying on her back. The woman fled through the same opening by which she had entered, but one Kamchadal who had remained outside the iurt for this express purpose, seized her and brought her back to the iurt and made her go down the ladder head first. Several women and young girls rushed to catch her and uttered great shouts; after this they all began to dance together and to shout until they fell to the ground.

Words were murmured as before; and the Kamchadals divided and ate the whale the children had torn from the woman.

Immediately afterward they heated up the iurt and the women started to prepare food, each having brought a bowl and a mortar; they began by crushing the roots of chelamain<sup>1</sup>, some fish roe and some kiprei, with some seal fat, and after all of this had been ground into a kind of paste, the old man took a bowl, went up to all the women and took from each a scoop of what she had ground together; then he gave the bowl to another old man who spoke certain words in a low voice to take the spell off the women who had fallen to the ground in a kind

<sup>1</sup>Ulmaria fructibus hispida. Steller. --French edition.



of trance. This old man sat near the fire and held the food he had just taken, called *tolkusha*, and spoke some words according to custom; then he threw a small bit of the food into the fire and gave the rest to the first old man. This one gave back to each woman a scoop of paste to replace that which had been taken from her to make an offering. The night was spent in these ceremonies and none of the Kamchadals went to bed.

The next day, November twenty-second, around nine o'clock in the morning, two sealskins were spread out in front of the ladder, in the middle of which was placed a mat on which three old women sat. Each of them had a packet of small particolored twists made of thong and sealskin and *tonshich*. They were assisted by an old man who took the twists and set them afire and gave them back. The women rose from their places, marched single file around the inside of the iurt and incensed it with the lighted twists, and while they promenaded, the Kamchadal men as well as their wives and children pressed forward to touch them, as if this were a holy thing.

After everyone in the iurt had been perfumed, the women returned to their former places, and one of them took the twists from the others, walked around a second time and held them up to each pillar and post in the iurt. Meanwhile all the Kamchadals began to shriek and the old women who held the packets of these twists danced and went into a trance as before. The third of these old women did the same thing, after she had promenaded around the iurt. Finally, they all fell to the earth as if they were dead.

The one who helped them took the twists from the old woman who fell and

put them on the ladder and held them there until everyone in the iurt, without exception, had touched them; then he distributed them into each corner where each woman took some, according to the number in her family; they waved them over each man, having first perfumed themselves, their husbands, and their children.

After half an hour, the Kamchadals spread out a seal skin in front of the ladder and tied a child to each of the two posts beside the ladder. Two old men entered the iurt and asked these children when their father would return. All the Kamchadals replied, "This winter." The old men left after they had placed in front of each child a length of intestine filled with seal blubber and wrapped in sweet grass; but they returned shortly, and began to shriek and dance, and everyone in the iurt uttered great shouts following their example.

Meanwhile, a woman entered by the second opening, the shopkhad, holding in front of her a wolf made of sweet grass and stuffed with bear fat, with intestine stuffed with seal blubber, and other things to eat. This woman was followed by the chief of the dwelling, who held a strung bow; the woman and he had their heads and hands wrapped with tonshich. The chief's belt and his arrow were ornamented with garlands of the same grass. The woman made a tour of the iurt along the walls followed by everyone in the iurt, dancing and shrieking. When she came to the ladder several Kamchadals grabbed the wolf she was carrying and rapidly climbed to the top of the iurt. All the women around the ladder did everything they could to climb up and get back the wolf. But the men on the ladder prevented them; and although the women knocked down some of the men from the top of the

ladder to the bottom, they were unable to accomplish their goal. As they could not succeed, they fell down, overcome with fatigue, and they were carried to various places where they were brought out of their spells in the same fashion as before. After this the chief, who had remained somewhat back from the ladder holding his strung bow, approached and drew it against the wolf. The other men below dragged down the wolf and after they had torn it to pieces, they ate it, leaving only a bit of bear fat to appease the Khantai idols.

Although the Kamchadals were no better able to make sense out of this ceremony than the whale was and although they do not know whether or not the ceremony is related to their superstitions, or indeed why they perform it, nonetheless it seems to me that this is only a simple entertainment or a symbol of their wish to capture and eat whales and wolves as easily as they did the ones made of grass. They tell the following story about this.

A Kamchadal lived on the bank of a certain river and had two very young sons; when he went off to hunt, he had to leave them alone in the yurt and he tied them to the posts so they would not get into mischief. While he was gone, some wolves asked the children if their father would be back shortly. The children replied, "In the winter." They were terrorstricken and were unconscious a long time. The father returned from the hunt and when he learned what had happened, he went after the wolf and killed it with arrows. In regard to the ceremony with the whale, the one made of grass represents the dead whales which sometimes float on the ocean and are washed up on shore by the waves. The crows made of intestines represent these flesh-eating birds which devour the whale carcasses;

and the little children who tear the whales to pieces represent the Kamchadals who strip off the blubber.

When the wolf scene was over, an old man lighted some tonshich, a packet of which he took from each family, and put it all together to offer it to the fire. He incensed the iurt twice with this grass. He set all the tonshich afire on the fireplace except one packet which he hung from the ceiling above the hearth where it was to remain the rest of the year.

Soon afterward birch branches were carried into the iurt according to the number of families. Each Kamchadal took one of these branches for his family and bent it into a circle and had his wife and children step over it twice; then they moved away from it and began to spin around. This they consider the purification of sins.

When they had been purified, the Kamchadals left the iurt with these little branches through the zhupana or the first opening; they were followed by all their relatives of both sexes. When they were outside the iurt, for the second time they crossed over this birch circle, after which they pushed these wands or small branches into the snow, with the tip pointing east. After the Kamchadals had thrown down all their tonshich in this place, and had shaken off their garments, they re-entered the iurt through the real entrance, not through the zhupana.

Among those who were in the place where the purification was performed, there was a young girl who was ill, whom the old man made sit on the snow. He leaned on his walking stick and bent over her and spent nearly half an hour whispering words over this girl. At last after having brushed off her clothing

with a switch, he allowed her to enter the iurt.

When the purification had been completed, the Kamchadals brought in a small dried bird and a fish, which had been specially prepared; after these had been lightly broiled, they were cut up into pieces; the men approached the fire and three times cast pieces into it as an offering to the evil spirits who come to their feasts and possess their women. The Kamchadals say these spirits live in the clouds, that they resemble men except that they have pointed heads, that they are as big as a three-year old child, and that they wear clothing made of the pelts of fox, sable and wolverine.

Since they believe that up to fifty or more of these spirits enter into the mouths of the women, I asked them how such a large number of spirits of such size could enter through an opening so narrow that it would seem impossible for even the hand of a child that size to pass. "That is just as amazing to us," they replied, "but perhaps they are actually smaller, although they seem this size to us."

Then they heated up the iurt and when the stones were red-hot, they cooked dried fish in their cooking vessels and ate it, after pouring the broth on the Khantai, the idols, and on the birch tree which was still in the iurt.

When they had to take the birch out, two men climbed to the top of the iurt by scampering up the tree, for they were not allowed to climb the ladder. Then everyone inside the iurt gave the birch to those outside, and the latter, after walking all around the iurt outside, carried it over to the balagan, where it remained all year, without anyone paying the slightest veneration to it. This is the manner in which the feast is concluded.

The northern Kamchadals differ considerably from the southern in their ceremonies. I went to their feast on the morning of the nineteenth of November. It was already under way, for the entire iurt had been swept before I arrived. They had made partitions on the benches above which they had placed horizontal poles with crudely carved heads called urilidaches.

In addition to these heads, they had placed around the fireplace dry wood to be used during the feast. The northern Kamchadals search out the wood and poles for the heads with the same rituals the southern peoples use when they go out after the birch tree.

Some time after my arrival, all the women left the iurt and dispersed into the balagans. When they came back, the old women were the first to descend, then the young girls and the other women; but before entering the iurt, they tossed some sweet grass inside, to which the women had tied kiprei and iukola. Two Kamchadals, whom I shall refer to hereafter as servants, and who were especially chosen for this feast, took this food and hung it from the heads ranged around the places where they were to sit. Each woman who came into the iurt placed some tonshich on the hearth and then sat down in her place.

One of the women came down into the iurt with young twin girls. The woman had sweet grass in her hands, and the girls had tonshich in their hands and on their heads. This woman, who had raised these two girls, removed the tonshich from their heads and put it on the hearth, and the girls tossed the tonshich they had been carrying in their hands into the fire. Their mother entered the iurt alone.

After this a crippled old woman was brought in front of the hearth, in the same way as the others, with tonsich on her head and in her hands; she threw it in the fire and shook herself while she mumbled some words.

Immediately afterward two men left the corners of the iurt and sat down beside the ladder holding hatchets and pieces of wood. The servants brought them iukola from each corner and put it on pieces of wood which they carried in their hands; they cut it into pieces while saying, "May the iukola last a long time and may it never be lacking in our balagans." The servants brought back the iukola cut in halves to the same corners, and after breaking off a small piece and tossing it in the fire, they returned the rest to the persons who had given it to them. Then they began to eat, both rushing from one corner to another, and so ended the first day of the feast at eleven o'clock in the evening.

The next day early in the morning one man and one woman from each family left to go find a friend in the neighboring ostrogs, to gather food for the feast, for although they had enough, it is customary to secure some extra food at this time from their neighbors, just as we try to obtain eggs for hens we want to brood.

They returned in the evening and the woman heated up the iurt and began to prepare food, to grind roots and berries together; these preparations lasted almost all night. Meanwhile they took care not to let the fire go out on the hearth before the food was ready, for they believe it would be a bad omen to let it go out.

They closed up the iurt two hours before daybreak, just after preparing the meal, and the women were busy until dawn making grass ropes, wrapping

fish heads in tonshich, and fastening little garlands of grasses around their necks. They spoke words which were not understandable. After this ceremony had ended, the servants began to gather up the fish heads wrapped in tonshich to make offerings to the fire; they placed them on the hearth, and each time they laid down a head, they sat down near the ladder on a large tree trunk or a kind of stump. After this, everyone of both sexes in the iurt, from the biggest to the smallest, tore apart their tonshich garlands and walked up to the fire and cast them in. Some families made circles of the grass ropes; they stepped over the circles and put them on the hearth. This was considered the purification of sins.

Immediately after this purification, an old man approached the hearth and whispered over the grasses and tonshich which had been thrown onto the hearth. Then he began to make ropes or a kind of chain from them, which he shook twice, while murmuring some words in a low voice, which the others repeated after him. This meant that they were ridding the dwelling place of all sicknesses.

Then a Kamchadal near the hearth purified the twin girls by laying on the hearth a fish called khakhalcha<sup>2</sup>, and some grass called omeg<sup>3</sup>, which he took from small bags which hung beneath his bed.

A short time afterward the servants left the four corners of the iurt, passed each other, took some iukola, and presented it to all the urilidaches. All the Kamchadals and the servants smeared the idols with tolkusha or sarana or some

<sup>2</sup>Obolarius aculeatus. Steller. --French edition.

<sup>3</sup>Cicuta aquatica. Gmelin. --French edition.



other food; then they all amused themselves by going from one corner to another in order to eat together with a spoon.

When their meal was over, two Kamchadals took off all their clothes, took into their hands a khomiaga (a vessel in which they draw water), and they received from the servants, in place of garments, small garlands which had been taken from the urilidaches. When they had put these garlands around their necks, they left the iurt and went to the river to get water. They walked single file; the first carried in his hand a khomiaga and some tolkusha; the second also had a similar vessel and a length of fir, long and slender, which was set afire to be used as a torch.

Upon leaving the iurt, two Kamchadals sat for several moments near the ladder. The one who walked first had succeeded in making a hole in the ice to draw the water; he had beaten the ice around the hole with a kind of pestle, and then he drew water from it by first turning khomiaga against the current, and then holding it in the stream of the water. All the others did the same, and each carried as much water as he could draw at one time. Then they went off in the same order as they had come, and when they reached the iurt, they lowered the pails on ropes very carefully so as not to let a drop of water spill, which would have been considered a great mishap. Two boys who had remained behind for this purpose received the pails, for the servants themselves had left the iurt to get water. They remained on top of the iurt until all the pails had been lowered inside. Meanwhile they cried out four times as loud as they could, and clapped their hands and stamped their feet. The one who held torch in his hand entered

the iurt, place it in the fire, soaked it in all the buckets of water which had just been brought in, took out a piece of ice and threw it in the fire; then he gave each of his assistants some water to drink, as if it were holy water.

The women then went in to the balagans with whatever they had saved from the food they had been given, and remained there. After that the old men made all the other men leave. At their command, we were obliged to leave, for they had a secret ceremony to conduct, at which no one could assist except several old men and the two servants. However, by earnest entreaty, I obtained permission for my interpreter to remain, and he reported to me what took place.

First of all the servants heated the iurt, according to the orders of the elders, and carried in handfuls of dried grass and strewed them about. After that they spread grass mats around the iurt and on all the benches, and in two corners lighted vessels filled with oil. Then the elders began to tie up tonschich and when they had passed it from hand to hand, they hung it from small pegs fixed into the wall, and ordered the servants not to let anyone leave or enter. They closed up the entrance to the iurt, and lay down and talked about hunting and fishing.

After some time they ordered the servant to scratch on the door, and then to open it and to bring from the balagan a jawbone and a whole fish head. When these things had been brought, an elder received them and wrapped them in tonschich and murmured some words over them and sat down near the hearth. The other old men approached him and trampled on the jaw and head of the fish with their feet, and crossed the hearth and returned to their places. Then the

servants left the iurt, and with that the first secret ceremony was concluded.

Two hours later all the Kamchadals, men, women and children, who had been ill or who had been in danger of drowning during the year, gathered together in the iurt; the women entwined tonshich around the heads of all the men and children; they gave them tonshich in one hand and sweet grass in the other and then they went out of the iurt; but previously they had twisted sweet grass around the ladder, and when they climbed out on top of the iurt, they made three turns around it, starting on the side where the sun rises. Afterward, still standing on the iurt, they shredded the sweet grass and tonshich into bits and threw them into the iurt; then they descended inside and placed on the hearth the tonshich garlands they had brought from above. The ones who had been ill during the year trampled them underfoot and returned to their places. As for those who had been in danger of drowning, they lay down in the place where the fire had been and made all the same movements they had made to fight the waves, and called out the names of those persons they had begged for help. These individuals went up to the hearth and pulled them from the ashes, as if they were rescuing them from the water.

Then the fish jawbone was brought in and was thrown onto the hearth, while people cried out, "Tu, tu, tu." On each side of the iurt two fish were cut into bits and the pieces were thrown onto the floor. Meanwhile, the servants who had gone out extinguished their lamps, collected the grass mats with which the iurt was covered, lighted a small fire in which they placed a stone, and then set fire to all the garlands worn by the sick and the drowning and ordered the children

to put out the fire with stones. So ended the secret ceremony, and nothing more was done that day.

On the third day the iurt was heated in the morning. In front of the fire were placed two bundles of dry grass and switches tied together. The feast servants stood near these bundles. When the fire had been kindled, they passed the bundles from hand to hand, untied them, and gave the switches to the men. Some broke them into small pieces, others bent them into hoops while uttering certain words. The straw was carried to one side of the fire place and the Kamchadals began to make Pom.

They either could not or would not tell me the significance of Pom, nor why they made it. It had a figure similar to a man's, about a half-arshin tall. They made a phallus about two sazhen long, or perhaps even longer. This figure was placed with its head toward the fire and the phallus was fastened to the top of the iurt. While some were busy making Pom, several other Kamchadals each took a single blade of grass and left the iurt to go beat on the posts of their balagans. Then they returned and threw the grass onto the fire along with the switches which had been distributed.

When the Pom figure had been hanging for some time in the position I have described, an old man unfastened it; he bent the enormous phallus into an arc, held it in the fire a moment, and waved it around the iurt, speaking the word "Ufai." Then this figure was burned; the iurt was swept and all the sweepings were gathered together near the ladder. Each of the Kamchadals kept a little of this to take into the woods to scatter along the trail he takes to go hunting. At

the same time the women left the iurt and gathered together into one group. The men returned from the woods, remained standing at the entrance, and four times cried out and clapped their hands and stamped their feet, and then entered the iurt. The women had taken their places and several times cried out,

"Alululu."

Meanwhile the iurt had been heated according to custom and they began to throw the glowing coals outside. But the women out on the top of the iurt picked them up and threw them back inside; and so that the men could not throw any more out, they covered the entrance with mats and seated themselves on the edges of these mats. The men climbed the ladder, forced open the entrance, and went out and chased the women away from the iurt. Meanwhile the other men hastily threw out the embers, but as there were more women than men, some threw them out and others tossed them back into the iurt, until it was almost impossible to breathe because of the smoke and sparks; the embers flew constantly, high and low, like fireworks. This game lasted nearly half an hour. At last the women stopped trying to prevent the men from throwing out the coals, but then began to drag the men along on the ground who had come out to chase them. Others left the iurt to come to their aid and rescue them.

Afterward the women sang for a few minutes on top of the iurt and then they went down inside. The men were lined up on each side of the ladder; they tried to pull down the women who were climbing down, which gave rise to a kind of contest. The victor led off the woman he had taken as a prisoner.

After this contest, there was an exchange of prisoners; when one team

did not have enough prisoners to ransom back its own team mates, they used force to liberate them, and this led to new combat. When I was there, the number of prisoners was equal on both sides, so the Kamchadals were not obliged to take them back by force.

When the mock battle was over, a small fire was built and the tonshich garlands which hung on the urilidache idols and other places were burned. The servants brought in Dolly Varden trout, and when they were cooked they were cut into small pieces on a large somewhat curved board which was placed at the right of the ladder. Afterward an old man appeared and threw a large part of the fish into the fire and said "Ta," which means "take." The feast servants gave the rest to the Kamchadals who were wearing the little urilidache idols. The embers of this fire were not thrown out as the others had been, but were allowed to burn out; at the end they divided among themselves the omeg which was left in the sacks after the purification of the twin girls.

The last ceremony of this feast consisted of going into the woods and getting a small bird, which they roasted and divided into small pieces which were handed out to each Kamchadal who took a tiny bite and threw the rest into the fire.

The feast, according to Steller, was celebrated by the Kamchadals for a whole month before the Russians came to Kamchatka; it began with the new moon. This leads us to believe that their ancestors had more reasonable beliefs based on observation of nature. Now these people, as can be seen from the foregoing, toss everything into the fire and regard everything that is burned during the feast as sacred. As a matter of fact, the new moon as well as the holy fire have

always been venerated by many people, especially by the Hebrews; they are the only ones who thus observed the commands God gave them and the tradition of their fathers, and lost nothing of their real faith after the flood, while certain other nations, such as the Kamchadals, retain nothing but some vestiges; all the rest has been changed. In regard to the Pom previously mentioned, Lucian described similar ceremonies which took place in Syria. The same kind of phallic idol was made, and eunuchs were dressed in women's clothing like the Kamchadals.

## CHAPTER XIV

### BANQUETS AND ENTERTAINMENTS OF THE KAMCHADALS

The Kamchadals have banquets when one village wants to entertain another, and particularly when a marriage takes place, or a great hunt or fishing trip; these banquets emphasize gluttonous eating, dancing and singing. The hosts give their guests great cups or wooden bowls filled with opanga, and the guests eat such an enormous amount of food they are frequently obliged to vomit.

Occasionally for a treat they serve a species of toxic mushroom known in Russia as fly-killer (mukho-mor). They either steep it in a fermented beverage made from kiprei or they eat some of these mushrooms dried. To gulp the whole thing down more easily, they make little rolls out of them. This is the most common method of eating them.

The first and most common symptom which these toxic mushrooms produce is a trembling or convulsion in all the limbs, which occurs after an hour or sometimes sooner; it is followed by intoxication and a delirium similar to that produced by a high fever. A thousand chimeras, happy or sad, appear in one's imagination. Some persons leap about, others dance or cry and are seized with terrible fears. A small hole seems a great door to them; a spoonful of water, a sea; however, only those who partake immoderately of these mushrooms fall into this delirium; those who use it in moderation only become lightheaded, more



lively and gay, more daring and bold. The condition this mushroom produces is similar to what it is said the Turks experience when they take opium.

All the Kamchadals assert that everyone who eats it becomes aroused by the invisible power of mukho-mor. They perform all sorts of foolish actions, which, according to reports, can be so dangerous that if someone does not watch over them, they may kill themselves.

I will not comment further at this point on the extravagances to which the Kamchadals abandon themselves, since I did not personally see any of them and they are very reluctant to talk about this matter. Perhaps there is a way of eating these mushrooms so as to be less likely to succumb to these violent frenzies, or perhaps they must only be eaten in moderation.

I shall report on the effects of these mushrooms on several Cossacks who ate some of them; either I observed these men myself, or I have the account of those who personally experienced this madness, or I heard of these things from reliable witnesses.

They say the mukho-mor commanded a servant of Lieutenant-Colonel Merlin, who was at that time in Kamchatka, to strangle his master; the mushroom suggested to him that everyone would admire him for it; and he would have carried out the command, if his comrades had not stopped him.

Another inhabitant of this country thought he saw Hell and a frightful pit of fire into which he was about to be hurled, and thought that an invisible power, which he believed to be the mushroom, ordered him to his knees to confess his sins. There were many of his companions in the room where he made his

confession and they listened to him with much amusement; he actually believed he was confessing his sins before God. They were much entertained, for he confessed to many things he certainly would not have told to his friends.

There is a report that a soldier ate a little mukho-mor before setting out on a march, and went a great part of the way without fatigue; but when he ate enough more to become intoxicated, he gripped his testicles and died.

My interpreter, a son of a Bolsheretsk Cossack, drank some of this mushroom liquor without realizing what he was drinking, and went into such a frenzy that he slashed open his abdomen, on the command, he said of mukho-mor, the mushroom. He was only saved with great difficulty at the last moment.

The Kamchadals and the settled Koriaks eat mukho-mor when they intend to kill someone. And moreover, the Koriaks make such an occasion of this that they will not allow anyone who is intoxicated with the mushroom to urinate on the ground; rather, a vessel is put in front of them to catch the urine, which is then drunk; and this brings on the same intoxication as the mushroom itself.

They only practice this particular economy because they do not grow any of the mushrooms themselves, and must buy them from the Kamchadals. A reasonable dose is at least four mushrooms; in order to become intoxicated, as many as ten must be consumed.

Since the women are sober, they do not follow this custom; their amusements amount to gossiping, dancing and singing. I had occasion to see a dance; this is how it was performed. Two women who were to dance together stretched out a mat on the floor in the middle of the iurt and got down on their knees facing each

other, holding a packet of tonshich in their hands. They began hunching their shoulders up and down and shaking their hands. They sang in a very low voice and kept time, then gradually increased the motion of their bodies and raised their voices at the same time, and kept on until they were breathless and their energy spent. This dance impressed me as being very strange, as well as barbaric and unpleasant; but the Kamchadals watched it with the greatest pleasure.

We will describe other dances, using Steller's notes which are very extensive on this subject as well as on their songs, which he personally noted down.

The first variety of dance, he says, is generally performed by the Kuriles of Cape Lopatka, as well as by all the Kamchadals who go fishing or hunting sea animals in boats. These people long ago took this dance from the Kuriles who live on the farther islands, and it is considered a sailor's dance. The Cossacks call it khaiushku skazyvat, which comes from the Kamchadal word khaiushkuking. The southern Kamchadals call it irskina, and the Kuriles, rimzeg.

Here is a description of this dance: ten men and ten women, girls or boys, dressed in their finest garments, form a circle and walk slowly, raising one foot after the other and keeping time. They speak in turns, so that when half the dancers have spoken the last word, the other half speaks the first words, as if someone were reading verses by syllables. All the words used in this dance are taken from their hunting or fishing, and although the Kamchadals speak them while dancing, they nevertheless do not understand many of them, for a number of these words are taken from the Kurile language; they do not sing them, but

rather chant them on the same note, for example:

Tipsannku fravantag tkeani tifrorpa.  
Untie the baidar, draw it near the shore.

If the dances just described are wild and uncivilized, the cries they utter are no less strange. However, they appear to derive such pleasure from it that once they begin, they do not stop until they are out of breath and have exhausted their energy. They consider it a great distinction to be able to dance longer than anyone else; sometimes they dance without interruption for twelve or fifteen hours from evening until morning; and there is no one in the iurt who does not wish to revel in this fashion. The elders, even the most decrepit, never refuse to enter in, to the limit of their strength. Moreover, if one compares this dance with the description Baron de la Hontan<sup>1</sup> gave of the dances of the Americans in Canada, one will find they are very similar.

The women have a special dance; they form two lines facing each other and put their hands on their hips; then they stand on their toes and shrug their shoulders up and down, keeping their hands motionless, and without stepping out of place.

In the fourth dance, all the men hide in different corners; then one of them claps his hands and suddenly leaps like a man possessed; he slaps his breast and thighs, raises his hands in the air, and makes extraordinary gestures. After him a second, a third, and a fourth do the same thing, all the while turning in a circle.

<sup>1</sup>Also written Lahontan; author of the two-volume work, Nouveaux Voyages dans l'Amerique Septentrionale (La Haye, 1703). --Ed.

The fifth dance is like this. They bend down on their knees in a crouch, and in this position they dance in a circle and clap their hands and make strange faces. This dance begins with a single man; the others come out of their corners in the yurt and join him in the dance.

The Kamchadals have still another ancient dance which is unique to them. The southerners call it khaiutelia, and the northerners, kuzelkinga; it is performed in the following way.

The girls and women are seated in a circle; one of them rises and begins to sing a song, and then shakes her arms; she holds in her hands, on her middle finger, some tonshich, and she shakes all her limbs with such rapidity that one can not help being struck with amazement. These women are so clever at imitating the cries of various animals and birds that in one moment and in the same voice one hears three separate calls. They have another circle dance, but neither Steller nor I observed it.

As for their singing, it can be said that it is not unpleasant, since there is nothing vulgar in it, as may be seen in the songs that are noted below.

There is no imagination or inventiveness in the subject matter of their songs; there are only simple ideas about things that seem strange to them, or ridiculous, or worthy of admiration. In nearly all their songs they use the words ganika, and baiun, as the Cossacks use zdunai and the Yakuts use naga. The Kamchadals make the syllables long or short, according to the demands of the song.

In their love songs they express their passion for their loved ones, their

sorrows, their hopes, and the other sentiments they feel.

Generally the women and girls are the ones who compose the songs; they have clear pleasing voices. These people seem to love music, but it is surprising that with this taste for it, they have invented no instrument except for a kind of flute or reed-pipe which they make from the shaft of the angelica plant. This instrument is so crudely made that one can not play any tune on it whatsoever.

A song about Lieutenant-Colonel Merlin, Major Pavlutski, and Krasheninnikov, a student from the Academy.



If I were the Major's cook, I would take the kettle and the meat off  
the fire;  
If I were the Ensign's cook, I would not take the kettle off the fire  
without gloves;  
If I were Pavlutski, I would always wear a beautiful white cravat;  
If I were Ivan, Pavlutski's valet, I would wear fine red hose;  
If I were the student, I would describe all the pretty girls;  
If I were the student, I would describe the bull fish;  
If I were the student, I would describe all the cormorants;  
If I were the student, I would describe all the seagulls;  
If I were the student, I would describe all the eagles' nests;

If I were the student, I would describe all the mountains;  
 If I were the student, I would describe all the birds;  
 If I were the student, I would describe all the fish in the sea.

This is how they compose all their songs, in which they tell only of certain deeds or other circumstances, without adding any elegance or embellishments. They have another song, called Aangich, named for the cry of the sea duck with that name; although the words which are used in this song do not fit any notes, the Kamchadals nonetheless adapted it to the air and made it fit by adding several meaningless syllables.

1. Gnakoede oloskonga voroka a khitets zhintes bine zotes komchul beloon.
2. Kapaninacha ugaren; bine zotes komchul beloon.

This is the meaning of the song:

I have lost my wife and my life. Overcome with grief and sadness, I shall go into the woods, peel off the bark from trees, and eat it. I will rise at dawn, hunt the aangich duck, make it fall into the sea. I will cast my eyes in all directions to see if I cannot somewhere find the one who is the object of my love and my sadness.

The Kamchadals take great pleasure in mimicking strangers' speech, gait, and behavior. When someone comes to Kamchatka, the natives first of all give him a nickname and then they observe all his actions, and in the midst of their entertainments they study him so they can mimic him. They also take much

pleasure in smoking tobacco and telling anecdotes; they prefer to hold their entertainments at night rather than in the daytime; they also have jesters whose job is to amuse the others; but their jokes are so obscene that it would be improper to recount them here.



## CHAPTER XV

### FRIENDSHIP AMONG THE KAMCHADALS, AND THEIR MANNER OF TREATING GUESTS

When a Kamchadal wishes to become friendly with someone, he invites his future friend to come share his repast; before receiving him, he starts heating his iurt and preparing the food he considers his best; he prepares enough for ten people.

