

GEOGRAPHY

Arctic Conquest

"Seward's Ice Box" in Alaska Turned Out a Real Bargain; Now Russia Exploits Her Own Frozen North

By DR. FRANK THONE

WHEN a Russian airplane slid to a stop on an ice floe at the North Pole, one day this spring, all of Soviet Russia celebrated jubilantly.

Not because it was a sensational stunt. Other men have visited the pole. Peary got there, something like 30 years ago. Byrd, Amundsen, Nobile and others have flown over it. And the Russian government is not out for stunts, anyway.

Its flight to the pole—where, on a drifting floe, four men planned to stay a year, polar hazards permitting—was simply one more step in an elaborate scheme for conquering the frozen Arctic and putting it to work.

That was why Russia wanted to establish a camp at the pole. Scientific observations over a year's time would tell much about the "weather's kitchen," where the northland's storms are made. They would also show whether a trans-polar air service would be feasible, and would help make possible navigation of the sea along the Arctic coast of Siberia.

The expedition was under the direction of Prof. Otto J. Schmidt. The four men who attempted to establish a permanent camp on the floe were Ivan Papanin, once manager of a polar station in Franz Josef Land; Ernest Krenkel, radio operator, who went to the Antarctic with Byrd in 1930; Pytor Shirsoff, hydrobiologist, and Eugene Federoff, magnetologist.

Accept Risks

Other airplanes brought equipment, supplies and the like to the men on the ice. Their venture was admittedly risky, due to the way polar ice floes often break up without warning—but they accepted the risks as a part of Russia's long-range plan.

When Secretary of State William Henry Seward negotiated the purchase of Alaska from Russia in 1867, scoffers nicknamed the territory "Seward's Ice Box" and substantial, level-headed businessmen groaned aloud over the waste of the taxpayers' money by a crackpot Administration. The verdict of time has proved to be heavily on the side of Seward.

After the sale, Russia still had enough Arctic land in Siberia to make another half-dozen or more Alaskas, with potential resources on a commensurate scale. But the Grand Dukes who were the real rulers of Russia never bothered to find out what was there. They were too busy. They invested in two or three terribly costly wars, and sat tight on the safety-valve of bubbling unrest among the people.

New Regime

Came the Revolution, sending the poor Czar and his ducal masters flying. When the dust cleared away, a brand-new group of rulers, who called themselves People's Commissars, sat in the Kremlin. These men, faced with the responsibility for the welfare of close upon 200 million people, knew that they had to exploit to the limit the resources of the vast territory at their command. Faced also with the hostile skepticism of most of the outside world, they felt that they had to do heroic things as demonstration of their right to govern.

The two drives could in many instances be given a common aim. Con-

quest of desert, marshland, tundra, mountains, to obtain new croplands, new metal mines, new sources of fuel, often demanded the impossible. Good! Young Russians, captained by giants, would do the impossible. We'll *show* these bourgeois doubters! they told each other.

Conquest of the North

Mightiest of these hopeful Soviets to accomplish the impossible, probably, is the huge undertaking of the conquest of Russia's Arctic—the long-neglected dozenfold Alaska of the Old World.

A glance at your map of Asia, or better, at a commercial atlas, will show the opportunities, the possibilities, the problems, the difficulties of this conquest. Russian Asia consists mainly of a great plain sloping northward toward the Arctic from the vast barrier of mountains that cross the continent from southwest to northeast. Its southern part consists of grassland and desert, giving way northwardly to the world's most enormous virgin forests of evergreens, and these in turn to the bleak inhospitable Arctic brush- and grassland known as the Tundra.

Through all this, from south to north, flow half-a-dozen mighty rivers: Ob, Yenisei, Khatanga, Lena, Indirgka, and a number of others. These would be



FRONTIER

There is something suggestive of a raw-built city in our own Alaska in this view of Khibinogorsk, on the Kola peninsula.



