

case of the Naval Observatory at Washington, by the interference of trolley wires.

Just what points will be chosen for the maintenance of continuous observatories will depend somewhat on the number of fixed magnetic observatories already maintained by universities and other institutions. With continuous records in Washington, Toronto, one point in the Northwest, Mexico and Havana, the magnetic fluctuations over the continent of North America ought to be fairly well followed. In addition to these a magnetic observatory will be established by the Coast Survey on one of the Hawaiian Islands, where its situation will not only supplement the data furnished by the observatories in the mainland, but by reason of its position in an isolated island may well be expected to add new facts to our knowledge of one of the most interesting, but one of the least perfectly understood, branches of physical science.

HENRY S. PRITCHETT,
Superintendent.

THE JESUP NORTH PACIFIC EXPEDITION.
ETHNOLOGICAL WORK ON THE ISLAND OF
SAGHALIN.*

THE following report has been received from Dr. Berthold Laufer, who is in charge of the ethnological work of the Jesup North Pacific Expedition on the Amoor River and on the Island of Saghalin. The expedition is being carried on under the auspices of the American Museum of Natural History, the expenses being borne personally by President Morris V. Jesup. Dr. Laufer left New York in May, 1898, and went to Saghalin by way of Japan and Vladivostok. He spent the time from the summer of 1898 until March, 1899, among the various tribes inhabiting that island. He writes under date of March 4, 1899, as follows:

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In the collections which I made on the Island of Saghalin there are a number of very interesting specimens. On my journey made in the course of last winter I succeeded in obtaining from the Olcha Tungus a collection of wooden idols and amulets made of fish-skins, which are quite new to science. I obtained from the Ainu of southern Saghalin a very interesting collection of ethnographical objects. I have had very good success in using the phonograph, and have obtained songs of the Gilyak and Tungus. The only difficulty is that the instrument cannot be used in the winter, owing to the effect of severe cold.

I intend to leave Saghalin the beginning of next week and continue my work on the Amoor River. It is my intention to devote a good deal of my time to the study of linguistics, since this part of my investigations has been least satisfactory. There are no interpreters on Saghalin capable of translating texts. There is no one who knows more than the most common phrases of Russian. Among the Ainu, Russian is entirely unknown, and for the purpose of interpreting I had to use Japanese, with which, however, they are not very familiar either. My knowledge of the Japanese language facilitated my work among them very much, since they like the Japanese very well. I succeeded in obtaining a great deal of ethnological material and information, traditions, and a large amount of grammatical and lexicographical material, although a short time only was available for this purpose. I collected most of my material among the Ainu during the night time, because it is only at this time that everything is astir. I have no detailed translations of this material, but expect to be able to make translations with the help of my lexicographical material and comparisons with the Ainu dialect spoken in Japan. There is a great difference between these two dialects. The Ainu of

Yezzo have a vigesimal numeral system, while those of Saghalin have a purely decimal system. The latter dialect is much more archaic. Its morphology and phonetics are richer. I have also found the pronominal prefixes recently discovered by Bachelor. I am well satisfied with the results of my ethnographical researches among these people. I have obtained full explanations of their decorative designs. I did not succeed in obtaining any measurements. The people were afraid that they would die at once after submitting to this process. Although I had their full confidence, I could not induce them to submit, not even by offering presents which they considered of great value. In Korsakovsk I succeeded in measuring a single individual, a man of imposing stature, who, after the measurements had been taken, collapsed and looked the picture of despair, groaning, "Now I am going to die to-morrow!" The opinion that the Ainu are exceedingly hairy is decidedly exaggerated, at least so far as Saghalin is concerned. I have seen almost every single individual of the villages of the east coast of the island; and as I slept in their huts I had ample opportunity of seeing naked individuals, since they undress in the evening. By far the greater number of the men whom I have seen have no hair on their bodies, or at least no more than is found among Europeans. A more considerable amount of hairiness on chest and arms I have seen only in a few old men. Neither is the long beard characteristic of all Ainu. There are just as many with long beards as there are with short beards, or even without beards. I do not think that their type is homogeneous at all. I do not understand the reasons for Schrenck's statement that it is impossible to distinguish a Gilyak from an Ainu. It seems to me they may be distinguished with certainty, even from a long distance. I have no doubt that the information that I have

collected on this island contains a very considerable amount of what is new. There are a great many errors in Schrenck's descriptions of the tribes of Saghalin. The Orok tribe, to which he refers, does not exist.

