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No. 15

**KAMCHADAL CULTURE AND ITS RELATIONSHIPS
IN THE OLD AND NEW WORLDS**

Chester S. Chard

1961

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PREFACE

In its original form, this study was submitted in January, 1953 to the Graduate Division of the University of California as a dissertation in partial satisfaction of the requirements for the degree of Doctor of Philosophy in Anthropology. At that stage it had benefitted greatly from the helpful criticisms of Drs. T. D. McCown and R. F. Heizer, to whom the author is indebted for their interest and assistance.

The subsequent (1954) revision of the original for publication owes much to Dr. Frederica de Laguna, for whose encouragement and critical reading of the manuscript, as well as unpublished data, I am deeply grateful.

To the Director of the Peabody Museum at Harvard, Dr. J. O. Brew, and its Librarian, Miss Margaret Currier, I should like to record my appreciation for their perennial hospitality. Translation of certain Japanese publications was made possible by a grant from the Wenner-Gren Foundation for Anthropological Research, Inc., whose assistance is gratefully acknowledged. Professor John A. Harrison of the University of Florida, Director of the Institute for East Asiatic Studies, Inc., very kindly made available his excellent and then unpublished translation of Mamiya Rinso's "Description of Northern Yezo".

Chapter Three, in a slightly amended form, appeared previously in the Kroeber Anthropological Society Papers Nos. 8 and 9.

[Note: The manuscript stands as completed in November, 1954. It was decided that subsequent developments do not sufficiently affect the picture presented to warrant further revision].

CHAPTER I

INTRODUCTION

The Kamchadal are a much-neglected people, anthropologically speaking. Heavily Russianized before the birth of anthropological science, they have been passed over by field workers interested only in "unspoiled" primitive peoples. Nor has their aboriginal culture ever been pieced together as has been the fortune of many other vanished peoples. The existing source materials are at least as adequate as for many of the latter, but they are not too readily available or readable for the average English-speaking anthropologist. As much as anything, however, the Kamchadal have probably seemed a rather unimportant, out-of-the-way group, lying outside the corridors of important culture-historical movements, and hence hardly worth the time and trouble. All these factors have added up to make the Kamchatka Peninsula somewhat of a blank spot on the map as far as the science of man is concerned. But in recent years attention has begun to be focused on the Aleutian-Kurile bridge as a channel of at least cultural currents, if not of migration, between the Old and New Worlds, and a glance at the map will show that the Kamchadal are the keystone of this bridge. A knowledge of their culture has thus become desirable for anyone interested in the culture history of the North Pacific area or in the problem of New World cultural origins in general. Such a knowledge can be expected to contribute to the elucidation of these subjects. At least, as long as the lacuna remains, we can never be fully sure of the ground on which our hypotheses are based. These considerations led to the present endeavor to cast some light on this shadowy people.

The purpose of this study is an attempt to analyze aboriginal Kamchadal culture in order to ascertain, insofar as possible, its origins, relationships and role in the culture history of the North Pacific. It does not purport to be a complete ethnography, although it should serve as an introductory one. It was felt that instead of merely lining up raw materials for others to work on, it would be of more immediate value and use to culture historians to analyze them, selecting the significant features and presenting the deductions which can be drawn therefrom, with special attention to their wider implications. The present work, therefore, may thus be regarded rather as a contribution to the culture history of the North Pacific area than as a study of the Kamchadal per se.

An undertaking of this sort involves problems even when dealing with a well-documented people; when applied to a case like the Kamchadal, it encounters severe limitations. Any comparative or analytical study is only as good as the materials on which it is based. Given the character of our sources, and the impossibility of ever supplementing them except archaeologically, it may be admitted at the outset that only very modest results can reasonably be expected. Still, whatever can be salvaged is certain to prove of value.

Our knowledge of the aboriginal Kamchadal is derived almost entirely from the accounts of two naturalists, Steller and Krasheninnikov, whose mission was to describe the peninsula of Kamchatka, its geography, natural history, resources, history and inhabitants. It is fortunate that they devoted as much attention to the latter as they did, and left us what are for the 1740's remarkably good accounts. Still, the picture they give us is incomplete, often vague and even conflicting. Moreover, they are describing a people

whose culture had already received a shattering blow and was on the verge of utter disintegration, although older individuals could still recall the days before the conquest. Nevertheless, as observers of the contemporary scene rather than as ethnographers trying to ferret out memories of an earlier day, the two writers did not take much advantage of such informants. Other drawbacks will be discussed in detail in the chapter on sources. There are no reliable illustrations of Kamchadal cultural items except the dog sled, nor museum specimens this side of the Iron Curtain. An analysis of material culture without either of these can only be very superficial.

Under the circumstances, a balanced, rounded analysis of the culture is impossible, since we can take for study only those traits on which sufficient data are available regardless of their interest or diagnostic value. The result is bound to be unrepresentative, with undue emphasis on some sectors and the complete omission of others. For those who believe that to be valid, analysis of a culture must be total, the conclusions will naturally be suspect. The writer can only suggest that under certain conditions half a loaf is not only better than none, but may even be welcome.

A successful comparative study also presupposes equally adequate data for all neighboring peoples. While in our case the information is at least as good for groups to the north, east and south, our knowledge of the population immediately to the west is so scant as to be almost non-existent, and distributional data for Siberia as a whole are inadequate to say the least. The validity of our conclusions is bound to be lessened accordingly. But having determined to exploit these materials for what they may be worth, in spite of the limitations involved, we must next consider the methodology to be employed for attaining the goals we have set.

"The only universally applicable approach to...historical reconstruction," writes Linton (1936: 367), "is that of the study of trait distributions and the subsequent analysis of these distributions."

Our procedure will therefore be to reconstruct Kamchadal culture, then to analyze this construction into definitive traits, and to trace the distribution of these among adjacent peoples in all directions, as far as possible. The significance of these distributions will then be explained, and conclusions based thereon will be presented which may or may not elucidate our basic problem, that is, to ascertain the origins, relationships and role of the aboriginal Kamchadal culture.¹

1. Our general approach has been initially inspired by the work of De Laguna, whose method "is one we owe to our Danish colleagues, and they to Nordenskiöld...to take the culture as a whole...and to discover of what types and variants of types it is composed. Then take each type with all its variants and study their history and distribution in other cultures...wherever they can be found. In this way we may learn that the Dorset culture, for example, is made up of such and such types, each at a particular stage of its own development, and each linked by a complex series of relationships with variant forms in other cultures. The types, now reassembled in the Dorset, fall into groups: some, ancient and found only in ancient horizons; others, ancient but shared by many later Eskimo cultures, some restricted to certain horizons and certain areas, through which they have traveled in certain directions; others, finally, are local and peculiar to Dorset culture alone. Thus we see our culture as a kind of onion-like growth, built up by the accretion of many layers which we can peel off again to exhibit the history of its development." (De Laguna, 1946: 110).

In view of this goal, we shall endeavor to reconstruct the pre-Russian culture, rigorously excluding anything suspected of being introduced or modified, and mindful that our sources mirror a situation of rapid acculturation. Archaeological data from Kamchatka will be utilized wherever pertinent, since it seems of recent date and attributable to the historic peoples. Inasmuch as the ethnic and cultural identity of the so-called Kurile population of extreme southern Kamchatka is open to question, any data known to refer to this area are excluded for purposes of this study. That these people differed from the "true" Kamchadal in many ways cannot be denied; but whether it was a subculture reflecting local conditions, a Kamchadal population culturally influenced by the Ainu, a mixed Ainu-Kamchadal group, or an actual occupation of Kamchatkan soil by the Ainu from the Kurile Islands, cannot be conclusively determined in the present state of our knowledge, although the writer inclines toward the latter view, so it has seemed in the interests of accuracy and caution to treat them as a separate entity.

We shall briefly present the results of this reconstruction in the form of a synthetic sketch of aboriginal Kamchadal culture as a living, functioning entity in its setting, to create a background against which to set our subsequent analytical studies, and which will, we believe, render the latter both more valuable and more valid.

This ensuing analysis will be based on the total body of information at the writer's disposal regarding this culture. The information represents the results of an exhaustive search of all likely sources; it seems improbable that it could be significantly augmented, except by the results of extensive archaeological work in the area, should that ever be undertaken. As many

traits will be isolated as the nature of the comparative data renders feasible; no selection or emphasis will be exercised other than that imposed by the sources. The analysis will thus be as objective and total as possible under the circumstances. Since negative traits can be as important diagnostically as positive ones, absences of expectable traits will be included wherever possible, but only where the absence is beyond doubt, and not merely due to faulty information. It is not pretended that the resulting traits constitute quantitatively comparable units. Inasmuch as no statistical treatment will be attempted, this disability should not affect the validity of the results.

"In defense of the study of abstracted elements of culture it need only be said that culture traits differ in distribution, and hence must be studied separately if distributions are to be studied at all" (Burrows, 1938: 6).

When following these traits into neighboring cultures, every effort will be made to insure that the trait is actually comparable qualitatively, that it was present in the other culture at the same relative period of time, and is aboriginal. The abuses and misuses of the comparative method are only too obvious, and we do not intend to view Kamchadal culture of 1740 and Chukchi culture of 1900 as if they were contemporaneous; the latter, like any culture, has undoubtedly suffered change in the interim. Nor do we suppose that Ainu culture of 1900 necessarily reflects what Ainu culture may have been at the time when it could have influenced that of the Kamchadal. Such pitfalls we shall attempt to avoid to the best of our ability by preserving a critical attitude, and in cases where doubt exists in our mind, it will be clearly indicated. Lastly, our studies of trait distributions will

be primarily limited to the geographically contiguous area surrounding Kamchatka, within which similarity in an element of culture, unless explicable otherwise, may fairly be regarded as evidence of historical relationship. Where wider distribution data are readily available, however, they will be cited to throw additional light on the historical significance of the trait in question.

After drawing our deductions from these distributions, we shall also consider the evidence of linguistics and physical anthropology. Only then will we venture to formulate answers to the questions toward which this study was directed. Although we cannot pretend to offer solutions, especially in view of the inadequacies of our data, we can at least hope to point up the most rewarding problems and leads for future work in the culture history of this area.

CHAPTER II

SOURCES

Since a study such as this is only as good as the material on which it is based, it seems advisable to include some discussion of the existing sources on the Kamchadal. These begin with the first explorer of Kamchatka (1697), the illiterate cossack Atlasov, who, many years after the event, dictated from memory two very brief reports on the new land.¹ Aside from this unsatisfactory background, they contain little of value for us, the only item of interest being the mention of pottery as still in use.

It is to Bering's Second Expedition (1733-1747) that we are indebted for the great bulk of our information on the native culture of the Kamchadal. Two members of the scientific staff--G. W. Steller, Adjunct of the Academy of Sciences, and S. P. Krasheninnikov (then a student)--have left us illuminating descriptions of the land and people. Steller,² a brilliant young naturalist highly regarded by such contemporaries as the great Linnaeus, was one of a number of German scientists in the Russian service at that time. The accuracy and reliability of his observations and reports thereon are attested by his zoological treatises. He was tireless in his investigations. Had he been able to devote more time to the Kamchadal, we could have expected a truly monumental ethnographic work. As it was, his chief interest lay in

1. These were published in Ogloblin, 1891.

2. For an exhaustive biography, tending almost to eulogy, but richly documented, see Stejneger, 1936.

accompanying Bering on the latter's voyage to America, and, secondarily, in the natural history of Kamchatka. However, he had a deep and genuine solicitude for the plight of the natives, and expended much energy in attempting to ameliorate their condition. The sections of his work dealing with the Kamchadal are admirably objective, especially for the era in which he wrote.

Remarkable though it is in many ways, Steller's work must nevertheless be read with caution. Since he did not travel widely in Kamchatka previous to writing it, and was busy with other things, he made free use of the reports and observations of his subordinate, the student Krashennikov, who had been much longer in the peninsula and had seen far more of it. However, he did not deign to credit the latter, and it is not always possible to identify with certainty the source of the information, even for one thoroughly acquainted with the works of both men. There are instances where Steller cites as a broad general fact a statement by Krashennikov which referred narrowly to some specific locale and, it is only fair to add, the reverse is also true. Nor is it always clear whether Steller is referring to a strictly aboriginal usage, to current practices under Russian influence, or to the customs of the cossacks settled in Kamchatka. There is also frequent uncertainty whether the trait described refers to the Kamchadal specifically or to Kamchatka in general, in which case it could as well relate to the Korayak or the Kuriles. All in all, it should be obvious that this is no source to be consulted at random on some topic or other--which has been precisely the use made of it in anthropological circles. The value of sporadic citations from it as evidence in topical studies is open to question.

But there is more to come. Steller wrote abominable German. He had received an excellent classical education, but was practically illiterate in his native tongue. There are passages whose meaning is not clear even to a well-educated native speaker. The finished manuscript was despatched to St. Petersburg in 1743 before he undertook his most extensive journey, his only visit to the Kamchatka River Valley, heart of the Kamchadal territory, and the eastern coast. This manuscript was subsequently utilized extensively by Krasheninnikov in compiling his own work, but thereafter vanished. Steller died in 1746 on his return journey to Russia; the papers still in his possession passed into the hands of his colleague and compatriot, Fischer. We do not know of what these consisted, but it is inferred that the original notes for Steller's report were included, since it is generally conceded that Scherer, who published Steller's Beschreibung von dem Lande Kamtschatka in Frankfurt and Leipzig nearly 30 years later, obtained the manuscript from Fischer. Stejneger (1936: 392) speaks of this as "hastily and carelessly written notes, many of which no doubt were hard to decipher even for Steller." It seems obvious that they must have required considerable editing, and one wonders how well the published book reflects what Steller really meant to say. Scherer apparently left much to be desired as an editor and publisher: Stejneger (1936: 494, 532) refers to his "dubious literary activities" which had made him a frequent target of the critics, and again to his "odious reputation". Scherer himself in the preface begs the reader's indulgence for the many uncorrected errors in the text.

Krasheninnikov,³ who, as we have said, was a student assistant on the scientific staff of the Second Bering Expedition, was one of Russia's very first native-born scientists; as such his star afterwards rose rapidly during the anti-foreign reaction (1746), and he soon became a professor of the Academy of Sciences and Rector of the University. He was charged with preparing a complete report on Kamchatka in 1745, and drew heavily on Steller's official reports which the latter had forwarded to the Academy from the field, including the "Description of Kamchatka". He had, however, copious material of his own, gathered in the course of nearly four years' stay in the peninsula, during which time he traveled widely. Krasheninnikov strikes one as a very keen observer and a meticulous recorder of detail. Our only knowledge of Kamchadal ceremonies comes from his eye-witness accounts.

Krasheninnikov's Opisanie Zemli Kamchatki was published in St. Petersburg in 1755, the year of his death. There have been three subsequent Russian editions and a number of translations.⁴ The best of the latter formed part of Chappe d'Auteroche's Voyage en Sibirie (Paris, 1768)--although the illustrations should be viewed with reserve--and was reprinted with minor omissions in Amsterdam (1770). There is a German re-translation of the latter (Leipzig,

3. A lengthy eulogy of Krasheninnikov (containing, however, the limited biographical information available) appears as the introduction to the latest edition of his work (Krasheninnikov, 1949: 13-84).

4. Data on these from Andreev, 1939, plus critical examination of the editions available to the writer.

1771). The English translation (London, 1764) is greatly abridged, the principal ethnographic section being omitted entirely. It is not recommended. Two French editions were based on this English one (Lyons, 1767; n. p., 1768), and are consequently to be avoided. There is also a similar Dutch translation (Harlem and Amsterdam, 1770) and a German one (Lemgo, 1766). Even the best translation, however, cannot be relied upon in matters of detail or for points of doubtful interpretation.

The present writer has made use of the new (1949) fourth Russian edition. This is no mere reprint but a monumental work of painstaking scholarship, based on the original manuscript and exhaustively annotated by a group of distinguished scientists, chief among them being the world-famed geographer and historian of the Bering Expeditions, L. S. Berg. All material crossed out in the original manuscript is faithfully reproduced in footnotes wherever it occurs. This is of particular value, since the most frequently deleted phrase is "according to Steller", or words to that effect. Thus for the first time we are on solid ground with regard to the sources of Krasheninnikov's information. Previously, when he and Steller agreed on some point, it was regarded as double proof; now we know that in most such cases he is simply quoting. With close scrutiny the identical wording of the text also indicates this on occasion. In addition to a long introductory study of Krasheninnikov and his work, there is a sizeable appendix containing his hitherto unpublished papers, notes and correspondence relating to Kamchatka preserved in the archives of the Academy of Sciences. The book has every appearance of a careful, thorough and competent job, and may be used with confidence. It renders obsolete and unreliable every previous edition or translation.

However, many of the dangers inherent in Steller's book apply here also. One cannot always be certain whether Krasheninnikov is referring to the Kamchadal or to another Kamchatkan people, to an aboriginal usage or to a current practice under Russian influence, or to the ways of the local cossacks. He is also apt to introduce without warning material from any part of Siberia, and this is not always clearly differentiated. Steller was also guilty of this, it should be noted.

In view of the above, plus the unsatisfactory translations which Western anthropologists have relied on previously, it can be seen that use of Krasheninnikov's description as authority in the form of random citations should be viewed with reserve. Our task would probably have been far simpler in many ways if only one of these works had survived, for in many places they do not agree, and where they do it is more often than not due to pirating. One cannot help but reflect on how many cultures we know from but a single source, and wonder what effect the reports of another observer would have on the clear, simple picture we enjoy in these cases.

"After Steller and Krasheninnikov there is nothing comparable. De Lesseps (1787), Dobell (1812), Kittlitz (1826) made only more or less fleeting trips through a part of the country. Erman (1829) went from Tigil across to the Kamchatka River Valley and ascended it to Petropavlovsk; his journey contributed unquestionably the most to scientific knowledge [up to 1850]. Otherwise Kamchatka has been visited for the most part only by navigators [Cook, La Perouse, Krusenstern, etc.] at some coastal point or other. Scientific attention was directed to other parts of the Russian Empire, and Kamchatka was all but forgotten" (Ditmar, 1890-1900: vi).

But the crucial point is that within three decades after the visits of Steller and Krasheninnikov, the Kamchadal were almost extinct and their culture with them. Thus the subsequent accounts are of little use primarily because there was nothing left to describe except a mongrel population leading a Russianized life. Erman⁵ was a keen and sympathetic observer; his information would be very valuable if it were of much use to us. Ditmar, author of the above quotation, spent the years 1851-1855 in Kamchatka making a geological survey and also carried out the first haphazard archaeological digging,⁶ but he was a hundred years too late. Hopelessly later still were Tiushov (1896-1897) and Komarov (1908-1909), who also give admirable pictures of life in Kamchatka in their day,⁷ as does Bergman for his (1920-1922).⁸

All these sources have been brought to bear on our task, but their total contribution is depressingly little. We have further endeavored insofar as possible to examine the published work of every person known to have visited Kamchatka prior to the Revolution, as well as the Russian archival materials on the region for the first half of the 18th century.⁹ These tedious months of investigation are scarcely reflected in the present study, but at least they may render it unnecessary for anyone else to waste the time and effort on a similar search.

5. Erman, 1848.

6. Ditmar, 1890-1900.

7. Tiushov, 1906; Komarov, 1912.

8. Bergman, 1926.

9. These latter have been published in Pamiatniki Sibirskoi Istorii (1882-1885), and Al'kor and Drezen, 1935.

Archaeological work on Kamchatka, published and unpublished, is well summarized in two recent papers (Rudenko, 1948; Antropova, 1949c), although all the original published sources have been examined in addition.

For our comparative studies on neighboring cultures we have in each case relied mainly on the standard ethnographic monographs where these were deemed comprehensive. Otherwise we have tried to secure as complete a coverage as reasonably possible under the circumstances, but make no pretense to its being exhaustive. For wider distributions, especially in the New World, we have relied heavily on the studies of Birket-Smith and of De Laguna.¹⁰

10. Birket-Smith, 1929; Birket-Smith and De Laguna, 1938; De Laguna, 1934, 1947.

CHAPTER III

THE KAMCHADAL: A SYNTHETIC SKETCH¹

The first Russians to explore Kamchatka (1697) found the peninsula occupied by three nations: the northern half by the **Koryak**, the southern extremity by the Kuriles, and the territory in between, the bulk of the southern half, by a people calling themselves Itelmen, but referred to by the Russians as Kamchadal, apparently a corruption of the name applied to them by the Koryak.

There is every reason to believe that the Kamchadal had occupied this territory for a considerable length of time. Their culture was very well adapted to its environment. Moreover, archaeological remains all point to a prehistoric culture not appreciably different from that found by the Russians. Outside of their neighbors to the north and south, with whom a limited trade was evidently carried on, and possibly occasional Japanese castaways, the tribe had no knowledge of or contact with the world outside of Kamchatka prior to the date cited above. Their culture contained a number of unique or peculiar features, had no obvious outside affinities as a whole, and its origin or origins are obscure.²

1. References to sources, where practicable, will be given at the end of paragraphs. Much, however, is based on the general impressions conveyed by the descriptions of Steller and Krashennikov.

2. Rudenko, 1948.

Neither the people nor their culture survived the impact of conquest by more than a few decades. A series of unsuccessful revolts in the early years was put down with such wholesale bloodshed that a substantial portion of the nation was exterminated. The conditions of life resulting from Russian rule, with its dislocations and burdens, brought on an impoverishment of the shattered natives and a consequent rapid decline, climaxed about 1768 by a smallpox epidemic that wiped out three fourths of the surviving population. The remnants became almost completely Russianized, and Kamchadal culture, except in some of its economic aspects, ceased to exist.³

When we compare this brief history with that of other Siberian peoples who also lay in the path of Russian expansion, the culture seems completely lacking in vitality. On the other hand, it must be admitted that probably no other tribe suffered such a rapid succession of shattering blows.

The ensuing sketch endeavors to picture Kamchadal culture as it existed at the time of the first Russian contact.

The southern half of the Kamchatka Peninsula is a land of magnificent volcanic scenery and wretched climate, heavy precipitation the year around, rigorous gale-swept winters, and brief foggy summers when vegetation shoots up with tropical rankness, seemingly overnight. The numerous rivers are rapid and shallow, the only major waterway being the Kamchatka which flows through the heart of the Kamchadal territory. The eastern coast of the peninsula is steep and rugged, the western low and bordered by a belt of tundra. The vegetation, a blend of that encountered in surrounding regions,

3. Okun', 1935: 102-104.

is abundant and, except for trees, varied. Thick forests of birch and poplar grow in the upper parts of the river valleys, with larch and fir as well in the central part of our area. Scrub forest, numerous stretches of swamp and tundra, and the barren volcanic peaks make up the rest of the country. The rivers in season are literally overflowing with salmon and similar fish; the oceans abound with sea mammals, at least on the Pacific side; and the waters and swamps teem with wildfowl. The land fauna is also abundant: bear, wild sheep, wild reindeer are common, as well as many valuable fur-bearers. All in all, it is a land richly endowed by nature despite the difficult terrain, the unpleasant climate, and the undependable weather.⁴

It is virtually impossible to reconstruct the physical type of the original Kamchadal, owing to the absence of any cranial material, the near-extinction of the native stock, and the heavy interbreeding of the survivors with the Russians long before the days of modern scientific investigation. However, early writers clearly differentiate them from the Ainu-like Kuriles, and the available information suggests a general resemblance to the type of the Reindeer Chukchi and Koryak: a type whose affinities appear to be with the Eskimo rather than with the Indians or Siberians.⁵

4. Extensive descriptions of the environment are given by many writers. Among the best are those by Erman, 1848; Ditmar, 1890-1900; Komarov, 1912; and Bergman, 1926. For a succinct survey of the vegetation, see Komarov, 1927-1930, I: 328-336.

5. Debets, 1951: 116-118.

The Kamchadal language is customarily grouped with Chukchi and Koryak into a single closely-related linguistic stock, formerly believed to exhibit structural similarities with the Indian languages of the Northwest Coast of America. The inclusion of Kamchadal in this group has apparently never been conclusively demonstrated, although repeatedly asserted by such authorities as Bogoras and Jochelson. However, the likelihood is strong that the relationship is a valid one, and seems to be accepted by modern students of Siberian linguistics such as Jakobson.⁶

Excluding the mixed-Ainu tongue spoken by the Kuriles of extreme southern Kamchatka, there appear to have been three main dialects of the Kamchadal language: one on the west coast, one on the east (including the valley of the Kamchatka River), and one in the Tigil River area to the north. The latter contained many Koryak words.⁷

In southern Kamchatka, as on the Northwest Coast of America and in the Amur-Sakhalin area, a seasonally prodigal environment enabled a provident people to lead a sedentary life of comparative luxury and leisure during half of the year. The busy summer and fall were devoted to exploiting the tremendous salmon run and the ample resources of the local flora. The products of both were prepared and stored in quantities deemed sufficient for the requirements of the long winter. This done, the people were free to devote themselves to a season of social and ceremonial activity, of visiting and general merry-making until the appearance of the first fish and plant growth

6. Jochelson, 1930; Jakobson, 1942; but see also Debets, 1949: 17.

7. Jochelson, 1928a: 16.

in late spring, plus the emptiness of their larders, prompted the resumption of subsistence activities.

Fish was the staff of life for the Kamchadal, and it was around fishing, consequently, that their life revolved. Their activities of necessity were geared to the habits of the local salmon species, and motivated by the need of exploiting them successively to the fullest extent during the relatively brief period in which they were available to each community. At these times everyone able to bear a hand worked frantically from dawn till dusk--the men bringing in the fish, the women cleaning them and hanging them up to dry. The greatest quantities were secured by means of weirs fitted with basket traps, but nets of several types made of nettle fibre also played a major role. In addition, fish were speared on occasions unsuited to these mass-production methods. With all types of fishing the dugout canoe was an important factor. The species which bulked largest in the Kamchadal economy were Oncorhynchus keta, O. nerka, and O. kisutch. Such an abundance of riches made the people choosy, and a number of other available and edible fish were utilized primarily or solely for dog food.⁸

Except for the tiny fraction which could be consumed fresh, this huge catch was destined for winter provisions, and was prepared in one of two ways: split and hung up to air-dry, becoming yukola, the staple of the country; or buried in pits to sour and decompose into a foul-smelling gruel beloved of man and dog. Owing to the damp climate of Kamchatka, air-drying was always more or less of a gamble; much of the catch inevitably rotted before it was properly cured, and not infrequently the entire winter's supply

8. Steller, 1774: 154-166; Krasheninnikov, 1949: 298-310.

would be thus lost, posing a grave threat of starvation unless the loss could in some measure be recouped from late-running fish. When cured, the yukola was stored in the balagans (pile structures) at the permanent settlement, safe from animals and relatively dry. (Wherever necessary, the entire population moved in summer to more advantageous fishing stations).⁹

An important post-conquest economic activity was rendering fish fat by stone boiling in dugout canoes filled with water and cut-up fish--the fat being scooped off the surface. However, Steller asserts that this was never done in aboriginal times, only oil from sea mammals being used.¹⁰

Next in importance to fishing in the Kamchadal economy was the gathering of wild vegetable products. This was the exclusive business of the women. Group gathering expeditions were apparently in some cases an occasion for a sort of ceremonial license, male trespassers, for example, being roughly handled.¹¹

The Kamchadal exploited the possibilities of the local flora to the fullest extent. Steller, a botanist among other things, remarked in amazement that there was not one plant whose properties--good or bad--they did not know. Everything edible was sought out and utilized, and much of the rest was put to household or medicinal use. This included sea plants cast up on shore.¹²

The nettle (Urtica platyphylla) was the principal utility plant, being the sole source of fibres for cordage and thread, and hence the essential

9. Steller, 1774: 168-170.

10. Steller, 1774: 174-175.

11. De Lesseps, 1790: 87-88.

12. Steller, 1774: 78-79, 95; Krasheninnikov, 1949: 226-237.

raw material for the manufacture of fish nets. It was gathered in late summer, left to dry, and processed at leisure during the winter. The grass called eheu (Carex laevirostris?) was combed into a soft substance of many uses (e.g. diapers, boot linings or stockings, many ceremonial functions). A tall grass (Elymus mollis) was woven into mats, raincoats, baskets, and containers of all sorts. "Sweet Herb" (Heracleum dulce) took the place of sweetening, and was also important ceremonially. The cossacks discovered in short order that vodka could be made from it also. The stalks of kiprei (Epilobium angustifolium) contain a pith extensively used for food.¹³

But the chief vegetable food of the Kamchadal, and their substitute for flour or cereals, was called sarana. These were the bulbs of certain members of the lily family (especially Fritillaria kamschatcencis and Lilium avenaceum),¹⁴ which were put to a variety of culinary uses. The women dug up as many of these as possible, but the greatest source of supply was from the nests of field mice (Microtus kamschaticus), each of which contained a winter store of about two-thirds of a bushel of sarana and other edible roots, all cleaned, dried and sorted out by kinds. Since this mouse is subject to periodic migrations and population fluctuations reminiscent of the lemming, it could not be depended on every year as a regular source of supply; but a year when this mouse was abundant was a good sarana year in consequence, and

13. Krashennikov, 1949: 230-233, 237-238; Steller, 1774: 80-88.

14. Illustrations of these two plants appear in Komarov, 1927-1930, I: plates iv, xi.

cause for great rejoicing. In plundering these mouse hordes the Kamchadal women took great pains never to remove all the contents, believing that the mice would commit suicide in despair, and their services thus be lost.¹⁵

Among other important vegetable foods should be mentioned the anti-scorbutic wild garlic (Allium ursinum), whose leaves are the first edible greens in spring, by which time many Kamchadals had suffered a touch of scurvy from the winter diet. The bulbs of these were also stored. There is also a wide variety of berries--Lonicera, Rubus, Prunus, and Vaccinium species for the most part--which were extensively gathered.¹⁶

Mention should also be made of the alder (Alnus incana), whose bark was widely used to dye leather red; and the birch, whose bark, as in all boreal regions, served a variety of purposes, except that it was never used to construct boats.¹⁷

The Kamchadal pharmacopoeia was impressive in its size and range, though in many cases of dubious efficacy (e.g. infusion of rhododendron for venereal disease). But this people was well aware of the deadly properties of aconite (Aconitum Fischeri is the commonest local species),¹⁸ and employed it effectively as an arrow poison.¹⁹

16. Steller, 1774: 77-78, 88-89; Krasheninnikov, 1949: 227-233.

17. Steller, 1774: 75; Krasheninnikov, 1949: 224-225; Erman, 1848: 286.

18. Komarov, 1927-1930, II: plate xii, illustrates this plant.

19. Steller, 1774: 93-96, 236, 362-366; Krasheninnikov, 1949: 239-241.

Hunting of land animals played only a small role in the native economy, and the rather abundant faunal resources were very little utilized, in contrast to the thorough exploitation of plants and fish. The average Kamchadal does not seem to have been interested in hunting until pressed by necessity, which is understandable in view of the relative ease with which the bulk of his livelihood was obtained.

Bears yielded a great variety of useful products, were abundant, and brought great honor to the hunter. Still, only a small number seem to have been slain. They were either shot with arrows or killed in their den by blocking it up with logs until the bear no longer had room to move, then despatching it with a spear through a hole made in the roof. Mountain sheep were esteemed for their flesh and skins, and their horns made into cups and spoons. They were hunted on occasion with the help of dogs. Though wild reindeer were available, it was apparently less effort to obtain reindeer skins from the Koryak by trade. The abundant furbearers--even those whose pelts were prized--seem to have been little hunted in pre-Russian times. Although sable hunting is described by all writers as a major industry of Kamchatka, the methods described are identical with those of Siberia and were evidently introduced by the Russians. There does not seem to have been much interest in sables in aboriginal times--certainly not sufficient to justify such laborious techniques of hunting as those described.²⁰

Fowling, by wholesale methods, was more to the Kamchadal taste. Quantities of waterfowl were clubbed from boats or rounded up by dogs while moulting. Flocks of ducks were caught in autumn by cutting artificial flyways

20. Steller, 1774: 113-128; Krasheninnikov, 1949: 243-250.

through the woods linking bodies of water, and rigging nets in these that could be raised in an instant when the quarry was within reach. Visits were also made to offshore seabird rookeries, both for eggs, which were gathered in great numbers, and to secure the birds themselves by means of nets or nooses.²¹

While it is customary to assign to sea mammals a very unimportant place in Kamchadal economy, and to hold up the Kamchadal, in scornful contrast to their seafaring neighbors, as landlubbers without the sense or ability to utilize the rich marine fauna available to them, it is possible that this picture has been overdrawn and deserves re-examination. There is no evidence, it must be admitted, that the Kamchadal proper ever hunted whales; stranded specimens were eagerly and fully utilized, but were not numerous enough to fill all the needs. Most of the latter had to be met by hunting the smaller sea mammals, primarily seals, which supplied essential illuminating oil, skins for many important uses, and the prized blubber which may have been a dietary necessity. Such hunting was a major seasonal activity, and in my opinion played a more important part in the Kamchadal economy than the other forms of hunting--at least for that part of the population that lived within reach of the coasts. And there are even indications that inland dwellers made annual trips to the sea for this purpose. The elaborateness of the ceremony to insure an abundant future catch of seals, described by Krasheninnikov, is a clear indication of the importance of this hunt in the

21. Steller, 1774: 180-183, 187, 190-191; Krasheninnikov, 1949: 315-316, 321-322; Erman, 1848: 325, 330.

Kamchadal mind. The preferred methods of taking seals were to club them when asleep on shore or on islets, and to close off river mouths with nets when a number of the beasts had entered. They were then driven back into the nets, entangled, and killed from boats. But they were also stalked in seal-skin disguises and harpooned--possibly on the ice. Sea lions were hunted to some extent as well--always on land--by parties using several harpoons and arrows. On the east coast, there is evidence that fur seals were hunted at sea in baidars and harpooned. Sea otters were being taken on the ice floes soon after the conquest, but this may have been in response to Russian demand, though it utilized undubitably native techniques.²²

Kamchadal cookery--the end result of all these varied food-gathering activities--was apparently a highly-developed art, and comprised a large variety of dishes including some very complicated mixtures of pounded roots, berries and fat. Ordinary meals, however, usually consisted of fish--fresh, dried, or rotted--stone-boiled in a wooden trough, or meat similarly prepared when available, sometimes with roots or herbs. They disliked roasted food and nothing was eaten warm; cooked food had to get cold before it was regarded as fit to serve.²³

Whale and seal blubber was greatly esteemed. The cooked blubber would be served in strips, which were crammed into the mouth until it would hold no more, then cut off at the lips and swallowed whole. To store blubber for future use, it was prepared by baking in an earth oven to remove excess oil,

22. Steller, 1774: 98-112; Krashennnikov, 1949: 271-284.

23. Steller, 1774: 322-323.

after which, we are told, it would keep for a year without spoiling.²⁴

For more casual snacks, yukola (dried salmon) was eaten plain. Another common standby was dried fish roe, usually eaten with the inner bark of birch or willow.²⁵

Except at a feast, the Kamchadals never ate together at definite hours, but individuals ate whenever they had time and inclination. Cooking was done usually once a day, in the afternoon.²⁶

The Kamchadal knew no alcoholic beverages before the conquest, though liquor rapidly became their favorite vice as soon as they had made its acquaintance.²⁷

Information on the use of the narcotic fly agaric mushroom (Amanita muscaria) as an intoxicant is very vague and conflicting. We know that the Koryak are, and have always been, enthusiastic addicts. They obtained it by trade from the northern Kamchadal, who gathered it for this purpose; but whether the latter also used it, to what extent, and whether the habit existed over the whole Kamchadal territory or was localized and the result of Koryak influence, is very difficult to establish on the existing evidence. There are definite reports of its use by the northernmost Kamchadal, and inferences that it was employed by the nation as a whole. It seems likely that it was never used on the scale observed among the Koryak.²⁸

24. Steller, 1774: 99-100, 112; Krasheninnikov, 1949: 395.

25. Steller, 1774: 322.

26. Ibid.

27. Ibid: 325.

28. Ibid: 92; Krasheninnikov, 1949: 428-429; Erman, 1848: 223, 304-306, 312, 324.

Like many neighboring peoples, the Kamchadal lived during the winter in large semi-subterranean dwellings capable of holding several families. The roof--of poles covered with turf--was supported on posts, and formed a low mound above the surface of the ground. Entrance was via a notched log ladder through the smoke hole. There was also a ventilation passage running from behind the hearth to the surface at one side which women and children used as an additional entrance. A wide low platform ran around the interior on which the inmates slept, lounged or sat. The walls were often covered with straw mats. Illumination was supplied by stone lamps burning sea mammal oil.²⁹

In the spring, when these dwellings got full of water, the Kamchadal moved into pile structures called balagans by the Russians. Several balagans belonged to every winter house, each being occupied by a single family. Those not needed for residence served as storehouses for winter provisions. The balagans were conical structures of poles and thatch set on a log platform which was supported by posts and raised about fifteen feet above the ground. There were apparently two opposing doors, a smoke hole at the peak, and a hearth. Access to the platform was by a notched log ladder. Fish and plants were hung to dry in the space between the piles, sheltered from rain by the platform, and out of reach of dogs and other animals. The balagans were far enough above the damp ground to be relatively dry, cool and airy, and probably

29. Steller, 1774: 212-215; De Lesseps, 1790: 224-228; Krashennikov, 1949: 374-376.

afforded some respite as well from the relentless insect pests that plague Kamchatka. As storehouses they were, in addition, safe from predators.³⁰

Balagans were also constructed at permanent summer fishing stations. For more temporary camps, or overnight stops when travelling, the Kamchadals erected huts of grass and thatch directly on the ground, which the Russians called barabaras.³¹

Settlements varied in size, consisting of one or several (rarely more) winter dwellings with their attendant balagans, though the earliest reports suggest that larger settlements existed in the past. Buildings were placed very close together, and the entire settlement was surrounded in many cases with a palisade or earth rampart. Settlements were always located on rivers or--among the eastern groups--on the shore. There is every indication that the Kamchadal territory was relatively thickly populated in pre-Russian times.³²

Technologically, the Kamchadal were still in the stone age. Such bits or objects of metal as had reached them were prized curios. Stone was chipped into knives, scrapers, arrow and spear points; pecked into pestles and sinkers; polished into adzes and axes. A peculiarity of the culture, however, was the absence of polished slate implements, so typical of the general area. Equal

30. Steller, 1774: 216-217; De Lesseps, 1790: 26-29; Krasheninnikov, 1949: 377.

31. Steller, 1774: 217-218; Krasheninnikov, 1949: 377; Dobell, 1830, I: 37.

32. Antropova, 1949b.

or greater use was made of bone, for everything from needles, spoons, and combs to sickles and harpoons. Whale vertebrae were made into mortars. Woodworking occupied a leading place in the technology; wooden troughs were the most important household utensils. This fact, plus the extensive use of birchbark and animal-gut containers, and of stone boiling and earth ovens for cookery, may explain the apparent absence of pottery in Kamchadal culture. Although known from prehistoric archaeological sites, it is relatively scarce and seems limited to border areas subject to outside influences. All the pottery found has obvious alien affinities. If pottery was in use as reported by Atlasov, the first Russian explorer, then even the memory of it had died out forty years later--a circumstance which strains the credulity. Hides from sea and land animals were another major raw material, supplying all clothing and footgear, thongs, straps, etc. Skins were dressed with fish roe, which was then allowed to ferment, in addition to the usual scrapings and rubbings. Tanning was effected by smoking, plus the foregoing procedures. Much leather was dyed red with a decoction of alder bark. Fish skin was used to make certain types of shoes, and yielded glue as well. Woven products of dried grasses and cordage from nettle have already been mentioned.³³

Fire was apparently produced with a simple hand drill, although the bow drill is almost universal in neighboring regions.³⁴

33. Rudenko, 1948; Krasheninnikov, 1949: 378-381, 386; Steller, 1774: 71-72, 81, 104, 127-128, 249, 304, 308, 318-319, 321.

