

The Problem of the Kursk Magnetic Anomaly

Problema Kurskoy Magnitoy Anamaliy, 1949,  
Book, (Russian) Moscow

THE ALL-UNION SOCIETY FOR THE  
PROPAGATION OF POLITICAL AND  
SCIENTIFIC KNOWLEDGE

THE PROBLEM OF THE  
KURSK MAGNETIC ANOMALY

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Stenogram of a Public Lecture  
Delivered at the Kursk  
Branch of the Society

Moscow 1949

In the postwar Stalin Five-Year Plan, stupendous prospects for further growth of the production forces of our Fatherland, the consolidation of its economic might, and the rise in the material and cultural standard of living of the Soviet people have all been outlined. The successful attainment of the lofty purposes of the new Five-Year plan requires the mobilization of all the forces and resources of the land. In connection with this, the utilization of the ores of the Kursk magnetic anomaly for the creation of a new metallurgical base in the central part of the USSR becomes a problem of great importance.

To quote from Comrade Stalin at the XVII Party Congress:

"The growth in the production of implements and means of production against the backdrop of the total volume of industrial development is of decisive importance to the program of industrialization." ( I. Stalin, Problems of Leninism, page 441, 11th Edition).

Metals, particularly ferrous metals, are at the foundation of the socialist construction and the industrialization of our land. Hence, the problem of supplying the Soviet Union with iron is fundamental to our economy. It is usually by the total amounts of smelted cast iron and steel that the degree of industrialization of a land is measured. Czarist Russia, with the greatest reserves of iron ore in the world, was not only behind the large capitalist countries -- the United States, England, and Germany -- but also was behind some of the smaller countries

in the production of metals. In addition to this, many of the metallurgical plants of Czarist Russia were owned by foreign capitalists -- Englishmen, Belgians, Frenchmen.

After the victory of the Great October Socialist Revolution, the Bolshevik Party and the Soviet Government, from the very beginning, gave much attention to the development of the metallurgical industry. As a result, our metallurgical industry, despite the terrific destruction brought on by the war, had by 1928 attained its prerevolutionary level.

During the first two Stalin Five-Year plans, the USSR attained great progress in ferrous metallurgy. It took the United States 20 years, and Germany 23 years, to attain the same increase in the production of cast iron as we attained in 8 to 9 years. Having left a number of large European countries far behind, the Soviet Union, as far back as 1937, occupied the second place in Europe. This was a manifestation of the creative energy of the Soviet system and the sagacious leadership of Stalin.

In accordance with the brilliant concept of Comrade Stalin, a mighty socialist industry in the east -- the second coal and metallurgical base -- came into being. The construction of the Magnitogorsk and Kuznetsk plants and the reconstruction of the old metallurgical industry of the Urals brought the following result: in 1937, the smelting of cast iron in the Urals and in Siberia was increased 18 times as compared to the year 1913. This was the work of such giants as the Magnitogorsk and Kuznetsk



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Metallurgical combines with the mightiest blast furnaces in Europe.

It is a remarkable fact that the Magnitogorsk Metallurgical Plant imeni Stalin alone produces now as much metal as was produced in all of prerevolutionary Russia.

On the eve of the Great Fatherland War, the Soviet Union was one of the leading producers of metal. In 1940, our country produced 15 million tons of cast iron and 18.3 million tons of steel.

The years of the Fatherland War vindicated the brilliance of Stalin's vision. The Urals and Siberia became the steel backbone and the military arsenal for the defense of the Fatherland. The fighting fronts were provided an adequate flow of Ural tanks, ordnance, and ammunition. The mighty power of the socialist industry was fully utilized for war production and provided the Soviet armies with ordnance, aviation, tanks, munitions, and equipment.

The creation of a mighty industry played a decisive part in the attainment of the history-making victory over the German-Fascist aggressors and the Japanese imperialists.

During the war, a beginning was made for the creation of a metallurgical base in the Far East and in Central Asia. Metallurgical plants were also built in Uzbekistan and Kazakhstan.

