Among the walruses

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Walruses are found in all of the seas of the Arctic Ocean. However, in the Soviet western Arctic there are few of them remaining; thus, at present the Bering and Chukchi Seas can be regarded as their last refuge. The Pacific walrus (*Odobenus rosmarus divergens*) is an extremely interesting and valuable animal. In 1956, hunting of them by the State was completely prohibited, and they were permitted to recover to meet the needs of the native population of the North. The hides of Chukchi walruses are utilized for construction of irreplaceable, lightweight, fast boats and for making belts; the meat serves as a singularly important product for eating. This meat also is food for dogs, which usually are the only means of transportation between the small settlements on the shores of the Bering and Chukchi Seas. From the tusks of the walrus a wide variety of realistic and artistic objects are made. Even the intestines and stomach of the beasts are not wasted; from them are sewn light, waterproof jackets and bags for storing oil.

For a long time it has been known that, in summer and autumn, some of the male walruses keep separate from the females and immature animals, hauling out on barren places along the coast of Chukotka (on islands, spits, and low shores), where they form herds of many thousands. Conversely, the main mass of walruses goes far to the north, to

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the edge of the drifting ice, occasionally up to a hundred kilometers from the coast, and there they spend the short summer. In the summer of 1960, we were on the staff of an expedition from the Institute of Animal Morphology of the Academy of Sciences of the USSR, under the leadership of Professor S. E. Kleinenberg. We were away for three months in the environment of these animals, to observe their way of life. V. M. Bel'kovich carried out observations in the Chukchi Sea and along the northern coast of Chukotka; A. V. Yablokov observed on the shores of the Bering Sea, along the southern and eastern coasts of Chukotka. we wish to tell about some of those observations.

With the Rudder Herd

One of the largest coastal herds in Chukotka is located on Rudder Spit, north of the Gulf of Anadyr. On approaching this herd from a few kilometers (in good weather), one can see the moving mass of rose-brown bodies. In calm weather, the air from the warm bodies of this mass of animals rises over the herd so shimmering and intermittent that it is difficult to photograph them. Their loud noise can be heard from far away, and from the continuous movement of the animals, a fine dust hangs in the air. For observation of the behavior of walruses, one of the authors situated himself on Rudder Spit during July and August, in the immediate vicinity of the herd. His sleeping bag and rucksack of provisions had to be left 2 km away. Observations were made nearly every day, during daylight hours, from a shallow trench constructed each morning at the edge of the hauling ground. Naturally, the animals were approached slowly and carefully, by crawling along the shore. They did not show a sign of fright, and allowed the observer to approach to

within 30 to 50 meters. Eventually, becoming familiar with the appearance on the hauling ground of this new figure, the walruses gradually walked a little nearer. One time, one approached to within 3 m of the observer, to examine this unfamiliar creature. At that moment, as he withdrew, the observer photographed a fine portrait of the walrus (Fig. 1). Day and night on the haulout, there were thousands of walruses. We calculated that there were not less than 3 to 4 thousand. The whole shore, for a distance of up to 50 to 100 m from the water, was occupied by the closely packed, resting animals. Those beside the water lay especially close together. The older animals generally lay farther apart. In the sea about the haulout, at a distance of a few hundred meters, there were always many other walruses. While some individuals were climbing out onto the beach, others were departing into the sea; a third group remained motionless in the surf zone for several hours at a time, drenched with foam and spray by every wave. Quickly and quite surprisingly light and agile, a large walrus comes from the water to lie out. Not finding an open place, he climbs up on the backs of the animals lying in front of him, pushing them apart, striking to the right and to the left with his tusks, trying to force his way to the edge of the herd, somewhat farther from the water, where the animals lie not as close together. The disturbed animals usually respond mildly, but sometimes spring up and obdurately fight. Each blow with the tusks is short and powerful. Throwing its head back, the walrus strikes with the tip of the tusks into the forward part of the body of his opponent. In mature males, the shoulders, chest, back and sides are covered with coarse, lumpy, thickenings of skin (*shishki*); for that reason, old males often are called *shishkari*[1]. The

[1] The origin of these "knobs" is disputed: some investigators consider them to be secondary sexual characters and even suggest that their development takes place at the time of onset of sexual maturity (S.

adaptive value of these formations seems quite clear, for even by powerful blows with the tusks an opponent is not able to pierce this calloused armor deeply enough to cause any serious wounds. Although the number of walruses remaining on the hauling ground was always enormous, at no time did we see any animals with major wounds received during fights. The only cases observed were a male from whose gum flowed a little stream of blood, and another with a large bruise around the eye. Small scratches and abrasions on the shoulders and sides were observed numerous times, as a rule mainly on young walruses having no *shishki*.