34. Krasheninnikov, 1949: 380.

The Kamchadal costume, in Steller's opinion, was very well adapted to the local climate and activities. Men's and women's dress was essentially the same, though distinguished by minor details. Children had a flap at the rear for sanitary purposes. The under garments consisted of a long shirt and trousers--leather in summer, fur in winter. Men wore only a breech clout when engaged in household tasks, and in summer, frequently outdoors as well. The outer garment, when needed, was the kuklianka, a long loose fur "night shirt" with a hood. For greater warmth additional kuklianka could be donned, the inner one with fur side in, the outer with fur out. Reindeer and seal skins were the commonest materials, with dog skins reserved for gala attire. Garments were embellished with borders of other furs, strips of red seal leather, bunches of red-tinted seal hair or long dog hairs, etc. The fur-less side was generally dyed with alder bark.³⁵

Boots for summer were of seal skin. In winter, several types of footgear were in use. One was made of dried fish skin; another, of the hide from reindeer legs, was soled with seal skin or bear paws, which provided secure footing on ice. Women constantly wore fingerless gloves when working; men had regular gloves. Women went bare-headed, while men had caps of various sorts--including a band from which dangled flaps to protect ears, neck, etc.--for winter wear, and for summer use wooden or quill "lampshade" hats like those of the Aleut. A sort of birchbark net was worn over the eyes to protect them from the spring glare, though this may have been introduced from Siberia with the Russians. Women during this season covered their faces with bear's

35. Ibid: 387-393; Steller, 1774: 304-309, 313.

guts to safeguard their complexions. To look their best, women customarily reddened their faces with various substances, but no tattooing or other bodily adornment was practiced.³⁶

Women of fashion sought to braid their hair into an elaborate mass, supplemented by other hair to make it even more "thick and stately". Fish fat or seal oil was applied to make it shine. Men apparently wore the hair in two braids.³⁷

The Kamchadal were a dog-breeding people par excellence, although dog-driving actually played little if any role in their economic life, merely facilitating their social activities and, probably, their warfare. Sled dogs could have been subtracted from their culture in all likelihood without impairing their chances of survival. The Kamchadal could afford this virtual luxury by reason of the abundant winter food supply. One gets the impression that dogs probably constituted about the only form of wealth among them.

The Kamchadal dog sled with its saddle-like superstructure was a unique product with no obvious parallels elsewhere and appropriately reflects the superfluous nature of their dog traction. This sled was about as utilitarian as a racing sulky. It could carry the driver, riding sidesaddle in a sportingly precarious position, but no load of any sort.³⁸

Driving this odd conveyance--a feat requiring considerable skill to avoid tipping over--was done with the aid of a pointed bent staff (oshtol),

36. Steller, 1774: 62, 69, 300, 308-310, 312-313; Krasheninnikov, 1949: 390.

37. Steller, 1774: 311-312.

38. Antropova, 1949a.

which served both as a brake and as an instrument for urging on the dogs, mostly by the sound of the jangling objects affixed to it. Directing was by voice, and a good leader was an absolute necessity. The average team apparently consisted of a leader and four dogs in pairs on a central trace, although the evidence is conflicting, and there are grounds for suspecting that originally the dogs may have been hitched fan-wise. The harness was of cervico-scapular type, with the collar around the neck and one foreleg. Under spring snow conditions, traction was improved by fastening on extra runners of whale bone.³⁹

There is no evidence to indicate the existence of another type of sled for freight transport. The Russians lost no time in introducing the standard east Siberian nart to fill this lacuna, and it became an integral part of post-conquest Kamchadal culture in short order.⁴⁰

Dogs were turned loose to fend for themselves in summer, and in winter were kept tied up and fed an exclusively fish diet, dried or rotten, usually cooked into a sort of soup. A curious method of training sled dogs involved keeping them in pits out of human sight (except, presumably, for their trainer) until broken to harness. Male sled dogs were always castrated. Dogs not suitable for harness were trained for hunting. Long-haired dogs

39. Ibid.; Levin, 1946: 94-96; Langsdorff, 1814, II: 283-286; Krashennikov, 1949: 398; Steller, 1774: 374.

40. Antropova, 1949a.

were valued for their fur. Dog fur was preferred above all others, and the fanciest clothing was made from it.⁴¹

Reflecting their riverine life, the typical Kamchadal boat was a poplar dugout about 12 to 14 feet long, handled by two men who stood in bow and stern, respectively, paddling downstream and poling up close to shore. Two slightly different types existed: one in which the bow was made slightly higher than the gunwales, which were spread apart, presumably by cross-pieces; the other in which bow and stern were of the same height as the gunwales or even slightly lower, and the gunwales were not spread apart but curved inward following the natural shape of the log. The use of the latter was apparently restricted to the Kamchatka River, the former being employed everywhere else--even on sheltered bays and on the sea itself close to shore in calm weather. These round-bottomed craft had low stability and a very limited cargo capacity. For transporting bulky but lightweight loads, two dugouts would be joined by a log platform to form a sort of raft; this was feasible only on the calmer rivers and was usually confined to downstream travel. On portions of the east coast, the inhabitants seem to have had more nautical propensities, and were led to create a more seaworthy craft by sewing planks on to the gunwales of the dugout with baleen. Steadied apparently by rock ballast, they were thus emboldened to pursue sea mammals on the open ocean like their neighbors to the north and south. This boat was the only Kamchadal craft to earn the designation baidar from the Russians, the term applied to sea-going plank boats or to the umiak.⁴²

41. Steller, 1774: 133-134, 137-139; Krasheninnikov, 1949: 253-254, 396.

42. Krasheninnikov, 1949: 382-383, 710; Erman, 1848: 167-168, 318-319.

On land, summer travel was on foot and transport on the human back-- mostly with a forehead tump line. For foot travel in winter, and also for breaking trail for dog teams, the Kamchadal had both skis and netted snowshoes. The former were of common Siberian type and equipped with fur underneath to facilitate up-hill progress. The latter, like the similar snowshoes of the Chukchi and Koryak, were obviously a diffusion from the other side of Bering Strait.⁴³

The Kamchadal, like most primitives, were a completely self-sufficient people, and trade was not necessary for their survival or the proper functioning of their economy. It was apparently a convenience to import reindeer skins or clothing made therefrom from the Koryak in return for agaric and furs, but much of this commerce may well be a post-conquest development. Luxury items of Japanese origin diffused northward from the Kuriles. Steller mentions the export of nettle cordage to the Kurile territory, where the plant does not grow, in exchange for sea otter furs, but this commerce also may have grown up after the conquest. By and large, trade seems to have been casual and of little consequence.⁴⁴

Very little is known about the social organization of the Kamchadal. In general, the inhabitants of each of the smaller river systems seem to have regarded themselves as descended from a single ancestor, and as owning the

43. Krasheninnikov, 1949: 368, 400, 710; Steller, 1774: 369; Antropova, 1949a: 69.

44. Steller, 1774: 83-84, 375; Krasheninnikov, 1949: 167, 171, 369, 514.

territory in common as far as hunting and fishing rights were concerned. There would seem to have been one major settlement in each such area, any others being offshoots resulting from overcrowding. Families thus breaking away in search of greener pastures would merely move a short way along the same stream, always remaining within the ancestral domain. Settlements seem to have been composed of members of one extended family. This is further substantiated by the solidarity displayed by each settlement in case of trouble with outside groups. Marriage apparently was extra-local; it may have been matrilineal, but here the evidence is conflicting. Property inheritance was to the eldest son. But women seem to have enjoyed a high position in Kamchadal society, and participated freely in religious ceremonies.⁴⁵

Slavery of war captives existed, and the capture of slaves was apparently a major motive for war. Such slaves had to do the unpleasant and menial work, but might be released after a few years. It is hard to tell how important a factor slavery was in the culture.⁴⁶

Political structure was non-existent. War parties, however, were apparently organized by a leader of proven ability and the participants accepted his orders for the duration of the expedition. Each settlement had some leading man or men who were feared or respected, and who exercised influence in proportion to this. But they had no authority to enforce their decisions or compel agreement. Law and order was on a purely personal basis--with

45. Steller, 1774: 354; Krasheninnikov, 1949: 366, 368, 378, 435.

46. Steller, 1774: 235.

whatever support one's relatives might be willing to give. Homicide was avenged by killing the murderer in the same fashion as the victim had died--if the relatives could lay hands on him. Thieves were beaten by the victim; a chronic thief might have his hands burned, maiming him permanently to render him incapable of further theft. Thieves were, in addition, universally despised and treated as outcasts by the entire group.⁴⁷

Warfare between settlements was apparently all too frequent in the old days--motivated by desire for women, slaves and dogs (the only valuable booty), to avenge wrongs and insults, or in cases of refusal to surrender a wrong-doer. The accumulated internecine hostility greatly facilitated the Russian conquest, the invaders receiving enthusiastic assistance, or at least approval, in many instances as a means of settling old grudges.⁴⁸

As might be expected, the Kamchadal avoided open combat and preferred treachery, ruses or sneak attacks, especially on a sleeping enemy. The design of the winter houses made it a simple matter to render large numbers of able-bodied men helpless by guarding the exits. They were capable of fighting bravely in a defensive position, however, as was illustrated frequently in the early revolts against the Russians, when the Kamchadal, meeting opposition, customarily withdrew to natural strongholds. Wives and children were often killed to prevent their falling to the victor, while the men threw themselves from cliffs or rushed into the midst of the attackers to sell their lives dearly.⁴⁹

47. Ibid: 234, 355-356.

48. Ibid: 234, 236, 356.

49. Ibid: 236, 238; Krasheninnikov, 1949: 402-403.

Prisoners, especially the most valiant, were tortured. Harmless individuals were apparently enslaved, and captured women became wives or concubines.⁵⁰

The weapons employed were bows with aconite-poisoned arrows, spears and clubs. The bow was small, apparently simple in type, of larch wood covered with birchbark; arrows had bone or stone points, and were fletched with eagle feathers. Armor made of matting, or seal hide supplemented by boards, is also reported.⁵¹

In their more peaceful moments, hospitality was a point of honor among the Kamchadal. Visitors were extravagantly entertained over long periods, and presented with valuable gifts at departure--regardless of the extent of the host's resources. To refuse a guest anything he might desire would be a great disgrace.⁵²

A curious practice was connected with entering into a formalized contractual friendship relationship with another man. The prospective "friend" was invited to a special "ordeal feast" set by his host, who prepared his choicest dishes (in quantity sufficient for ten men) and heated the underground dwelling to a stifling temperature. While the guest did his best to consume the spread, the host plied him with more, and at intervals poured water on red-hot stones to make the atmosphere unbearable. The host could go outdoors at any time for a breath of fresh air, and ate nothing himself,

50. Krashennikov, 1949: 402.

51. Ibid: 404.

52. Ibid: 433; Erman, 1848: 215; Dobell, 1830, I: 83.

but the guest could neither stop eating nor leave the house without admitting defeat. When he finally gave up, he had to purchase his liberty by surrendering to the host the most valuable possessions he had with him (dogs, clothing, etc.). Later on the host must be similarly entertained, or the guest might return and expect to receive presents of comparable value.⁵³

The aesthetic side of Kamchadal life seems to have been little developed despite the abundant leisure. Decorative art was at best confined to some painted ornament on wooden or bark utensils, to which might be added the adornment applied to clothing.⁵⁴

A reed flute of rather negative capabilities was their sole musical instrument; even drums seem to have been absent. Singing, though a popular diversion, appears to have been confined to the female sex. Songs were improvised with alacrity on almost any topic.⁵⁵

The dance was probably the best developed field. All the principal dances indigenous beyond doubt to the Kamchadal seem to have been pantomimic representations of the actions and habits of various familiar animals and birds, and, sometimes, of hunters in relation to these--all very cleverly and faithfully portrayed. The favorite dance depicted realistically the courtship of a pair of bears. These performances seem to have been executed by men, while the onlookers sang an incessantly-repeated refrain. More

53. Krasheninnikov, 1949: 432-433.

54. Kittlitz, 1958, II: 317, 338; Guillemard, 1889: 75.

55. Krasheninnikov, 1949: 430-431; Steller, 1774: 333-337.

ordinary sorts of group dances in which all participated are described, but with the implication that some or most were borrowed from the Kuriles.⁵⁶

Mimicry of others was a Kamchadal talent and a favorite diversion along with story-telling. Clowns, "whose buffoonery is extremely obscene", played a part in festivities.⁵⁷

Their folklore consisted primarily of a body of satirical and "indecent" tales about the misadventures of their creator, Kutka, and as such shows great resemblance to Koryak folklore and its Raven cycle. Some of the examples known to us have considerable literary merit.⁵⁸

Turning now to the life cycle of the Kamchadal, we find that women who wished to enhance their fecundity, insure a successful pregnancy, and facilitate delivery, ate spiders during this period. Many others with the opposite objective resorted to alleged herbal contraceptive concoctions and to various types of abortion, including crushing the foetus within the womb (often with fatal consequences to the mother), an art at which certain old women were regarded as especially proficient.⁵⁹

Childbirth took place with no effort at seclusion and without any attendant fuss, ritual or restriction. Mothers generally assisted their daughters. The afterbirth was thrown to the dogs. Women resumed their usual

57. Steller, 1774: 341-342; Krasheninnikov, 1949: 432.

58. Jochelson, 1905-1908: 341; Kittlitz, 1858, I: 326-327; some of the tales are given by Steller, (1774: 255ff).

59. Steller, 1774: 198, 294, 349.

duties within a few days. The neighbors all came to see and rejoice over the newborn, but no occasion was made of it. Unwanted children might, apparently, be killed at birth, as was generally the case with one of a pair of twins or with children born during a storm. It was believed that the latter would subsequently cause bad weather, although there were ritual means of removing this disability.⁶⁰

Children were named after deceased relatives by the father when they were a month or two old; no ceremony was involved, and the name was retained throughout life, unless the child's restlessness at night indicated that it had probably received the wrong name and was being disturbed by some offended relative. In such cases the shaman was consulted and the name changed. Most names were common gender.⁶¹

Infants were generally carried about on mothers' backs inside the kuklianka, supported by a strap, being transferred at night to the breast. Children were suckled for three or four years, or until the birth of the next child.⁶²

We are told that parents indulged their children, and that the latter were disobedient, disrespectful, indifferent to affection, and in general did as they pleased. Their attitudes did not improve with age, and elderly parents were treated with contempt.⁶³

60. Ibid: 350-352; Krasheninnikov, 1949: 437-438.

61. Steller, 1774: 353; Krasheninnikov, 1949: 438.

62. Steller, 1774: 352.

63. Ibid: 353-354.

The Kamchadal usually selected wives from another settlement. A suitor went to live with his prospective parents-in-law and worked for them. When he felt that he had sufficiently ingratiated himself and proved his worth, he would ask their permission to attempt to "touch" the girl, i.e., insert his finger in her vagina. If the parents and the girl were satisfied with him, they told him to try his luck; if not, they sent him packing with nothing to show for his pains. The girl, regardless of her acquiescence, had to put up a great show of resistance, in which she was aided and abetted by all the women of the settlement. In addition to being securely bundled up in many layers of clothing, she was never left alone. Any attempt by the suitor brought a crowd of women to her assistance, at whose hands he could expect rough treatment. Sometimes a year or more would elapse before the objective was attained at a cost of many scars. However, the moment he succeeded the girl surrendered immediately and made no further resistance. They were now regarded as man and wife without more ado. Steller says the couple lived in the wife's settlement, while according to Krasheninnikov they went to the husband's, although returning later for a marriage feast with the bride's family.⁶⁴

Virginity was apparently neither expected nor particularly esteemed, although we have no specific data on pre-marital sexual activities.⁶⁵

Polygyny was general, though there were rarely more than three wives. The husband had to follow the same procedure in the case of each subsequent

64. Ibid: 343-346; Krasheninnikov, 1949: 434-436.

65. Steller, 1774: 345-346.

wife. If the wives did not get along well they were housed separately, and the husband lived with each in turn. When a wife died, her parents would often supply another daughter without requiring servitude. Widows were free to remarry, but first had to "purify" themselves by intercourse with some other man, an act fraught with magical danger and hence not too easy to arrange until the arrival of the cossacks, who gladly assumed this burden. The levirate was also practiced.⁶⁶

Women seem to have "worn ~~the~~ pants" in the Kamchadal family. Husbands are pictured as devoted and willing slaves in all matters. Women were very jealous of rivals as well as of their husbands, but also rather promiscuous. Men are described as not particularly jealous, although the paramour of a beloved wife was apt to suffer injury, and as indulging in numerous extra-marital amours. Wife exchange between friends is reported also. Divorce consisted merely in separation, both parties usually remarrying.⁶⁷

Homosexuality was widespread. Confirmed male homosexuals had to dress, act, and live as women. They were commonly kept as concubines by married men in addition to their wives, and this arrangement seems to have been an established and accepted institution.⁶⁸

The Kamchadal division of labor seems equitable. Men constructed the houses, although women thatched and furnished them; supplied the firewood; did all hunting, fishing, and skinning; prepared the rotten fish in pits;

66. Ibid: 346-347.

67. Ibid: 287-288, 345, 347; Krasheninnikov, 1949: 436.

68. Steller, 1774: 289, 350-351.

manufactured all household utensils, sleds, boats, fishing and hunting equipment; prepared all food, fed the dogs; and entertained guests.⁶⁹

Women--in addition to bringing up the children--prepared the entire fish supply (except the rotten portion), which then remained in their charge; collected about 100 different kinds of roots, **herbs**, berries, etc. for medicine and food, as well as grasses for weaving and other uses, and nettles for cordage, and prepared all of these for use as necessary; manufactured all cordage and woven products; did all skin dressing; made all clothing and footgear of every sort; and were the sole repositories of medical and surgical knowledge.⁷⁰

Although sickness was considered due to the actions of offended spirits, or to the consequences of transgressing some tabu, and a shaman was consulted to determine the specific cause and to counteract it by magical means, this did not prevent the Kamchadal from developing a very extensive practical medical repertoire, even if it was largely of imaginary efficacy. The women practitioners had at their disposal a pharmacopoeia impressive in size and variety if not in quality. How much of this was motivated by magical considerations, and how much based on a knowledge of actual beneficial results, is impossible to determine. The latter might have been an accidental adjunct of the former, or it might represent a body of practical lore mixed together with the magical.⁷¹

69. Ibid: 316-317.

70. Ibid: 317-321.

71. Ibid: 276, 362-366; Krashennikov, 1949: 412, 440-442.

However, when Kamchadals became seriously ill it was the usual practice to abandon them in the woods, or (according to Steller) to throw their living bodies to the dogs--either with or without the patient's acquiescence. Indeed, suicide was part of the cultural pattern. Whenever anyone decided life was no longer attractive, or felt themselves old, decrepit and useless, they would go off into the forest and starve themselves to death. This urge was possibly reinforced by the hope of sooner attaining the underworld, where the sorrows of this life did not exist.⁷²

If a Kamchadal fell into the water accidentally (they apparently did not know how to swim), no one would try to save him, and bystanders might even forcibly insure his drowning, reasoning that since the man was obviously supposed to drown it would be wrong for him not to. Should he survive anyway, he was considered dead and treated as such. No one would speak to him or allow him to come into the house.⁷³

When a person died in a house the corpse was immediately hauled outside by a strap around the neck, and left nearby for the dogs to devour. All clothing of the deceased was thrown out also, lest it contaminate someone. Everyone involved immediately underwent a purification ceremony, involving crawling through hoops of branches which were then cast into the woods. The man who pulled the corpse had, in addition, to catch two birds, burning one, and, joined by his entire family, eating the other. The house was abandoned and a new one erected at some distance. No doubt the eagerness to abandon the dying out in the woods was motivated to a great extent by this consideration. Corpses of young children, we are told, were placed in hollow trees.⁷⁴

72. Steller, 1774: 294, 354; Bering in Golder, 1922, I: 18.

73. Steller, 1774: 295; Golovnin, 1861: 108.

74. Krasheninnikov, 1949: 443-444.

The souls of all living creatures were believed to be immortal, and their bodies to be revived in the underworld, where they would engage in all the usual activities and carry on as in this life, except that want and suffering would be unknown and life would be always perfect, as it used to be in Kamchatka back in the days of Kutka, the Creator. The poor on earth will be well off in the underworld and vice versa, we are told. The Kamchadal knew all this because the lord of the underworld, a son of Kutka, and the first man ever to die, returned to earth to enlighten his descendants on this and kindred matters; which knowledge had been handed down ever since.⁷⁵

It is, however, particularly difficult to obtain a coherent picture of Kamchadal supernaturalism from the type of source material available to us. One gets the impression that the Kamchadal were not too clear about such matters in their own minds. They had a Creator--Kutka, the ancestor and culture-bringer of their nation--but they regarded him with derision for his follies and with resentment for not having created a better world. For such a theoretically powerful and central figure they felt neither respect nor fear. Various sons of Kutka seem to be deities controlling natural phenomena such as rain, wind, thunder, and earthquakes. But again, they are regarded primarily as causal explanations, and not as objects of fear or reverence.⁷⁶

On the other hand, the Kamchadal believed that spirits inhabited all parts of the landscape, and it was these that they really feared and respected--especially those dwelling in dangerous places such as volcanoes, hot springs,

75. Steller, 1774: 269-273.

76. Ibid: 253-255, 265-269.

and high mountains, which were regarded as being particularly malignant. They were the main objects of the Kamchadals' efforts at treating with the supernatural, since they were the ones who actually affected men's lives.⁷⁷

This treatment took the form of leaving offerings when passing by spots inhabited by dangerous spirits; making offerings to the hearth fire; adorning the household "god" (probably a tutelary spirit, represented by a wooden stake) with sacred herbs and "feeding" (smearing) it with blood and fat so that it would secure them luck on the hunt; ascertaining whether a spirit has been offended when sickness occurs, and so forth. Nothing useful or desirable was ever offered to the spirits--generally the inedible portions of fish and such like.⁷⁸

Much of their dealings appear to have been purely magical in nature, however. There were a number of prohibitions handed down from the ancestors which if violated would automatically cause misfortune, illness, or unsuccessful hunting. One who believed himself in trouble of this sort consulted a shaman to ascertain the precise cause, then expiated the transgression by carving a little man of wood and placing it in the forest. Spirits do not seem to have been involved, although it is difficult to judge the matter on the basis of the sources. Or again, "purification" was achieved in several ceremonies by passing through a hoop of branches which was then burned or thrown away in the woods.⁷⁹

77. Ibid: 47, 265-266; Krashennikov, 1949: 369.

78. Steller, 1774: 265-266, 276-277.

79. Ibid: 274-276.

In marked contrast to the surrounding Siberian tribes, shamanism was very little developed among the Kamchadal. There were no professional shamans, no special costume, no drum. Anyone of either sex could try their hand at it, but women, especially older ones, and homosexuals were regarded as most successful, though no particular prestige was attached to the role. Shamans seem to have been resorted to largely for divination: to locate stolen goods, interpret a difficult dream inexplicable by the standard rules, ascertain what "tabu" had been violated to cause misfortune or what was the cause of an illness, to predict the future, and so forth. One principal technique employed by shamans was lifting the foot by means of a nettle thread; if it felt heavy it was a bad omen or negative sign. But they could also summon spirits into their presence from whom to inquire the answer. There is no evidence that they exerted any control over supernatural beings beyond this fact-finding function. They played no major role in the important ceremonies, nor were they endowed with any supernatural powers or abilities. Since spirit possession does not seem to have been a cause of illness, there was no opportunity to fulfill the familiar function of spirit expulsion. Nor was sorcery apparently practiced by the Kamchadal. Shamans did deal in magic to the extent of supplying persons with amulets to be worn around the neck.⁸⁰

The Kamchadal had only one fixed annual ceremony, a very elaborate and important affair lasting many days, which was held in November after the winter supplies were all in and the festive season ready to begin. The details varied in different parts of the country, but the central idea seemed

80. Ibid: 182, 276, 278-279, 312; Krasheninnikov, 1949: 412.

to be one of "purification". Krasheninnikov witnessed several of these affairs, and has left us detailed descriptions. Everyone took part, of both sexes and all ages. The total picture is a somewhat incoherent hodge-podge, which seems to consist partly in offerings to spirits to gain their good will, and partly in purely magical procedures for one purpose or another. One gets the impression that the ceremony was a sort of catch-all to take care of the year's needs in relation to the supernatural, and that many birds, so to speak, were thus killed with one stone. Among items that stand out from the general confusion: a tug-of-war between the sexes over a birch tree brought in from the forest; purification by passing through hoops; installation of a new household "idol"; making of many wooden effigies which are fed and adorned, then burned; effigies of whale and wolf (made of food stuffs), subsequently eaten; a human figure of woven grass about a foot high with a 14-foot priapus, which was burned.⁸¹

While animal ceremonialism was apparently a well-developed feature of Kamchadal culture, it should be regarded rather as "hunting magic" than cult or ritual. There was nothing at all comparable to the "bear festival" of the Ainu or Gilyak. Although bears were held in esteem, they were not markedly singled out for special treatment. Indeed, the ceremonialism observed seems more proportional to the economic importance of the particular animal, and was aimed solely at insuring a good bag of them in the future.

In general they apparently asked forgiveness before killing any major land or sea mammal lest it take offense, and subsequently endeavored to make

81. Krasheninnikov, 1949: 413-427.

it believe it was an honored guest by offering sacred herbs and various delicacies to the meat, skull or fur, so that others of the species might not become shy of people. A proper observance involved special treatment of the skull after the animal had been devoured: adorning it with sacred herbs, and making speeches to it pointing out how well it had been treated and urging it to inform its relatives so that they also may enjoy similar hospitality. (A more elaborate ceremony, although developing the same theme, was described by Krasheninnikov in connection with seals). The skulls do not appear to have been preserved after the completion of these observances, except those of bears, which seem to have been hung up on or near the dwelling.⁸²

The wolf and bear in particular were believed to understand human speech, and circumlocutions were always employed in their presence.⁸³

In connection with these supernatural attitudes towards animals should be mentioned the prohibition on cooking meat of land and sea animals--or meat and fish--together in the same pot. Also the belief that the only proper position for sexual intercourse was on the side, since fish were said to do it in this fashion.⁸⁴

Such, in brief and in part, was the culture into whose origins and relationships we now propose to inquire.

82. Ibid: 249, 272-273; Steller, 1774: 82, 85, 112, 117, 280, 330-331.

83. Steller, 1774: 276.

84. Ibid: 274-275.

CHAPTER IV

ANALYSIS OF KAMCHADAL ETHNOGRAPHY

1. Material Culture

Dog Traction

The aboriginal Kamchadal dog sled¹ was, as we have previously stated, of unique appearance. The saddle-like superstructure has no parallel. However, when the method of constructing the frame is analyzed in detail, comparisons become possible. This construction is characterized by bow-shaped cross-ribs (knees), a feature found also in the Chukchi-Koryak reindeer sledge (Bogoras 1904-1909: 90). According to Bogoras (Ibid: 99), the latter is similar to the ancient Chukchi dog sled. Sleds incorporating the same structural features are illustrated in Mason, 1896, from Point Barrow and western Alaska--figs. 244-246. Levin, in his important study of dog traction (Levin, 1946), groups such sleds together as Type 3 in his classification (Ibid: 92).

Evidence is conflicting and inconclusive as to how the Kamchadal originally hitched their dogs, as well as to the type of harness employed. Specific descriptions all date from later periods² when the so-called "East Siberian type", introduced by the Russians, had become firmly established. Earlier evidence is vague. One of the sleds preserved in museum collections,

1. For a detailed technical description, see Antropova, 1949a.

2. e.g. Kittlitz, 1858, II: frontispiece; De Lesseps, 1790: 116; Ditmar, 1890-1900: 178; Golovnin, 1861: 17.

however, indicated a four-dog team hitched fan-wise (Antropova, 1949a: 74). This was apparently the ancient method among the Chukchi (Bogoras, 1904-1909: 99). Information is lacking for the Koryak. Levin (1946: 94) concludes from this that the ancient Kamchadal team was very likely fan-shaped. This is, of course, the standard Eskimo method; it was also one of the ways employed in western Siberia (Ibid: 96).

On the basis of the data available, Levin (1946: 95) identifies the indigenous harness as being single-bight of cervico-scapular type (over the neck and one foreleg). Jochelson (1905-1908: 507) similarly interprets Krasheninnikov's cryptic remarks on the subject. While the ancient dog harness of the Chukchi and Koryak is unknown, their reindeer harness is of this same cervico-scapular variety, which gives some basis for supposing that the Kamchadal type may have been common to all three tribes in former times.

Using as criteria sled form, method of hitching, and harness type, Levin has classified Siberian dog traction into various types. On the basis of the above data, he groups Kamchadal, Koryak and Chukchi into a "Northeastern Type" (1946: 94-95). Another of his classificatory groups, the "Eskimo-American", he regards as probably related (Ibid: 95-96). The latter is characterized by several sled types (including some with bow-shaped ribs), fan-wise team, and a harness that seems to be a modification of the Kamchadal type. Jochelson (1905-1908: 508) also sees the Eskimo harness as an improved form developed from a single-bight harness similar to the Kamchadal. The "Gilyak-Amur" type of dog traction differs in every respect from these (Levin, 1946: 94).

Northeastern Siberia and arctic America constitute a definite culture area in Levin's opinion (Ibid: 101-102), characterized by a specific form of dog traction (the related Northeastern and Eskimo-American types) which arose and developed there independently--as well as by a whole series of other common cultural elements (unspecified). The Amur-Sakhalin region, on the other hand, is a separate culture area which developed independently of this. Levin also believes in the relative recency of specialized dog traction (Ibid: 108), although we cannot take the space here to examine his arguments.³

A word should be said about the oshtol, or staff used in driving, and especially for braking, which is in universal use in northeastern Siberia in modern times. Bogoras declared (1904-1909: 100) that the word oshtol

3. In this connection it is of interest to note, however, that dog traction in western Alaska seems relatively late. No traces are reported from Old Bering Sea, Punuk or Birnirk sites (Birket-Smith and De Laguna, 1938: 428). Collins believes it was unknown on St. Lawrence Island until about the eighteenth century (1937a: 338). See Giddings (1952: 62-63) for the most recent discussion of this problem. Birket-Smith (1929, II: 169) believed dog traction to be old in Eurasia, and Zolotarev (1938a) considers it a diagnostic feature of his most ancient level of culture in northern Asia. Levin refutes this whole approach, and while his demonstration is not conclusive by any means, the former view can no longer be taken for granted.

was of Kamchadal origin, which would lead to the conclusion that it was a local invention which subsequently spread over a wider area. Levin (1946: 98) flatly denies the accuracy of this derivation, and holds that both the term and the method of braking were borrowed by the Kamchadal along with the rest of the paraphernalia of "East Siberian" dog driving after the Russian conquest.

·Let us proceed to some other details related to dogs.

The practice of walking ahead of the dog team, as the Kamchadal did under certain conditions, is unknown on the Chukchi Peninsula, but is "generally employed by Eskimo drivers" (Bogoras, 1904-1909: 100). It is also typical of the Yukagir (Jochelson, 1926: 351). Shoeing the sled runners with whale bone in spring is noted for the Chukchi (Bogoras, op. cit.: 91) and Alaskan Eskimo (Nelson, 1899: 207). The common Eskimo practice of coating the runners with ice, found among the tribes west of Bering Sea and on the Kolyma River (Bogoras, op. cit.: 106), was not much used in Kamchatka (Ibid.), possibly, however, due to climatic conditions. The older sources do not mention it, although one modern observer does (Bergman, 1926: 136). The custom of turning the dogs loose in summer to fend for themselves is probably too obvious and widespread in the circumpolar zone to have any significance. The placing of small leather boots on foot-sore dogs is described by Langsdorff (1814, II: 287); while this might not be an aboriginal Kamchadal practice, Bogoras observed it on occasions among the Chukchi (1904-1909: 110). It is not reported from the Koryak, but Birket-Smith (1929, II: 170) cites a few references to "dog socks" from northern Canadian Indian tribes, and Weyer states that they are common among Eskimos (1932: 88), so it may be associated with the general type of dog traction in our area. Cropping the tails of sled dogs in the belief that it will increase their speed Bogoras implies (1904-

1909: 103) is restricted to the Koryak and Kamchadal; it is not mentioned in the early accounts, although this does not necessarily militate against its presence, given the nature of our sources. The castration of driving dogs is of interest chiefly for the method employed. The Chukchi and Koryak--only some fifty years ago, it is true--used a knife; but there is no suggestion of any other method (Bogoras, 1904-1909: 103; Jochelson, 1905-1908: 519). Krasheninnikov (1949: 396) simply says that Kamchadal driving dogs were castrated, without giving any details; but De Lesseps (1790: 115) declares specifically that the method was not cutting, but crushing with the teeth. Other reports neither confirm nor deny his assertion. If true, this fact is of considerable interest, since this method is used on reindeer all the way from the Lapps to the Chukchi (including the Tungus), whereas castration of reindeer by cutting (after the fashion of horse-breeders) is limited in the north to tribes of southern origin such as the Yakut and Samoyed (Vasilevich and Levin, 1951: 75). The possibility arises that this bloodless castration may reflect former practices in connection with dogs, as do so many traits connected with reindeer breeding, and that the Kamchadal instance may be the lone survival of an ancient custom once widespread in arctic Eurasia.