We again quote Comrade Stalin, this time from a speech de-

livered on 9 February 1946 before the electors of the Stalin election district of Moscow:

"We must arrive at a point where our industry will be capable of producing up to 50 million tons of cast iron, up to 60 million tons of steel, up to 500 million tons of coal, up to 60 million tons of petroleum. Only then will it be possible to assume that our motherland will be equipped to meet any emergency. This will require, perhaps, three new Five-Year plans, if not more. But this goal can be reached, and we shall reach it." (I. Stalin, speech delivered at the pre-election meeting of the electors of the Stalin election district in the city of Moscow on 9 February 1946, page 29, Gospolitizdat, 1946.)

The realization of this stupendous program is closely involved with the construction of new metallurgical plants. Hence arises the problem about the part to be played by and the place to be occupied by the Kursk magnetic anomaly in the further development of our metallurgy. The new metallurgical base is to be created on the foundation of the practically inexhaustible reserves of iron ores contained in the Kursk magnetic anomaly.

The law governing the new Five-Year Plan for 1946 to 1950 for the restoration and development of the national economy of the USSR contemplates the inception of industrial mining during this period of the ore bodies deposited in the Kursk magnetic anomaly, with a view toward the subsequent construction here of a metallurgical plant.

The tremendous ore reserves, the presence of various valuable non-metallic minerals, including coal, the proximity of the Donetsk basin and of the most important railroad routes of the country -- all these are exceptionally favorable conditions for the future creation of a new, large-scale industrial center in the area of the Kursk magnetic anomaly.

It is a known fact that the magnetic needle of the compass always points practically straight to the north. However, the proximity of masses of iron exerts a perceptible effect upon the magnetic needle, producing its deflection toward the west or toward the east. The deflections of the needle from its conventional positions are called anomalous deflections, and the areas in which these anomalous deflections occur are known as magnetic anomalies. There are many areas around the globe where such anomalies occur. These anomalies are due to accumulations at low depths of magnetic iron ores which attract the compass needle and cause it to show deflected readings.

In 1784, Academician Petr Imokhodtsev was engaged in land surveying of the city of Kursk, in which task he encountered the phenomenon of the magnetic anomaly. However, Imokhodtsev's discovery went the way of many other brilliant discoveries in Czarist Russia, i.e., it was completely forgotten.

After a period of 90 years, the Kursk magnetic anomaly was rediscovered. In 1874, I. N. Smirnov, a docent of the Uni-

versity of Kazan', engaged in a special magnetic survey of the territory occupied by the Kursk guberniya, discovered two sharply anomalous points.

During the period 1883 to 1894, the Russian Geographical Society continued to send Professor Pil'chikov and others into the Kursk guberniya for the purpose of magnetometric surveys and research. These investigations confirmed the presence of anomalies and established even greater magnetic deviations at a point not far from Belgorod. The data from these investigations bore witness to the fact that here, in the Kursk guberniya, were located the greatest magnetic anomalies in the world. The evidence of the presence of the anomalies was so overwhelming that, in the characteristic manner of Czarist Russia's admiration of everything foreign, it was decided to invite foreign geologists to check the findings.

In 1896, Mr. Muro, Director of the Paris Magnetic Observatory, arrived in Kursk. He conducted observations throughout 15 uyezds of the Kursk guberniya, altogether at 102 locations, with the center of the greatest anomaly in the village of Kochetovka.

In 1897, E. E. Leyst, Professor of the Moscow University, discovered the greatest anomalies between Kursk and Belgorod, in the village of Krasnoye, in the Oboyansk uyezd, near the village of Kochetovka of the same uyezd, and in the village of Nepkhavevo, the Belgorod uyezd. Professor Leyst was the first one to

ascribe the underlying causes of these magnetic anomalies to great masses of magnetic iron ores (obviously, magnetite), which induce the deviations of the magnetic needle.

This finding by Professor Leyst coincided with the period of industrial development then stirring in Russia, and various business manipulators began feverishly to search for iron ore in their land holdings.

