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# Geography of Russia

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# GEOGRAPHY OF RUSSIA

A Lecture delivered
at the Naval War College
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*Dr. John A. Morrison*

After I had accepted Admiral Conolly's invitation to speak to you on "The Geography of Russia" and began to figure on how to cover the subject in 45 minutes, I felt like the collective farmer in Russia who was given a trip to Moscow as a prize for exceeding the norm for digging sugar beets on his collective farm by 318%. He was taken to the Bolshoi Teatr to see the ballet, "Swan Lake," for a ride on the Moscow subway, photographed with Stalin, and finally taken out to the Moscow radio station. Here he was shown around by the director, who explained to him that the station was so powerful that it could reach to every country in the world. "Ivan Ivanovich, how would you like to tell the enslaved workers and peasants of the capitalist world how glorious life is here in our Soviet fatherland?" But the director had an afterthought, remembering what a sly fellow the Russian peasant is, so he added: "But remember, Ivan Ivanovich, the time on this transmitter is terribly valuable. We can only let you say one word."

Ivan thought a moment, then stepped up to the microphone, grasped it firmly, and shouted, "Help!"

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Dr. John A. Morrison studied the geography of the U. S. S. R. at the University of Breslau. He has held positions connected with research in O. S. S. and the State Department. From 1949-1951 he was a member of the faculty of the University of Maryland as Professor and Head of the Department of Geography. At the present time Dr. Morrison is writing on the economic and political geography of the U.S.S.R.

Obviously, my problem is more one of selection than condensation. The best I can hope to do in the time available is to point out *some* of the ways in which its geography and natural resources affect the power of the U. S. S. R. And since maps and pictures save thousands of words, I am going to call in Visual Aids to help me.

There seem to be two points about the U. S. S. R. concerning which there is rather general agreement:

1. It covers a lot of territory; and
2. The regime that governs it is an evil thing with intentions toward our team that are not exactly charitable.

Beyond these two points, there is considerable argument as to the nature of the beast and how it operates.

You will have heard the characteristics and intentions of the regime described and analyzed by other lecturers in this series. I propose to start out by having a look at the first of the two points on which we are all agreed, and consider the implications of the country's large size.

*Size and Position as Geopolitical Factors*

Just how much real estate *does* the U. S. S. R. cover?

Approximately 8½ million square miles. This is nearly three times the area of the United States—a million square miles more than the entire continent of South America. It is roughly 6000 miles from its westernmost point on the Gulf of Danzig in Longitude 20 degrees East to its easternmost point on Cape Dezhnev, 10 degrees inside the Western Hemisphere, and only 56 miles from Alaska. It has *eleven* time zones compared with our five. Not

counting the area of its satellites, the Union of Soviet Socialist Republics covers about one-sixth the land surface of the globe.

Size, alone, is not necessarily important—look at the Sahara Desert. But when the area in question is the home of 200 million people and the seat of the world's second strongest power, the advantages and disadvantages of its size need looking into. Strategically, its great size has both. It has lots of space to sell for time—as Napoleon and Hitler both discovered to their sorrow. An enemy can invade the country deeply and still occupy only a small part of it, even though he may wound it severely. And when the invader's lines of communication are stretched out to the breaking point and he has experienced a Russian winter or two, the Russians—calling on the population and resources of the enormous hinterland—take the offensive.

On the other hand, the immense size of the country, plus the long frontiers with potentially hostile neighbors, have always caused the regime (Tsarist or Soviet) to maintain a large military establishment, even in peacetime. Not only were the frontiers long, but the great distances of the country required that sufficient strength be maintained on each frontier to contain a possible attack across that frontier, for there would not be time to transport forces across the country.

The great size of the country and the inadequacy of her transportation limits Russia's ability to capitalize on her central position in the Eurasian land-mass. At the time of the Crimean War, Russia had only one railway line—that from St. Petersburg to Moscow. Consequently, she had to maintain forces sufficient to cope with the enemy in both the widely separated coastal areas where he might land—the Baltic region and the Black Sea area. When the Anglo-French forces were finally committed to the

Crimea, it was too late for the Russians (with their great distances and poor overland transportation) to build up sufficient strength to displace them.

Even after the Russians had built railways to their most exposed frontiers, the vast distances continued to be a handicap. In the war with Japan in 1904-1905, Russia was unable to move to Manchuria over the new (and at that time single-track) Trans-Siberian enough of her vastly greater manpower and material resources to contain the Japanese attack in South Manchuria.

The double-tracking and virtual rebuilding of the Trans-Siberian, completed in 1938, by no means gave the Russians freedom of action both in the West and in the Far East.

General Deane relates in his book, "The Strange Alliance," that at a conference with Stalin in October, 1944, the Soviet leader stated that the Russians could not enter the war with Japan until three months after Germany's defeat. It would require that much time to move the 30 divisions from the front in Europe to the Manchurian border in order to bring the Soviet forces in the Far East up to the strength necesary to launch a successful offensive against the Japanese. You may recall that the Soviet attack on Japan came just 90 days after VE-Day.

Further improvements to the Trans-Siberian, such as electrification of the western part of the line (which was scheduled for the fourth Five-Year Plan, but apparently not completed) and the opening of supplementary railway routes may reduce somewhat the time required to move forces from West to East, and vice versa. But the enormous distances involved will continue to impose a severe restriction on the advantage of the central position.

The supposed advantage of the central position in the Eurasian land-mass (Mackinder's *World Island*) appears to have captivated the geopoliticians, or at least some of them. I once heard a very distinguished authority on international relations (a political scientist) tell an audience of senior Army, Navy, and Air Force officers that because of her central position Russia could move forces more rapidly to the "rimlands" of Eurasia than could the Western Powers. The map which he was using to illustrate his thesis (a plain outline map) had arrows pointing outward from a hub in Western Siberia. One of the largest arrows pointed to India and the speaker argued that the Kremlin had an advantage over the Western Powers in dealing with Southern Asia because Russia was closer. Not only did he fail to recognize the logistical problems of Russia's great land distances, but he also overlooked the little matter of the intervening Hindu Kush (one of the highest mountain ranges of the world) and the deserts of Iran and Afghanistan where modern means of transportation are not exactly plentiful!

It is probably superfluous to mention to this audience that with control of the sea, the Western Powers, which are maritime powers, could move elements of surface power to Southern Asia by sea more rapidly than Russia could move them by land. As Hartshorne has pointed out: "In terms of naval power capable of transporting land forces, every maritime power is in a central position in reference to all other maritime countries in the world." And the "rimlands" of Eurasia are maritime countries because they are accessible from the sea.

A further, and even more obvious, qualification of the value of the central position is the strength of the surrounding states. In the late 1930's and during most of the recent war, Russia's central position was a disadvantage to her because she faced a strong

and expanding Germany on the West and an aggressive, powerful Japan on the East. She had to be prepared for simultaneous attack from both. And even though Japan ultimately failed to join Germany in the attack on the central position, the Kremlin could never feel certain that she would not if opportunity offered—a constant nightmare for those responsible for Soviet military planning. So, during this last war, military strength badly needed in the West had to watch the eastern frontier. Russia controlled the "heartland" all right, but she was far from ruling Eurasia! Had Germany and Japan been weak, the Soviet Union could have devoted more manpower and capital to the development of her natural resources —thus increasing her long-run capabilities and power. But she had no freedom of choice.