Everyone who visits a hauling ground notices the extreme diversity of form of the walrus' tusks. It is customary to consider that the tusks of females are more delicate, slender, and convergent at the tips. But among the males on Rudder Spit, one often finds tusks of this type. Occasionally, the tusks are unequally developed or, more often, defective or broken off. We often watched scenes in which, upon countering blows to the head, two walruses locked tusks and, with vigorous shakes, each animal endeavored to release himself. However, taking into account the numerous functions of the tusks in the life of the walrus, one must assume that they can be broken in other ways than fighting. Evidently, walruses use their tusks to procure food, plowing up the bottom with them in order to acquire benthic mollusks, which they eat. The walrus employs its tusks also in climbing out onto steep shores or ice. Evidently, the development of their neck muscles allows the walrus to thrust its tusks into the ice or into a cleft in the rocks and to pull his enormous body forward. The tusks are threatening weapons of defense and attack. It is no

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Yu. Freiman, 1941); others, especially M. M. Sleptsov, consider that these are calloused thickenings of the skin, not unlike "scars", which are produced as a result of numerous fights.

wonder that native hunters proceed so cautiously in their whaleboats and *baidars* in those areas where walruses are found. To approach closely to a walrus that is sleeping in the water or one that is wounded may result in a pair of tusks being thrust into the whaleboat, threatening to upset it or split it apart. The Chukchi and Eskimos who hunt for walruses at this time of year maintain that, in winter, walruses break through the ice in the *polynyas* with their tusks. Finally, choosing a more or less quiet place or by pushing apart his neighbors, a walrus climbs out of the water and quickly goes to sleep. As shown by our observations on the haulout, the sleep of a walrus lasts usually 30 to 40 minutes, whereupon he wakes up, surveys the situation, and either goes to sleep again at once or moves to another place nearby and sleeps there. Walruses sleep in a variety of poses: on the back, on the side, or on the belly, sinking their tusks nearly to the base in the gravel or sand. They also sleep in the water, evidently collecting air in voluminous sacs that branch off from the end of the pharynx, ahead of the esophagus, and run back to the shoulders. There is a widely spread opinion that walruses sleep soundly on the haulout for a long time. However, our observations showed quite the contrary. The makeup of the herd was constantly changing, each animal spending not more than a few hours on land without interruption. Only the old males, which are the least active and most quiet, lay in one place for up to six hours without interruption. The young ones were by far the most active and restless. On the haulout, one hears a striking variety of sounds. Most of these resemble grunting; sometimes they resemble bellowing and, occasionally, also barking. Snuffing the ground or their comrades, walruses sometimes quietly cough. In the water, walruses are noisy and sonorous, surfacing with a powerful exhalation of air from their

nostrils. Sometimes, underwater, they somehow emit sounds very similar to rattling of plates on a metal roof or to the distant ringing of a bell.[1]

Often on the haulout it is possible to hear a peculiar clicking, which resembles a squirrel chattering its teeth, however made with the mouth shut and only movement of the upper lip. One time, after a piercing sound like the shriek of a dog with burrs in its tail, the whole herd panicked—all of the animals becoming alarmed and starting in motion. In calm weather, all of these various sounds resound from the haulout for several kilometers around. The number of inhabitants of the hauling ground is variable and often changes. This feature makes determination of the number of animals at any time unavoidably inaccurate. Actually, the observer arriving on Rudder Spit on 31 July 1960 found no greater numbers on this territory than 9 bodies of walruses that had died from old age and one individual that remained in the surf. Twenty-four hours later, two to three thousand walruses appeared, and at least as many again remained at sea, in the immediate vicinity. Subsequently, it was determined that the walruses departing from the spit on 3l July went out to feed, 10 to 20 km from the haulout. We were very pleased with the thoughtful attitude of the Chukchi kolkhoz at this hauling ground. In the daytime, when the animals were away, two brigades of hunters from the marine mammal industrial region of Rudder Bay cleaned up the area of carcasses of dead animals and cast them away, far at sea. In order not to frighten the walruses, hunting in the vicinity of the haulout is never practiced, and the whaleboats pass always at a distance of 1.5 to 2 km from the spit where the hauling ground is located.

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[1] Fay, F. H. Structure and function of the pharyngeal pouches of the walrus. *Mammalia*, v. 24, 1960, No. 3.