Literally speaking, an iron ore rush was on in the Kursk guberniya. On instructions from geologists, drilling began at the villages of Nepnkayevo and Kochetovka. The designated depth was reached soon enough, but no iron ore was found. After this disappointment, the interest in the workings of the KMA (the Kursk magnetic anomaly will from here on be referred as KMA) was lost, and only a few individuals maintained their insistence that the magnetic anomaly is produced by great masses of iron ore stratified at accessible depths. These individuals continued their investigations until 1910. Having processed all the accumulated data on the subject, Professor Leyst made a complete report to the Physical Institute of the University of Moscow in 1918. In this report he insisted that the only possible cause for the manifestations of the KMA is the presence of iron ore. His report, however, lacked cartographic data. Subsequently, he went to Germany for his health, taking with him the complete accumulation of his research data. There, together with the German promoter Stein, he published a booklet on the KMA.



Upon the death of Professor Leyst all the available data fell into the hands of the Germans, and it is characteristic that, during the separate peace negotiations at Brest-Litovsk between Russia and German, the German High Command doggedly persisted in the demand that the Kursk guberniya be included in the zone of German occupation. At a later date, the German promoter Stein made an attempt to sell the Leyst data to the young Soviet Republic for the sum of 8 million rubles in gold. When this attempt failed, certain German promoters tried to obtain from the Soviets concessions of exclusive rights to the development of the iron ores of the KMA.

Thus, Soviet Russia irretrievably lost the entire accumulation of research pertaining to the KMA, and everything had to be started from the very beginning.

Vladimir Il'yich Lenin instantly understood the tremendous importance of KMA to the country, and he considered it of the utmost necessity to have the iron ore deposit areas investigated by Soviet geologists.

It is characteristic that these investigations proceeded even during the year 1919, under conditions of armed conflict with foreign interventionists and White Guard groups. At the beginning, this work was concentrated in the Academy of Sciences, which was created in 1919.

Soon afterwards, the Council of Labor and Defense adopted

a special provision pertaining to the study of the Kursk magnetic anomaly. In this decree, signed by V. I. Lenin, it was pointed out that all work connected with the exploration of the Kursk magnetic anomalies was officially recognized as having great state importance.

In 1921, under personal instructions from Vladimir Il'yich, a special commission to investigate the KMA (OKKMA) was formed in the Supreme Council of National Economy (VSNKh); supervision of the magnetometric and geological investigations was incumbent upon this commission. The prominent Soviet scientist (later Academician), Ivan Mikhaylovich Gubkin, became the head of this commission. Academician A. D. Arkhangel'skiy, Professor Terfigorev, and other prominent scientists were also members of this commission.

Lenin himself was constantly interested in the work of this commission and always ready to be of assistance to the scientists, as recorded by Academician I. M. Gubkin.

On 6 April 1922, Vladimir Il'yich wrote to G. M. Krzhizhanovskiy: "Yesterday Martens told me that it 'was proved' (you used the word 'almost') that immeasurable deposits of iron exist in the Kursk guberniya . . .

"I wonder whether it wouldn't be advisable, as early as this spring, to (1) lay the necessary narrow-gauge tracks, and (2) to condition the nearest peat bog (or peat bogs?) for the

exploitation of peat as fuel for a power station to be erected there?

". . . This business is to be pursued with redoubled energy and drive." (From V. I. Lenin, Volume XXIX, page 468, 3rd edition.)

The special commission for the investigation of the KMA, under the guidance of Academician I. M. Gubkin, developed tremendous activity. The OKKMA collaborators conducted magnetic observations at 18,000 locations, and constructed precision maps. Geophysical research confirmed the fact that the underlying causes for the magnetic anomaly is the presence of huge reserves of magnetic iron ores. The commission even succeeded in establishing preliminary estimates for the depths of stratification of the ore.

What then is the nature of this area of the so-called Kursk magnetic anomaly?

The investigations conducted by the OKKMA and subsequent research conducted by Soviet scientists have shown that, over the vast territory of Kursk and adjacent areas, huge deposits of iron ores are located at accessible depths -- magnetite quartzites with an iron content up to 40 percent.