I have been able to find no parallels to the method of training sled dogs by confining them in a pit as described by Steller (1774: 138-139). Langsdorff (1814, II: 276) gives this as the mode used "in the old days", but his account is obviously lifted from Steller. Jochelson (1905-1908: 515-516) reprints Steller's statement on the subject without comment. We may conclude that he accepts it, but knows of no parallels either.

The Kamchadal practice of feeding dogs on warm fish soup in wooden troughs (Steller, 1774: 133-134; Krasheninnikov, 1949: 254; Erman, 1848: 187) was

shared with the Koryak (Jochelson, 1905-1908: 513). Nobody but the Gilyak feed dogs indoors (Ibid: 514).

The Kamchadal seem never to have utilized their dogs for towing boats as did the Chukchi (Bogoras, 1904-1909: 129), Koryak (Jochelson, 1905-1908: 538), Bering Strait and Point Barrow Eskimo (Nelson, 1899: 211; Murdoch, 1892: 338), Yukagir (Jochelson, 1926: 377), Sakhalin Ainu (Mamiya, 1855: vol. II, illus.; Harrison translation, p. 24), Sakhalin Gilyak, Ket, and northern Yakut (Levin, 1946: 80).

In using dogs for hunting, the Kamchadal shared in "an old and wide-spread culture element in the North" (Birket-Smith and De Laguna, 1938: 429),⁴ typical for northwestern North America and northeastern Asia. Among some of the neighboring tribes (Kuriles, Hokkaido Ainu, and reindeer-breeding divisions of the Tungus group) the dog was used solely for hunting (Bird, 1888: 280; Hawes, 1904: 208; Schrenck, 1881-1895: 499; Bogoras, 1904-1909: 71, 100; Polonskii, 1871: 383).

The part played by the dog in ritual life is also not without interest. The idea that dogs guard the entrance to the underworld is, according to Jochelson (1905-1908: 514), shared by the Yukagir, Chukchi, Koryak and Kamchadal, while such concepts are not alien to the Gilyak, Aleut⁵ and Eskimo.

4. Clark, in a recent discussion of the subject (1952: 122), believes that the use of dogs for hunting came comparatively late in the history of their domestication.

5. The reference to the Aleut is apparently an error. Hrdlicka tells us that there were "no dogs at any time in the Aleutian Islands." (1945: 484-485).

The Yakut, on the other hand, display a totally different attitude, and consider the dog as unclean (Ibid.). Among the Chukchi, dogs play a more important role in religious beliefs and rites than do reindeer, despite the predominant role of the latter in daily life (Bogoras, 1904-1909: 13). A list of the northeast Asiatic tribes who sacrifice dogs is virtually a roster of the dog-driving peoples of the area.⁶ But leaving aside the Ainu of Sakhalin, whose dog traction is obviously borrowed wholesale from their Gilyak neighbors, the Kamchadal stand out as a glaring exception to this general rule. The ritual disability of the dog is further emphasized when we read Krasheninnikov's description (1949: 416) of their major religious event--the great autumn ceremony. One of the preliminaries to this was the removal from the scene of all sleds, dog harness, traces, trappings, etc., on the grounds that these accoutrements are disagreeable to the spirits.

In this connection, attitudes toward eating dog flesh should be noted. The Koryak dislike the idea, their myths echoing the same attitude, but it is apparently not unknown in time of famine (Jochelson, 1905-1908: 519), as with Eskimo in general (Weyer, 1932: 101). The Maritime Chukchi and Asiatic Eskimo, on the other hand, not only fall back on dog meat in famines but indulge in it occasionally as a gustatory treat, with the implication that they formerly did so more frequently (Bogoras, 1904-1909: 101). This

6. Chukchi (Bogoras, 1904-1909: 101), Koryak (Jochelson, 1905-1908: 519), Yukagir (Jochelson, 1926: 215), Okhotsk Foot Tungus (Zolotarev, 1938b: 73), Gilyak (Schrenck, 1881-1895: 765-766), Gold (Vasil'ev, 1940: 166), Orochi (Shternberg, 1896: 439).

is interesting because evidence indicates that the Old Bering Sea people of St. Lawrence Island ate dogs of a small variety (Collins, 1940: 551). And in the 16th century the Frobisher Bay Eskimo--possibly a mixed Dorset-Thule group--are reported to have kept a special breed of small dog for eating in addition to their larger sled dogs (Jenness, 1940: 392). The Okhotsk Foot Tungus ate dog on ritual occasions (Zolotarev, 1938b: 71), whereas the Gilyak regarded it as a delicacy (Schrenck, 1881-1895: 434), as do the Koreans (Osgood, 1951: 77-78). Probably from the Gilyak it spread to the menus of the Ul'chi (Strenina, 1949: 47) and Ainu of Sakhalin (Bickmore, 1868b: 364; Howard, 1893: 106). Again, the Kamchadal stand out in contrast; although "everything that can possibly serve as food is eaten by these people" (Steller, 1774: 324), "mice, lizards and dogs are excluded from their fare" (Ibid: 323). Anyone can be driven to extremities, however, and Kamchadals who are trapped on the trail by one of the interminable local blizzards have been known, says Erman (1848: 230-231), even to butcher a part of their team--but not, it seems, until they have devoured as much of their own skin clothing as they can safely do. There can be no question, therefore, as to the basic Kamchadal feeling toward dog flesh.

We might sum up this discussion by concluding that in these various attitudes the Kamchadal seem to stand closer to the Ainu of Hokkaido than to their Palaeo-Asiatic kinsmen.

7. Dogs are not eaten on the Northwest Coast either (Drucker, 1950: 175).

Carrying

The data on burden-carrying are conflicting. Krashennikov remarks cryptically (1949: 368) that women carry loads by the forehead, and men on the shoulders; possibly he means by shoulder straps,⁸ but Jochelson (1905-1908: 606) interprets this to mean a chest yoke. Steller (1774: 369) clearly describes a wooden carrying yoke, but placed on the forehead, and implies its use thus by either sex. Kittlitz (1858, II: 325) mentions no yoke, only a carrying strap over the forehead, mostly used by women but sometimes by men as well. Koryak men use a chest yoke like the Eskimo,⁹ women the forehead strap (Jochelson, 1905-1908: 606).

The Ainu use the forehead strap--apparently exclusively (H. von Siebold, 1881: 22; MacRitchie, 1892: 18)--as do the Kuriles for carrying children, and probably also in general (Torii, 1919: 172-173). The Yukagir and Kolyma population use both forehead and chest tump lines (Birket-Smith, 1929, II: 338--based on a letter from Bogoras). Both types occur in northwestern North

8. Pack frames with shoulder straps similar in principle to our own hikers' equipment are known from the Kuriles of southern Kamchatka (Steller, 1774: 369), Korea and northern Japan (Mason, 1896: 442-443). I have noted no other references to this method in northeastern Asia or northwestern North America, except for the possibly related method in use over much of the Northwest Coast whereby large bundles were carried by shoulder straps tied together across the chest so that the latter took most of the weight (Drucker, 1950: 197, 266-267).

9. Jochelson must be referring to the Bering Strait Eskimo; it is not typical of most Eskimo. Cf. Birket-Smith, 1929, II: 260.

America (Ibid: 337). It seems impossible to deduce anything from the distribution.

The wooden chest yoke, in addition to the Koryak and Bering Strait Eskimo noted above, is definitely reported only from the Tanaina and Chugach (Birket-Smith and De Laguna, 1938: 386). It may be more widely used; data on such matters are meagre and unsatisfactory.

About all one can say is that the Kamchadal seem to have employed every method known in the general region--with one important exception. They never adopted the peculiar and distinctive device used by the Kuriles living on the southern tip of Kamchatka. This consisted of a pack frame with a shelf at the bottom projecting at right angles--reminiscent of that employed by glass carriers in Germany, according to Steller (1774: 369-370). The device is also known from Korea, and from the Ainu of Japan (Mason, 1896: 440). In every case, shoulder straps are used.

Snowshoes

Davidson's classic monograph on snowshoes (1937) completely ignores the Kamchadal. Not being a hunting people, snowshoes were not vital to their survival and do not loom large in the cultural assemblage; still, they were a convenience, and we will find the Kamchadal as well equipped in this respect as any tribe in the general area.

The Kamchadal ski is known from a museum specimen (Antropova, 1949a: 69) as well as from the descriptions of Krasheninnikov (1949: 710--a previously unpublished account), De Lesseps (1790: 123) and Langsdorff (1814, II: 290-292). The information, for once, is all in agreement. This

ski was wide, fairly short, pointed at both ends, and shod with fur. It is a good example of Davidson's "Arctic Type", which he believes to be the oldest form; the type is traced back to the Scandinavian Neolithic, where it is dated at 2000 B.C. (Davidson, 1937: 142, 148).¹⁰ The ancestral form may not have been fur-shod; this feature is usual but not invariable today, being occasionally absent in peripheral groups (Ibid: 155). "Arctic Type" skis are in common use among Siberian peoples from the Samoyed and Ostyak to the Chukchi and Ainu (Ibid: 139);¹¹ they are the standard means of forest travel in northeastern Asia (Bogoras, 1904-1909: 261).

10. The most recent discussion of the history of skis will be found in Clark (1952: 297-301).

11. More specifically, I have noted fur-shod skis from the following (the list does not pretend to be exhaustive): Kamchadal, Koryak (not manufactured; purchased from Tungus) (Jochelson, 1905-1908: 605), Tungus (Bush, 1871: 166), Lamut (Bogoras, 1904-1909: 261), Chukchi (not manufactured; purchased from Lamut) (Ibid.), Yukagir (Jochelson, 1926: 385), Sakhalin Ainu (Batchelor, 1901: 150-151), Gilyak (Schrenck, 1881-1895: plate xxxv), Gold (Lipskaia, 1940: 252), Orochi (Vasil'ev, 1940: 165), Ostyak (Manninen, 1932: 355), Lapp (reported by Olaus Magnus, in Collinder, 1949: 215). Yakut skis, according to Bogoras (1904-1909: 261), are narrower and lack the fur. Skis seem to be absent in our area only for the Ainu of Hokkaido. The Kuriles apparently used them (Polonskii, 1871: 383), but details are lacking.

Netted snowshoes, on the other hand, are employed on uneven ground where skis would be useless, but apparently not in the forest (Ibid: 262). No specimens of the Kamchadal snowshoe have survived, but from the meagre descriptions (Krasheninnikov, 1949: 400, 710; Langsdorff, 1814, II: 292) it appears to have consisted of a two-piece frame with pointed ends (the front slightly upcurved) and two cross-pieces--the whole interlaced with thongs. This would correspond to the basic form of Davidson's "Athabascan Type" (Davidson, 1937: 123). Chukchi-Koryak snowshoes seem very similar (Bogoras, 1904-1909: 262). Together with those of the Bering Strait Eskimo, Davidson classifies them as "Athabascan" (Davidson, 1937: 75). He also includes here the Kurile pair illustrated by Torii (1919: 176), although these differ in having six crossbars. This latter feature seems, however, to be merely an elaboration of the basic type: an elaboration which Davidson feels sure was originated by the Athabascans themselves in North America (Davidson, 1937: 71, 159).

There are few other references to netted snowshoes in northeastern Asia. We do not know what the Yukagir form looked like, but since they were called "raven's feet" (Jochelson, 1926: 387), just as were the Chukchi snowshoes, it seems probable that they were similar. There is a tantalizing reference to snowshoes "like a tennis racket" among the Sakhalin Ainu (Howard, 1893: 103). On Hokkaido, the local Ainu employed crude "bear paws", some of hour-glass shape, others oval (Montandon, 1937: plate 31; Torii, 1919: 177).

Thus it would seem as though the Kamchadal, Koryak, Chukchi, and possibly Yukagir, share with the Bering Strait Eskimo a primitive and probably old snowshoe type of American origin. "We may feel certain," writes Davidson,

"that the occurrence of the pointed-toe type of two-piece frame in north-eastern Asia is due to a diffusion from America" (1937: 77). Their neighbors to the south, the Kuriles, possessed an elaborated form of the same, but owing to the great distance and complete isolation from any similar developments in the Athabascan homeland, Davidson prefers to label it an "anomalous" phenomenon (Ibid: 116).

An interesting development is the addition of spikes on the underside of the snowshoe to facilitate climbing. Krasheninnikov mentions this (1949: 146), and apparently all the snowshoes seen by Langsdorff in his time were so equipped; in fact, he implies that netted snowshoes were used solely for steep hills (1814, II: 292). De Lesseps (1790: 123) describes a similar article from northern Kamchatka, but this may refer to the Koryak. Davidson illustrates a "probably Koryak" snowshoe so equipped (1937: 77, fig. 32c). A very crude combination snowshoe and ice creeper from the Ainu of northern Japan is pictured in Mason (1896: 411). A very few instances of this device have turned up in northwestern North America. It is described by Emmons for the Tahltan (1911: 61); and De Laguna reports a reference to something possibly of this nature in Tlingit folklore (personal communication).¹²

Ice creepers consisting of iron spikes affixed to the shoes are used by the Russians, Chinese and Mongols (Mason, 1896: 410). Those described by Langsdorff (1814, II: 292) for the Kamchadal may thus be introduced

12. In this connection should be cited the statement of a Kutchin informant that war parties attacking an enemy camp attached sharp bone points to their snowshoes "to detect people hiding under the snow." (Osgood, 1936: 89).

(there is no earlier reference). On the other hand, devices of this nature are aboriginal in the Bering Sea area. The Chukchi and Koryak use ivory creepers on smooth ice which are identical with those of the American Eskimo (Bogoras, 1903-1909: 263)--though the Koryak also have iron ones of obviously recent pattern (Jochelson, 1905-1908: 605). Langsdorff's specimens may have been of this type, since he speaks of them as fastened to the foot rather than affixed to the boot. In both cases we may be dealing with a modern version of a native idea which seems old and widespread: creepers are known from Finland and Scandinavia (Collins, 1937a: 322) in addition to the distribution already noted, and go back to Penuk and Old Bering Sea times locally (Ibid.).

The standard ski pole with the small wheel-like contrivance a few inches from the butt end, which shows such amazing similarity over the whole vast expanse from Lapland to northwestern North America (Davidson, 1937: 108), is not reported from the Koryak or Kamchadal. The former use any convenient stick (Jochelson, 1905-1908: 605), and perhaps the latter did also. The Orochi simple bow doubled as a ski pole (Vasil'ev, 1940: 164). But in this connection we should note Bogoras' reference to a specialized mountain-climbing staff with two large, slightly-curved spikes at the end for catching hold on rocks. He may be referring to the Kamchadal of his own time, and since he mentions that the Lamut and Kolyma Chukchi use a similar form, it is possibly a recent borrowing (Bogoras, 1904-1909: 263). There is no older reference. That this might have been the Kamchadal ski pole, however, is suggested by the unique device used by the Yukagir, which from the description (Jochelson,

1926: 387) combines the specialized attributes of both the standard ski pole and the climbing staff. Perhaps this also is an outgrowth of recent Lamut influence, however.¹³

Boats

When considering the boats used by the Kamchadal, we are immediately struck by the curious absence of the two most expectable forms: the birch-bark canoe, so typical of the circumpolar boreal zone; and the skin boat of either kayak or umiak type, both the latter being manufactured by their closest neighbors, the Koryak. The explanation is not environmental, as is so often the case, since Kamchatka abounds in materials suitable for either form. "The shores of Kamchatka are probably even richer in sea mammals than those of the Chukchi Peninsula," writes Bogoras (1904-1909: 126), "and thus afford every convenience for constructing skin boats. The Kamchadal nevertheless remain a fishing tribe with clumsy wooden canoes; and they have never shown much skill in maritime pursuits, although they crave blubber and hides as much as do their northern neighbors." Gjessing (1944: 53) brands the Kamchadal as "the only arctic people in a maritime region to lack the skin boat." As a "vestige of an earlier inland life they have merely the dug-out boat, whereas their northerly neighbors the Koryak have excellent skin boats. It has not occurred to the Kamchadal to copy them." (Ibid.)

13. The Bering Strait Eskimo use the standard ski pole by itself independent of ski or even snowshoe, as a walking staff to test treacherous ice and facilitate passage over boggy ground (Nelson, 1899: 214-215). The Point Barrow Eskimo do not have the ski pole (Murdoch, 1892: 352).

As for birchbark, the most typical Kamchatkan flora is that in which Betula Ermani plays the chief role (Komarov, 1927-1930, I: 329). It is the "commonest tree everywhere" (Langsdorff, 1814, II: 268), "the general utility tree of the area" (Guillemard, 1889: 75), "its bark is much used" (Krasheninnikov, 1949: 224). Even the Samoyed of the treeless tundra at the mouth of the Yenisei contrive to manufacture canoes using bark from driftwood (Brindley, 1919-1920: 67), yet in the midst of such plenty the Kamchadal either ignore the possibility, or else the idea never occurred to them--or never reached them. A similar situation exists, it is true, in northern Scandinavia, where birchbark admirably adapted for making boats was plentiful, while there is no indication that it was so used either in ancient or modern times (Clark, 1952: 284). However, Kamchatka is almost in the midst of the area of distribution of birchbark canoes, while Scandinavia is far away from it; so the problem is not quite the same.

Simple dugouts such as those used by the Kamchadal have a very wide distribution in northern Eurasia, and date back to the Neolithic and even Mesolithic (Clark, 1952: 284-286). In many areas, particularly on the Amur and among the Tungus peoples, they exist alongside of plank and bark boats. The dugout of northwestern North America, on the other hand, is a somewhat specialized form (see Olson, 1927) which is obviously not immediately related. Manninen (1927) discerns two definite types among the Eurasiatic dugouts: a simple, crude, trough-shaped form; and a more highly-developed, thin-walled, pod-shaped variety whose sides are spread with the aid of fire and water. Both the form and the techniques of manufacture show close similarity over

a wide area. Cross-pieces are typical for the latter type, although in northern Europe they are replaced by ribs--probably a later development in imitation of plank boats.

The simple trough-shaped variety is described by Jochelson (1905-1908: 541) for the Koryak, and he states that it is also used by the Kamchadal, but not the Yukagir. It is exclusively a river boat. Presumably Jochelson is speaking of the modern Kamchadal. The meagre descriptions of boats in the early accounts do not enable us to state positively whether this type was present aboriginally. Batchelor (1901: 535) pictures one from the Ainu, however.

The fancier pod-shaped dugout is more commonly encountered in northeastern Asia. Jochelson describes it from the Yukagir (1926: 375) and Koryak (1905-1908: 541), and also attributes it to the Kamchadal (Ibid.)--presumably modern. It is used on both rivers and bays. In the Amur area the omorochka of the Udehe and Gold, for example, is of this type (Brailovskii, 1901: 200-201; Lopatin, 1922: 123-124), although larger dugouts seem more like imitations of the local plank boat. Krasheninnikov's remarks (1949: 382, 710) could apply to a dugout of this type, and, even more, those of Erman (1848: 167-168)--although much later in time. The construction technique of shaping with water and hot stones is noted by Erman (Ibid.) and also Sliunin (1900: 509).

However, let us proceed from the other end and examine the original sources on the Kamchadal. Steller, strange to say, is no help in the matter. Krasheninnikov's brief remarks have hitherto been highly confusing. Now, with

the publication of his additional notes and manuscript materials, we can make more sense out of them. Krasheninnikov tells us (1949: 382, 710) that the boats are of two types, with different names: takhtu and koiakhtakhtym. Both are poplar dugouts, but in the latter the sides are spread apart, while in the former they curve inward, following the natural shape of the log. The takhtu, consequently, is usable only on calm water; when there are any waves, the water pours in. When he went on to say (1949: 382) that the takhtu was used on both coasts, and the koiakhtakhtym only on the Kamchatka River, this made no sense whatever--particularly when he remarked that side boards were sometimes added to the takhtu to make a real sea-going craft, which would be hard to visualize. However, the previously unpublished material (1949: 710) clearly indicates that we have been struggling for almost two hundred years with typographical errors: the terms in one case and the locales in the other had simply gotten reversed. This new manuscript makes perfect sense: the unstable incurving takhtu is used only on the Kamchatka River, the koiakhtakhtym everywhere else, including salt water ("on bays, and in calm weather even on the sea near shore"). On one section of the east coast, side boards are added to the latter to form a sea-going baidar. These two basic types were still in existence in Erman's day (1848: 167-168).

Dugouts of the takhtu type also occurred among the Ainu, as is clearly shown in Montandon (1937: plate 32). I have not found them elsewhere.

On linguistic grounds, Steiner (1939: 182, footnote 18) argues that koiakhtakhtym means "the kayak-boat, that is, the Russian boat." He makes much of Krasheninnikov's remark (in the original text) that this type resembled Russian fishing boats, but this statement does not appear in the manuscript.

which I regard as the more accurate account. There, Krasheninnikov merely says that the gunwales are spread as in a lodka--the standard Russian word for any small boat. Therefore, according to Steiner, the takhtu is the only native Kamchadal craft, and the koiakhtakhtym is of Russian origin and introduction. In my opinion, such sweeping philological edicts are at best debatable unless substantiated by other evidence. It seems inconceivable that any boat type could have become so widespread and firmly established in the course of a mere forty years since the first Russian visit--a period of almost continuous hostility and intermittent revolt; so established that Krasheninnikov, no casual observer, would be unaware of its alien origin--as he obviously was. Moreover, Russians arriving by boat in the early days from the Koryak country probably utilized the leather baidars typical of that region. If any boat had been introduced by the Russians, it would have been the umiak. All in all, I find Steiner's viewpoint unconvincing.

In view of the widespread distribution of the pod-shaped dugout in this region and its truly aboriginal status, as shown by its occurrence, e.g., among the Udehe, where Russian introduction is out of the question, it would seem highly probable that the koiakhtakhtym of the Kamchadal should be included in this classification. Nothing specifically contradicts it.

This brings us to the problem of the double boat: two dugouts joined together by a sort of bridge, for transporting bulky loads in relatively calm water (Krasheninnikov, 1949: 383). The Kamchadal were using it widely in Krasheninnikov's time, and he obviously regards it as a local invention. It does not remind him of anything back home. Jochelson (1905-1908: 541) observed it among the Koryak in modern times, and Russian traders were

utilizing a similar contraption on the Kolyma River in the same period (Jochelson, 1933a: 187). The Alaskan Eskimo, according to Nelson (1899: 221) frequently lash two kayaks together with cross poles, and carry small loads on a platform of sticks, which is placed, however, on the deck rather than on the cross poles. A similar arrangement was photographed by Giddings on the Kobuk River (1952: fig. 34). In Coronation Gulf, Stefansson (1914: 81) saw kayaks lashed with cross sticks to form a sort of raft capable of carrying a heavy load. And the Ingalik lash their bark hunting canoes side by side to bring in game--although their larger cargo canoes are never used in this way (Osgood, 1940: 371, 373). Some of these arrangements could well have originated spontaneously, of course, for the idea seems obvious. Further south on the Northwest Coast we find rafts consisting of house planks laid over two large dugouts, forming a deck for transporting a substantial cargo and passengers. These are reported from the Kwakiutl (Curtis, 1915: 13), Nootka (Drucker, 1951: 88), Lummi (Stern, 1934: 41), and Puyallup-Nisqually (Smith, 1940: 290). Though such craft are more reminiscent of the Kamchadal double boat, they are still quite possibly a local development by people desirous of transporting their hard-earned house planks when shifting settlements.^{13a}

I have not noted anything of this type elsewhere in Siberia or northwestern North America. Steiner (1939: 178) declares the double boat in Kamchatka to be also of Russian origin. "Double boats are used as ferries and general

13a. Ray reports double boats from the Lower Carrier, Lillooet, Kutenai and Lower Chinook (1942: 155), but gives no details.

rivercraft in many localities of eastern and southeastern Europe, particularly in Russia.¹⁴ In both places in northeastern Asia the double-boat resembles the Russian type and the term employed is Russian. There are no native terms for double-boats to be found in the vocabularies of these tribes." This argument would be greatly strengthened, it seems to me, if such craft were in common use on the great rivers of western and central Siberia, but judging from Brindley's survey (1919-1920) this does not seem to be the case. Otherwise the gap in distribution between Russia and northeastern Asia seems excessive, particularly in view of the possibly related instances in North America. The date and nature of Krasheninnikov's report is also a stumbling block. I cannot prove Steiner wrong, as I felt I could in the previous case, but neither do I feel that his assertion can be accepted without additional evidence.

So much for the river craft of the Kamchadal. We must now take up the even more complex problem of sea-going boats: craft which would earn from the Russians the designation of baidar. In Steller (1774: 7, 338) we read that the Kuriles of southernmost Kamchatka went to sea in baidars, as did the coast population between Cape Lopatka and Avacha Bay, who were probably Kurile or largely so--but there are no details. Krasheninnikov at one point (1949: 405) declares flatly that "the Kamchadals do not have sea-going craft." This statement is either an error, or does not mean what it appears to. It

14. Clark describes the use of paired dugouts in eastern Europe as ferries for horses, etc., but no mention is made of a platform. The dugouts are simply fastened together and the animal stands with its forelegs in one, hind legs in the other (1952: 288).

could imply that people having such boats were not true Kamchadal; or simply that in Krasheninnikov's eyes the boats were not fit to be called sea-going, even though the natives were willing to risk their necks in them. At any rate it is contradicted by a quite detailed description elsewhere in his account (1949: 282-283, 710) of the baidars used on the east coast of Kamchatka between Cape Kronotskii and Cape Shipunskii--an area thoroughly within Kamchadal territory.¹⁵ This is not to say that the coastal population might not have been under strong Kurile influence, as it very likely was. These baidars (Krasheninnikov uses the term) were koiakhtakhtym with several planks sewn on top of the sides with baleen--in other words, a raised plank dugout. Stone ballast was required to keep them from capsizing.¹⁶ These craft could sail far out to sea and would even remain out overnight on occasion. Most interesting detail of all is the statement that the dugout hull was purposely split on the bottom, then sewed up again with baleen and caulked with moss or nettle fiber. Hulls so treated were believed to be much stronger and less likely to split open under the buffeting of the waves.

The search for parallels to this craft leads us south. Although it seems to be the common view that the Ainu are not a maritime people and have only the plank boat introduced by the Japanese (see for instance Montandon, 1937: 131-132), an examination of the accounts of some of the older visitors to the Ainu reveals a different picture. According to Scheube (1882: 230),

15. Steller (1774: 7) also alludes to the common use of baidars by the sea-hunting Kamchadal of Cape Kronotskii.

16. Stone ballast was also used by the Aleut (Jochelson, 1933b: 55).

their boats "consist of hollowed-out tree trunks whose walls are heightened by tied-on planks." Similar craft are also mentioned by St. John (1873: 251), Holland (1874: 241), and Bird (1888: 310). "Boats intended for rough water are often built with dugout logs for the bottom and a free-board of considerable height made of planks bound on with bark lashings. Many of the large fishing boats are made in this manner--they measure perhaps fifty feet in length." (Hitchcock, 1891: 472). Two and a half centuries earlier is the account of Martin Vries, who describes a boat cut out of a thick tree, strengthened on each side with four planks one foot high. "With these boats they go to fish for seals and other animals" (P. von Siebold, 1859: 118). The Ainu here referred to may be those of Sakhalin. Quite obviously the raised-plank dugout is an old and well-established Ainu trait. It is also possibly highly localized. Sternberg (1929: 767) says the Ainu are the only people in the area using raised sideboards. Other tribes employ dugouts solely on rivers, never on the ocean. In this connection it is interesting to note that the Ul'chi transform their plank river boat into a sealing boat for salt water by attaching extra side boards to raise the height of the gunwales all around (Strenina, 1949: 43). It is true that there are sporadic occurrences of the raised-plank dugout elsewhere in Siberia: among the Ket (Nansen, 1914: 200), Zyrians (Manninen, 1927: 14), and in the northern parts of the Yakut region (Borisov, 1927: 485). But the close kinship of the east coast Kamchadal baidar and the Ainu craft is still further strengthened by their sharing the split-hull technique of construction, as seems evident from Bird's description (1888: 317) of a 25-foot sea-going canoe of the Hokkaido Ainu, the hull of which "consisted of two halves, laced together with very strong bark fiber for their whole length, and with high sides also

laced on. They consider that they are stronger for rough sea and surf work when made in two parts."¹⁷

Since these Ainu craft must have reached the Kamchadal through the medium of the Kuriles, some consideration of the boats of the latter people is in order. According to Krasheninnikov (1949: 383), the Kuriles both of the islands and of southern Kamchatka made their baidars of driftwood, with a keel, and planks sewn on with baleen and caulked with moss. We have already quoted Steller's reference to the sea-going baidars of the Kuriles. Polonskii's¹⁸

17. What sounds like somewhat the same type of construction, but applied to an ordinary small dugout for river use, is reported from the Manchu: the trunk of a hollowed tree cut in two pieces, fastened with wooden pegs and secured from leaking with pitch (Lansdell, 1882: 555).

18. The use of Polonskii as a source presents difficulties. His work is a secondary compilation from all the available accounts and materials, much of it documentary or archival, but he gives no references. The absence of the latter does not inspire confidence in his work, and makes it unsatisfactory for citing as an authority. Still, his information cannot be disregarded. Polonskii, like Sgibnev, made extensive use of archival materials in Irkutsk, Yakutsk, and Kamchatka that were subsequently destroyed by fire (Andreev, 1948: 9). Some of his data may therefore be unique. And it should be noted that in those cases where his statements can be checked against other sources available to us, they are fully substantiated (Ibid: 27). Furthermore, Berg (1946), who seems to have an intimate knowledge of the sources and writers of this period, and of their relative reliability, draws heavily and unquestioningly on Polonskii. His complete acceptance constitutes a powerful endorsement.

account is probably based on Kozyrevskii, which would date it even earlier: "They carried on communication between the islands in baidars constructed of driftwood (fir and larch). The baidars were large and small. The latter were of leather, and the former composite--i.e. of planks sewn together with baleen, the cracks caulked with moss, and covered with a special batten." They had from eighteen to twenty-two oars, plus a long steering oar, and a rectangular sail woven of grass.¹⁹ "These big baidars have been abandoned owing to the changed conditions of life," and only small ones of four to eight oars are still built (Polonskii, 1871: 383). In the latter half of the nineteenth century the boat of the northern Kuriles was a frame and plank affair, sewn with whale sinew and whalebone fiber. It was 30 feet long, and was rowed (Snow, 1897: 21). This was undoubtedly a heavily Russianized craft, but the construction by sewing with baleen may preserve an aboriginal feature. The prehistoric boat excavated in Echigo Province, Japan, and differing from any modern type, was of planks fastened together with baleen (Kishinouye, 1911: 363). The presence of sewn-plank boats aboriginally among the Kuriles cannot be ruled out, though their isolated use in between two areas of raised-plank dugouts is puzzling. Polonskii's description could pass for a boat of the latter type, it is true--but there is Krasheninnikov's specific reference to a keel, and his general implication that the Kurile boat was something different from the Kamchadal baidar. Possibly Russian methods of construction had already replaced the indigenous technique by his

19. It is interesting to note that the Bering Strait Eskimo and Koniag also used grass matting sails (Nelson, 1899: 202; Davydov in Hrdlicka, 1944: 60).

time; where driftwood is the only material, a plank construction is probably easier. Or again, his information may have been hearsay and open to misinterpretation, since he only touched the fringe of the Kurile territory in his travels.²⁰

Polonskii's mention of a leather boat is of great interest, since they are not supposed to exist south of Koryak territory, and were definitely absent from Kamchadal culture. Steller also remarks from his personal observation in 1743 that the Kuriles hunted sea otters in leather boats carrying six oarsmen, a helmsman, and a hunter (in Golder, 1922, II: 222). A possible explanation suggests itself when we read (Berg, 1946: 146) that the first cossacks crossed from Cape Lopatka to the islands in leather baidars. As noted previously, early Russian visitors to Kamchatka by water undoubtedly arrived in umiaks requisitioned from the Koryak. The islanders may have realized that these craft would be ideal for their own conditions of life, and have imitated them. Or again, it is not impossible that skin boats were present in the Kuriles in pre-Russian times. The islands do not lie that far from the Aleutians, where the umiak was in common use; and both peoples were daring seamen. There are even archaeological hints of such contacts, which will be noted later.

20. Sewn-plank boats do occur also on the Kolyma River, in two types: a small, light hunting canoe, and a large boat (Shklovsky, 1916: 61-62, 67; Wrangell, 1844: 154, 165; Jochelson, 1926: 376). The large type is obviously a Russian introduction, but the antecedents of the canoe are obscure. The Lapps also have sewn wooden boats (Collinder, 1949: 198).

The mention of a sail on the Kurile plank baidar reminds us that the Kamchadal, who as far as we know never utilized sails, are surrounded by sail-using people: Chukchi (Bogoras, 1904-1909: 129); Koryak--with a tripod mast (Jochelson, 1905-1908: 537-538); Ainu--very probably of Japanese origin (Landor, 1893: 38; Balogh v. Baratos, 1914: 180); Gilyak (Schrenck, 1881-1895: 504); Koniag (Hrdlicka, 1944: 60--quoting Davydov); Eskimo (Birket-Smith and De Laguna, 1938: 382). The distribution of the Eskimo sail corresponds to that of the umiak, except that we have no reference from the Aleut, and is very likely derived directly from the sail of northeastern Asia (Ibid.). There is some question as to the aboriginal status of sails on the Northwest Coast, despite widespread recent use (Drucker, 1950: 255).

Another absence, far more peculiar, is the double-bladed paddle. Although we tend to associate this with the kayak, it is in reality widespread in Siberia, being commonly used with small dugouts and bark canoes. The waters of Kamchatka do not differ essentially from those of the surrounding regions, yet the Kamchadal prefer to handle their boats standing upright, using poles for the most part, and single-bladed paddles (Krashennikov, 1949: 383). In this they resembled the Ainu, who in part at least used the same method (Batchelor, 1901: 535), and among whom the double-bladed paddle has not been reported either, so far as I can ascertain. It has otherwise a universal distribution in northeastern Asia.²¹ A curious variant is the use

21. Chukchi (Bogoras, 1904-1909: 135), Koryak (Jochelson, 1905-1908: 540), Yukagir (Jochelson, 1926: 375), Gilyak (Deniker, 1883: 300), Gold (Lopatin, 1922: 135), Orochi (Margaritov, 1888: 15), Manchu (Lansdell, 1882:

(footnote continued)

555), Ket (Shimkin, 1939: 151), Dolgan and Samoyed of Yenisei estuary (Brindley, 1919-1920: 67), Aleut (Hrdlicka, 1945: 127), Eskimo (Birket-Smith, 1929, II: 262). Further distribution will be found in the latter (pp. 340-341), which indicates that the double paddle is rather rare in North America outside of the Eskimo area, but is widespread in northern Eurasia. Finds in Denmark may date it back to the Stone Age (Ibid: 174-175).

of two small paddles, one in each hand, which occurs along with the double-bladed paddle among the Koryak, Gold and Orochi.²²

Houses

Subterranean and semi-subterranean houses are widely distributed in space and time, as the recent brief survey of Daifuku (1952) amply demonstrates. This type of dwelling in itself can have no diagnostic value. It has, however, to some extent been allowed to become a rubric covering a number of very different types of structure having no necessary relationship to one another. The differences tend to be obscured, and a spurious entity is created which lacks historical reality--a danger inherent in any rubric.