The defeat of Germany and Japan left no strong powers on Russia's frontiers. She now had freedom of choice. She could concentrate on internal development or she could seize the opportunity to expand the area under her control. And when she chose the latter course, she had freedom in the selection of her targets. Our policy is to replace the weakness on Russia's borders with strength. If successful, the central position will once again be a disadvantage to Russia.

Getting back to the matter of Russia's size and its effect on strategy, we must not forget the air. To the layman like myself, it would seem that Russia's size is an asset in air warfare, or at least in static defense against air attack. For an enemy to reach targets in the deep interior, I would suppose that bombers would have to sacrifice bomb load for fuel. And with so large an area, strategic industries can be widely dispersed, thus offering fewer targets of opportunity in the event that it proves impossible to hit the selected target. I say, "can be"—actually, because of the past Soviet propensity for building very large plants, the concen-

tration of industrial output in single plants is more marked than in this country. Thus, before the war 14% of the Soviet iron and steel-making capacity was concentrated in a single plant—that at Magnitogorsk in the Southern Urals. The largest single U. S. iron and steel plant—that of the U. S. Steel Corporation at Gary, Indiana—had only about 6% of our steel-making capacity. Still, the U. S. S. R. has the *possibility* of a very wide dispersion of its vital industry. However, a dispersed industrial structure requires a good transport system. And the very size that makes wide dispersal possible is a handicap to the provision of adequate transportation.

*Transportation*

Even before the war the average freight rail haul was 460 miles; for coal, 430 miles. Russia's ability to capitalize on the advantages of her central position and to offset its disadvantages, as well as her ability to maintain a rapid rate of industrial development, depend on her transportation system—on its ability to overcome the vast distance of the country.

What other geographic factors affect transportation in the U. S. S. R. ? Fortunately for the Russians, most of their transportation is over level terrain. A relief map of Eurasia shows the Great Plain extending from the western frontiers of the Soviet Union to the Yenisei River in Central Siberia, a distance of 3,000 miles. In its Siberian portion this Plain is one of the flattest in the world as Figure 1 shows.

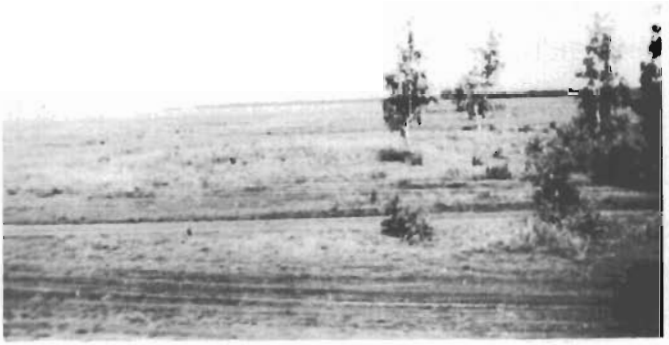

Figure 1. The West Siberian Plain. Forest-steppe as seen from the Trans-Siberian west of Omsk. (Photo by author)

The Urals form a rather insignificant interruption to this vast expanse of lowland, as is suggested by Figure 2.

Figure 2. The low crest of the Urals west of Sverdlovsk. The monument marks the boundary between Europe and Asia and is on the watershed between the Volga and Ob-Irtysh basins.
(Photo by author)

In his excellent and thoughtful book, *Russia and the Russians*, Edward Crankshaw devotes one of the five parts into which the book is divided to an analysis of the influence of the Plain on the Russian people and their history. He points out that the location of the early Muscovite state in the heart of the East European part of the Plain provided both encouragement and necessity for the expansion of that state.

*Inland Waterways*

This expansion was facilitated by the rivers of the Plain. Because of their gentle gradient and considerable volume, they are navigable over much of their courses. Thus, the Volga is navigable for vessels drawing up to 12-15 feet all the way up to Gorky, 1200 miles from its mouth; and there is regular steamer service a further 450 miles to Kalinin, northwest of Moscow. Large river steamers operate on the Ob-Irtysh system in the West Siberian Lowland all the way up to Semipalatinsk, not far from the Altai Mountains and 2500 miles from the mouth of the Ob. Even small ocean steamers ascend the Yenisei to Krasnoyarsk where the Trans-Siberian crosses the river, 1300 miles from its mouth in the Arctic.

Figure 3. Small ocean steamer at Krasnoyarsk where the Trans-Siberian crosses the Yenisei 1500 miles from its mouth. (Photo by author)

Even where the Yenisei cuts through the mountains, it is still an impressive stream.

Figure 4. The Yenisei at Novoselovo Pristan south of Krasnoyarsk. View upstream. The small dots extending diagonally to the middle of the river are boats which carry the cable of the swing ferry. (Photo by author)

Yet in terms of ton-miles of freight, Russia's rivers carry only a small part of the country's total transport load—around 6 or 7 per cent. This is due, of course, largely to the fact that they are frozen over from 2 to 7 months and to the fact that they run in the wrong direction. The largest of them (Ob, Yenisei, Lena) flow north into the Arctic; while others, notably the Volga, empty into land-locked seas. Nevertheless, in many areas they provide the only means of cheap transportation. This is particularly true in the case of the Siberian rivers, which run at right angles to the Trans-Si-

berian Railway and which serve as feeders to it. Thus, grain is hauled to granaries on the river bank.

Figure 5. Granaries on the Yenisei below Minusinsk. (Photo by author)

from which it is loaded into barges or river steamers for transport down river (i. e., to the north) to large storage elevators or flour mills, like that at Krasnoyarsk on the Yenisei as shown in Figure 6.

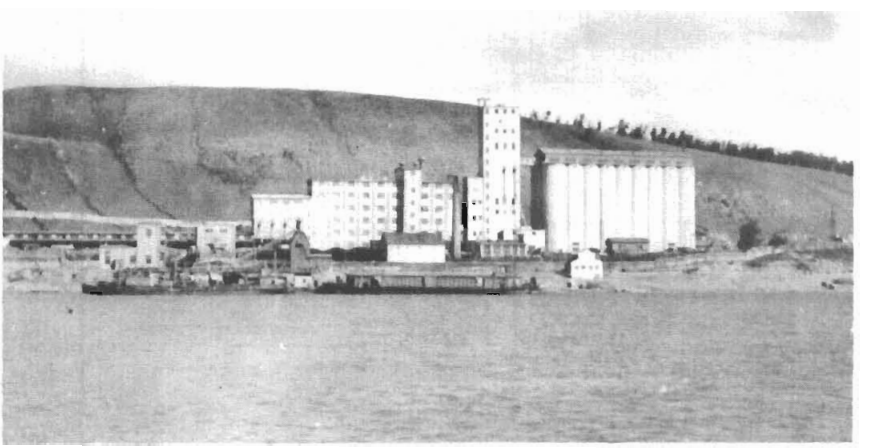

Figure 6. Flour mill and grain elevators at Krasnoyarsk.
(Photo by George Cressey)

Because they are rivers of a great lowland plain, the watersheads between them are low. Hence, it is possible to construct canals which to some degree offset the disadvantages in orientation of the main rivers. Beginning with Peter the Great in the early 18th century, canals were built and tributaries canalized so that many of the principal rivers of European Russia were connected by the middle of the 19th century. But all the canals built in that early period were built for small barges and, for the most part, had fallen into disuse by the Revolution. However, the overloading of the railways led the Soviet regime, in the early 1930's, to adopt a grandiose plan for the modernization of the inland waterways of the U. S. S. R.