On the Ice of the Chukchi Sea

In summer, a large part of the walrus population is found far to the North, amongst the drifting ice. The shallowness of the Chukchi Sea allows them to feed on benthic organisms practically anywhere, inasmuch as the depth here does not exceed 60 m. Generally, the walruses lying on the ice arrange themselves along its edge, on floes of different sizes and shapes. Here, one finds females with immature young and calves of the year, but there also are males which, in the majority of cases, lie separately from the females. The size of a herd on ice varies over a very wide range. Herds of *shishkari* usually comprise from 7 to 30 or, less often, 50 to 70 animals. Herds of females usually are larger—from 10 to 15, up to 75 to 200 individuals; rarely, they may be as many as 300 to 500. For a place to rest, walruses select large floes of multi-year ice which have no cracks or water holes, sometimes with a completely smooth surface, or at other times, hummocky.

When the animals have stayed for a long time on the ice, its upper surface melts and becomes shiny and very slippery. Walruses tend to concentrate in one place; consequently, they often "overload" the ice. At the edge of such floes, the animals may be lying partially in the water, while alongside there is much more comfortable and completely vacant ice. When other walruses swim up to such overloaded floes, with the intention of getting up onto them, those lying at the edge raise up their heads and, with roars, drive away the foolish ones who are about to sink their comfortable bed. In calm,

clear weather, walruses are peaceful and sleep soundly on the ice. At that time, one can float up to them in a launch and photograph them as much as is desired. Now and then, one of them raises his head to have a look, but then the head is lowered again, and he resumes his sleep.

The vision of walruses is indifferent. They see poorly—far worse in sunny weather than in cloudy weather or twilight. On the other hand, their senses of smell and hearing are very well developed. It was a curiosity to see how instantly all of the resting herd reacted to only a gust of wind, bearing smoke from our launch. Sounds and noise did not alarm the animals as much as odors. But one need only step onto the ice and take several steps, whereupon all of the resting animals, as if by command, are awakened. The only enemy of the walrus in nature is the polar bear, whose attacks they fear. In the majority of cases, walruses that are frightened go down into the water very promptly, literally "rolling themselves" into the sea in the same pose in which they had so placidly rested. In the span of a few seconds, the spray settles and before you remain only swaying ice and swirling water. But within a few more seconds, the head of a walrus appears with loud snorts, then another, then a third, and within a few meters, the whole herd emerges. Into the air rise fountains of spray; one hears loud snorts, laboriously expelled; the animals clearly express their discontent at being disturbed. For a long time, they swim around the ice, surfacing now far, now near, and finally, satisfied that you do not intend to leave, resolutely they depart. The gregariousness of walruses is expressed with unusual emphasis. It is often possible to observe the remarkable occurrence of mutual assistance; they rush to lie on the ice in a group and to descend with each other and swim always in a

group. At the same time, if one for some reason cannot swim, the others swim beneath it and two or three will swim alongside to support it. The attachment of mother to young is especially strong. When danger threatens, the mother does not retreat from the ice if her youngster is unable to go into the water. Without fear of the approaching people, she emits a threatening roar and assists it from the *ropak*,[1] gently pushing it into the water and, at all times, sheltering it with her body. In a launch, we floated close to two females which lay on the ice side by side with their calves. We saw how alert they are when one of the calves quickly scrambled onto its mother's back (Fig. 2). After only a few seconds, both walruses slipped off together with their little ones into the water. In the water, the calf at all times was found between the foreflippers of the mother. Since the calf swims rather slowly, the mother at all times pushes him ahead. The calf is very curious, often rising high in the water and gazing around. If, in the opinion of the mother, this is not safe, she quickly covers his body with her flippers and dives back underwater. Often the calf tires of swimming and climbs up onto the mother's back or, sometimes, onto any nearby neighbor, who is neither provoked by that nor in the least protests. If the calf is for some reason left alone on the ice, and he cannot independently jump off into the water, he cries hoarsely. Usually, in this case, the rest of the walruses do not go away from the ice but, with loud cries, swim around it. After a short time, one or two animals overcome their sense of fear, head for the ice and, paying no attention to the people, come out onto it. Noticing them, the calf hastens to them and enters the water. One time, a calf was so intent on watching us that it did not notice the other walruses that were coming to its aid until it nearly collided with them in the water. Such walrus "rescuers" were mostly young

[1] Irregularly heaped ice.

animals or, less often, males with *shishki* well developed. The great attachment of these animals to each other was very apparent, and later, when we were studying their habits, we always expected to see adults whenever we encountered a calf in the water.

Our close observations of walruses on the coastal hauling grounds and on the ice left lasting impressions. The sharp reduction in numbers of these interesting animals in the last century again emphasizes the importance and necessity of maintaining regulation over the protection of the walrus. The recently passed law for protection of nature in the RSFSR, in which the necessity for great care in the protection of rare and valuable animals is pointed out, absolutely, pertains also to the walrus.