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THE DAWN OF HUMAN GENETICS

V.V. Babkov

Translated from the Russian by Victor Fet
Edited by James Schwartz



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THE DAWN OF HUMAN GENETICS

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Introduction

by James Schwartz

THE DEVELOPMENT OF MEDICAL GENETICS, and more generally human genetics, in the West suffered greatly from its too close association with eugenics. More progressive doctors, who would have been needed to advance the field, were put off by the racism and xenophobia of eugenics and were given almost no training in the complexities of the then new science of genetics. However, in Russia, the initial euphoria of the Bolshevik leaders for a new socialist society to be populated by a new kind of socialist Man, combined with a commitment to a truly universal health care system, gave a huge boost to the emergence of both the eugenic and medical aspects of human genetics. The obstacles that proved so formidable to the successful launch of the field in the West—the lack of available data on the genealogy of diseases in families, the difficulty in getting a statistically significant number of identical twins to study, and the skepticism of the medical establishment—were all swept aside in the Soviet Union. In the 1920s, under the stewardship of the charismatic and gifted biologist Nikolai Koltsov, the groundwork was laid for a uniquely Russian approach to medical genetics, and by the early 1930s the physician–geneticist Solomon Levit was able to build the well-funded, extensively and expertly staffed Medical-Biological Institute (MBI) (later renamed the Medical Genetics Institute) into the world’s leading center for the study of the genetic basis of many diseases and human genetics in general. The immense success of the movement, which is little known even to Russians, is brought to life in V.V. Babkov’s *The Dawn of Human Genetics*, as is its dramatic and violent end, which resulted in the “liquidation” of many of the country’s finest biologists, as well as a major setback to the development of world science. Like many other promising ideas and projects that were born in the Soviet Union, this one was abruptly truncated and then virtually eradicated.

This book, which was V.V. Babkov’s last before his untimely death in Moscow in 2006, was his most ambitious work. The text consists of many of the original texts—articles, letters, and other documents—from the 1920s and ’30s, as well as a series of short interpretative essays by Babkov himself, which serve as explications and interpretations of the primary source material. The final chapter of the book features some of the few remaining geneticists in the post-Stalin era. Of special interest is a remarkable and, as far as I know, never-before-translated essay on the origin of altruism by the great scientist and humanist V.P. Efroimson, which was written at the same time that the sociobiology movement was coming into its own in America and England. In contrast with the

sociobiologists, with their emphasis on the warlike, aggressive, and individualistic nature of mankind, Efroimson argues that man is born with an innate sense of justice, humanness, and kindness, as well as a passion for knowledge.

Babkov is an unapologetic champion of the style of historical writing that views the scientist as a Romantic hero (or villain) and attributes great significance to the actions of a select group of highly energetic, charismatic leaders. In that sense, he was a Russian of the old school—passionate, intuitive, intensely opinionated, interested in the big sweep of ideas and less in the details, and occasionally giving himself over to mysticism. The son of a decorated air force general who shot down 23 Nazi planes during World War II, Babkov grew up in a privileged milieu. Unlike many of his colleagues, who still hardly dare to deviate from a catalog of places, titles, and dates, Babkov was unafraid to leap to conclusions about people and events. It was for this reason that I was immediately attracted to his writing, which presents a quite novel picture of the birth and destruction of human genetics in the Soviet Union, as well as a great deal of the primary source material that will allow the reader to come to his or her own conclusions.

It is perhaps not surprising that this historian of the Romantic school devoted a large part of his career to the most romantic of Russian biologists, N.K. Koltsov, who is, along with Solomon Levit, at the center of this book. Koltsov's articles and Babkov's writing about him take up no less than a quarter of the book, and most of the rest concerns Koltsov's disciples and their writings. Koltsov was a hugely productive scientist and organizer of scientific projects. In the tumultuous summer of 1917, which was characterized by wild experimentation in art and science, Koltsov founded the Institute of Experimental Biology (IEB). The first center for new biological research in the country, the IEB encompassed a huge diversity of disciplines, including genetics, cytology, embryology, hydrobiology, physicochemical biology, endocrinology, and neurobiology.

Koltsov's interests spanned the gamut of modern biology, ranging from the structure of molecules—he predicted several key features of the hereditary molecule, which would later be borne out by the structure of DNA—to the anatomy of the cell (advancing the idea of the existence of a cytoskeleton), to evolution and population genetics. He had command of the latest findings in physiology, endocrinology, and neurobiology, as well as the recent developments in animal psychology. In addition, Koltsov had a great passion for human biology and eugenics, and it is this aspect of his career that Babkov's book focuses on. In 1921, Koltsov expanded his efforts in this direction by forming the Russian Eugenics Society (REO), along with the *Russian Eugenics Journal*, which published seven multi-issue volumes over the next nine years. Koltsov was himself a prolific contributor to this journal, and Babkov has included four of his weighty papers from the period 1922–1926 in Chapter 2, as well as the tables of contents of all seven volumes of the journal.