The central feature of this plan is the so-called "Great Volga Scheme." It is a detailed plan for the multi-purpose development of the Volga system for navigation, power, flood control and irrigation. It calls for a series of dams on the Volga, which will insure a depth of 15 feet for navigation and provide hydro-electric power in large blocks. It also calls for canals of the same depth, connecting the Volga with the Don, the Neva, and the Dnieper. Power generated at the largest of the dams—that on the Samara bend above Kuibyshev—will be utilized to pump water out of the river further downstream for the irrigation of several million acres in the Trans-Volga Steppes where the rainfall is so uncertain as to make this a region of rather precarious agriculture.

Three of the seven dams projected for the main river have been completed. The first to be finished was one on the upper part of the river, where it has a course from west to east—north of Moscow. This dam was built to raise the level of the river and create a reservoir from which a canal could lead the water over the divide between the Volga and the small Moskva River, on which Moscow is situated, giving the Soviet capital (now a city of over 5 million)

a plentiful supply of water and also a deep waterway connection with the Volga. You can get some idea of the size of this artificial waterway from the stretch of the canal,

Figure 7. View of the Moscow-Volga Canal.

and from the view over one of the locks in Figure 8.

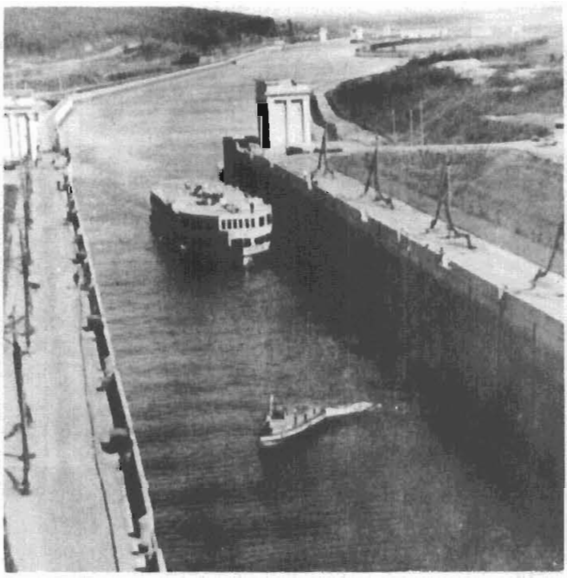

Figure 8. Lock No. 6 on the Moscow-Volga Canal.

These locks are 950 feet long, 98½ feet wide and have 18 feet of water over the sills. The canal was opened in 1937.

The Great Volga Scheme calls for a waterway of similar dimensions between the Volga at Stalingrad and the Don, at the point where the two rivers are less than a hundred kilometers apart. This is an old project and work on it was supposed to have started in the First Five-Year Plan period (1928-1933). It is reported that work is being rushed on it at present. When completed it will offset one of the two major handicaps of the Volga—the fact that it empties into the land-locked Caspian.

Connection with the Neva and through it, with the Gulf of Finland and the Baltic, will be provided by the widening and deepening of one of the waterways built at the end of the 18th century —the so-called Mariinsk Waterway—named after the canal across the watershed between one of the headwaters of the Neva and one

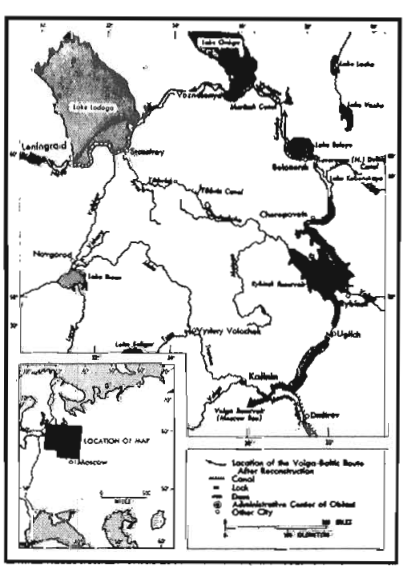


Figure 9. The water routes between the Volga and the Gulf of Finland.

of the Volga tributaries. The large artificial lake, the third largest lake in European Russia, created by the Rybinsk dam on the Volga is part of this new Mariinsk Waterway.

Connection between the Volga and the White Sea will be provided by the new Mariinsk Waterway and the Baltic-White Sea Waterway, the canals of which (between Lake Onega and the White Sea) were the first built by the Soviet regime—more specifically by the GPU.

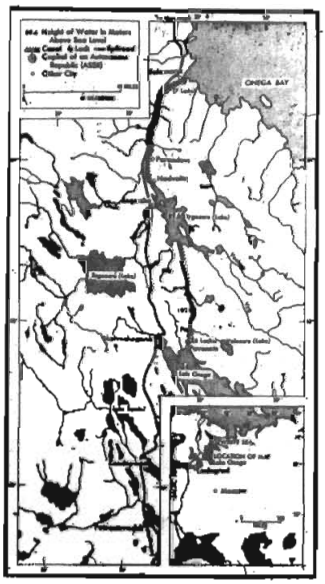


Figure 10. The Baltic-White Sea Waterway.

These are scheduled for enlargement to the dimensions of the Volga Waterway.

Completion of the "Great Volga Scheme" will relieve the pressure on the railways. It will also permit the transfer of smaller naval vessels between the Baltic and Black Sea, thus in part overcoming one of the major problems of Soviet naval strategy.

*Railways*

The Plain also favors railway construction.

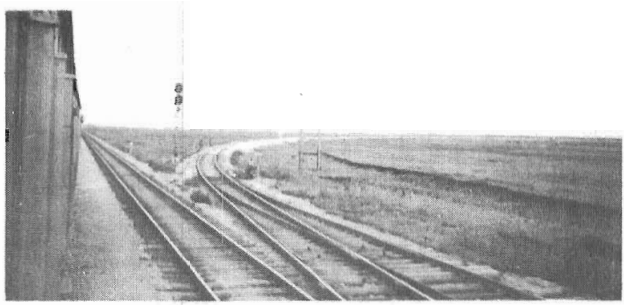

Figure 11. The Trans-Siberian on the West Siberian Plain just east of Petropavlovsk. View looking east. The single-track line branching to the south connects the Trans-Siberian with the Karaganda coal fields and the copper mines and smelter near Lake Balkhash, 750 miles to the south. (Photo by author)

From the western frontier to Lake Baikal, no tunnels are needed, and little grading is necessary. On the flat plain between the Urals and the Yenisei, ballast can be laid directly on the ground. And the lack of grades and curves makes for cheap operation. The Urals present no problem: the gradients on the lines crossing this low range are gentle as suggested by Figure 12.

