

## SOVIET WORK IN THE ARCTIC.

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The exploration and development of its Arctic territories is regarded by the Soviet Government as an integral part of the Five Year Plan; most of the work done in Polar regions by the Russians during the last twelve years has had the steady support and assistance of the State.

As early in the new regime as 1919 the Soviet Government had begun to realize the importance of the Arctic portions of the country, and a "Commission for the Exploration of the North" was inaugurated. It was attached to the Scientific-Technical Department of the Council of National Economics. Twenty-three expeditions were sent out during the year 1921, and during the next few years work was being carried out over the whole western section of the Russian Arctic. In 1925 the Institute was again reorganized, and finally all the essentially practical work, such as fishery investigations, especially those conducted in the southern areas of the Russian Arctic regions, were handed over to the Fisheries Institute, and the first "Arctic Institute of the U.S.S.R." came into being.

The Institute was designed to be the sole organizing centre for all Soviet work in the Polar regions, uniting under its control all branches of Arctic research. Its aims, as outlined by the statutes drawn up at the time of its foundation, and published in the English Section of its journal, *The Bulletin*, are as follows: It "elaborates the several designs regarding the exploration of the natural productive powers of the Polar regions of the Soviet Union; is endowed with the right of convoking conferences; carries on geological, geomorphological, hydrological, and hydrobiological investigations, geodetic and topographical surveys, zoological, botanical, and geophysical researches; investigates the routes and the means of air and water communication in the Arctic". The Institute has remained under the control of the State, being attached to the Central Executive Committee, and thus has all the support, financial and otherwise, required for work of this kind.

The chief work of the Arctic Institute is now to carry out effectively those portions of the Second Five Year Plan which have to do with the Arctic regions, and these resolve themselves mainly into making investigations into certain outstanding problems, the most important of which is the navigation through the Kara Sea to the basins of the Ob and Yenisei. The ice conditions of the Kara Sea vary considerably from year to year, owing, it is believed, partly to the fluctuations in the temperature of the Gulf Stream Drift, and partly to the direction of the winds. Lack of adequate knowledge of these factors prevents the possibility of any accurate ice forecasts.

The effect of the temperature of the sea upon the fisheries is another problem to be studied, and there is room for investigation on the effect of the North Atlantic on the weather, not only in the immediate vicinity, but in Eastern Siberia also. Besides directing work on these questions which affect the entire State, the Arctic Institute is also at the head of all scientific Polar research carried on in the country, and most of the expeditions of the present day are working under its auspices, the Director, Professor O. J. SCHMIDT, having himself taken part in several ventures in the North.

In 1932 a map of the Severnaya Zemlya archipelago was published by the Arctic Institute. This was the result of work accomplished during the preceding two years by the party under G. A. USHAKOV, which had been left by the *Sedov* Expedition to establish the Research Station on the Sergei Kamenev Islands. As a result of five strenuous journeys by dog sledge or on ski, the whole archipelago was mapped. It was found to consist of three main islands, the most northerly of which was named Komsomolets Island, and is divided by Proliv Krasnoi Armii (Red Army Sound) from Ostrov Oktyabrskoi Revolyutsii (October Revolution Island); Bolshevik Island, the most southerly, is separated from the latter by Shokalski Strait. The rest of the archipelago consists of the Sergei Kamenev group, and a number of smaller islands. A hitherto unknown

island was discovered between lat.  $79^{\circ} 30'$  and  $79^{\circ} 42'$  N., and long.  $77^{\circ} 5'$  and  $76^{\circ} 6'$  E. It was named Wiese Island after Professor WIESE, who, following his deductions from the drift of the *St. Anna* in 1913, had told the expedition that they might expect land in that area.

In addition to their usual Arctic observations the Russians undertook a great deal of work in connection with the Polar Year. Their programme, which was to begin on 1 August 1932, was divisible into the following groups, but the results of all these expeditions are not yet available.

*Group I.* — To establish new observation stations and to relieve scientists in old stations.

(1) The ice-breaker *Russanov* was sent to land a party at Cape Chelyuskin and then proceed farther north. General NOBILE made arrangements to travel with this vessel.