At the XVI Geological Congress, Academician I. M. Gubkin, in discussing the problem of further prospects for the mining of iron ore, declared that the development and utilization of the

KMA deposits will solve the problem of iron ore once and for all, and will postpone eventual depletion for many hundreds of years, in terms of needs for all mankind.

When the Party and the Government embarked upon the industrialization of the country, upon the fulfillment of Stalin's first Five-Year Plan, the problem of the industrial utilization of the unlimited iron ore reserves of the KMA came up again. On the initiative of Comrade Stalin, the Gosplan USSR drew up a program for the geological exploration of the KMA. The most prominent scientists of the country, with Academicians Gubkin, Terpigorev, and Arkhangel'skiy at their head, participated in formulating this program, which was endorsed by the Soviet Government at the beginning of 1930.

The work of exploration then proceeded at an unheard of pace, as can be seen from the following: according to the schedule of 1930 to 1931, the drilling of exploration holes was contemplated only for the Staro-Oskol'sk and Shchigrovsk areas, to a total extent of 34,425 linear meters. In addition, geophysical exploration (magnetometric, gravimetric, and seismometric) was contemplated for 8,320 locations, a topographic survey for an area of 2,000 square kilometers, and (by means of a large shaft) the extraction of 50,000 tons of quartzite for purposes of experimentation in ore dressing and in ore smelting. All this stupendous work was supposed to be accomplished within a short time --- not later than July 1932.

Comrade Stalin and the Soviet Government considered the start of industrial mining of the KMA iron ores as a high priority. For the direction of all the projects connected with the KMA, a supervisory council, under the chairmanship of Ivan Mikhaylovich Gubkin, was set up under the jurisdiction of the Council of Labor and Defense. All research and exploration was put into the hands of the most important scientific institutes, and all the drilling operations involved -- into the hands of the Leningrad Drilling Trust.

Subsequently, the volume of exploration work was increased. After the discovery of high-grade ores, the sinking of a mine shaft was begun.

A special trust known as "KMAstroy", with the assignment to concentrate on the work of sinking a shaft and extracting KMA ores, was set up in 1932 at Staro-Oskol, in addition to the exploration trust. The project for a great metallurgical combine began to take shape at approximately the same time.

During the period 1931-1932, the KMA exploration work was far ahead of what was contemplated by the plan. Geophysical observations were taken at 56,000 points, and an area of more than 2,500 square kilometers was covered by detailed prospecting. The drillers were not lagging behind the geophysicists -- they succeeded in drilling 3,500 linear meters of test holes in excess of the contemplated quota. Their work was hugely successful: as early as February 1931, they discovered iron ores in one of the

test holes of the Korobkovo formation, similar to the ores encountered in the area of Krivorog, with an iron content up to 65 percent. Subsequently, such ores were discovered also in other sections.

The results of the investigations indicated that the Stero-Oskol formation contained high-grade ores at relatively shallow depths. All the work, therefore, was basically concentrated in this section and discontinued at Shchiguy. Incidentally, the territory of the Novo-Oskol area was also partly embraced by the work of exploration.

On the initiative of Comrade Stalin, in 1932, our Government made a special decision with reference to the extraction of the KMA iron ore on an industrial scale. The People's Commissariat of Heavy Industry was instructed to construct principal shafts at the Korobkovo sector and to start on the construction of a powerful TsES at the mine imeni Academician I. M. Gubkin.

Experimental shaft No 1 was sunk at the Korobkovo sector. In 1934, the work of sinking a second shaft began. However, the enemies of the people, the minions of Pyatakov, who at that time were influential in the People's Commissariat of Heavy Industry, spared no effort in order to detract from the importance of the richest KMA iron ore deposits and in order to sabotage their industrial utilization. These enemies of the people took advantage of the fact that some quicksands existed in the mining area. This should have demanded a careful hydrogeological investigation



before proceeding with mining operations, but the enemies of the people continued their sabotage; as a result, the mining development proceeded at random and without adequate preparation, and the crosscut connecting the two above-mentioned shafts cut into the bed of an ancient river which was running through the quartzites.