The Kamchadal house,²³ leaving aside its semi-subterranean nature, is a specialized dwelling with some definite characteristics, and the latter are valid diagnostic traits for comparative purposes. We shall consider them individually.

Entrance through the smoke hole is recorded ethnographically elsewhere in Asia for the Koryak (Jochelson, 1905-1908: 455), northern Kuriles (Steller,

22. See pertinent references in note 21.

23. Descriptions will be found in Steller (1774: 212-215), Krasheninnikov (1949: 374-376), and De Lesseps (1790: 224-228).

1774: 215; Polonskii, 1871: 379), Okhotsk Foot Tungus²⁴ ("entrance on top": Zolotarev, 1938b: 71), and, apparently, some group of Samoyed (Olearius, quoted in Larsen and Rainey, 1938: 54). Ritual and terminological survivals indicate its very probable former presence among the Gilyak (Shternberg, 1903: 17). Chinese annals suggest it as well for the ancient I-lou and Wu-chi peoples of Manchuria, who are described as living in holes. "Die Offnung ist oben" (Eberhard, 1942: 31-32).²⁵ Also for the Ma-han people of southwest Korea in Han times (Ibid: 20). Whether the smoke-hole entrance had a wider distribution in the past would be difficult to establish

24. The sedentary "Foot Tungus", who in the seventeenth and eighteenth centuries occupied the northwest coast of the Okhotsk Sea in the vicinity of the settlement of Okhotsk, are virtually unknown to ethnography. Their way of life had much in common with that of the "Palaeo-Asiatics", and they may partially fill the gap between the Gilyak and the Koryak. The plans of the Second Bering Expedition included a study of these Okhotsk Tungus as well as of the Kamchadal, the former being assigned to Yakov Lindenau, an assistant of Fischer's. Unfortunately, Lindenau's manuscript was never published or even utilized, and remained forgotten until resurrected by Zolotarev, who has given us an all-too-brief description of it (Zolotarev, 1938b).

25. Zolotarev is presumably referring to the same sources when he mentions the ancient use of the smoke-hole entrance in this area (1937: 28).

conclusively from archaeological remains. Traces of pit dwellings with no indication of an entrance passage might suggest this, however--such as the majority of the oldest house pits of the northern Kurile Islands (Baba, 1939: 5-21), and possibly also the large circular pits (2 to 2½ meters deep) on the lower Amur (Zolotarev, 1937: 27), or the smaller ones on the Tym River in northern Sakhalin (Zolotarev, 1936: 273). There is no mention of an entrance passage in the last two cases, but we cannot be sure about this from the scanty description. No finds elsewhere in Siberia to my knowledge suggest a smoke-hole entrance. In the New World, however, this manner of entrance is far more common, "being found in the Pueblo region of the Southwest, from California to southern British Columbia, and then again in the Aleutian Islands." (Collins, 1937a: 280). The Aleut occurrence is of particular interest, owing to their proximity to the Kamchadal. Hrdlicka (1945: 43-47) quotes the descriptions in various early accounts, all mentioning the feature. The relative distribution in Asia and America led Collins to suggest (1937a: 280) that this trait diffused into Kamchatka from the New World via the Aleutians. This theory seemed quite convincing at the time, when the Old World distribution appeared limited to the Koryak and Kamchadal. Now, it must be regarded as an open question.

Access to the Kamchadal house through this entrance was effected by means of a notched log ladder, as with the Aleut (Hrdlicka, 1945: 45), whereas the Koryak use a split log with pierced holes for steps (Jochelson, 1905-1908: 457).²⁶

26. What looks like an identical type of ladder is pictured by Holmberg (1927: plate xv) from the Cheremiss, a Finnish nation on the Central Volga.

The latter was placed vertically, whereas any notched log must of necessity be slanting. The notched log ladder is "widely known on both sides of Bering Sea, both in connection with the semi-subterranean earth lodge and the plank house...it is also known elsewhere in both hemispheres." (Birket-Smith and De Laguna, 1938: 371). All neighbors of the Kamchadal who have any need for a ladder (the Koryak excepted) apparently make use of the notched log. It seems a very widespread and probably ancient device.

While the Kamchadal house lacked the full-fledged entrance passage found among the Koryak (Jochelson, 1905-1908: 456, 458), Gilyak (Schrenck, 1881-1895: 322), and in typical Alaskan houses other than the Aleut²⁷ (Collins, 1937a: 275), this difference tends to be exaggerated (e.g. by Collins, *Ibid.*). Actually, there is very little fundamental difference between the Kamchadal draught passage (zhupan) and the Koryak entrance passage. The latter functioned as such only in the summer, when the Kamchadal did not live underground; so we cannot tell how they might have used their zhupan at that season. In winter the Koryak passage served as a draught for the fire, a cold storage place, and an optional entrance for women, children, and transvestites (never for men)--precisely as did the zhupan among the Kamchadal. Rudenko suggests (1948: 156-157) that originally the Kamchadal house had only an entrance

27. Cook's description speaks vaguely of "another entrance below" in some cases (in Hrdlicka, 1945: 45), but none of the other accounts suggest any access other than the roof entrance, although there may be more than one of these.

passage, and that the smoke-hole entrance was a later development. (All archaeological house remains have a feature resembling a passage). However, it seems to me that the zhupan would leave traces indistinguishable from an entrance passage, and that his argument is thus unnecessary.

A rectangular house form the Kamchadal share with the northern Kuriles (Polonskii, 1871: 379; Torii, 1919: 237), the Sakhalin Ainu (Torii, 1919: 243), Gilyak (Schrenck, 1881-1895: 321), Aleut (Hrdlicka, 1945: 43-47), and peoples of western and southwest Alaska (Collins, 1937a: 274-275). The rectangular pit houses of western Siberia are of a totally different type and construction, e.g. those of the Ket (Dolgikh, 1952: 159-160) and Ob Ugrians (Sirelius, 1906-1911, VII: 106-108). The attempt of Larsen and Rainey (1938: 54-55) to equate them with the Ipiutak house is not convincing. Rectangular pit houses of more probable affinity are known archaeologically from the northern Kuriles, where they are relatively late (Baba, 1939: 62-75, 111-125); and from southern Sakhalin (very late) (Baba, 1940b: 69-78). Remains of square houses were found on the Tym River in northern Sakhalin (Zolotarev, 1936: 273), but they do not seem to have been pit dwellings. Houses of this shape are common in prehistoric Japanese sites (Goto, 1940: passim), but their chronological status is unclear and many other shapes were also in use.

The Koryak houses were octagonal (Jochelson, 1905-1908: 453)--which would account for the roughly circular house pits reported from probable Koryak sites (Jochelson, 1928a: 48, 65). The only other specifically octagonal structures in the general area are the kashims of Alaska between the mouth of the Kuskokwim and Bristol Bay (Collins, 1937a: 272-273). The

house of the neighboring Okhotsk Foot Tungus, described as "circular" (Zolotarev, 1938b: 71), might have been of this type.²⁸

Four centrally-placed roof supports characterize the construction of the Kamchadal dwelling, as with the Koryak (Jochelson, 1905-1908: 453-454), Gilyak (Schrenck, 1881-1895: 322), Yakut (Jochelson, 1933a: 139), Ipiutak (Larsen and Rainey, 1948: 147), and in southwest Alaska (Collins, 1937a: 277). This four-post roof construction is widespread in North America. De Laguna (1947: 109) suggests its spread to Asia via the Aleutians--yet it is not used by the Aleut themselves. Furthermore, the circular pit houses on the Yamal Peninsula may have had this type of roof support (Chernetsov, 1935: 118), which would indicate that the trait might be well established in the Old World as well.

28. Round pit dwellings are known archaeologically from the lower Amur (Zolotarev, 1937: 27), northern Sakhalin (Zolotarev, 1936: 273), and prehistoric Japan (Goto, 1940: passim). Also from the Yamal Peninsula (Chernetsov, 1935: 118). We do not know the shape of the underground house formerly used by the Ul'chi (Ivanov, 1951: 71-72), the Yukagir (Jochelson, 1926: 348), or the ancient Wu-chi of Manchuria (Eberhard, 1942: 31-32). Other Manchurian tribes are also reported to have lived in "Erdwohnung" or "Hohle" in olden times (Ibid: 29-34). It is uncertain from the meagre data whether the Orochi (Zolotarev, 1934: 81) or the Negidal (Shternberg, 1933: 531) built true subterranean dwellings of northern type, or imitations of Chinese winter houses as the Gold did (Ivanov, 1951: 71). In any case we know nothing about their shape.

The sleeping platform extending around three sides of the house is shared with Ipiutak (Larsen and Rainey, 1948: 147), western and south-western Alaska (Collins, 1937a: 274-275), the Yakut (Jochelson, 1933a: 135), Sakhalin Ainu (Torii, 1919: 243), and Gilyak (Schrenck, 1881-1895: 322). The northern Kuriles in the last century had benches on two sides (Torii, 1919: 237); Krasheninnikov mentions mat-covered "shelves" in his time, but gives no details (1949: 468). The Koryak have only one platform at the end opposite the door, for the use of guests. (In the Kamchadal house the place of honor was similarly located opposite the zhupan). The regular occupants sleep on the ground along the sides (Jochelson, 1905-1908: 460). No platforms of any kind are reported for the Aleut, and their absence is specifically noted by Cook (Hrdlicka, 1945: 45). Like the Koryak, the Aleut made their beds directly on the floor.

On the whole, the Kamchadal winter dwelling seems to have had its closest counterpart in the contemporary house of the northern Kuriles. Krasheninnikov says (1949: 468) that the latter's yurts were the same as the Kamchadal, only kept cleaner. However, we know that he had no opportunity to inspect them personally, except in border areas, and he offers no further information.²⁹ Steller (1774: 215) does not say in so many words that the Kurile winter dwelling was the same as the Kamchadal; he says that it was

29. Antropova (1949b: 416) calls attention to the fact that Krasheninnikov discusses the Kurile settlements in a very different manner from those of the Kamchadal, and feels that this indicates some essential difference. This might, however, lie rather in the settlement pattern than in the construction of the winter dwelling itself, but the point is worth bearing in mind.

better constructed, and not so smoky; "very high", and capable of holding fifty sleepers comfortably. There is the implication that it was larger than the typical Kamchadal house, which would put us in mind of the huge Aleut dwellings. However, the rectangular pit dwellings with a passage of some sort excavated by Baba in the area, which apparently date from just this period, are of very moderate size (Baba, 1939: 62-75), and do not seem to differ much from house remains further north in Kamchatka.

The Koryak house displays some specializations, such as the funnel-like roof superstructure, which may tend to obscure what is probably a basic relationship with the Kamchadal. The huge Aleut communal houses, on the other hand, are structurally quite different--though sharing certain features. Their resemblance to the Kamchadal is more superficial. However, if smaller pit dwellings were characteristic of the pre-Aleut population, they might show greater kinship. As it is, Collins (1937b: 381) somewhat exaggerates the similarity of the Aleut and Kamchadal houses, and conveys an impression of closer relationship than the facts justify.

There is a tendency to see in the balagan, or pile summer dwelling of the Kamchadal,³⁰ either a unique feature or a clear link with southern regions where pile dwellings are widespread. The undoubted presence of southern elements in the formation of early Japanese culture supplies a link and lends plausibility to the latter viewpoint. Pile dwellings are otherwise rare in northeastern Asia and vicinity. The Gilyak, like the Kamchadal, move into

30. Described by Steller (1774: 216-217), Krasheninnikov (1949: 377), and De Lesseps (1790: 26-29).

a summer house on piles (vid. Schrenck, 1881-1895: 355-356), and for about the same reasons: the underground house gets full of water, they want to locate temporarily at favorable fishing sites, and to keep off of the damp ground. But there is little actual resemblance between the structures of the two peoples, while in each case the summer dwelling is almost identical with the local storehouse³¹--so much so that one is obviously an outgrowth of the other. But was the parent structure dwelling or storehouse? De Laguna believes (1947: 113, 278) that Asiatic pile houses and storehouses were derived from southeast Asia, and traveled thence up the Pacific coast. This type of structure, she thinks, was first a dwelling, later a summer house, and finally a storehouse. In its final form it was carried over into the New World by the "Circum-Pacific Culture Drift". The occasional instances of pile dwellings on the Northwest Coast, and those of the King Island Eskimo, De Laguna (1947: 113) regards as accidental reversions to a former function, or as independent local inventions stimulated by the pile cache. I believe she is entirely correct in the latter view; but I also feel that the Kamchadal and Gilyak summer houses can most reasonably be explained in precisely the same way: as independent developments, in each case, from the local storehouse, rather than as marking the northernmost and northwesternmost limits of a direct cultural intrusion from southeast Asia, as seems to be the prevalent view. The Kamchadal balagan, in other words, need not be regarded either as a unique incomprehensible feature or as a southern element.

31. The Gilyak summer house and storehouses on piles are also found among the neighboring Ul'chi (Strenina, 1949: 53), who obviously borrowed them as they did so many other items of Gilyak culture.

In support of this position I would point out the isolation of the Kamchadal and Gilyak pile dwellings, both from each other and from any area where such houses are in use;³² their lack of similarity to each other, but strong resemblance to their respective storehouses; and the almost universal distribution of pile storehouses in northern Eurasia³³--both peoples being surrounded by them. They are obviously a very old feature in this region, and it is hard to see in them the final stage of a long evolution, in which

32. Two references do exist to pile dwellings in the southernmost Kuriles-- strategically located to serve as connecting links with the south. Tatarinov (1790: 98-99), reporting the voyages of Antipin in this area (1775-1782), states that the inhabitants live in grass-covered balagans on piles. There is, however, no confirmation from the numerous other early observers of such a practice--which could hardly have escaped notice. The thatched pile storehouse, to be sure, is a common feature of Ainu villages; and anyone fresh from Kamchatka with its balagan-dwelling population could easily jump to erroneous conclusions on superficial acquaintance. In the other case, Balogh v. Baratos (1914: 174) reproduces what is obviously an early illustration of a Kamchadal settlement with the caption "Shikotan Ajnu Wohnung"--a clear error of attribution in some museum file.

33. Kuriles (Torii, 1919: 240), Hokkaido Ainu (Holland, 1874: 241; Bird, 1888: 223; H. von Siebold, 1881: 19), Sakhalin Ainu (Howard, 1893: 39), Gilyak (Schrenck, 1881-1895: 358), Orochi (Margaritov, 1888: 5), Ul'chi (Strenina, 1949: 53), Gold (Lopatin, 1922: plate 9), "all Northern

(footnote continued)

Tungus" (Shirokogorov, 1926: 137), Udehe (Shirokogorov, 1933: 298), Koryak (Jochelson, 1905-1908: 467), Yukagir (Jochelson, 1926: plate xviii), Asiatic and Bering Strait Eskimo (Birket-Smith and De Laguna, 1938: 378), Ket and Sel'kup (Prokofjew, 1933: 132), Ostyak (Schultz, 1923: plate 5), Zyrian (Belitser, 1952: 64), Karelian (Manninen, 1932: 57), Lapp (Collinder, 1949: 75-76). (Tripods replace piles in supporting the Koryak and the large-type Lapp storehouse). Birket-Smith and De Laguna (1938: 378) say the storehouse is common in "this region"--apparently meaning northwestern North America.

the scarcely marginal Kamchadal and Gilyak summer dwellings represented the ancestral stage. It would seem far more reasonable to regard the process as just the reverse: an ancient trait, widely shared over a vast area, giving rise therein in two sporadic instances to a specialized development which still adhered closely to the form of the prototype. It would not, after all, seem too difficult a step for a people whose winter dwellings were rendered uninhabitable by water to hit upon this dual utilization of an already existing structure. Furthermore, if the Kamchadal balagan were of southern origin, its superstructure might be expected to reflect this fact. But instead of a dwelling with any southern parallels whatever, we find atop the pile platform the most typical boreal house type imaginable--the conical tipi. Nothing could point more conclusively to the northern origin of the Kamchadal balagan. I would even venture to suggest that it may represent the sole survival of the most ancient type of storehouse in arctic Eurasia. Most of the ethnographic examples of the pile storehouse seem to have as the superstructure an interlocking log cabin or some modification thereof. This is obviously not aboriginal but a result of Russian influence, and must have supplanted some earlier form, whose shape we do not know. Might not the latter have reflected the most widespread house-type in the area--the conical tipi? Just such a replacement of an ancient conical pile structure by a gable-roofed interlocking log cabin has taken place in modern times among the Kamchadal. Perhaps this phenomenon reflects a general pattern of cultural change that occurred elsewhere in Siberia at an earlier period. The superstructure of the Gilyak pile dwellings, like most house-types of the Amur region, is inspired by Chinese architecture. This further strengthens the probability that it is an independent local development.

The Kamchadal also on occasion built temporary huts of grass directly on the ground (Steller, 1774: 217-218; Krasheninnikov, 1949: 377; Dobell, 1830, I: 37), but we know nothing of their shape or construction.

Palisaded villages were built by the Kamchadal (Steller, 1774: 218-219), as well as by the Koryak (Jochelson, 1905-1908: 563). The Ainu in the seventeenth century had palisaded forts on mountains (P. von Siebold, 1859: 115-116), while the Kuriles constructed earthen forts (Torii, 1919: 228-229). The Aleut built no fortifications (Hrdlicka, 1945: 146). On the Northwest Coast, Birket-Smith and De Laguna (1938: 375-376) believe they were an integral part of aboriginal culture.

The subject of sweat baths is a complicated one owing to its introduction by the Russians in many places at an early date. The Kamchadal did not employ it as such, but had a curious custom of steaming up the house as a high mark of hospitality (Krasheninnikov, 1949: 432-433).³⁴ Torii reports (1919: 239) the Kuriles as heating their houses by pouring water on hot stones. The typical sweat bath of the North Pacific coast of America is a dry heat bath (Birket-Smith and De Laguna, 1938: 369-370); with the probable exception of Kodiak Island (Hrdlicka, 1944: 30, 133, 394) and Prince William Sound (Birket-Smith, 1953: 68), steam baths in this area are apparently not aboriginal.³⁵

34. The Russians erected bath houses in Kamchatka wherever they settled. The Kamchadal rarely enter them, but when they do, "they steam themselves so hotly that no Russian can endure it." (Golovnin, 1861: 48).

35. Drucker (1950: 192) reports steam bathing (water over hot stones) for all the northern Northwest Coast tribes, starting with the Bella Bella. But there is no data on the antiquity of the practice in this area.

Clothing

A careful scrutiny of the remarks of Steller (1774: 304-310) and Krasheninnikov (1949: 387-393) on the subject of the Kamchadal costume has led me to the conclusion that major changes were taking place in this department during the time of their sojourn in Kamchatka. The dress described by Krasheninnikov (and later writers) is identical with that of the Koryak,³⁶ and this has resulted in their being lumped together and treated as one for this purpose down to the present day. The materials for this clothing--overwhelmingly reindeer skins--were being obtained from the Koryak, and often the finished garments themselves (Krasheninnikov, 1949: 369). But Krasheninnikov states flatly that these reindeer-skin garments were a new thing for the Kamchadal, who formerly manufactured their clothes from a considerable variety of furs. Steller also speaks of the former use of quite different materials--furs and also birdskins--and implies that this had to be abandoned because nearly all the available furs were so efficiently confiscated by the Russians. Furthermore, his description of the Kamchadal costume differs in certain important respects from Krasheninnikov's: women wore a shirt and trousers like the men, instead of the famed "combination suit"³⁷ of the Koryak, Chukchi and Eskimo: the same applied to children.

36. The Koryak costume is described by Jochelson (1905-1908: 587-603), and the very similar Chukchi one by Bogoras (1903-1909: 234-253). The ancient Yukagir costume was of Chukchi style; subsequently they adopted the dress of the Tungus (Jochelson, 1926: 388).

37. "Hatt is undoubtedly justified in regarding the combination suit as

(footnote continued)

being very old" (Birket-Smith, 1929, II: 184). It seems restricted to the Eskimo culture area, however, with a few scattered occurrences elsewhere such as Naskapi (probably borrowed from Eskimo), Kamchadal (from the Koryak, as we are in the midst of demonstrating), southern Lapps, Kolyma population (undoubtedly from the Chukchi), Orochon and Lamut (I question the accuracy of the identification in the case of the latter two; the garment would be alien to the highly distinctive Tungus manner of dress). (Above distribution from Birket-Smith, 1929, II: 184; comments by the present writer.)

I interpret the situation as follows: the aboriginal Kamchadal costume is the type described by Steller; it differed somewhat from the Koryak one, and was made of dog, fox, sable, marmot, sea otter, mountain sheep and bird skins, rather than reindeer skin like the northern tribes. After the Russian conquest, dressing in furs became impracticable if not almost impossible. As a substitute, the Kamchadal turned to reindeer skins which could be obtained in quantity from their northern neighbors--especially since the cessation of intertribal conflict under Russian rule. As a result of this trade, certain elements of the Koryak costume were adopted, with the result that the two modes of dress became indistinguishable. It is this "new" costume which Krasbeninnikov describes.

Let us examine the affinities of what seems to be the aboriginal Kamchadal costume.

The man's shirt is of the type which belongs ultimately (according to Hatt) to the earliest determinable layer of Arctic culture; it is derived from the simple poncho. This form (which is characteristic for all Eskimo) occurs in the Old World among the Samoyed and Finno-Ugrians, and the north-eastern Palaeo-Asiatics. The gap between these groups is due, he says, to an intrusion of a new type, the caftan, which is open at the front and must be a derivative of the cloak (Birket-Smith, 1929, II: 175).

The practice of putting together this shirt out of small skins--of birds and smaller animals--seems to have a more southerly distribution. Birket-Smith and De Laguna (1938: 388) say it probably represents a common type on both sides of the North Pacific, and cite it from the Pacific and Kuskokwim

Eskimo, Eyak, Tanaina, and Atna. Waterfowl skins were sometimes used for parkas of poor people on St. Lawrence Island and the Diomedes, and in southwestern Alaska the parka was quite commonly made of small animal or bird skins (Nelson, 1899: 31-32). One gets the impression that in western Alaska such materials were being supplanted by imported Siberian reindeer skins. The Koryak told Jochelson that they formerly used bird skins, and such garments were typical for the Kuriles (Steller, 1774: 23, 304),³⁸ and also the Aleut (Hrdlicka, 1945: 69-70, 74) and Koniag (Hrdlicka, 1944: 37-40).

The Kamchadal trousers, like the Koryak and Chukchi, belong to Hatt's "legging breeches" type, which is unknown in North America outside the Eskimo area. This type has been supplanted in the rest of Asia by a later form--trousers derived from the breech-cloth--which seems to have penetrated over onto the Northwest Coast. In the Old World, legging breeches survive outside our immediate area only among the southern Lapp and in our own western civilization, where they go back to antiquity (Birket-Smith, 1929, II: 182-183). Some of the Aleut men, according to Steller, were wearing summer seal-skin trousers like those of the Kamchadal (in Golder, 1922, II: 97). Apparently they were used mainly for fishing, and were not worn at all times (Langsdorff, quoted in Hrdlicka, 1945: 74). There is no indication of trousers among the Kuriles, but our information is too meagre to be decisive.

These shirts and trousers were the fundamental costume for both sexes at all seasons. Additional clothing for colder weather consisted simply in adding further layers of basically identical garments, varying only in length

38. The ancient Kurile garment may have opened down the front like a coat--which is typical for the Ainu. Cf. Krasheninnikov, 1949: 468.

and materials. The same situation prevailed among the Chukchi and Koryak, and presumably the ancient Yukagir, the only difference being the use of the combination suit as an undergarment by women, as with the Eskimo. I find no reference to the latter for the Aleut, however, whose women wore a parka cut like the men's but differing in material (Hrdlicka, 1945: 70), and apparently without trousers.

The presence of the fundoshi or men's breech clout of Japanese type among the Kamchadal is of interest. Steller's description of it (1774: 313) is sufficiently detailed to leave no question as to its nature. This fundoshi, according to Torii, is typical for both sexes among the Kuriles and the Hokkaido Ainu, and can be seen on prehistoric figurines from Japan (Torii, 1919: 158-159; Kindaichi, 1925: plate 3, shows an Ainu man dressed in one). It is, of course, a common male appurtenance among the primitive peoples of Indonesia. The brief loin breeches of the Maritime Chukchi and Asiatic Eskimo pictured by Bogoras (1904-1909: 253) do not seem to be to be related. There is mention by Shelekhov of the Koniag covering the genital region with "any sort of piece of skin, flowers or grass" (Hrdlicka, 1944: 37) which might or might not resemble the fundoshi. Birket-Smith and De Laguna (1938: 390-391) state that breech cloths were never worn by the Eskimo, Yukon Athapaskans, or Northwest Coast tribes (except a single reference for the Tsimshian). Their occurrence among the Eyak is remarkably isolated and possibly recent. However, they believe the fork gusset in some Eskimo trousers to be a survival of the breech cloth, and on these grounds call it an apparently old circumpolar type. Possibly so, but the Kamchadal fundoshi is obviously a later intrusion from the south--or reappearance, if you will.

Since we are verging on nudity, that subject might as well be mentioned at this point. In the earliest report on the Kamchadal, Atlasov remarked that some went to battle naked in summer (Ogloblin, 1891: 15)--a custom he obviously considered unusual, and hence probably not encountered elsewhere in Siberia. (We may presume that "naked" meant clad only in the fundoshi). Krasheninnikov informs us (1949: 390) that men in summer wore only this garment when **engaged** in hunting and fishing. They did the same at all times when indoors (Steller, 1774: 313). Such habits are characteristic of the Hokkaido Ainu ("only garment in summer", Bickmore, 1868: 359; "men in summer wear little or nothing", Landor, 1893: 277), and point toward sunnier climes, it would seem. The nearest occurrence in North America is among the Koniag, where men are reported to have been naked in their boats in summer, and also at home (presumably with a genital covering) (Hrdlicka, 1944: 22, 37). In this respect the Koniag are doubtless an outlyer of the Northwest Coast, where such practices are not uncommon and presumably autochthonous.³⁹ Nudity or varying degrees thereof within the winter house is, of course, very typical for all branches of the Eskimo and for the Chukchi. The Koryak are more

39. Northern Northwest Coast: men almost naked in summer (Niblack, 1890: 242); Kwakiutl: men often stark naked (Curtis, 1915: 5); Nootka: naked in good weather (Drucker, 1951: 99); Gulf of Georgia Salish: not uncommon for men, especially older ones (Barnett, 1938: 125); Quinault: men often entirely naked in summer (Olson, 1936: 55). The custom may have been more general than is presently admitted in this area (Drucker, 1950: 260).

prudish. There is no mention of the Kamchadal women being anything but properly garbed at all times, so the male penchant for nudity is probably more akin to the Ainu than to the mass dishabille of the Eskimo.

There is no trace among the Kamchadal of the men's apron, which Birket-Smith and De Laguna (1938: 391) regard as a circum-Pacific trait, and which is found on the Northwest Coast, among the Pacific Eskimo and Eyak (Ibid.), and also among the Ainu (Montandon, 1937: 86).

We have a late reference to the gutskin coat on Kamchatka (Guillemard, 1889: 74) as well as for the Kuriles (Torii, 1919: 161). We must assume that the latter is traceable to the Aleut sea otter hunters formerly operating in the islands in Russian employ, and a comparable history for the former is to be expected. Such garments are not mentioned in the older accounts for either region. The Koryak, it is true, told Jochelson (1905-1908: 599) that they formerly used seal gut for clothing, as do the Chukchi. It was the most characteristic garment of the Aleut (Hrdlicka, 1945: 70-75) and Koniag (Hrdlicka, 1944: 37-38); Birket-Smith and De Laguna (1938: 387) call it "peripheral Eskimo", and probably an element of the Thule culture.

As among the Chukchi, there is a clear sexual distinction in footgear, women's being knee-length and men's short. Koryak men have both high and low boots; the funerary use of the latter suggests that they may be the ancient type. Summer boots were made of seal skin--as with the Maritime Chukchi, to some extent among the Koryak, and the Aleut.⁴⁰ Winter travel boots were of reindeer legskin, with soles of seal skin, or of the bits of skin between

40. We are told that the Aleut did not often use boots or any footgear

(footnote continued)

(Hrdlicka, 1945: 76). The men's summer boots which Steller saw "seemed to be made after the fashion of the Kamchadal, out of seal leather, and dyed brownish-red with alder bark." (Golder, 1922, II: 97). The Koniag occasionally wore boots (Hrdlicka, 1944: 41), but commonly went barefoot even in the coldest weather (Ibid: 24).

reindeer's hooves, or again of bear's paws (very non-skid). Such boots were shared with the Chukchi and Koryak. Another type of winter boot, however, was made of fishskin, and this points mainly in the opposite direction. Fishskin knee boots are reported by Snow (1897: 13) from the southern Kuriles, and fishskin shoes from the Ainu of Hokkaido (St. John, 1873: 251), while the lower Amur is an area where the use of fishskin as a clothing material is highly developed.⁴¹

The Kamchadal practice of wrapping the feet in soft grass as a stocking seems to have been followed by the Chukchi and Koryak also, and is probably widespread in the area, since we find it mentioned for the Yakut (Jochelson, 1933a: 154), Ainu (Batchelor, 1927: 57; Balogh v. Baratos, 1914: 183), and Gilyak (Deniker, 1883: 298). A comparable practice was followed by the Alaskan Eskimo (Nelson, 1899: 43), Ingalik (Osgood, 1940: 270) and Tanaina (Osgood, 1937: 48).

A preference for dog skin over all other materials for clothing (Steller, 1774: 137-138) the Kamchadal share with the Gilyak (Lansdell, 1882: 597), and Gold (Ibid.). The Koryak use it to some extent, but don't seem to have the same attitude toward it (Jochelson, 1905-1908: 598-599).

41. In northwestern North America the use of fish skin seems confined to two isolated localities: 1) the lower Yukon, where the Ingalik make outer rain garments and over-boots of it (Osgood, 1940: 258, 268), and the very poor among the local Eskimo use it for parkas (Nelson, 1899: 31, plate xix). 2) interior British Columbia, where poorer people among the Lillooet and Shuswap make moccasins or shoes of this material (Teit, 1906: 219; 1909: 507).

For purposes of adornment, wolverine fur is most highly prized by the Kamchadal (Steller, 1774: 118), Koryak (Jochelson, 1905-1908: 557), Chukchi and Bering Straits Eskimo (Bogoras, 1904-1909: 236).

Dyeing the hairless side of skin garments red with alder bark is noted for the Kamchadal (Steller, 1774: 304), and Koryak (Jochelson, 1905-1908: 629). The Chukchi (Bogoras, 1904-1909: 219) and Yukagir (Jochelson, 1926: 430) do this as an integral and necessary part of the curing process for all skins. Batchelor (1927: 56) says that the Ainu sometimes dyed clothing with a decoction of oak or alder. An infusion of alder bark is the standard dye of the Alaskan Eskimo for fur or leather (Nelson, 1899: 117), while the Aleut dyed the skin side of clothing red, but alder is not mentioned (there is one reference to "red earth") (Hrdlicka, 1945: 70). The nature of the local vegetation in the Aleutians would explain this departure. Alder dye on skins is also reported from the Ingalik (Osgood, 1940: 382), Chilcotin (Teit, 1909: 764), Shuswap (Ibid: 476), Thompson (in tanning; Steedman, 1930: 501). The Kwakiutl (Curtis, 1915: 46), Nootka (Drucker, 1951: 97) and Makah (Swan, 1870: 45) use it for cedar bark. It is also made by the Quinault (Olson, 1936: 81).

The use of red-tinted seal hair as a decoration on clothing was a favorite device of the Kamchadal (Steller, 1774: 304-307), and is also reported from the Koryak (Jochelson, 1905-1908: 681), Aleut (Hrdlicka, 1945: 70), and Bering Straits area (Nelson, 1899: 30, 41).

Bills of ducks and seabirds similarly used are not mentioned for the Kamchadal, although they were worn around the neck as an amulet (Krashennikov, 1949: 311). Such adornment is, however, typical for the Kuriles (Golovnin, 1818: 32; Snow, 1897: 20), Aleut (Hrdlicka, 1945: 70, 74), Koniag (Hrdlicka,

1944: 38), and St. Lawrence Island (Nelson, 1899: 30). Duck bills as ornaments on children's girdles are also known from the Udehe (Brailovskii, 1901: 205).

The use of sinew as thread is general in the North Pacific and Arctic, from the Kuriles to the Northwest Coast, where the lack of tailoring renders it unimportant (see Birket-Smith and De Laguna, 1938: 424).

The Kamchadal women wore finger-less gloves at all times when working, and Steller says they were similar to the Tungus ones (1774: 312-313). Veniaminov also mentions "finger-less skin gloves" stuffed with grass as used by older people among the Aleut (in Hrdlicka, 1945: 78), although this might of course refer to mittens. Batchelor (1901: 150) speaks of gloves worn "on the back of their hands" in winter by Ainu men and women--whatever that may mean. Other gloves in the area are regarded as introduced, but there is no further reference to gloves without fingers.

The women went bare-headed (Steller, 1774: 310), as did the Aleut women (Hrdlicka, 1945: 78). Among the Koryak, women rarely wore caps, though both sexes of Chukchi did so.

A men's cap consisting of a head band with ear and other flaps hanging from it is described by Steller (1774: 310). Atlasov also noted that ear tabs were made from sable tails (Ogloblin, 1891: 10). Something similar is mentioned from the Gold by Ravenstein (1861: 369), and a brow band with ear tabs from the Tungus, Dolgan (Birket-Smith, 1929, II: 185--citing Middendorff) and Yukon-Kuskokwim Eskimo (Nelson, 1899: 37).

The presence on Kamchatka of the highly distinctive men's "sunshade" hat of the Aleut is a matter of great interest. This type of hat was in general use, with more or less modification, on all the islands from Kodiak

westward (Hrdlicka, 1945: 80). Similar wooden hats are used by the Yukon-Kuskokwim Eskimo; north of the Yukon they degenerate into a wooden visor alone (Nelson, 1899: 167, plate lxiv). The latter is also found among the Maritime Chukchi and Asiatic Eskimo (Bogoras, 1904-1909: 261). Their origin seems to derive from the zoomorphic masks of the Northwest Coast (Ivanov, 1930: 488).⁴² When Steller first encountered these hats in the Aleutians, he wrote in his journal that "the Kamchadals and Koryaks are in the habit of wearing exactly similar hats, several kinds of which have been purchased for the Art and Natural History Cabinet" (in Golder, 1922, II: 103). In the description of the Kamchadal men's costume in his work on Kamchatka (1774: 310), we read: "In the summer they wore wooden hats, or hats made of feather quills like lampshades, of the kind we have found in America."

Grass mat raincoats (Ibid: 80) suggest southern affinities; I have noted them from the Sakhalin Ainu (Howard, 1893: 70), and they are probably related to the well-known straw raincoat of Japan. Whether they have any relationship to the conical rain capes of twined cedar bark used on parts of the Northwest Coast (Drucker, 1950: 189) is problematical.

Steller states flatly that the Kamchadal snow goggles were borrowed from the Buryat, Tungus and Yakut (1774: 69). Although they might seem like a universal and basic necessity for the successful survival of any arctic people, such is evidently not the case. As Birket-Smith (1929, II: 188)

42. Birket-Smith (1953: 211) views them as identical with the woven conical hat of Asia and the Northwest Coast. Perhaps we must accept an ultimate relationship, but surely so distinctive a trait is entitled to separate status.

writes, "the Lapps have no snow goggles, nor do we find them among the Gilyak or Ainu...It is thus very probable that they are not a part of the earliest Polar culture."