When the guest enters the iurt, he strips off all his clothes, as his host does. The host closes up the iurt and serves the guest the food he has prepared and pours some broth into a large bowl. While the guest eats and drinks, the host from time to time sprinkles water on the red-hot rocks, which makes the iurt unbearably hot. The guest makes every effort to eat everything that is served to him and to endure the terrific heat in the iurt. The host, on the other hand, does everything in his power to make the stranger complain that it is too hot, and to beg him not to serve any more food. If these proprieties are not observed, the guest takes it much amiss and is very displeased, and the host is considered miserly or rude. The host eats nothing during the meal and is free to leave the iurt when he wishes, but the guest may only leave after he has admitted he is overwhelmed; he vomits as often as ten times during the meal. Thus after such a banquet, not only is the guest unable to eat for two or three days, but he can

not even look at food without feeling ill.

When the guest can eat no more, and can no longer bear the heat, he asks permission to leave; but he must ransom himself, since he has not been able to endure the heat nor to eat any more. He is not excused until he has given the host some dogs, some clothing; in fact everything which pleases the host. The host in turn gives him some rags instead of the good garments he received, and several poor decrepit old dogs who can scarcely walk.

This reception, far from being considered an insult, is to them a mark of friendship, since each reciprocates. If the one who has thus stripped his friend does not in turn go to repay the visit, the one who was fleeced returns to his friend a second time, not to eat, but to receive a gift in turn. Although the guest does not mention the object of his visit, for this is their custom, the host knows the reason, and must in turn give presents according to his ability; and if he does not do this, then the guest, after spending the night with him, harnesses up his dogs on top of the iurt itself, sits on his sled, beats his stick on the ground, and stays right there until he has received something from his friend.

If, through avarice, the host gives him nothing, the guest returns home greatly insulted, and becomes his worst enemy. This, however, rarely happens, for the Kamchadals consider it such a great dishonor to insult a friend in this way that no one would want to be a friend of anyone who would do such a thing; it is likewise shameful for a guest to ask for presents in return for those he has given.

The Kamchadals treat their friends the same way when they give banquets

for them, except that they do not heat their iurts so much, and presents are not required. If they are served seal or whale blubber, the host cuts the blubber into long strips, kneels before the seated guest, and then holds one of these strips of blubber in one hand and a knife in the other; he stuffs it in the guest's mouth, and shouts as if he were angry, "Tana" (there), and with his knife cuts off as much as hangs out of the guest's mouth.

When someone sees something he wants from a Kamchadal, the only way to get it is this; it would be dishonorable for a host to refuse a guest anything he asked. I will give a rather amusing example. This is what a Cossack did who had just been baptized in a Yakut ostrog in Lower Kamchatka. Following the custom of the country, he struck up a friendship with a Kamchadal who he knew had a very beautiful fox skin. He did everything possible to obtain it, but without success. The Kamchadal, in spite of all the gifts the Cossack offered him, was firm and did not want to give up such a valuable fur. The Cossack, seeing that he would not agree, proceeded thus. He issued the man an invitation, heated his bathing-room very hot, and cooked a great deal of fish; he had his guest sit on the highest step, and began to entertain him before throwing any water on the stones; but observing that the Kamchadal regarded the moderate heat of the room as poor treatment, he poured water on the very hot stones, and in this way caused the room to become so hot he could not stand it himself. He left the room in his role of host, which was permissible, and stood in the hallway beside the bath chamber, from where, by opening the door, he could continue to pour water on the stones without stopping. In this way, the Kamchadal could not bear any more,

and was obliged to beg his host to desist; but the Cossack would not agree until the Kamchadal had promised to give him the pelt.

This treatment could not have been more pleasing to the Kamchadal. He vowed that he had never experienced such heat in his life and that he never would have believed the Cossacks could treat their guests so well. Far from being angry over the loss of his fox skin, which he considered a treasure, he praised the friendship of this Cossack to all his companions, and boasted about this feast as the best and most honorable treatment anyone could give him; he told everyone that the Kamchadals knew nothing of how to treat their guests compared to the Russians. I heard about this from the Cossack himself, and from other soldiers in that ostrog who were much amused by it.

## CHAPTER XVI

### COURTSHIP AND MARRIAGE

When a Kamchadal wishes to marry, he chooses a bride, generally from some village other than his own. He moves there to live, and after he has declared his intentions to her father or mother, he works for them for some time, so they can see his zeal and energy. He serves everyone in the dwelling with more care and alacrity than a mere slave would show, and he especially works for his future father-in-law and mother-in-law and his intended; at last he asks permission to take her. If his services have pleased the father, the mother, the relatives, and the young lady herself, his wish is granted. But if he has not had the good fortune to please them, either his work has been completely in vain, or he is dismissed with some recompense. Sometimes these swains go off to live and work in some strange ostrog without announcing their intentions; and although it is easy to guess their plans by the work they do, no one mentions this to them until they themselves speak to the father and mother of the maiden they seek in marriage.

When the young man has received permission to take his intended, he waits for an opportunity to seize her when no one is about, which is not easy, for the girl is always under the eye of the women of the ostrog, who rarely leave her alone.

Furthermore, during the period of courtship, she is dressed in two or three sets of garments, and is so tied up with strings and thongs that she cannot untie herself, and looks like a statue. If the man is lucky enough to find her alone, or if only a few women are guarding her, he throws himself on her impetuously, rips and tears off all the thongs and clothing with which she is swathed, and then embraces her naked body; this constitutes their entire marriage ceremony. But the bride, as well as the other girls and women, cries out loudly, and they all fall on the young man, hit him and tear his hair, scratch his face, and use all sorts of methods to keep him from carrying out his plan. If he is fortunate enough to succeed, he immediately leaves his sweetheart, who at this instant gives him proof of his victory by calling out to him in a tender and pleading voice, "Ni, ni."

This is the whole nuptial ceremony. However, the suitor does not always immediately achieve his purpose, and sometimes his endeavors last an entire year or even longer; in such a case, he is sometimes so mistreated that it takes a long time for his wounds to heal, and for him to recover his strength. In fact, there is more than one example of a suitor who instead of gaining a sweetheart after trying for seven years, received nothing but wounds and bruises and was lamed by being thrown off the balagan by the women. When he has taken his intended, he is permitted to sleep with her the following night; the next day he takes her to his own village without any ceremony; he returns sometime afterward to his bride's parents to celebrate the marriage. At this time, the following ceremonies are observed, which I myself witnessed in 1739 in a settlement in

Kamchatka situated on the Ratuga River. The bridegroom, accompanied by his relatives and his wife, embarked in three large boats and paid a visit to his father-in-law. The women, seated in the boats with the young bride, were abundantly provided with food, iukola, seal and whale blubber, sarana, etc. The men, including the young bridegroom, were completely naked, and pushed the boat with poles.

When they were a hundred sazhen from the ostrog they got out to walk and began to sing, to make magic and to tie garlands of tonschich to some poles; they spoke some words over a dried fish head which they entwined with the same grass and gave to an old woman who was with them.

When the magic had been made, they dressed the young bride, on top of her clothing, in a lambskin shirt, to which were attached knickers; they added four other garments on top, so that she was like a mannequin, holding her hands straight out and able to move only with difficulty. They got back in their boats and continued on to the settlement, where they landed.

One of the younger boys who had been sent from the ostrog of the father-in-law led the young bride from the place where the boat had landed to the iurt, and the other women followed her.

She was taken to the outside of the iurt, a rope was tied around her, and she was lowered inside with this rope. She had been preceded by the old woman who had been given the fish head, which was placed in front of the ladder and stepped on by everyone of both sexes who had come on the journey, by the bridegroom and his bride, and at last by the old woman herself, who placed this

head on the hearth beside the wood which had been prepared to heat the iurt.

After they had taken off the extra garments they had dressed the bride in, everyone who had come with her found a place and sat down in various spots. The groom heated the iurt, prepared the food he had brought, and played host to the people who lived in his father-in-law's ostrog. The next day the father-in-law entertained the guests lavishly, according to custom, and on the third day they departed, except for the young couple, who stayed behind for some time to work for the bride's father.

The extra garments mentioned earlier were given to the relatives, who in turn gave the new couple presents; those who were not able to give anything, could not receive anything.

These ceremonies are observed only by those who are marrying for the first time. When someone marries a widow, the betrothal and marriage only consist of an agreement, with no ceremony; but no one may lie with a widow until she has been purified of her sins. For this it is necessary that she have intercourse with a man other than the one who is to marry her; but it will only be a stranger, or someone beyond the prejudice of shame and infamy, who will perform this service for widows, this action being considered very dishonorable by the Kamchadals. Thus it was formerly only with great difficulty and expense that widows could find men to purify them, and they were sometimes obliged to remain widows all their lives. But since our Cossacks have settled in Kamchatka, widows no longer have this trouble; they can find as many men as they wish to absolve them of their sins.

Marriage is only forbidden between a father and his daughter, or a mother



and her son. A son-in-law may marry his mother-in-law, and a father-in-law may marry his daughter-in-law, and brothers marry their first cousins, etc.

The Kamchadals can divorce their wives without any formalities; all that a divorce involves is that a husband and wife no longer sleep together. In this case he takes another wife, and she takes another husband, with no need for any other ceremony.

Each Kamchadal has two or three wives who occasionally live in the same iurt, or sometimes in separate places. He sleeps with them in turn, now with one, then with another; with each wife he must submit to the ceremony of taking which has just been described. Although the Kamchadals are much given to loving women, they are not as jealous as the Koriaks. They pay no attention in their marriages to signs of virginity and are not concerned whether the girls they take are virgins or not; it is even claimed that sons-in-law reproach their fathers-in-law when they discover their wives are virgins; this, however, is something I can not state positively. The women are no more jealous than the men, for two or three women with the same husband not only live together happily, but they even put up with the koekchuchi, who are kept by some as concubines.

When a woman goes out she covers her face with the hood of her robe. If she happens to meet a man on the road at some spot so narrow it is impossible to step aside, she turns her back and stands still until he has passed, not wishing to be unmasked or seen. When they are in their iurts, they sit behind mats or curtains made of nettles; those who do not have curtains turn their faces to the wall when a stranger comes in, and keep on with their work. This custom is

observed only among those who have not yet left their old backward ways behind; the others are not so uncivilized. Furthermore, all the Kamchadal women speak rudely and churlishly, in a very forbidding manner, as if they were angry.

## CHAPTER XVII

### THE BIRTH AND EDUCATION OF THE CHILDREN

It can be said in general that the Kamchadal people are not at all prolific; at least I have never heard anyone tell of a Kamchadal having ten children by the same wife.

The women, so it is said, give birth easily, except in unfortunate cases when the infant is not positioned properly. Steller reports that a woman near her time left her iurt and returned fifteen minutes later with her baby, with no change in her expression. He also reports having seen another woman who was in labor for three days, who to his amazement gave birth to a child by a breech delivery. The shamans attribute the cause of this to the father having made a sled at the time the child was about to be born, saying that he bent the wood into an arc over his knee; from this one may judge other absurd notions the Kamchadals have.

The women give birth while kneeling, in the presence of all the inhabitants of the ostrog, with no consideration given to age or sex. The baby is dried off with tonshich and the navel is tied with a string made of nettles, and is cut with a knife made of sharp flint; the placenta is thrown to the dogs. They place chewed kiprei on the navel which has just been cut; instead of swaddling clothes, they wrap the child in tonshich. All the inhabitants in turn take the child into their

hands, kiss it and caress it and rejoice with the father and mother. This is what the entire ceremony amounts to.

Although there are midwives, one cannot say they are professionals. If the young woman has a mother, she usually serves as midwife.

Women who want to have children eat spiders, as I have mentioned. Some eat the umbilical cord with *kiprei* in order to become pregnant again. There are many others, on the other hand, who kill the unborn child with drugs, or who have recourse for this purpose to fearful means, killing the fetus within the womb and aborting it. For this purpose they avail themselves of the services of old women experienced in such transgressions, but it often costs them their lives. If these Medeas do not wish to destroy their infants in the womb, they strangle them at birth, or feed them alive to the dogs. Sometimes they use a concoction made from an herb called kutakhzhu, with various spells, so they will not conceive. Superstition is frequently the reason for their barbarity, for when a woman gives birth to twins, it is absolutely mandatory that one be put to death. They do the same thing when a child is born during a storm; these two circumstances are considered evil omens. In the latter case, however, they sometimes have resource to magic spells to avert the evil influence of the tempest.

After the women have given birth, they restore their strength with *opana*, which is a fish broth made with the leaves of a plant called *gale*; after several days they go back to eating *iukola* and return to their usual work.

The fathers give their children the names of their dead relatives, with no other ceremony. The children keep these names until they are grown.

## Men's Names

Keshleia	I shall never die
Kamak	A water insect
Lemshinga	The earth
Shikuika	Spider
Kana	Devil
Briutch	Burned alive; called this because one of his relatives was burned in his iurt
Imarkin	Grass which catches fire very quickly, perhaps <u>plau</u>
Byrgach	An illness
Talach	Catfish

## Names of Women

Kanalam	Little devil
Kenillia	Little mouse
Kygmach	One who cannot go out into the world, perhaps thus named because her mother died in childbirth
Kairuch	Colic

Most of the women also have men's names, as for example, Briuch, Byrgach, Chekava, etc.

They do not rock their babies; a wooden box is used as a bed; there is a kind of trough in front to let the urine run off. When the babies cry, their mothers put them behind their shoulders, in their garments, where they tie them and jiggle them until they fall asleep. The women travel and work while carrying the infants on their backs like this. They are not wrapped in swaddling clothes at all; they are put to bed with the mothers, and although they are heavy sleepers and take no precautions, it almost never happens that they are rolled on or smothered.

They are weaned at the age of three or four years. In their second year they are taught to creep. When they cry, they are pacified with iukola, caviar, birchbark and willow bark, and especially with sweet grass. Often too, the children crawl over to the dogs' bowls and eat whatever the dogs have left. The fathers and mothers rejoice when they see the children begin to climb up the ladder, and this is a source of great amusement for the entire family. The children wear garments similar to the ones the Samoeds wear; they are pulled on over the feet. This garment consists of a hood and a kind of knicker with leggings and a top, sewed together, with an opening in the rear to meet the child's needs, and a piece which closes this opening, like the double pouch in our breeches for riding horseback.

In regard to the education of the children, Steller says that the parents love the children so much that they spoil them, especially when they are old and infirm. The children chide their parents, insult them, never obey them, and do not pay any attention to them; this is why the fathers and mothers dare not scold them

nor punish them, nor oppose them in anything they want to do. When they return after a long absence, they are received and embraced with every evidence of joy and the greatest tenderness, whereas the children themselves show only coldness and indifference.

They never ask their parents for anything; they simply take whatever they wish. If they want to marry, rather than consult their parents about it, they do not share any part of it with them. The power of the fathers and mothers over their children only consists in the fact that they may say to anyone who wants to marry their daughter, "Take her if you can, and if you have enough confidence in yourself."

The Kamchadals have some regard for the custom of primogeniture, for the eldest, on the death of his father, comes into possession of everything and the others receive nothing; the entire inheritance only consists of a set of clothing, a hatchet, a knife, a bowl, a sled and some dogs. They still cast out the clothing of a dead person, for fear that whoever wears the garments will die himself; this superstition still exists among them.

## CHAPTER XVIII

### DISEASES AND REMEDIES

The major illnesses of the Kamchadals are scurvy, boils, palsy, cancer, jaundice and venereal disease. They believe all these evils befall them through the spirits who live in the birch trees, the willows, or the osiers<sup>1</sup>; when someone inadvertently cuts some brush where the spirits are living, they retaliate by sending illness. They believe these diseases are cured primarily through charms and magic words, which belief nevertheless does not prevent them from using plants and roots.

To cure scurvy, they use the leaves of a certain herb called mytkazhun which they apply to the gums. They also drink an infusion of bilberry<sup>2</sup> and cowberry<sup>3</sup>. The Cossacks successfully use the buds of the cedar tree<sup>4</sup>, which they drink in the form of tea, and they also eat a wild garlic<sup>5</sup>. Everyone on the Kamchatka expedition proved the efficacy of these two remedies.

<sup>1</sup>Salis viminalis. --French edition.

<sup>2</sup>Vaccinium. Linnaeus, Flora Suecica. --French edition.

<sup>3</sup>Empetrum. --French edition.

<sup>4</sup>Cedrus humilis. Gmelin, Flora Sibirica. --French edition.

<sup>5</sup>Allium foliis radicalibus petiolatis floribus umbellatis. Ibid. --French edition.



They call boils oon; this is a most dangerous illness in Kamchatka, for many of those stricken with it die. These boils are sometimes two or three inches across, and when they begin to suppurate, from forty to fifty small fistulae are formed. If there is no suppuration, they believe this to be a fatal sign. Those who recover must stay in bed for six or even ten weeks or more.

To bring about suppuration, the Kamchadals apply to the boil the pelt of a freshly-skinned hare; and when the boil opens, they try to draw out the core from which the purulent matter is derived.

They consider palsy, cancer and venereal disease as incurable. They saw that they never had the latter until the Russians came to their country. They call palsy nalach; cancer, kaikch, and venereal disease<sup>6</sup>, arozhich.

They have still another illness which they call suzhuch<sup>7</sup>. It is similar to a gall and forms a girdle of sores under the chest. If it does not suppurate, the disease is fatal. They believe no one can avoid having it once in his lifetime, as we have small pox.

Shelech or eagle is also a disease which affects the entire body. It has the same symptoms as the gall, and sometimes causes death. They believe an evil spirit by the same name brings it. They call the sore which infects a majority of their children teued.

Since Steller has described these diseases in great detail, as well as the

<sup>6</sup>The Russian edition refers to "the French disease;" the French version translates this as "the Neapolitan disease." --Ed.

<sup>7</sup>Possibly shingles. --Ed.

remedies used, I will only relate the most essential points.

He says the Kamchadals successfully treat boils with sea sponges to draw out the infection. The alkaline salts in the sponge prevents edema in the dead flesh around the area. Nevertheless, this cure is slow and difficult. The Cossacks treat these boils by putting on them the residue left in the kettle when they make spirits from sweet grass, and in this way they draw out the infection.

The women use sea raspberries to ease childbirth and hasten delivery. They also use nignu, known in Russia under the name of sea radish; they pulverize the shell with spearheads or knifeblades, and use this powder to cure gonorrhoea; however this remedy is only a diuretic and does not stop vaginal discharge.

The women successfully use the fat of the sea wolf to treat cramps or constipation. They drink a Kurile tea, which is a decoction of pentaphilloides fruticosus, to cure colic or cramps and all stomach disorders that are caused by cold. They use the bark of the cedar tree on all wounds, and they claim it even has the virtue of drawing out arrowheads which have become imbedded in the flesh.

To cure constipation, the women cook up some sour iukola and then drink a kind of malodorous fish broth. For dysentery, they eat lac-lunae which is found in several places in Kamchatka, and they also use the root of shelamain (ulmaria) for this illness.

They claim that they can cure people who have a patulous urethra, or a constant desire to urinate, by having them micturate into a woven circle of tonshich with fish eggs in the middle, over which they cast some magic spell

or conjuration.

Sore throat is treated by drinking a sour juice fermented from the herb kiprei. Women in childbirth also use this to facilitate their delivery.

When someone is bitten by a dog or a wolf, they apply crushed ulmaria leaves to the wound; they also drink an infusion of it, primarily against stomach aches and scurvy. They crush the leaves and stems of it to apply to burns.

They cure headaches with cold cowberry juice. When they have a toothache, they steep ulmaria and boil it with fish; they hold it in their mouths, and apply the roots to the aching tooth. Whoever has an attack of asthma chews an herb called segelch (a rockfern which the Russians call kammenoi paporotnik). They also drink this mixture when they spit blood or when they have had a bad fall.

Pregnant women drink this to make their babies strong, or to become fecund. Some people believe that this herb makes the voice clearer and sweeter.

They also drink an infusion of a native plant (a variety of gentian) to cure themselves of scurvy, as well as to treat all internal illnesses. They also use a plant called Chamaerrodendros, which they call ketenano, or miscush, to treat venereal disease, but without any success. They use a sea cabbage (Quercus marina) to treat dysentery.

The men drink infusions of the plant kutakhzhu to combat scurvy and weakness of the limbs; the women drink it in order not to become pregnant. They steep this plant in fish oil and apply it hot to the affected areas. They use the same remedy to get rid of the livid marks that are produced by certain bruises.

They use an infusion of the herb chakhbon (Drymopogon) for scurvy and to reduce swelling in the limbs. They eat ephemera berries to combat insomnia.

When they have an eye infection, they treat it by bathing the eyes with a decoction of the plant zizom (seranus). The women also use this herb when they feel flirtatious; they perfume their bodies with it.

The people who live on Cape Lopatka make use of clysters, which they probably learned from the Kuriles. They make an infusion of various herbs which they sometimes mix with fat; they pour it into a seal bladder and attach a tube to the opening; the sick person who is to receive this treatment lies on his stomach with his head down; they think so highly of this remedy that they use it in all kinds of illnesses.

For jaundice, they have a cure which they consider infallible. They take the root of the plant caltha palustris (wild iris, or woods violet). They scour it clean, and while it is still fresh, grind it up with warm water, take the milky white fluid that is produced, and pour it into seal bladders, and give clysters for two consecutive days, three times a day. This cure is an effective purge, for the juice of this healing plant is diffused into all the members. This cure will not surprise anyone who knows the healing powers of this plant.

For blood-letting they use neither lancets nor cupping-glasses. They hold up the skin around the affected part with wooden pincers; they pierce it with a crystal instrument and let as much blood as they consider suitable.

When they have a back ache, they rub the aching part with hemlock root, while the person is in front of the fire; they are careful not to touch the waist,

for fear that if the medication were applied that far the person would suffer convulsions or a shriveling of the nerves. Although they praise this remedy and claim that it produces its effect and immediately alleviates distress, I nonetheless find this difficult to believe.

When they have a soreness in the joints, they use a kind of fungus-like growth which is found on birch trees. They place a cone-shaped pile of it on the sore area, light the tip and let it burn down to the living skin. This causes a mortification and makes a large sore. In order to close the open wound, some use the ash of this same agaric or fungus, and others use nothing at all; this remedy is known throughout Siberia. They use the root of the plant liutik and the one called oneg against their enemies; they poison their arrows with the former; they consider this a poison against which there is no remedy.

## CHAPTER XIX

### CEREMONIES FOR THE DEAD

The Kamchadals, instead of burying their dead, let the dogs eat them; other people in this country burn the dead, or bury them with certain ceremonies. But the Kamchadals tie a rope around the neck of the corpse, drag it away from the iurt, and then leave it to be food for these animals. They give two reasons for this custom. The first is that whoever is eaten by the dogs will have good dogs in the other world. The second reason is that by putting the body outside the iurt, the evil spirits who they believe to have caused the death, will see the corpse and be content with the death of the victim and not do any harm to the living. This second reason seems unlikely to me, for they always abandon their dwellings when someone dies and establish themselves in other iurts which they build at a considerable distance from their former ones. They do not drag the corpses with them, which might in their opinion protect them against evil spirits in the new dwelling to which they move. Perhaps they do not so much consider the corpse a safeguard against the evil deeds of spirits as the fact of building a new living place. Along with the corpse, they throw out of the iurt all the clothing and footwear of the deceased; it is not that they believe he will need these things in the other world, as some of these people suppose, but only through fear that his clothing may also bring death; for whoever wears his garments invariably

dies, they say, sooner than he should.

The inhabitants of the southern cape of the Kuriles are especially given to this superstition. They believe it so firmly that they will never take anything, however much they want it, which they know has belonged to a dead person.

Thus the Cossacks and those who bring merchandise to them, such as cloth garments made in the German or Russian style, or clothing made of Chinese silk, do not have to employ any other ruse to prevent the people from buying things from other merchants than to assure them that the clothing their competitors are selling belonged to dead persons.

After they have observed these obsequies, they purify themselves in the following manner. They cut small branches from any kind of tree, take them into the iurt, and make hoops out of them; then they crawl twice over these circles; they take the branches back into the woods and throw them toward the west. The person who dragged the body outside the iurt must capture two small birds; he burns one up completely, and eats the other with all the members of his family. They must purify themselves the same day as the death ceremony takes place; thus they do not leave the iurt at all, nor allow anyone to enter, until they have purified themselves. Instead of offering prayers for the dead, they throw into the fire the gills or fins of the first fish they catch; they believe they are making a gift to the dead person. Then they eat the fish. They place the dead bodies of their young children in hollow trees, usually without ceremony. They mourn the dead and weep, but make no great outcry.

## CHAPTER XX

### VARIOUS DIALECTS OF THE PEOPLE OF KAMCHATKA

Here I will give a number of words in the three main dialects of the Kamchadals. In column A the words are given in the dialect of the northern Kamchadals, in column B, the dialect of the southern Kamchadals, and in column C, the dialect used by those who live between the Vorovskaia and Tigil rivers.