An accident occurred in 1936: during the work of driving the crosscut tunnel, the quicksands broke through, and the shaft was flooded. Following this disaster, the enemies of the people created the myth about the supposedly complex stratification of the iron ores in the KMA rendering mining operation practically impossible, what with the quicksands constantly inundating the shafts. The underlying idea in the minds of the enemies of the people was to prevent the creation of a new metallurgical base and cause the maximum damage to the Soviet Union as a whole.

The delay on the Kursk magnetic anomaly<sup>y</sup> lasted for three years until, in 1939, at the XVIII Congress of the Communist Party, Vyacheslav Mikhaylovich Molotov rose up and said:

"In discussing the third Five-Year Plan, the problem of the Kursk magnetic anomaly and of creating in the latter area an industrial metallurgical base was discussed in earnest. The wreckers have done much in order to delay the necessary action. The time is here to correct the results of sabotage, embark in earnest upon the development of the iron ore and upon the creation of a metallurgical base in the area of the KMA. This en-

terprise is pregnant with great possibilities in relation to the problems of the development of the metallurgical industry in the USSR." (XVIII Congress of the VKP(b); Stenographic Report, page 495; Gospolitizdat, 1939).

In the resolution of the XVIII Congress of the VKP(b) pertaining to the above, the tasks necessary for the mastering of the KMA were clearly put forth:

"To embark upon the construction of mine shafts in the area of the Kursk magnetic anomaly as a supplementary ferrous metallurgy base of the Center, and to accomplish all the necessary preparatory measures for the construction of a metallurgical plant in the above area of the KMA." (From the same stenographic report).

Activities at the KMA began with renewed vigor. Hundreds of miners who had been previously working in the area returned for the construction job on hand. Also, engineers and technicians with extensive experience in shaft construction arrived at the area.

Toward the end of 1940, two shafts, cutting into the ore-body and connected by horizontal crosscuts, were completed. During the same year, the first lot of iron ore from the KMA was shipped to the Stalino Metallurgical Plant. A test smelting proved the ore to be of a very high grade. All the contemplated development of the mines was 80 percent complete: the main shaft,

the mine stockyard, the main haulage tunnel were ready, and preparations for full-scale mining operations were in full swing.

A town-settlement <sup>named</sup> I. M. Gubkin, with numerous administrative and housing facilities, a hospital, a school, two clubs, two libraries, a park for culture and rest, a powerful radio station, and other cultural institutions developed. This already well-organized town was slated to become a great industrial center.

An electric power plant, compressor and pumping stations were installed underground, and mechanical repair shops and other necessary structures were erected and equipped on the surface. A special railroad line running from Starooskol to the mine, a distance of 23 kilometers, was built.

Prior to the outbreak of the war, 45,000 tons of iron ore and quartzite were extracted. According to plan, regular operations were to start in 1942.

However, with the Fatherland war, all the operations of KMA were discontinued, and all the equipment evacuated further into the interior, to the Urals.

The Hitlerite bandits destroyed in a barbaric manner all that was created over a period of many years by the painstaking labor of our people. All the surface structures were leveled to the ground; all the underground works were flooded. Only gaping ruins remained where once stood the power plant, the compressor

installation, and other structures. Around the headframes of shafts No 1 and No 2 there was nothing but wreckage. In the place of the power house, the elevator machinery buildings, and the auxiliary buildings were gaping black holes. According to rough estimates, the damage sustained by the KMA because of the German invasion amounted to 137 million rubles.

However, the black days of the German occupation are a thing of the past. The gallant Soviet Army has expelled the Hitlerites from the soil of the Kursk area.

In accordance with the assignment of the Regional Committee of the Party, the restoration work in the KMA mines began immediately upon liberation. The Regional Committee of the VKP (c) made special decisions with relation to reconstruction.

Again, the miners were returning to the KMA, and the town imeni Academician I. M. Gubkin came back to life. Beginning with 1945, the collective of the "KMAstroy" Trust began the work of restoration on a large scale. The conditions under which the people were obliged to labor were extremely difficult, what with the lack of construction machinery and structural materials. However, the enthusiasm of the miners overcame all obstacles. They restored a considerable part of the housing facilities, the school, the hospital, the nursery and kindergarten, the club, the cinema. A temporary electric power installation supplied the minimum requirements, and some auxiliary operations began.