Intimately connected with the subject of clothing is that of skin dressing. We have fairly good accounts of this process among the Kamchadal (Steller, 1774: 318-319; Krasheninnikov, 1949: 386), and can thus speak of it with some certainty. Particularly interesting is the fact that urine was apparently never used. It was employed by the Koryak (Jochelson, 1905-1908: 629), Chukchi (Bogoras, 1904-1909: 219), Yukagir (Jochelson, 1926: 430), Aleut (Hrdlicka, 1945: 106), Koniag (Hrdlicka, 1944: 51) and Chugach (Birket-Smith, 1953: 75). Birket-Smith and De Laguna (1938: 423) associate it with the Thule culture. Instead, the Kamchadal employed fish roe, which is somewhat unique in Siberia, although Bogoras states vaguely (1904-1909: 219) that it is one of the methods used by "other tribes" than the Chukchi. The use of fish roe is less uncommon on the American side of the Pacific, although here it is usually employed in conjunction--or at least side by side--with urine. The standard procedure of the Alaskan Eskimo for tanning reindeer skins, according to Nelson (1899: 117), utilized first urine and then boiled fish roe. This is confirmed for Nunivak Island by Curtis (1930: 44). The Ingalik used fish roe mixed with urine for rabbit skins and roe alone on squirrel skins--although large skins were treated solely with urine (Osgood, 1940: 163, 170). There is a single reference to the use of putrefied fish roe on bird skins by the Koniag (Petrov in Hrdlicka, 1944: 39). On the Northwest Coast use of rotten salmon roe is

reported from the Bella Coola, the Wikeno group of Kwakiutl, and the Haisla (Drucker, 1950: 196). The Lillooet also employed salmon roe (Teit, 1906: 205)

The instrument used in preparing skins was the two-handed scraper with stone blade. This was also used by the Chukchi, Koryak and Yukagir (Bogoras, 1904-1909: 217). It is known from some North American Indians, and was considered by Hatt a characteristic trait of the "Inland Culture", and hence unknown to the Eskimo. However, it was found at Ipiutak (Larsen and Rainey, 1948: 89-90) Elsewhere in Eurasia it is noted for all Tungus groups, Yakut, Ket, Altai, Ugrians and Lapps (Birket-Smith, 1929, II: 358--based mostly on specimens in Russian museums).

Turning to personal adornment, let us first consider tattooing. Its absence among the Kamchadal is striking, since it was practiced by the Kurile (Krasheninnikov, 1949: 468), Ainu (Montandon, 1937: 145; apparently it dates back to the Neolithic in Japan), Koryak (Jochelson, 1905-1908: 604), Chukchi (Bogoras, 1904-1909: 254), Asiatic Eskimo, Tungus, Yakut, Vogul (Rudenko, 1949), Aleut (Hrdlicka, 1945: 81-83), Koniag (Hrdlicka, 1944: 44-45), all American Eskimo groups (Birket-Smith, 1929, II: 269-270), Northwest Coast (Ibid: 344), Gold, Samoyed (Ibid: 347), and Ostyak (Manninen, 1932: 333) The Gilyak, like the Kamchadal, do not tattoo (Schrenck, 1881-1895: 422).

The Kamchadal also apparently lacked earrings or ear ornaments of any sort. Strings of beads dangling from holes in the ears were typical of Chukchi, Lamut (Bogoras, 1904-1909: 259), Koryak, Tungus, Gilyak (Jochelson, 1905-1908: 624), Aleut (Hrdlicka, 1945: 88-89), Koniag (Hrdlicka, 1944: 42), and many Eskimo (Birket-Smith, 1929, II: 268) The Kuriles wore big silver rings in their ears (Krasheninnikov, 1949: 468), as did the Ainu.

There is no record of the wearing of labrets by the Kamchadal. Such a conspicuous and bizarre custom could scarcely have gone unnoticed; early visitors were always quick to comment upon it elsewhere. Therefore I feel that we can be quite emphatic about its absence from Kamchadal culture. Jochelson, however, during his excavations (or, rather, his digging) on the south shore of Avacha Bay found in a pit house "a polished marble object resembling a labret" (1928a: 43). Unfortunately, he does not illustrate it. There are only two logical possibilities: either it is not a labret--and Jochelson is certainly not positive, although well acquainted with labrets elsewhere; or it was brought from a region where labrets are in common use--the nearest such being the Aleutian Islands. If such an occurrence ever took place, this seashore site would seem a natural location for it. Collins (1937a: 376) accepts this "labret" at face value, and even criticizes Jochelson's hesitation in the matter, on somewhat specious grounds. Three definite labrets have, however, been found on the northernmost Kurile Islands (Baba, 1939: 48-51). Unfortunately, none of them were scientifically excavated, so we know nothing of their context. Again there is the possibility of the Aleut sea otter hunters⁴³--or of prehistoric visitors.

43. As a probable example of the introduction of extraneous cultural elements into the Okhotsk Sea region by Aleut hunters in the first half of the last century, we might cite the kayak and atlatl observed c. 1855 by Tronson at Ayan on the Siberian coast above the mouth of the Amur River. This was at that period the seaport for the Russian-American Co. (Tronson, 1859: 125-126)

The labret is a distinctively southwest Alaskan trait, present in the earliest known period there (De Laguna, 1947: 10). The first settlers of the Aleutians had it (Laughlin and Marsh, 1951: 82). It was also found at Ipiutak (Larsen and Rainey, 1948: 114)--upsetting the theory that it only spread into northern Alaska in recent times. Strangely enough, none were found in the sites on St. Lawrence Island, although the modern Bering Strait Eskimo wore them (Ibid: 115-116), and they are found archaeologically at East Cape, Siberia (De Laguna, 1934: 205). They possibly reached their highest development among the historic Aleut (Hrdlicka, 1945: 85-86) and Koniag (Hrdlicka, 1944: 45), but were widespread on the Northwest Coast as well (Birket-Smith, 1953: 219).

Weapons

The precise identification of the Kamchadal bow is difficult if not impossible. Steller tells us (1774: 235) only that they were "very small", but implies that they were similar to the Kurile bow; Krasheninnikov says (1949: 404) they were of larch wood pasted over with birchbark. The assumption seems to be that they can be classified as "simple",⁴⁴ but a glued-on bark wrapping should make us pause. Ainu bows were made of a

44. Birket-Smith, however, calls the Kamchadal bow composite (1929, II: 316), citing these same references--a questionable deduction. He also lists the composite bow for the Ainu, citing Adler (1902). I find no basis for this whatever in the latter work.

single piece of wood, but were usually wrapped with thin strips of wild cherry bark to increase elasticity; a sufficiently elastic piece of wood was left plain (Goodrich, 1888: 507). Montandon (1937: 92-93) speaks of them as simple bows reinforced with a strip of bark wrapped spirally; and Torii (1919: 224) implies that the bows of the Hokkaido Ainu, like the ancient Japanese, were bark-wrapped. Hitchcock, however, states (1891: 492) that only one of the three bows collected by him was so constructed, and Adler (1902: 19) does not regard the bark reinforcement as extensive enough or common enough to disqualify the Ainu bow for the "simple" status, or to classify it as a true reinforced bow. So possibly the Kamchadal weapon, although reinforced to some extent, can still be called a simple bow.

It is customary to regard northern Asia as the domain of the composite bow, and to view such occurrences of the simple type as isolated anachronisms-- or as introductions by migrants from southern climes. However, simple bows are not as rare in northeastern Asia as might be supposed. They exist side by side with more elaborate types among the Ul'chi (Strenina, 1949: 41), Gold (Lipskaia, 1940: 252), Sakhalin Gilyak (Adler, 1902: 18), Chukchi (Bogoras, 1904-1909: 154) and Alaskan Eskimo. (Nelson, 1899: 156); and as substitute or emergency weapons among the Yukagir and Lamut (Bogoras, op. cit.). The simple bow was the only type used by the Orochi (Vasil'ev, 1940: 164) and Kuriles (Torii, 1919: 224)--in addition to the Ainu and Kamchadal. Further investigation would probably reveal a similar situation elsewhere.

The significant question is, therefore, not the presence of the simple bow among the Kamchadal, but the absence of the more complex types which are

in common use on every side except for the immediate south. The reinforced (sinew-backed) bow, so typical for all Eskimo (including Asiatic and Pacific, and the Aleut), is used also by the Chukchi and Koryak (Birket-Smith, 1929, II: 244-245), Sakhalin Ainu (Howard, 1893: 82) and Gilyak (Bogoras, 1904-1909: 153); while the composite "doublewood bow" is also widespread in the area: e.g. Koryak, Chukchi, Yukagir, Lamut, Yakut (Ibid.). Even the simple bows of the Northwest Coast reveal in their shape and construction a clear connection with the composite bow (Birket-Smith, 1929, II: 148). The Kamchadal bow seems clearly to be neither of these devices. As to why they were never adopted, one can only conjecture that the Kamchadal, like the Ainu, did not need a powerful bow: perhaps because the real work was done by arrow poison. There is an interesting correlation in this region, it seems to me, between sole reliance on the simple bow and use of poisoned arrows.

"Aconite...grows on all of Kamchatka, and its potency is well known to the inhabitants...and to the Koryak, Yukagir and Chukchi. They dig this in 'rolls', hang them up in the air to dry by means of cords, pound them into a powder, and coat their arrows with it." (Steller, 1774: 94-95; Krasheninnikov's identical statement is obviously copied: 1949: 240-241). This plant--the zgate of the Kamchadal and the liutik of the Russians--is identified by Berg as Aconitum Fischerii Rehb.⁴⁵ Two other species of aconite occur, but not commonly (Krasheninnikov, 1949: 240, footnote 2).

45. Lewin (1923: 174-175) identifies zgate as Anemone ranunculoides. Berg's identifications, based on the most authoritative materials, seem

(footnote continued)

beyond question. The two monumental modern works on the flora of the region (Hulten's and Komarov's) had not been published when Lewin wrote. Lewin also suggests that the Kamchadal added Cicuta virosa to the zgate to increase its potency. There would be no necessity for this if Aconitum were employed; Anemone, however, apparently lacks sufficient toxic power by itself. According to Krasheninnikov (1949: 443), Cicuta virosa was used to poison enemies, but apparently not by means of arrows.

Although Bogoras (1904-1909: 157) found no trace of arrow poison in his time among any tribe of northeastern Asia, there seems to be confirmation of its presence among the Chukchi and Asiatic Eskimo in documents of the mid-eighteenth century (Antropova in Krasheninnikov, 1949: 240-241, footnote 3). No details are given, but we may assume it was aconite. Heizer (1943: 444) points out that plants of sufficient toxic content probably do not grow this far north, so it is likely that the poison was secured by trade from Kamchatka. In this case we would have to assume its presence was thereby confirmed also among the intervening Koryak.⁴⁶ Its spread to the Yukagir would not seem unreasonable under the circumstances. Rudenko (1948: 161) apparently accepts this distribution. He states that no other Siberian tribes poison their arrows.

The Kuriles also made use of liutik on their arrows (Steller, 1774: 235-236), and on the southern islands "a poisonous plant with a large saffron-yellow bulblike root like rhubarb" was similarly employed and traded to the north (Ibid: 27-28). Use of poisoned arrows against the Russians on Iturup (1771) and Kunashir (1777) is cited by Berg (1946: 155).

The Ainu made extensive use of aconite arrow poison. Heizer (1943: 445) gives a bibliography on the subject, to which should be added H. von Siebold (1881: 20) and the very important account of Howard (1893: 111-113, 133-136) for the Sakhalin Ainu. It is of interest in this connection that poison arrow points of bird bone are reported from the Moyoro midden at Abashiri, Hokkaido, type site of the protohistoric Okhotsk Culture (Oba, 1950).

46. Lewin (1923: 175) says that the use of aconite arrow poison by the Koryak is "wholly unproven and more than improbable," but he does not seem to have any better idea to offer.

Schrenck states flatly that the Gilyak did not poison their arrows (1881-1895: 560).⁴⁷ However, there is an interesting account of the ancient I-lou people of eastern Manchuria, dating from about 220-265 A.D., in which it speaks of poisoned arrows for war and hunting that meant instant death. The poison was prepared annually during a two months' period (Ikeuchi, 1930: 97-98). The latter statement in particular is reminiscent of the sort of circumstances often surrounding the preparation of aconite. There is a similar account for a neighboring group, the Wu-chi (Malgal) north of the Yalu River (Eberhard, 1942: 31).

Among the Aleut, a poison "known to but a few" was used at times for dart and spear points, also for arrows (Veniaminov, quoted in Hrdlicka, 1945: 106). Erman, in mentioning (1848: 162) the former wide use of liutik as an arrow poison in Kamchatka, says that it still is so used among the Aleut.

Use of aconite poison on arrows by the Koniag is specifically stated by Sauer (quoted in Hrdlicka, 1944: 58). Heizer has demonstrated (1943: 448) that the use of aconite must have been introduced into the Aleutian-Kodiak area from the west in conjunction with whaling and inseparable from it. The knowledge was limited to a very few persons. Use of plant alkaloid poisons centers in southeastern Asia. There is a continuous distribution of aconite arrow poison from India through China to Hokkaido, the Kuriles, and Kamchatka (Ibid: 443, 445).

47. A poison made of putrefied fat is used on the arrows of set-bow traps by the Managir (Ravenstein, 1861: 351).

It is of interest that the Thompson Indians of British Columbia poisoned arrow points with "a species of *Ranunculus*" (Steedman, 1930: 511). They therefore employed a plant that was at least closely related to aconite. Use of a vegetable arrow poison for war is also reported (no details) for the Lower Carrier, Flathead and Klickitat (Ray, 1942: 151).

The set-bow, or self-acting bow, is not aboriginal in North America (Birket-Smith and De Laguna, 1938: 429), and though in recent times very typical of northern Asia, its status there is open to question. In northeastern Asia, Bogoras (1904-1909: 141) feels that it was probably copied from the Russians. It is most commonly used in this area by the Yakut and Lamut, although known to the other tribes. Steller implies (1774: 124-125) that it was a recent innovation on Kamchatka, and was apparently confined to the Kurile territory in the south. We do not know, however, whether the Russians were responsible, or whether it spread north from the Ainu. At any rate it is apparently not a part of aboriginal Kamchadal culture. There is a heavy concentration of set-bow use in the Amur-Ainu area,⁴⁸ and since Russian influence in this region was very late or absent altogether, and the area furthermore borders on the ancient habitat of the crossbow, we can reasonably believe the set-bow here to be aboriginal (in the sense of relatively ancient). The question of the relation between the crossbow and the set-bow, it is true, is a knotty one, and such kinship cannot, of course, be assumed. Wilbur, in

48. Gilyak--small animals only (Schrenck, 1881-1895: 554-556)--although its use for bear by the Sakhalin Gilyak is reported by Hawes (1904: 296-297); Sakhalin Ainu--commonest trap (with poisoned arrow) (Howard, 1893: 138);

(footnote continued)

Orochi (Ravenstein, 1861: 382); Managir (Ibid: 351); Okhotsk coast--large game (Bush, 1871: 276-277); Gold, Orok, Tungus (Specimens in National Museum, Copenhagen: Birket-Smith and De Laguna, 1938: 429); Kuriles (Torii, 1919: 223); Ainu of Hokkaido (Bird, 1888: 270; H. von Siebold, 1881: 20; Batchelor, 1901: 461-465--with diagrams of different types for various animals from bears to rats); Tungus of northern Pribaikal (Levin, 1936: 75--"ancestral" means of catching sable). This list does not pretend to be exhaustive.

his study of the crossbow (1937: 428), feels that the origin of the latter is possibly to be sought in the self-acting bow trap, which he points out, is more widespread than the crossbow. (The recency of a good deal of this distribution is not taken into consideration, and might on closer examination weaken or invalidate his argument). He admits, however, that there is no real evidence of such an evolution. I wonder if it might not have been just the reverse. The crossbow is a Chinese invention, dating from at least the third century B.C., which has subsequently spread all over the world. During the first century B.C. and the first few centuries A.D. it was the standard offensive projectile arm of the Chinese frontier troops. The latter point is highly significant to my mind, since this means that many primitive peoples over a wide zone had an opportunity to become acquainted with this weapon at a fairly early date. In particular, archaeological finds show its presence in north Korea in 7 B.C. The crossbow is known to have spread from China to Korea and thence to Japan, but neither of the latter two countries ever accepted it wholeheartedly in preference to the bow. In view of this, it is not surprising that the Siberian peoples did not adopt it as a weapon; their failure to do so is not clear proof that they did not have the opportunity, or could not have accepted the principle for another purpose without adopting the weapon. Wilbur shows an Ainu trap which is, he says, a variety of the true crossbow. Possibly this is where we must look for the origin of the Ainu set-bow, which may have spread north to the tip of Kamchatka (data in above discussion from Wilbur, 1937: 427-430, 437; interpretation by the present writer).

It seems to me that we have three possibilities to explain the prevalence of the set-bow in the Amur-Ainu area: (1) it is very old and aboriginal in Siberia, in which case it is hard to explain how it failed to penetrate into the New World--or why it seems to be so recent in northeastern Asia; (2) it was introduced into western and central Siberia⁴⁹ by the first Russians, and spread so rapidly that it was already firmly established on the Amur when that area came under Russian rule--which could hardly explain its wide use by the Ainu isolated on the Japanese islands; (3) it has some relationship with the presence of the Chinese crossbow in areas close to the Amur and in Japan at the beginning of our era, and spread out from here, although there was not time enough for it to reach northeastern Asia in the pre-Russian period.⁵⁰ I do not regard the latter alternative as demonstrated by any means, but I do feel that it presents fewer fundamental objections.

The Kamchadal used eagle feathers on their arrows like the Japanese (Golovnin, 1818: 41), Ainu (MacRitchie, 1892: 18; H. von Siebold, 1881: 19), Gilyak (Schrenck, 1881-1895: 565), Orochi (Ravenstein, 1861: 378),

49. In this area I have references to the set-bow in recent years only from the Finns (Manninen, 1932: 26), Ostyak (Ibid: 341), and Samoyed (Birket-Smith and De Laguna, 1938: 429--museum specimen), although I have not pursued the subject. Nor do I know anything of the history and antiquity of these occurrences, which may well be similar to the situation in northeastern Asia.

50. The predeliction of the Yakut (much of whose culture was brought from south to north in relatively recent times) for the set-bow, previously noted, suggests that they may have been responsible for some of the northward spread of this device.

and Koniag (Hrdlicka, 1944: 92). The latter three, at least, kept eagles in captivity for the purpose, as did the Kuriles (Steller, 1774: 194). The Japanese trade with the Kuriles for eagle feathers, which has a considerable antiquity, is discussed by Leroi-Gourhan (1946: 101-102).

Our information on defensive armor is, as usual, unsatisfactory. In a passage that seems to refer to the Kamchadal, Krasheninnikov (1949: 404) describes the use of a coat-of-mail or cuirass made of mats or chirel (meaning?), or of thongs (bands?) of seal or walrus hide joined together. The latter sounds like Bogoras' description of Chukchi hide armor (1904-1909: 162), especially since it is described as fastening on one side, and having a board projecting up in back to protect the head--details typical for Chukchi armor in general (see the illustrations in Bogoras, op. cit.: 163). However, there are no walrus in the Kamchadal area, so perhaps we are dealing with the Koryak--although such armor or the materials therefor could have been traded south into Kamchadal territory. Steller (1774: 236) speaks of the use of clubs made from the penis bone of walrus, which could only have been acquired by trade from the Koryak. Mat armor evidently has a southern origin, since there is no indication of its existence among other peoples of northeastern Siberia (Antropova in Krasheninnikov, 1949: 404, footnote 2). In a previously unpublished manuscript of Krasheninnikov (1949: 705) there is a reference to "bone or sealskin armor". Ivory plate armor was known to the Chukchi and Bering Strait Eskimo (Bogoras, 1904-1909: 162), and armor of bone plates or walrus hide to the Koryak (Jochelson, 1905-1908: 563; Krasheninnikov, 1949: 382). In the Vladivostok Museum there is a specimen of alleged Kamchadal armor consisting of wooden plates covered with leather

intended to surround the upper part of the body, to which was attached a skirt of eight thick leather hoops; a helmet of horn plates completed the outfit (Gluzdovskii, 1907: 30). This helmet fits into the general pattern of northeast Siberian armor discussed above--a pattern apparently shared by the Gilyak, Koryak, Chukchi and Bering Strait Eskimo (described by Bogoras, 1904-1909: 161-168), and which first appeared in the Punuk period (Collins, 1937a: 331). This type of armor got no further into the New World: the slat armor of the Northwest Coast is very different and probably unrelated (Ibid: 330,332).⁵¹ Aleut armor was of the latter type (Hrdlicka, 1945: 132, 137). As to the origin of the northeast Siberian plate armor, Laufer argues vehemently against the easy conclusion that it is an imitation in bone of Japanese or Chinese metal armor. Such bone armor, he asserts, is at least as old as, or even older in northeastern Asia than iron plate armor in China or Korea (which in turn long antedates any Japanese armor). He doubts that it was a direct imitation of anything, but if there was an outside stimulus, it came from the interior of Siberia, where bone armor was ancient among the Scythians. Laufer points out that the cut, style, and manner of wearing of this northeast Asiatic armor is unique; that it could be an indigenous invention, and that even if outside stimulus was involved, a subsequent independent development in situ must be granted (Laufer, 1914: 266-274). The question is a highly complicated one which would lead us too

51. For the New World distribution of armor of this type, see Birket-Smith, 1953: 215-216.

far afield. Suffice it to say that this armor complex seems to have had a respectable antiquity in northeastern Asia, and was shared in by the Kamchadal, having obviously reached them from the Koryak.

However, there are indications of another armor complex in our area, which may be unrelated to the preceding, or at least only distantly and anciently. The Ainu, according to a source of 1622, had coats of small planks (P. von Siebold, 1859: 99); and on Kunashir in the Kuriles wooden slat armor is reported in 1777 (Berg, 1946: 155). Birket-Smith has recently (1953: 216) cited indications of such armor in Japan and China. If this wooden armor continued to spread northward, meeting and mingling in Kamchatka with the northeast Siberian type, something like the specimen in the Vladivostok museum might have resulted. Possibly this Ainu-Kurile armor links up with the rod and slat armor of the Aleut and Northwest Coast, which as we have noted previously is totally unrelated to the northeast Siberian complex and could not possibly have been derived from it. This is just a suggestion; a thorough investigation of Ainu armor--if there exists anything to base it on--would be required in order to establish any convincing relationship or to approach the problem of relative age, origin, and direction of movement.

Wooden clubs were used by the Kamchadal for close combat (Steller, 1774: 236). I can find no reference to clubs for the Chukchi or Koryak, but among the Ainu the club was an important weapon in older times (H. von Siebold, 1881: 21), and it is noted also from the Kuriles (Steller, 1774: 348; Kozyrevskii in Berg, 1946: 149). The Aleut used wood and bone clubs (Hrdlicka, 1945: 133), and stone clubs are common on the Northwest Coast (De Laguna, 1934: 175).

The lance is too universal a weapon throughout the entire area to have any significance.

The sling is not mentioned for the Kamchadal except by Atlasov (Ogloblin, 1891: 16); it is more likely that this refers to the Koryak. The sling in Eurasia has a limited and extremely northern distribution; in the New World it is lacking among the Aleut and Pacific Eskimo, and most of the Northwest Coast tribes (Birket-Smith, 1929, II: 243, 313-314).

The atlatl was definitely absent from Kamchadal culture. It is typical for the Eskimo, including Asiatic, Pacific, and Aleut (Ibid: 249), but in Asia was restricted to the extreme northeast corner: the Chukchi, Koryak, and population of the Anadyr and Kolyma Rivers (Bogoras, 1904-1909: 145).⁵² The bird dart, with a similar distribution (Birket-Smith, 1929, II: 248-249), was also lacking.

Steller and Krasheninnikov have left us no information on the nature of the weapon used for taking sea mammals, except the single reference to a thong attached to the one employed for sea lions (Krasheninnikov, 1949: 275).⁵³ We can thus only postulate the presence of a harpoon of some sort, but have no basis for a comparative treatment of what is elsewhere the prime

52. There is an erroneous record of its occurrence among the Gilyak (F. Krause, 1902: 132).

53. Bone harpoons with inserted metal blades are described and pictured by Tiushov (1906: 414ff), but it is risky to infer that they necessarily reflect the aboriginal type after nearly 200 years.

diagnostic trait throughout the North Pacific--a most regrettable lacuna. Nor does archaeology come to our assistance. In Rudenko's words (1948: 166-167), harpoon points from Kamchatka are counted singly where bone artifacts are numbered in tens and stone artifacts by hundreds. Moreover, all these come from the Kurile area in the south or the Koryak border on the north--and are mere fragments or portions. Schnell (1932: plate XVII-7) pictures a barbed point from Tar'ia Bay, but this is clearly the prong of a fish spear.

The distribution of harpoon types in the North Pacific has been discussed so fully and so often⁵⁴ that it would be pointless to repeat it here.

Land Hunting

Hallowell (1926: 42) says there are three general methods of bear hunting in northern Eurasia and North America: forcing the animal out of its den and then killing it; hand-to-hand combat, usually with a spear; or trapping by various devices. The Kamchadal originally used none of these methods, apparently, although by the time of De Lesseps' visit numbers one and three had been adopted (1790: 104-108). Steller (1774: 114, 116) mentions only shooting with arrows (presumably from ambush, or after stalking)--a method still noted by De Lesseps, with the substitution of firearms--and a very specialized manner of killing within the den. In this, branches and logs

54. See e.g. Leroi-Gourhan, 1946: 325-412; Collins, 1937a: 306-321; De Laguna, 1934: 186-189; Birket-Smith, 1929, II: 155-156, 250-251, 323-325; De Laguna, 1947: 194-201.

are shoved into the mouth of the den, which the annoyed occupant pulls inside until he is finally cramped for space and unable to move. A hole is then made in the roof of the den, and the bear is killed with a spear. What seems to be this same method was used on occasion, but not invariably, by the Ainu of Hokkaido (Holland, 1874: 241) and the Reindeer Chukchi (Bogoras, 1904-1909: 142); customarily, in winter, by the Koryak (Jochelson, 1905-1908: 555), and in the Mackenzie River area in North America (Hearne, quoted by Hallowell, 1926: 36). Something of this nature was also practiced by the Ket (Shimkin, 1939: 154). Jochelson (*op. cit.*: 555) describes this as "the manner common throughout Siberia", but he may be referring simply to hunting the animal in its lair. I have not noted the specialized technique so far elsewhere. Hallowell (1926: 36) states that it was used by the Lapps, citing Turi. But I find that Turi's account describes something entirely different (Turi, 1931: 121).

Krasheninnikov, according to Jochelson (1905-1908: 555), declares that all traps in Kamchatka were introduced by the Russians. This may well be the case, but what Krasheninnikov actually said (1949: 243) was merely that all the methods of catching foxes which he was describing had been introduced by the cossacks. It is true that there is no mention of an unquestionably aboriginal trap in Kamchadal territory; but neither is there any clear statement that they were totally unknown.⁵⁵ The Koryak even today use very few

55. Birket-Smith (1953: 207) attributes the springpole snare to the Kamchadal, citing Steller. The latter, however, is describing methods of bear hunting in Siberia in this passage--not Kamchatka. It is a typical example of the ease with which Steller may be misquoted.

traps, and Jochelson (1905-1908: 555) believes that they were innocent of such devices in pre-Russian times. It seems certain that the Aleut had no traps (Hrdlicka, 1945: 137).

Pitfalls for geese are reported by Steller (1774: 190) for the Kamchadal on the Kamchatka River. Pitfalls have a rather erratic distribution, being known for only the most northerly groups of Eskimo (Birket-Smith, 1929, II: 253), very sparingly elsewhere in northern North America (Ibid: 326-327), and in northeast Asia on the Kolyma and among the Ainu, Gold, Tungus and Manchu (Ibid.). About all one could deduce is that it is a very archaic method which has fallen into disuse in most places.

The pole snare has a very widespread but scattered distribution in both hemispheres, and "must be a very old culture element" (Ibid: 159). Steller (1774: 180) describes its use for catching nesting seabirds.

The ingenious system of rigging nets for ducks across artificially-constructed flyways (Steller, 1774: 190; Erman, 1848: 325) is also reported from the Ob-Irtysh area of western Siberia (Pallas, 1788-1793, II: 463-465; IV: 124; Finsch, 1879: 603-604).⁵⁶

56. The use of perpendicular flight nets in general for catching waterfowl is very widespread. They are found in most parts of Europe, in India, Australia, China, Japan, and on the Pacific coast of North America. They are common in Siberia. Often such nets are rigged across natural flyways such as streams or gorges (Macpherson, 1897: xxxix, xl, 219, 280-281, 286-287).

Sea Hunting

There is no clear evidence that the Kamchadal proper ever hunted whales, although they utilized stranded ones to the fullest, as did a number of non-whaling Northwest Coast groups (Drucker, 1950: 173), and the modern Sakhalin Ainu (Pilsudskii, 1907: 108). Collins believes that a similar situation prevailed in the Old Bering Sea culture (1940: 549). On the other hand, the Kuriles of the southernmost tip of Kamchatka and the adjacent islands sought out sleeping whales at sea in their baidars and attacked them with poisoned arrows (Steller, 1774: 98).⁵⁷ The capture of a whale resulted in ceremonial observances and festivities (Ibid: 103-104) rather reminiscent of those described for the Elutori Koryak (Ibid: 98-99). There are indications that the Ainu formerly engaged in whaling, but the methods employed are uncertain (the subject is discussed in Heizer, 1943: 422).⁵⁸ Poisoned lance whaling was present in the Aleutians, on Kodiak, and probably (Birket-Smith, 1953: 34) among the Chugach of Prince William Sound as well. Heizer (1943) has convincingly demonstrated its Old World provenience. Koryak whaling was of very different type (Jochelson, 1905-1908: 550-552).

57. For a more detailed account of this, see Muller, 1757: 471-472. This paper, although anonymous, is attributed to Muller by Mezhev (1891-1892).

58. There are, however, references to poisoned harpoons in Scheube (1882: 229) and Natori (1940: 138-139), the latter based on Ainu legends.

The Kamchadal did hunt seals extensively, but there is no evidence of the use of poisoned weapons for this. Three methods were followed: clubbing while asleep on land; stalking in disguise and harpooning; and closing river mouths with nets after a number of seals had entered (Steller, 1774: 109-110; Krasheninnikov, 1949: 271; Tiushov, 1906: 347-350).⁵⁹ The Kuriles, on the other hand, hunted them from boats with harpoons (Steller, 1774: 110), as did the Amur Gilyak (Kreinovich, 1934: 79-83), Koryak (Jochelson, 1905-1908: 548), Orochi (Margaritov, 1888: 13-14). Netting sea mammals is quite characteristic of the northeast Asiatic coast: Eskimo of Bering Strait (Asiatic origin--Steensby, 1917: 153), Chukchi (Bogoras, 1904-1909: 124-126), Koryak (Jochelson, 1905-1908: 543-544), Elutori Koryak (whales--Steller, 1774: 98-99), central Kurile Islands (sea otters--Golovnin, 1818: 42), Amur Gilyak (sea lions--Kreinovich, 1934: 83), Japan (whales--Heizer, 1943: 424-425). Comparable netting of seals on the Northwest Coast was limited to possible occurrence among the Kwakiutl (Drucker, 1950: 172).

Stalking on the ice in disguise is far more common, being a widespread Eskimo method (Birket-Smith and De Laguna, 1938: 434-435) as well as Old

59. Birket-Smith (1929, II: 225) erroneously ascribes the breathing-hole method to the Kamchadal, based on a passage in Steller (1774: 109) which is lifted out of context from Krasheninnikov (1949: 271), who was describing practices on Lake Baikal. This is a classic example of the dangers inherent in random, uncritical citations from these authors.

World: Chukchi (Bogoras, 1904-1909: 119), Koryak (Jochelson, 1905-1908: 548), Gilyak (Schrenck, 1881-1895: 544), Ul'chi (Strenina, 1949: 45), Ayan Tungus (Pekarskii and Tsvetkov, 1913: 50), Tungus of northern Pribaikal (Levin, 1936: 76), Sakhalin Ainu (MacRitchie, 1892: 39).

Fishing

Despite the primary role of weirs and traps in the all-important Kamchadal fishery, we know almost nothing about them. Steller merely mentions them (1774: 156, 158); Krashennikov speaks only of "a sort of coffer-dam or fence of stakes" on several occasions (1949: 303-308). Later writers describe them in more detail, but still not to our satisfaction;⁶⁰ moreover, we have no way of knowing what modifications might not have taken place in the intervening years. I have not been able to recognize any of these precise types of weirs and traps in the classic and exhaustive monograph of Sirelius (1906) dealing with the weir fishery of the Finno-Ugrian peoples. And our comparative materials for the rest of the circumpolar zone are not sufficiently detailed. The mere use of fish weirs as a device by any given people is

60. De Lesseps (1790: 112), Erman (1848: 214, 254-255, 462-463, 476), Kittlitz (1858, II: 273), Ditmar (1890-1900: 396), Guillemard (1889: 135), Bergman (1926: 96, 99-100), Demidoff (1904: 161-163).

about as diagnostic as the presence of pit dwellings, for as Birket-Smith says, they are spread over the whole of North America except for the Southwest and (to some extent) the Plains, and are generally diffused in northern Eurasia (1929, II: 161).

With fish nets, our data are somewhat fuller. There was some variety, both in type of net and size of mesh for different purposes. It is possible that seines were not used for fishing in aboriginal times. De Lesseps (1790: 112) says, even in his time, that seines (made of thongs) were used only for seals, but nets suitable for this purpose must have been long in use. Steller (1774: 142), after remarking that bag nets would be torn to shreds by such huge masses of fish, says that the Kamchadal used flat nets like those for birds. If he has in mind the elevated flight nets, something in the nature of a seine may be represented. Bag nets were, however, employed in ice fishing for herring (Ibid: 167). Krasheninnikov refers to casting nets (1949: 303) and scoop nets (Ibid: 299). By the nineteenth century, however, seining had apparently become a common practice, judging by the remarks of e.g. Erman (1848: 307-308), and Ditmar (1890-1900: 376).

This is the general picture we find for the Koryak. Even in Jochelson's time they were still unfamiliar with seine nets, although Russians in the area had long used them, and with seines they could have secured their whole year's fish supply in a few days. Instead, they relied on casting,⁶¹ hand,

61. Rostlund (1952: 82), on the basis of Jochelson's description, says

(footnote continued)

this was "obviously not a casting net but a seine or gill net of some sort."

It must, however, have differed markedly from the Russian seine used in the area, which was evidently a far more efficient device.

and dip nets, made of nettle (Jochelson, 1905-1908: 527-528). The Aleut may have had no real nets at all, or at best they were uncommon and local (Hrdlicka, 1945: 140). References to nets for the Koniag are very vague (Hrdlicka, 1944: 53, 59-60). The Eskimo seem originally to have used no fish nets of any sort; the large nets of western Alaska are regarded as a relatively recent introduction (Rostlund, 1952: 85, 92, 97). On the Northwest Coast, netting was definitely a secondary fishing method; seine and gill nets may not be aboriginal, and in any case seem not to have been the general rule (Ibid: 86, 291). Indeed, it has been suggested that only the small dip net was used in America in pre-Columbian times--the seine being introduced by the whites (De Laguna, 1934: 170--based on an unpublished study by Hallowell).⁶² The Chukchi had sinew nets (Bogoras, 1904-1909: 146), but the ancient Yukagir had none of any kind, unless a pivoting fence of woven willow could be so described (Jochelson, 1926: 373). The Lamut also seem to have lacked nets, although the tipi cover was sometimes used in emergencies as a sort of net (Bogoras, 1900: 69). The Amur was apparently a center of net-using (Schrenck, 1881-1895: 518-519, 528, 531-534, 540), and here, as on

62. Rostlund's more exhaustive and recent study leads him to question this hypothesis. Although some tribes doubtless acquired the seine from Europeans, the weight of evidence indicates that it was present in pre-Columbian America. "I think it can be concluded that not only various small hand nets but also large seines, gill nets, and towed nets were known to the Indians in aboriginal times; however, some forms were not used everywhere but had a restricted distribution." (1952: 84).