(2) The *Maligin* established a station on Rudolf Island in lat.  $81^{\circ} 47'$  N. A party of four was landed: a biologist, a meteorologist, a wireless operator, and an industrialist.

(3) The *Soviet* was to relieve the station at Wrangel Island.

(4) Stations were to be constructed at Cape Severni and Cape Wellen.

*Group II.* — Expedition with special objects as well as for general observation.

(1) The *Sibiryakov* was sent to navigate the North-East passage. This expedition, which was led by Professor O. J. SCHMIDT, left Archangel on July 28 and made the whole journey from the White Sea to Bering Strait, a distance of 3000 miles, in nine weeks. The route chosen was by way of Matochkin Strait, Novaya Zemlya, to Dickson Island, after which Severnaya Zemlya was visited. From there the choice of route is interesting, as the expedition could have gone through either Vilkitski or Shokalski Strait between the mainland and Bolshevik Island and the two most southerly islands respectively, or by the route finally chosen, *i. e.* round Cape Moletov, the most northerly point of Komsomolets Island, using for this purpose a map compiled by USHAKOV and URVANTSEV of the Sergei Kamenev Islands Expedition. By taking this route the expedition was able to show that a course set through this region has an undoubted advantage over coastal navigation. The next port of call was Tiksi Bay, and in due course the expedition arrived at the Kolima. Conditions up to this point were favourable, but East of the Kolima heavy ice was encountered, and on September 18, off Cape Serdtse Kamen, a propeller was smashed, and the ice-breaker finally arrived at Bering Straits in a crippled condition. The last part of her journey was accomplished by means of an improvised sail and with the help of a favourable current.

(2) The *Taimir* was sent to the northern part of the Kara Sea.

(3) The *Lenin* was also sent to the Kara Sea.

(4) In the same group may be mentioned the *Krassin*, which was ordered to proceed as far North as possible, up to lat.  $85^{\circ}$  N., and winter there.

*Group III.* — Oceanographical work.

(1) The *Knipovich* (100 tons) made a first circumnavigation of Franz Joseph Land.

(2) The *Perseus* was also sent to the neighbourhood of Franz Joseph Land and Spitsbergen.

Although the above list only provides incomplete information, it may be said that the Russians now have seventy-six Arctic stations in operation. Parties have been at work regularly each year on all kinds of different scientific problems, at various points along the Russian Arctic coast-line, especially at the mouths of the rivers; and the permanent stations at Tiksi Bay, Dickson Island, Bulun, and other places testify to the success already attained in the opening up of the region. Hydrographic and oceanographic expeditions have also been sent out every summer, and there have been preliminary observations made with a view to future air routes in the Arctic. Other work of a less active kind is the compiling of the Arctic Bibliographies, which is a definite function of the Arctic Institute.

The station at Russian Harbour, Novaya Zemlya, includes measurements of the thickness of the land ice, to be made by seismic methods. These will be directed by Dr WOLCKEN, who was a member of the WEGENER Greenland Expedition, during the course of which similar measurements were made in more or less the same way. Another of the

larger Russian stations is at Calm Bay, Franz Josef Land, which has been considerably enlarged with a view to the Polar Year activities, and is manned by a large staff. Dickson Island, Wrangel Island, Verkhoyansk, Bulun, Novokolimsk, Tiksi Bay (River Lena), Cape Wellen (Bering Sea), White Island, the river Khatanga region, Kotelni Island and Cape Nordvig are a few of the Siberian stations.

In conclusion one may mention the work done by ice-breakers. For some years now an annual expedition to the Kara Sea has been organised to open up the mouths of the Ob and Yenisei Rivers to trading vessels which carry an outward cargo of machinery, stores and supplies and return with flax, furs, graphite, mica, etc., the whole voyage taking about seven weeks. These expeditions are always preceded by ice-breakers. In 1931 this work was performed by the ice-breakers *Lenin* and *Krassin*. But the chief functions of the ice-breakers has always been concerned with the relief of other ships in difficulties in the ice, and some successful voyages for rescue were made during last winter.