The law relating to the Five-Year Plan for the restoration

and development of the national economy of the USSR in 1946-1950 anticipates the organization of iron ore mining in the KMA area, with the additional accumulation of industrial ore reserves for the metallurgical plant that is contemplated for the future.

During 1946-1947, the Soviet Government assisted the "KMAstroy" by making available to them a variety of machinery, equipment, and materials. At the present time, two powerful electric power pumps have been installed at the mine, opening the possibility for pumping the water out of the inundated mine. This job was completed by August 1947. With access to the ore re-established, the restoration of the underground passages began.

The Soviet Government is giving much attention to the development of the KMA, as reflected in the 1948 budget appropriation, which was 10 times greater than that of 1947.

In the process of developing the KMA, very complex engineering problems will have to be solved, the principal one being the selection of proper mining methods. A special Commission of the Gosplan USSR, consisting of the most prominent scientists of the country, is charged with the solution of this problem.

Considerable preparatory work will have to be done at the Lebedinsk Mine. In order to begin mining operations there, it will be necessary to remove over 26 million cubic meters of overburden, which at the present time is covering the orebody. This will call for a concentration of huge quantities of machinery at

at that section and the organization of numerous auxiliary operations. The developmental work at the Lebedinsk Mine calls for tens of millions of bricks, thousands of tons of metal structures, and other materials.

A new, well-organized mining town is growing up around the mine. The construction of a great number of dwellings and cultural institutions is contemplated. The KMA can provide all the raw materials for the metallurgical plants of the Donbass and the Moscow areas. The distance between Staryy Oskol and the Donbass metallurgical plants is shorter than the distance between the latter and Krivoy Rog. Thus, empty railroad coal cars returning from Moscow and other central areas to Donbass can be usefully loaded with iron ore from the KMA. This would effect considerable economy in transportation and make for higher efficiency in the utilization of the rolling stock tonnage.

In addition to the inexhaustible reserves of magnetic quartzites and high-grade iron ores of the KMA, deposited during the earliest geological eras and therefore stratified at substantial depths, younger and relatively recent formations of non-magnetic iron ores are encountered in the Kursk oblast at rather shallow levels.

The Ivnyansk iron ore deposits lying close to the KMA hold great possibilities. As early as the beginning of the century, the mining engineer I. R. Robetskiy discovered great ore-bearing areas. These deposits occupy the northern slope of the



watershed between the Psel and Vorskla rivers. The Ivnya River divides the ore deposit into two parts: the western and the eastern deposits.

The industrial exploitation of the Ivnyansk orebody poses no difficult problems. Open-pit mining can be done here, and the smelting of the ore can be accomplished on local fuel: peat coke. Thus, the Ivnyansk Mine (or mines) could become in the future an important auxiliary raw-material base for the metallurgical plant (or metallurgical plants) of the Kursk magnetic anomaly.

Usually, when the Kursk magnetic anomaly<sup>y</sup> is mentioned, it is the stupendous iron deposits that come to one's mind. However, great amounts of valuable non-metallic minerals also occur throughout the KMA area. This creates very favorable conditions for the creation of a great industrial center, where, provided with local raw materials, metal-working, chemical, and coal plants, and also plants for the manufacture of various building materials can be established.

The Soviet scientist, Academician P. I. Stepanov, maintained that the southern part of the Kursk oblast is a sort of continuation of the Donbass, a component part of the so-called Greater Donbass. In the opinion of Academician Stepanov, it is imperative to continue under forced draught the study of the possibilities of the Greater Donbass that had their inception prior to the war. First of all, it is necessary to determine the propagation boun-

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daries of carboniferous areas of the Donbass, and also the possible petroleum-bearing and gas-bearing characteristics of these areas.

Coal deposits and coal formations may be encountered in the southern part of the Kursk oblast, as was confirmed by exploration conducted in 1932-1940. In addition to regular deposits, mixed deposits of coal and lignite of a more recent origin are present at shallow depths. It is a matter of record that lumps of coal have frequently been picked up by local inhabitants in the area of Staryy Oskol and other areas as well.