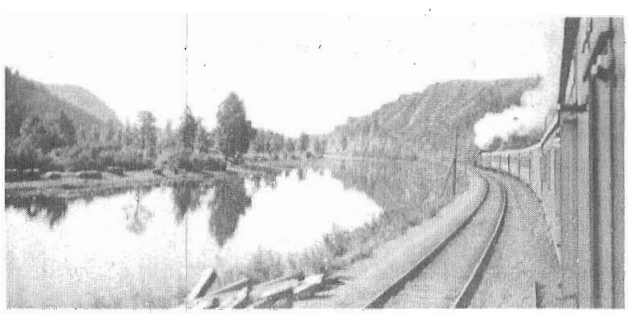

Figure 12. Railway crossing the Urals between Ufa and Chelyabinsk, View west along the Sim River between Simsky Zavod and Vavilovo. (Photo by author)

The great rivers present the only engineering problems of consequence to railway construction in the Great Plain. Because of their size, the bridges over even tributaries are large structures, such as the bridge over the Kama at Molotov.

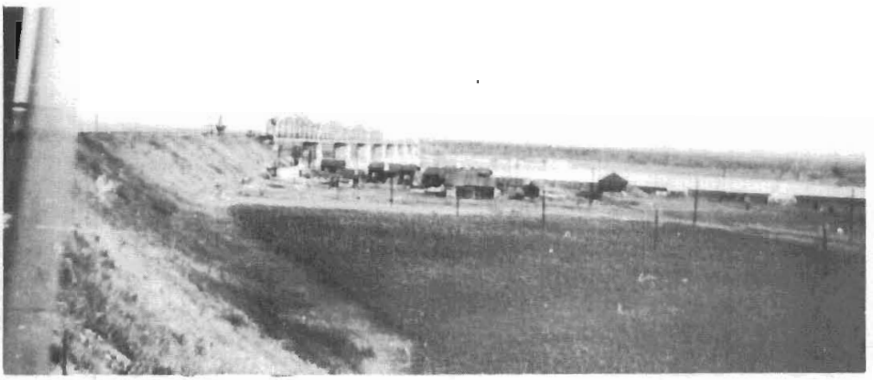

Figure 13. Railway bridge over Kama River at Molotov. (Photo by author)

Many new bridges have had to be built in connection with double-tracking, or to make possible the use of heavier locomotives and rolling stock. Because of the flatness of the Plain, they can be seen for miles—like the bridge over the Ob on the new direct line to the Kuznetsk Basin, which bypasses Novosibirsk.

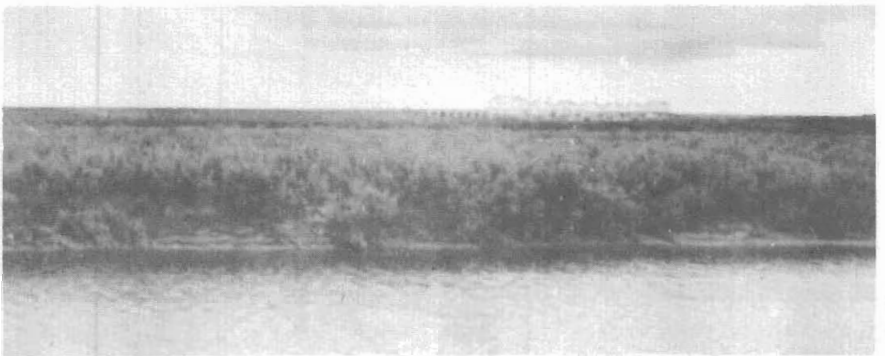

Figure 14. Railway bridge over the Ob River on the Novosibirsk by-pass line to the Kuznetsk Basin. (Photo by author)

In the highland and mountain country east of the Yenisei —a third of the country's area——railway construction is by no means easy. Not only relief but permafrost present a major problem in railway construction and operation. And the deserts and mountains of Central Asia and the Caucasus present their special problems. Yet even in the Great Plain where railway construction is easy, the density of the rail net is far less than in Europe and most of the U. S. A.

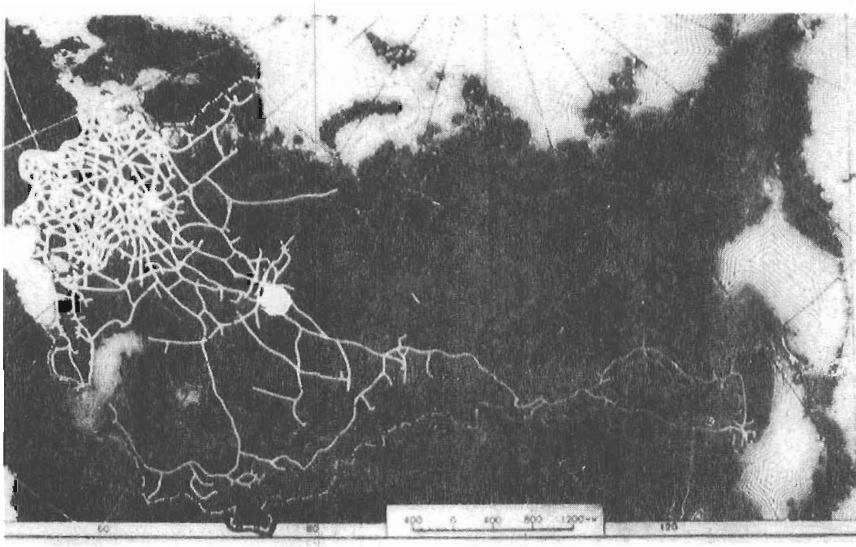

Figure 15. Railway accessibility map of the U. S. S. R. The areas in white are within 20 km. of a railway.

No other of the great land empires is so dependent on rail transport as is the Soviet Union. Not only are the distances enormous, the rivers frozen for long periods every year and coastal shipping possibilities limited, but the raw materials of industry are frequently widely separated. Thus, as Shimkin has pointed out,

95% of the iron ore reserves of the country are west of 63 degrees E. longitude,

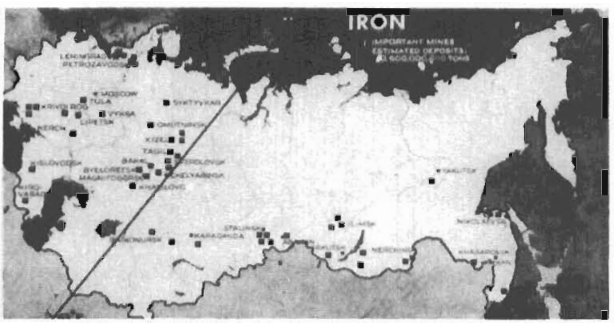


Figure 16. Principal iron ore deposits of the U. S. S. R.

while 91% of the coking coal reserves lie east of that line.

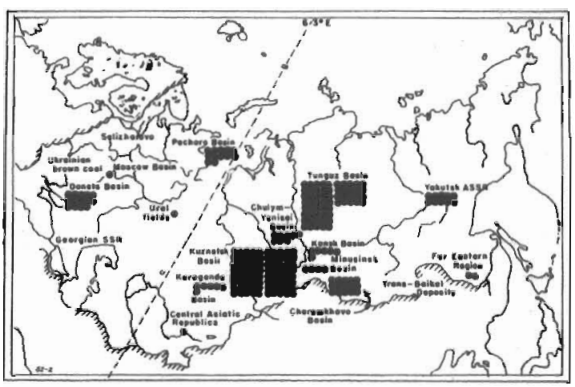


Figure 17. Distribution of the coal reserves of the U. S. S. R. Each dot represents 50 billion tons of reserves.