Although the mood of the country and official policy took a wrenching turn at the end of the decade, there was a palpable sense of promise and possibility, of a “New World” and a “New Man,” in the early 1920s. The quick development of Koltsov's Institute and the Eugenics Society were greatly facilitated by his friendship with N.A. Semashko, the Commissar of Health (head of the NKZ), who had briefly taken over the Institute when Koltsov was arrested for his role in the Tactical Center Affair, an anti-Bolshevik movement undertaken by disillusioned members of the “intelligentsia.” Although Lenin spared Koltsov, he was no fan of the liberal intelligentsia, as he made clear in his reply to

the already famous Maxim Gorky, who had written an appeal on Koltsov's behalf. "The intellectual powers of workers and peasants are growing and get stronger in the fight to overcome the bourgeoisie and their supporters, the intelligentsia, the lackeys of capital, who imagine themselves the brain of the nation," he wrote, adding with terse acerbity: "Actually this is not a brain, but shit."¹ It was only the timely intervention of Gorky and Semashko that won Koltsov's reprieve the night before he was to face a firing squad. Ever the scientist, Koltsov had written a paper on the physiological changes of prisoners sentenced to death entitled, "About Weight Change of a Human in a State of Unstable Equilibrium."

Like his hero, Francis Galton (Charles Darwin's cousin and the founder of modern eugenics), Koltsov saw no reason why humans could not be bred for particular traits in exactly the same way that animals and plants were. In the fall of 1921, he gave an address to the newly formed Russian Eugenics Society, which appeared later that year as the lead article in Volume 1, Issue 1, of the new *Russian Eugenics Journal* (see Chapter 2, p. 87), an article that would haunt him in future years. In it, he described a vivid thought experiment illustrating the power of breeding. Borrowing from H.G. Wells, Koltsov imagined the invasion of a group of super-intelligent Martians who treated humans exactly as they treated their farm animals and household pets. People would be suitably "domesticated" just as dogs had been made from wolves. Independent-minded, rebellious types would quickly be eliminated, while large, docile breeders would be chosen to create a strong, compliant workforce. Other people with fine motor control would be selected to create a class of craftsmen, and special races of the most beautiful—to the Martian taste—would be created. "In as little time as a century," he wrote, there would be "endless individual races of domesticated people as sharply distinct from one another as a pug or a lapdog is from a Great Dane or St. Bernard" (p. 71). Had the laws of Mendel been known to Russian landowners or to American slave owners in the previous century, he continued, they could have accomplished the same ends by means of breeding their serfs and slaves. However, Koltsov believed that the right to choose one's spouse was a "precious freedom"—one that mankind would never willingly relinquish.

It was just this precious freedom that Koltsov's disciple A.S. Serebrovsky and the expatriate American geneticist H.J. Muller, who was one of the principal architects of the modern chromosome theory, would propose to revoke a decade later, and their suggestions would set off a cascade of horrible events. But this comes later in the history and in Babkov's book as well. For Koltsov's 1921 speech was given in the first months of Lenin's New Economic Policy, following three years of "real communism" during which the government had requisitioned all produce, resulting in the virtual disappearance of food in the cities. Moscovites were eating horses and cats. In the wake of this wholesale confiscation, Lenin's new policy was meant to encourage individual enterprise, and Koltsov's genetic theory was perfectly consonant with the new economic theory. According to Koltsov, centuries of serfdom had created a dull, passive peasant population, little different from the hereditary slaves that might have been bred by his Martians. Koltsov believed that humanity itself could be divided into two types: *Homo sapiens explorans*, a subspecies characterized by its inborn qualities of enterprise, independence, and

¹ Lenin to Gorky, September 15, 1919.

bravery; and the entirely passive, authority-craving *Homo sapiens inertus*, among whom the long-suffering, highly conservative peasantry was a prime example.