	A	B	C
God	Kut	Kutkhai	Kutkha
Devil	Kana	Kana	Tkana
Sky	Kogal	Kokhal	Keiss
Cloud	Gurengur	Uishaa	Myizha
Wind	Shapel	Chikhucha	Keipk
Storm	Kakalt	Chikhucha	Keipk
Rain	Chikhucha	Chakhchu	Chukhchykh
Snow	Korel	Kolaal	Kolaal
Hail	Kakumchel	Koda	Koalle
Thunder	Kyfkyg	Kyfkyg	Kykhshigyna
Lightning	Amronshchinachich	Umechkyshi	Mytlkyzhigyna
Sun	Galen-kulech	Koach	Lach



	A	B	C
Moon	Galen-kulech	Koach	Laaigyn
Star	Ezhsngyn	Ashangyt	Agazhin
Day	Taazh	Kucgal	Kulkhalla
Night	Kuinuk	Kulkya	Kunku or Lkhuiuguna
Morning	Uidymkulel	Bokochozh	Emkolaliu
Noon	Kunukulechkui	Pennok-khalla	Khtadyzhagyna
Evening	Atakulel	Aatyku	Talbak
Midnight	Kunuguinguch	Kedy-kulkua or Pelkhuchik	Nuulkhuiugula
Year	Tattazh	Not known	Tkhazh
Earth	Shemt	Semt	Shemt
Mountain	Eel	Namud	Aala
Hill	Pynuzhidych	Taakorich	Izhulan
Fire	Brumich	Pangych	Pangych
Smoke	Gazhungazh	Ngarangach	Ngachazh-ngachazh
Water	Azham	Ii	Ii
Field	Bataran	Usha	Us
Road	Shizhich	Eshichum	Kuchazha
Forest	Uud	Ooda	Lagylan
Tree	Ua	Oo	Uu
Sea	Keiaga	Ningel	Keiaga
Lake	Korro	Kshchu	Kulkhua

	A	B	C
River	Kig	Kyga	Kig
Small River	Kigydych	Kygydach	Kigygach
Spring	Pidadych	Kakeda	Keiaka
Sand	Byzhymt	Katemt	Symyzhymch
Mud	Kyltsham	Imagai Akchinashumt	Koola
Stone	Kual	Ubachu	Uach
Man	Kroshchuga	Ushkamzha	Ushkamzha
Father	Ipip	Apach	Ishkh
Mother	Antuan	Aalgach	Lakhshkha
Son	Peech	Peach	Pacha
Daughter	Chidepech	Sugyng	Shuuonga
Brother	Tyia	Kutakhushka	Tyia
Sister	Ikhtum	Kutkhaan	Lilikhlch
Husband	Kengish	Elku	Kamzhan
Wife	Chikheiguch	Ngyngych	Igych
Boy	Paachuch	Peagachuch	Panakhcha
Baby	Paachuch	Peaichich	Nanacha
Girl	Chikhuachuch	Khuchichu	Ukhchumakhcha
Gentleman	Kroshchu	Arm	Khuizhuch
Male servant	Kharo	Chikoach	Khoallu
Female servant	Chedakharo	Chikoach	Khoallu

	A	B	C
Head	Khabel	Chysha	Ktkhyn
Hair	Cheron	Kubiin	Kuiba
Beard	Elun	Kuukun	Luulla
Eyes	Eled	Nannin	Lella
Ears	Iliud	Igiad	Illa
Nose	Kaiako	Kaiky	Kaiakan
Lips	Shakshi	Kussa	Keshkha
Mouth	Telun	Tskhydda	Channa
Language	Dychil	Nichil	Echella
Cheeks	Uan	Uaad	Khoauda
Chin	Peganchuch	Pakhykhych	Kymkych
Shoulder	Penod	Tannun	Tynynga
Hand	Tono	Syttu	Khkach
Finger	Keko	Kuida	Pkotcha
Chest	Luteng	Ingyta	Keitach
Heart	Gullugu	Nuiiugu	Lugolguch
Belly	Kolid	Ksukh	Kaltki
Bubble	Ishuriu	Elkuai	Kshulkh
Male genitals	Kallaka	Kalka	Kalka
Female genitals	Koipion	Kuappan	Koapan

	A	B	C
Spine	Karog	Chagga	Kigach
Legs	Katkhein	Chkuada	Ktakhada
Cap	Galaluch	Khalialuch	Pakhal
Breeches	Kue	Koau	Koa
Stockings	Paiman	Paiman	Paimad
Fur coat	Koabezh	Tangak	Kaptkhach
Ostrog	Atyn	Tasha	Atynum
Iurt	Kist	Kishit	Kist
Iurt window and door	Atkhyzhich	Oknuch	Oknuch
Bed	Lazhut	Aatt	Antet
Bow	Ichet	Chaschu	Chkhch
Arrow	Kag	Kakha	Kalkh
Rope	Alchol	Kulkhsum	Ushkht
Axe	Koashu	Kuashua	Koashu
Leaf	Krom	Pashaad	Pellaakela
Root	Pyngylpyngyl	Pyngelpyn	Pyngylpyngyl
Grass	Shishch	Sesda	Izhula
Hungry	Ekuzhich	Kuushishk	Ishakk
Greedy	Tykyzheguzhik	Tugiulask	Chkhchakhych
Full	Tymgaushi	Chigyshik	Chikhlikh

	A	B	C
Intoxicated with mushroom	Toapkuzhik	Tovapkoshk	Khylpashkicham
To eat	Balolk	Chikhyshkik	Dykyzhu
To drink	Bigylik	Tykushkhushk	Tykushku
To sleep	Tychkazhik	Tungukulashk	Nuikushku
To speak	Kazhinukhshkhazhik	Khazhdukhch	Kazhilgukush
Go, by dog	Koshl-koksh-khazhik	Ushashish	Khonshkozhimyk
Go on foot	Tylledzhk	Ushashish	Tlalam
I stand	Kums-tyzhishik	Kemma-tyzhishik	Kemakhtazhukush
You stand	Kyzhe zhishun	Kyshshishich	Kezh khtazhuzhich
He stands	Dugug zhitich	Udda shishikik	Dangun khtazhuzhich
We stand	Buzhe zhishiishimk	Mush ushishamg	Mozhish khtashuzhimk
You (pl.) stand	Ikhuzhe zhishizh	Sush shishik	Dagunad khtazhuzhigin
They stand	Trun zhishich	Itkhuiu shishikik	Itkha Khtazhuzhigin
I sleep	Tynguiukuzhik	Tungykushik	Tunguikushkuk
I see	Tylchkuuzhik	Tyttshkuishik	Tylchkuizhcha
I do not see	Gyich kupkg	Ishk etshkuikak	Elchkuik
I do not sleep	Gyinguikullak	Ishk nuikushkak	Nguikkulkuk
I laugh	Tyzhiishik	Tashiukashk	Lizhingshchich
I cry	Tyngazhik	Tuuushik	Sinshch
White	Gylkala	Attykh	Atkhala
Black	Drelu	Tyggan	Ktgala

	A	B	C
Red	Chachal	Chean	Chachal
Green	Dulkhkarallo	Nukhusany	Kukhlelaga
Big	Tollo	Khychin	Pellaga
Small	Dynelu	Chunguiung	Nianiukala
High	Dashelu	Kuun	Kyngylla
Low	Dyzhulu	Ishung	Izhula
Light	Datkhylyu	Attyg	Chazhu
Dark	Dukhulu	Dukhshanny	Chunik
Warm	Nomla	Kikang	Umela
Cold	Dykeilu	Sakkeing	Lkelaga
Wet	Dykchkelu	Adchinu	Chkalaga
Dry	Demlu	Kashigu	Kyzhgela
Alive	Kyzhunynlin	Kakova	Kakolin
Dead	Kyriin	Kychikin	Kyzhann
Early	Tymkolin	Mokochush	Amkolchel
Late	Tukhtann	Aatyku	Tkhtadan
Today	Dengu	Dangu	Dad
Tomorrow	Dymkollaku	Bokuag	Azhushk
Day after tomorrow	Koratyzhk	Chie-sulungak	Dugan-inshizhing
Yesterday	Etel	Aaty	Ateng

	A	B	C
Day before yesterday	Kykhy-koratazh	Not known	Not known
Forward	Dukik	Koazaku	Kulkhenchki
Backward	Shalk	Sakky	Shaalikin
1	Dyzyk	Dyzyk	Koning
2	Kaazh	Kaass	Kassa
3	Chook	Chook	Chouk
4	Chaak	Chaak	Chaak
5	Koomnak	Koomnak	Kugumnuk
6	Kylkog	Kylkoak	Kelkug
7	Etaktanak	Itaatuk	Etuktunuk
8	Chooktunuk	Chokutuk	Chooktunuk
9	Chaaktanak	Chaaktak	Chaaktanak
10	Chumkhtuk	Kunkhtuk	Togossa
11	Dyzyk shinazhich	Kyzyk shinashi	Koning shinazhin
12	Kaazh shinazhich	Kaass shinashi	Kassa shinazhin
13	Chook shinazhich	Chook shinashi	Chouk shinazhin
19	Chaaktanak shinazhich	Chaaktan shinashi	Chaaktanak shinazhin
20	Kaazh chumkhtuk	Kaass kumkhtu kadykyd	Kash tuzhad
30	Chook chumkhtuk	Chook kumkhtu kadykyd	Chook tuzhad
40	Chaak chumkhtuk	Chaak kumkhtu kadykyd	Chaak tuzhad

	A	B	C
50	Koomnak chumkhtuk	Koomnak kumkhtu kadykyd	Kugumnuk tuzhad
60	Kulkog chumkhtuk	Kylkoak kumkhtu kadykyd	Kelkyg tuzhad
70	Etaktapak chumkhtuk	Itaatuk kumkhtu kadykyd	Etuktunuk tuzhad
80	Chooktunuk chumkhtuk	Chokutuk kumkhtu kadykyd	Chooktunuk tuzhad
90	Chaaktanak chumkhtuk	Chaaktak kumkhtu kadykyd	Chaaktanak tuzhad
100	Chumkhtuk-Chumkhtakai	Kumkhtu- kumkhtakan.	Chush-togyshain

This is how the Lord's Prayer is said in the dialect of the southern Kamchadals.

Apach buryn kizet itzyn kranakh kogalvu sygzul  
Our Father, who lives high in the heavens, may

Knign rourench tege bitel nakalk kabiltaka katattoko  
Your name always be greatly praised

Kottik koglycyg borenaka knign koncpalagn elkonomu  
Give to us your eternal dwelling place

Kizek enakh ollogtchazen endu deggaken latsgotus  
So that your will may be done

Kagolk deltgam simsk, adonnom burin pygi gulls  
As in heaven, so on earth, our creator, from whom

Suglkaizen sugiet katolk borenako dengutem dars  
Comes every living thing, give us this day.



## CHAPTER XXI

### THE KORIAKS

It would be superfluous to dwell as long on this tribe as on the Kamchadals, since their way of life is so similar. Generally speaking, all of these natives are idolaters, are very backward, and only in their human appearance do they differ from animals; for this reason we shall give only a brief account of each tribe and will only give longer descriptions of the ways in which they differ from the Kamchadals.

The Koriaks, as earlier stated, are divided into the reindeer Koriaks and the settled Koriaks. The first are nomadic. The second live in iurts built into the earth in the same way as the Kamchadals, whom they more resemble in their way of life and their ceremonials than they do the nomadic Koriaks. Thus everything I shall say here will apply to the reindeer Koriaks, unless I make a particular reference to the settled Koriaks.

The settled Koriaks live along the shores of the Bering Sea from the Uka River almost as far as the Anadyr and along the shores of the Sea of Okhotsk from there along the bay of the same name to the chain of the Nukchanunin mountains, where the Nukchan River rises and flows toward the sea. They have different names, according to the rivers they live near, and this is how they distinguish themselves from one another; for example, the Ukinsk Koriaks are those who live

near the Uka river. Those who live on the banks of the Karaga river are called the Karaginsk Koriaks, and so with the others.

The reindeer Koriaks wander with their herds over the entire extent of the land which is bounded on the east by the ocean, on the west by the sources of the Penzhin and the Omolona, on the north by the Anadyr, and on the south by the Lesnaia and Karaga rivers.

They sometimes approach the Kamchadals, especially when they have some reason to fear their most dangerous enemies, the Chukchi, but this rarely transpires. Thus their neighboring nations are the Chukchi on the north, the Iukagirs, Tungus and Lamuts on the west.

If one draws no distinction between the Chukchi and the Koriak peoples, which can be justified since the Chukchi are actually Koriaks, the territorial limits of these latter extend much farther, for the Chukchi live not only along the Anadyr and north and all through the area known as Cape Chukotsk, but they also live on the islands near this promontory. In this case the Anadyr River serves as a boundary between the Koriaks who are subject to Russia and the Chukchi who are not. However, the Chukchi often move beyond these limits and make forays against the Koriaks and either kill them or take them prisoner, and lead off their reindeer herds. In the summer they fish in the estuary of the Anadyr; they even ascend this river to some distance from the sea, so that the people who are subject to Russia and live on the banks of the Anadyr often suffer raids.

The two Koriak nations differ from each other not only in their way of life but even in their appearance. The reindeer Koriaks, as far as I have been able

to observe, are of small stature and lean; they have medium-size heads, black hair which they cut frequently, a face that is oval and even somewhat pointed; their eyes are small and narrow, the eyebrows hang over their eyes; they have a short nose which is not so flat as the Kamchadal nose; the mouth is large, the beard black and pointed, and they frequently trim it. The settled Koriaks, on the other hand, although of medium stature, are heavy and stocky, especially those who live toward the north. Yet the Chukchi are so much heavier that the settled Koriaks actually bear more resemblance to the Kamchadals.

The Koriaks also differ in their desires and customs. Those who live on reindeer meat carry jealousy to the point of killing their wives over the slightest suspicion. When they are discovered in adultery, they and their lovers are condemned to death; this is why Koriak wives do everything possible to make themselves unattractive; they never wash their hands or faces, nor comb their hair; they wear their hair in two plaits which hang over their temples; their garments are old, worn, dirty and disgusting. But they wear their best clothes underneath. They are afraid they will be suspected of having a lover if anyone sees them better dressed than usual, and especially if they wear new clean garments on the outside. The reindeer Koriaks say, "Why should our wives dress up if not to please someone else, since their husbands love them just as they are?" The settled Koriaks, on the other hand, and especially the Chukchi, consider the greatest mark of friendship a visiting friend can show them is to sleep with their wives or daughters, and at such a time the host leaves for that express purpose, or goes off to find the wife of the friend who is visiting. To refuse to sleep with

the wife of one's host is to insult him so gravely that one runs the risk of being killed for having rebuffed this show of friendship; it is said this happened more than once to our Cossacks on the Anadyr who were unaware of this custom; thus the wives go to much work to deck themselves out according to their customs. They use white and red paint and wear their best clothes. The Chukchi women go even further; they paint various designs on their faces, on their thighs and on their hands; they go about completely naked in their dwellings, even when strangers are present.

In general these people are churlish, hot-headed, stubborn, vindictive and cruel. The reindeer Koriaks are vain and presumptuous. They are convinced that they have the best way of life in the world; they consider everything foreigners tell them as deceits, lies, and untruths. Thus they replied to our merchants who went from Yakutsk through Anadyr to reach Kamchatka, "If the life you were leading was so much better than ours, you would not have come so far to be here; it is easy to see that you have only come to eat our fat reindeer meat which you cannot find anywhere else. Since we have an abundance of everything, we are content with what we have, and we do not need to go to your land."

The circumstance that makes them so imperious and insolent is that they are feared and respected by the settled Koriaks to such a degree that if a single reindeer Koriak comes among them, they drop everything to go meet him, give him a worthy greeting, overwhelm him with presents and all manner of courtesies, and patiently bear all the insulting remarks he can make to them. I have never heard that a settled Koriak killed a reindeer Koriak. Our men who

collect iasak never go among the Oliutors without being accompanied by some reindeer Koriaks for safeguard; without this precaution they would very likely be killed by those people who have not yet been brought under subjection. This is all the more amazing since the settled Koriaks are so much more robust and courageous than the reindeer Koriaks. I believe that one can find the reason for this in two facts: first, the respect in which the poor hold the rich, through long precedent, and the custom of submission to them; and second, since they obtain all their clothing from the reindeer Koriaks, they are afraid of irritating them and thus having to bear the full rigors of the cold.

The reindeer Koriaks, particularly the Oliutores, consider them as their slaves. Actually, the name Oliutor comes from a corrupted Koriak word, aliutoklaul, which means slave. The settled Koriaks never object when they are referred to by this term. Only the Chukchi do not have this high regard for the reindeer Koriaks; on the contrary, they cause such fear that fifty Koriaks would not dare face twenty Chukchi, and without the help the Russians on the Anadyr gave the Koriaks, the Chukchi would have completely decimated them, or made slaves of them, by taking away their herds and forcing them to live in iurts in the ground and to eat roots and fish, like the settled Koriaks. This was how they treated the Koriaks of Katyrkinsk and Apukinsk in 1738 and 1739. However, as there is no nation which does not have some advantage over another, the Koriaks do have several good qualities which one does not find among the Kamchadals. They are fairer and work harder, are more honest and less debauched; perhaps they cannot behave other than as they do.

The number and various sorts of reindeer Koriaks who belong to the Anadyr ostrog is not known. It is believed, however, that this nation combined with the settled Koriaks is more populous than the Kamchadals.

The reindeer Koriaks, especially in winter, live in places where there is a large enough supply of moss to feed their reindeer, and give no consideration to water or wood. In winter they use snow instead of water, and burn moss to cook their food, or use the wood of small cedar trees which grow in that part of the country. I can assure you that their way of life in winter is more unpleasant and uncomfortable than that of the Kamchadals; their iurts are filled with smoke so dense that it is impossible to see a man across the room. This is because of the green wood which they burn and because of the heat of the fire which thaws the ground. In other places this smoke is so acrid that someone who is not used to it can lose his sight in a single day. I myself could only bear it for five hours, and although I went outside several times during that interval of time, my eyes burned severely.

Their iurts are made in the same way as those of other nomadic peoples, for example, like those of the Kalmyks, although much smaller. In winter they are covered with freshly skinned reindeer hides for greater warmth, and summer with tanned hides. They use neither flooring nor divided compartments inside the iurts; they have four small posts set up in the middle with cross-pieces which are supported from below. The hearth is between these posts; they generally tie their dogs to these posts, and the dogs take advantage of their place to snatch meat from the hollowed out platters on which it is put when it is cooked; they

even take it out of the kettles which are still on the fire, in spite of the way their masters beat them with the cooking utensils when they are caught in the act. One has to be very hungry to eat meat which has been prepared like this, for instead of washing out the kettles and the platters on which they put their meat, they give them to the dogs to lick clean. While the women are preparing the meal, they use their cooking spoons to deliver great blows to the dogs, and also to snatch back the meat they have stolen. They never wash it; they always cook the meat with the skin and the fur; one can scarcely imagine anything more filthy and disgusting.

The Chukchis' winter iurts are as uncomfortable as the Koriaks' because of the smoke; however they do have the advantage of being very warm. They are built into the ground in the same manner as in Kamchatka. They are much more spacious, since several families live in them; each family has its separate bench on which they spread reindeer skins; they use the benches to sit on in the daytime and to sleep on at night. On each bench is a lamp which burns day and night; it is an earthenware pot placed in the middle of the bench; they use the oil from various marine animals; moss is used instead of a wick. Although these iurts have an overhead opening to let the smoke out, that does not keep them from being just as smoke-filled as those of the Koriaks. It is so warm inside that the women go about naked, as I have already mentioned; they only cover their private parts with their heels as they sit; and look on the various designs they have drawn on their bodies with as much pleasure and satisfaction as if they were dressed in the richest and most elegant garments.

All the clothing of these people is made of reindeer skin, and is in no way different from Kamchadal clothing, since the latter obtain their garments from the Koriaks. They live on reindeer meat, and a wealthy Koriak may occasionally own ten or thirty thousand of them, or even more; I was assured that one of their toions, the son of Etel Sopljakov had as many as a hundred thousand. In spite of this, they are so avaricious that they hate to kill them even for their own use; they are content to eat reindeer who die of some illness or who have been killed by a wild animal; but in large herds, sometimes more die than they can eat. If a friend comes, whom they do not wish to honor with ceremony, they do not hesitate to say they have nothing to give him, because unfortunately there are no dead reindeer and the wolves have not brought down any. They only slaughter them when they want to treat a guest handsomely, and it is only on such an occasion that they will eat their fill.

They do not know how to milk reindeer, nor how to use their milk; when they have too many of these animals, they boil the meat and then let it dry and smoke it in their iurts. The food they generally make from it is iamgaiu, which they make in the following manner. When they have slaughtered a reindeer, they remove the blood and intestinal contents from the animal and add some reindeer fat and stir it all together, allow it to stand for some time, and then smoke it and eat it like sausage; a number of our Cossacks enjoy it very much. The Koriaks eat all the varieties of wild animals which they take while hunting except for dogs and foxes. In preparing their food they use neither herbs, roots, nor tree bark; only the poor eat these things and then only in case of a famine.



The herders are the only ones who catch fish, and even that is rare; they do not store away berries for winter; they only eat them during the summer. They cannot imagine anything sweeter than blueberries crushed and mixed with reindeer fat and sarana. One day I witnessed the amazement of one of the Koriak chieftains who happened to come into the ostrog at Bolsheretsk. The first time he was given sugar, he at first thought it was salt; but when he had tasted it, he was enraptured with its great sweetness; he wanted to take some with him to let his wife taste it, but he could not resist the temptation to eat it himself on his homeward journey. When he arrived back home, he swore to his wife that the Russians had given him such a delicious salt that he had never tasted anything that could compare with its sweetness. But in spite of all his enthusiasm, his wife would not believe him, convinced that nothing could be sweeter than blueberries mixed with reindeer fat and sarana.

In winter they use sleds drawn by reindeer but in summer they do not ride the reindeer as the Tungus do. They call their sleds chauchu-uetik; they are about one sazhen long. They use two reindeer for each sled; the harness is similar to the kind used for dogs. The straps are fastened over the reindeer's right shoulder; the ones for the reindeer on the right are longer than for the one on the left, but both are fastened to the left of the sled.

The bridle is similar to a dog's halter; on the forehead of the reindeer on the right are placed three or four small bones shaped like molar teeth with four projections. These are used to stop the animal when he runs too fast; for when the driver pulls sharply on the bridle, the reindeer feels the bite of these bones

and stops immediately. The bridle of the reindeer on the left has none of these bones, for when one stops, the other must perforce stop also.

The driver sits on the front of the sled; when he wants to turn to the right, he simply pulls on the reins; if he wishes to turn left, he slaps the reins against the reindeer. To speed up, he uses a rod about one and one-half arshins long with a bone point on one end and a hook on the other. He raps the reindeer with the pointed end to make them go faster, and uses the hooked end to pick up the reins when they fall down.

One can travel faster with reindeer than with dogs; when they are running well, one can make 150 versts in a day; but it is necessary to stop often to feed them and allow them to relieve themselves, for if the driver is not careful, a single day is long enough to ruin them to the point where they can never be of use again, and they may even die of exhaustion.

Reindeer are broken to the harness in the same way horses are. The males are gelded by severing the spermatic tubes or by piercing them, without removing the testes. All the reindeer pasture together; the ones which are used as draught animals as well as those which have not been broken. When a Koriak wants to separate them, he herds the entire group into one place and shouts with all his might in a special tone of voice. At the sound of this cry the reindeer separate instantly; if one does not go where it should, it is beaten unmercifully.

The settled Koriaks also have reindeer, but fewer of them, and those few who have them use them only to make long trips. The Chukchi have large herds but they nonetheless live more on marine animals. If a Koriak loses his reindeer,

he becomes poorer and more wretched than a Kamchadal, for he has no other way to subsist than to enter into the service of a wealthy Koriak and to take his herds to graze; they know nothing about fishing, and furthermore it is very difficult for them to get nets and dogs. But in return for taking the herds to graze, they are supplied with food and clothing. Beyond this, if they still have a few reindeer of their own, they are allowed to graze them with those belonging to their master; and if they do not slaughter any for food, they can build up their herd in time and succeed in having a certain number of them.

The reindeer Koriaks exchange animals and hides with their neighbors for the loveliest and most valuable furs of the country; they always have so many furs they carry them with them like valises. But it is hard to find one settled Koriak in a hundred who has a fox or sable skin.

As for religion, the Koriaks are as ignorant as the Kamchadals, at any rate the Koriak chief or prince with whom I had a chance to talk had no idea about a divinity. They have great respect for demons or evil spirits because they fear them; they believe they live in the rivers and mountains. The settled Koriaks acknowledge as their god the Kut of the Kamchadals. They have no set time for making sacrifices, but when the spirit moves them they kill a reindeer or a dog; if it is a dog, they put it whole on a stake without skinning it, and turn its head to the east; if it is a reindeer, they put only the head and part of the tongue on the stake; they do not know to whom they offer this sacrifice; they only speak these words, Vaio koing iaknilalu gangeva, that is, "This is for you, but send us something else."

When they have to pass certain rivers or mountains they believe to be inhabited by evil spirits, they think about making sacrifices. Shortly before they come to such places, they kill a reindeer, eat the meat, and put the head on a stake, turned toward the place they imagine the spirits live. When they are taken with an illness they consider dangerous, they kill a dog, stretch his intestines over two stakes and walk between them.

When their shamans make sacrifices, they beat on little drums which are made in the same way as those of the Yakuts and other pagan natives of this country; but the Koriak shamans wear no special costume as the others do. Among the settled Koriaks there are shamans who are considered doctors and who, these superstitious people believe, can cure illnesses by beating on these little drums. It is a very interesting fact that there is no nation, no matter how wild and barbaric, whose shamans are not cleverer, more adroit and shrewder than the rest of the people.

In 1739 in Lower Kamchatka ostrog I saw a famous shaman. He was from a place called Ukinsk, and his name was Karymliach. He was considered a man of great learning and he was much respected, not only by these people but even by our Cossacks because of the amazing things he did. He pierced his abdomen with a knife and drank the blood which gushed out; but he did this so clumsily that one would have to be blinded by superstition as these people are not to see through such a gross deceit. He began by beating on his drum several times while he was kneeling; after that he plunged a knife into his belly, squeezed the supposed wound to make the blood gush out, and, thrusting his hand under his robe, he drew it

back filled with blood and licked his fingers. I couldn't keep from laughing for he performed his trick so crudely that he would have had a hard time in our country being accepted by our apprentice thimblerriggers. One could see him slide the knife along his stomach and pretend to stab himself, then squeeze a bladder to make blood come out. After he had finished all this conjuring and magic, he felt he was astonishing us all the more by lifting up his shirt and showing us his belly all smeared with blood. He assured us that this blood (which was seal blood) had actually come from his wound, and that he had just healed it up by his magic. He also told us that evil spirits came to him from various places and appeared to him in different forms, that some came from the sea and others from volcanoes; that there were small ones and big ones; that several had no hands; that some had been completely burned, and others only half burned; that those who came from the sea seemed richer than the others and that their garments were made of a grass which grows along rivers; he said they came to him in a dream and that when they came to visit him they tormented him so cruelly that he was almost out of his mind in a kind of delirium.

When one of these shamans treats a sick person, he tells him, according to the rules of his craft, how he can be cured. Sometimes he orders the sick person to kill a dog, sometimes to place little branches outside his iurt, or to perform other trivial tasks of this nature. In the situation in which they kill a dog, this is how it is done. While two men hold the animal, one by the head and the other by the tail, its side is pierced with a lance or a knife; when the animal is dead, it is placed on a stake with its muzzle turned toward a volcano.

The reindeer Koriaks have no festivals. The settled Koriaks celebrate one at the same time as the Kamchadals, but in honor of whom and for what purpose, they do not know any more than the Kamchadals. They give no other reason for it than that their ancestors did the same thing. This festival lasts four weeks. During this time they admit no visitors and none of them leaves the settlement. They stop all work and do nothing but eat a great deal and make merry. They toss a bit of the food they serve into the fire as an offering to some volcano.

Their civil institutions are as crude and backward as their religion. They do not know how to divide time into years and months; they know only the four seasons of the year. They call summer alaaku; winter is lakaliang, spring kitketik, and fall, getiga. They give names to the four principal winds. The east wind is called kongekat; west wind is geipevkyg; the north wind is gychigolioia, and the south wind, eutelioia.

The only constellations they know are the Great Bear, which they call Blue-kyung, the wild reindeer; the Pleiades, Ataga, the duck's nest; Orion, Iultaut, which means, he has fallen sideways; Jupiter, Ichivalamak, the red arrow; the Milky Way, Chigei-vaem, the river strewn with tiny pebbles.

They measure the distance from one place to another by days, as the Iakuts do. Each day can be reckoned as between thirty and fifty versts. However, the distance as the well-to-do reckon it is greater than as the poor estimate it, for although the wealthy have better horses, they also have more goods to carry and thus the poor with lighter loads travel faster.

Before they were brought under the rule of the Russian Empire, they had

no chief. However, whoever was richest by virtue of the size of his reindeer herd had a certain authority over the others. Until that time they had no idea of what it was to swear an oath of allegiance. The Cossacks, rather than having them swear on a cross or on the Gospel, held out to them the muzzle of a gun, and gave them to understand by this that anyone who broke his oath or refused to swear it would not escape the ball which was ready to punish him.. They also use a certain method in this country to settle confused and complicated arguments. The guilty one is assured that the gun will kill him if he does not tell the truth; and rather than risk his life, he prefers to confess to his crime. In other circumstances, there is no more earnest oath than these words, "Inmokon keim metynmetik," which means, "Yes, assuredly, I am not lying to you."

They do not understand either politeness or compliments in their conversation. They do not treat visitors with deference, but rather, behave toward them as a great lord might do to his inferiors. A visitor unharnesses his reindeer and remains seated on his sled, awaiting the invitation of the host to enter into his iurt, as if he were granting an audience. It is actually not the host himself who gives this invitation, but his wife, as she says to the guest, "Elko," that is, "He is in the iurt." When the guest enters the iurt, the host remains seated and says to him, "Koion," that is, "Come in." He indicates the place the guest is to sit and does him the courtesy of saying to him, "Katvagan," "Sit down."

When they entertain their friends, they are only concerned with satisfying them, with serving them everything they can possibly need or that might please

them; they do not follow the Kamchadal custom of forcing their guests to eat more than they want. Their best food is meat well streaked with fat; in general all wild and nomadic peoples consider very fat meat as a delicious food<sup>1</sup>. They are so passionately fond of it that a Yakut would be willing to lose an eye rather than be deprived of eating a bit of fat mare meat or some other fat-streaked meat; and a Chukchi would do the same for fat dog meat. Although a Yakut knows that the theft of a single animal from a herd will be punished by the confiscation of all his possessions, he cannot stop himself, when the opportunity arises, from stealing a mare that looks nice and fat to him; then he consoles himself for his later misfortunes by the memory of having consumed such delicious food.

Thievery among all the savage nations, except for the Kamchadals, is not only allowed, but even commended and highly regarded, provided however, that one does not steal from one's own kin, and that one is clever enough not to be caught. A thief caught in the act is severely punished, not so much for the theft itself as for not having been clever enough to escape detection. A Chukchi maiden may not marry a man who has not previously given proof of his dexterity in stealing.

As for murder, this is only punished when it is committed against a member of the tribe or one's fellow villager. In such a case the relatives of the murdered person do not fail to revenge him; but if the dead man is a stranger, no one

<sup>1</sup>This custom was still practiced in the twentieth century in parts of Siberia. For a description, see John D. Littlepage, In Search of Soviet Gold (New York: Harcourt, Brace and Company, 1937), ch. V, pp. 46-55. --Ed.



concerns himself over it or takes any action. Murder is so common among them that they have not the slightest notion of pain and punishment in the next life.

A very praiseworthy thing in this country is that in spite of the great love they have for their children, they start at a very early age to accustom them to hard work and fatigue. They treat them like slaves, send them out to get wood and water, make them carry burdens, care for the reindeer herds, and give them other jobs of this nature.

The wealthy marry into wealthy families, and the poor into poor families, with no regard to character or beauty. They usually take their wives from among their relatives, as for example, their aunts, cousins or mothers-in-law; but they do not marry their own mothers, daughters, sisters or daughters-in-law. They must carry off their intended wives in the same way as the Kamchadals do; and no one marries a young man unless he has performed this ceremony. Anyone who wishes to marry, no matter how rich in reindeer he may be, must work for his future father-in-law in order to acquire his bride, for three and even sometimes five years. The man and the girl are permitted to sleep together, although the man has not yet carried off the girl. She is wrapped up until the wedding ceremony has been performed, but this is only for the sake of custom. There is no part of their marriage ceremony which is worth commenting on.

