

NOTES AND REVIEWS

OIL IN NORTHERN SIBERIA

[Based on papers in *Nedra Arktiki (Mineral Resources of the Arctic)* (Moscow, Leningrad), No. 1, 1946, by N. A. Gedroyts (p. 9–14), Yu. N. Kornilyuk, T. P. Kochetkov and T. M. Yemelyantsev (p. 15–73), V. I. Lappo (p. 74–129), S. N. Pavlova and P. S. Gofman (p. 140–54); and by A. I. Rakitov in *Problemy Arktiki (Problems of the Arctic)* (Leningrad), No. 6, 1940, p. 40–58.]

After 1933 persistent efforts were made to find oil in northern Siberia, and geological investigations showed that there were several promising areas, particularly Ust'-Port at the mouth of the Yenisey and Nordvik at the mouth of the Khatanga.

At Ust'-Port natural gas, which had long been known to come to the surface in the area, was found to contain 95 per cent methane, and after preliminary geological survey work, drilling for oil began in 1939. Prospects were thought to be good, but N. A. Gedroyts, writing in 1946, suggested that too much should not be expected of the area since the rock structure is more complicated than had been supposed. Evidently no oil had reached the surface at that time.

Nordvik had been thought promising since 1926, when I. P. Tolmachev published his views on the similarity of the salt domes there to those in the Texas oilfields. From 1933 to 1936 geological exploration of the area was intensified, but in 1936 the formation of a trust called Nordvikstroy, with the object of developing all mineral resources in the area, shifted the emphasis from oil to salt. It was not until 1940 that oil was again given priority, and wells were drilled in two principal localities about 40 miles apart. In 1943 oil was actually found and brought to the surface; on Poluostrov Yurung-Tumus 950 l. of oil were pumped from well 429 in 21 hours. This was the maximum yield in the Nordvik area up to 1945. It was also the first occasion in the Soviet Union and probably in the world that oil was brought to the surface from within the permanently frozen layer. Well 429 struck oil at 116 m., while the permanently frozen layer extends downwards for 540 m., attaining a minimum temperature of -12.7° C. at a depth of 60 m. The oil, which of course was very viscous, was sulphurous, bituminous, and had a low paraffin content. Oil was also obtained from some of the other borings; further drilling was thought worth while and the area was scheduled for development during the post-war Five Year Plan (1946–50).

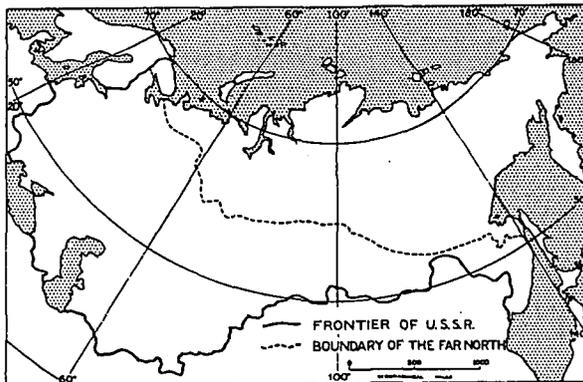
There was in 1946 only one other place in northern Siberia at which oil had been brought to the surface, on the river Tolba, or Tuolba (a tributary of the Lena) in southern Yakutiya. The quantity was minute—75 l. a day. This was the first well in the Soviet Union where oil lying below the permanently frozen layer reached the surface. At Norman Wells in Canada the same problem has been successfully solved. It is not known what work has been done at the Tolba site since 1940.

It seems clear that in 1946 there was no immediate prospect of obtaining oil in sufficient quantity for use by industry or shipping in the Arctic. But if the further work envisaged by the post-war Five Year Plan has been carried out, the Nordvik deposits may now yield an appreciable quantity.

THE REINDEER INDUSTRY IN THE SOVIET ARCTIC

[In 1948 a book entitled *Severnoye olenevodstvo* [*Reindeer breeding*],¹ edited by P. S. Zhigunov and F. A. Terent'yev, was published by the Ministry of Agriculture of the Russian Soviet Federal Socialist Republic. The fact that some 120,000 words are devoted to this arctic industry testifies sufficiently to its importance in the U.S.S.R., and the chapters cover reindeer anatomy and physiology, hygiene, fodder and pastures, breeding, illnesses, use in transport, farm buildings and installations, slaughter and preparation of products, dogs for reindeer herding, and protection against predatory animals. The editors of an English translation which it is hoped to complete in 1951 have called our attention to the following paragraphs in the Introduction as of general interest. The area called the "Far North" is defined in a paragraph here omitted, and is shown on the accompanying map.]

"Reindeer farming is the most important branch of husbandry in the Far North and in many of the most northern *rayony*² it is the fundamental productive activity of the population. From reindeer farming the inhabitants of the



Map showing the area of the "Far North".

north get meat and fat for food, skins for making clothes and footwear and also for making dwellings (skin tents). Besides satisfying the inhabitants' requirements of food and various necessities of their daily life and work, reindeer farming provides the nomad population with a fundamental and, up to now, unique and irreplaceable means of travelling during their migrations and when hunting and transporting loads.

"Delivery of goods from ports and wharves to the consumer in the heart of tundra, forest tundra and taiga, and the transfer of the prepared raw material—meat, fish, hides, furs, etc.—from these inaccessible places is mainly carried out by reindeer transport. Tens of thousands of transport reindeer, hundreds and thousands of reindeer herdsmen are employed yearly on goods transport."

¹ Reviewed by T. E. Armstrong in the *Geographical Journal*, Vol. 113, 1949, p. 139-41.

² An administrative area corresponding roughly to a county.—Eds.