The bulk of the Soviet petroleum is still produced in the Caucasus, although a lesser proportion than formerly. The bulk of the Soviet copper, lead, and zinc resources are in Kazakhstan, remote from the consuming centers. The central industrial region around Moscow must get coal from the Ukraine and Vorkuta and is dependent on the Ukraine and the North Caucasus for much of the food consumed.

In spite of its need of railways, the Soviet Union has only about one-fourth the rail mileage of the United States. In view of the vast areas which are unsuitable for settlement, one would not expect the U. S. S. R. to have as many miles of line on the average per 1000 square miles. But even in terms of population, the Soviet Union lags far behind the U. S. A.: in 1940 it had an average of only about 3 miles per 10,000 people, compared with 20 for the U. S. A. and 28 for Canada—more like the U. S. S. R. in environmental conditions. Tsarist or Soviet, the growth of the Russian railway system has not kept pace with the economic development of the country. As a result, the existing lines—at least the major ones—are generally carrying about all that they can. There is little reserve capacity left for meeting emergencies.

In 1937, the freight traffic per mile of line averaged over 3 times the U. S. figure, about 4 times that in Germany, and almost 5 times the British figure. In that year, the Soviet railways, with only about a fourth of the mileage of the U. S. system, carried two-thirds as much freight. Not long before World War II, Voroshilov stated that in case of war the Soviet railways would be called on to do two or three times as much work as in peacetime. In view of the excessive load on the system, people like myself who were following Soviet developments just didn't see how this could be possible. We agreed that the Soviet rail transport system, overloaded in peacetime could not stand the strain of a major war effort. Yet it did.

We failed to take into consideration two factors: (1) The ruthless way in which the needs of the civilian population would be sacrificed, and (2) The fact (it should have been obvious) that as the Germans advanced into Russia the Russians, taking a good part of their rolling stock with them in their retreat, would have more equipment for fewer miles of line.

Even so, the complete cessation of locomotive and car building during the war, the postponement of repairs to the rolling stock and permanent way, plus actual enemy-inflicted damage, brought the Soviet rail system close to collapse. Without the substantial lend-lease shipments of locomotives, it is an open question whether the Soviet railways could have continued to function for another year of war. Restoration of war damage has now been completed and some important new lines are under construction, but the load on the railways has continued to increase. Thus, in 1949 the total freight volume was 523 billion ton-km. as compared with 415 billion in 1940. The reserve of capacity becomes steadily less.

Although the Russians were able to meet the demands placed on their rail transport during World War II, it must be recalled that the main lines in the area not occupied by the enemy were, with minor exception, able to function without hindrance. If the Germans had succeeded in knocking out the seven railway bridges across the Volga, or any of the major bridges on the western section of the Trans-Siberian, the story might have been quite different.

If I had to put forward a candidate for the role of "most critical Soviet weakness," I believe I would vote for its transport!

*Mineral Resources*

Mere size does not necessarily mean that a country is rich in minerals of economic and strategic importance. However, it is a safe bet that a country which covers a sixth of the earth's land surface has considerable geologic variety. Thus, in the U. S. S. R. there are the recent sedimentary formations of the West Siberian Lowland, thousands of feet in thickness, which so far have not

yielded minerals of significance. Yet bordering this mineralogically poor region on west, south, and east are regions rich in minerals of many kinds.

On the west are the Urals, one of the most highly mineralized zones of the earth's surface. Iron, copper, chromite, asbestos, bauxite, potash, gold, platinum, and oil are the more important minerals of this favored region. There is coal, also, but not of good coking quality and not much of it.

To the southeast lie the Altai Mountains, formed during the same period of mountain building as the Urals and hardly less rich in minerals. Like the Urals, they have been worn down and the older, mineralized rocks exposed. Here are rich deposits of lead, zinc, copper, iron ore, manganese.

Between two north-reaching outliers of the Altai lies the Kuznetsk coal basin with 450 billion tons of high grade steaming and coking coal—the richest and largest coal field of the Soviet Union. Here has developed the third most important concentration of iron and steel making and heavy manufacturing in the U. S. S. R.

South of the West Siberian Lowland is the elevated region of Kazakhstan, with the rather picturesque name of "Kazakh Folded Country." Here are the roots of ancient mountains containing the chief copper deposits of the U. S. S. R., as well as iron, lead, zinc and manganese.

The minerals of the Urals, the Altai and Kazakhstan have provided the bases for the new centers of heavy industry, the development of which started before the war and which expanded rapidly when the older industrial centers of the western part of the country (principally in the Ukraine) fell into enemy hands.

There is not time to survey the mineral resources of the U. S. S. R. and besides I am sure that Dr. Shimkin has treated the matter adequately. Although Soviet production of most minerals is below requirements, the U. S. S. R. is *potentially* more nearly self-sufficient as regards strategic minerals than is the United States. However, comparison of the two countries as to mineral self-sufficiency is not very meaningful. It is difficult to conceive of a situation in which we would not have free access to Canadian and Mexican minerals, and so long as we have control of the sea, we can draw on the mineral resources of the entire non-Soviet world.

*Agricultural Land and the Food Problem*

One might suppose that with so large an area there would be land enough to grow the food needed to support Russia's large and rapidly growing population—estimated at around 200 million at present and at 244 million by 1970. But, while minerals can be mined in mountains, in the desert, and in the tundra, food cannot be produced irrespective of climate, topography and soils.

How much of the huge area of the U. S. S. R. is climatically suitable for the growing of crops?

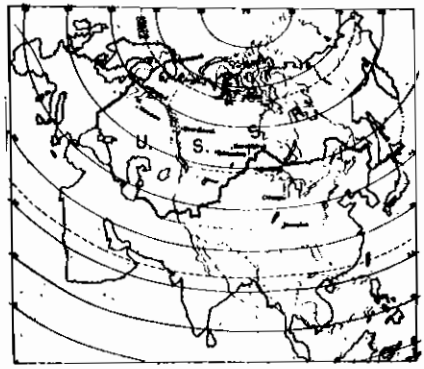


**Figure 18. The U. S. S. R. superimposed on North America in same latitudes.**

Figure 18, in which the U. S. S. R. is superimposed on North America, in the same latitude, shows how much of the Soviet Union lies north of the northern boundary of the United States. High latitude does not necessarily mean cool summers and short-growing seasons. Consider England, all of which is north of the 49th parallel. But most of the U. S. S. R. is also remote from the sea and its moderating influence on climate. High latitudes *plus* continentality make for long, cold winters and short growing seasons.