They marry as many as two or three wives and keep them in separate places; each is given herders and reindeer herds. They have no more pleasant pastime than to go from one place to another to inspect their herds. An amazing thing is that although a Koriak scarcely knows how to count, he can tell by a single

glance at a large herd that a reindeer is missing, and he can even describe its coloring.

They rarely have concubines; however some do maintain them; they call them keiev; but far from treating them as the Kamchadals do, they are very unkind to them; it is a terrible insult to call someone keiev. The settled Koriaks have a very strange superstitious practice; occasionally, instead of sleeping with their wives, they put clothing on rocks and take the rocks into the beds with them; they talk to them and caress them as if they were alive. I received two of these rocks from a man who lived at Ukinsk; the larger stone he looked on as his wife, and the smaller as his son. The larger one he called Iaitel-kamak, or "stone which heals;" and the smaller one was called Kalkak. In order to explain to me the reasons that led him to ally himself with this particular spouse, he told me that for ten years he had been ill with a disease as dangerous as it was extraordinary. His body had for a long time been covered with pustules. One day when he was on the bank of the river Adka, which flows into the Uka, he found this large stone all by itself; he took it into his hands and it breathed on him, as a man might have done; having witnessed such an amazing phenomenon, he threw the rock into the river. Shortly afterward his malady grew so much worse that he could not do anything at all, only lie about all summer and winter. The following year he went to great trouble to find the stone again, for it was not in the same place he had thrown it, but some distance away on a big flat rock, with the other small stone. The man joyfully took them and carried them to his home, and from the time he put clothes on them, his illness abated.

"From that time on," he added, "I have kept them close to me, and I love that stone wife more than my real wife. I take the little stone with me everywhere, whether I am travelling or hunting." I do not know if the stone wife was actually dearer to him than his real wife, but I can say, that in spite of my gifts, it was only with the greatest difficulty in the world that he consented to give me these stones, for he believed that his health depended on them, and he feared he would lose it by giving them over to me.

I have already mentioned that in spite of the great tenderness they feel for their children, they do not in any way raise them in a state of indolence. The wealthy set aside several reindeer for them as soon as the children are born; but they are not permitted to have them until they have reached maturity.

It is the old women who give the children their names, and they observe the following ceremony. They set up two small stakes and fasten a cord between them; from this cord they hang a stone wrapped in mountain sheep skin. At the same time they speak certain words in a low voice and ask the stone what name to give to the child; they then repeat the names of all his relatives; when they notice the stone moves a little, they give the child whatever name they had just spoken at that moment.

Men's Names	Women's Names
Aiga	Iakyi, sled-front
Liaktele	Iamga, the plague
Kyiaugyngen, lively	Iuimach
Geichale	Ekym
Vellia, crow	Vagal
Ymmevy	Kepion
Iakaiak, seagull	Kaliaian

Women who have just given birth remain in the iurt for ten days and are not seen. During this period of time if they are obliged to change their dwelling place, they are moved in covered sleds. They suckle their infants for about three years, after which time they teach them to eat meat; they do not use cradles or swaddling clothes; they lay their children right on the ground, and when they move to a new dwelling, they carry them on their backs or on their chests.

The Koriaks take great care of their ill; the shamans treat all illnesses, as has already been discussed. They are not at all knowledgeable about drugs and medicinal plants.

The dead are burned with the following ceremonies. First they are dressed in their best clothing; they are drawn to the burning place by their favorite reindeer. The corpse is laid on a great funeral pyre with all his belongings, his weapons such as his spear, bow, arrows, knives, hatchets, kettles, etc.

They are set afire and while everything is being consumed by the flames, the reindeer's throats are cut. The people eat the meat and throw everything else into the fire. The reindeer which the dead man loved best is recognized when the sled he pulls passes noiselessly over a stone set in the earth for this very purpose. Sometimes as many as ten pair of reindeer are drawn to make this choice. And they observe this further distinction: that they put the breast pieces of these reindeer on the left shoulder and not on the right as is usual.

The anniversary of the dead person is observed only once, one year after his death. His relatives take two kargins, or two young reindeer who have not yet been used as draught animals, and a great number of reindeer antlers which have been saved during the year for this purpose. When they come to the place where the corpse was burned, or to some high place if the funeral pyre was far away, they cut the throats of the reindeer and eat them and push the antlers into the ground. The shaman sends them to the dead man, as if they were a herd of reindeer. On their return, they purify themselves by passing over two small wands set up for this purpose. The priest stands near these wands, and as each person passes over them, he taps him with a small staff which he holds in his hand and speaks certain words so that the dead will not cause anyone else to die.

The other customs of these people are the same as for the Kamchadals. Their weapons, the work the men and women do, are quite similar.

The Koriaks usually come on their enemies unawares; their weapons are the bow and arrow, and the spear, which they used to tip with bone or flint. The women have the same tasks as the Kamchadal women. They work at preparing

pelts, making clothing and shoes or boots; they also prepare the food, which the Kamchadal women do not do. The Koriak women know how to prepare hides better; they make them more supple. They work them with reindeer dung, rather than with fish roe, and they use the nerves of these animals to sew the skins.

The main difference between this nation and the Kamchadals is in their language, which, according to Steller, has three dialects. The first, which can be considered the principal language, is that spoken by the settled Koriaks who live on the Sea of Okhotsk and by the reindeer Koriaks. This language dialect is used by the Oliutors; the Russians refer to this as the second sea Koriak language. It is much harsher than the first. The third dialect is that of the Chukchi; its delivery is freer and softer and it is spoken in a rather sibilant manner. Other than this, there is such a great similarity between their words and idioms that these three peoples can easily understand each other.

However, if the Oliutors are considered to have a separate dialect, there are as many dialects as there are ostrogs, since there is much variation in dialect between one ostrog and another. The farther north one goes, the more Koriak words one hears; but in the south there are more Kamchadal words.

## CHAPTER XXII

### THE KURILES

The customs of the Kuriles resemble those of the Kamchadals so much I would not here give a separate description of the former, if there were not some difference between these two peoples. The origin of the one is no better known than of the other<sup>1</sup>.

The Kuriles are of medium stature; they have black hair, a round swarthy face; but they are better looking than their neighbors.

They have a heavy beard and a hirsute body; in this they differ from the Kamchadals. The men shave off their hair from their foreheads back to the tops of their heads, and let it grow in back in a tuft. They resemble the Japanese in this; possibly they adopted this custom from them as a result of the trade they once carried on with them. The women only cut the front part of their hair, so it does not fall into their eyes. The men blacken the middle of their lips; the women's are completely blackened, and they have stains and designs all around; they also have various designs on their arms as far up as the elbow;

<sup>1</sup>Even in the twentieth century scholars are not agreed; some maintain the Kurile Islands were colonized by Ainu settlers; others believe the earliest Islanders came from the north via Kamchatka. --Ed.

in this they resemble the Chukchi and Tungus women. All of them, men and women, wear large silver rings in their ears, which undoubtedly came to them from the Japanese.

Their clothing is made from the skins of sea birds, from fox skins and beaver, and from other marine animals. They are sewn together in the Tungus fashion; the garments open in front, unlike Kamchadal clothing. In making clothing, they use whatever skins they happen to have, regardless whether they come from the same kind of animal. Thus it is rare to see a Kurile costume which is not made of pieces of skin from various animals and birds.

They are most eager to have rich garments, which for them are clothes made of woolen cloth or silk, but they immediately soil them because they take so little care of them. A Kurile dressed in scarlet will carry a seal over his shoulder, although he is certain to ruin his outfit which cost him a great deal. They are not concerned with whether their clothing is well made or hangs like a sack; they are only particular about the color.

Steller observed a Kurile who saw a silk corset and found it so much to his liking that he took it and strolled around admiring his garb in spite of the Cossacks who poked fun at him.

They live in iurts which are no different from those of the Kamchadals except that they are somewhat cleaner. They decorate the walls and benches with grass mats. They usually eat sea animals, but very seldom eat fish.

They know as little about the Divinity as the Kamchadals do; they have intricately carved wooden figures in their iurts as idols, and these are very



skillfully made; they are called ingul or innakhu. They are greatly venerated, but I could not determine whether they were regarded as evil spirits or as gods. The Kuriles offer up to them the first animals they take; they eat the meat themselves and hang the skins near the idols. When their iurts are on the verge of collapse, and they are obliged to abandon them, they leave these idols inside, and also the skins which they had offered as a sacrifice. When they have to make some sea voyage, and when there is danger, particularly when there is an unusually heavy tide between the first Kurile island and the southern point of Kamchatka, they throw the idols into the water and in this way they hope to appease the violent waves.

The southern Kamchadals who live on the first of the Kuriles and on Cape Lopatka took this particular rite from the Kuriles as an infallible way of assuring felicitous sailing.

They use baidars in summer and snowshoes in winter, for they do not keep dogs. The principal work of the men is to take sea animals. The women, like the Kamchadal women, are busy sewing and making grass mats. In summer they go hunting with their husbands.

As to their manners and customs, the Kuriles are infinitely more civilized and polite than their neighbors; they are gentle, loyal, upright and honest; they speak calmly, without chopping off their words as the settled Koriaks do. They have great respect for their elders and live together very amicably. They have a particular affection for their parents.

It is a touching sight to see the meeting of friends who live on islands

distant from one another. The visitors who have come by boat, the hosts who have left their iurts to meet them proceed with great ceremony. Each dons his war garments, takes up his weapons, and brandishes his sword and his spear. They draw their bows against each other, as if they were about to do battle, and approach each other as if they were dancing. When they come together, they make a great show of friendship. They embrace with many demonstrations of affection. Their embraces are heartily returned, and they shed tears of joy. After this they take their guests into the iurt, have them sit down and entertain them. The host remains standing in front of the guests and they listen to the accounts of the adventures which have befallen the guests since they last met; it is always the eldest who is entrusted with the telling of these tales. They tell about their hunting trips down to the last detail; how their lives have been, their voyages, what they have seen, the good and the bad things that have happened, who has been ill, who has died, and what was the cause of their illness or their death. This tale sometimes lasts more than three hours, and the others listen attentively. When the guest has finished speaking, the eldest in the dwelling then has his turn to tell everything that has happened to them. Until he has finished, no one else is permitted to speak. After these accounts, they console one another or rejoice together, depending on the nature of the news they have just been given. Then they celebrate the holiday according to their custom, with eating, dancing, singing, and recounting stories.

As for other customs which they observe, whether these relate to seeking a girl in marriage, a wedding, or the birth and education of the children, these

are the same as among the Kamchadals. They have two or three wives; they only go to them during the night, stealthily, as for example do the Mahomedan Tatars who only go furtively to see their fiances until they have paid the father the agreed price to obtain the bride. They also have concubines, as do the Koriaks and Kamchadals.

If someone is discovered in adultery, the two men duel with cudgels, in the following singular fashion. The husband of the adulterous wife challenges his adversary to a duel; both strip off their clothing and stand quite naked. The one who has issued the challenge is the first to receive from his adversary three blows on his back from the cudgel which is about as thick as an arm and about one arshin long. He then returns this kind of blow and hits his enemy in the same way; they use all their strength and continue this business in turn for three exchanges; this combat costs many lives. To refuse to duel would be as great a dishonor as it is among Europeans who duel with swords. If there should happen to be someone who in such a circumstance preferred life to honor, and refused to fight, he would have to pay the husband of the adulterous woman whatever compensation he demanded, whether in animals, clothing, food, or other goods.

It is more difficult for Kurile women to give birth than for the Kamchadals; by their own testimony it takes them three months to recover. If twins are born, one is always put to death. Names are given to the children by wisewomen.

## Men's Names

## Women's Names

Lipaga

Afaka

Etekhan

Zaagshem

Tatal, black

Chekava

Pikankur

Kazukch, one who weeps, no  
doubt because she was born  
at the time the country was  
being conquered

Galgal

Tempte

In winter they bury their dead in the snow, but in summer, in the ground.

Suicide is as common among them as among the Kamchadals, but there are no examples of death by starvation.

I have already said that the Kuriles who live on the first of the islands and on Cape Lopatka are really Kamchadals.

PART FOUR

THE CONQUEST OF KAMCHATKA, REVOLTS AT VARIOUS  
TIMES, AND THE PRESENT CONDITION OF RUSSIAN  
OSTROGS IN THIS COUNTRY

## CHAPTER I

### THE DISCOVERY OF KAMCHATKA, RUSSIAN EXPEDITIONS TO THIS COUNTRY, AND A DESCRIPTION OF HOW THE RUSSIANS BECAME ESTABLISHED

When the Russians had extended their power northward and had established colonies on the banks of the larger rivers which empty into the Arctic Ocean, from the Lena River eastward as far as the Anadyr, they constantly made new efforts and attempts to gain knowledge of the country situated beyond the latter river, and to bring into submission the natives who inhabited it.

All the agents received most explicit instructions to reconnoiter the countryside, learn about the natives, their numbers, their weapons, their wealth, etc. With these instructions, they gained much knowledge of Kamchatka, even while they were making certain Koriaks tributary who lived along the shores of the Sea of Okhotsk and the Oliutor Sea, for these people were close neighbors of the Kamchadals, and knew them very well, particularly the Reindeer Koriaks, who frequently went off with their herds into the interior of Kamchatka. However, it cannot be stated positively which Russian first discovered Kamchatka. According to several traditions, this honor is attributed to Fedot Alekseev, a merchant. His name has been given to the Nikul River, which falls into the Kamchatka River and is presently called the Fedotovshchina.

It is said that Fedot left the Kovyma River with seven ships, and entered

the Arctic Ocean, where a violent storm separated his ship from the others; that he was cast up on the coast of Kamchatka where he spent the winter with his ship; that the following summer he rounded Cape Lopatka, entered the Sea of Okhotsk, and reached the Tigil River, where during the winter he and all his companions were killed by the Koriaks. These Russians brought on their own misfortune, for one of them killed one of his comrades. Until then the Koriaks had supposed they were gods, because of their firearms, but when they saw they were mortals, they did not wish to keep such formidable guests in their midst any longer.

As far as the account of their voyage is concerned, the fact of their sailing out of the Kovyma River was confirmed by the report of a certain Semen Dezhnev<sup>1</sup>, who commented that the voyage was most unfortunate; that a fierce storm separated them from Fedot Alekseev, that his ship, after being tossed by the waves for a long time, was finally thrown up on the first cape which lies beyond the Anadyr River. There is only this unreliable report of his stay in Kamchatka, and that it was he who gave his name to the Nikul River; the same tale adds that in 1660, Dezhnev went on foot along the coast and rescued from the hands of the Koriaks a woman from Yakutsk who had been in Alekseev's service; that this woman

Dezhnev's report constitutes one of the ironies of history. His 1648 voyage proved that a body of water separates Asia from America; his report was filed in Yakutsk in 1662, and was to have been sent to Moscow, but was buried in the official papers of Yakutsk until it was at last discovered by the historian G. F. Müller in 1736. The full text of Dezhnev's report is given in Frank A. Golder, Russian Expansion on the Pacific 1641-1850 (Cleveland: The Arthur H. Clark Company, 1914), pp. 282-289. Golder's critical examination of the report is found in the same volume, pp. 67-96; his findings are disputed by Raymond H. Fisher, "Semen Dezhnev and Professor Golder," The Pacific Historical Review, August, 1956, pp. 281-292. --Ed.

stated that Fedot and one of his company had died of scurvey and that the others had been killed; that a very small number had escaped and had fled stark naked in canoes, that no one knew what had become of them.

The Kamchadals claim that the Russians built several buildings on the Nikul River and one could still see the ruins when we were in Kamchatka. It appears that these various stories can be reconciled if one supposes that Fedot died with his companions, not on the shores of the Tigil River, but between the Anadyr and the Oliutor. This way these accounts do not contradict each other, since Fedot spent the winter in Kamchatka with his ship and after he had doubled Cape Lopatka, went as far as the Tigil River, from where he returned to the Anadyr, continuing either on land or by sea as he followed the coast of the Oliutor Sea. He died en route and his companions were killed or wandered off and perished in some unknown manner while trying to escape the fury of these barbarous peoples. However it happened, this discovery was not of great use, since it did not redound to the advantage of the Empire, nor did any knowledge of the country come from it since not one person returned from the expedition. Thus the honor of the first discovery of Kamchatka may be attributed to the Cossack Volodimir Atlasov.

In 1695 he was sent from Iakutsk to Anadyr ostrog as agent. He had been ordered, as had the other agents, to collect iasak from the Koriaks and the Iukagirs in the Anadyr region, and to do everything possible to discover new lands and bring them under the control of the Russian Empire. In 1696 he sent a man named Luka Morosko to the Aputsk Koriaks, along with sixteen troops, to collect iasak. Morosko reported upon his return that he had been among the



the Koriaks, and that from the place he had gone, Kamchatka was only four days distant; he had even taken possession of a small Kamchadal ostrog where he had found a letter, which he showed to Atlasov.

Upon hearing this account, Atlasov took sixty troops with him, and the same number of Iukagirs, leaving only thirty-eight in the garrison at Anadyr, and departed the following year, 1697, for Kamchatka. Either by skill or soft words he persuaded the ostrogs of Aklansk, Kamennoi and Ust-Talovsk to pay iasak; he was only forced to take one of these three by force. Afterward he divided his men into two corps. He sent one group toward Bering Sea under the command of Luka Morosko, and took the other, with himself in command, along the Sea of Okhotsk. When he reached the Pallana, his allies the Iukagirs rebelled, killing three of his men and wounding him and fifteen of his troops. Their plot to kill all the Cossacks failed. The Cossacks repulsed the traitors and dispersed them; and although they were deprived of the aid of their auxiliary troops, rather than abandon their project, they continued their march southward. The two groups rejoined on the shores of the Tigil River and collected iasak from the natives who lived on the banks of the Napana, Kigil, Icha, Siupcha and Khariusova rivers. They advanced to within three days' journey of the Kalanka River.<sup>2</sup> While they

<sup>2</sup>As there is no river in Kamchatka called the Kalanka, it is impossible to say how far Atlasov penetrated. According to old Kamchadal tradition, he went as far as the Nyngychu River, which is now called the Golygina; thus there is every reason to believe that Atlasov mistook as the Kalanka either the Iglyg or the Ozernaia, which is about a three-day journey from the Golygina. He may have named it Kalanka because of the sea otters caught there, which were formerly called kalana.

were on the shores of the Icha, they took off with them a Japanese prisoner from Ukazinsk (a Japanese state) who had been kept by the Kamchadals. From there, Atlasov retraced his steps and followed the same route back to the Icha River, from where he moved on to the Kamchatka River, and built Upper Kamchatka ostrog. He left Potap Seriukov there with fifteen men, and he himself left for Yakutsk on the second of July, 1700, taking the Japanese prisoner with him. He also took all the iasak he had collected in Kamchatka. This consisted of 3200 sables, ten sea otter, seven beaver pelts, four otter, ten grey fox, and 191 red fox. In addition to these, the total had included, as he himself said, 440 sable which he had traded for other goods. He was sent with his entire iasak collection from Yakutsk to Moscow, where, in recognition of his services, he was promoted to the rank of Commander of the Cossacks of the city of Yakutsk. At the same time he was ordered to return to Kamchatka and to take with him one hundred Cossacks drawn from Tobolsk, Eniseisk and Yakutsk, and to supply the expedition, at Tobolsk, with field pieces and powder, shot, firearms, a flag, and anything else he might need. Atlasov, however, could not make this expedition until 1706, because of lawsuits against him; for after leaving Tobolsk with his boat, he plundered a vessel on the Tunguska River loaded with goods from China which belonged to a merchant named Login Dobrynin. The agent of this merchant brought charges against Atlasov in Yakutsk, as a result of which this officer and ten of his principal accomplices were put in prison. In 1702 Mikhail Zinovev, who had been in this country, as the Archives in Yakutsk prove, even before Atlasov, perhaps with Morosko, was sent in his place and placed in charge of

the expedition.

Meanwhile, Potap Seriukov, who had been left in Kamchatka, spent three peaceful years at the Upper Kamchatka ostrog, and none of the natives were unfaithful to him. The small size of his company did not permit him to collect iasak; he traded with them as a merchant. At length he left to return to Anadyrsk; but the Koriaks killed him and all his company en route. To all appearances, he did not leave until after the arrival of the nobleman Timofei Kobelev, who is considered to have been the first official administrator of Kamchatka.

While he was there, Kobelev transferred the location of Upper Kamchatka ostrog to the banks of the Kali-kyg River, which is a half-verst from the former location. He built a zimove on the Elovka River. The various tribes who lived both along the Kamchatka River as well as on the shores of the Sea of Okhotsk and the Sea of Beavers, voluntarily paid iasak to him. He finally returned to Yakutsk in 1704. At this same time, a company of Cossacks from Anadyrsk, under the command of a certain Andrei Kutin, built six zimoves on the shores of the Uka River, which empties into Bering Sea, and undertook to make the Koriaks who lived in the vicinity pay iasak.

Mikhail Zinovev, who had been sent from Yakutsk in place of Volodimir Atlasov, succeeded Kobelev and governed the Kamchadal ostrogs until the arrival of Vasili Kolesov, that is, from 1703 until 1704. He was the first to introduce the custom of keeping a Tax Registry book in which the names of the Kamchadals were written. He moved the lower Kamchatka winter buildings to a more convenient location, and built an ostrog on the banks of the Bolshaia River. He

moved the government servitors who had been wintering on the Uka River so they could spend their winters on the shores of the Kamchatka River. Then, having put all the Kamchatka affairs in order, he returned without mishap to Yakutsk with the iasak.

Vasili Kolesov came to replace Mikhail Zinovev at the beginning of autumn in 1704, and remained until April, 1706, because Vasili Protopopov and Vasili Shelkovnikov, who were coming to relieve him, had been killed en route with ten of their men by the Oliutors, one in 1704, and the other in 1705. It was during this administration that the first expedition into the Kurile country was made. They forced about twenty of the people to pay iasak, but the large majority fled and spread out in all directions.

This agent returned to Yakutsk well pleased with the iasak he had collected, in spite of the attempts made to kill him by the settled Koriaks at Kosukhina ostrog, which is at the mouth of the Talovka River, near the Penzhin River, at the end of August in that same year; he had been informed of this ahead of time by the settled Koriaks of the small Aklansk ostrog, which is not more than fifteen versts from Kosukhina, and took all necessary precautions and kept on guard. He remained there about fifteen weeks, waiting for enough snow to travel by sled. During the intervening time, the Koriaks from Kosukhina, together with some others, made a second attempt to kill him and his companions; but the natives from Aklansk ostrog stopped them. Kolesov encountered in that area seven persons from Shelkovnikov's detachment who had escaped, and who were carrying the munitions and gifts which had been sent for the ostrogs in Kamchatka.

He knew they were short of powder and lead, and had them escorted by thirteen of his men, putting Semen Lomaev in command, and ordering him to collect iasak from the three ostrogs in Kamchatka.

After Vasili Kolesov departed from Kamchatka, all the tributary Kamchadals remained quite peaceful; but afterward, when Fedor Ankudinov was put in charge of the upper ostrog, Fedor Iarygin, of the lower fort, and Dmitrii Iarygin, of Bolsheretsk, the Kamchadals in this last-named ostrog rebelled, burned the fort, and killed all the soldiers they could find, sparing not a single man. At the same time five of the agents charged with collecting iasak were killed in the vicinity of the Sea of Beavers. This revolt was undoubtedly caused by collecting iasak. The severe manner in which it was exacted was a great burden to the Kamchadals, who had never lost the memory of their former liberty. They hoped to regain it by getting rid of all the Russians. According to the report of the elders of the country, the Kamchadals believed the Russians were fugitives because the same ones always came to collect iasak and they never saw any others; thus they deluded themselves that they had killed all of them. They also counted on the fact that the Koriaks and Oliutors would not allow help to come from Anadyrsk, for they knew that the Oliutors had killed the two agents Protopov and Shelkovnikov en route with their men. But their hopes were dashed, and instead of regaining their liberty, many of them lost their lives. This event considerably diminished the number of inhabitants of the country, as will be explained at length presently.

During this time there were very few Cossacks, and they had to keep

constantly on guard and leave the rebels alone. Meanwhile, Atlasov was released from prison in 1706, and was sent from Yakutsk to Kamchatka as government agent. He was given the same full authority over the Cossacks which he had had in 1701, and he was given the power to punish criminals. He was enjoined to redeem his former sins and brigandage by doing everything possible to discover new lands and bring into submission natives who had never paid iasak; he was not to commit any outrage or injustice against anyone who paid, nor was he to use harsh methods against the natives when he could use skill and kindness. He was threatened with death if he disobeyed these instructions. He left Yakutsk at the head of a small group of government servitors, with weapons of war and two small cast brass field pieces; but he forgot many of his instructions. He had not even reached Anadyrsk before his ill treatment, his violence and unfairness had irritated everyone under his command to the point where nearly every one of them sent petitions of complaint against him to Yakutsk. Nonetheless, he successfully reached Kamchatka in the month of July, 1707. He took over the command of both upper and lower Kamchatka ostrogs from the former commandants, who turned over to him at the same time all the iasak which they had collected that year.

In August of that same year he sent Ivan Taratin with seventy Cossacks to the Sea of Beavers to conquer the rebels who had killed the agents sent to collect iasak. This officer met no resistance on his trip, from the upper fort to Avacha; but when he approached Avacha Bay, which is now called the port of Petropavlovsk, he stopped for the night. Approximately eight hundred Kamchadals had gathered

in this spot. Full of confidence in their superior numbers, they had come not to kill the Cossacks, but to take them all prisoner. Counting on a certain victory, they had brought thongs to tie them with. Taratin reached Avacha Bay the next day, where he found the Kamchadals' baidars. Meanwhile the rebels had hidden in the forest on either side of the trail, and had allowed those in the lead to pass by; then they fell on the center part of the column. The Cossacks defended themselves with such valor and stubbornness that part of the Kamchadals fell, and the others were forced to flee.

Only six of the Cossacks were killed, and several were wounded. They took the three principal Kamchadals prisoner, from whom they could raise only ten sable, four red fox, and nineteen sea otter. In spite of this successful expedition, the country was not wholly subdued, for there were native uprisings from time to time until the major revolt in Kamchatka, which occurred in 1731.

The Cossacks returned to the upper fort on the twenty-seventh of November, 1707, with their hostages and the tribute they had collected. Up until that time, the government of the Kamchadal ostrogs had been in quite good condition, because the Cossacks respected their leaders and obeyed them; but from that time on, they did everything possible to harass the Cossacks. They deposed them, pillaged their goods and effects, put them in prison, mistreated them, and even put them to death, as will shortly be seen.

## CHAPTER II

### THE COSSACK REBELLION IN KAMCHATKA; THE MURDER OF THREE AGENTS, AND SUBSEQUENT EVENTS; AND THE COSSACK EXPEDITION TO DISCOVER ISLANDS AND KINGDOM OF JAPAN

In the preceding chapter it was shown how the Cossacks were vexed with the wrongdoings of Atlasov; the license and disorder in which they lived led them to rebel to rid themselves of their commander; and this came about in December, 1707. In justification, they wrote to Iakutsk that Atlasov had not given them any of the food supplies he had taken from the Kamchadals, but had kept them for himself, so that when they could not catch fish they were constantly in danger of starvation. They accused him of having accepted bribes to allow his hostages to escape; this made all the tributary tribes so insubordinate and so insolent that the iasak collectors along the banks of the Sea of Okhotsk had to flee to save their lives. They furthermore accused him of having run his sword through Daniel Beliaev, who was innocent; and when they pointed out to him that he had no business committing such violence, but was supposed to punish any guilty person by knouting him, according to the Emperor's ukase, he replied that even if he put them all to death the Tsar would not consider him a criminal. And moreover, to revenge himself on the Cossacks for their harsh words, he had one of the principal Kamchadals brought before him, and told the man that he had put the



soldier Beliaev to death because he had discovered that his troops had resolved to kill all the Kamchadals, along with their wives and children, in order to divide up their spoils. The Kamchadals were greatly distressed at this news and abandoned their settlements so they could retrench on to a sheer cliff. They killed three Russian soldiers and wounded many others. The Cossacks also accused him of having appropriated nearly all the gifts sent from Iakutsk, which he then disposed of to his own advantage, so that during his stay in Kamchatka, they had not seen more than a half-pud of bits of glass and tin. They charged that he had used all the copper which had been given him; he had had it melted down and made into alembics for distilling spirits. He had mistreated a newly baptised Kamchadal in order to extort from him a very valuable black fox skin the man had intended for the Imperial Treasury.