The idea that the best genes resided in the aristocracy was of course unacceptable after the Revolution, as one would have had to praise the fiercely anti-Bolshevik White Army, and even as Koltsov and his fellow members of the Russian Eugenics Society were writing, the aristocrats and bourgeois classes were being eliminated. It was safe, however, to reach back to the Decembrist uprising of 1825, which was led by Russian army officers against Tsar Nicholas I, to show that these officers were richly endowed with genes for activity, bravery, and intelligence, and to trace their origin and mode of inheritance. Likewise, it was still acceptable to focus on the old nobility, and Babkov includes a representative sample of genealogical studies of Russia's most celebrated aristocratic families, including the Tolstoy, Pushkins, and Trubetskoys, attempting to find patterns in the inheritance of their special talents (see Chapter 5). An essay on Dostoevsky by M.V. Volotsky, who worked for a time in Koltsov's Institute, is an example of an early, and maybe the first, study of epilepsy informed by genetics. Koltsov himself wrote a genealogical study of the Darwin and Galton family. In a separate chapter, Babkov includes a contemporary study of the "Criminality of Jews," which found criminality of all types to be less prevalent among Jews than among Christians (see Chapter 4), and the table of contents of an entire journal devoted to the study of the constitutional makeup and diseases of Jews (pp. 301–305).

Unlike the aristocracy, the *vydvizhentsy* were an entirely uncontroversial subject for study. By the 1920s the word had come to describe those who opportunistically pushed their way into positions of power in the Communist Party, but Koltsov meant it in an older sense. For him, the *vydvizhentsy* referred to those of humble origins who had sufficient inborn ambition, drive, and intelligence to make "great men" of themselves—people so overflowing with energy and talent that no external obstacle could prevent them from achieving their creative goals and advancing to the highest levels of society. In fact, Koltsov might just as well have used his own story to illustrate the point. As he described in his 1924 article in the *Russian Eugenics Journal* (Chapter 2, p. 96), the new class of scientist and merchant must be uncommonly endowed with genes for creative capacity and the "will for power," which enable them to organize others, as well as genes for "propagandizing." These genes, he added, were most likely dominant, and without the ability to promote one's ideas a scientist's "labor was wasted" (p. 99). Ruling over the immensely influential IEB and REO, each of which turned out reams of impressive work, Koltsov was certainly an exemplar of the active type, but Koltsov's longtime friend Maxim Gorky was an even more perfect example of the *vydvizhensty*, and Gorky's family was the main subject of Koltsov's 1926 study, "Genealogies of Our *Vydvizhentsy*" (Chapter 2, p. 152). Because Gorky's relatives were all indisputably working-class—a family of drunks, storytellers, savants, and miscreants—it was politically acceptable to talk about the origin of Gorky's inborn traits, the unique "availability of neuron-rich cortex strata" that Koltsov believed accounted for the creativity of the writer or poet (p. 178).

After Lenin's death in 1924, Russian eugenics continued to grow and prosper for the next five years. Complementing the work of Koltsov, the geneticist–statistician Yu.A. Filipchenko, who had formed his own eugenics society with its own journal in Petrograd (soon to be renamed Leningrad) in the early '20s, embarked on his most ambitious eugenical work in 1925. Taking inspiration from Francis Galton's book-length study *English Men of Science*, Filipchenko did a careful statistical study of the members of the

Russian Academy of Sciences. Meticulously, he documented the achievements of close relatives of >80 members of the Academy. Like Galton before him, he erroneously concluded that the fact that close relatives of brilliant men were also brilliant proved that scholars were born and not made, glossing over the obvious objection that it might have been the special benefits that accrue to the family members of celebrated scholars rather than their great brains that accounted for their exceptional level of accomplishment. Nonetheless, Filipchenko's studies were taken seriously, and he was put in charge of dividing all researchers into five groups, ranking them according to the level of their inborn talent for the Central Commission on Improvement of Scholars' Lives (TsEKUBU). The greater your inborn talent, the greater the benefits you received.

Over the subsequent years Koltsov and his collaborators at the REO continued to argue the case for genetic determination of human psychology, diseases, and other characteristics. Koltsov was deeply impressed by the purely mechanistic approach to neurophysiology being developed by I.P. Pavlov, who banned all references to thoughts, desires, memories, and emotions in his lab in favor of his famous conditional and unconditional reflex arcs. In his "Genetic Analysis of the Psychological Features of Man" (Chapter 2, p. 87), Koltsov applied his expertise in microscopic anatomy to make the case that although "conditional reflexes" were obviously not inherited, the ability to lay down such reflexes and the rate of their formation were (p. 112). At the same time, Koltsov was interested in subjective psychology, speculating that the ancient classification of temperament into four types—choleric, sanguine, phlegmatic, and melancholic—could be correlated with the activity of the thyroid gland or the gonads. Although conceding that the *expression* of genotype depended on random environmental conditions, he believed that it was nonetheless possible to define "constitutional types." Temperament he considered to be a purely zoological feature, and expressions such as "timid as a rabbit" or "brave as a lion" could be taken literally. Thus, it was possible in principle to dissect personality into units that were inherited as genes.