The electric power base of the KMA industries can <sup>not</sup> operate ~~only~~ only on coal. It is clear that, as already pointed out by Vladimir Il'yich Lenin, the nearby peat bogs will have to be utilized for the fueling of the great power plants of the area. The experience of many years of fueling a number of large power plants in the Moscow area with peat indicates that peat is an excellent fuel. As is known, there is an abundance of peat bogs in the Kursk oblast.

Thus the KMA area is favorably situated with relation to fuel. There is no doubt that new carboniferous deposits will be discovered in the near future.

Refractory products, particularly Dinas bricks, are a very necessary material for the metallurgical industry. The KMA plants will not only have a plentiful local supply of these, but will be

in a position to ship the bricks elsewhere. Plentiful deposits of quartzite sandstone, a good raw material for refractory purposes, were discovered long ago at shallow depths in the Kornevsk, Rye'sk, and Skorodnyznsr areas. Substantial deposits of refractory clays are known to exist at Shchigrovo and other areas.

Now it becomes clear that a new branch of industry -- the manufacture of building materials -- may be established in the KMA area. Practically every zone of the area has abundant possibilities for the construction of brick- and tile-manufacturing plants.

The use of tripoline clays in the manufacture of heat-insulation materials, cement, fibrolite plates, etc, is widespread. In three districts alone -- Kursk, Kastornensk, and Skorodnyansk -- reserves amounting to millions of cubic meters of such clays have been discovered. Thus, the KMA area has all the possibilities for a powerful and variegated building-material industry.

The most abundant variety of metallic and non-metallic natural resources of the KMA makes this area a potential base for the development of a powerful heavy industry.

The Soviet people, successfully accomplishing today their plans of yesterday, are capable of thinking in terms of broad perspectives. Within the next 10 to 15 years, a visitor to the KMA area will have the following majestic vista unfold before his very eyes.

The fires and lights of new cities will catch his eye with their bright glow from a distance of many kilometers. At night the flames of the gigantic blast furnaces of the Metallurgical Combine will illuminate the skies. The outlines of numerous structures will loom clearly out of the darkness, and, reaching for the firmament, plant and factory stacks will stand as towering beacons at the gateways of the new cities.

And here is the very heart of the KMA -- the Metallurgical Combine -- distributing its structural frames, blast furnaces, and open-hearth furnaces over a vast area (perhaps by that time somewhere nearby a second metallurgical plant will appear on the horizon). The KMA iron ore will flow in a continuous, copious stream, turning into cast iron and steel in the giant blast and open-hearth furnaces. The steel will be designated "KMA" in honor of the Kursk magnetic anomaly. Nearby will be seen the long enclosure of the steel-rolling mills receding into the distance. Mighty rolling and blooming mills will transform the mass ingots into rails and other needed profiles and shapes.

The KMA cast iron and steel will be shipped to the various plants throughout the country, but a considerable part of it will be consumed within the area, going to the machine-building plants nearby. A giant boiler-making plant will produce remarkably powerful boilers. A storage battery plant will make completely new-type storage batteries which will be used throughout the land. A

special new machine-building plant and a plant for the manufacture of mining equipment will service the needs of the KMA operations by building machinery and equipment for the mines and the shafts of the KMA. The electric motor plant will ship portable motor-generator sets to all parts of the land.

In the cities, which do not exist as yet, mighty installations of the metal-working industry will grow, and a variety of machinery and equipment built from KMA metal will flow into the cities and the villages of the motherland.

Not too far from the blast and open-hearth furnaces of the Staro-Oskol Combine rise the long batteries of the gigantic coke-ovens. The waste products of the metallurgical and the coal-tar chemical industries will furnish valuable raw materials for a number of chemical plants. In addition, large chemical plants will operate at Shchigry or at other locations where deposits of phosphate rock exist. Based on the local supply of raw materials, the production of paints and other valuable organic products will be established, as well as the manufacture of building materials such as brick, tile, glass, refractory and heat-insulating products, porcelain and glazed earthenware products, products of sanitary engineering, and the like.