Kamchatka (and to some extent the Northwest Coast), nettle was the material used in manufacturing. Evidence suggests, however, that use of nets diminished with distance from the main river. The Udehe, for instance, use them very little, preferring to spear their fish (Brailovskii, 1901: 199); some groups of Orochi have none at all (Zolotarev, 1934: 81); and certain Gold clans, originally forest-dwelling, have traditions that they learned the use of nets only on moving out into the Amur valley, from the river people (Lipskaia, 1940: 253).

Fish hooks seem to have been very little used in Kamchatka, although hooks of wood or seabird bone are mentioned (Krasheninnikov, 1949: 299). They have a wide use in the general area, however, being reported from all the Eskimo, including Pacific, Asiatic, and Aleut (Birket-Smith, 1929, II: 251-252), as well as Chukchi (Bogoras, 1904-1909: 150-151), Koryak (Jochelson, 1905-1908: 532-534), central Kurile Islands (Golovnin, 1818: 44), Sakhalin Ainu (Pilsudskii, 1907: 92), Gilyak (Schrenck, 1881-1895: 521; Hawes, 1904: 257), Udehe (Brailovskii, 1901: 199-200), Orochi (Margaritov, 1888: 19).

Spearing fish may be an older method than either hook or net.⁶³ It was still important among the Kamchadal, and seems to be practiced everywhere in our area, although it had died out among the Chukchi and Koryak by the turn of the century. (For distribution of fish spears, see Birket-Smith, 1929, II: 250, 323).

63. But in North America, at least, the evidence does not seem to support this hypothesis. See Rostlund, 1952: 120.

Fishing through the ice also seems to be pretty universal in the region, though the Kamchadal practiced it only to a limited extent. A specialized variety, the so-called "peep-fishing", was employed for herring--with a bag net, however (Steller, 1774: 167-168; Krasheninnikov, 1949: 309-310). The technique is known in North America only for certain Eskimo and Indian groups (Birket-Smith, 1929, II: 256, 335; Rostlund, 1952: 180); and in Asia for Ainu, Tungus, Vogul, Samoyed (Birket-Smith, 1929, II: 335), Orochi, Udehe, and Baikal Tungus (Zolotarev, 1938a: 21-22). In these cases it appears to be used as an aid to spearing.

The use of elevated platforms as "watch towers" for spotting fish, as the Kamchadal did with the Chavycha (Oncorhynchus tschavytscha (Krasheninnikov, 1949: 303; Erman, 1848: 416-418; Kittlitz, 1858, II: 284-285), crops up in a few places elsewhere; the occurrences may or may not have some relationship: Hokkaido Ainu (Montandon, 1937: plate 16); Sakhalin Ainu (MacRitchie, 1892: 41); Manchu (Lansdell, 1882: 555).

Ethnobotany

As Gunda has shown (1949: passim), wild vegetable products are an important item in the diet of peoples throughout northern Eurasia. But their importance varies from group to group; the Kamchadal seem to have utilized vegetable foods to an unusual degree, while among the Koryak, these play a lesser role, but greater than among the Chukchi (Jochelson, 1905-1908: 577). On the other hand, the Point Barrow Eskimo are said to eat no vegetable food at all (Murdoch, 1892: 62), and Eskimo in general do not always make full use of what is available; those of western Alaska and Labrador probably eat

proportionally more vegetable food than other groups (Weyer, 1932: 53). The Northern Tungus use very few plants compared with the "Palaeo-Asiatics" (Shirokogorov, 1924: 124), although their more sedentary relatives on the Amur such as the Manchu, Gold and Ul'chi make wide use of them (Ibid: 123; Lipskaia, 1940: 252; Strenina, 1949: 47). The Ainu also seem to have made considerable use of the local flora; Batchelor and Miyabe (1893) describe 93 edible and 44 medicinal species regularly employed, and Torii (1919: 220-221) lists thirty herbs used as food by the Kuriles. A variety of roots and berries were commonly used by the Northwest Coast tribes (Drucker, 1950: 176). Steller noted that Heracleum dulce was prepared and used in the same manner in America (i.e. the Aleut-Pacific Eskimo region) as on Kamchatka (1774: 87).

We do not know enough about the digging instrument employed by the Kamchadal in this connection to compare it.

A specialized type of gathering is the utilization of the winter stores collected by mice in their nests, a favorite practice of the Kamchadal. The Chukchi (Bogoras, 1904-1909: 198), Koryak (Jochelson, 1905-1908: 577), Kolyma population (Wrangell, 1844: 67), and Bering Strait Eskimo (Nelson, 1899: 268) do likewise. It is not reported from other Eskimo groups, but occurs sporadically elsewhere in northwestern North America: Yakutat Tlingit (De Laguna: personal communication), Ingalik (Osgood, 1940: 177), Thompson (Teit, 1900: 231). With the Chukchi and Koryak, at least, the customs and beliefs connected with it are identical with those of the Kamchadal. Instances of similar plundering of animal hordes in eastern Europe and western Siberia are cited by Gunda (1949: 371).

The medicinal use of plants may properly be included in this section. We have noted that the Kamchadal had a vast pharmacopoeia as an adjunct of their amazing botanical knowledge. And although the role of environment enters into such matters to some degree, the determining factor seems to be more cultural than dependent on natural resources. For instance, the Koryak do not employ herbal remedies at all, relying solely on shamanism, charms and incantations (Jochelson, 1905-1908: 420). The situation is identical with the Chukchi (Bogoras, 1904-1909: 43-44). Granted that their respective habitats are more barren than that of the Kamchadal, they are still not completely devoid of plant life--especially since these same tribes manage to locate and eat many of the vegetable foods utilized by the Kamchadal. The Yukagir, in the same ecological zone, make a very limited use of herbal remedies, and then only if found nearby at the moment when needed (Jochelson, 1926: 29). The Eskimo in general rarely use them (Weyer, 1932: 329). In contrast, the Ainu seem to have had a large herbal pharmacopoeia (Batchelor and Miyabe, 1893). The Aleut also made considerable use of herbal remedies (Hrdlicka, 1945: 175-178), and a recent note (American Antiquity, vol. 17, 389) says that current ethnobotanical field work is revealing the old Aleut plant lore to be more extensive and important to the culture than previously supposed. A similar picture is found among the Tlingit (De Laguna: personal communication). The references to Koniag herbalism are limited (Hrdlicka, 1944: 84-86), but this may reflect the inadequacy of the sources. Further south we find tribes like the Thompson, who used 160 species of plants medicinally (Steedman, 1930: 455); the Shuswap, who employed "a large number of herbs", and only called in a shaman if they failed to cure (Teit, 1909:

618); the Kutenai, whose pharmacopoeia includes the entire local flora in one way or another (Turney-High, 1941: 101); the Puyallup-Nisqually, who have a "considerable body of herbal knowledge" (Smith, 1940: 92); the Quinault, who used herbs "extensively" in curing (Olson, 1936: 179); and the Makah, among whom there was scarcely a herb in the vicinity not considered a medicine by someone (Swan, 1870: 81). Clearly, the affinities of the Kamchadal in this respect lie to the south and east rather than with their northern kinsmen.

The practice of burning the birch bracket-fungus (Polyporus sp.) on a spot afflicted with rheumatic pains is, according to Krashennikov (1949: 443), a remedy known all over Siberia. Moxa cautery in general, utilizing a variety of materials, is found from Lapland to China and Japan (Qvigstad, 1932: 133). It seems to be an ancient, widespread practice in the Old World, and is noted also from a number of American Indian tribes. In the northwest, the latter include the Makah (Swan, 1870: 79, 99), Nootka (Drucker, 1951: 146), Kwakiutl (Curtis, 1915: 97), Klallam (Gunther, 1927: 304), Quinault (Olson, 1936: 180), and Thompson (Teit, 1900: 370).

Food

The use of ground inner bark for food in case of famine is a widespread expedient; the Kamchadal, however, seem to have used it as a regular article of diet, as did the Koryak (Jochelson, 1905-1908: 579), Chukchi (Bogoras, 1904-1909: 197), Yakut (Wrangell, 1844: 23), Lapps (Collinder, 1949: 83), Chugach Eskimo (Birket-Smith, 1953: 42), and all Northwest Coast tribes except the Nootka (Drucker, 1950: 176).

Geophagy is reported for the Kamchadal (Steller, 1774: 324-325) and also for the Koryak and Okhotsk Tungus (Ibid.), Reindeer Chukchi and Lamut (Bogoras, 1904-1909: 200), Hokkaido Ainu (Bird, 1888: 268), and Aleut (Hrdlicka, 1945: 94).

They preferred fat to any other food; no dish could be prepared without it, or it was eaten plain very readily (Golovnin, 1861: 108-109). This might be regarded as an environmentally-determined dietary necessity, since it seems to be the rule among many northern maritime peoples. On the other hand, one wonders how the forest peoples manage to get along without such liberal amounts of it. A few examples: "Every Lapp likes to have a quart of train oil to drink at every meal" (Sea Lapps of Finnmark, 1613; in Collinder, 1949: 219); "the desire for fat seems to be innate" (Chukchi; Bogoras, 1904-1909: 39); Sakhalin Ainu: sea animal oil consumed in great amounts; poured on food before eating like soy sauce in Japan (Mamiya, 1855: Harrison translation, pp. 18-19); Aleut: principal food consists of fat of any kind (Hrdlicka, 1945: 93); Koniag: "no food tastes good to them if not dipped in oil; and the latter...will even be drunk alone" (Holmberg in Hrdlicka, 1944: 47); Tlingit: scarcely eat a meal without it; used like butter; bread, biscuit, dried fish dipped in it (Jones, 1914: 105); Nootka: "there was a tremendous emphasis on fats--oils and greases--in the dietary pattern. Probably the fats made up for the virtual lack of starch and sugar forms of carbohydrates" (Drucker, 1951: 62). But: the Point Barrow Eskimo were not observed to eat any more fat than "civilized people", and rarely by itself (Murdoch, 1892: 62).

Puddings of various roots and berries mixed with fat and oil were great favorites of the Kamchadal. "The idea of mixing vegetable and fatty substances is...an old and widespread culture element slightly adapted to local conditions." (Birket-Smith and De Laguna, 1938: 446).

Steller's claim (1774: 174-175) that in pre-Russian days fish fat was never rendered (sea-mammal oil alone being used) is disputed by Findeisen (1928: 11), who believes it is an old, indigenous culture trait, as with the Gilyak and Ainu. The Kamchadal method of stone-boiling oil from fish in dugouts was observed by Krause among the Tlingit (1885: 177-178, plate 3), and is also reported from the Okhotsk Foot Tungus (Zolotarev, 1938b: 72). Stone-boiling to render olachon oil was standard practice on the Northwest Coast (Drucker, 1950: 171), and whale blubber was rendered in canoes among the Nootka (Ibid: 173).

Stone boiling itself has a wide distribution in North America, being in general use in the Northwest Coast, Plateau, and Mackenzie regions; the Eskimo did not employ it, however, except apparently the Aleut and Chugach (Birket-Smith and De Laguna, 1938: 441). It is not known from the Chukchi, though it was formerly used by the Koryak (Jochelson 1905-1908: 568) and Yukagir (Jochelson, 1926: 415-416). As noted above, it was practiced by the Okhotsk Foot Tungus. Also the Kuriles (Torii, 1919: 194).

The pit oven occurs all over the world. In northwestern North America it centers on the Northwest Coast and Plateau, and does not extend north of the Aleut, Tanaina, Kutchin, Chugach and Eyak (Birket-Smith and De Laguna, 1938: 442). I have not noted any references in northeastern Asia except the Kamchadal (Steller, 1774: 99-100, 180).

As with the Lapps (Collinder, 1949: 77), the Kamchadal men do all the cooking. Their passion for eating all their food cold (Steller, 1774: 322) is shared with the Chukchi (Wrangell, 1844: 362). The Nootka also allow all food to cool before eating (Drucker, 1951: 62).

The data on cooking methods are somewhat contradictory. Steller (1774: 323) says the Kamchadal don't like roasted food, being similar to the Koryak in this respect, and differing from the Tungus, Yakut and Kuriles. It is true that boiling was the common procedure. The Koryak, however, although their meat is principally boiled, spit-roasted fish in Jochelson's time (1905-1908: 572). And later accounts of the Kamchadal (e.g. Dobell, 1830, I: 37), describe this also. Moreover, according to Wrangell (1844: 23), the Yakut never roast or bake meat, but only boil it. The Gilyak tabu roasted meat (Schrenck, 1881-1895: 431); the Chukchi scarcely know how to roast it properly and mostly boil it (Bogoras, 1904-1909: 194); while the Yukagir are experts at spit-roasting (Ibid.). Spit roasting is common on the Northwest Coast, Plateau, and in the Mackenzie area, but unknown to the Eskimo in general (Birket-Smith and De Laguna, 1938: 442-443).

Preserving birds' eggs in oil (Steller, 1774: 191; Sauer, 1802: 299, 313) is also noted for the Tikeramiut (Larsen and Rainey, 1948: 30); some preservation method was employed by the Aleut and Koniag, although the details are unknown (Hrdlicka, 1945: 108). The Diomed Islands, it is interesting to note, store eggs without benefit of oil, and have in fact resisted missionary efforts to persuade them to adopt this obviously preferable preservative method (Weyer, 1932: 115).

Preservation of fish by sun-drying was practiced almost without exception by the Kamchadal, who smoked only the bellies of certain fish as special treats for guests (Steller, 1774: 174). The Gilyak (Hawes, 1904: 207), Koryak (Jochelson, 1905-1908: 572), Aleut (Hrdlicka, 1945: 90) and Eskimo (Birket-Smith and De Laguna, 1938: 443-444) sun-dry,⁶⁴ while the Tungus (Steller, 1774: 174) and the kindred Orok (Hawes, 1904: 207) smoke. Both methods are used by the Ainu (Batchelor, 1927: 89), Yukagir (Jochelson, 1926: 416), and Northwest Coast, Plateau and Mackenzie tribes (Birket-Smith and De Laguna, 1938: 443-444).

Kamchadal women have complete charge of the storehouses in which fish supplies are kept. The same system appears to prevail among the Hokkaido Ainu (Bird, 1888: 248; Landor, 1893: 213).

The Kamchadal practice of placing fish in pits to rot was, according to Steller (1774: 169), also followed by the Samoyed,⁶⁵ Tungus (with modifications), and Yakut (slightly different method). It is also reported for the Okhotsk Tungus (Sarychev, 1802: 45) and Koniag (Hrdlicka, 1944: 26-- quoting Davydov). Since the Koryak are reported to like the taste of putrid fish (Jochelson, 1905-1908: 415), we may assume the practice for them also; the same applies to the Kolyma population (Shklovsky, 1916: 18) and the

64. Some western Eskimo smoke their fish, according to Weyer (1932: 115). This is doubtless ascribable to Indian influence.

65. Montefiore reports that the Samoyed prefer fish in a highly odoriferous condition, which would seem to confirm Steller (Montefiore, 1895: 404).

laps (Collinder, 1949: 82). The Yukagir, on the other hand, do not eat putrid fish (Jochelson, 1926: 417). Similar rotting of fish in pits is practiced by a number of Alaskan and northwestern tribes; it is not unlikely that the method originally came from Asia across Bering Strait (Birket-Smith and De Laguna, 1938: 445-446; Rostlund, 1952: 143, 199-200).

Narcotics

Fly agaric (Amanita muscaria) is the only intoxicant known in northeastern Asia according to Bogoras (1904-1909: 205); its habitat is restricted to the forest zone, so few Chukchi get hold of it. The Koryak are the most passionate addicts (Jochelson, 1905-1908: 582). Yukagir traditions indicate its former use (Jochelson, 1926: 419). Lewin (1931: 124) lists it also for the Yakut, Tungus, Samoyed and Ostyak--but gives no references; I am inclined to view this claim with reserve until more definite evidence is adduced. Although fly agaric was apparently employed in Russia in Krashennnikov's time as an insecticide (1949: 427), I have not found any convincing evidence of its use elsewhere as a narcotic. Heizer, in his study of the use of narcotic mushrooms by primitive peoples (1944), reports no instances from northern North America.⁶⁶ Since Amanita muscaria occurs commonly over much of the northern portion of both hemispheres, it is interesting that its narcotic properties may have been known (or utilized) only in such a restricted area. This limited use--if correct--suggests it might have been a relatively recent development.

66. The following description of a debauch observed among the Indians

(footnote continued)

of Cape Flattery is strikingly reminiscent of the agaric orgies of the Koryak, although the exact agent involved is not certain: "The medicine men distil, from potatoes and other ingredients, a vile liquor, which has an irritating and exciting effect upon the kidneys and bladder. Each one who has partaken of this dish immediately urinates and passes the result to his next neighbor, who drinks. The effect is as above, and likewise a temporary insanity or delirium, during which all sorts of mad capers are carried on. The last man who quaffs the poison, distilled through the persons of five or six comrades, is so completely overcome that he falls in a dead stupor." (Bourke, 1891: 65).

The Kamchadal lacked alcoholic beverages, although the Kuriles on Cape Lopatka brewed a fermented drink from berries with which to make their guests drunk (Steller, 1774: 325). The pre-Russian Koniag also used the fermented juice of berries, and at times drank to excess (Davydov, in Hrdlicka, 1944: 48).⁶⁷ With this exception, intoxicants seem to have been unknown to the Eskimo. The Gilyak lack any beverage produced from plants by infusion or other methods, according to Schrenck (1881-1895: 463), and this may be interpreted to include fermentation.

Fire

Krasheninnikov's description of the Kamchadal fire drill (1949: 380) has been generally assumed to represent a simple-type drill, but it seems to me that this identification is largely on negative grounds, and that it is risky to lean on it too heavily.⁶⁸ Not that the **presence** of the simple

67. According to Curtis (1915: 40) the Kwakiutl seemed able to achieve a state of intoxication on fresh elderberry juice, which could contain little if any alcohol. Local white men experienced no effects from the beverage.

68. He merely states that they twirl a stick without saying specifically how this is done. It is true that the plate reproduced on page 379 depicts a hand drill in operation, but I am highly suspicious of the reliability of the plates in the early editions of Krasheninnikov. Some contain obvious errors of fact, and in general they seem to have been drawn by artists on the basis of impressions gained from reading the text--which itself often does not give the reader too clear a picture. Krasheninnikov died in the same year that his book appeared, and thus may not have supervised the final stages.

drill is impossible. The Ainu of Hokkaido used it (Torii, 1919: 203); and it also survives ritually in Japanese shintoism (Hough, 1928: 26). The simple fire drill is very nearly universal among the North American Indians, where bow and cord drills are apparently rather late, and introduced from Asia (in the north and west) or by the whites (in the east) (Birket-Smith and De Laguna, 1938: 413).

The bow drill, however, is typical of the Eskimo and northeastern Asia. Unfortunately, Birket-Smith does not distinguish between types of drills except in rare instances, so that his extensive data on the subject are useless in this instance (1929; II: 273-274, 350-352). Fire drills do not seem to have been used much by the Aleut, pyrites being preferred; there are only two early references to the drill as a secondary method, both too vague for identification as to type (Cook and Coxe, quoted in Hrdlicka, 1945: 111-112). Jochelson, however, speaks confidently of the use of the bow drill--apparently based on native informants (1925: 74); and he excavated objects which he identifies as bone and stone drill heads (Ibid: 110). The Kuriles used the bow drill (Torii, 1919: 202-203), as did the Koryak and Chukchi (Bogoras, 1904-1909: 231) and Sakhalin Ainu (Howard, 1893: 83).

Thus the Kamchadal, if their drill was of the simple type, would have occupied a somewhat isolated position, although if the Kurile bow drill could be proved recent, they would link up with an obviously ancient center of simple drills in the Japanese islands.

Lamps

We know from the early accounts (Steller, 1774: 82; Krashennikov, 1949: 222; De Lesseps, 1790: 163) that the Kamchadal used stone lamps, but for any detailed picture of these we must turn to archaeology. Kamchatkan lamps, like Aleutian ones, differ from the Eskimo lamp in having no bridges or special grooves for wicks (Jochelson, 1928a: 68). Although Jochelson classified those found in his excavations by shape as circular, elliptical, egglike and sadiron, Schnell (1932: 61) correctly points out that the first three types "can only theoretically be distinguished from one another", and lumps them into a Type A, calling the triangular sadiron lamps Type B, and a special variety of the latter with a handle on the end, Type C. Quimby (1946: 202-203) regards the sadiron lamp as a distinctive type and a definite cultural trait (he evidently includes both B and C types in this classification); he feels that "the evidence of a genetic relationship among the sadiron lamps of Kamchatka and the Aleutians seems unmistakable", and accepts "Collins' hypothesis that this form diffused from the Aleutians to Kamchatka." Lamps with a hole for suspension or for the insertion of a stick-stand occur in the New World only in the Aleutians (De Laguna, 1934: 180), and in Kamchatka (Type C) and the Kuriles (De Laguna, 1940: 59). This feature seems to have no correlation with shape, however, which probably explains why Quimby seems to disregard it. De Laguna (1940: 59) includes these types of lamps in a larger category of "pointed oval lamps", which she feels reached the Eskimo from the Asiatic coast of the North Pacific, being probably derived from southeastern Asia. Quimby (1946: 203) criticizes this lamp complex as too

inclusive and abstract, and as including types which may have had different histories. Conceivably, therefore, specific types of Kamchatkan lamps could have stemmed from several sources, including southwestern Alaska and southeastern Asia.

It should be pointed out that none of the specimens of sadiron or pierced lamps known at present from Kamchatka are from undubitable Kamchadal territory; both types occur in probably Kurile and Koryak sites, as Schnell's distribution table shows (1932: 62).

Lamps, as such, are believed by Birket-Smith (1929, II: 191-192) to be a very ancient circumpolar trait, once spread over all boreal Eurasia and North America, dating back to the Upper Palaeolithic in Europe, and going out of use over most of their former range owing to the subsequent rise of nomadic hunting and reindeer-breeding cultures. Hence they survive only among relatively sedentary peoples on the fringes of this area. I must confess that I do not find this hypothesis too convincing. The concentration of lamps on the North Pacific coast of Asia, and their rarity elsewhere in the general area except for the Eskimo would seem to point to a more immediate and recent inter-relationship--probably stemming, for the oval type at least, from southeastern Asia, as De Laguna proposed. The latter has gone into the whole subject so thoroughly in a recent publication (1947: 249-258) that any further discussion seems unwarranted unless or until new evidence is produced.

Pottery

Not the slightest suggestion of the use of pottery by the Kamchadal appears in either Steller's or Krasheninnikov's work. And their descriptions of household arrangements are sufficiently full to render mere oversight in this matter inconceivable. There is frequent reference to wooden containers, for instance. Pottery is, however, mentioned by Atlasov, who goes on to relate that they mixed sable tails in the clay (Ogloblin, 1891: 10). Lest such a statement be dismissed off hand as in the realm of pure fantasy--which would probably be the initial reaction--we should point out that an admixture of animal hair (probably of some fur-bearer) is generally typical for the ancient pottery of the Lena Valley (Okladnikov, 1945-1946, Part 2: 81); it is found at "Neolithic" sites of all stages, and also in some Bronze Age sites. It is not typical for the Baikal region. Native informants on the Yukon often mentioned the use of hair or feathers as tempering (De Laguna, 1947: 141-142, 227). There are similar accounts from Hooper Bay to the southwest (Oswalt, 1952: 18), the Kobuk River (Giddings, 1952: 93) and Point Barrow (Murdoch, 1892: 91). Still, owing to the circumstances of Atlasov's report, we cannot place too much reliance on any individual statement, and I think it most likely that the pottery mentioned referred to some other people on the Kamchatka Peninsula, probably the Koryak. After all, it is highly unlikely that this art could vanish without a trace in the scant forty years between Atlasov and the Bering Expedition, especially since it is definitely not a case of replacement with metal or other imported utensils.

Again, we must turn to archaeological materials to elucidate the question. Pottery does occur in sites on Kamchatka, but in insignificant quantities, due no doubt to the wide use of pit ovens, stone boiling in wooden troughs, and bark containers (Rudenko, 1948: 174). Quimby (1947) has erected an elaborate classification of eight types based on the published descriptions of the pottery finds, but in the long run these can be boiled down to the three types recognized by Schnell (1932: 60): (1) a coarse, undecorated ware with ears inside; (2) similar, but lacking the ears, and having stripes around the rim; and (3) a fine ware decorated with dots and lines, and sometimes with mat and cord impressions. The latter is confined to northwestern Kamchatka, on the Koryak border, and seems clearly to be of Koryak attribution. The type is widely distributed in extreme northeastern Asia up to Bering Strait (Rudenko, 1948: 175). The first two types occur in southern and southeastern Kamchatka--in Kurile territory, and on the coastal strip to the northeast which was probably open to strong Kurile influence. Davis (1940: 15-16) rightly points out that types 1 and 2 could only be told apart from rim sherds, a typological weakness which leads him to lump the two together as a southern coarse ware. Vessels with inside ears for suspension (the so-called Naiji pottery) are of obviously Ainu provenience, being found in the Kuriles, Sakhalin and Japan. They seem chronologically to be a late form. This type of pottery was made the subject of an exhaustive study by Baba (1940a), who concludes (100-104) that it was made in imitation of Japanese metal pots having similar features. Schnell (1932: 64) could find no positive analogies for the striped Type 2 pottery. A few striped potsherds are known from the Koryak area, but they are clearly

unrelated and of northern affinities, as Quimby recognizes by placing them in a separate type (1947: 176). De Laguna (1947: 237) says these grooves and ridges are quite similar to those on Yukon pots; but since she also compares the latter with the Koryak striped pottery noted above, the resemblance is obviously of a general nature. All in all, the restriction of this Type 2 pottery to the southern part of Kamchatka and its general similarity to the eared ware suggests a parallel southern origin. De Laguna (1947: 236-247) lumps the Kurile-Kamchatka pottery as a whole into a broad ceramic tradition stemming from the Japanese islands, which she believes also gave rise to the later types of southern Alaskan pottery.

But how to explain the discrepancy between the ethnographic and archaeological data? It will be noted that we have nowhere spoken of Kamchadal pottery; and this is because I do not believe there was any. There were probably some Kamchadal who used clay pots, but they lived in border areas under strong outside influences, and the pots were either acquired outright from their neighbors or made in close imitation of them. The fact is that the bulk of archaeological ceramic finds come either from the Kurile territory in the south or the Koryak frontier on the north. No pottery has been found at sites in the Kamchadal heartland, such as Ust Kamchatsk or Nakayama's west coast sites (Nakayama, 1933, 1934). There was none at Tar'ia either, which Rudenko believes to be the oldest Kamchadal site. In the whole Avacha Bay area only two potsherds were found by Jochelson (1928a: 43-44); none at all by Bergman (Schnell, 1932: 61) or Lev (1935).⁶⁹ These could

69. Quimby's "Avacha complex", one of the eight local culture complexes which he formulates in Kamchatka, includes pottery of his "Kuril Lake Plain" type--on what basis, is not clear.

have been stray intrusions at this coastal spot, like the labret previously mentioned. Pottery, it is true, was relatively abundant in the Nalacheva area, on the coast north of Avacha. Most of it, however, is of the eared variety which is of obvious Ainu origin. This leads me to believe that the Nalacheva area may have been colonized by Kuriles coming by sea. Being a truly maritime people who moved about over an immense expanse of ocean as hunting conditions dictated, the distribution of their settlements along the coast need not have been continuous. The Nalacheva area had at least a strongly Kurile-influenced culture if not an actual Kurile population.

Stone

The lithic industry of Kamchatka shows a remarkable uniformity over the entire peninsula (Schnell, 1932: 62), which reduces its value for diagnostic purposes. Quimby (1947: 178) calls this industry "very similar" as a whole to that of the Aleutian Islands. The assortment of arrow points has much in common with those of eastern Siberia (as far west as the Baikal area) and also with those found on the Kurile and Japanese islands. The Kamchatkan points are not typical of extreme northeastern Asia or for the Eskimo culture (Rudenko, 1948: 164-165). The adze types (very common) are too widely distributed to be significant. The Koryak apparently did not use polished stone axes, employing bone wedges and bone adzes instead; only one such axe was observed among the Yukagir (Jochelson, 1905-1908: 610). Of course the archaeological picture might be quite different. Type 4 in Rudenko's classification of stone knives (weakly convex back, sharply convex blade, neck on tang) is well known in Japan and the Aleutians (Rudenko, 1948:

169). The almost complete absence of polished slate knives on Kamchatka is surprising. The woman's ulo does not occur at all, and only two men's slate knives--one from the Koryak border, the other from Avacha Bay (where, like the labret, it could have been intrusive). In view of the fact that Kamchatka is surrounded on all sides by polished slate knives--Aleutians, Japan,⁷⁰ the mainland Okhotsk coast, and especially typical for late stages of Eskimo culture--this absence is particularly striking (Rudenko, 1948: 169-170). Ground slate knives are a recent introduction archaeologically in the Aleutians (Laughlin and Marsh, 1951: 82). On St. Lawrence Island, however, they seem to go back to the Old Bering Sea stage (Collins, 1937a: 350). We do not know their relative age in the other adjacent regions, and under these circumstances it would be impossible to work out their local history.⁷¹ Pestles, of frequent occurrence on Kamchatka, are not found north or west of Prince William Sound in North America, though common on the Northwest Coast (De Laguna, 1934: 174). Natural cobbles seem to have served the purpose in Japan (Munro, 1911: 137). Stone mortars⁷² are common

70. The ulo is, however, lacking in the Ainu region (the northern Japanese islands), and seems to be restricted to the prehistoric Japanese proper (De Laguna, 1947: 185).

71. It may be of some significance that slate spear points are considered late on the Amur (Okladnikov, 1936: 277).

72. A small, shallow grinding slab is pictured by Jochelson (1928a: 54) from the Koryak frontier; Steller, (1774: 72) mentions stone mortars for grinding tobacco--presumably of similar size and type

around the rim of the North Pacific from Japan to the Northwest Coast (Birket-Smith and De Laguna, 1938: 412). According to Steller, the Kamchadal made their large mortars of whale vertebrae, as the modern Ainu make them of wood. Stone "sinkers" with either a drilled hole or a circular groove are quite common in central and southern Kamchatka (Rudenko, 1948: 160). De Laguna (1934: 170-172) has questioned the correctness of this identification for artifacts of this type, pointing out that modern peoples commonly use unworked stones for weighting nets, and that such "sinkers" are often found away from any suitable water. Their use as weights on fishing lines has been suggested, but their distribution does not correspond with that of fish hooks. In fact, these "sinkers" may have had nothing to do with fishing at all--at least in many cases.⁷³ The battered appearance of some suggests violent use. Others may have served as bolas. There are, after all, many conceivable uses for which it would be necessary to attach a cord to a stone--which is, in the last analysis, what these objects were designed for. Grooved stones are generally lacking in the Eskimo area except for southwest Alaska and the Aleutians, but are widespread in North America and are known also from prehistoric Japan. Pierced stones seem limited to the North Pacific rim from Japan to the Northwest Coast. (Ibid: 168-169).

Tiny chipped flint or obsidian "effigies" were found at two points on Avacha Bay (Lev, 1935; Schnell, 1932: plate xvii). Gjessing (1944: 64)

73. "Nevertheless, stones of this kind were used on fish nets. The archaeological and historic-ethnographic evidence on that point is overwhelming, and that none of these stones were net sinkers is as incredible as the assertion that all of them were." (Rostlund, 1952: 87).

says that such small flint sculptures were widespread in America in old Indian and Eskimo cultures. They are also reminiscent of the whale amulets pictured by Murdoch (1892: 435) from Point Barrow. Though so far known from only two other points in the interior of Siberia, miniature flint "sculptures" are widely distributed in European Russia (Zamiatnin, 1948).

Bone

The oval whalebone shovel is a type common among the peoples of extreme northeastern Asia and in the Bering Strait area (Rudenko, 1948: 157-158). It is also common in the Thule culture and in arctic Alaska, and is apparently an old widespread type (De Laguna, 1934: 200-201).

Whale vertebra mortars were found in small numbers in the shell heaps of Prince William Sound (Birket-Smith and De Laguna, 1938: 412). Jochelson pictures a "bone lamp" from the Aleutians (1925: plate 20), and Hrdlicka states (1945: 57) that he found similar specimens in the Aleutians and on Kodiak. De Laguna (1934: 174) thinks these are mortars.⁷⁴ Hrdlicka (1944: 33-34) refers to them as vessels or containers, and says that all the natives of southwestern Alaska utilized vertebrae for pots. He also saw one in a Leningrad museum from the Chukchi. In view of the fact that Steller (1774: 104) speaks specifically of vertebra mortars, it is possible that some at least of these problematical "pots" were so used.⁷⁵

74. However, Jochelson (1905-1908: 567) did see one example of a whale vertebra lamp in use among the Koryak, so either identification could be correct.

75. In post-conquest times, Steller speaks of the Kamchadal keeping alcoholic beverages "in large containers made of fish bone" (1774: 326). Perhaps he means whale vertebrae; but it could equally well refer to baleen vessels.

Baleen pails are mentioned by Steller (1774: 103). These are "evidently an old element in Eskimo culture" (Collins, 1937a: 350), but this writer goes on to state that they are not found anywhere else, being replaced by bark and wooden vessels in both the Old and New Worlds. Though possibly a substitute for bark among the Eskimo this could hardly have been the case on Kamchatka, where bark was widely used for containers. Perhaps this was once a more widespread culture element than Collins supposed.

Tubular bone needle cases (Steller, 1774: 183) are very old and widespread in Eurasia, and are the ancestral Eskimo type (Collins, 1937a: 354).

Heizer has suggested (1951) that the sickles of the Kamchadal and Koniag, otherwise isolated, may possibly be related.

Bark-Wood-Basketry

Folded birchbark containers are common in the boreal woodlands from Lapland to Labrador. The extensive use of bark is regarded as a trait closely connected with the "snow-shoe complex" (Birket-Smith and De Laguna, 1938: 414, 416). There are indications of bark containers in "Late Neolithic" sites on the lower Lena (Okladnikov, 1945-1946, part 2: 143). The Kamchadal made square containers and cups of birchbark, but bark seems to have played only a subordinate role in their culture, since equal or greater use was made of wood, basketry, woven bags, gut, baleen, etc. Wooden containers and utensils are very old and widespread in both hemispheres (Birket-Smith and De Laguna, 1938: 419-420). We do not have a sufficiently detailed picture of the Kamchadal ones to compare specific types. The prominent role of wooden vessels in their culture is, however, also the case with the Aleut (Hrdlicka,

1945: 58-59), Ainu (Hitchcock, 1891: 436; Landor, 1893: 215), Chukchi (Bogoras, 1904-1909: 188), and Koryak (Jochelson, 1905-1908: 570). The latter two do not seem to have used bark at all, while wood and bark shared equal honors in the Gilyak and Yukagir households (Schrenck, 1881-1895: 477; Jochelson, 1926: 411, 413).

Montandon (1937: 107-109) found no references to basketry anywhere in Siberia⁷⁶ except for a strip along the North Pacific coast from the Ainu through the Maritime Koryak. Twined basketry, he states, is typical of the North Pacific rim from the Ainu to California (Ibid: 109-110). The Northwest Coast tribes were particularly expert in this technique, which, according to Birket-Smith and De Laguna, centers in western North America (1938: 416). Koryak basketry was both coiled and twined (Jochelson, 1905-1908: 631), as was Kurile (Torii, 1919: 183-186) and that of the Bering Strait Eskimo (Nelson, 1899: 203-204). Ainu basketry is most typically twined, and coiling is very rare (Montandon, 1937: 103-104); that of the Aleut seems to have been purely twined (Hrdlicka, 1945: 59-62). We do not know the technique employed by the ancient Kamchadal, although an obviously modern specimen pictured by Jochelson (1905-1908: 713) is coiled. Birket-Smith and De Laguna (1938: 417-418) feel that coiling may have been the older technique, which has been entirely supplanted by twining on the Northwest Coast and partially displaced in the neighboring areas. They regard Wissler's

76. On the southeastern border of this area, the Gold and Manchu are skilled basket makers, though all the Northern Tungus lack the art (Shirokogorov, 1926: 129).

opposite conclusion as lacking foundation. There can be no doubt that the coiled basketry of the Kuriles, Koryak, Eskimo and Tena is closely related (De Laguna, 1947: 219).