Perhaps most importantly from a contemporary perspective, Koltsov also initiated a wide-ranging study of what he called "racial pathology," which focused on the many isolated populations of the Caucasus that had been virtually untouched for centuries, with the goal of looking for higher incidences of specific diseases that could then be analyzed genetically. The concepts of what would come to be called population genetics had recently been developed by the brilliant geneticist Sergei Chetverikov, who had been profoundly affected by his exposure to *Drosophila* genetics, which had been introduced to Koltsov's group by a highly energetic and idealistic Muller in a whirlwind tour of the Soviet Union in the summer of 1922.

This interest in studying isolated populations in order to find disease genes was picked up by the young physician-geneticist Solomon Levit. Levit was born in a shtetl in Lithuania and was the first member of his family to receive a formal education. Although many scientists—even the most left-leaning among them—avoided joining the Communist party, it provided a quick means to advance in society for a poor Jew from the hinterlands. As a teenager, Levit had joined the Bund, the most leftist of the Jewish parties in the Jewish Pale, and later he joined the Bolshevik faction of the RSDRP. Levit entered Moscow University medical school in 1916. Shortly after the Bolsheviks seized power in October 1917, he served briefly as a medic in the Red Army until he was struck with typhus and allowed to return to his medical studies. After the Civil War ended in 1921, Levit returned

to his native village in Lithuania to be married. Although he would have been well-advised to emigrate to the West as had many Jews from similar backgrounds, Levit chose instead to return to Soviet Russia with his bride. For him, the Communist Party was a new religion, and he had an almost messianic fervor about it. In the prime of his life he would be richly rewarded for his loyalty to the Bolshevik cause, and subsequently, as was the norm under Stalin, cruelly punished for it.

A devoted Party member, Levit would have had good reason to believe that he was acting in accord with Stalin's famous injunction in December 1929 to elevate practice over theory (p. 541). For he was vigorously advocating a new medical genetics, a field that would apply the new insights of the chromosome theory and Mendelism to the practice of medicine. As a founding member of the Society for Study of Racial Pathology and Geographic Distribution of Diseases and the head of the Laboratory of Human Heredity and Constitution at the Medical-Biological Institute in Moscow, Levit had initiated field studies of local populations; twin studies, nonidentical and identical; and the collection of genealogies. In addition, he began to compile data on the human chromosomes with the eventual goal of creating a map of the complete set of chromosomes, as well as genetic data on the inheritance of various diseases.

In 1929, the first volume of the Laboratory's works was published, which included Levit's visionary article, "Genetics and Pathology (in Relation to the Current Crisis in Medicine)" (Chapter 8, p. 552). In this article, Levit pointed out that genetics would play a key role in understanding purely internal diseases—what he termed "constitutional diseases"—including many forms of cancer, but also in illuminating a patient's predisposition to diseases triggered by specific pathogens (like tuberculosis) and in understanding susceptibility to paratyphoid diseases (diseases caused by infections, traumas, etc.). With the zeal of a recent convert, Levit trumpeted the role of heredity, proudly proclaiming: "We put an end to simplified ideas about the almighty role of the environment, for which an organism is a kind of an amorphous mass that is able to change in any direction." Others might have been more cautious about going against Soviet orthodoxy, which sanctified the role of the environment in disease, learning, and heredity itself, but for Levit, who was firmly convinced that in the end science would trump ideology, such unambiguous and direct statements were second nature. Until the very end he could not believe that he would be punished for the clear-sighted and groundbreaking new science that he was creating.

In particular, Levit had already begun gathering all available information on the mode of inheritance—whether recessive or dominant, sex-linked or autosomal—for diseases that ran in families. Such data, he pointed out, could immediately be used clinically to distinguish between two different diseases that presented with the same symptoms. Based on his own findings, it was already clear that there were at least two different forms of hemophilia—the classical sex-linked version and another that was autosomal dominant. Furthermore, Levit predicted that a time would come when it would be possible to determine the linkage of a disease gene to other traits, and to map its exact location, as well as to find other contributing genes—so-called modifiers—that influenced the primary gene's expression. When this happened, he said, clinical differentiation would be put on a solid scientific foundation. This possibility had been pointed out by H.J. Muller in a remarkable paper that occupied an entire issue of the *Journal of Genetics* in 1920. In that paper, which was based on work he had done as a graduate student at Columbia, Muller had shown that it was possible to map complex traits by locating both the master

gene for a particular mutant phenotype (truncate wings) and the associated modifier genes to specific chromosomes in *Drosophila*. Eighty years later, with the advent of genome-wide association studies, Levit's dream of finding the genes that contribute to complex human diseases would begin to be realized.