I started comparatively late on my journey along the east coast, because I was detained for two months and a-half by a severe attack of influenza. As soon as I had sufficiently recovered I went to Rykovsk, where the Gilyak were celebrating one of their bear festivals. I was welcomed with much delight, since I met several of my acquaintances of last summer. For five days I witnessed the ceremonial, and was even permitted to see the sacrifice of the dog, which is kept secret from the Russians. Then I travelled southward a hundred versts on horseback to Kasarsk, the southernmost Russian settlement on the central part of the island. I visited the whole valley of the Poronai as far as the mouth of the river on a reindeer sledge, and stayed for some time in the large Tungus village Muiko, where I had the great pleasure of obtaining additional information in regard to the texts which I had recorded during the preceding summer. I have measured almost the whole population of this area and collected statistical information. In this valley there are a number of Gilyak families who have begun to use the reindeer. I had also an opportunity of seeing a few Yakut. In December I reached Tichmenevsk, which is called Siska by the natives. This place is situated on Patience Bay. On the following day I started on an excursion eastward, in which I was particularly fortunate and successful. I obtained many specimens and much information on the Shamanistic rites and the ceremonials of the natives. When, later on, I had an opportunity to show my specimens to some Russians they were much surprised, since during the many years of their life on

Saghalin they had not seen anything of the kind. Then I visited the villages Taran-kotan and Taraika, where I first fell in with the Ainu. I also visited the Tungus villages Unu, Muiko and Walit, after having passed the famous lake of Taraika. It was impossible to proceed farther eastward, since I received an official letter of warning not to proceed, because a few versts farther east a band of highwaymen consisting of escaped convicts had built a fort and were terrorizing the country. For this reason I returned without making the acquaintance of these gentlemen.

On New Year's Eve I reached Siska. On the following day I took phonographic records of songs, which created the greatest sensation among the Russians as well as among the natives. A young Gilyak woman who sang into the instrument said: "It took me so long to learn this song, and this thing here learned it at once, without making any mistakes. There is surely a man or a devil in this box which imitates me!" And at the same time she was crying and laughing from excitement.

On the second of January I started by dog-sledge for Naiero, where I had the best results in my work with the Ainu. Then I visited all the settlements on the coast as far as Naibuchi, which is 260 versts from Siska. This journey was exceedingly difficult, and sometimes even dangerous. At one time I narrowly escaped drowning when passing the ice at the foot of a steep promontory. I broke through the ice, which was much weakened by the waves. Fortunately, my guide, who was travelling in front of me, happened to capsize on his sledge at the same moment when I broke through. Thus it happened that he saw my situation and extricated me with his staff.

Towards the end of the month I arrived at Korsakovsk, making the distance from Naibuchi, about 100 versts, on horseback.

Originally I intended to return from this point along the west coast of the island; but this proved to be impossible, as there is no means of communication in winter. For this reason I had to return northward the same way by which I came, and I had to travel as rapidly as possible in order to reach Nikolaievsk in time. Towards the end of March communication between the island and mainland over the ice is suspended. Therefore, I returned with all possible speed; working and collecting, however, when opportunity offered. The last few days I travelled day and night, camping a few hours, but not more than necessary to give the reindeer time to rest. At nine o'clock this morning I arrived here, having covered, since six o'clock yesterday morning, a distance of 200 versts.

ON THE BRIGHTNESS OF PIGMENTS BY
OBLIQUE VISION.*

IN the formation of any theory of color-vision the phenomena of color-blindness necessarily play an important part. This is especially true, of late years, of total color-blindness, or the absence of all color-sense. Of this phenomena there are three classes, exemplified by the eyes of those rare individuals who lack from birth all power of perceiving color by the normal eye in faint light and by the peripheral vision of the normal retina.

In each of these three cases the spectrum appears as a colorless band of graduated brightness. It was pointed out by Hering, in 1891, that the distribution of brightness in the first two of these three classes is the same, and it has been generally supposed that the color-blindness of the retinal periphery is of similar character. Von Kries showed, however, that this supposition was untrue (*Zeitschr. für Psychologie und Phys-*

*A paper read at the Boston meeting of the American Association for the Advancement of Science, August, 1898