Grass mats were the most important item of Kamchadal household furniture, as with the Aleut (Hrdlicka, 1945: 116-117) and Koniag (Hrdlicka, 1944: 31). They are widely used, in fact, all around the North Pacific rim from the Ainu through the Northwest Coast (Birket-Smith and De Laguna, 1938: 418) although only the southernmost branch of the Koryak made them, at least in recent times (Jochelson, 1905-1908: 636).⁷⁷

Art

Of Kamchadal art we unfortunately know next to nothing. Outside of decorating clothing, as previously mentioned, it seems to have been confined to painting wooden objects (Kittlitz, 1858, II: 317, 338) and possibly stamping designs on birchbark (Guillemard, 1889: 75). The latter is perhaps not aboriginal, although decoration by stamping on skin was practiced by the Koryak in Jochelson's time (1905-1908: 683). Had Kamchadal art been highly developed, it seems likely that it would have attracted more attention than it apparently did. The low artistic achievement of a people with such abundant leisure is particularly striking when we see that they are almost surrounded by peoples noted in this field. Aleut decorative art is unsurpassed in America (Hrdlicka, 1945: 81). Miniature sculpture is strongly

77. The Chukchi have only very crude mats of willow twigs (Bogoras, 1904-1909: 171), but the Bering Strait Eskimo are skilled weavers of mats, bags and baskets (Nelson, 1899: 202-203).

developed among the Koryak, Chukchi and Eskimo (Jochelson, 1905-1908: 648). The Ainu have a rich decorative art (Utsurikawa, 1928; Baba, 1951; inter alia), not to mention that of the Amur tribes (Laufer, 1902; Lavrov, 1949). Perhaps the artistic affinities of the Kamchadal lie with the Northern Tungus, whose carving, at least, "lacks all artistic merit" (Jochelson, 1905-1908: 649).

Painting of implements is a trait whose principal center is on the Northwest Coast, whence it seems to have spread in some small degree to adjacent peoples. It is not an aboriginal Eskimo feature (Birket-Smith and De Laguna, 1938: 410-411). Except for the Aleut, the Eskimo have no aptitude for painting (Ivanov, 1930: 479). There is no trace of it among the Chukchi, either (Birket-Smith and De Laguna's reference to this is erroneous. 1938: 410-411), and painted decoration of objects among the Koryak is of the most rudimentary nature (Jochelson, 1905-1908: 629).

Music--Dance

One of the most striking "negative traits" in Kamchadal culture is the drum--universally present otherwise in the circumpolar zone from Lapland to Greenland (distributions in Birket-Smith, 1929, II: 287, 363-365; Ainu specimen cited from Leningrad museum obviously borrowed from Tungus or Gilyak). The only parallel in this respect is with the Kurile and Ainu, where it also seems to be completely absent except as a frontier borrowing. The only Kamchadal musical instrument was a sort of flute made from the stem of Filipendula kamschatica (Steller, 1774: 333-334). Wind instruments are very scarce in northeastern Asia, and known elsewhere, again, only for the Ainu, who have a reed flute of sorts (MacRitchie, 1892: 35). In the New

World they are lacking aboriginally among the Eskimo, but are more common in the boreal woodlands and Plateau, and especially on the Northwest Coast (Birket-Smith and De Laguna, 1938: 477-478).

Turning to the related topic of the dance, the pantomimic animal dances, or (more accurately) dramatic presentations, so characteristic of the Kamchadal seem to be universal in northeastern Siberia at least: Northern Tungus (Shirokogorov, 1933: 325), Yukagir (Jochelson, 1926: 129), Chukchi (Bogoras, 1904-1909: 268-269), Koryak (Jochelson, 1905-1908: 782), Ainu (Hitchcock, 1891: 482). On the American side they occur among Eskimo, Eyak and Tlingit (De Laguna: personal communication), Kutchin (Osgood, 1936: 104), Thompson (Teit, 1900: 385), Shuswap (Ibid.).

2. Social Culture

Government

The Kamchadal political system seems typical of the entire area. Some examples:

Koryak: the founder of a settlement remained the elder so long as no stronger rival appeared, and his family would continue to dominate after his death. The term for elder means "the strong one" (Jochelson, 1905-1908: 763).

Aleut: characterized by the leadership of "strong men" or "owners" who dominated their villages by physical strength and wisdom (Laughlin, 1952: 81; Hrdlicka, 1945: 25-26 gives a generally similar picture).

Gilyak: no chiefs; the oldest and richest are listened to (Deniker, 1884: 309).

Ainu: the men of greatest authority are mostly oldsters remarkable for experience and social virtues (P. von Siebold, 1859: 107). (The present highly-developed system of chiefs among the Ainu is probably a relatively recent development).

Birket-Smith (1953: 215) attributes the institution of the sub-chief or assistant chief to the Kamchadal, and largely on this basis classifies it as a "circumpacific" culture element. I find no evidence for such an institution in aboriginal times, although it was typical of the administrative set-up under Russian rule.

Property

As to property concepts, community ownership of a certain territory for hunting and fishing purposes prevailed among the Kamchadal. This seems intermediate between hunting grounds owned by the tribe as a whole ("an old feature in the social organization of the circumpolar region". Birket-Smith and De Laguna, 1938: 462)--and the family hunting territories of boreal North America. The identical system seems to have prevailed among the Ainu: villages owned definite hunting and fishing territories, and the river on which a village was located was theirs to fish (Batchelor, 1927: 41). Something similar is indicated for the Aleut: "no stranger is allowed to hunt or fish near a village, or to take away anything fit for food" (Solov'ev in Hrdlicka, 1945: 91). There is no trace of the special private ownership

found e.g. among the Sakhalin Gilyak, where the right to set snares for sable on a specific stream is individually owned and inherited, although there are no other limits on hunting (Hawes, 1904: 300); or among the Orochi, where the identical situation prevails (Margaritov, 1885: 5).

Social Organization

According to Garfield (1953: 58), "the Koryak, Kamchadal and Chukchi are sibless, forming a continuous bilateral area with the Aleut and Eskimo on both sides of Bering Sea."

The high position of and regard for women among the Kamchadal seems to find its nearest parallel among the Ainu of former times, as pictured by P. von Siebold (1859: 112), H. von Siebold (1881: 30), Batchelor (1927: 14-15), and Czaplicka (1914: 276--quoting Sternberg and Pilsudskii). Batchelor (1927: 15) even suggests survivals of a matrilineal system, stating that in the old days family ties were stronger on the women's side, and the mother's brother was regarded as the real family head. Among the Aleut the maternal uncle was esteemed above the father and played the major role in the children's education (Veniaminov in Hrdlicka, 1945: 170-171). Our data on the Kamchadal are insufficient to tell whether any such system prevailed there.

The levirate (observed by the Kamchadal) seems to have been almost universal in the area: Chukchi (Bogoras, 1904-1909: 607), Koryak (Jochelson, 1905-1908: 748-752), Ainu (Batchelor, 1927: 160), Gold and Northern Tungus (Shirokogorov, 1926: 144), Eskimo, Yukagir, Samoyed and Ostyak (Birket-Smith and De Laguna, 1938: 456-457). The latter authors believe it is a custom

of very considerable age, being widely distributed, especially in areas with old-fashioned cultures (Ibid.)

Slavery was very widespread in northwestern North America and northeastern Asia, and is evidently an old custom in both areas, though probably more developed among the semi-sedentary fisher populations than among the Eskimo and inland hunters. The warlike dispositions of these tribes had a lot to do with it. Its actual economic importance was not very great (Ibid.: 451-452). The whole complex may have come to the Northwest Coast from Asia via the Aleutians (De Laguna, 1947: 92, 278).

War

In connection with warfare, we find torture of captives described also for the Aleut (Hrdlicka, 1945: 146) and Koniag (Hrdlicka, 1944: 64, 74). The Koryak generally killed their captives (Jochelson, 1905-1908: 766), but it is uncertain whether torture was a regular custom as with the above and the Kamchadal. The Bering Strait Eskimo also killed all male enemies (Nelson, 1899: 327). Self-destruction in defeat was typical of the Koryak (Jochelson, op. cit.: 422) and is mentioned for the Atka Aleut (Veniaminov in Hrdlicka, 1945: 209). I can find no positive evidence of the use of refuge islands by the Kamchadal in aboriginal times, although they subsequently fled from the Russians to such locations. Refuge islands are noted for the Koryak (Jochelson, 1905-1908: 563), Aleut (Hrdlicka, 1945: 146-148), Koniag (Hrdlicka, 1944: 82-83), Chugach (Birket-Smith, 1953: 102), Nootka (Drucker, 1951: 67), Kwakiutl (Curtis, 1915: 9), and Makah (Swan, 1870: 51).

Marriage

The custom of serving for the bride is widespread in the region: Chukchi (Bogoras, 1904-1909: 579, 585--"identical with Kamchadal"), Koryak (Jochelson, 1905-1908: 739; sometimes a matchmaker is involved); Yukagir (Jochelson, 1926: 87); Aleut (Hrdlicka, 1945: 167--purchase possible, but service preferred); Koniag (Hrdlicka, 1944: 77-78); Sakhalin Ainu (Pilsudskii, quoted by Czaplicka, 1914: 102; Bickmore, 1868b: 363). For the Hokkaido Ainu, Batchelor (1901: 230) speaks vaguely of service by either sex. Among the Northern Tungus and Orochi, the kalym is sometimes paid in labor (Shirokogorov, 1933: 219; Fraser 1891-1892: 32). Bride service is also noted for the Lapp (Collinder, 1949: 132)--usually after the marriage takes place--and for the lower Yukon, Tanaina and Tlingit (Birket-Smith and De Laguna, 1938: 454).

The marriage rite among the Kamchadal consisted solely in the forcible insertion of the suitor's finger into the vagina of the prospective bride; success in this attempt automatically made the woman his wife. No other rites or festivities were involved. Jochelson describes an absolutely identical situation for the Koryak (1905-1908: 741-742). We have no positive data for the Kuriles, though Krasheninnikov states (1949: 469) that their marriage customs are the same as the Kamchadal. It is dangerous to extend such vague generalizations to establish the presence of specific details, however. According to Czaplicka (1914: 87), nothing comparable exists elsewhere in Siberia; but there is a possible parallel in northwestern North America. Teit, in his account of the Thompson Indians (1900: 323-324) writes as follows:

"Another form of marriage was that contracted by a man touching a girl's person...A man who touched the naked breasts or heel of a maiden transformed

her at once into his wife, and there was no retraction for either party, so that henceforth they lived together as man and wife...The man who cut or loosed one string of the lacing which covered a maiden's breast, cut her breech cloth, or lay down beside her, had to marry her; and she at once became his recognized wife without further ceremony."

Among the Lillooet, also, "marriages by touch were customary. If a man touched a maiden's breasts or heels twice at different times, he was expected to marry her." (Teit, 1906: 268).

Why touching the heel should suggest a parallel with the Kamchadal custom becomes more apparent when we read Boas' commentary (1894: 458): "The meaning of this action is said to be founded on the fact that the heel of the woman is near her private parts when she squats, as Indian women are in the habit of doing."

Polygyny in itself is too widespread to have any significance. But the separate housing of wives on occasion by the Kamchadal is noted also for the Ainu (Batchelor, 1901: 231) and Aleut (Hrdlicka, 1945: 166), whereas the Koryak never do this (Jochelson, 1905-1908: 754).

Temporary wife exchange may perhaps be an old circumpolar trait; our information on the distribution of this custom is probably far from complete, but it seems definitely foreign to peoples with a clan or moiety division (Birket-Smith and De Laguna, 1938: 458). Like all Eskimo, the Aleut practiced it (Hrdlicka, 1945: 166, 168), But Jochelson flatly denies it for the touchily jealous Koryak (1905-1908: 756), and thinks Krasheninnikov's earlier reference is due to misunderstanding or confusion with the Chukchi, whose

"group marriage" is more probably an institutionalized wife exchange. It is not mentioned for the Ainu.

The problem of hospitality prostitution is difficult to deal with. That it was greatly fostered by the white man everywhere is beyond doubt, and there is a question as to whether it was even aboriginal in many cases. The Kamchadal are an instance of this. Our sole reference is the experience of Erman (1848: 425), but after a hundred years of cossack indoctrination one would hesitate to argue that this necessarily reflected ancient usage. As for the Koryak and Chukchi, the remarks in the preceding section apply to this matter as well. It seems to have been a regular institution among the Yukagir (Jochelson, 1926: 62)--though here again one questions what the situation may anciently have been--and Aleut (Hrdlicka, 1945: 168). It is on an informal basis among the Eskimo (Birket-Smith and De Laguna, 1938: 459). There are a few isolated references to it in very early sources on the Lapps (Collinder, 1949: 131).

The regions on both sides of Bering Sea formed a well-defined area of transvestitism and homosexual behavior, extending from the Kamchadal through the Northwest Coast (Birket-Smith and De Laguna, 1938: 453). In contrast, the Northern Tungus show little or no homosexuality (Shirokogorov, 1933: 263, 323), and there is no trace of it among the Gilyak (Schrenck, 1881-1895: 649), or Yukagir (Jochelson, 1926: 112). I have seen no reference from the Ainu.

The Kamchadal custom of married men keeping male homosexuals as concubines occurred also among the Koryak (Jochelson, 1905-1908: 755), Aleut (Hrdlicka, 1945: 168) and Koniag (Hrdlicka, 1944: 78-79). **Chukchi** transvestites

(transformed by command of spirits, however) ultimately married (Bogoras, 1904-1909: 450-451), but this seems to involve a somewhat different attitude than the perversion for perversion's sake implied by the practice of concubinage.

The necessity of "purifying" a widow by intercourse with a stranger before she is free to remarry apparently has no parallels in Siberia, to judge from the tone of Jochelson's remarks (1905-1908: 752), and I have seen no references to it elsewhere in our general area.

Children

Practices surrounding childbirth among the Kamchadal offer little for comparative purposes; there is no isolation in a separate structure, no special restrictions or attitudes. The aversion to twins probably reflects an attitude that may be widespread in the general area, although data are scanty. The Northern Tungus, for instance, regard twins as an abnormality and a bad sign (Shirokogorov, 1933: 275); the Manchu believe twins will bring misfortune, and that if one should die the other is sure to (Shirokogorov, 1924: 114). The Hokkaido Ainu have an aversion to double fruits or vegetables (Batchelor, 1927: 95) which probably reflects an ancient attitude toward twins; the latter cannot be reared in the same house or one is sure to die (H. von Siebold, 1881: 32). The Kuriles are said to have always killed one twin (Krasheninnikov, 1949: 470). Among the Eskimo, one twin at least is generally either killed or taken by another family (Weyer, 1932: 132), and on the Northwest Coast there is some evidence of killing one twin in a few places (Drucker, 1950: 208). Jones (1914: 121) states

that the Tlingit killed twins. The Klallam regarded multiple births as animal-like, and sometimes disposed of the offspring immediately, while others died of neglect (Gunther, 1927: 237). The general view in north-western North America, however, was that twins were endowed with tremendous supernatural power, most often with respect to the weather or the salmon; this might be viewed either as an asset or a danger, but in any case was apt to entail severe restrictions on the parents during their infancy. There is probably an ultimate relationship between this attitude and that of the Kamchadal.

Naming a child after a dead relative (Steller, 1774: 353) is found throughout the Eskimo area, with several cases on the Northwest Coast and Plateau; also Chukchi, Koryak and Yukagir--but the Gilyak do not, and the Ainu tabu it (Birket-Smith and De Laguna, 1938: 468-469).

I find no parallels among any surrounding peoples for the total lack of filial respect and obedience depicted for the Kamchadal children. The picture everywhere seems to be the very opposite.

The Kamchadal predilection for infanticide and abortion seems also an isolated phenomenon, for unlike the Eskimo, economic and environmental pressures were hardly involved here.

Death

Abandonment of the dead seems to be an ancient custom, not environmentally conditioned, which is prevalent among tribes of the lowest order. In the exceptional cases where it occurs among more highly-developed cultures, it is only the bodies of the lower classes that are treated so carelessly

(Birket-Smith, 1929, II: 206). Bogoras (1904-1909: 523) believes that abandonment must be considered as the fundamental Chukchi method. Distribution elsewhere is summarized by Birket-Smith (op. cit.: 293-294, 379-380).

Placing children's corpses in hollow trees is noted also for the Ket (Shimkin, 1939: 158). This is done with adults (not shamans) by the Uriankhai (Czaplicka, 1914: 162), while the burned remains of shamans are sometimes placed in a hole in a tree trunk by the Buriat (Ibid: 156-157). Holmberg (1927: 481) implies that the custom is fairly widespread among northern peoples, but cites no data.

Offerings to the souls of the dead in the form of bits of food thrown in the fire is, according to Birket-Smith and De Laguna (1938: 506), a Northwest Coast and Athapaskan custom. I believe it is probably widespread in Siberia also. The Kamchadal threw into the fire as an offering to the dead the gills or fins of the first fish caught after the corpse had been disposed of (Krasheninnikov, 1949: 444). The Okhotsk Foot Tungus and Yukagir put food into special fires by the grave (Zolotarev, 1938b: 73; Jochelson, 1926: 222); also the Uriankhai (Czaplicka, 1914: 162). Doubtless a search would reveal many more instances of this custom.

The Kamchadal do not seem to have been afflicted with quite such an abject fear of the dead and anything belonging thereto as were the Kurile (Krasheninnikov, 1949: 443), Ainu (P. von Siebold, 1859: 54) and Yakut (Jochelson, 1926: 233); still, a general attitude of fear is probably typical of the area as a whole, as it is for most Eskimo. The Aleut and Yukagir are glaring exceptions (Laughlin, 1952: 79; Jochelson, 1926: 225). However, the Kamchadal do seem to have abandoned the dwelling in which a

death occurred, when they were not lucky enough to have removed the dying person in time (Krasheninnikov, 1949: 443). According to Davydov, the Koniag would tear down the dwelling in such circumstances (in Hrdlicka, 1944: 27), and various Eskimo groups endeavor to remove the dying to avoid the problem (Weyer, 1932: 254-256). Among the Hokkaido Ainu in the old days it was the practice to burn the house of the dead. On Sakhalin this was done only if the death had been an unnatural one (Mamiya, 1855: Harrison translation, p. 33).

Although killing of the aged is very common among the Chukchi (Bogoras, 1904-1909: 560-568) and Koryak (Jochelson, 1905-1908: 759), this is only done on request, and is more properly regarded as a form of suicide. Similar attitudes prevail among the Kutchin (Osgood, 1936: 144). The Northern Tungus, however, are known to abandon old men to die without their consent (Shirokogorov, 1933: 258). This is probably influenced by economic pressures and environmental conditions, as among the Eskimo. The Kamchadal freely dispose of the sick in such fashion, with or without the patient's concurrence,⁷⁸ but otherwise leave departure from the world up to the individual's own hand. Suicide, we have noted, was a very common phenomenon, as it was among the Thompson (Teit, 1900: 392), Lillooet (Teit, 1906: 202) and Shuswap (Teit, 1909: 470).

The Kamchadal refusal to rescue a drowning person might be included here. A precisely similar situation is described for the Gilyak (Lansdell, 1882: 605). It is reported from the Koniag that no one will go to save a man

78. The Orochi (Margaritov, 1888: 29) and Koniag (Hrdlicka, 1944: 88) also abandon the seriously ill to die.

drowning (Hrdlicka, 1944: 87), but this may only refer to one who has announced that he wants to die. Possibly related is the Maritime Chukchi custom whereby a person believed lost at sea and subsequently returning must undergo a purifying ceremony (Bogoras, 1904-1909: 536). There is a possible correlation here with inability to swim, although our data are far too meagre. Like the Kamchadal, neither the Gilyak nor Koniag could swim (Lansdell, 1882: 595; Hrdlicka, 1944: 90). The Unalaska Aleut couldn't either, according to Sarychev (quoted in Hrdlicka, 1945: 165), and few Eskimo can (Weyer, 1932: 69), but all Ingalik and Tanaina can swim (Osgood, 1937: 70; 1940: 371), and the Ainu sea hunters could swim like fish (Batchelor, 1927: 403).

3. Intellectual Culture

Calendar

Krasheninnikov found no evidence of the calendar described by Steller (1774: 359-361), in which the solar year was divided into two years of six months each. All the surrounding peoples seem to have a year of twelve lunar months, with the sole exception of the Sakhalin Gilyak, where the six-month year is also reported by Hawes (1904: 211).

Curing

Some aspects of curing (such as pharmacopoeia and euthanasia) have already been dealt with, but a few remaining matters should be touched on here. Krasheninnikov witnessed a case where dying patients were tied up

with thongs: to prevent their going to the other world, he surmised (1949: 295). Possibly comparable is holding the patient tightly to prevent escape of the soul, which is noted for the Ainu (Batchelor, 1927: 335). Curing with the aid of a crude human effigy which is taken into the forest and left there (Krasheninnikov, 1949: 412; Steller, 1774: 276) finds a parallel among the Tungus of northern Baikal (Levin, 1936: 77). The Amur peoples also make images of deities under a shaman's direction for curing purposes (Laufer, 1902: 5), but the precise manner in which they were used is not mentioned.

Surgery among the Kamchadal seems limited to setting broken limbs and letting blood at the site of an ailment (Steller, 1774: 365-366; Krasheninnikov, 1949: 442). The latter may actually refer to acupuncture, which was unmistakably employed by the Bering Strait Eskimo (Nelson, 1899: 309),⁷⁹ Aleut (Hrdlicka, 1945: 175-178), Koniag (Hrdlicka, 1944: 84-85), Tlingit (Jones, 1914: 226), Carrier (Morice, 1893: 82), Tahltan (Emmons, 1911: 55, 114), Thompson (Teit, 1900: 370), Nootka (Drucker, 1951: 146), and is a traditional Japanese medical procedure. The Aleut and Koniag also displayed an amazing surgical knowledge and skill.

Steller (1774: 365) clearly states that enemas were administered only by the inhabitants of Cape Lopatka and Shumushu Island, i.e. by Kuriles, not by the Kamchadal themselves, and that this knowledge had come to them from the southern Kuriles. Krasheninnikov is obviously quoting Steller

79. Also apparently by Point Barrow, Mackenzie and Coronation Gulf Eskimo (Murdoch, 1892: 423; Weyer, 1932: 324).

(1949: 442) in his remarks on the subject. Heizer (1939) has shown that this element seems to be lacking in northern Eurasia and among the Eskimo, although it is fairly widespread, and probably old, in the New World. The possibility is suggested that it may have reached the Kuriles from America.

Religion

It is in the general realm of religion that the Kamchadal and Koryak show their closest affinities. The Koryak Big Raven is a culture hero whose activities closely parallel those of the Kamchadal's Kutka. (The Eskimo of Alaska also have him as creator and culture hero. Weyer, 1932: 446) Similar "traces" of his presence are pointed out; he is the subject of the bulk of the mythology of both peoples--frivolous tales usually displaying him to disadvantage. In each case he is regarded as the tribal ancestor (Jochelson, 1905-1908: 17-23). There is a god of hunting common to both (as well as to the Chukchi), who is master of the wild reindeer and other wild animals (Ibid: 118). The Koryak whale festival is very reminiscent of the Kamchadal seal ceremony. The full participation of women in the religious life of all these northern tribes sets them strikingly apart from the Ainu, where religion is strictly a man's prerogative.⁸⁰ Sacred poles as votive places are reported

80. This long-established view has recently been challenged by Kubodera (1951), who brands the idea that Ainu women are not qualified to participate in religious activities a misconception. Women take a definite part in ancestral worship ceremonies, worshipping the souls of female ancestors.

for the Maritime Chukchi (Bogoras, 1904-1909: 412), Maritime Koryak (Jochelson, 1905-1908: 37-38) and Kamchadal (Steller, 1774: 265).

Certain features, however, set the Kamchadal off from their neighbors to the north--sometimes from the region in general. For instance pyroscapulimancy, so typical of the boreal zone in the New World and much of Northern Asia, including the Chukchi and Koryak (Cooper, 1936: 32, 35), is unknown to the Kamchadal. Animal sacrifices, universal in northeastern Asia from the Orochi to the Chukchi (except for the Ainu) are completely lacking--in which respect the Kamchadal are more akin to the tribes of northwestern North America where only bloodless offerings are the rule (Jochelson, 1905-1908: 90). Comparable wooden masks representing evil spirits were employed by the Kuriles (Torii, 1919: 204-205) and Koryak (Jochelson, 1905-1908: 80-86). The latter resembled the masks of the Point Barrow Eskimo, while practices connected with them are reminiscent of the Aleut (Ibid.). The Kamchadal, like the Chukchi, had none. Masks are rare and sporadic in northern Asia but quite common in North America, especially on the Northwest Coast (Birket-Smith, 1929, II: 288, 365-367).

The concept of spirits with pointed heads--and figures representing the same--are old and widespread in Siberia, occurring in the Neolithic of the Baikal region (Okladnikov, 1950a: 44). On the coasts of the Pacific they are noted from the Kamchadal and Koryak (Jochelson, 1905-1908: 39), Gilyak (Hawes, 1904: 194; Schrenck, 1881-1895: plate liv), Ul'chi (Strenina, 1949: 44), Gold (Holmberg, 1927: 509), Chugach (Birket-Smith, 1953: 209), and at Cook Inlet (Birket-Smith and De Laguna, 1938: 504). The Kamchadal also share other practices with the general region. Veneration of the hearth

fire and offerings to it (Steller, 1774: 276) find parallels among the Gilyak (Hawes, 1904: 260), Koryak (Jochelson, 1905-1908: 98, 565) and Chukchi (Bogoras, 1904-1909: 348, 350). Also in the very important role of the fire goddess among the Ainu, and its attendant attitudes and practices regarding the hearth (Batchelor, 1901: 586).⁸¹ Ritual use of plant materials is widespread on the Northwest Coast but absent among the Eskimo and woodland Indians (Birket-Smith and De Laguna, 1938: 486). Specifically, purification by passing through rings of branches in Kamchadal fashion occurs on the Northwest Coast in connection with girls' puberty rites (three groups) and funerals (two groups--one duplicating the former), and may have been more widespread than the record shows (Drucker, 1950: 211, 219, 276). De Laguna reports a similar practice to remove evil charms among the Chugach and Eyak (personal communication). The willow-bark wreaths worn by the Kuriles during all ceremonies (Torii, 1919: 211) remind one of the Kamchadal wreaths of sacred herbs. "Sacrificial grass" was also used ceremonially by the Maritime Koryak (Jochelson, 1905-1908: 97-98). Fir branches have a ritual

81. According to Holmberg, the Mongols and Turkic peoples (including the Yakut) worshipped the hearth fire. There is also a considerable "fire cult" among the Finno-Ugrian and Samoyed peoples of northwestern Siberia and northeastern Russia. Holmberg feels that all these manifestations are probably of Iranian origin, and are not originally indigenous. He also notes that the Tungus lack any fire ritual, though having a certain regard for their fire (1927: 237, 452-456).

role among the Ul'chi (Strenina, 1949: 44) and Orochi (Vasil'ev, 1940: 166). Plant materials are also used by the Gilyak (Czaplicka, 1914: 272).

The amulets of the beaks of Ipatka (Fratercula corniculata) worn by the Kamchadal and Kurile (Krasheninnikov, 1949: 311) have a possible connection with the common Ainu custom of keeping the skull or beak of an albatross or similar bird for magical purposes (Batchelor, 1901: 297). Steller relates (1774: 276) that the Kamchadal offered noses of sables, foxes and the like to the fire. This suggests that the nose (like the beak) embodied the essence of the creature, and reminds us of the Orochi, who preserve the noses of sable and bear (Vasil'ev, 1940: 170), and the Alaskan Eskimo, who kept noses of fur-bearers as amulets (Nelson, 1899: 437).

The human effigy of straw which figured in the Kamchadal's big autumn ceremony may also find parallels among the Ainu. Holland (1874: 240) mentions a straw figure like a scarecrow, which represented the god who presides over household treasures; and MacRitchie (1892: 33, plate xvi) notes a straw puppet in human form.

"Feeding" spirit images by smearing the mouth is probably a basic Siberian practice, since we find it also among the Koryak (Jochelson, 1905-1908: 98), Gilyak (Lansdell, 1882: 606), Tungus and Yakut (Holmberg, 1927: 467), Ostyak and Vogul (Ibid: 142), Samoyed (Nordenskiold, 1881, I: 94), and implied for Chukchi (Bogoras, 1904-1909: 364).

Certain elements point in the direction of the Eskimo. For instance, the Chukchi have few tabus, while the whole life of the Eskimo is closely bound up with them (Bogoras, 1904-1909: 491). This is reminiscent of the Kamchadal. As an example, both observe a general tabu against cooking land

and sea animals in the same pot (Weyer, 1932: 367; Steller, 1774: 274). The Kamchadal alone also practice the Eskimo mode of expiating sins by confessing tabu transgressions (Jochelson, 1905-1908: 65). Divination by lifting a part of the body to test its weight is typical of the Eskimo and Chukchi (Weyer, 1932: 230; Bogoras, 1904-1909: 485). The Kamchadal employ the identical method but lift the foot instead of the head (Krasheninnikov, 1949: 412; Steller, 1774: 278).⁸² Lantis (1938: 449) has pointed out that the mock whale hunt practiced ritually by the Eskimo of Little Diomed Island and Cape Prince of Wales is reminiscent of one episode in the Kamchadal autumn festival.

Shamanism

Krasheninnikov and Steller were both struck by the contrast between the Kamchadal and other Siberian peoples in the realm of shamanism. There were no professional shamans, no special costume, and, most astounding of all, no drum (Steller, 1774: 277; Krasheninnikov, 1949: 412). Bogoras (1904-1909: 413-414) believed that the "family shamanism" still flourishing among the Chukchi, whereby everyone may try his or her hand at shamanizing as far as skill and inclination permit, represented the original state of affairs in northeastern Asia, and that vocational, specialized shamanism grew up out of it and has largely displaced it. Kamchadal shamanism may have represented

82. Basically similar methods of divination are employed in particular situations by the Ostyak (lifting coffin containing corpse) and Lapp (lifting stone seide "idols") (Holmberg, 1927: 28, 101).

this simple stage, although the absence even of a drum links it more with the "wizards" of the Ainu mentioned by Batchelor (1901: 308-309, 324). Thalbitzer has advocated the view that modern shamanism was a secondary historical phenomenon for the Eskimo, being superimposed from Asia on an earlier more primitive cult centering largely around animal ceremonialism and magic (1941: 581-582). Such a view is critically discussed by Weyer (1932: 444-447).

Schrenck seemed to feel that shamanism was intrusive among the Gilyak, and centered inland among the Tungusic peoples of the Amur (1881-1895: 752-753). I wonder if something similar was not also the case in northeastern Siberia, and whether diffusion eastward from the Northern Tungus would not better explain the state of affairs there than the hypothesis of an evolution in situ out of undifferentiated "family shamanism". Zolotarev points to the limited role of the shaman among the Okhotsk Foot Tungus, the lack of special costume, etc. as evidence that highly-developed professional shamanism had not yet reached them. It seems to me that the Kamchadal situation could be another instance of this. The lack of any special shaman costume among the Koryak (Jochelson, 1905-1908: 48) suggests that the complex had not quite become fully established there. The Kamchadal and Ainu would occupy the most marginal positions geographically if such a diffusion from the Tungus had taken place, and it seems hardly mere coincidence that it is precisely these two among whom shamanism is the least developed in all northeastern Asia.

Animal Ceremonialism

Considering the absolute dependence on salmon for their very existence, the absence of any salmon ceremonialism among the Kamchadal and other fishing tribes on the Asiatic side of the North Pacific is a curious phenomenon. A first salmon ceremony seems general on the Northwest Coast, except for the Tlingit and Haida (Birket-Smith and De Laguna, 1938: 448-490). Findeisen (1928: 47) was struck by a similar situation among the Ket, where there is practically no trace of fish or fishing either in the religious concepts or the mythology, despite the fact that fish are the basis of economic life. Whatever the explanation, it seems to represent a pattern among the primitive tribes of Siberia. The only suggestions of any observance by the Kamchadal in connection with the first salmon are Krasheninnikov's note that it is considered a great crime not to eat the first chavycha of the year yourself (1949: 303), and Ditmar's mention of great rejoicing over the first salmon caught in the spring, with praise and congratulations for the lucky fisherman (1890-1900: 111). Perhaps we have here a dim echo of practices on the opposite shore of the Pacific.

The bear ceremonialism which Hallowell has described (1926) across the northern hemisphere from Lapland to Labrador appears very weakly among the Kamchadal, yet it reaches its most highly developed form among their southern neighbors, the Ainu. On the whole we may say that the Kamchadal participated in a broad pattern of observances toward game animals in general, probably widespread in the area. A few specific ideas about bears apparently filtered in and, added to this base, produce an appearance of mild "bear ceremonialism".

It can hardly, however, be regarded as a distinct, integrated complex in and of itself, comparable to such complexes elsewhere.

In fact, the most highly developed animal ceremonialism recorded for the Kamchadal is connected with seals. These practices are paralleled elsewhere in this area. Among the Amur Gilyak, slain seals are "fed" immediately, and their heads subsequently returned to the sea after appropriate preparations and ceremony (Kreinovich, 1934: 86-95); the same holds for the Ul'chi (Strenina, 1949: 47). The Sakhalin Gilyak return the bones of the first seal killed to the sea after ceremonially eating it (Hawes, 1904: 253-254). The whale cult of the Koryak and Kurile is probably closely related, also the Aleut practice of throwing back into the sea skulls of slain aquatic animals (Hrdlicka, 1945: 155). At Point Barrow, bones of seals are also reported to be returned to the sea (Weyer, 1932: 340, quoting Ray) as are heads of belugas at Kotzebue (Curtis, 1930: 163). In the latter cases, at least, reincarnation seems to be the basis for the practice.

But it seems as though this general attitude prevailed towards any game animal, land or sea, taking the form of asking the animal's pardon and "entertaining" it with food, the object being to persuade it not to arouse the fears of others of the species. Steller clearly indicates this more than once (1774: 82, 85, 280), and gives the definite impression that bears were not singled out for any different treatment (Ibid: 330-331). Krasheninnikov does state, however, that the skull and thigh bones of bears were hung up, a treatment apparently not accorded to other animals (1949: 249).

Such a broad attitude toward animals is paralleled among the Ainu, who must offer inao to the spirits of any animal killed, even small furbearers (Batchelor, 1927: 101). "When a living thing is killed by men, its skull is decorated with flowers and the skull is called Riwak-Kamui, 'returning god'. After killing a creature, they make an offering to its spirit and say 'Go thou home to thy fatherland with the souvenir'. This is called 'sending off'..." (Kindaichi, 1949: 348). The Eskimo, too, "feels it always incumbent upon him to ingratiate himself with the souls of the animals and to avoid their retaliation. Toward this end he must govern himself by a formalized system of observances lest the dreaded punishment of food shortage follow upon his noncompliance" (Weyer, 1932: 334). "Their cult pertaining to slain animals has the aim of encouraging other animals to be caught in the future." (Ibid: 339). The Nootka have a series of ritual performances "aimed at honoring and pleasing the species of animal caught, so that its reincarnated spirit would again let its body be captured. These customs were based on a belief in the immortality of animal spirits, most explicitly described for the salmon, whose spirits returned to their home beneath the sea to report how the humans had treated them. Ill treatment was punished by refusal of the fish to run in that river again." (Drucker, 1951: 166).

Such general attitudes doubtless exist among other peoples in our area as well. They are typical for most North American hunting tribes, according to Underhill (1953: 63).