Around the time that Levit published his foundational article, there was an abrupt change of mood in the Soviet Union. In several chapters Babkov spells out the ways in which the advent of the Five-Year Plans in 1929 and the push for industrialization marked the beginning of a new relationship between the state and science. The liberal-minded commissars of health and education, Nikolai Semashko and Anatoly Lunacharsky, were removed, and the leading geneticist at the IEB, Sergei Chetverikov, was arrested and exiled. Koltsov was accused of leading "a reactionary-party biology," and his past writing was subjected to analysis by a brigade of ideologues, including the notorious Lysenko crony I.I. Prezent, who found that Koltsov was conspiring to import the conclusions of Fascist eugenics into Russia. Even Koltsov's finest and least controversial work on the distribution of blood types was criticized as Fascist.

Among the younger generation, the Koltsov protégé A.S. Serebrovsky was singled out for attack for his zealous advocacy of eugenics. In his 1929 article, "Anthropogenetics and Eugenics in a Socialist Society" (Chapter 6, pp. 505–516), which appeared concurrently with Levit's "Genetics and Pathology," Serebrovsky laid out his vision of a new socialist eugenics. He called for the destruction of the traditional family, state child care for all children, and artificial insemination of women by sperm from state-approved donors. The notion that a man could love offspring only if they were products of his own sperm was, in Serebrovsky's view, an entirely artificial construct that followed from the capitalist conception that a wife was a man's property (pp. 513–516). Although equally radical ideas had been embraced in the 1920s, such independent-minded initiatives were no longer welcome. Serebrovsky was severely criticized for overreaching and forced to recant, and in his future writing he put aside his ideas for improving the national "genofond" by means of artificial insemination and stuck to less controversial topics.

In February 1932, Levit, having returned from a yearlong stay in Muller's Texas laboratory on a Rockefeller stipend, found that he had been removed from his position as head of the Medical-Biological Institute and that all of his genetic projects had been suspended. In his absence, the attacks on Koltsov had escalated and a decision had been made to disband the venerable IEB. Once again, it was Maxim Gorky who came to the rescue, hand delivering a letter from Koltsov to Stalin, which was enough to stay the assault. Nevertheless, Koltsov felt it was necessary to divest his institute of its association with human genetics altogether, and he handed off the researchers involved with human genetics as well as their projects to Levit. Six months later, Levit was reinstated as head of the MBI and persuaded the Central Committee to allow him to resume genetic research. His friends warned him that this was suicide, but the indomitable Levit pressed forward.

Over the course of the next four years the MBI, which would be renamed the Maxim Gorky Institute of Medical Genetics (MGI), resumed work on the analysis of the genetics of pathology that Levit had laid out in his 1929 paper. In addition, the twin studies that had been initiated at Koltsov's IEB were greatly expanded, and by the time it was closed in 1937, the MGI was monitoring >1700 twin pairs and overseeing the development of seven pairs of twins in the Institute's twin kindergarten. In the department of cytology, researchers were studying the chromosomal changes associated with leukemia, and

making great strides in characterizing chromosomal irregularities more generally, an effort that would only come to fruition 20 years later in the West.

In the final section of his book, Babkov presents the narrative of events that led to the demise of genetics in the Soviet Union. Among the texts that are reprinted is Muller's letter of July 1936 to Stalin, in which Muller, who was then living in Moscow, argued, as Serebrovsky had before him, for a eugenics program based on the use of artificial insemination by selected donors. It was this letter, Babkov argues, that tipped the balance and persuaded Stalin to liquidate the Soviet genetics program. Although it seems unlikely that Muller could have exerted so large an influence on a matter of such vital interest to the state, it is clear that he and the geneticists had failed to understand how thin was the thread on which the future of genetics hung. Although Muller would escape, Levit, Koltsov, and many of their colleagues were to perish in the upheaval that followed.