These accusations will show the ill-will the Cossacks had for their leader; it must be added, however, that several of these charges were not entirely justified; for Atlasov may have refused them their rations, set hostages free in exchange for bribe-money, threatened them with his sword when he was angry, and appropriated for his own use revenues which belonged to the Crown, as is proved by the immense wealth he amassed in such a short time. But can one believe he sought to incite the Kamchadals to revolt? He must have known that his safety and indeed his life depended on the Cossacks, and that their death would inevitably lead to his own. As for the accusation that the Kamchadals from the Sea of Okhotsk tried to kill the iasak collectors, and did kill three men in another area and wounded several others, this might well have happened without Atlasov

having anything to do with it. The Kamchadals on the shores of the Sea of Okhotsk had already tried to kill one of the collectors, because instead of one sable, he would demand two or three from each person. And in regard to the black fox skin, it was never found among Atlasov's effects, when they were searched.

Atlasov was arrested and put in prison. Semen Lomaev was named agent for the upper ostrog by Kolesov; he was responsible for gathering iasak from all the ostrogs. All Atlasov's belongings were confiscated and deposited in the Treasury. They consisted of 1234 sable, 400 common fox, fourteen black fox and seventy-five sea otter, in addition to a large number of other sable and fox furs.

Atlasov somehow managed to escape from prison and went to Lower Kamchatka ostrog and tried to gain command. Fedor Iarygin, who was in charge of that ostrog, refused to give it up to him, and so Atlasov was forced to remain without a post until the arrival of a new agent.

Meanwhile, the charges levied against him by the Cossacks had reached Yakutsk. The government of that area, informed of the disagreement between Atlasov and the Cossacks and fearing that the interests of the Crown would suffer because of it, sent to Moscow an exact and detailed account of everything which had transpired. In 1707 the nobleman Peter Chirikov was sent to replace him as agent, with one captain, four officers and fifty Cossacks. He was given two canon, one hundred cannon balls, five puds of shot, and eight of powder. Then, in January of 1709, the report on Atlasov's misconduct and removal was received from Kamchatka. A courier was sent after Chirikov to order him to investigate this affair and to send back his report with the agent Semen Lomaev to the

government headquarters in Yakutsk, along with the iasak which had been collected during the years 1707, 1708 and 1709. The courier, however, could not join Chirikov at Anadyrsk. He was not sent to Kamchatka because there were so few Cossacks at the Anadyrsk ostrog at that time. It would have been highly dangerous for him to take that route without a large escort, for there were so many rebels all along the Oliutor Sea and the Sea of Okhotsk that on the twentieth of July Chirikov was attacked in broad daylight in spite of the number of men he had with him. Ivan Paniutin was killed with ten of his companions. The iasak they were carrying and all their military equipment were looted. Those who escaped were obliged to retreat onto a steep cliff; they stayed there until July twenty-fourth, when they were fortunately rescued by the Oliutors. They lost only two men on their retreat.

Thus when Chirikov reached Kamchatka, he had no idea he was to investigate and follow up the Atlasov affair; he simply carried out his orders. During this man's administration, two events occurred which I wish to discuss. The first was the unfortunate expedition of Captain Ivan Kharitonov, who was sent to the Bolshaya River in command of forty men to put down the rebels in that part of the country. The mutineers gathered together in great numbers, killed eight of his men and wounded a great many others. The rest were besieged for about four weeks, and had to flee to save their lives. The second was a Japanese ship which was wrecked on the shore of the Sea of Beavers, where Chirikov found it. He rescued four Japanese who had been taken prisoner by the rebel Kamchadals who lived in the area. The rebels had seen the Cossacks, abandoned their

captives, and fled into the woods. On this same expedition, the Cossacks brought back into submission all the natives who had revolted from the Zhupanova River to the Ostrovnaia, and forced them to pay iasak as formerly.

Meanwhile Chirikov, upon his return to the Upper Kamchatka ostrog, found Osip Mironov there. This new commander had been sent from Yakutsk in 1709 with forty men, and arrived in August of that same year to replace him. Thus there were three commanders in Kamchatka, Atlasov, Chirikov, and Mironov. Chirikov handed over the command to Mironov with all the appurtenances, and in October left to go to Lower Kamchatka ostrog with his men and the iasak he had collected, with the idea of spending the winter there and setting sail on the Sea of Okhotsk the following year. Mironov remained at Upper Kamchatka ostrog until winter, and left on the sixth of December to go to Lower Kamchatka ostrog, where he and his men made the necessary preparations for building a ship to carry the iasak back to the Crown; he left Aleksei Aleksandrov in command of the ostrog. When he had carried out everything he had intended to do at the lower ostrog, he left to return to the upper ostrog with the former commander, Chirikov; but he was killed en route on the twenty-third of January, 1711, by twenty of his own Cossacks, who had born a grudge against these two commanders for a long time. The assassins resolved to murder Chirikov also, but they were dissuaded by his entreaties and allowed him to live.

Then thirty-one of them went to Lower Kamchatka ostrog to kill Atlasov. When they were one and one-half versts from the ostrog, they sent three men with a letter for that officer, with orders to kill him while he was reading it. These

men arrived in the evening, found Atlasov asleep, and killed him. The entire band then entered the ostrog and took possession of three buildings. The principal leaders of these mutinies were Danilo Antsyforov and Ivan Kozyrevskii. They divided up the belongings of the commanders they had killed, suborned their men, took down the flags, invited the others to join them, and enlarged their number in that way to seventy-five men. They gave Danilo Antsyforov the title of Ataman, and Kozyrevskii was called the Iasaul. They appointed other officers, and from then there was no excess, no revolt, no insolence which they did not commit. They took over all the things Atlasov had brought with him to take across the Sea of Okhotsk, pillaged all the stores which had been laid in for the maritime expedition, and took the sails and rigging which Mironov had left for Chirikov to use to cross the Sea of Okhotsk when he took the iasak to the Crown. Finally, they returned to Upper Kamchatka ostrog, and on the twentieth of March they threw Chirikov into the river with his hands and feet tied.

On April seventeenth, 1711, they sent a petition to Yakutsk in which they asked pardon for their crimes, and explained why they had killed the commanders Chirikov and Mironov; they made no mention of Atlasov. In justification, they insisted these commanders had been avaricious and greedy. They detailed how they had used iasak belonging to the Crown, buying goods for their own use and thus procuring immense profits for themselves; how they had oppressed and angered the Cossacks and the conquered natives, seizing from one group their goods by dint of force and threats, and taking military pay from the others by forcing them against their will to buy goods at an excessive price. They claimed

that in exchange for the entire pay of a foot Cossack, which was nine rubles and twenty-five kopecks, the commanders would give only twelve arshins of cloth or several ounces of Chinese tobacco, and that they exacted as interest two rubles on the pay of each soldier, forcing them to give a receipt in full in their statements, stating that they had been paid in cash and not in goods. They reported a great number of other grievances of this nature. They added that they had been led to the violent extreme of taking justice into their own hands because of the great distance involved, and especially because all the commanders prevented their complaints from ever reaching Yakutsk. To this memoir they appended a statement of the belongings of Chirikov and of Mironov. According to that statement, the possessions of the former included 600 sable, 500 common fox, and twenty sea otter; Mironov's included 800 sable, 400 common fox and thirty sea otter.

In the spring of that same year, seventy-five of them went from Upper Kamchatka ostrog onto the shores of the Bolshaia River to subdue the rebels there. They built Bolsheretsk ostrog, in the hope of thus gaining pardon for their revolt. The first part of April they destroyed a small Kamchadal ostrog between the Bystraia and Goltsovkaia Rivers, which fall into the right shore of the Bolshaia River; at that place there is presently a Russian fort called Bolsheretsk ostrog. They located there, and remained there during the month of May, without being attacked by the Kamchadals; but on the twenty-second of that same month a large number of Kamchadals and Kuriles, either from above or below the Bolshaia, came to take possession of that ostrog and to kill all the Cossacks there. They

blockaded them, and sought to intimidate them with threats. They boasted that they would have no need of weapons, but would simply use their hats to suffocate them.

The Cossacks had taken Archimandrite Martian with them who had been sent to Kamchatka in 1705 by Filofei, metropolitan of Tobolsk and Siberia, to preach the word of God. On the twenty-third of May, after prayers, these Cossacks made a sortie with most of their troops; after firing their guns several times at the Kamchadals, they fought with their spears until evening, and finally were victorious. So many of the rebels were killed or drowned in this battle that the Bolshaia River was covered with bodies. The Russians lost only three of their men, and only a few were wounded. This victory was all the more important, in that it was followed by the conquest of all the ostrogs on the Bolshaia River, which payed iasak without resistance, as formerly. The victors advanced toward the land of the Kuriles, crossed the narrows, and made the natives on the first island tributary and imposed iasak on them; no one had ever before penetrated there.

Meanwhile Vasilii Savastianov, otherwise known as Shchepetkii, arrived in 1711 to replace Osip Mironov. He did not know of the lot of the three commanders, having left Yakutsk before the news of their massacre had reached there. He collected iasak on the two upper and lower ostrogs. Antsyforov, the leader of the mutineers, who had done the same thing at Bolsheretsk ostrog, pretending to return to his duty, returned to the lower ostrog, but accompanied by so many of his men that he had no fears as to what might happen to him or that he might

he called to account for his conduct. Shchepetkii sent him back to the Bolshaia River to collect iasak. Upon his return to the shores of the Sea of Okhotsk, he put down the rebels on the Konpakova and Vorovskaia Rivers who had thrown off the yoke some time before, and forced them to pay iasak; but he himself was killed in February, 1712, by the rebels from Avacha with twenty-five men. The natives took him into a large balagan, under which there were hidden doors; they received him with every kind of civility, showered him with lavish gifts, promised to pay him a large iasak, and even gave him certain very distinguished men as hostages; but the following night they set fire to the balagan and burned the Russians with their hostages.

The following account will indicate how great was the animosity and the vengeance the Kamchadals felt for the Cossacks. It is reported that when these savages set fire to the balagan, they opened the secret doors and shouted to their compatriots to escape however they could; the hostages shouted that they had been put in irons, but that the others must not worry about them, as long as they managed to kill their enemies, the Cossacks. By this action the Kamchadals did nothing but prevent the just punishment which the leader of the rebels and his accomplices deserved.

Before one could go to Kamchatka across the Sea of Okhotsk, the distance and the difficulty of crossing the unconquered Koriak country were the reasons it took so long to send reports to Iakutsk and to receive orders from there; this was of no small advantage to the commanders in their brigandry.

After the death of Danilo Antsyforov, it appeared that the commanders



have less to fear from the rebels. Shchepetkii sent men to the upper ostrog to arrest the murderers wherever they were found. He took one of them with him who had been tortured in the upper ostrog. In addition to confessing to several crimes, including that of having taken part in the killing of the three commanders, he swore they had planned to destroy both the upper and lower Kamchatka ostrogs, to get rid of Commander Shchepetkii, to pillage the ostrog and all the effects which they might find there, and then to go to live in the Islands. It was not to bring iasak that Antsyforov had rejoined Shchepetkii, but to loot and to assassinate him. The man said that he had not dared carry out this detestable plan because the Cossacks who were not on his side were too numerous.

Shchepetkii handed over the command of the upper ostrog to Konstantin Kozurev, and that of the lower ostrog to Fedor Iarygin, and left Kamchatka on the eighth of June, 1712. He set sail with the iasak on the Oliutor Sea and went as far as the Oliutor River, which he ascended for four days. He stopped two short days' journey from Glotova's settlement, because the rapid current and the shoals in the river would not allow him to go further. Since he lacked wood to retrench and defend himself against the attacks of the Oliutors, he built iurts as fortifications. The Oliutors constantly harassed him, and not a single day passed in which he was not attacked. He remained in these entrenchments until the ninth of January, 1713. Meanwhile he sent one man directly to Anadyrsk to ask for help and for reindeer, so he could transport the iasak he had with him. They sent him sixty Cossacks and a sufficient number of reindeer. Thus it was that he saved the Imperial Coffers from being looted by the Koriaks; the iasak arrived

without incident in Yakutsk in the month of January, 1714. The iasak had not been sent in since the year 1707, because of the troublesome conditions in the country and the brigandage of the Koriaks. The iasak consisted of 13,280 sable, 3289 red fox, seven black, forty-one nearly black fox, and 259 sea otter.

After Shchepetkii's departure, Kyrgyzov, the commander of the upper Kamchatka ostrog, revolted. He gathered all his troops together and descended in canoes to the lower fort, arrested Iarygin, who was in charge and tortured him by beating the culprit with a whip made of several thongs, to which pieces of lead were attached; after this, a thong was placed about his head, and by means of a stick wound in the cord, it could be tightened around the skull as much as one wished. They then looted his belongings and distributed them to his soldiers. The chaplain of this area suffered the same harsh treatment along with several Cossacks from the lower ostrog who were put on the rack.

Iarygin was obliged to take monastic vows, and turned over the command of this fort to Bogdan Kanashev, who remained there until Vasili Kolesov returned. Kyrgyzov took with him the eighteen men who had been at Lower Kamchatka ostrog, and returned with them to the upper ostrog, where for a long while he was a danger to the lower ostrog, not only before the arrival of Kolesov, but even during this agent's stay there.

Kolesov was sent from Yakutsk in 1711 to replace Vasili Savastianov. He arrived at Lower Kamchatka ostrog on the tenth of September, 1712, and while en route received orders to prosecute the mutineers who had killed the three commanders. In consequence of these orders, he punished two of these seditious

criminals with death, and branded and exiled the others. Ivan Kozyrevskii, who had become their leader after the death of Danilo Antsyforov, and who had then acted as commander at Bolsheretsk, was punished with several of his accomplices; but Kyrgyzov, who had been the real leader of the last revolt, not only refused to recognize Kolesov's jurisdiction and to surrender the ostrog to him, he even threatened to attack him in the lower ostrog, and to dislodge him with artillery. He actually took thirty of his men and marched against him, and was then joined by other Cossacks, but he could not carry out his plan.

Kolesov feared both factions equally, and took all the precautions he thought were necessary; but in spite of that, Kyrgyzov remained in his position, mounting guard day and night. In the meantime he asked the Cossacks from Lower Kamchatka ostrog to join him, and with threats, demanded permission of the commander to try to discover the island Karaga. The Cossacks would not support him in this, and permission was not granted him; thus his plans completely miscarried, and he had to return to the upper ostrog. A short while afterward his accomplices ousted him from command and put him in prison. Then, seeing the steadfastness of the Cossacks at Lower Kamchatka ostrog in staying at their post, and realizing that they could not delude themselves that they could pass before the lower ostrog to reach the sea and go to find the island of Karaga, they divided into two factions; one took Kolesov's part, and the other supported Kyrgyzov. The former were stronger and had the upper hand, and with their help Kolesov took over Upper Kamchatka ostrog in 1713 and punished the traitors. Kyrgyzov was put to death with several of his henchmen. The Cossack soldiers and iasak collectors who had

refused to join the rebels and had remained at their duties were rewarded. And thus the revolt was put down.

In April, 1713, Kolesov sent Kozyrevskii with fifty-five Cossack trappers and about eleven Kamchadals, several cannon and all necessary ammunition, to the Bolshaia River. He gave orders to build small vessels and to try to win his favor by going to reconnoiter the islands near Japan, and also Japan itself. No great advantage resulted from this expedition; they brought into submission some of the natives on Cape Lopatka and on the first and second of the Kurile Islands. Kozyrevskii made them pay iasak. He collected some information about the more distant Kurile Islands. From this they learned that the natives of the island of Matmai carried on commerce in these islands, as in the first and the second, and that they brought iron cooking vessels, all manner of laquered receptacles, and silk and cotton goods. Kozyrevskii even brought some of this merchandise back with him.

### CHAPTER III

THE AGENTS WHO SUCCEEDED VASILII KOLESOV UNTIL THE GREAT REVOLT IN KAMCHATKA; NOTEWORTHY EVENTS WHICH OCCURRED IN THAT INTERVAL; WHEN IASAK WAS BROUGHT FROM KAMCHATKA. THE DISCOVERY OF A SEA ROUTE FROM OKHOTSK TO KAMCHATKA

Ivan Eniseiskii went to Kamchatka in August, 1713, to replace Vasilii Kolesov. In addition to his administrative duties and the iasak he collected as his predecessors had, during his residence there he built a church near Kliucha, with the notion of moving Lower Kamchatka ostrog there, which plan he carried out without delay. The former location was surrounded by marshes and subject to floods. The Cossacks abandoned it to establish themselves in the new location. Lower Kamchatka ostrog remained in this place until 1731, when it was burned to the ground during the revolt, along with the church and all the other buildings.

Ivan led an expedition during his administration; he took command of 120 Cossacks and 150 Kamchadals and led them against the natives of Avacha, who had killed Danilo Antsyforov and twenty-five soldiers. The rebels were so well entrenched that for fifteen days they could not be taken. They were attacked twice with no success; finally they resorted to burning them. All the Kamchadals who escaped were killed; the only ones allowed to live were those who gave themselves up and promised to pay iasak. They did the same thing with the small ostrog, Paratun, which was also taken by assault. From that time on, the Kamchadals

at Avacha began to pay iasak regularly every year. Formerly the Cossacks had been content with whatever these natives gave them voluntarily, since most of them were insurgents.

Eniseiskii collected the iasak for the year 1714, and then in the spring of that year embarked on the Oliutor Sea with his predecessor Vasilii Kolesov, who had had too few men in 1713 to take the iasak to Iakutsk, for fear of being pillaged by the Koriaks who had not been subdued. They reached the Oliutor River without mishap in August of 1714, and there they found that nobleman Afanase Petrov, supported by several Cossacks from Anadyrsk and by some Iukagirs, had destroyed the Oliutors, demolished and razed their main ostrog, and had built a new one; they remained there until winter. The iasak which these two commanders were carrying with them consisted of 5641 sable, 751 red fox, ten half-black fox, 137 sea otter, eleven magnificent fox skins, two otter, and twenty-two zolotniks<sup>1</sup> of gold, in bullion and small pieces, marked with a Japanese seal. These had been found on the Japanese ships which had been wrecked on the coast of Kamchatka. There were also forty rubles in coin.

As soon as it was practical to use sleds, these agents departed with the iasak for Anadyrsk. They left fifty-five men in the garrison at Oliutorsk ostrog; they still had four captains, about fifty soldiers, and two chaplains with them.

On December second, 1714, the Iukagirs who were with Afanase Petrov, before reaching Aklansk ostrog at the headwaters of the Talova River, killed

<sup>1</sup>One zolotnik weighs approximately 4.25 grams. --Ed.

Petrov and his men and looted the iasak. The commanders Kolesov and Eniseiskii, with sixteen of their men, escaped to Aklansk ostrog, but they could not escape death, for the Iukagirs attacked the ostrog and by means of threats forced the Koriaks there to revolt and to kill the commanders who had taken refuge there. They later alleged, to justify their actions, that the harshness and violence with which Petrov treated the Cossacks and the Iukagirs had occasioned this revolt, particularly at the time of the siege of Oliutorsk ostrog. They said that he would not permit them to go hunting at all, in compliance with the orders he had received from Anadyrsk, and that he had used them like horses to carry the iasak from Kamchatka, which he should not have done, since he had been ordered to use the Koriaks who had been especially sent for this purpose.

A painstaking search was made to find the things which belonged to the Crown, but they had been so dispersed that it would have taken a monumental effort to recover them. One part had fallen into the hands of the Koriaks, the Kamchadals and the Anadyrsk Cossacks, who lived in the new Oliutorsk ostrog. After the revolt the Iukagirs had come to camp near that ostrog to carry on trade with the Cossacks, from whom they were not far distant. They would trade a sable skin for three or four pipes of Chinese tobacco, and with a single zolotnik one could buy at least fifty pipes of tobacco. This was how Aleksei Petrilovskii, who shortly afterward came to Kamchatka, bought 800 sable, besides many other furs; these were restored to the Treasury in the future. The insurrectionists brought sable and fox and gave them to the Cossacks who had been sent to force them to submit. I have not been able to ascertain positively what the loss of

these things amounted to, nor whether any of them were recovered. The revolt of the Iukagirs and the Koriaks did not last very long, as can be seen by the memoirs sent from Anadyrsk to Yakutsk. It appears, from these same memoirs, that the Koriaks along the Sea of Okhotsk were not conquered until the year 1720 by Stepan Trifonov, an officer from Yakutsk who had been sent against them with a large number of Cossacks. Until then, particularly immediately after the commanders were killed, they threatened to attack Anadyrsk ostrog, and tried to persuade the Chukchi to join them.

After the murder of the commanders, tributes were no longer taken from Kamchatka through Anadyrsk, because in the intervening time a passage was found by way of the Sea of Okhotsk to Kamchatka. This was much easier and safer than taking the route from Yakutsk to Anadyrsk, which today is no longer used at all; the only ones who use it are couriers, and then only in urgent cases. Between 1703 and the time the sea passage was discovered about two hundred men died on the land route; a loss which can be regarded as very large considering the distance and the small number of Cossacks. The sea passage was attempted in 1715 by a Cossack named Kuzma Sokolov, under the command of Colonel Iakov Elchin, who had been sent to explore the islands in that sea. Aleksei Petrilovskii was commander of Kamchatka at that time. The Cossacks, in concert with Sokolov, revolted against him; they deposed him, put him in prison, and confiscated his effects. He brought on his own misfortune by his insatiable greed, looting and violence. Anyone who was wealthy had to expect to be fleeced of everything he owned on the slightest pretext. Only the poor were safe from



his cruel harassment. In such unworthy ways he amassed such considerable wealth in a short time that his goods exceeded in value the iasak for two entire years for the whole of Kamchatka. In addition to many sable and fox cloaks, he was found to have more than 5600 sable, about 2000 fox, 207 sea otter, and about 169 otter.

The natives were peaceful except for some troubles which arose between the Kuriles themselves on the cape. The Kurile tribe refused to submit and to pay the iasak for fear they would be punished as they deserved. Four soldiers who had been sent to take the iasak to the ship had been killed on the banks of the Khariuzova River. All these revolts were soon put down. The conduct of some Russian commanders and Cossacks was hateful to the Kamchadals, who were so resentful that there was every reason to fear the worst in the future.

Kuzma Vezhlyvtsov succeeded Petrilovskii, and was himself replaced by Grigorii Kamkin, sent from Anadyrsk. In 1718 three commanders, all noblemen, were sent from Yakutsk to Kamchatka; Ivan Uvarovskii to the Lower Kamchatka ostrog, Ivan Porotov to the upper ostrog, and Vasiliï Kochanov to Bolsheretsk. The Cossacks, in accordance with their custom, hastily deposed the latter and put him in prison, where he remained for about five months; but he found the means to escape. It seemed unreasonable that they would behave in such a violent manner toward him, since the leaders of this revolt were taken to Tobolsk, where they received the punishment they deserved.

These outbreaks of trouble favored a revolt, which occurred on the banks of the Vorovskaia River. Several iasak collectors lost their lives, and the iasak

was stolen; but troops were sent, and they brought the rebels under control during that same year.

In 1719 Ivan Kharitonov was sent to replace these commanders. He went to put down the settled Koriaks on the Pallana River who had revolted, but he allowed himself to be caught off guard, and he was killed on that expedition. The rebellious Koriaks at first paid him great homage; they gave him hostages and payed iasak; but as he was leaving a dinner to which they had invited him, they fell on him in a moment when he was unprepared and killed him and several of his companions. Their treason and perfidy did not reap all the success they had intended, for a great majority of the Cossacks were lucky enough to escape and shut the assassins up in their ostrog, and burned every one of them to death.

Nothing of great interest happened during the years following until the great revolt in Kamchatka, with the exception of some minor seditious activity among the Kuriles and near Avacha. The commanders succeeded one another each year as formerly; they would remain one year and then go, taking with them the iasak they had raised; and the Kamchadals would kill some of them from time to time.

In 1720, 1728 and 1729, however, certain noteworthy expeditions were made. The one in 1720 was made to explore the Kurile Islands. Ivan Evreinov and Fedor Luzin, under orders from His Majesty, returned to Iakutsk. Their voyage was quite successful, since they were the first to penetrate as far as the island Matmai. The great Kamchatka expedition was made in 1728 to explore and map the northern coast. They continued to 67°17' latitude. The following year they

were in the port of Okhotsk, and in 1730, returned to Saint Petersburg. In 1729 a military corps came into this country under the command of Captain Dmitri Pavlutski, and a Cossack chief from Yakutsk named Afanase Shestakov. They were ordered to explore and map the northern and southern coasts in great detail, to bring into submission, either voluntarily or by force, all the Koriaks and Chukchi who were not paying iasak, to establish settlements and build ostrogs in critical places, to explore the country further, and to organize trade with the neighboring peoples; but all this could not be carried out as completely as might have been desired. They built only a few ostrogs, conquered some of the Koriaks; and mapped the coast from the Ud River to the Chinese frontier; they also sent several small detachments to the Kuriles. Shestakov was killed in 1730 by the Chukchi, large numbers of whom had come to attack the tributary reindeer Koriaks. Captain Pavlutski, who was later promoted to the rank of major, was sent with his troops to Lieutenant-Colonel Merlin to put down the revolt which had broken out in Kamchatka. More fortunate than Shestakov, he fought several battles with the rebellious Chukchi, killed a great many of them, and for some time kept the Koriaks and the people who lived at Anadyrsk safe from their incursions.

In the summer of 1729 a Japanese vessel<sup>2</sup> was cast up on the shores of

<sup>2</sup>The name of this ship in Japanese is Faiankmar. It came from the town of Satsma; it carried a cargo of rice, silk goods, cotton fabrics, paper and other merchandise for the town of Azaka. At first it had good sailing, but soon afterward it ran into a violent storm which lasted for eight days. It carried the ship out in the open sea. The sailors who were able to cling to it knew neither where they

Kamchatka, between Cape Lopatka and Avacha. There were seventeen crewmen on this ship, and some goods. These hapless men were massacred by a non-commissioned officer named Shtinnikov; only two of them were spared and sent to Saint Petersburg, where they had the satisfaction of learning that that scoundrel had received his just punishment.

were nor in what direction they should steer. For six months and eight days they were at the mercy of the winds, from November until June; meanwhile they had to jettison all their goods into the sea, their rigging, their anchors, and they even had to cut their mast. The rudder had been torn away by the violent waves; they were making do with heavy long boards or balks which they fastened to the stern. In the midst of such immediate dangers, they constantly implored their gods for help, especially their sea-god, whom they call Fnadama. Their prayers were useless; at length they were cast up on the coast of Kamchatka, near Cape Lopatka, where they dropped the last anchor they had left, five versts from shore. They began carrying everything ashore that they most needed. At last they all went ashore; there were seventeen of them. They put up a tent, where they spent twenty-three days without seeing one single Kamchadal. During this time a storm blew up and carried off their ship.

By chance a Cossack officer, Andrei Shtinnikov, happened to go to that area; he was accompanied by several Kamchadals. These wretched Japanese were overjoyed to see men, although they could not make themselves understood. They displayed every indication of friendship and courtesy, and gave them gifts of the yardgoods and whatever they had. The Russians pretended to respond; the better to mislead them, Shtinnikov spent two days camped ten sazhen away. Presently, under cover of night, he robbed the Japanese, which greatly grieved them. The next day the Japanese got into their skiff and rowed along the coast to find another place to live. After they had gone about thirty versts, they found their ship, which Shtinnikov was cutting up with the Kamchadals in order to retrieve the iron. In spite of the loss of their vessel, the Japanese continued on their way. When Shtinnikov saw them, he ordered the Kamchadals to follow them and kill them. The Japanese saw the canoe coming in pursuit, and fearing that they were still in danger, had recourse to prayers and entreaties, to try to move their enemies to pity. But they were met not with humanity, but with arrows. Some of them leaped into the water, and the others were either struck by the arrows, or were killed with their own sabers, which they had given Shtinnikov several days before, as a token of their submission. Their bodies were cast into the water. Only two were allowed to live; one was a young child eleven years old whose name was Gonza, he had accompanied his father, the assistant

In 1730 Ivan Novogorodov, and in 1731 Mikhail Shekhurdin, were sent to Kamchatka to collect iasak. I mention them here because they were the leaders of the great revolt which broke out immediately after Shekhurdin left.

pilot, in order to learn navigation. He was wounded in the hand. The other, who was older, was called Soza; he had been chosen by the merchants to escort the ship.

Shtinnikov took their skiff and everything inside it, burned the ship in order to get the iron, and returned to the upper ostrog with all this booty. He enjoyed the fruit of his barbarity as soon as he reached an agent in Yakutsk, for he found means to bribe the agents with gifts he had taken from the Japanese and smuggle his goods through the customs search. As soon as the new agent was informed of what had happened, he released the Japanese prisoners from Shtinnikov, had him severely punished in the presence of the agent who had been corrupted by bribery, ordered Shtinnikov put in irons, and informed his superiors. He took care of the Japanese at the expense of the Crown, until he received new orders.