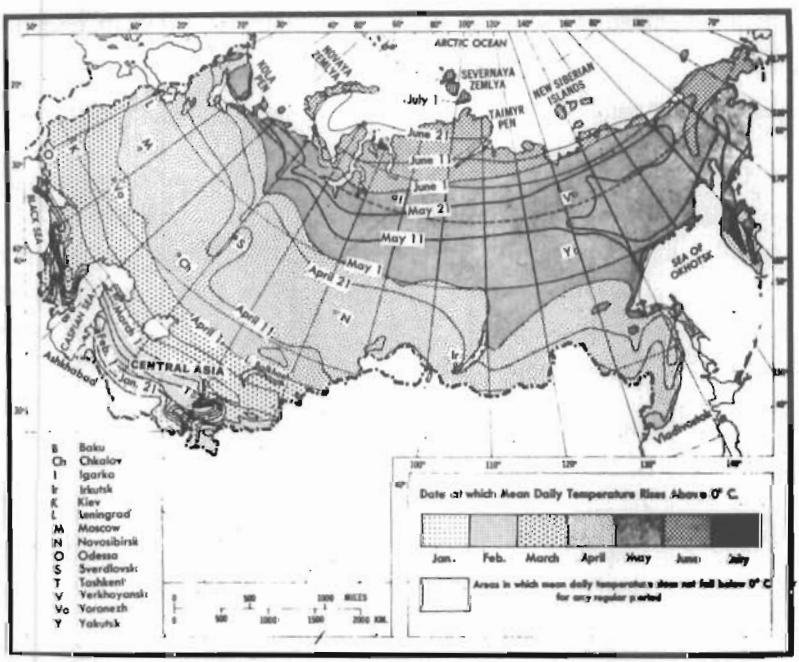


Figure 19. Date at Which Mean Daily Temperature Rises Above 0° Centigrade (32° Fahrenheit) (from Great Soviet World Atlas, Vol. I, Plate 108V)

Figure 19 shows the date on which the mean daily temperature rises above freezing—note how much of the country is still below freezing on April 1. Even though in July most of the

U. S. S. R. is actually warmer than London, the summers in a large part of Siberia are so short that the ground-ice, or permafrost, which formed during the glacial period has survived to this day, only the top few inches thawing during the short summers.


Figure 20. Distribution of Permafrost in the U. S. S. R.

And you all have heard of Siberian winters—with the world's record low temperature of -93° Fahrenheit registered at Verkhoyansk, in Northeastern Siberia—colder even than Newport, but not so raw!

Much of the U. S. S. R. has too short a growing season for successful crop growing. And a large part of the rest of the country has insufficient rainfall for growing crops without irrigation, i. e., less than 12 inches.

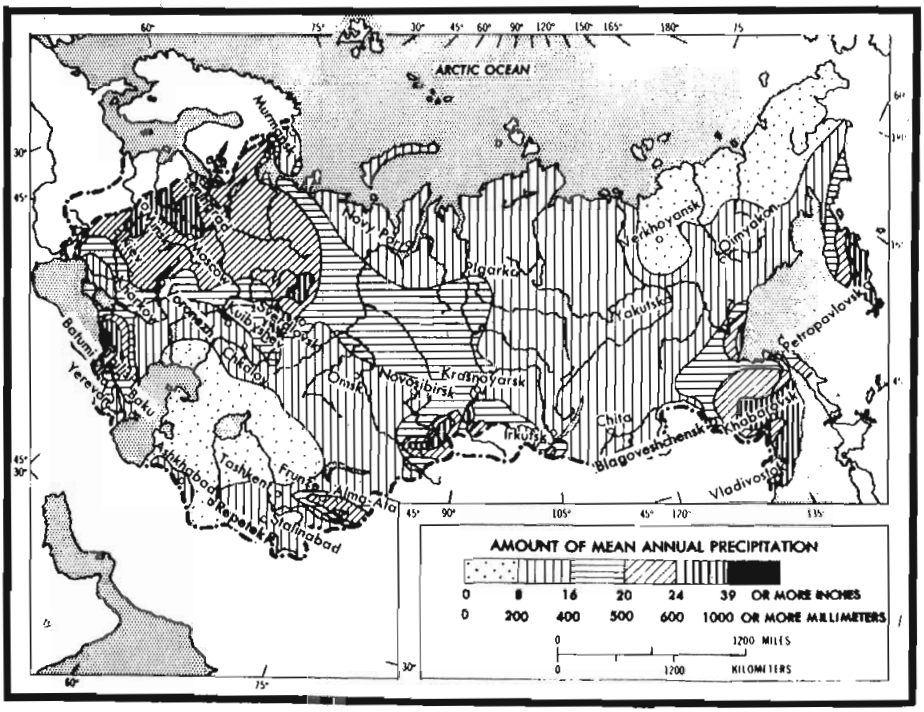


Figure 21. Mean annual precipitation in the U. S. S. R.

Even Russia's richest soil belt—the famous chernoziom, or black earth—has either inadequate or uncertain rainfall. If all of this belt were cultivated extensively, as is our chernoziom belt in Kansas, Nebraska and the Dakotas, the uncertain rainfall would not be so serious. But the western part of the belt is the most densely populated part of the U. S. S. R. It is called upon to support over 100 persons per square mile. Hence, it is not surprising that some of the most disastrous famines have occurred in the area of Russia's richest soil. The great "shelter belt scheme," now being pushed by the regime and expected to reduce the incidence of drought, is clear evidence of the marginal character of even this fertile soil.

"Short growing season and deficiency of rainfall limit the area suitable for crop growing to only 8 to 10% of the entire country. The actual cultivated area of the U. S. S. R. is about the same as that of our own country, but it is only 6% of the country's total area, while our cultivated area is some 17% of our total area. Although the cultivated area of the two countries is about the same, it should be remembered that because of our longer growing season and greater precipitation, we can grow a greater variety of crops and their yields are higher."

Futhermore, the pressure of population on our crop-growing land is less than is the case in the Soviet Union. For the 200 million people of the U. S. S. R. the cultivated area averages only 1.9 acres per person, while for our 154 million it averages 2.3 acres. The possibilities of expanding the cultivated area of the U. S. S. R. are not great—perhaps by about one-third, not counting that added by new irrigation. But this increment will be marginal land, agriculturally speaking, because it will be on the colder or drier side of the presently cultivated land, most of which lies in the shape of a large wedge with the base along the western frontier and the tip out in Central Siberia.

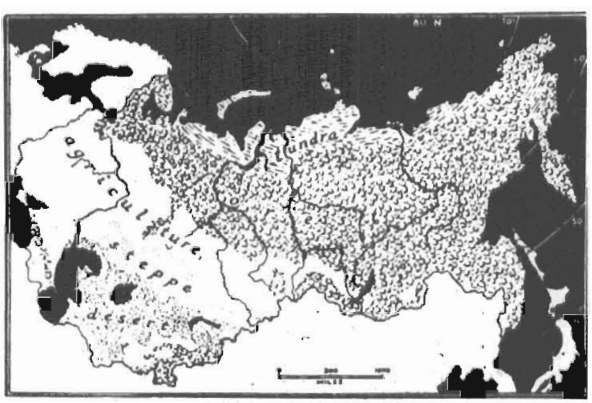


Figure 22. The Soviet "Agricultural Wedge."

Because of its marginal character, the new land will have lower yields than that now under cultivation.

In 1940 a leading Soviet agricultural economist wrote that the crop land of Siberia could be expanded by about 7½ million acres, but that wheat could be grown on it only two or three years before having to go over to dry-farming; also, that the yield would be only about 10 bushels per acre. And anybody who has tried to make a living by dry-farming knows that it is only successful in wet years!