In the early developmental stages all these products will satisfy the needs of the cities and the manufacturing requirements of the KMA area only, but subsequently they will be shipped to other areas of the Soviet Union as well.

Plant buildings and plant stacks in the KMA area will alternate with many shaft and mine structures. Iron ores and quartzite concentrates will follow in echelons from the Lebedinsk, Gubkin, and other mines to the Donbass, Lipetsk, and Tula, where cast-iron will be smelted and steel will be made from the KMA ores.

The industrial development of KMA iron ore deposits, the construction of metallurgical plants and coal mines, the electrification of the agricultural areas will induce the construction of area power plants of great capacities.

Along with all this, the continuous flow of railway freight in the form of metal, coal, iron ore, building materials, electrical products, rubber and technical goods, local light-industry and agricultural products will lead to the electrification of the Moscow-Kursk and Donbass railroads. Mighty power plants and high-tension electric power transmission lines will be built.

The electrification of the entire economy can be accomplished through the construction of hydroelectric power plants on the basis of the utilization of the water power of the current of the upper Don, with the transmission of the power over high-tension lines to the mines and the metallurgical plants of the KMA. The thorough knowledge gained in developing the KMA will accelerate the solution of the entire problem, will make it possible to undertake<sup>g</sup> and all-round study and exploration of the overall



mineral resources of the Kursk oblast. Here, note should be made of the fact that the exploration at the L'gov and Yastrebov ore deposits proved the complete absence of quicksands over the orebody.

The existence of the Kursk magnetic anomaly was known to the Czarist autocracy for over 150 years, yet, under the conditions of the bureaucracy then obtaining -- conditions of stagnancy and technical backwardness -- an all-embracing study of these natural resources was impossible.

Only the Party of Lenin and Stalin and the Soviet Government inaugurated scientific and practical projects for the purpose of mastering this problem.

Only because of the advent of Soviet power, the material resources of society became the property of the people and were transformed from a means of enslaving the masses into a source of raising the welfare and the cultural standards of the toilers.

It is a known fact that the problem of the KMA, by its importance, by the volume of projects involved, by the complexity of the scientific and engineering solutions entailed, and by the perspectives of future industrial growth is unequalled by anything the world has seen.

The selection of the proper method of mining will play a decisive part in the solution of this problem.

The important job of selecting and introducing the proper mining methods is the joint responsibility of the previously-existing collective of the KMA shafts and the newly-organized Kursk Scientific and Research Institute, which is to coordinate all the works of exploration and development pertaining to the Kursk magnetic anomaly.

In addition to the above, a special KMA supervisory committee is being established under the jurisdiction of the Gosplan USSR.

The huge volume of projects connected with the construction of the metallurgical plant and KMA shafts will require the organization of a special Mining and Metallurgical Design Bureau.

It is only natural that the overall construction involved in the development of the KMA will call for tens of thousands of highly-skilled workers, hundreds of engineers, technicians, and production chiefs. This will call for the creation of special construction institutes and combines.

The time is near at hand when the industrial, agricultural, and welfare needs of the population of this area will be fulfilled with the people's own natural gas from their own coal, shales, and peat.

Around the future cities of the KMA, agricultural development will become more intensive. Sovkhozos and kolkhozos will provide the growing population with bread, vegetables, meat, and

fruit. And the well-known glory of the districts of Kursk, Belgorod, and Oboyan' -- famous for their wonderful "antonov" apples -- will be further propagated and enhanced by additional thousands of hectares of new orchards, plus protective forestation strips.

The picture we paint is fully realistic. The great complex of natural resources will permit the creation in the KMA area of a new industrial center of our motherland in the shortest possible time. The mastering of the inexhaustible riches of the Kursk magnetic anomaly will greatly affect the economic life of the Kursk and adjacent oblasts, and transform these into areas of heavy industry.

Comrade Stalin, our Bolshevik Party, and the Soviet Government all are devoting much attention to the Kursk magnetic anomaly, considering it a problem of the greatest importance to the State.

END