For several years Koltsov staved off the final dissolution of his institute. His eugenic writings from the 1920s were resurrected and turned against him, but again and again he refused to renounce his former writings or to recant, insisting that his words were being taken out of context and that the specific criticisms that were being leveled against him were unjustified. When pressed, he continued to insist on the importance of eugenically sound marriages. In the end, Koltsov died of a heart attack under suspicious circumstances in a hotel in Leningrad in December 1940. Ironically, Koltsov's fantasy of the 1920s had been enacted. It was Stalin himself who played the role of the nearly omnipotent Martians, systematically destroying the most independent, active, and rebellious members of society. Regardless of whether these qualities were inborn or the result of education and acculturation, the destruction of these individuals had far-reaching consequences. The fact that the children of these gifted individuals were deprived of nurturing parents, or murdered along with them, or never even conceived had a profound effect on the subsequent generation, and this effect is still felt today, as is the effect of the loss of one of the crowning achievements of Russian science—a brilliantly conceived and highly productive program in medical genetics.

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VICTOR FET
JAMES SCHWARTZ

A Note from the Publisher

WE HAVE OBSERVED CERTAIN CONVENTIONS during translation. Any text we have added that was not in the original Russian book has been enclosed in square brackets. This is the case with many of the figure captions. Any Editor's notes that were added by the translator (rather than by the Editors of the Russian book) are indicated by lettered (rather than numbered) footnotes.

We have left all illustrations at (or very close to) their size in the original Russian book.

Key to Russian Acronyms and Abbreviations

AMN SSSR	<i>Akademiya meditsinskikh nauk Soyuza Sovetskikh Sotsialisticheskikh Respublik</i> Academy of Medical Sciences of the USSR
AN SSSR	<i>Akademiya nauk Soyuza Sovetskikh Sotsialisticheskikh Respublik</i> Academy of Sciences of the USSR
BME	<i>Bolshaya Meditsinskaya Entsiklopedia</i> Big Medical Encyclopedia
GIDUV	<i>Gosudarstvennyi institut usovershenstvovaniya vrachey</i> State Institute for Continuing Education of Doctors
GINZ	<i>Gosudarstvennyi institut narodnogo zdravookhraneniya</i> State Institute of People's Health Care
GPU	<i>Gosudarstvennoye politicheskoye upravlenie</i> State Political Directorate [preceded by VChK; succeeded by OGPU]
GULAG	<i>Gosudarstvennoye upravlenie lagerey</i> Government directorate of camps
IEB	<i>Institut eksperimentalnoy biologii</i> Institute of Experimental Biology
IKP	<i>Institut krasnoy professury</i> Institute of Red Professors
ITL	<i>Ispravitelno-trudovoy lager</i> Reeducational labor camp
KEPS	<i>Komissiya po izucheniyu estestvennykh proizvoditelnykh sil Rossii</i> Commission for the Study of Natural Productive Powers of Russia
Kolkhoz	<i>Kollektivnoe khozyaystvo</i> Collective farm
Komsomol	<i>Kommunisticheskiy soyuz molodezhi</i> The Communist Union of Youth
KPK	<i>Komitet partiynogo kontrolya</i> Committee for Party Control

KPSS	<i>Kommunisticheskaya Partiya Sovetskogo Soyuz</i> Communist Party of the Soviet Union, CPSU [preceded by VKP(b)]
KUBU	see TsEKUBU
MBI	<i>Mediko-biologicheskii institut</i> Medical-Biological Institute
MGI	<i>Mediko-geneticheskii institut</i> Medical Genetics Institute
MGK VKP(b)	<i>Moskovsky gorodskoy komitet Vsesoyznoy Kommunisticheskoy Partii (bolshevikov)</i> Moscow City Committee of the All-Union Communist Party of Bolsheviks
MMI	<i>Moskovskiy meditsinskiy institut</i> Moscow Medical Institute
MOIP	<i>Moskovskoye obshchestvo ispytateley prirody</i> Moscow Society of Naturalists
Narkom	<i>Narodnyi Kommissar</i> People's Commissar [succeeded by Minister]
Narkomat	<i>Narodnyi Kommissariat</i> People's Commissariat [succeeded by Ministry]
Narkomindel	<i>Narodnyi Kommissariat Inostrannykh Del</i> People's Commissariat of Foreign Affairs
Narkompros	<i>Narodnyi Kommissariat Prosveshcheniya</i> People's Commissariat of Enlightenment (Education)
Narkomvnutel (NKVD)	<i>Narodnyi Kommissariat Vnutrennikh Del</i> People's Commissariat of Internal Affairs [preceded by OGPU; succeeded by MGB, MVD, and KGB]
Narkomzdrav (NKZ)	<i>Narodnyi Kommissariat Zdravookhraneniya</i> People's Commissariat of Public Health
Narkomzem	<i>Narodnyi Kommissariat zemledeliya</i> People's Commissariat of Agriculture
NII	<i>Nauchno-issledovatel'skiy institut</i> Scientific research institute
OBM	<i>Obshchestvo biologov-materialistov</i> Society of Materialist Biologists
OGPU	<i>Obyedinyonnoe gosudarstvennoe politicheskoe upravlenie</i> Unified State Political Directorate [preceded by GPU, succeeded by NKVD]
OLEAE	<i>Obshchestvo lyubiteley yestestvoznaniya, arkheologii i etnografii</i> Society of Naturalists, Archeologists, and Ethnographers
ORP	<i>Obshchestvo po izucheniyu rasovoi patologii i geograficheskogo rasprostraneniya boleznei</i> Society for the Study of Racial Pathology and Geographic Distribution of Diseases