When he left, he took the Japanese to lower Kamchatka ostrog, and turned them over to the pilot Iakov Gans. He himself continued to Anadyrsk and made his report to Major Pavlutski, who was then in command. Iakov Gans received orders to send the Japanese to Yakutsk, which he did in 1731. They remained there about five weeks, entertained at the expense of the Crown. Upon an order signed by Aleksei Lvovich Pleshcheev, they were sent to Tobolsk, where the men tried to make them forget their misfortunes by treating them extremely well. After about a month, they were sent to Moscow. The men who were to conduct them presented them at the Prikaz of Siberia, who sent them to the Senate at St. Petersburg, with their guides. The Senate made its report of the matter to Her Majesty, who wanted to see them. They were presented to her in the Summer Palace. She questioned them about the shipwreck. The younger one spoke Russian quite well. Her Majesty gave orders to General Andrei Ivanovich Ushakov to inform the Senate of her intentions in regard to their support.

In 1734, on orders from the Empress, they were sent to the Cadet Corps chaplain to be instructed in the Christian religion, and on the twentieth of October in that same year they were baptized in the church of the military school. Soza was given the name Kuzma, and Gonza, Damian. In 1735 Damian was sent to the Seminary of Saint-Aleksandr Nevskii, where he learned to read. A short time afterward they were both sent to the Academy of Sciences to be instructed there. In 1736 they were ordered to learn to speak Russian, and to make sure they did not forget their own language, they were given some young pupils to whom they taught Japanese; and this they did until they died. Kuzma died on the eighteenth of September, 1736, at the age of forty-three; and Damian, in 1739, on the fifteenth of December. The former was buried in the Church of the Ascension,

## CHAPTER IV

### THE REVOLT OF THE KAMCHADALS. LOWER KAMCHATKA OSTROG IS REDUCED TO ASHES. THE REBELS ARE PUT DOWN. THEIR PUNISHMENT.

In order to regain their liberty, these people had for a long time been plotting to kill all the Russians in Kamchatka; but since the discovery of the Sea of Okhotsk route there were too many of them, because every year ships full of troops came to Kamchatka, and one expedition was immediately followed by another. And so the Kamchadals waited for the right moment to carry out their wicked plot. But when Bering, together with his entire expedition had left Kamchatka to go to Okhotsk, and the troops who were usually so numerous in this country, received orders to embark on the vessel Gabriel to sail to Anadyr to meet Captain Pavlutskii, Commander in Chief, and accompany him on his expedition against the hostile Chukchi, the Kamchadals decided to carry out their plot the moment they set sail. They had all the more reason to be confident of success, in that so few Cossacks remained in Kamchatka. The Kamchadals from the lower Kamchatka ostrog and those from the Kliuchevska and the Elovka Rivers did nothing all winter long but

which is near the Admiralty; the second was buried in the church of the Kalinka. In memory of such a singular set of circumstances which brought these two unfortunate foreigners to Russia from such a distance, the Academy wished to have their portraits painted, and plaster busts made of them. These can be seen today in the Kunstkamera.

travel all over Kamchatka under the pretext of visiting each other. They held meetings and solicited others to join them; and when entreaties did not succeed, they threatened to kill anyone who would not conspire with them. It was thus that they roused all Kamchatka to revolt. They learned that Shestakov had been killed by the Chukchi, and spread the word that these same natives planned to attack Kamchatka, perhaps for the reason that if their plot should succeed, the Cossacks would not suspect them of being the leaders of the rebellion; or perhaps the reason was to instill fear and defiance so that others would come to their aid to help them defend themselves.

It is certain that if Divine Providence had not come to the aid of the Russians in a most unusual manner, not one of all the Cossacks in Kamchatka would have escaped. They would all have been massacred, or would have died of starvation. It would have been very difficult to reconquer a nation so far away, and many lives would have been lost; and furthermore, the natives, having once thrown off the yoke, would have continually been in a state of defiance. Add to this the fact that they had learned how to use firearms and had acquired a great amount of flint and powder, that many of them knew the manner in which the Russians were armed and how they would defend themselves. They had drawn their plans with more skill and cunning than one would have supposed such barbarous people capable of; they had taken every possible precaution to intercept the correspondence with Anadyrsk. They had positioned a large number of guards in all the harbors to make a show of friendship and submissiveness to all the Russian soldiers who came by sea, under the pretext of taking them to the various settlements; then

they were to kill them en route, and to spare not a single one. The major leaders of this revolt were the toion Fedka Kharchin who lived along the Elovka River and who had served as interpreter for the Russians who came to collect iasak, and another toion from the Kliuchevka River, a relative of his by the name of Golgoch.

Meanwhile the former agent, Shekhurdin, left Kamchatka peacefully carrying with him all the iasak which had been collected in the country. His entire band reached the mouth of the Kamchatka River safely and embarked to go to Anadyrsk. The ship was barely out to sea when an adverse wind came up and forced them to drop anchor. The various rebel leaders who had only waited for the Russians to leave before they gathered together to attack the Lower Kamchatka ostrog, had instructed several Kamchadals to inform them when the Russians departed. As soon as they saw the ship set sail, not foreseeing that it would return, they gathered together on the twentieth of July, 1731, went up the Kamchatka River in their canoes, killed all the Cossacks they met, burned their summer huts, took the children prisoners and made concubines of the women, and sent a runner to their leaders to inform them the Russians had departed.

That same evening the rebels came to the ostrog, set fire to the chaplain's house, thinking that the Cossacks would come out to put out the fire and that they could then kill them easily without running any risk to themselves. This plan succeeded so well that they killed nearly everyone in the ostrog without any resistance. They spared neither the women or children, and committed all manner of outrages on the women before killing them. They burned all the



buildings with the exception of the church and the fortifications, where the possessions of the inhabitants were stored. A very few escaped and took refuge near the mouth of the Kamchatka River where they informed their companions who had not yet left what had just taken place. The voyage to Anadyrsk was cancelled; it was more important to think of guarding their present possessions than to go off to acquire new ones.

Meanwhile Chegech, the chief of the Kliuchevka area, had remained near the sea. When he learned that Lower Kamchatka ostrog had been taken, he went to the ostrog and made prisoners of everyone who had escaped the fury of the first rebels, and killed every one. He went to join Kharchin, and told him that the Russian ship was still near the mouth of the Kamchatka River. Then, to guard against the return of these troops, they retrenched in the square, made a second rampart from the debris from the church, and sent a runner to the headwaters of the Kamchatka River to carry the news to all the Kamchadals that they had taken the lower ostrog, and invited the others to come join them.

The next day they divided up all the loot they had taken and put on the finest garments they could find, which in many cases were women's clothes or priests' vestments. Then there was great rejoicing, feasting, dances and superstitious ceremonies and incantations. Fedor Kharchin, who had shortly before become a Christian, ordered one Kamchadal, also newly baptised, who knew how to read, to celebrate a church service and to chant the Te Deum wearing a priest's vestments. In recompense he gave him a present of thirty foxskins, and had it inscribed in the Register in the following manner: "By order of Agent Fedor

Kharchin, Savina (for this was his name) was given thirty common fox for having sung the Te Deum." In the future, and even until I left the country, he was jokingly referred to as "the vile priest."

Two days after the fort was taken, that is, on the twenty-second of July, a man by the name of Iakov Hens, a petty officer, sent a detachment of sixty Cossacks to recapture it from the rebels. The Cossacks advanced to the foot of the rampart of the ostrog and used every possible means to force them back into submission, assuring them of the clemency of Her Majesty and that they would be pardoned for their crime. But they refused to listen, and replied only with curses and invective. Kharchin in particular mocked them, and shouted to them from the top of the ramparts, "What are you doing here? Don't you know that I am the one who is agent for Kamchatka? I will collect iasak in the future without you, and you are no longer needed in this country." They were obliged to send for some of the ship's cannon, and on July twenty-sixth they began to barrage the fort with such success that they made huge breeches in it. The men in the fort were in such a state of consternation over this that the women who had been held prisoner inside took advantage of this circumstance to escape.

Kharchin realized that he was in no condition to resist, and escaped, disguised as a woman. He was followed, but they could not capture him. He was so swift that he could run as fast as a wild reindeer. These facts were confirmed for me by several Cossacks, and even by his brother who was still living when I was in that country. Thirty of the men who were besieged surrendered; the others were killed. But Chegech, one of the chiefs from the

Kliuchevka area, held out until the last moment, along with a small number of his own men. The fire eventually spread to the powder magazine, and the fortress was reduced to ashes, along with all the belongings and the entire treasure which it had held. The Kamchadals burned the church which had previously been spared. The Cossacks lost four men in the assault, and a number of them were wounded. The number of Kamchadal casualties is unknown, because the bodies of the dead were consumed in the fire. The ones who had given themselves up and been taken prisoner before the assault was mounted were also killed. The Cossacks, infuriated by the outrages committed against their women and by the loss of all their goods and possessions, put them all to the edge of the sword and spared not a single one.

The sudden return of the Russians did much to stifle the rebellion in its infancy by preventing the flames from spreading further; otherwise the Kamchadals from Kamakov ostrog, who numbered more than one hundred, would have come to join them; and a many from other small settlements would have been forced to follow that example in order to survive the danger which threatened them. But when they saw that the Russians had come back, they were forced to await the outcome of this catastrophe while pretending to be faithful, or at least neutral. Nevertheless the victory over the rebels was not really decisive. Kharchin gathered together in force with several chiefs and set into action a plan to go along the seacoast and attack the Russians. He had just set out on the march when the latter encountered him, and after a brief battle obliged him to retreat onto a high place. He retrenched onto the left bank of the Kliuchevska

River, where the combat had taken place, and the Cossacks made their camp on the right bank.

Kharchin in vain mustered all his forces to frighten the Russians and force them back to the sea; the Russians, far from feeling the least fear, never stopped shouting to him and his comrades to give themselves up. At last they persuaded Kharchin, another chief and his brother, to listen to their proposals. Kharchin appeared on the river bank and let it be known that he was afraid to go over to the Cossack camp, demanding that they give a hostage to insure his personal safety; they consented to this. When he was in the camp, he asked that the Kamchadals be spared, adding that he himself wished to live in peace and that he would persuade his kinfolk and those on his side to follow his example. They let him go. Then he sent word that his men did not want to hear peace talk; his brother and another chief whose name was Tavach, who had gone with him, did not wish to return with their men.

The next day Kharchin appeared on the bank of the river with several other chieftains, begging the Cossacks to take him to their side of the river and to send two men as hostages. The better to mislead him, they pretended to consent to this; but he had no sooner set foot on the ground than they seized him, shouting to the hostages to jump into the river. In order to help the hostages escape and prevent them from being killed with arrows, they fired on the rebels and forced the Kamchadals to take flight. Thus it was that the chief rebel was taken prisoner and that the Russian hostages escaped. After two cannon balls had been fired, the other chieftains and all their men dispersed. Tigel, the toion

of the tribe who lived near the headwaters of the Elovka River, retreated with his men. Golgoch, head of the people who lived near the Kliuchevska, fled toward the upper part of the Kamchatka River; the other chiefs went off in different directions, but eventually all of them died. The Cossacks divided up into different detachments and pursued the fugitives and killed all they could catch. The toion Tigel, after a long period of resistance, killed his wife and children and then committed suicide. The chief Golgoch plundered several small Kamchadal ostrogs on the Kozyrevka River, including Shapina, to revenge himself on the natives who had refused to join forces with him; but these natives killed him when he came back.

Meanwhile the word had spread that the rebels had seized Lower Kamchatka ostrog and a majority of the Kamchadals revolted; they killed all the Cossacks they encountered and inflicted every kind of cruelty of them. They began to gather together to march on Upper Kamchatka ostrog and on Bolshepetsk, which had never yet been attacked. They used threats and soft words to persuade their neighbors to join forces with them, and many who refused to be part of this were killed. The Cossacks were in serious trouble until they received help from the lower fort. The Russian detachment began their march along the Sea of Okhotsk, putting everyone they encountered to the sword. After they met up with the Cossacks from the upper ostrog, they marched in force against the Avacha rebels who were more than three hundred strong. They successfully attacked the ostrogs where the rebels had entrenched themselves, and killed them, innocent and guilty alike, and took their women and children into slavery.

After a great deal of bloodshed and the destruction of many of these people, they reestablished peace in the country and returned to Kamchatka with an immense amount of plunder. Since that time there have been no more revolts and until 1740 no Kamchatka agent was killed; in that year about seven Russians were killed in various places by the Koriaks. One of these was a sailor who had been on Bering's expedition.

A short time after this event, Vasilii Merlin, who was then a Lieutenant-Colonel, came to Kamchatka with another officer and a small number of soldiers; his companion was Major Pavlutskiĭ. They were ordered to learn all about the cause of this revolt, about the murders of the Japanese, and about other disorders which had occurred in this country. They were to clarify these matters and send their reports to Iakutsk. They were also ordered to build another fort. They remained there until 1739 and in fact built the Lower Kamchatka ostrog slightly below the mouth of the small Ratuga River. They looked into the matter of the causes of the rebellion, and when they received authorization, they put to death three Russians, Ivan Novogorodov, Andrei Shtinnikov, who had so barbarously killed the unfortunate Japanese and Mikhail Sapozhnikov; they also executed one of the most culpable of the Kamchadals from each ostrog, the two principal rebel leaders, of whom Fedka Kharchin was one; and several Cossacks were punished according to the nature of their crimes. All the prisoners and slaves who had been taken in various ways were set free, with the warning issued never to take slaves again.

It is difficult to portray the indifference and the sangfroid with which these

natives faced death. One of them said, laughing, that he was sorry to be the last to be hanged. They were equally steadfast during the agony and the frightful torture of being put on the rack. No matter how cruel the torments they were made to suffer, they only allowed the words "Ni, ni," to escape their lips, and these only at the first turn; after that, they pressed their tongues against their teeth and maintained an obstinate silence, as if they had lost all sense of feeling. No one could force them to say a word which they had not already volunteered during their prior interrogation.

After this, peace and tranquillity were reestablished in Kamchatka, and it seemed that this condition would endure, for the Empress Elizabeth had established various institutions there which were so well administered that the inhabitants could only be greatly satisfied with them. From each person only one fur was required, either a fox or a sea otter or a sable. They paid no *iasak*. Only their own chieftains dispensed justice and took cognizance of all their affairs, except for criminal matters. The Cossacks were forbidden, under threat of the most severe punishment, to exact payment for old debts from them. But the greatest advantage is that nearly all of them were converted by the missionaries who brought them into the Christian faith. The piety and clemency of our august Sovereign contributed to this in no small way, by exempting the newly baptized persons from taxes for ten years. Schools were established in nearly all the villages, where free instruction was given to the children of the Cossacks and the Kamchadals to strengthen their Orthodox faith. Eventually Christianity extended in this country to the Koriaks in the north, and south as

far as the third of the Kurile Islands. There is every reason to hope that even the Koriaks will soon follow this example; several of them have already embraced the Christian faith. Only our august Sovereign could have accomplished this sort of miracle. Among the great deeds which will immortalize her, this one will without doubt hold a distinguished place. These people were barbarians, savages; when the country was conquered, there were perhaps not one hundred of them who had been baptized. In a very short time, their eyes have been opened to the truth, and today they are ashamed of the false beliefs and their former barbarous condition.



## CHAPTER V

### THE PRESENT CONDITION OF THE OSTROGS IN KAMCHATKA, THEIR ADVANTAGES AND DISADVANTAGES

The Russians have five ostrogs in Kamchatka: Bolsheretsk ostrog, Upper Kamchatka ostrog, Lower Kamchatka ostrog, the port of Petropavlovsk, and the ostrog on the Tigil River.

Bolsheretsk ostrog is situated on the northern bank of the Bolshaia River, between the mouths of the Bystraia and the Goltsovka, thirty-three versts from the Sea of Okhotsk. This ostrog is rectangular, each side being ten sazhen long. It is fortified with palisades on the east and north faces; there are various structures on the south and west such as a iasak building, another to hold hostages, and divers store houses. There is a very small entry on the west. Outside the fort there is a chapel, where there is a church dedicated to Saint Nicholas, and lodging quarters which belong to the church. There are about thirty buildings on the different islands, a tavern and a distillery. There are forty-five soldiers there and fourteen sons of Cossacks; although they pay a head tax, they nonetheless serve as other Cossacks do.

This ostrog is inferior to all the others by reason of its fortifications, but it seems pointless to add to them, because the nearby Kamchadals who are dependent on it have long been peaceful and faithful. Its location is much more

advantageous than that of the others for the following reasons. 1. All ships can ascend the Bolshaia River, which means that the people who live there always receive their merchandise first hand. 2. They lodge and feed foreigners, which is a means of considerable profit for them. 3. They also receive substantial sums of money by using their dogs to transport all the provisions or merchandise destined for the other ostrogs. 4. They are better situated than people in other ostrogs to buy sea otter, which today are the most sought-after merchandise in Kamchatka. 5. In summer they have more fish than they need, and can fish easily and cheaply. Because of the nature of the river, the nets they use are not more than twenty sazhen. This is also the reason why the Commander-in-Chief of all the ostrogs in Kamchatka usually resides at Bolsheretsk, from where he sends out agents to the other ostrogs. The sole disadvantage of this ostrog is that in summer when fish come up the river at the time when the people are fishing to lay in a supply for winter, there are always rainstorms which prevent the fish from drying. In spite of the prodigious number of fish, they have a difficult time providing enough for winter. This means that in spring food is generally extremely expensive, and sometimes there is a shortage. If trees grew around this river, it would be easy to remedy this inconvenience by smoking and drying fish in the cabins, as people do at Okhotsk; but it would be very expensive to build such a cabin on the banks of this river; the wood needed for its construction would have to be brought from afar, with a great deal of difficulty and even of danger. Only ten logs can be put on each canoe, and in spite of the precaution of loading the boats so lightly, the rapid current often

carries them onto the reefs where they break up. So that the reader can judge the difficulty of bringing wood by water, it will be sufficient to say that it takes three or four days to go from the seashore to find poor dry wood which they use in making salt and trying out oil from fish and that in one trip they can only bring back enough to make thirty-six pounds of salt. Thus salt is as scarce in this place as at Lower Kamchatka ostrog or at Avacha. Every Cossack who has a canoe builds a balagan on the shore of the sea; all he needs for this are some sticks, grass, and a few uprights.

Upper Kamchatka ostrog, which was built before all the others, was for some time the principal ostrog. The agents lived there and sent out subalterns to other places. It is on the left bank of the Kamchatka River, at the mouth of the small Kali River, about sixty-nine versts from the headwaters of the Kamchatka River, 242 versts as the crow flies from Bolsheretsk, and 436 versts 50 sazhen from the trail one takes to cross the mountain range called Oglukominsk. This fort forms a square fortified with palisades on all sides. Each side is seventeen sazhen long. The entry is on the river side, and the storehouse where iasak is collected is above. There is a iasak building in this fort, with apartments where hostages are kept and two magazines. Outside the fort there is still a chapel where there is a church dedicated to Saint Nicholas, a Crown building with the necessary apartments, a tavern, a distillery, and twenty-two houses for the natives. There are fifty-six Cossacks there.

This ostrog has a great advantage over the one at Bolsheretsk both by reason of the climate and the availability of wood; the weather is almost always

fair, and although the only wood is poplar, it is nevertheless quite large, and lends itself to carpentry and can easily be transported. Thus the buildings there are much better constructed than at Bolsheretsk. This ostrog has still another advantage, which is that the land is good for agriculture and has a good deal of pasturage which is of much better quality than anywhere else. On the other hand, fish are not nearly so abundant there. Because this place is so far from the sea, only a few fish come upriver, and they arrive so late in the season that the people who live at Lower Kamchatka ostrog have already laid in their provisions when the fishing begins at the upper ostrog. This means that these latter people lack food supplies nearly all spring and must go to buy fish along the coasts of the Sea of Okhotsk and the Beaver Sea. They buy their salt and fish oil at the lower ostrog, or else they go themselves to catch fish, and try out the fat at the mouth of the Kamchatka River, which is more than 400 versts from the Upper Kamchatka ostrog. These inconveniences were formerly compensated for by the number of sea otter which were taken in the Beaver Sea, and which our Cossacks would buy; but they no longer have this advantage, because these animals are now very scarce in that sea. If the Beaver Sea had been placed in the jurisdiction of Avacha instead of under this ostrog, because of the proximity between the sea and Avacha, the natives would have no other resource than to cultivate the land; but they use it to better advantage, provided that they are constantly hard at work, whereas if they neglected it, they would have nothing to live on.

Lower Kamchatka or Lower Shantal ostrog is 397 versts from the upper

ostrog. It is located on the same bank of the Kamchatka River, thirty versts from its estuary. This ostrog is in a square, surrounded by palisades. It is forty-two sazhen long and forty wide. It is flanked by a tower which has an entry on the west side. There is a church there in honor of the Assumption of the Holy Virgin, with a small chapel dedicated to Saint Nicholas, a building for holding tribute, a house which belongs to the Crown where the agents are quartered and two buildings where iasak and ammunition are kept. All these buildings constructed of larch or tamarack are better made and more comfortable than the ones in any other ostrog. Outside the fortress there is a tavern and a distillery, and thirty-nine houses for the inhabitants, of whom there are ninety-two.

This settlement, considering the things which are necessary for living in this country, can perhaps be considered the best supplied and the most comfortable. 1. There are many excellent fish; the people salt them and dry more than they need for their own food supply. 2. They have all the wood they need, not only for carpentry, but even for building ships. 3. Since the river is readily navigable, they can use it for transporting goods with little risk or difficulty. In addition, they have so much fish oil and salt that they can supply these things to other ostrogs. 4. Wild game is so plentiful in the vicinity, and the Kamchadals furnish them with so much of it, that there is no Cossack, no matter how poor, who does not serve a swan when a friend comes to see him. Geese and ducks abound, and there is no shortage of them. 5. They can always catch fish in the springs throughout the winter. 6. A

great many berries grow, such as cloudberry, red bilberry and huckleberry, which can easily be kept all during the winter; these, after fish, comprise one of the most essential parts of their diet. 7. They can procure at a quite reasonable price all kinds of utensils which they need, and which are hard to get at Bolsheretsk even for a great deal of money. 8. They have the finest sable in Kamchatka, which are found around the Tigil River. 9. It is easier and cheaper for them to buy things from the Koriaks than it is for people in other ostrogs; they buy clothing made from reindeer skin, various pelts, and also the meat from these animals; in short, they can buy everything they can not do without except for Russian or Chinese goods. 10. In several parts of the area the land is fertile and produces fruits and all sorts of grain. The only disadvantage is that Russian and Chinese merchandise is more expensive here than elsewhere, since the merchants have to raise the price of their goods because of the price of transporting the goods by land from Bolsheretsk to this ostrog. This expense comes to four rubles per pud.

The fourth ostrog was built in 1740 on Avacha Bay, and it was peopled with persons who were taken from the upper and lower Kamchatka ostrogs. They have built quite attractive houses there, and particularly one building which might be said to be beautiful for this country. It was built for the Kamchatka expedition. It is situated near the port of Petropavlovsk. The church is one of the best ornaments of the place; it is nicely built, and well situated.

This area has almost the same advantages and the same inconveniences as Bolsheretsk ostrog, with this single difference, that it is easier to hunt sea

otter here; but the water is neither so good nor so healthful as at Bolsheretsk. Some persons are very much bothered by it, and experience a choking sensation from it. The principal officers of the Kamchatka expedition nearly always had to send men to look for good water in Avacha River, which empties into the bay.

There is nothing I can say about the condition of the fifth ostrog located on the Tigil River, since they did not start to build it until after I had left Kamchatka; I only know that thirty-seven men were sent there. Steller says this fort was built for the following reasons. 1. To hold the settled Koriaks in submission. 2. In order to establish a route around the Sea of Okhotsk to the town of Okhotsk. 3. To be used if necessary to protect the reindeer Koriaks against the incursions of the Chukchi who often come to attack them.

The inhabitants of that ostrog have certain advantages over persons who live at Lower Kamchatka ostrog. 1. The latter are not close enough to have easy access to the sable from the Tigil. 2. They are the first to whom the Koriaks bring their goods. 3. The tributary Koriaks from the Sea of Okhotsk who were until now under the jurisdiction of the lower ostrog, will very likely be assigned to the jurisdiction of the Tigil ostrog, because of the proximity.

## CHAPTER VI

### THE COSSACKS' WAY OF LIFE; HOW THEY DISTILL SPIRITS FROM VARIOUS PLANTS AND BERRIES; THE SALE OF THIS LIQUOR, AND THE REVENUE IT BRINGS

The Cossacks' way of life is almost the same as that of the natives. They both live on roots and fish, and their occupations are the same. They fish in summer and lay in their supply of fish for winter. In the fall, they look for roots, gather nettles and use them to make nets during the winter. The only differences between them are these: 1. The Cossacks live in houses, while the Kamchadals generally live in iurts or in dwellings which are partly hollowed out into the earth. 2. The Cossacks cook their fish, whereas the Kamchadals usually eat it dry. 3. The Cossacks prepare fish in various ways, by making a mince or a *pâté* of them, which the Kamchadals had never heard of before the Russians came to Kamchatka. In such a way of life as theirs, they find women indispensable, for a great part of these tasks falls on their shoulders, as for example cleaning the fish, gathering roots, making clothing and footwear, sewing, etc. When the Cossacks came into Kamchatka to settle, they brought no women with them because it was so difficult they had a hard time making the journey alone; and so this is the way in which they managed to get women.

It is perfectly obvious that the Cossacks could not force all these people



into submission by gentleness, and that sometimes they had to use force and violence. When they had taken over several ostrogs, they took off a certain number of women and children whom they divided among themselves, who became their slaves. These women were put in charge of all the necessities of life.

As for the men, they acted as the masters, and lived in plenty and enjoyed all the labors of their slaves, without taking part in the work. They put their concubines in charge of the slaves; they would usually marry the concubines when they had borne children. Those who wished to contract alliances with free Kamchadals signed notices in which they promised to marry their daughters as soon as the priest should come. Thus the baptism of the promised daughter and the baptism of the infants as well as the betrothal and the marriage ceremony frequently took place all at the same time. There was only one priest for all these ostrogs; he lived at Lower Kamchatka ostrog and visited the other ostrogs every year or every two years. Since that is a very long interval, the priest usually had his work cut out for him when he made his rounds.

The Cossacks were not at all displeased with this kind of life; they lived like nobles, with absolute power over their slaves. The slaves furnished them with sable and other furs. The Cossacks spent most of their time playing cards, which was one of their greatest pleasures. The only thing they lacked was liquor, and they soon managed to supply themselves with that. At first they used to gather together in the iasak building to amuse themselves playing various games, and it was there that they would have their meetings and decide their affairs. The establishment of taverns, however, was the immediate cause of

the most horrible disorderliness. The gamblers took their sable and fox pelts there, and when these were not enough, they would play for their slaves. When at last they had lost everything, their desperation and madness would be carried to the point that they would gamble their clothing, and sometimes would go about almost naked. It is difficult to describe how much misery these unfortunate slaves had to suffer. It often happened that they would change masters twenty times in a day.

As for the discovery of spirits, this is how the Cossacks at Bolshepetsk found the means to distill it. They were accustomed to gather a supply of various kinds of berries for winter, as has been mentioned. Sometimes they would ferment and sour in springtime, so that they could only be used to make a kind of beverage called kyas. However, some of them drank this fermented liquor straight and undiluted, and saw that it was intoxicating. Then they prepared some alembics and distilled it. This experiment had every success that had been hoped for. From that time on there has always been plenty of liquor in Kamchatka, particularly after they discovered they could also make it from sweet grass.

When they had no berries to make spirits, they would steep sweet grass in water and then mix it in a concoction of crushed cedar nuts. They would leave the whole thing to ferment, and then drink this beverage in place of mead; but then, when they saw that it went to the head, they wasted no time in distilling it. At first they fermented sweet grass in a concoction of the grass called kiprei which they distilled. When they realized this was unsuccessful, they put

the same grass in boilers, which produced the effect they wanted. Since it was more expensive to steep the sweet grass in the kiprei decoction, they tried to make spirits from sweet grass alone, and this was equally successful. This latter method, which is the least costly, is still used today in Kamchatka. I have already described how sweet grass is prepared, so I shall only mention here how they distill spirits from this plant.

When it is dry they spread it out and pour enough water over it so that it is covered and is well soaked. Then honeysuckle bramble berries are added; the vessel is sealed by coating it with clay or with paste, and it is placed in a warm place. This is the mash; it works and ferments with a great deal of noise. They know it has reached just the right condition when the noise stops. Then they steep two or three puds of sweet grass in tubs and allow it to ferment with the mash and proceed in the same manner as just described. These two fermented liquors are called braga. When the latter has stopped fermenting and no longer bubbles, they pour it into a copper or iron cauldron. Then they put on a wooden cover, through which they insert a pipe which is usually the barrel of a musket. The liquor which they draw off, known under the name of raka, is as strong as the best brandy, and they drink it without the necessity of distilling it a second time, for then it would become like aqua fortis, and would have the same property. They also make braga without mash, by putting it to ferment only with water in which they steep the grass which remains in the cauldron after distillation. From two and one-half or three puds of grass, about one pail is drawn, which sells for a profit to the Crown of twenty rubles.