AGRICULTURE

This girl, who looks as though she might be a daughter of the vikings, is a technical worker in a plant breeding station in the Arctic. The thing she is holding out in her left hand is just a radish.

ideal for floating logs down to the sea, for cheap transportation to a world now grown very hungry for lumber and paper-pulp. That is, they would be ideal, if that sea were any but the Arctic Ocean, traditionally the one wide water in the whole world that is forbidden to ships.

"Northeast Passage"

Ever since Columbus first crossed the Atlantic and Magellan showed the way around the world, there have been dreams of opening the "northeast passage" along the north shores of Asia, down through Bering Sea and out southward into the Pacific to the silks of Cathay and the spices of the Indies. Hardy explorers have made the attempt from the days of English King Henry VIII until our own time. One or two managed to get through, but until the last decade the Northeast Passage has been regarded as a stunt for explorers and geographers and not as a route for cargo ships.

But the new effort by the Russians is distinctly aimed at getting paying numbers of commercial ships in and out again during the open season, to bring colonists and supplies and to take out lumber, mineral ores, and other products of the country. The ambitious foundations thus far laid were described a short time ago by an impartial observer, H. P. Smolka, a Viennese geographer, before

a meeting of the Royal Geographical Society in London.

Foreigners Not Invited

Mr. Smolka, who is not a Communist, stated that he had to get special permission before he could go to this northern outpost of the U.S.S.R., which is usually closed against foreigners. He went in by plane, travelled over part of the region partly by plane and partly on boats, and finally came out on a steamer.

For shipping venturers into the Northeast Passage, however, the starting point is the port of Murmansk, on the coast near the Finnish border. Murmansk, before the War only a fishing village and minor port, has now grown to a city of 100,000 population, quite overshadowing the prewar port of Archangel on the White Sea. Paradoxically, Murmansk on the Arctic is Russia's only port on open water that is ice-free the year round. A branch of the Gulf Stream accounts for that.

Even newer than Murmansk are the port towns that have been founded on the wide mouths of the great north-flowing rivers of Asia, the Ob, the Yenisei, and the Lena. Here the lumber steamers call for cargo, and here are timber-handling wharves and sawmills. The town names are Novi Port on the Ob (that would be Newport, in English), Port Igarka on the Yenisei, and Port Tiski on the Lena.

Of these three settlements, Port Igarka is the largest. Its population, as reported by Mr. Smolka, is about 14,000—including a couple of thousand children. About 4,000 of the population were exiled Kulaks—well-to-do peasants who resisted taxes and the Soviet farm collectivization program.

Reports Status

Disclaiming knowledge of actual conditions some years ago, when these Kulaks were alleged by many newspapers to be very badly treated, Mr. Smolka made the following statement regarding their present status:

"Now they are paid normal wages for their work in Igarka, and outwardly can hardly be distinguished from the free workers. They live door to door with them. . . . Their children are rapidly assimilated to the new society. They go to school with those of the free workers, and when they reach the age of eighteen are given all political rights and allowed to join even the Communist organizations, which is a privilege in Russia. The Kulaks themselves are restored to their civil rights and given passports if, after a number of years, the authorities decide that they have worked well, have shown interest in factory production, and on the whole have proved themselves to be 'dekulakized.'"

Timber of course is not the only source of wealth that is exported from these new Arctic ports, though it is as yet the principal one. In some places metal ores have been discovered and work has begun on these mines, particularly for nickel, because of its importance in the huge Soviet armament program. Coal near the surface is being dug, but principally for refuelling the

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FAR NORTH

Modernistic architecture above the Arctic Circle. Murmansk, Russia's Arctic Ocean seaport, now has a population of 100,000, and is outfitting headquarters for expeditions heading north and east.

ships that come for cargo and the ice-breakers that open paths for them.

The whole job of navigating on the Siberian north coast is a difficult one, for ice is always a menace to navigation. To scout best ways for cargo ships to get through, airplanes based on shore and island stations take to the air when ships approach, and radio down directions. There are some threescore of these Arctic aviation and radio outposts now on duty. As a valuable byproduct of their activities as navigational aids, they also assemble a great deal of useful data on weather, ocean currents, ice conditions, animal and plant life, and other valuable scientific information. The Academy of Sciences of the U.S.S.R. has found it necessary to establish several new science journals for the publication of these researches.