Politbyuro (PB)	<i>Politicheskoye byuro [of CC]</i> Political Bureau
RAN	<i>Rossiyskaya Akademiya Nauk</i> Russian Academy of Sciences [succeeded by the Academy of Sciences of the USSR in 1922; name returned to RAN in 1992]
REO	<i>Russkoe evgenicheskoe obshchestvo</i> Russian Eugenics Society
RGALI	<i>Rossiyskiy gosudarstvennyi arkhiv literatury i iskusstva</i> Russian State Archive of Literature and Art
RGASPI	<i>Rossiyskiy gosudarstvennyi arkhiv sotsialno-politicheskoy istorii</i> Russian State Archive of Social-Political History
RISO	<i>Redaktsionno-izdatelskiy sovet</i> Editorial and Publishing Council
RKP(b)	<i>Rossiyskaya Kommunisticheskaya Partiya (bolshevikov)</i> [succeeded by VKP(b)]
RSDRP	<i>Rossiyskaya sotsial-demokraticheskaya rabochaya partiya</i> Russian Socialist Democratic Workers Party [its Bolshevik faction became RSDRP(b), succeeded by RKP(b)]
RSFSR	<i>Rossiyskaya Sovetskaya Federativnaya Sotsialisticheskaya Respublika</i> Russian Soviet Federative Socialist Republic
SOOR	<i>“sovmestnoe oranie” [Sometimes referred to as Droz-Soor]</i> Working Together [also Screaming Together, a pun], a <i>Drosophila</i> work group
Sovkhoz	<i>Sovetskoye khozyaystvo</i> State farm
Sovnarkom (SNK)	<i>Soviet Narodnykh Kommissarov</i> Council of People’s Commissars [succeeded by Council of Ministers]
SSSR	<i>Soyuz Sovetskikh Sotsialisticheskikh Respublik</i> Union of Soviet Socialist Republics, USSR
TKP	<i>Trudovaya Krestyanskaya Partiya</i> Labor Peasant Party [This was a fictional anti-soviet political organization fabricated by OGPU.]
TsEKUBU	<i>Tsentralnaya komissiya po uluchsheniyu byta uchenykh</i> Central Commission on Improvement of Scholars’ Lives [also KUBU]
TsIK SSSR	<i>Tsentralnyi ispolnitelnyi komitet SSSR</i> Central Executive Committee of the USSR [succeeded by VTsIK]
TsK	<i>Tsentralnyi komitet</i> Central Committee
TsK KPSS	<i>Tsentralnyi Komitet Kommunisticheskoy Partii Sovetskogo Soyuza</i> Central Committee of the Communist Party of the Soviet Union

TsK RKP(b)	<i>Tsentralnyi Komitet Rossiyskoy Kommunisticheskoy Partii (bolshevikov)</i> Central Committee of the Russian Communist Party of Bolsheviks
TsK VKP(b)	<i>Tsentralnyi komitet Vsesoyznoy Kommunisticheskoy Partii (bolshevikov)</i> Central Committee of the All-Union Communist Party of Bolsheviks
UGB (GUGB)	<i>(Glavnoe) Upravlenie gosudarsvennoy bezopasnosti</i> (Chief) Directorate of State Security [part of NKVD]
U[kr]SSR, YCCP	<i>Ukrainskaya Sovetskaya Sotsialisticheskaya Respublika</i> Ukrainian Soviet Socialist Republic
VARNITSO	<i>Vsesoyuznaya assotsiatsiya rabotnikov nauki i tekhniki dlya sodeystviya sotsialisticheskomu stroitelstvu</i> All-Union Association of Science and Technology Workers for Contribution to Socialist Construction
VASKhNIL	<i>Vsesoyuznaya akademiya sel'skokhozyaistvennykh nauk imeni V.I. Lenina</i> Lenin All-Union Academy of Agricultural Sciences
VChK	<i>Vserossiyskaya chrezvychainaya komissiya (po borbe s kontrrevolyutsiei i sabotazhem)</i> All-Russian Extraordinary (Emergency) Commission (for combating counter-revolution and sabotage) [VChK usually shortened to ChK, or Cheka] [succeeded by GPU]
VIEM	<i>Vsesoyuznyi institut eksperimentalnoy meditsiny</i> All-Union Institute of Experimental Medicine
VIR	<i>Vsesoyuznyi institut rastenievodstva</i> All-Union Institute of Plant Breeding
VKP(b)	<i>Vsesoyuznaya Kommunisticheskaya Partiya (bolshevikov)</i> All-Union Communist Party (Bolsheviks)
VND	<i>Vysshaya nervnaya deyatel'nost</i> Higher nervous activity
VSKhV	<i>Vsesoyuznaya sel'skokhozyaistvennaya vystavka</i> All-Union Agricultural Exhibition
VTsIK	<i>Vserossiiskiy Tsentralnyi ispolnitel'nyi komitet</i> All-Russian Central Executive Committee [succeeded by the Supreme Soviet of the RSFSR]
VTsIK SSSR	<i>Vsesoyuznyi Tsentralnyi ispolnitel'nyi komitet</i> All-Union Central Executive Committee [succeeded by the Supreme Soviet of the USSR]