Soviet popular writers have had a lot to say about the northward advance of agriculture under Soviet rule. Some progress, doubtless, has been made in the development of strains requiring shorter maturing periods. However, achievements on experimental farms in the Arctic no more constitute a real northward expansion of agriculture than a single swallow makes a summer. The best commentary on Soviet Arctic "agriculture" I know of I came across in a book by a Czech journalist who made a trip by the Northern Sea route to the lower Yenisei. At Igarka, the new lumber port north of the Arctic Circle, he visited the experimental farm. In the farm's potato patch he found a former kulak (probably exiled to the Far North for the "crime" of owning two cows instead of one) and asked him what he thought of growing crops in the Arctic regions.

The kulak replied succinctly: "Why you can grow potatoes anywhere if you put a professor behind every plant!"

Northward expansion of crop growing in the U. S. S. R. not only has to contend with an ever shorter growing season, but with poor soils. The northward side of the agricultural wedge is already deep within the zone of podsol soils—the largest soil belt in the U. S. S. R.

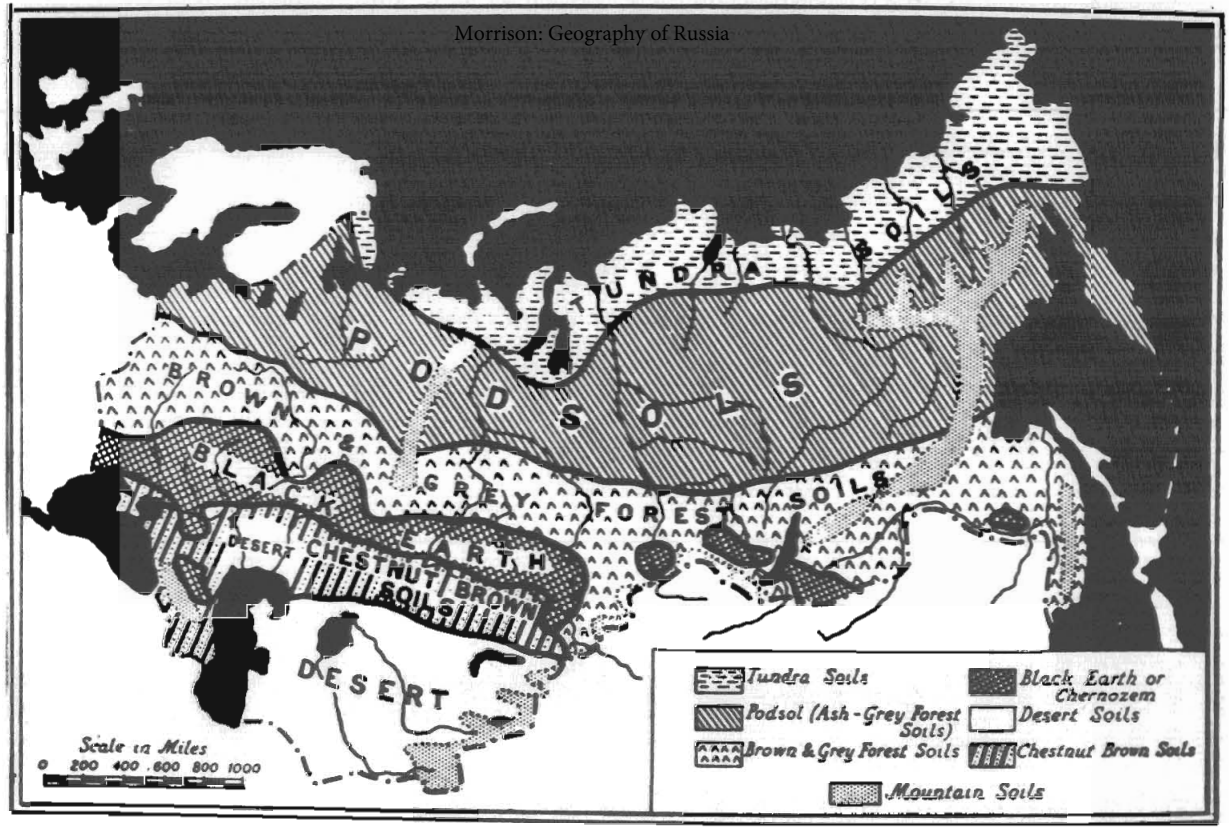


Figure 23. The major soil zones of the U. S. S. R.

These are acid soils with poor structure and low in humus. To make them productive, large amounts of lime and organic fertilizers must be added.

Judging from the ambitious schemes which have been announced, the regime is counting heavily on the expansion of the irrigated area to meet the growing need for food and fibers. There is still considerable land in Central Asia, the Trans-Caucasus, and the Lower Volga regions which, if it had water, could produce heavily because the growing season is long. But the irrigation of these areas will require very large-scale construction. However, the construction of dams and long canals are well suited to the police state, where labor can be supplied in any amount desired—at little or no cost!

All this "remaking the map," as the Soviet writers are fond of calling it, suggests rather strongly that Nature has not been too kind to the U. S. S. R. in the matter of good crop-growing land.

*The Urge to the Sea Fallacy*

In our quick look at Russia's transportation and agricultural problems we saw the effect of remoteness from the sea. No other major power is so poorly situated in relation to the sea—and few lesser states. Because of its great size and regular configuration, even if the sea washed all its frontiers, much of the country would still be remote from the sea. Europe, west of the U. S. S. R., is a peninsula composed of peninsulas. Because of this, no point in it is more than 400 miles from the sea. If you drew a line 400 miles from the sea bordering the U. S. S. R. (except the Caspian, which because it is land-locked, does not give access to the world ocean), you would find that about half the country is *over* 400 miles from

the sea. And most of the other half (that *within* 400 miles of the sea) lies within 400 miles of the Arctic—Russia's longest sea frontier.

But except for the narrow segment near Murmansk, this sea frontier is of little use to the U. S. S. R. because it is closed by ice so much of the year. And access to the high seas from the small area which is within 400 miles of coasts open the year around —that north of the Black Sea, east of the Baltic, and the Siberian littoral of the Sea of Japan—can be cut off by foreign control of the entrances to these seas.

And it was a long time before Russia reached the borders of these seas.

In view of Russia's historically poor connection with the sea and its phenomenal expansion from a small principality around Moscow to a great continental empire reaching across Eurasia, it is perhaps inevitable that that expansion should be attributed to a conscious "urge to the sea," or a reaching out for "warm water ports."

During the course of his testimony before the Senate Armed Services and Foreign Relations Committees, General MacArthur made a little sally into geopolitics. Speaking with an assurance and an eloquence about non-military matters, which I had thought rare in professional military men, the general had this to say about Russian territorial expansion: "The Russian has always believed that he could not take his rightful place in the international sphere of commerce and industry unless he shared the commerce of the seas. For centuries he has been seeking warm water....."

I am sure that this simple explanation of Russia's territorial expansion is familiar to all of you. It has probably not occurred to you to question it. It sounds so reasonable!