A number of persons who are not at all familiar with this country may be curious to know how the Cossacks became established here, and how they set about making themselves wealthy; I will say something here to satisfy their curiosity.

At the beginning of the conquest of Kamchatka there were many opportunities to make a fortune. 1. They made frequent armed raids against the rebellious Kamchadals, and looted everything they could find. 2. When they went to collect tribute, the Cossacks would always take some pelt from the natives, for apart from iasak for the Crown, each Kamchadal was obliged to give four fox or sable skins, of which one was for the collector, another for his agent, the third for the interpreter, and the fourth for the Cossacks. 3. They sold all the little trifles they had brought with them on their iasak-collecting rounds at a very dear price to the natives, and although later on these extortions were to be strictly forbidden, nonetheless the Cossacks had the freedom to trade with the Kamchadals and to sell their goods as they wished. They procured their goods from the merchants, took them to the natives, and sold the things to them for twice their value, or even more. They did not always take pelts in exchange, but often things they needed, such as boats, nets or foodstuffs. They had no other means of subsisting in a country where there were neither grain or other necessities. The pay of a foot Cossack was only five rubles, their bread money being paid according to the price in Yakutsk. However in addition to his subsistence, each Cossack needed at least fifty rubles a year to fit himself out properly with winter clothing, summer garments, dogs, and ammunition. A

set of native garments cost six, seven, or even eight rubles. Winter trousers cost two or three rubles and one could not buy summer and winter boots, a hat and gloves for less than four rubles. Woolen stockings cost one ruble; two shirts cost four rubles; four arshins of yardgoods were worth one ruble; two summer trousers of skin cost two rubles. One could not buy a sled with even poor dogs and the necessary equipment for less than ten rubles. Muskets are very expensive in this country, and even with money it is hard to find powder and lead.

## CHAPTER VII

### THE SMALL KAMCHADAL AND KORIAK OSTROGS UNDER THE JURISDICTION OF THE RUSSIAN OSTROGS; IASAK COLLECTORS, AND OTHER STATE REVENUES

Earlier I said that there are actually five Russian ostrogs in Kamchatka, without indicating whether there were Kamchadal or Koriak ostrogs which were under their jurisdiction. Here I shall discuss which small ostrogs, during the time I was in Kamchatka, were under the control of the three principal ostrogs, Bolsheretsk, and Upper and Lower Kamchatka. I will also give the names of their chiefs, the number of inhabitants and what sort of tribute they paid, and the number of collectors who were sent from each Russian ostrog, and the places they were sent.

#### I. OSTROGS IN THE DEPARTMENT OF BOLSHERETSK

##### On the Shores of the Bolshaia River

	Sable	Fox	Number of Persons
1. Kuchenichev ostrog, toion Kuchenich	8	17	25
2. Sikyshkin, toion Kurikhtach	12	15	27
3. Apachin, toion Apacha	4	10	14
4. Nachikin, toion Nachika	<u>6</u>	<u>3</u>	<u>9</u>
Totals	30	45	75

## On the Bystraia River

	Sable	Fox	Number of Persons
5. Karymaev, toion Karymai	7	9	16

On the Sea of Okhotsk, from the Opala River  
to the Vorovskaia

6. Opala River, toion Khantai	5	9	14
7. Utka River, Toion Keliuga	4	10	14
8. Kykchik River, toion Shemkochia	13	29	42
9. On the same river, toion Tavacha	10	20	30
10. Nemtik River, toion Nalach	5	5	10
11. Kora River, toion Savachilki	8	12	20
12. Vorovskaia River, toion Tonacha	<u>27</u>	<u>53</u>	<u>80</u>
Totals	72	138	210

On the Avacha River and Avacha Bay, and  
from there North to the Nalacheva River

13. Avacha River, toion Pinich	2	7	9
14. Small Paratun ostrog, toion Karimchi, where one paid in <u>koshloki</u> <sup>1</sup>	6	19	25
15. Small Kupkin ostrog, toion Tarei, one paid in beaver, the others in koshloki	17	37	54
16. Small ostrog, toion Niaki, two paid in koshloki	6	21	26
17. Kolakhtyr, toion Apaulia; one paid in beaver	3	8	12
18. Nalacheva River, toion Mgata; three paid in beaver, two in koshloki	8	14	27

<sup>1</sup>koshloki is a young beaver. --Ed.

In 1738 a new iasak was instituted along various rivers; one to pay in sable, forty-five to pay in common fox, and one, blue fox.

Thus in the seventeen ostrogs of the Bolsheretsk Department, the total number of persons paying iasak in furs:

Beaver	5
Sable	151
Fox	288
Plus forty-seven natives who recently paid tribute	<u>47</u>
Total	491

At the present time an agent is sent from Okhotsk every year to collect iasak in various places. He is chosen from among the soldiers, and goes along the Avacha River and the Sea of Okhotsk. The Kamchadals on the Opala River and from the other small ostrogs in the vicinity come in person to the principal ostrog. When the agent has not been able to collect iasak somewhere, he sends out soldiers when he returns who go to persons who have not yet paid. One goes to the Sea of Okhotsk, another to the Avacha River, and a third to the Opala River. The agent also sends other men to Kamchadals who have moved from one ostrog to another.

Formerly the Kuriles were under the jurisdiction of Bolsheretsk ostrog, from which place a collector was sent; but now the collector comes from Okhotsk. Every collector takes with him a scribe, an interpreter, a sworn-man, and



several soldiers to guard the coffers. The agent receives the iasak in front of all the men, and consults them on the quality of the furs. The interpreter acts as spokesman, and the scribe keeps a record of all the iasak which is paid and gives receipts. The iasak is then given to the sworn-man, and he puts his stamp alongside the stamp of the official.

## II. OSTROGS IN THE DEPARTMENT OF UPPER KAMCHATKA OSTROG

Along the Kamchatka River, from its Source to the Small Vytylgina River

	Sable	Fox	Tribute
1. Chanichev ostrog, toion Ganala, iasak	37	57	94
2. Iromlin, toion Shipakmak, iasak	19	24	43
3. Mashurin, toion Nachika Mashurin	84	70	155
4. Shapin or Shepen, head man Nachika, tax	8	5	13
5. Tuluach, toion Kanach Kukin, iasak	3	9	12
6. Kozyrevska, toion Naksha, iasak	5	9	14
7. Vytylginsk, head man Virgach, iasak	4	2	6

Along the Sea of Okhotsk, from the Konpanakova River in the North to the Kovran

8. Konpakovskii, toion Aket, iasak	11	42	53
9. Krutogorovskii, toion newly-baptized Ivan Pavlutskii	11	30	41
10. Oglukominskii, toion newly-baptized Ivan Otlasov, iasak	15	34	49

Along the Sea of Okhotsk, from the Konpanakova River in the North to the Kovran  
(continued)

	Sable	Fox	Tribute
11. Ichinskii, toion Tyoshka, iasak	23	61	84
12. Soposhna, toion Tonach, iasak	14	36	50
13. Moroshechna, toion Vaikho, iasak	3	10	13
14. Belegolova, toion Tareia, iasak	11	33	44
15. Bystraia River ostrog, toion Khomlit, iasak	10	20	26
16. Khariusovka, toion Briumcha, iasak	16	34	50
17. Kovranska, toion Iginiak, iasak	6	20	26

Along the Sea of Beavers from Cape Kronotsk on the South to Chipunsk Ostrog

	Beaver	Sable	Fox	Number of Persons
18. Kronotsk ostrog, in the bay, toion Gatalcha, iasak	6	8	30	44
19. Ust-Kronotsk ostrog, toion Briuch, iasak	1	2	6	9
20. Kemshka ostrog, toion Izhur	5	-	15	20
21. Shemiachinsk ostrog, toion Teniv	1	1	12	14
22. Berezovsk ostrog, toion Tukach	1	1	12	14
23. Zhupanovsk ostrog, toion Pishkal	2	4	12	18
24. Kaligarsk ostrog, toion Kuzhak	1	2	8	11
25. Ostrog on the Ostrovnaia River, toion Vakhile	-	9	-	9
26. Ostrog on the same river located on an island, toion Apachi	9	1	35	45
27. Shipunsk ostrog, toion Kushug	1	-	10	11

Along the Sea of Beavers from Cape Kronotsk on the South to Chipunsk Ostrog  
(continued)

	Beaver	Sable	Fox	Number of Persons
In addition, from iasak-paying Koriaks, who live on the Avacha	<u>-</u>	<u>3</u>	<u>9</u>	<u>12</u>
Total from the twenty-seven ostrogs under the jurisdiction of Upper Kamchatka ostrog	27	302	651	982

Generally three iasak collectors are sent to these various ostrogs; one goes along the shore of the Sea of Beavers, another along the Sea of Okhotsk, and the third goes along the Kamchatka River; however at present the collectors from Okhotsk sometimes go personally to levy iasak in all these places.

### III. OSTROGS IN THE DEPARTMENT OF SHANTAL, OR LOWER KAMCHATKA OSTROG

#### On the Kamchatka River

	Sable	Fox	Number of Persons
1. Ust-Kamchatsk, toion Tavach, iasak	15	77	92
2. Ostrog located on the shores of Lake Kolko-kro, toion Namakharuch, iasak	2	12	14
3. Shantal, toion Tumuch, iasak	5	26	31
4. Khapichinsk, toion Lemshinga, iasak	9	13	32
5. Peuchev or Shvanolom, toion Kamak, iasak	17	85	102
6. Shchechkin, toion Shehechka, iasak	9	15	24

On the Kamchatka River  
(continued)

	Sable	Fox	Number of Persons
7. Kamennoi, toion newly-baptized Ivan Karbaranov, iasak	6	63	69
8. Kliuchevska, toion Likoch, iasak	11	34	45
9. Kamachev, toion Nalach, iasak	12	39	51
10. Itatelev, toion Itatel, iasak	17	27	44

On the Elovka River

11. Ust-Elovka, or Koannym, toion Stepan Kharchin	4	11	15
12. Verkho-Elovka, toion Tavach Tenivin, iasak	40	37	77

Along the Coast of Bering Sea

13. Stolbovsk, toion Chegaga, iasak	4	19	23
14. Ukinsk, toion Korich, iasak	9	15	24
15. Pilchengylyp, or Maimliansk, toion Nachik, iasak	8	34	22
16. Ukamelian, or Kakhtansk, toion Kholiuli, Koriak iasak	4	15	19
17. Rusakov, toion Kumu	2	21	23
18. A small ostrog at the entrance to the bay, toion Kamak, iasak	2	28	30
19. Iumgin, toion Umeuchkin, iasak	-	25	25
20. Karaginsk, toion Kumliu, iasak	-	20	20
21. Ostrog on Karaga Island, toion Tata, iasak	-	30	30
	<hr/>	<hr/>	<hr/>
Total	176	636	812

## Along the Coast of the Sea of Okhotsk

	Sable	Fox	Number of Persons
22. Tigil, toion Peivev, iasak	31	61	92
23. Napansk, toion Khotkamak, iasak	8	26	34
24. Amaninsk, toion Lialia, iasak	1	18	19
25. Utkolotsk, toion Lialia Kamakov, iasak	5	22	27
26. Vaempalsk, toion Unepokha, iasak	21	59	80
27. Kakhtansk, toion Kulu Nimgyit, iasak	4	30	34
28. Upper Pallansk, toion Amgal, iasak	1	16	17
29. Middle Pallansk, toion Amril, iasak	7	15	22
30. Upper Pallansk, toion Kamak, iasak	4	30	34
31. Lesnaia, toion Kelliakh, iasak	1	37	38
32. Podkagir, toion Tomgirgin, iasak	<u>2</u>	<u>33</u>	<u>35</u>
Total, from the thirty-two subject ostrogs under the jurisdiction of Chantal, or Lower Kamchatka Ostrog	254	983	1237

Three iasak collectors are sent to the various ostrogs; one goes to the Tigil, another to the Uka River, and the third to the Island of Karaga. Those who live along the shores of the Kamchatka River, since they are the closest, bring their iasak to the ostrog which chooses the agent.

There are 2,716 persons who pay iasak in all the ostrogs of Kamchatka.

The total income amounts to thirty-four sea otter, 706 sable, and 1962 fox, to which one must add about a hundred sea otter which are paid by persons who live on certain islands, and by the Kuriles who live on the southern cape of Kamchatka.

Everyone pays in sable, fox, etc. People who trap beaver bring those in; but rather than give up their best furs, they often bring in only mediocre ones. The estimated value of the iasak is ten thousand rubles, according to the fur price in Kamchatka, and double that or more, if one values the furs according to prices at Irkutsk.

After iasak, the largest Crown revenue in this country comes from the sale of liquor, and amounts to three or four thousand rubles. The head tax levied for the children of Cossacks, who are few in number, amounts to very little.

The above comprised the Crown revenue while I was in Kamchatka. In Okhotsk ten per cent was collected on all merchandise which came into the country. Perhaps these revenues have been augmented since Bering Island and several other sea otter islands have been consolidated.

## CHAPTER VIII

### TRADE<sup>1</sup>

The preceding material has indicated the nature of trade in Kamchatka, how it was carried on at first when the country was conquered by the lone agents and Cossacks who were sent out from Iakutsk to collect iasak. The way in which the Cossacks traded with the Kamchadals has been discussed; here we will treat of the period when real merchants began to come. We will discuss the merchandise which they had for sale, and finally the advantages of this trade.

Although at the beginning of the conquest of Kamchatka there were several persons who came with the iasak collectors and carried some small goods, they were not considered as true merchants, because they spent less time in trade than in military service, which they were forced to perform as were the Cossacks. Occasionally the prikaz officials even put the merchants in command of these

<sup>1</sup> Some persons suppose that for more than 150 years there have been trade relations between the Kamchadals and the Japanese, that the latter gave them all sorts of iron and copper vessels and needles and knives in exchange for furs. Even if this were true, however, this could not be considered organized trade. It is generally agreed that the Japanese only carried on this traffic on such occasions as storms cast their ships up on these shores. Other persons, on the other hand, maintain that the Japanese ships came regularly twice a year to the mouth of the Bolshaia River to trade; but this has yet to be confirmed. The truth is that the Kamchadals never carried on trade among themselves or with their neighbors. As for the Japanese, they came to the Kurile Islands, where they exchanged various merchandise for furs and eagle feathers, as previously described.

Cossacks; there was scarcely a one of these small merchants who did not long for the rank of Cossack, a distinction which was not accorded to everyone, since, in spite of military service, they remained known for the most part as merchants, and at the first revision they were classified in the census as posada dwellers, and soul tax payment was imposed on them as well as on native inhabitants of that region. No one would have ordered anyone to leave a place so distant, newly discovered, and so sparsely populated.

It was the factors and the agents of the wholesale merchants who began to take a large stock of merchandise, first to Okhotsk, and then to Kamchatka at the time of the second expedition. At that time, there were so many men employed on the expedition that there was a great market for all kinds of goods, so much to the advantage of the seller that some of the petty merchants who had come from Russia on ships as sailors, built up the trade to such an extent that over six or seven years some of them had done fifteen thousand rubles worth of business, or even more. But the other side of the picture is that this enormous profit was the downfall of those who, wishing to amass still more wealth, did not want to leave the country; they indulged in a luxurious and expensive way of life during their stay, and dared not face their employers. Thus they settled in Kamchatka, hoping that because of the distance and the small number of persons in the country, they would not be forced to return to their native land. However, they were mistaken in this, fortunately for the merchants who had sent their agents into this country.

Since the time of the Kamchatka expedition, trade in this country has



changed considerably. All the officers and soldiers who were there paid cash for everything they bought, whereas the merchants had to give credit to the natives and wait until winter to be paid. Then, in exchange for their goods, they accepted furs, at the going price in the country, which was so much to their advantage that although there was scarcely a merchant who left Kamchatka without leaving more than one hundred rubles behind in uncollected debts, which there was no hope of recovering, they nonetheless would make a double or triple profit. And finally, when one compares the exchange of goods from Kamchatka for Chinese merchandise, one finds that in spite of the expenses, which must have been very high because of the distances involved, the arduous trip, the expense of cartage and the upkeep, a thousand rubles would bring four thousand in return, as will shortly be clearly seen. But it was essential to stay not more than one year in Kamchatka, for otherwise, instead of profiting, one would run the risk of losing a great deal, for the following reasons. 1. Everyone who comes into this country sees how expensive everything is and wishes to profit from this situation; they sell everything they have for as much as they can get. They strip themselves of all their belongings, even their clothing, with the intention of leaving the country immediately. But when some unforeseen situation detains them for another year, they have to pay twice as much for the things they need. 2. The longer furs are kept, the more they lose their color, and consequently their beauty and their value. 3. Merchandise which remains in storehouses brings them no interest; not to mention the hardship and boredom of living in this country, the poor standard and high cost of living, as well as the cost of

lodging, storehouses, etc., inconveniences which one avoids by not staying long in this country.

The goods which are brought into Kamchatka come from Russia, Europe, Siberia, Bukhara, and from the Koriaks of Anadyrsk. From Europe come common fabrics in various colors, all sorts of footwear made in Kazan or Tobolsk; silk and cotton handkerchiefs; wine, in small quantity however; sugar, tobacco, various silver trifles, gold braid, mirrors, combs, imitation pearls and glass beads. From Siberia they bring various copper and iron pots, bar iron and various tools made of this metal, such as knives, axes, saws and tinderboxes, wax, salt, hemp, string for making nets (the natives like these goods very much), tanned reindeer hides, coarse fabrics and ordinary linen. From Bukhara and the Kalmyk come printed fabrics, glazed cotton in white and various colors, and other goods from that country. From China they bring various kinds of silk and cotton fabrics, tobacco, silk, coral, and needles, which are preferred to Russian needles, and other such items. From the Koriak country they bring all kinds of reindeer pelts both raw and tanned, which is the merchandise for which there is greatest demand.

Merchants can not load up too great a supply of goods to sell; for no matter how low a price they may ask, the inhabitants will only purchase goods they need at the time. Similarly the Kamchadals will buy almost nothing except things they need at the moment, no matter how low the price may be; and when they need something, they will pay four or five times the price and buy it from their compatriots. This is the reason it is not possible to determine the exact price

of goods which are taken to Kamchatka. In general it can be said that in the fall, when there are many traders, goods bring the lowest price; and they are more expensive in spring when the supplies are lower. I shall give a statement of the purchase price of certain goods, and the price for which they were sold in Kamchatka, so one may see the profit merchants make on this transaction.

Merchandise	Purchase Price		Sale Price	
	rubles	kopecks	rubles	kopecks
Foreign linen, per arshin	1	-	2	3
Heavy coarse fabric, per arshin	-	12	-	50-60
Blue woolen stockings	-	25	1	-
White woolen stockings	-	20	1	-
Russian linen, per arshin	-	4-5	-	25-30
Chinese fabric, per length	-	40-50	1 1/2-2	-
Good quality damask, per roll	10	-	20-25	-
Lesser quality damask	5	-	10-12	-
Damask worth seven <u>lans</u>	3	-	5-6	-
Silk, per <u>gin</u>	3-4	-	10-12	-
Chinese serge	-	50	2	-
Taffeta, per length	3-4	-	8	-
Boots	-	60-80	3	-
Bukhara cotton, per length	3	-	7-8	-
Cotton from the Kalmyk land	-	40	1	1 1/2
Wrought tin, per pound	-	25	1	80

Merchandise	Purchase Price		Sale Price	
	rubles	kopecks	rubles	kopecks
Copper kettle or pot	-	35	1	20
Iron skillet	-	15	1	-
Hatchet	-	15-20	1	-
Usolsk knife	-	12-15	1	-
Iakutsk knife	-	5	-	20-30
Flint and steel	-	5	-	25
Glass beads	-	15	1	-
Coral, per hundred	-	25	1	-
Ukrainian tobacco, per pound	-	10	1	80
Rye flour	-	25	4-8	-
Tallow, per pud	1	80	4-5	-
Cow's butter, per pud	1	20	6-8	-
Wax, per pud	-	-	20-60	-
Tanned reindeer hides	-	50	1	50
Young reindeer hides, with hair	1	-	2	-

In Kamchatka ten thousand rubles worth of merchandise will sell for thirty or forty thousand rubles profit; if taken to Kiakhta, on the Chinese frontier, goods from this country will bring only double the investment. Thus it is easy to understand that a merchant would make an immense profit if he could spend a year selling his goods in Kamchatka or in Kiakhta when it is permitted or in Irkutsk at Fair time.

The only things taken out of Kamchatka are pelts: sea otter, sable, fox and a few otter. As has always been true, there is no cash in this country, and all goods are paid for in furs. For example, one buys so many goods in exchange for a fox pelt, which is worth one ruble. However today things are beginning to change, and one no longer buys things at a set price of one ruble per fox, but according to the fluctuating price of furs, or even in ready money.

All goods taken out of Kamchatka are taxed ten per cent at Okhotsk, and for furs other than sable, the tax is five out of each bundle of forty.

## CHAPTER IX

### VARIOUS ROUTES FROM IAKUTSK TO KAMCHATKA

In some respects it is pointless to describe the various routes which lead to Kamchatka, since there are several which have been abandoned; it would be sufficient to indicate the ones used most frequently. The curious reader, however, will perhaps not be sorry that all are to be described herein. This description will help him to become acquainted with the various Russian establishments, which people in each zimovie or ostrog pay iasak, how many troops are sent from Iakutsk, and what a slow and difficult task it is for the iasak collectors to travel in this country. In fact, even when they were fortunate enough not to fear anything at the hands of their enemies, they still had two formidable foes, hunger and cold, from which they often died.

It is commonly known that the Cossacks only travel in winter; they have no other provisions than those they carry with them on their small sleds. They have to cross vast uninhabited areas where frightful storms frequently rage. It takes several days to cross such places, and they soon consume all their food supply and find themselves faced with the horrors of hunger. Sometimes they resort to eating their leather saddlebags, their thongs and their boots, and particularly the soles of their shoes, which they roast. It seems almost beyond belief that a man can live ten or eleven days without eating, but this is something that does

not surprise anyone in this country, since few of those who have made this journey have not had to face this cruel experience.

From Yakutsk one goes to Kamchatka by descending the Lena River to its estuary in the Arctic Ocean; from there one goes to the mouths of the Indigirka and Kovyma rivers, and then overland from Anadyrsk to the Sea of Okhotsk and the Oliutor Sea, which one coasts either in a boat or on foot. This route, however, in addition to being very long is also very dangerous, for even when the season is warm, the ice has melted, and the wind is favorable, it never takes less than a year to make the journey. If the weather is bad, the ice can break up boats, and perhaps it may take two or three years to finish the journey. It is 1960 versts from Yakutsk to the mouth of the Lena River: from Yakutsk to Ust-Viliusk zimovie, 351; from there to Zhigansk zimovie, 465; from this latter place to Sikatsk zimovie, 224 1/2; from there to the Lena, 500 1/2; from there to Ustiansk zimovie, 419. Isak collectors were formerly sent along this route into the three zimovies of Indigirk, Alazeia, and Kovyma; but today it has been completely abandoned.

There is another way entirely by land. From Yakutsk one goes to Aldansk, and from there to Verkhoiansk zimovie; then one goes past the zimovies Zashiversk, Ujandinsk, Alazeisk, middle and lower Kovyma to Anadyrsk ostrog. Then one goes to Lower Kamchatka ostrog and from there to Bolsheretsk ostrog, by way of Upper Kamchatka ostrog.

Verkhoiansk zimovie is 554 versts from Yakutsk; it is located on the shore of the Iana River which falls into the Arctic Ocean, 310 versts from the estuary. It takes five weeks to go this way with pack horses. Generally six soldiers are

sent from Iakutsk. There are one hundred ninety-five Iakuts who are under their jurisdiction and pay iasak, which consists of ten forties<sup>1</sup> plus ten sable and fifty red fox.

Zashiversk zimovie is 360 versts from Verkhoiansk zimovie; it is situated on the right bank of the Indigirka River, which falls into the Arctic Ocean. It is possible to go from one place to the other in fifteen days with horses, but one has to go very fast. If one takes his time, the journey requires about a month. There are eighty-six Iukagirs who pay iasak amounting to eleven forties of sable and one additional sable each.

Podshivernoë, or the winter quarters on the Middle Indigirsk, which the geodesists have not described, is situated on the shore of this river, two days' journey from Zashiversk; thirty-two Iukagirs there pay iasak of six forties plus thirty-four sable.

Uiandinsk or Lower Indigirsk zimovie is located on the left bank of the Uiandina River, which falls into the Indigirka, 220 versts from Zashiversk; it is a five-day trip. Fifty-seven Iukagirs under the jurisdiction of this ostrog pay iasak of eight forties plus twenty-eight sable.

To these three zimovies a prikashchik is usually sent out from Iakutsk with fifteen soldiers, whose orders are to guard about forty hostages taken from the natives.

Alazeisk zimovie stands on the bank of the Alazeia River, which empties

<sup>1</sup>Sable pelts were packed in bundles of forty and such a bundle was referred to as "a forty."



into the Arctic Ocean a considerable distance above its estuary. It is 509 versts from Ujandinsk to this place, and the journey by sled takes three weeks. The iasak which the tributary lukagirs pay is eight forties plus one sable and an additional twenty sable backs, and they give only six hostages. Ten soldiers are sent to collect this iasak.

The Middle Kovymsk zimovie is on the left bank of the Kovyma River, which empties into the Arctic Ocean. It is 103 versts from Alazeisk. There are only twenty-five lukagirs there who pay iasak of five forties plus four sable.

The lower Kovymsk zimovie is located on the right bank of this same river, 442 versts from the middle zimovie. It takes three weeks to go by sled from one to the other. Thirty-two lukagirs pay iasak of eight forties plus seventeen sable.

The Upper Kovymsk zimovie is not on the route from Kamchatka; it is located above the middle one, and it takes four weeks to make the journey by sled. The iasak from thirty-two lukagirs is eight forties plus seventeen sable.

To these three settlements one prikashchik and twenty soldiers were sent; they guard twenty-five hostages.

Anadyrsk ostrog is located on the left bank of the Anadyr River, which falls into the Arctic Ocean; it is 963 versts from the Lower Kovyma zimovie, and the journey takes six weeks. There are thirty-one tributary lukagirs, who pay one forty plus thirty-eight sable, and an additional nineteen backs. I do not know the exact number of reindeer Koriaks and settled Koriaks who are under this jurisdiction, but there is every reason to believe the number is quite large,

since not only those from Iakutsk and Katyrksk pay there, but also those who live along the Sea of Beavers and the Sea of Okhotsk, as far as the uezd of Okhotsk itself.

It is 1144 versts from Anadyrsk ostrog to lower Kamchatka ostrog. It takes two weeks with laden reindeer to reach the Penzhina River. From there, one follows the coast of the Sea of Okhotsk as far as the Tigil, and from there through a mountain range to the Elovka, which one follows as far as lower Kamchatka ostrog. There is no other route.

At present one still takes this route to all the ostrogs or zimovies as far as Anadyrsk, except that in Kamchatka, the only ones sent along this route are couriers who travel rapidly on urgent business and cannot afford to be slowed down.

The third route is almost entirely by water. One embarks at Iakutsk and descends the Lena as far as the mouth of the Aldan River, which empties into the right bank of the Lena. One ascends the Aldan to the mouth of the Maia, then goes up that river to the Iudoma, and from there one goes to a place called Iudoma Cross. From there one goes overland to Okhotsk, or as far as Uratsk; from there down the Urak to the Lama Sea, and from there to the port of Okhotsk. Then one sets sail for the Bolshaia River; from there overland along the shore of Penzhin Bay. This latter route, however, is dangerous because of the Koriaks who have not yet been conquered. The natives do not make the journey from Iakutsk to Iudoma Cross, nor on the Urak, because this is a very difficult and long trip. It is fortunate when the journey can be made in summer; it was only

on the Kamchatka expedition that these rivers were used to transport all the provisions and munitions. Since that time no one has been advised to go down the Urak, possibly because of the dangerous rapids.

The fourth route, which is the one most used in summer, lies across the mountains. Since I have taken this route myself, I shall quote from my Journal. This may help make our maps more accurate, since they omit not only the small rivers, but even several of the large rivers which lie along this route, such as the Amga, Belaia, Iuna, Iunakan, etc.

From Yakutsk one descends the Lena to a small village called Iarmanka, which is ten versts from Yakutsk, opposite an uninhabited island in the river known in Yakut as Eseliala, or Bear Island. The name Iarmanka, or "Fair," may have been given this place because in summer there are many men there who go to Okhotsk and stay several days to prepare everything necessary for the voyage. They get their horses ready, pack bales and balance the packs which the horses will carry so that each pack will weigh two and one-half puds. Pack horses rarely carry more than five puds apiece, unless food or some trifles are loaded on top of their packs.