There is even the prospect of tourist

trade in the Arctic. Tass, official news agency of the U.S.S.R., has announced a tour starting at Murmansk, taking in points of interest around Novaya Zemlya, and returning by way of Archangel. The first steamer is billed to start about the end of July. This trip will of course not take the tourists very far into the Northeast Passage, but it will at least give them an idea what the Russian North is like.

A further possible usefulness of the Passage is suggested by Mr. Smolka. In the event of a European war bottling up Russia within her own boundaries, it might be possible for steamers to follow the Arctic coast to Bering Strait, thence southwardly along coasts covered by the American and British flags, to obtain supplies in the United States and Canada. On return, their cargoes would be carried up one of the great Asiatic rivers, possibly the Ob and its branches to Novosibirsk or Omsk on the Siberian Railroad. That would be just about a shellproof route for at least the most vital materials, such as certain drugs and hospital supplies, and possibly the rarer metals used in alloying steel.

Arctic Gardens

One aspect of the Soviet venture in the Arctic that never fails to make the stranger's eyes pop out is the cultivation of vegetables in the Far North. To be sure, we have been doing that in Alaska ourselves, but for the most part not quite so close to the Pole. Successful outdoor crops thus far have been principally salad vegetables such as radishes and cabbage, and (with somewhat less éclat) potatoes. And the workers' wives have even raised bright flowers around their houses. Moreover, the presence of fair numbers of horses and cows has necessitated the raising of hay.

One of the factors most likely to be overlooked by anybody unused to high latitudes is the very long day of the Arctic and sub-Arctic regions. The vegetables and hay get 24 hours of sunlight every day during the greater part of their growing season. Naturally they grow fast and get big.

Sometimes special breeds are necessary, for this very reason. When the big white radishes that Russians like so well were attempted in the North, they all ran to leaves and produced small, stringy, inedible roots. But geneticists worked out a new strain that would take the long Arctic daylight and turn it into enormous radishes as big around as a man's leg.

Even in the island outposts vegetables are raised, in underground chambers

RADIO

July 13, 4:15 p. m., E.S.T.
FOUR RULES OF THE ROAD—Dr. H. C. Dickinson of the National Bureau of Standards.

July 20, 4:15 p.m., E.S.T.
SCIENTISTS OF THE FUTURE—Dr. Gerald Wendt, Director of the American Institute of the City of New York.

In the Science Service series of radio discussions over the Columbia Broadcasting System.

insulated with wood and fur and lighted only with big incandescent lamps that get their power from huge windmills. This is admittedly a costly way to get one's "greens" but one must have them somehow, and this method appears to be cheaper than flying them in by airplane.

At any rate, such heroic methods used to get nothing more vital than a bowl of salad, one must admit the young Muscovites up there in the Arctic are cheerfully ready to tackle tougher jobs with the requisite vim.

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Science News Letter, July 10, 1937

PLANT PHYSIOLOGY

Cane Leaves Form Sugar Even When Cut From Plant

SUGAR cane leaves can form cane sugar when they are detached from the stalk and kept in the dark, supplied with the two simpler sugars, glucose and fructose, or with either one of them alone.

Experiments developing these points, performed by Dr. Constance E. Hartt, research plant physiologist for the Hawaiian Sugar Planters' Association, give further support to the theory that conversion of simple into complex sugars can take place in leaves.

Science News Letter, July 10, 1937

A new process for preserving newspaper is intended for use in treating valuable clippings and pages.

Salicylic acid, from which aspirin is derived, was discovered a century ago, but not until 1874 could it be made at moderate cost for general use.

A mysterious old sunken ship in Hamble River, England, is now believed to be the Grace Dieu of Henry the Fifth's navy, built in 1418 and famous then as the biggest vessel afloat.

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