Preservation of bones of game (limited to bear among the Kamchadal), or special treatment of some portion, is apparently very ancient and

widespread. Birket-Smith and De Laguna cite numerous examples from northern and northwestern North America pertaining to various animals or fish (1938: 486-488). In Asia, in addition to the instances already mentioned, preservation is reported from the following peoples and doubtless many others: Gilyak--beluga skulls (Schrenck, 1881-1895: 548); Sakhalin Gilyak--bear and dolphin skulls (latter may mean beluga) (Hawes, 1904: 202); Hokkaido Ainu--bear and deer skulls (H. von Siebold, 1881: 18); Orochi--noses of sable and bear (Vasil'ev, 1940: 170); Chukchi--animal skulls (Nordenskiöld, 1881: 435); various Tungus and Yakut groups--big game bones (Okladnikov, 1950b: 286-287); Ostyak--beluga skulls (Schrenck, 1881-1895: 548); Lapp and Samoyed--bones of land and sea animals, each in its proper medium (Holmberg, 1927: 98-99).

Folk-lore

"All that we know of the Kamchadal mythology...leads to the conclusion that the Koryak and the Kamchadal had one and the same folk-lore," (Jochelson, 1905-1908: 341). And again: "Kamchadal mythology corresponds closely to that of the Koryak, and forms a clearly-defined cycle, consisting exclusively of raven myths. It may therefore be stated without hesitation that whatever is true of Koryak folk-lore is just as true of that of the Kamchadal" (Ibid.).

"All the [Koryak] tales about Big-Raven belong to the cycle of raven myths which are popular on the American as well as on the Asiatic shores of the North Pacific" (Ibid.: 18). There can be no doubt that this raven cycle constitutes a typical circum-Pacific trait (Birket-Smith and De Laguna, 1938: 511).

Jochelson (1905-1908: 358) shows that 84 per cent of the motifs in Koryak tales are shared with the Northwest Coast Indians, 24 per cent with the Eskimo and only 20 per cent with the Old World.⁸³ "Neither the present isolation of the Koryak from the Indians, nor the influence of Asiatic culture on their customs and social life, has been able to efface from their myths the characteristic spirit and style of the traditions of the American

83. Hatt (1949: 5) justly points out that Jochelson deliberately excluded Alaskan Eskimo folk-lore from his study, on the assumption that these Eskimo were recent intruders into the area and hence did not figure in the level at which he was operating, and would only confuse the issue if included. The folk-lore of this group exhibits strong Indian similarities (they were assumed to be borrowings), and its inclusion would have increased the number of elements common to Indian and Eskimo mythology, and made the conformity between Koryak and Indian somewhat less conspicuous--though it does not invalidate the reality of this. It may, however, have a real effect on the interpretation of this conformity. In Jochelson's time it was assumed that the "Eskimo wedge" had interrupted the former contact between Koryak and Indian. We now know that the Alaskan Eskimo culture is ancient in its present habitat. This discovery in turn gave strong support to the substitute proposal of contact via the Aleutians to explain this split distribution. Now the possibility arises that the distribution may not be split at all, or at least not to a serious degree, and that the Alaskan Eskimo may be the intermediary which their geographical position would lead one to expect. A comparative study of Koryak and Alaskan Eskimo folk-lore

(footnote continued)

would be crucial in settling this important point, and it is therefore with great interest that I have recently learned of the existence of an unpublished master's thesis on the raven tales by Ann Chowning, University of Pennsylvania. She feels that the Alaskan Eskimo tales form a perfect link between those of the Northwest Coast and Athabaskans on the one hand, and the Siberian tales on the other. She further suggests the Athabaskans as the center of origin, or of elaboration, of the earlier forms of the tales. (I am indebted to Dr. Frederica de Laguna for this information).

Bogoras, in his comparative study of the folk-lore of northeastern Asia and northwestern North America, similarly excludes from consideration the raven tales of the Alaskan Eskimo "as they are probably borrowed from the Indians" (1902: 681). Inasmuch as it is precisely in the raven cycle that the Koryak-Indian similarities chiefly lie, this arbitrary treatment has put the whole problem in a false light, and affected the validity of culture-historical hypotheses which have subsequently been based on his findings. Elsewhere (1902: 669) he writes: "The Raven legend, the most important of all these myths, extends in one continuous line along the Asiatic and American shores; but close to Bering Strait this line seems almost broken by the Eskimo. The Raven stories of the Alaskan Eskimo were probably borrowed from the Indians, or, at least, conceived under Indian influence." In other words, there is no actual interruption at all in the distribution of the Raven cycle from Kamchatka to the Northwest Coast--though the opposite impression is still prevalent.

Pacific coast" (Ibid: 359). "I regard the identity of the Koryak folklore with that of North America as established" (Ibid: 362).⁸⁴ (To a greater extent, he implies, than his comparative study is able to show.)

And this same conclusion must, as shown above, be applied to the Kamchadal as well.

84. Bogoras comes to similar conclusions (1902: 579-580, 669-671, 683). "One may almost assume that, from an ethnographical point of view, the line dividing Asia and America lies far southwestward of Bering Strait, extending from the lower part of the Kolyma River to Gishiga Bay. In the whole country east of this line, American ideas, or, more properly speaking, ideas characteristic of the North Pacific coast of America, prevail." (Ibid: 579).

CHAPTER V

CONCLUSIONS

Having thus analyzed Kamchadal culture into its component traits, insofar as the nature of our sources permit, and having studied those traits individually where comparative material, positive or negative, was available, we shall now try to ascertain whether they fall into any distributional groupings which might enable us to formulate conclusions or hypotheses as to the origins and relationships of Kamchadal culture. Question marks indicate there is doubt regarding the group classification of the item.

(1) The following traits seem to be widespread in northern Eurasia and to be probably of considerable age: ice fishing, "peep fishing", fish weirs, fish traps, dip net, fish hook, fish spear, hunting dog, carrying strap, carrying yoke (?), fur-shod ski of "Arctic" type, pod-shaped dugout, shaping of latter by water and hot stones, semi-subterranean house with entrance passage, conical tipi, pile storehouse, tailored skin costume of parka and trousers, grass boot lining, head band with ear tabs, sinew thread, two-handed scraper with stone blade, simple bow, lance, pitfall, planing adze, socketed haft for same, and probably the elbow handle, bone wedge, tubular bone needle case, bone needle, birchbark containers, wooden bowls and utensils, bone shovel, rudimentary art, notched log ladder, pole snare, catching seabirds with hook and line, bird drives, waterfowl caught with

flight nets, moderate gathering of wild vegetable products, pounded inner bark as food, puddings of fat and vegetable products, geophagy, burying fish to rot, moxa cautery, simple fire drill, stone boiling, flint effigies, certain types of stone points, levirate, wife exchange (?), naming after dead person (?), spirits with pointed heads, animism, preserving bones of game, certain limited attitudes and beliefs concerning bears, attitude toward twins, pantomimic dances. The type of social organization and political system--or lack of them--displayed by the Kamchadal possibly should belong here also.

Many if not most of these elements are not by any means peculiar to northern Eurasia, but represent a basic substratum of human culture originating outside the area. We cannot, of course, be sure that all of these were present in ancient Kamchadal culture. Some may have been acquired in the course of time from adjacent groups equally primitive.

(2) Next are traits whose basic distribution seems to lie around the rim of the North Pacific, or seems likely to have once done so. They may be in addition more widespread continentally, on one side or the other. These distributions seem too old to be attributable to recent interchange across the Aleutian Islands, or lie too far to the north of this route:

Oval lamp, mortar of stone or whale bone, pestle (?), clubs, absence of pottery (or its very subordinate role compared to wood), highly-developed basketry, coiled technique of basketry, highly-developed wood-working, prominent use of grass mats, nets made of nettle, extensive use of plants, rendering fish oil by stone boiling in dugouts (?), addiction to fat as food, pit oven (?), bride service (?), hunting sea mammals in open water, clubbing

seals on land, raven cycle mythology, Big Raven as creator and culture hero, ritual use of plant materials, transvestitism, marriage by "touching" (?), grooved and pierced stones, rectangular house, smoke-hole entrance (?), roof supported by four central posts (?), sleeping platform around three sides (?), shirt made of small animals and birds (?), acupuncture, destroying or abandoning dwelling after death (?), fish-roe tanning, double boat (?), mouse nest plundering, elaborate herbal lore, dyeing skins with alder bark, generalized animal ceremonialism.

In a number of cases, the distribution would rather suggest spread across the Aleutians, but the elements seem to have a greater antiquity than we could reasonably expect for this route. This is a view that could easily be altered, of course, as our knowledge of Aleutian chronology increases.

(3) Certain traits are distributed up the Asiatic side of the North Pacific; many of them spread over into the Eskimo area, but do not seem to have continued on down the American side. Some or all of these may be elements that actually belong in group two above, but failed to take hold in the New World, or have been supplanted there:

"Utoq" sealing, netting sea mammals, bear hunting by blocking den, boiling meat, aversion to roasting or scant use of it, preserving birds' eggs in oil (?), preservation by sun-drying rather than smoking, specialized seal ceremonialism, very rudimentary shamanism (probably really belongs in group one), attitude toward drowning, informality of birth customs. The loose social and political system included in group one is very typical of this same zone. Aconite arrow poison probably belongs here as well as in group four below.

(4) Circum-Pacific traits whose apparent recency or distribution suggest possible movement in either direction across the Aleutian Islands:

Twined basketry, painting of implements, aconite poison, preparation of Heracleum dulce, "sunshade" hats, red-tinted seal hairs as clothing decoration, fingerless gloves (?), lamp with hole, sadiron lamp, elements of lithic industry, male homosexual conclubines, separate housing of wives, rod and slat armor (?), palisaded fortifications, slavery of war captives, torture of captives--to which self-destruction in case of defeat is probably related.

We should perhaps note here some traits which seem to belong to this culture drift, but which apparently passed by the Kamchadal without being introduced or taking hold: man's apron, clothing ornaments of bird beaks, fermented drinks of berries, masks, bulbed enema syringe, mummification, poison lance whaling, refuge island, labret (?).

(5) Elements possibly of immediate Eskimo origin, or received from the Bering Strait area. Some are doubtless ancient traits, but may have been acquired locally from the Eskimo:

"Athabaskan" type snowshoe, ice creeper (?), baleen pail, elaborate system of tabus, confession of tabu-breaking, tabu on cooking land and sea animals in the same pot, divination by weight-lifting, whale cult details.

(6) A certain body of culture is characteristic for the Chukchi, Koryak and Kamchadal as a group; much of it spread to the adjacent Eskimo. Here we include plate armor, many types of boots (and probably numerous other details of costume about which we have insufficient data), wolverine

as the most prized fur, narcotic use of fly agaric, many aspects of religion and ceremonial including deities, sacred poles; and, above all, dog traction of "northeastern" type with its whole attendant complex: construction of sled, fanwise team, harness type, dog boots, shoeing runners with whale bone, icing runners, walking ahead of dogs.

There is a still larger body of elements common to the Chukchi and Koryak which are absent in Kamchadal culture. The marginal position of the Kamchadal suggests that in some cases these were recent diffusions into the region which did not reach them. The majority are widespread in northeastern Asia, and it is interesting to note that about half are also lacking in Ainu culture, which is likewise geographically marginal to this general area:

Ulo, polished slate tools in general, pottery (which was impinging on the Kamchadal from both north and south: they were caught between the spread of two unrelated complexes, but do not seem to have really adopted either), complex bows, atlatl, sling, bird dart, set-bow, traps and deadfalls, seines for fish (?), whaling, skin boats, sail, double-bladed paddle, towing boats with dogs, eating dogs, ritual role of dog, animal sacrifices, developed bear ceremonialism, pyro-scapulimancy, professional shamanism, drum, cremation, developed art, tattooing, ear ornaments, gut coat, women's combination suit, urine tanning, bow drill, standard ski pole, reindeer breeding. The Koryak also lack a few of these traits, but the general distributional picture is not affected.

We should also note the absence from Kamchadal culture of some traits common in the taiga region of northeastern Asia, most of them extending over into the boreal zone of the New World as well: bark canoes, elevated or

above-ground burial, and cradles. The very subordinate role of birchbark containers among the Kamchadal should be included here as well.

(7) The following elements are shared primarily with the Ainu, and in a few cases with the Amur region as well:

Dugout with incurved sides, raised plank dugout, split-hull method of construction, boats poled standing, fundoshi or breech clout, nudity (?), fishskin boots, grass-mat raincoat, bark-wrapped bow, mat armor (?), fishing watch towers, some types of stone points, flute, storehouse in charge of women, high position of women, bird-beak amulets, anthropomorphic effigies of straw, holding sick person to prevent escape of soul.

(8) Peculiar to the Kamchadal are the saddle-like sled superstructure, pit training of dogs, ritual disability of dogs, conical summer pile dwelling, purification of widows by intercourse with a stranger, lack of filial respect, prevalence of abortion and infanticide.

The general type of winter house is shared with the Koryak and northern Kuriles. The latter also steam up the house to heat it. The former share in having the place of honor opposite the entrance (or draught passage). Koryak and Kamchadal crop dogs' tails and feed the warm fish soup in troughs.

A few traits of uncertain status, or for which we have insufficient data, have been omitted from these listings: e.g. the oshtol or driving staff, climbing staff, snow goggles, hospitality prostitution, stone ballast, year of six months' duration, killing of sick, village hunting territories, eagle-feathered arrows, fish nets (other than seine or dip nets).

What inferences may be drawn as to the significance of these groupings?

The widespread, primitive nature of the elements in group one suggest that they represent the sub-stratum of basic culture in northern Eurasia which must underlie all the later developments in this region. But what is the general nature of this stratum?

Zolotarev (1938a) conceived of this as a culture of "winter fishers", lacking the snowshoe, but having the semi-subterranean house, pottery, and dog traction. This formulation was an outgrowth of Birket-Smith's "ice-hunting" culture, which in turn emanated from Hatt's earlier concept of a pre-snowshoe "coastal" culture. In all these hypotheses the snowshoe was conceived of as a unitary and very late invention, which then spread rapidly through the boreal zone of both hemispheres, accompanied by a small body of companion elements (conical tipi, wide use of birchbark, etc.). Cooper (1946: 284-285) was apparently the first western scholar to question this viewpoint, which had become virtual dogma in culture-historical circles. He pointed out that the evidence for unitary origin for the snowshoe was weak, and that there was, in his cautious words, "an appreciably greater probability in favor of multiple origin" of the basic forms, and a good chance that these go back to the earliest human occupancy of the Old World taiga. This demolishes the whole structure of an ancient pre-snowshoe "ice-hunting" culture overlain throughout the boreal zones by a later intrusive "snowshoe culture"--the former giving rise to Eskimo culture, and a blend of the two to the modern specialized taiga hunting economy of both hemispheres typified by the Tungus and Athabascans, which is regarded as a relatively recent phenomenon. This "taiga economy" Cooper

regards as an integrated complex, whose origin dates back at least two to four millenia (Ibid: 288-290).¹

At about the same time, Russian scientists were also re-examing their concepts of the culture history of northern Eurasia. Levin (1946) had attacked the assumption of antiquity for dog traction, and made out a plausible case for its independent development in a number of areas out of the hand hunting sledge, to which a dog is often hitched to assist the hunter. He felt that the available facts were better explained by his hypothesis and accompanying historical reconstruction, and adduced considerable data not previously taken into consideration. Okladnikov (reported in Kratkie Soobshcheniia IIMK, 9: 130) believed that the most ancient "Neolithic" stages revealed by his extensive archaeological work in Siberia represent a hunting culture of the taiga presupposing the snowshoe. The latter, he believes, appeared simultaneously with the bow and stone axe. His dating closely approximates Cooper's estimate above. The new point of view was synthesized by Levin (1947: 86):

"We will regard as the most ancient economic-cultural type of North Asia the unspecialized hunting-fishing complex which is to a considerable degree the culture of the Neolithic population of northern Asia. With this

1. Birket-Smith has recently (1953: 229) assailed Cooper's critique, which menaced the very existence of the former's entire theoretical structure. Although certain of Cooper's specific arguments may be contested, his basic approach nevertheless remains far more convincing than that of Hatt and Birket-Smith.

stage is associated the hunting dog, hand hunting sledge, and snowshoe. From this culture the lines of development lead both to the specialized cultures of the sedentary fishers and arctic hunters with their dog traction, and also to the culture of the contemporary taiga hunters and fishers which to the greatest extent preserves the features of this ancient stage."

I am of the opinion that this general point of view interprets the facts as known at present far more acceptably than did the "ice-hunting" versus "snowshoe" approach of the Hatt-Birket-Smith-Zolotarev school, and that it offers a more rewarding hypothesis for testing by future investigations in this field.

This basic unspecialized hunting-fishing complex of the forests, inland waters and tundra, having the snowshoe but lacking dog traction, is, I think, reflected in our first group of traits.

For the seemingly ancient traits distributed around the rim of the Pacific via Bering Strait I shall borrow from De Laguna (1947: 12) the term "North Pacific Cultural Continuum", since I regard them in much the same light as she does, although I cannot consider them as a southerly zone of "ice-hunting" traits, an attitude which she maintains only with difficulty. I have included elements which she would view as belonging to more recent movements across the Aleutians, because I believe them to be more ancient in the area, or more likely to be linked at Bering Strait than she considered possible. This North Pacific rim was a belt of maritime cultures sharing a very similar environment and having much in common from very early

times.² Individual elements may have diffused in either direction. Aleut-Kamchadal similarities at this level do not have to be ascribed to direct contact, since Aleut culture stems from southwestern Alaska, where it would have shared in this continuum. There is the difficulty, however, that so many such traits are absent at Bering Strait. What this actually means usually is that they have not turned up archaeologically in the Old Bering Sea culture. Many would not show up archaeologically anyway. And the impact of Thule influences on the modern Bering Strait Eskimo makes absence from the latter's culture hardly conclusive either. It seems to me that the old concept of the "Eskimo wedge" still tends to dominate our thinking even after its ghost has supposedly been laid.³ We assume that traits could not pass through this culturally "hostile" intermediary. On the contrary, I believe that this intermediary--the ancient Bering Sea cultures--was part and parcel of this North Pacific Continuum, though the local spectacular efflorescence of culture at this point has tended to obscure what must have been a basic kinship. Furthermore, the Old Bering Sea Culture does not extend backward indefinitely into time. Much could have transpired in the

2. "The fundamental features of the material culture of the fishing tribes of the coast of northeastern Asia, of northwestern America, and of the arctic coast of America, are so much alike that the assumption of an old unity of this culture seems justifiable, particularly since the beliefs and customs of this large continuous area show many similarities." (Boas, 1910: 534).

3. See the discussion on mythology, supra, in this connection.

area relatively recently and still antedate it. When people speak of the absence of a trait at Bering Strait as if it conclusively proved or disproved some point, I think of the passage through that region of all the peoples who entered the New World, and all the cultural elements they carried with them. What does the content of the Old Bering Sea Culture tell of this?

Our third group of traits (Northeast Asiatic Coast and Eskimo), if it has objective reality and does not merely reflect incomplete distributions, is of interest in the light of recent Russian views on the origin of the Bering Sea Eskimo cultures. Rudenko, after his recent field work on the Chukchi Peninsula, has some radically different and highly stimulating ideas on this matter (1947: 111-113). Instead of looking westward along the arctic coast of Siberia for the homeland of the mythical ancestral Eskimo--traditional procedure for American archaeologists, but a barren quest, as Rudenko demonstrates--he looks for the source of those elements that made the rise of the Bering Sea cultures possible: maritime propensities and the toggle harpoon. Lacking these, he convincingly argues, what could have persuaded any people (much less a group of inland caribou hunters, as Larsen and Rainey, 1948: 183, would have us believe) to settle on the islands in Bering Strait? And it is south along the Asiatic coast that his search leads him, seeking sea hunters who might have been attracted to the far north by the incomparably rich marine fauna, and there developed the spectacular cultural outburst which archaeology has revealed, with its artistic links to southern realms. Okladnikov holds the slightly different view that the ancient Bering Sea cultures represent simply the final link in a chain

of sedentary cultures along the North Pacific coast of Asia whose chief occupation was fishing in conjunction with sea mammal hunting (Levin, 1949: 230). In either case, the existence of a northeast Asiatic maritime culture stretching from Japan to Bering Strait is indicated, and this is what our group three might have some connection with, although this particular list is certainly far from impressive.

Group four represents De Laguna's "Circum-Pacific Culture Drift" of recent times, a transportation of cultural items in either direction supposedly through the medium of the sea-faring Aleut. I have confined my list to elements of definite recency, and it is consequently somewhat more limited than the roster given by other writers (see Collins, 1940: 578-583; De Laguna, 1947: 270).

The presence of a number of distinctively Eskimo traits (group five), most of them not reported for all the intervening tribes, raises the question of a former closer contact between Eskimo and Kamchadal. The possibility suggests itself that the Eskimo might once have been more widely spread along the western coast of Bering Sea--not necessarily the elaborate forms of Eskimo culture flourishing in the Straits area, which were, after all, a strictly local and peculiar efflorescence, but "country cousins", so to speak. This is in conflict with the prevalent attitude that the few Eskimo found in Siberia are recent intruders clinging to a few precarious footholds on the extreme tip. But there are indications that the picture in former times was quite different. The pre-war researches of Zolotarev on this problem led him to the conclusion that an ancient Eskimo culture was spread over the entire coast of the Chukchi Peninsula, and that modern Chukchi culture arose on this

basis as the result of the invasion of the ancestral Chukchi from the west; the ancient Eskimo population being absorbed by the newcomers, except for the extreme marginal settlements. The modern Asiatic Eskimo are descendants of this ancient population, which has also entered into the composition of the present-day Chukchi tribe (Levin, 1950: 61). A comparable view is also held by some American scholars, e.g. Collins (1940: 538): "In northeast Siberia the Chukchi seem clearly to have displaced or caused a marked contraction of a once rather widespread Eskimo population." And not only the neighboring Chukchi but the more distant Koryak show evidences of past Eskimo contact. "The Eskimo elements in the religious rites, and...in the material culture of the Koryak point, I believe, to direct intercourse of the Koryak with the Eskimo at some period"; too much is involved to be explained merely by diffusion via the Chukchi (Jochelson, 1905-1908: 359). Collins (1940: 541) also considers the mode of life of the Maritime Koryak, like the Chukchi, to be "so close to that of the Eskimo that it must be considered in large part as an actual extension thereof." The cultural resemblances between both these tribes and the Eskimo, he goes on to say (Ibid.), are not only greater than with any Indian group, but seem too fundamental and deep-seated to have been acquired through recent contacts (emphasis mine); these facts have hitherto been ignored or inadequately explained by proponents of the theory that the Eskimo only crossed over to Siberia very recently. Birket-Smith goes even farther, declaring that "for several reasons it looks as if there were a gradually decreasing Eskimo influence from the Chukchi in the north to the Gilyak in the south." (1951:

150). In general, it seems that again our thinking has been colored by the "Eskimo wedge" viewpoint: we have assumed the basic kinship of the Chukchi and Koryak with the Indians for so long that we have tended to overlook their far closer links to the Eskimo. All this suggests to me a former extension of Eskimo occupation south along the west coast of Bering Sea. We shall adduce further data in support of this when we take up the topic of physical anthropology.

The traits in group six indicate a certain shared cultural tradition of the Chukchi-Koryak-Kamchadal as a unit. Outstanding here is, of course, the "northeastern" dog traction complex, which from its distribution seems to have developed in situ in this region and given rise to the related Eskimo dog complex.

Traits shared with the Ainu (group seven) clearly indicate a spreading north from the latter (via the Kuriles) and borrowing by the Kamchadal-- probably directly from the Kurile population in southernmost Kamchatka. Such elements must be very recent in Kamchadal culture, since they are associated with the so-called Naiji pottery, a very late type in the northern Kuriles (Baba, 1939: 104-107). Furthermore, the occupation of these islands by the Kurilian Ainu (the people we have referred to as Kuriles) is a late phenomenon, the preceding population (of no great antiquity) being apparently of non-Ainu racial type and differing culture: the so-called Okhotsk Pottery people (Ibid: 44-60).⁴ Jochelson's attempt to date some Naiji pottery

4. Skeletal remains showing resemblances to the Aleut type are reported to have been found with this culture (Baba, 1939: 47-48), but these may, of course, be a later intrusion. De Laguna (note in Oka, 1939: 301) remarked

(footnote continued)

on the striking identity of some types of stone tools from the northern Kuriles with Aleutian types, but it is not clear whether these were associated with the Okhotsk Pottery People.

sites in the Kurile area of south Kamchatka to the eleventh century by means of Japanese coins found therein (Jochelson, 1928a: 37) must be rejected completely. He states that the coins (which are not illustrated) were identified by Professor Koganei. The latter, however, denies ever having seen them or having even considered the matter (Baba, 1939: 96). Baba found a coin of the Kan-ei era (1624-1643) in a culturally-similar site in the northern Kurile Islands, and it is quite probable that Jochelson's coins were of this type (Ibid: 97-98).

Traits peculiar to the Kamchadal (group eight) could be considered as inventions of this people. The fact that the most elaborate and specialized form of sled in the northeastern region occurs here might suggest that the Kamchadal were the originators of the northeastern sled, and by extension, of the accompanying dog traction complex. But their prejudices toward dogs (e.g. ritually) indicate the very opposite.

It is now time to consider what light the data of linguistics and physical anthropology might throw on our problem.

The Chukchi, Koryak and Kamchadal languages, according to Jakobson (the most modern authority on the Palaeo-asiatic languages) "form a closely connected family" (1942: 602). Older writers believed that this group "has much in common with the structure of the languages of the Northwest Coast Indians" (Jochelson, 1930: 454), but such views are not taken seriously today. Instead, some similarities are found between this "Chukchean" stock and the Eskimo on one hand, and the Samoyed on the other. But they may be old borrowings rather than traces of common inheritance (Jakobson, 1942:

603). The Samoyed reference is of interest, since Vasilevich (1949: 48-50)⁵ has located the ancient homeland of the Chukchean peoples between the Yenisei and the Lena, north of the Stony Tunguska--based on other linguistic evidence, place names, and hints in the folklore of the present tribes of that area. All this would suggest a migration into northeastern Siberia at not too remote a date.⁶ The Eskimo similarities are further evidence of the close association of our tribes with this people. Thalbitzer, comparing Eskimo and Koryak, concludes that "certain elements in the language testify to an earlier fairly intimate contact" (1941: 576). Later, discussing the Kerek, a branch of the Maritime Koryak, he finds an apparent hybridism in the language of this group--a mixture of Eskimo and Koryak (1952: 52). In this connection, Boas (1933: 369) points out that Aleut-Eskimo-Chukchi-Koryak-Kamchadal share a common psychological structure. Despite the fundamental differences in structure, vocabulary and phonetics, there is a similarity in the mode of analyzing experience, especially striking since it is not found elsewhere. No great antiquity would be required, however, for the development of this phenomenon. This is further support for our North Pacific Cultural Continuum, as well as suggesting association with a basic Eskimo population.

5. See Jettmar (1952: 501-502) for a critical discussion of this thesis.

6. Cf. Harrington (1940: 504): "I feel sure that a map of 20,000 years ago would have shown the Chukchean stock largely where it is today."

It is important to note the division of Chukchi and Koryak into distinct Reindeer and Maritime dialects. The Maritime Koryak are further subdivided into a number of marked dialects (Jakobson, 1942: 605). The importance of this clear Maritime-Reindeer distinction will become apparent in the next section.

Boas (1910: 534) was inclined to regard the Palaeo-Asiatics as "an offshoot of the American race". Jochelson flatly labeled them "Americanoids" (1928b: 44). This classification, which was closely tied up with the "Eskimo wedge" theory, became virtual dogma, and has continued to stand unquestioned even after the demise of that theory. However, on the basis of Debets' extensive post-war anthropometric field work in northeastern Siberia,⁷ the "Americanoids" seem slated to share the fate of the "Eskimo wedge".

Briefly, the only type in the area displaying "Americanoid" features was found to be the Eskimo type. The presence of such features among the Palaeo-Asiatics (who in general occupied an intermediate position between the Eskimo and the Siberian mongoloids) was the result of mixture with populations of Eskimo type.

There proved to be a distinct contrast between the coastal and reindeer-breeding inland groups. This demarcation, Debets feels, is ancient, long antedating the introduction of reindeer breeding into this area. The inland groups (Chukchi and Koryak) were predominantly characterized by the "Kamchatkan"

7. Summarized in Chard, 1951.

physical type (whose precise affinities are unknown); the coast population (Chukchi, Koryak and Kamchadal) is a mixture between this and the Eskimo type (Debets, 1949).⁸

The picture seems to indicate an ancient sedentary coastal population of Eskimo from Kamchatka to Bering Strait and thence on around to the Northwest Coast in an unbroken arc--a physical basis for our North Pacific Cultural Continuum; and an invading inland group of tundra hunters, some of whom stayed inland and ultimately adopted reindeer-breeding, probably from the Tungus, and the rest of whom settled on the coast, mixed with the Eskimo, and took over much of the latter's culture.

And now, having set up the various layers of which historic Kamchadal culture seems to have been composed, and having added the data of linguistics and physical anthropology, it remains to synthesize this body of materials and see what sort of picture emerges of the building of Kamchadal culture. Our groupings of traits give us only a general idea of the relative strength of the various influences involved in this process. Any deductions based on comparing the size of these groups against one another are ruled out, since the traits are hardly of equivalent value. The task is one of interpretation, which unfortunately (in the present state of our knowledge of the area) must be largely subjective. This being the case, we can terminate our study at this point, and announce, justifiably, that the data do not permit

8. In his final report (Debets; 1951) which has become available since the above was written, Debets, viewing the Siberian racial picture as a whole, sees an "Arctic group" whose affinities seem to lie with eastern Asia

(footnote continued)

and which is clearly set off from all the other Siberian Mongoloids. This may represent a Pacific Mongoloid race as contrasted to a continental one, and tends to substantiate Cheboksarov's hypothesis of an initial differentiation of the Mongoloids into two main branches--Pacific Ocean and continental.

(Cheboksarov also believes that northeastern Siberia was settled by the Pacific coast route). Debets' "Arctic group" is composed of five local types: eastern Eskimo, Bering Sea Eskimo (including coastal Chukchi), Aleut, Kamchatkan (Reindeer Chukchi and Reindeer Koryak), and Itel'men (Kamchadal and Kamchatkan Koryak). The Yukagir are placed with the Siberian "Baikal group". Insofar as their original physical type can safely be inferred from early accounts, the Kamchadal in Debets' opinion leaned more toward the "Kamchatkan type" of the Reindeer Chukchi and Koryak than toward the related Bering Sea. This suggests that the Eskimo element was at a minimum in Kamchatka and the interior strain predominant. It is only to be expected that as the distance from Bering Strait increased the Eskimo component would decrease proportionately and be least evident at the southern limit--in Kamchatka. The whole cultural picture reflects this.

of final, sound, demonstrable conclusions. Or we can venture onward and sketch the outlines of the picture which the data seem to us to reflect, thus erecting a hypothesis for future testing, to be altered or discarded in the light of new facts or better interpretations. The second alternative would seem to be the most constructive. There are dangers, we gladly admit, but our facts have been set clearly apart from our fancies, and the former need not suffer for the sins of the latter. De Laguna (1949: 647) has rightfully pointed out that "while sober caution must be valued, let us realize that always to keep within the bounds of the surely provable, always to cling to the safety of the indisputable, never to run the risk of error, is to renounce the hope of gaining that insight which may perhaps be won only through the hazards of imaginative speculation." And so, having hoisted a red flag, as it were, to clearly indicate that we are handling explosive materials, and that the reader proceeds at his own risk, let us sketch the picture which seems to emerge.

I conceive of the Chukchi-Koryak-Kamchadal as anciently forming a group, sharing a common language and physical type, and possibly located in north-central Siberia. Culturally, they participated in the old basic unspecialized hunting-fishing economy of northern Eurasia--the type of culture reflected archaeologically in what the Russians call the "Siberian Neolithic"--but which we would perhaps more accurately describe as "sub-Mesolithic". This was of course not absolutely uniform over this vast expanse, but consisted, as Okladnikov (1941) has shown, of local variations on a common theme. From this cultural base, various peoples subsequently developed more specialized economies. Our group had perhaps taken some steps in the direction of a

culture oriented toward the tundra--like that of the ancient Yukagir, for instance--and this led them, in search of new territory, to the probably then unpopulated interior of extreme north-east Siberia. This move probably took place before the development of the highly-specialized taiga hunting economy represented by the modern Tungus--a development largely inspired, I believe, by the rise of the fur trade; for a guess, let us say it occurred in the first centuries A.D.

At this same period, I believe that the North Pacific arc from Kamchatka to the Northwest Coast was occupied by a sedentary coastal population related racially and linguistically to the Eskimo, sharing a common cultural tradition, and leading a roughly similar type of life based on fishing and unspecialized sea mammal hunting. Conceivably, this basic, undifferentiated "Eskimoid" culture, lacking what we would call "typical Eskimo" features, was something on the order of Kachemak Bay I, which De Laguna believes to be the underlying stratum on the northern Northwest Coast, as I believe it was on Kamchatka also. The local manifestations of culture within this arc were naturally strongly influenced by the particular ecology: abundant cyclical fish resources and richer flora on the southern ends of the arc; walrus and arctic conditions in the center, along the shores of Bering Sea. In addition, I think that the western half of this arc linked up with an ancient Northeast Asiatic maritime culture, from which came the inspiration that gave birth to the brilliant cultural efflorescence at Bering Strait (in conjunction with the unparalleled natural wealth of that area). From this latter cultural hearth, influences spread out both ways along the arc, but so specialized was the culture in relation to its peculiar ecological base that

they had little strength beyond the limits of that restricted region. Hence we see little trace of the effects of these ancient Bering Sea cultures at either extremity of the arc--Cook Inlet or Kamchatka.

Our Chukchi-Koryak-Kamchadal group moved in on the Siberian half of this arc; some of them remained in the interior as tundra reindeer hunters, others settled on the coast, mixed with the preceding population, and took over their culture, including most of their mythology and religion. The latter, particularly, spread to their kinsmen in the interior, who otherwise retained most of the ancestral culture, language and racial type--all this being later modified by their adoption of reindeer breeding with its attendant complex. Those segments which became the Maritime Chukchi and Koryak received subsequent influences from the Eskimo culture hearth at Bering Strait; these influences, as noted above, did not reach Kamchatka, where the ancestral Kamchadal had mixed with the preceding "Eskimoid" population and similarly adopted much of their culture--a culture oriented, in that environment, primarily toward fishing. This ecological orientation of the local culture, plus the absence of later Eskimo influences, explains why Kamchadal culture did not mirror that of the modern Eskimo to the extent visible among the Maritime branches of the Koryak and Chukchi.

Thus, the elements shared by the Kamchadal and the Northwest Coast tribes were taken by both from the ancestral culture of this North Pacific arc which they had overrun and absorbed. Maritime features which do not show up on the American side can be attributed to the influence of the Northeast Asiatic Maritime cultural tradition, which centered in the southern half of the Okhotsk Sea (Amur-Sakhalin-Hokkaido-Kuriles), but made itself felt farther north. I suspect that when we come to know more about the mysterious

"Okhotsk Pottery People", this concept may begin to take on more shape and substance. At present it is a somewhat nebulous formulation, reminiscent of the erstwhile "Q-culture" of Maya archaeologists.

In relatively recent times, the Kamchadal culture resulting from this amalgam, enriched by further borrowings and local specializations, came under strong Ainu influence through direct contact with the Kuriles who settled in southern Kamchatka. The Circum-Pacific Culture Drift, which most probably antedates this process, possibly by many centuries, seems to have largely by-passed the Kamchadal. It is possible that contact may have taken place directly between the Aleutian and Kurile Islands.

The Kamchadal occupied a very marginal position, both in respect to influences emanating from continental Siberia, and those coming up the island chain from the south. This is well typified by the meeting in Kamchatka of two very different ceramic traditions whose roots lie thousands of miles apart. This marginal position probably explains some of the absences from Kamchadal culture of elements common in the area. In other cases, special local conditions or attitudes inhibited borrowing.

The culture sketched in Chapter Three was the net result of all these processes, influences and movements.

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The North Pacific Area, showing approximate locations of principal groups.