I doubt if any geopolitical thesis has received more widespread and unquestioning acceptance—outside of Russia—than this one. You probably encountered it in your high school history text books and they are still teaching it, judging from one that I had occasion to look into not long ago. It had this bold and uncomplicated explanation of Russian history: "Russian history is a story of an energetic land, of people who pushed out from Moscow in all directions in search of warm water ports."

And if the author had been challenged, he could cite the title of a book by one of our most eminent authorities in the Slavic and East European field—Professor R. J. Kerner of the University of California. The title of his book is: "The Urge to the Sea —The Course of Russian History." However, if you will read the book you will discover that the author apparently forgot all about its title, for there is no further mention of the urge to the sea! Instead, the book is an excellent and scholarly account of the role of river, portages, and furs in the expansion of Russia!

But historians are not alone in lending the weight of their authority to this thesis. A few years ago in a lecture at the National War College I heard the same distinguished political scientist who was so impressed with the advantages of Russia's central position say that Russia is "a landlocked country which believes it needs access to the warm water ports south of the country."

It was inevitable that geographers should seize on what appeared to be such a juicy example of the effect of geographical position on the growth of a nation-state. In his book, *The New World,* which first appeared in 1921 and which was regarded as the law and the prophets in the field of political geography to a whole

generation of college students (some of whom were in a position to influence policy-making in recent years), the late Isaiah Bowman explains the territorial growth of Russia in these words:

"In Mongolia and Tibet, in Persia and Afghanistan, in Caucasia and at Constantinople, the Russian has been pressing forward for three hundred years, and no system of government can stand that denies him proper commercial outlets. His slogan has been 'a warm water port'. That explains his reaching out in the Far East to Vladivostok.....; it explains his effort to reach the Persian Gulf.....; it explains the struggle with Turkey and the West European powers for Constantinople."

One of the more scholarly of the avalanche of books about Russia which appeared during World War II was by another prominent American geographer, Professor Geoge B. Cressey of Syracuse University. One of the very few American geographers who have traveled widely in the Soviet Union, his *Basis of Soviet Strength* filled a wide gap in our knowledge of the Russian land and had a corresponding influence on American thinking about the U. S. S. R. Cressey is even more sweeping than Bowman:

"The history of Russia may be written in terms of its search for ocean ports. The Russian Bear will not be content until it finds warm water, and this is equally true whether the government be a Czarist autarchy (sic) or Soviet Socialism."

Now I am sure that none of the writers whom I have quoted would condone specific acts of Soviet aggression, yet their explanation for Russian expansion make it *seem* justifiable. The impression they give is one of a land-locked people driven by an elemental urge to break through the ring of selfish border states to the life-giving sea. For Americans and the peoples of Western

Europe, whose history and development are so closely related to the sea, there is a natural sympathy for the aspirations of another people to enjoy the benefits of close contact with the sea. But the trouble is—the Russian people have never had such aspirations; nor does it appear that the Russian rulers (with the single and notable exception of Peter the Great) have ever been sea-minded. And their own histories do not explain the expansion of their country in terms of an "urge to the sea." I have yet to meet a Russian who recalls having been taught that his country had to expand until it reached the sea—until it had warm water ports. The notion appears to have been Western, probably English or American, in origin.

If you will examine the history of Russian territorial growth, you will find that only in one direction—to and along the Baltic —was Russian expansion motivated consciously, persistently, and primarily by a desire for outlets to the sea. For Russia's economic centers of gravity have always been nearest to that sea. And it was in that direction—towards Western Europe—that Russia had to turn to get the armaments, equipment, and engineers she needed if she were to be victorious in her wars with Poland and her other neighbors. The northward expansion in the days of old Novgorod and the later drive of Muscovy across Siberia were motivated almost entirely by the desire for furs. To say that the Russians' expansion across Asia to the Pacific was because of an urge to the sea is to imply that when the Cossack Yermak crossed the Urals in 1581 the gleam of the far-off Pacific was in his eyes. I doubt if Yermak had even heard of the Pacific. The only gleam in that illiterate ex-bandit's eyes was the gleam of sables!

Once the Russians reached the shores of the Sea of Okhotsk in this search for furs, they needed good harbors on which to base the naval vessels needed to protect their new acquisitions and also to provide means for supplying posts in these territories by sea

from European Russia instead of by the long and weary overland route.

The last acquisition of imperial Russia—Dairen and Port Arthur—was not acquired as a "warm water outlet to the sea," but as a base for further expansion in the Far East. For Dairen to serve as an outlet to the sea for the economically significant parts of Russia—that is, the U. S. S. R. west of Lake Baikal—would be like acquiring Acapulco to serve as an outlet to the sea for the eastern United States! Dairen is the natural port for South Manchuria—and South Manchuria only. Nevertheless, F. D. R. was so strongly convinced of Russia's need for a warm water port that at Tehran he suggested that Russia might have access to Dairen! According to Pat Hurley, F. D. R. hoped that Russia could obtain a warm water port and "come in contact with the free world." Interestingly enough, it was not Stalin who first raised the "warm water port" question at Tehran, but according to Bob Sherwood it was that doughty foe of Russia—Mr. Winston Churchill.

The expansion southward to the Black Sea was, until its last phase (the end of the 18th century), due to the need for grain-growing land—the fertile chernoziom—and to the necessity for containing the Crimean Tatars, whose raids against the Russian frontier were long a great nuisance. Even in the final phase, when estate owners and grain merchants in the newly acquired lands north of the Black Sea demanded port outlets on that body of water, other motives were of equal or greater importance—such as ejection of the Turks from the Black Sea and Catherine the Great's desire to create a new Greek empire with her grandson, Constantine, on the throne of the Byzantine emperors.

As to the expansion across the Caucasus—a natural frontier if there is such a thing—and into Central Asia, to say that it aimed

at the acquisition of warm water ports on the Persian Gulf and Indian Ocean is to ignore both history and geography. The Russians first crossed the Caucasus at the request of the Christian King of Georgia, who was under attack by Mohammedan Persia and was a number of years before the Russians made up their minds to stay south of the mountains. The conquest of Central Asia was a by-product of punitive expeditions against the Turkomans of the Khiva Oasis who had been raiding the Russian trade caravans to the north. There may have been romantic young officers who had visions of leading their sotnias of Cossacks in a raid on India, but the Russian General Staff certainly was aware of the tremendous logistical problems involved in moving armies across the roadless deserts and high mountain ranges of Persia and Afghanistan. And the government in St. Petersburg must have been well aware that a port on the Indian Ocean would be of little value to Russia commercially, because of the great distances from Russian producing areas and, in wartime, a liability in view of British control of the Indian Ocean.

To generalize from the one direction to which Russia's expansion *was* primarily due to a conscious drive for ports—the expansion to and along the Baltic—and to build from it a geopolitical explanation for Russian expansion in *all* directions is justified neither by the historical record nor by the realities of geography. At best it deflects attention from the real aims of Russian expansion; at the worst it may lead to the unnecessary surrender of important strategic positions which can cost us dearly. However, simple explanations and broad, sweeping generalizations have an unfortunate way of sticking to the mind.

I am reasonably confident that for the rest of my life I will continue to read that Russian expansion has been an urge to the sea, a reflection of the desire for "warm water ports."