The first place of any size which one encounters beyond this is Kumakhtai Khortyga, a sandy hillock, on top of which the Yakuts have hung a number of horses' manes from the trees as offerings so they may be able to ascend and descend without danger. It is about three versts from Iarmanka to this place. Between this small hill and Iarmanka, there is a lake on the left side, about two versts in circumference, which the Yakuts call Namtaga.

Beyond that there is another small hill called Bulgunniakhtakh, then a small lake called Oliong, and then desert areas called Bukulug, Ese Elbiut, Usun-Erga and Siubtiur Dolgota. These various places are not more than one verst apart. The first place we stopped after leaving Iarmanka was Siubtiur Dolgota.

The next day we crossed the Sola River, which is one verst beyond the place we had stopped; it rises one hundred versts away in a mountain range. The mouth through which it falls into the Lena is about six versts from the place we halted. The horses were fed near Lake Kytchugui Tylgyiakhtak. The following areas lie between this lake and the Sola: the desert regions of Kuterdiak and Urasagag, Lake Olbut, the desert Miogurte, Kaigaramar, and Lakes Ulakhan and Tylgyiakhtak. These various places are nearly equidistant from each other, and the place where we watered our horses is about eleven versts from the Sola.

The same day we crossed Baryniaktak, Cygynakh, the uninhabited areas of Koromok and Konmoror, and then spent the night near Lake Uriun-khamus, which is about thirteen versts from the place where we had fed our horses. The area around the lake to the left of the trail is inhabited by some Iakuts, who were brought here in 1735 to maintain the post.

The following day we passed Lakes Khatyli and Chupchulag. We watered our horses at the shore of Lake Arylake, which is about three versts long, from west to east, and one or one and one-half wide. We spent the third night on the shores of Lake Talba, where there is a station maintained by the Iakuts. Between the place where we fed the horses and the spot where we camped for the night, there is the district called Kordiuten, and Lakes Kutchugui and Narygana; the

first is to the right of the trail, and the second to the left, opposite one another; and finally, the large lake Ulakhan Nokragana, which is fed at its upper reaches by the Tangaga River, which rises in a chain of mountains and flows for about forty versts. We followed up the shore of this river, and on the way passed a small river called the Kululdzhu, which empties into the north bank of the Tangaga, near the place we passed, about four versts from its mouth. We passed by Lakes Kyttagai, Syngasalak and Bittagai. The first is four versts from Kululdzhu, the second lies five versts beyond that, and the third is another four versts beyond. One verst before Lake Bittagai we saw the small Tangaga River. Lake Talba, where we camped for the night, is one and one-half versts above the place where we crossed the Tangaga, and one verst from Bittagai. That day we made about thirty versts.

Seven versts beyond Lake Talba lies Lake Kyl-Sarynnak; three versts farther on is Lake Kuchugui Bakhaldzhima, and two versts beyond lies Lake Ulakhan Bakhaldzhima. They are all on the right hand side. One and one-half versts from the latter, there is a mountain range, and beyond are the desert regions of Kuoalag, Keindu, Namchagan and Kurdiugen. Then one comes to Lake Satagai, where we stopped to rest our horses. This lake is about twenty versts from Lake Talba. In the afternoon we passed near the lakes Chabyichai, the three lakes Bysyktaka, Khanchalu and Ala-Ambaga. A post has been established on the latter, and is maintained by Yakuts. We stopped there to spend the night. All these lakes are on the right hand side of the trail. The distance from the place where we rested our horses to this post is about thirteen

versts.

Two versts from Ala-Ambaga there are two small lakes both called Vuerdaty, which are quite close to one another; one verst farther there is another small lake called Egdegas. One and one-half versts from there is the river Kokora, which empties into the left bank of the small Tatta River, twenty-two versts below the place where we came onto its shores. We descended it as far as its mouth. We passed the following points in between: Ogusbasa, which is a lake, the desert Kabychzha, lakes Kutchugui, Ulakhan and Kyllagy, and the deserts Ulus, Icy and Kurannakalas; lakes Detchimei, Lumparyky, Urasalad, Kuagaly and Chiranchi. One verst before the latter, on the banks of the Kokora, there is a post called Tatskaia, where one usually takes the horses which are sent to the place where one passes the Belaia, to relay the ones which have come from Yakutsk; this is also the place to buy animals in order to have enough to eat in the deserts. Travellers have the animals walk in front of them, then when necessary they kill them one at a time and divide up the meat. The meat is roasted and eaten; and this goes on as long as there are animals left. They take the smallest animals they can find, so that each beast will provide only as much meat as can be eaten; for otherwise the meat spoils and becomes full of maggots, in spite of the fact the men have taken the precaution of cooking it. Cossacks sent from Yakutsk maintain this place. It is fifteen versts from the area where we reached the banks of the Kokora.

We spent the night at this post, and sent our horses ahead to the Aldan River as relays for the ones from Yakutsk; we provided ourselves with everything

we needed, and then continued our journey. We passed the lakes Imitte and Talbakana, about two and one-half versts from the mouth of the Kokora, which falls into the Tatta on the right hand side of the trail. We also passed the small lake Menga-alasa, and crossed the deserts Karakak, Titiktiak, Tuarapsysy and Bulgunniaktak, as far as the desert Tittiaka, where we spent the night on the shore of a small lake. We travelled about fifteen versts that day, and from Lake Talbakana we followed the shore of the Tatta River without ever wandering far away from it.

Beyond the Tittiaka one finds the deserts Choaraitta, Menne, Kurottok, Tabalak and Susun-sysy, and beyond that the small Toulia River, which falls into the Tatta about four versts from the place where we crossed it. The distance from this latter place to the site where we spent the night is about twelve versts.

Thirteen versts from the Tioula the Namgara River empties into the left bank of the Tatta, five versts from the place where we passed it; it rises in the mountains, and flows for about sixty versts. The most noteworthy places one encounters between these rivers are Lake Kungai and three deserts, the first of which is Saadakhtiak, and two others near the Namgara River, both of which are referred to as Bitigitte.

Beyond the Namgara there are Lake Nigra and the deserts Tiuliugutte, Kaialakhu, Bulguniaktak and Taaldzhiram. Two versts before one reaches the Tatta, there is a post called Dzhoksogonsk, where Cossacks are sent from Iakutsk. It is fourteen versts from the Namgara River. We spent the night there. At noon we rested our horses near Lake Kungae, which is four and

one-half versts from the Tioula.

After we had made this part of the journey, we passed the Tatta River; the natives told us that the mouth is one hundred sixty versts from the place where we passed it, and the source one hundred fifty versts. There are two small lakes near there, both called Kullu, one on the right, and the other on the left of the trail.

Four versts from the Tatta we passed the small Leebagana River, which flows into the right bank of the Tatta about four versts from the place we passed it; one verst above this river is Lake Eliegniok, to the right of the trail.

A half-verst from the Leebagana, we passed Bes-Uriak (Sosnovka) River, which falls into the right shore of the Leebagana, a short distance from the place we crossed it; five versts farther on is Badarannak River, which flows into the right bank of the Bes-Uriak. We went about two versts to reach the source of the latter, and from there crossed a range of mountains and reached the headwaters of the Tiugutte River, which flows for thirty versts and then empties into the left bank of the Amga River. The distance across the mountains is about three versts.

As we descended along the left bank of the Tiugutte, we passed near Lake Utia; then we crossed the small Kyrtak River, which flows into the Tiugutte eight versts from the source of the latter and from the source of the Byeltyly, the distance between being two and one-half versts. We spent the night on the shores of the small Bysyttaka Lake, three versts from the small Byeltyly River. We rested our horses at midday near Lake Umia, which is almost half way



between Tiugutte and Kurtak.

Two versts from Lake Bysyttaka, we crossed the small Bes-Uriak River, which flows into the left shore of the Tiugutte. Two versts beyond the Bes-Uriak, we passed along the shore of the small Lake Maicharylak; and five versts above we passed the small Tiugutte River which we had left.

One verst beyond, we found a large lake, Tigutte, and then the lakes Taraga, Maralak, Tygytty, another one also called Maralak, and then Melkei. The Tygytty is more than five versts long, lying south to north, and in some places it is more than one and one-half versts wide. The other lakes are small. A half-verst beyond Melkei, is the ford of the Amga River. It is about eighteen versts from the Bysyttaka to this ford. Lake Tygytty is not more than one verst from the Amga, for from the lake to the place where one passes this river, we went about four versts upstream.

The Amga is from forty to fifty sazhen wide, and falls into the Aldan, about one hundred versts from the place where the trail passes it. The distance from the mouth of the Amga to the mouth of the Tatta, according to the report of the Yakuts, is about one hundred versts, and according to the Journal kept by the naval officers who navigated on the Aldan, about one hundred nineteen versts. This river is interesting, in that Russian peasants were once sent there to try to cultivate the soil; but the attempt was not successful, for the children of the settlers not only forgot agriculture, but even their native tongue; they adopted the customs and language of the Yakuts, and only differed from them in religion. We had to spend the night there.

The next day we passed the Amga, which we ascended for about two versts, as far as the mouth of the small river Oulbuta; two versts down stream the small Aispyt River flows into its left bank. We ascended the Oulbuta to its headwaters. From there we went to the source of the small river Chiopchuna, and then descended that river to the place where it flows into the left shore of the Nokhu River. The length of the Oulbuta from source to mouth is about ten versts; it is one verst from its source to the Chiopchuna, and from the headwaters of the latter to the place where it falls into the Nokhu, approximately fifteen versts.

The points of some interest which one encounters along the Chiopchuna are Lake Darky, which it crosses, the small Lake Oiun on the left, the small Khat River, which falls into its left shore, and the lakes Tabkhalak and Kotalak. The Khat falls into the Chiopchuna three versts above its mouth.

The Nokhu rises in the mountains and empties into the Aldan, about one hundred twenty versts from the headwaters of the Aldan, and forty versts from its mouth.

Beyond the Nokhu we went about twelve versts across the mountains to the small Soirdanak (Crow) River, which falls into the left shore of the Nokhu eight versts below the place where it can be forded.

Two versts from the Soirdanak is the small Elgei River which empties into the Nokhu ten versts from the place where one crosses it. It is about twenty versts long. We stopped there and rested our horses near Lake Darky, which is located in the Chiopchuna.

One verst from the place where we made our stop, the Elgei receives the waters of the small Aktakhachi River, which we ascended for a distance of eight versts. We left it, and four versts farther on we found the small Chipanda River, and followed its shore for a distance of sixteen versts as far as the Aldan, which flows into it on the left bank. In this distance of sixteen versts, the Chipanda crosses three lakes: Bilir, Driu, and Chipanda.

The Aldan is a large navigable river which empties into the left shore of the Lena, eight hundred versts from Belsk crossing, and two hundred versts or more below the town of Yakutsk.

The Aldan can be crossed by boat at Belsk. It was named this because the Belaia River flows into its right bank twenty-four versts farther up. The mouth of the Chipanda is eight versts below the place where one crosses it, and from its mouth to this crossing place, one ascends the Aldan.

From the Jarmanka to Belsk crossing, we found much forested country, mostly larch or tamarack and birch. There are some firs on the shores of the Bes-Uriak and the Amga, but it was only along the Elgei that I saw poplar.

After we had crossed the Aldan, we passed close by the following places: Lake Chichimyk, which is two versts long and one verst wide; the small Kereatm River, which falls into one arm of the Aldan near the place where we crossed it; and the Oulbut River, which empties into the same arm. We went up to the headwaters of Lake Rubuliaga, and from there reached the Belaia, which is called the Taidaga in the Yakut language. It rises in the mountains and empties into the Aldan twenty versts from the place where we reached this

river. From the place where one crosses to this place it is about thirty versts, and fifteen versts to Lake Chichimyk. It is five versts from this lake to Kereatm River, one verst more to Oulbut, from there it is four versts up the Oulbut to Lake Tiublyiaga, and from this lake to the headwaters of the Oulbut, one verst; and two versts from there across the mountains to the Belaia. We spent the night there, and fed our horses near Lake Chichimyk.

We continued along our route and ascended the Belaia. We crossed several rivers which fall into its right bank: the Sasyl, the Ulak, and the Lebini. We stopped near the latter to spend the night. We rested our horses three versts before we reached the Ulak River. It is six versts from our campsite to the Sasyl, seventeen versts from the Sasyl to the Ulak, and from the Ulak to the Lebini, three versts.

The following day we crossed the Argadzhiki River, which falls into the Belaia. The Argadzhiki is about seven versts from the Lebini. We rested our horses near Tyllaikhaia Mountain, or Wind Mountain, which it is called because of the blustery winds which blow continually. It is about nine versts from the Argadzhiki.

The Black Forest commences five versts from this mountain, and extends for ten versts. We went about three versts into it and stopped to spend the night.

The next day we left the forest and stopped to spend the night: an exceptionally heavy rain forced us to stay until four o'clock in the evening.

Five versts beyond the Black Forest we found the Khodzhalá River, and twenty versts beyond that, the Chagdala; both empty into the left bank of the Belaia.

As we went up the Belaia, we crossed it three times; first between the Ulak and Lebini Rivers; second, two versts before the Atgadzlike; and the third time, near Wind Mountain. Since the summer had been very dry, we forded it easily, our horses scarcely more than chest deep in the water; but when there has been a great deal of rain, one must wait several days; at such times the current is extremely rapid and it is very dangerous to cross by raft, for the swift current often carries the raft a distance of several versts onto rocks, or drives it onto tree trunks hidden under the water; or the raft may break up, and the men who were on it will be drowned.

There is a great deal of timber along the Belaia, such as pines, firs and arch or tamarack. There are also a good many birch and dwarf willow, known in this country under the name of ernik<sup>1</sup> and talnik<sup>2</sup>. There are currants, and in some places junipers; and there is an especially large amount of wild rhubarb, so much indeed that one might think it had been planted.

We followed the shore of the Chagdala for twenty-three versts. In a distance of sixteen versts, we were obliged to cross it seven times; for this reason we made a stop at the place where we crossed it for the fourth time, eight and one-half versts from its mouth. We rested our horses five versts before we reached this river.

Fifteen versts from the place where we crossed it for the seventh time,

<sup>1</sup>Betula pumila. Gmelin, Flora Sibirica.

<sup>2</sup>Salix pumila. Ibid.

lies the river Lunakan, which is about thirty sazhen wide, and which flows into the Aldan. We ascended it as far as its source.

Ten versts from the place where we reached the shores of the Lunakan, there is another small river which flows into its left shore. The Yakuts could not tell us its name. A half-verst from its mouth, there is a lake called Bus-Kiol (Frozen Lake), because the ice never melts there, even during the hottest days of summer. It lies between steep mountains which are called arantsy in this country; it is about one hundred fifty sazhen long and eighty wide. The ice is about three-quarters of an arshin thick, and closely resembles spring ice. It is bluish, rather rough on the surface, and full of holes which are undoubtedly caused by the sun. When one crosses near the mouth of this river, it is always cold, even on the hottest days.

Over this ten-verst distance we had to cross the Lunakan eight times. Above the place where we crossed it for the eighth time, it divides into two branches, one flowing southeast to northwest, and the other east to west. At the confluence of these two branches, after we had crossed it for the ninth time, we followed along the shore of the branch which flows west; it was only eight versts to its source. In this distance we had to cross it three times.

According to the observations the naval officers made, it is only thirty-one versts between the mouths of these two rivers which flow into the Aldan.

We rested our horses at the headwaters of this river. We went approximately twenty versts across the mountains, and for the second time

found ourselves on the banks of the Belaia, which we crossed one verst upstream, and then reached the Bukakana River, which enters the right shore of the Belaia three versts beyond. We spent the night there.

The next day we went up the Bukakana for about six versts and left it in order to reach the source of the Akyru River, which flows into the Iuna after a distance of fifteen versts. From the Bukakana to its source, the distance is about eight versts. We followed its shores for seven versts, then moved away from it for three versts, and rested our horses. We continued by ascending the Iuna, never straying far from its banks. We reached the place where we could cross and stayed there twenty-four hours to let our horses rest. We crossed it eighteen versts below the Akyru. The Iuna empties into the Aldan.

Lake Tumusaktak-kiol is on the right of the trail, three versts from the Iuna crossing. Then one finds the Ancha River, which is nearly as large as the Iuna, into which it flows approximately five versts from the place where we encountered it, and seven from Lake Tumusaktak-kiol. We continued on for about eight versts and stopped for the night.

The next day, thirteen versts from the place we had camped, we crossed the Anchur River, opposite the mouth of the small Temen Iulbiuniia or Verbliuzhe River, which enters its left shore; we ascended the Verbliuzhe, and after we had gone ten versts, we stopped for the night at Kuchugui-taryn, a small glacier, which lies across the valley and is two hundred sazhen wide and fifty long. The ice is a half-arshin thick, and is otherwise quite similar to the ice of Lake Bus-Kiol, which has already been described. Kuchugui-taryn

is about ten versts away from the Verbliuzhe.

Five versts from Kuchugui-taryn, as one follows alongside the Verbliuzhe, there is another glacier which is seven sazhen long and three wide; ten versts farther, along the same river, there is a third; and five versts from that is the source of the Akanacha River which empties into the Iudoma.

Eighteen versts from the headwaters of the Akanacha, on the left side of the river, there is a glacier called Kapitan taryn, which is three versts long and one verst wide. We stayed there for twenty-four hours.

Fifty versts beyond Kapitan taryn there is another glacier called Kem taryn, which is one verst long and about the same in width. The place where we spent the night is twenty-four versts away, and the next day we rested our horses near the glacier. We camped eight versts farther on, near a lake.

Beyond this there are two sections called the large and small gari, and in the Yakut language, Kem-ort and Kutchugui-ort. The large gari extend for a distance of five versts, and the small gari, fifteen. From the lake to the beginning of the large gari the distance is about twelve versts. The small gari begin at the end of the large ones. We rested our horses between these gari, and stopped to spend the night when we had left the small ones.

Fifteen versts from the small gari, the Iudoma River flows; it empties into the Maia. They have erected a crucifix at the place where one can cross the river; and for this reason the place is called Iudoma Cross. On the left bank of this river there are two buildings where the naval officers stayed so they could receive and send out the munitions which were taken to Yakutsk during



the Kamchatka expedition. There are two iurts there, one tavern for soldiers, and five storehouses. One verst lower there are also a building, a winter dwelling, and a storehouse where provisions and munitions destined for Okhotsk were kept.

A half-verst above Iudoma Cross, the small Ala-agus River enters the left bank of the Iudoma. We followed this river for about ten versts, and then made camp for the night. There was no suitable place to graze our horses in the vicinity of Iudoma Cross.

We broke camp the next day after noon, and after we had passed Lake Sas, ten versts away from the place where we had stopped, we left the Ala-agus and made camp. We spent the night three versts from Lake Sas, on the shores of another small lake.

The following day we arrived on the shores of the Urak River, which empties into Lama Sea, twenty versts from the mouth of the Okhota, as was explained earlier. We followed its shores downstream. It is twenty-two versts from the place where we had camped to this river.

Five versts from the place where we reached the shores of the Urak, the Korshunovka empties into its left bank. Opposite its mouth a post has been established, where everyone who goes to or from Okhotsk stops. We spent the night there.

Sixteen versts beyond this post, on the left bank of the Urak, there is an area called Shangina-gar, and a zimovie which has the same name. Fourteen versts beyond, there is a supply depot called Uratsk, where the naval laborers

stayed when they built flatboats to be used on the Urak to carry all the necessary provisions for the Kamchatka expedition. We spent the day there, and stopped for the night at Kononov post, five versts from the supply depot. We rested our horses four versts from Shangina-gar.

Beyond that one finds Talankino zimovie; it is situated on the left bank of the Urak; then one encounters the river Popereshnaia, which also empties into the left bank of the Urak.

From Kononov post to the first zimovie, it is twenty-three versts, and from there to the Popereshnaia, sixteen versts. It was there that we spent the night. Three versts below the Popereshnaia there are rapids on the Urak River.

As we proceeded along this river, we were obliged to cross it five times. The first ford is at the very place where we first came onto it; the second is six versts below the Korshunovka post; the third, four versts below Shangina-gar; the fourth is three versts before one comes to Talankino zimovie; and the fifth is one verst below the rapids.

About thirteen versts from the Urak, when we had passed through the mountains, we reached the Bludnaia River, which falls into the right bank of the Urak thirty versts below. We spent the night there.

Sixteen versts from there is the river Luktur, which empties into the Bludnaia, on its right shore, near the place where we crossed it.

Beaver Field is nine versts from the Luktur and two versts from the mouth of the Bludnaia; it is two versts long. We crossed the Bludnaia and again

found ourselves on the Urak, which we crossed for the fifth time five versts from Beaver Field. Finally, three versts from the ford, we left it and made camp.

Twelve versts from there is the Popereshnaia, which falls into the Dzholokon River thirty versts below the place where one crosses it.

We spent the night on the banks of the Popereshnaia, and the next day we reached and crossed the Metu River, which empties into the right bank of the Okhota near the ford. From there we descended the Okhota as far as the old Okhotsk ostrog, and crossed the Dzholokon and Amunka rivers. We spent the night in the old ostrog. We had rested our horses on the banks of the Metu River. It is ten versts from the Popereshnaia to the Metu; from there to the Dzholokon, fifteen; and from the latter, it is the same distance to the Amunka; and it is only one verst from the Amunka to the old ostrog.

There were only three buildings in the ostrog. It was located on a fork of the Amunka, which one had to cross at this point in order to go to the port of Okhotsk. This fork empties into the Okhota River three versts below the ostrog.

The next morning we reached the port of Okhotsk; it is only six versts from the old ostrog. At that time there was a chapel dedicated to Our Savior, a government office, a house for the government officials, five buildings for the residents, four houses for the naval officers, six other lodgings and two taverns; but now many more buildings have been added.

We left Iarmanka on the ninth of July, 1737, and reached Okhotsk on the

nineteenth of August; we spent three days at Belsk crossing, one day at Khora-  
mas, two days at Kapitan-taryn, and one day at the small garis. In all, we  
spent seven days in camp and traveled for thirty-four days.

In regard to this route, one might say in general that it is not bad from  
Iakutsk to the Belaia crossing, but from there to Okhotsk, it is as miserable  
and difficult as one could possibly imagine; one has to continually follow the  
river banks or cross over wooded mountains. The banks of the rivers are filled  
with huge rocks and round stones; it is amazing that the horses were able to  
walk on them; a number of the horses were lamed. The higher the mountains  
are, the muddier they become. On the summits there are huge marshes, and  
places filled with quicksand. If a packhorse becomes mired there is no way to  
pull it out; and when one is walking one is absolutely horrified to see how the  
earth quivers in waves for ten sazhen.

The best time to make this trip is from spring until the month of July. If  
one waits until August, there is a great risk of being caught by the very early  
snows which fall in the mountains.

We remained at Okhotsk until the fourth of October, 1737, waiting until  
the ship Fortuna, which had returned from Kamchatka on the twenty-third of  
August, to be refitted and made ready to sail.

There are five types of settled Lamuts who live around Okhotsk: the  
Iviansk, Adgansk, Sholgansk, Uiairsk and Niuichinsk; they all pay iasak.  
Chalik is the chief of the Iviansk; four Lamuts pay iasak. The Adgansk are  
ruled by the chief Undykan-Dedianovich; twelve of them pay iasak.

Kuruka is chief of the Sholgansk; four pay iasak. The Uiairsk are ruled by Sharygan; three pay iasak. Dzholdoikur Buinakov is chief of the Niunchinsk; nine pay iasak.

These various Lamuts live in the vicinity of Okhotsk, along the Okhota and Kukhtuia rivers, and along the sea. They live on fish. Each man pays one sable and one fox.

There are seven tribes of reindeer Lamuts who come into Okhotsk to pay iasak: the Uiagansk, Gotiikansk, Gorbikansk, Kelarsk, Edzhgansk, Dolgansk and Kukuirsk. I do not know either the names of their chiefs nor how many pay iasak, because at that time there were no reindeer Lamuts around Okhotsk to tell me.

When the ship had been refitted, the commander at Okhotsk gave orders on the thirtieth of September that it be loaded, and that it be ready to sail by October fourth. We left the Okhota estuary two hours past noon, and by evening we had lost sight of land. At about eleven o'clock we saw that our ship was taking on a great deal of water, so that the men down in the hold were standing in water up to their knees. Although two pumps were used constantly and everyone bailed water with pots and kettles and anything he could find, the amount of water did not diminish. The ship was so heavily laden that the water was already coming in through the portholes. The only way we could save ourselves was to lighten the ship. The weather was calm, which greatly helped us for it was not possible to return to Okhotsk. We threw overboard everything on deck or fastened around the ship; but this had no effect and so

we jettisoned about four hundred puds of cargo in addition, taken at random. Finally the water began to subside. We had to keep the pumps going, for in a few minutes the water would rise two inches. Everyone on the ship, except for those who were ill, had to take his turn working the pumps.

We remained in this unfortunate condition until the fourteenth of October, and all the while suffered constantly from the cold weather and snow mixed with rain. At last we reached the estuary of the Bolshaja River. Our situation was very serious. The sailors did not understand the ebb and flow tides. Taking the high tide for the low, they did not tack soon enough into the foaming waves, which even in the calmest weather rise in this estuary at the beginning of both high and low tide, and which the north wind makes even higher. The men were in despair. These waves were so wild that they swept right over the ship, which was very badly split in many places. There was no hope of entering the mouth of the river, because of the unfavorable wind and the swiftness of the outgoing tide. Some felt we should put back out to sea and wait for the tide to change. If we had followed their advice, we would have been lost, for a strong north wind continued to blow violently for more than a week. We would have been carried out into the open sea where, in that period of time, the ship would certainly have sunk. But fortunately for us the captain decided to follow the advice of those persons who felt it would be better for us to be carried up on shore. We were cast up on shore one hundred fathoms from the mouth of the river, on the south side. Our ship was soon completely out of water, for the tide continued to go out.

In the evening, when the tide came back in, we cut the mast. The next day we found nothing but the planks from the wreckage of our ship; the rest had been swept away by the sea. Then we saw the full extent of the danger which had faced us, for all the ship's planks were black, and so rotten that one could easily break them by hand.

We stayed on the coast in some balagans and huts until the twenty-first of the month, waiting for boats which were to be sent to us from the ostrog. During the time we stayed there, there were almost constant earthquakes; but since they were very slight, we attributed the movement we felt and the difficulty we had in walking to our enfeebled condition and to the violent and rough passage we had had on the sea. It was not long until we realized our mistake, for several Kuriles who came to the place where we were staying told us that there had been a very severe earthquake, and that the level of the sea water had risen a great deal, which I have previously discussed.

We left this place on the twenty-first of October, and the next day we reached Bolsheretsk ostrog in the evening.

The route from Yakutsk to Kamchatka is as long and difficult as the return trip is quick and easy, for these reasons: 1. The ship which makes the crossing generally goes to Kamchatka in the winter, and leaves for Okhotsk in a better season, when the sea is not dangerous. The weather then is very good, and the days are long; one has nothing to fear but being becalmed. 2. One can go by water to Okhotsk as far as the place where one crosses the Belaja, or

even, if one wishes, as far as the Aldan River, and from there by land to Iakutsk.

The most difficult part of the route is the part to Iudoma Cross. From Okhotsk, we spent seven days reaching this river on which we embarked; counting the time we stopped, it took us five days to reach the Maia River; but we only sailed during the day. The next day we were at the mouth of the Maia, and from there to Iakutsk, which was the end, counting the days we did not travel at all, it took eighteen days. We went down the Iudoma in less than three days, not counting the time that we stopped; but when one goes up, it takes at least five or six weeks. This will give some indication of the swift current in these rivers, and how difficult it is to navigate them.



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Krasheninnikov's Opisanie Zemli Kamchatki has appeared in several languages since its first publication by the Academy of Sciences in St. Petersburg in 1755. The abridged English translation by James Grieve was published in London in 1764 and reissued by Quadrangle Books in Chicago in 1962. A German edition appeared in Lemgo in 1766. The abridged French translation was published in Lyon in 1767, and the complete French edition appeared in Amsterdam in 1770. A second Russian edition was issued in 1768. The third edition appeared in Polnoe Sobranie Uchenykh Puteshestvii po Rossii, a two-volume work published by the Academy of Sciences in St. Petersburg in 1818-1819. The new critical Russian edition, edited by Lev S. Berg, was published by the Academy of Sciences in Moscow and Leningrad in 1949.

Study materials are scarce. Kamchatka was so remote and difficult of access it was almost unknown until Krasheninnikov's work brought it to the attention of the scholarly world. Contemporary writers were more interested in recounting unrest, uprisings, wars and other affairs of European Russia. To go to Siberia was "to go to the wolves." Even today school children jokingly refer to pupils in the back row as "sitting way out in Kamchatka." Archival records are scarce. Many have been lost or destroyed in fires; others have been dispersed to Leningrad, Moscow, Tomsk, Irkutsk, Yakutsk, Khabarovsk and other cities. Many are simply not available for study at the present time.

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