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Russian Academy of Science
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Vasily Babkov

THE DAWN OF HUMAN GENETICS

The Russian Eugenic Movement
and the Beginnings of Medical Genetics

PROGRESS-TRADITSIA

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Babkov V.V.

Dawn of Human Genetics. The Russian Eugenic Movement and the Beginnings of Medical Genetics.—Progress-Traditsia, 2008.—800 pages.

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Vasily Vasilyevich Babkov (September 23, 1945–December 22, 2006)—Soviet and Russian geneticist and historian of genetics, Doctor of Biological Sciences, author of monographs *Moscow School of Evolutionary Genetics* (1985), *Nikolai Vladimirovich Timofeev-Ressovsky* (2002, together with Ye.S Sakanyan), and others. He published about S.S. Chetverikov, Ya.A. Filipchenko, S.G. Levit, N.K. Koltsov, N.I. Vavilov, H.J. Muller, N.V. Timofeev-Ressovsky, as well as the poet V. Khlebnikov. This book, an anthology of eugenics from the 1920–30s, is the last work of V.V. Babkov, which he put together shortly before his untimely death. The book provides a general survey of Russian eugenics and basic eugenic texts from rare publications.

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Preface

RUSSIAN EUGENICS AND THE *Russian Eugenics Journal* have always evoked interest; however, the question was not resolved: If the articles in this journal are so good, then why did eugenics lead to racism?

Indeed, 100 years ago the mainstream American eugenics meant racism, xenophobia, and compulsory sterilization. It appears that for exactly this reason the appearance of Anglo-American medical genetics was delayed for about 20 years.

However, the Russian eugenics movement was designed and has developed as a precursor to research in human evolution, human behavior, and human genetics. “Why then don’t we call eugenics ‘medical genetics?’” asked a colleague. But eugenics is not medical genetics; it is not even entirely a science. A science does not appear in ready form like Athena from Zeus’s head; there needs to be a preliminary orientation period. Russian eugenics was a discussion of certain themes and approaches, a kind of anticipation. N.K. Koltsov’s eugenics addressed a comprehensive study of man. For Yu.A. Filipchenko, eugenics was demographic statistics.

The Russian eugenics movement was concerned with a wide variety of fields, including evolutionary genetics and evolutionary theory, population genetics and population ecology, the study of human constitution and typology, psychology and behavioral science, pathography, pedology, and many others. All these fields were unlucky to be disfavored by Stalin, and as a result they ceased, and books and journals on these subjects were banned.

In 2005, over winter vacation, an old friend asked me what I would be doing over the near year. I mentioned *Dawn* . . . , and he replied (only partially joking): “Twenty years ago you would have been shot for that right away.”

But this book was conceived 30–35 years ago: Eugenics is related to population genetics, my first field of study, and 20 years ago I was already giving a series of lectures on the history of eugenics.

The Russian eugenics movement appeared at the boundary of the 19th and 20th centuries, when people were expecting “the end of days.” Now this is history. But we are now again at the boundary of centuries, and even of millennia. Many feel that a new apocalypse is coming and talk about the inevitability of a new eugenics. What will it be? Nobody knows! But we must be ready.

This book aims to give a general survey of the Russian eugenics movement, to present the fundamental texts, and to provide orientation for future scholars.

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Introduction

MAN AND EVERYTHING CONNECTED to him is the favorite, the main, and the almost sole object of our observation and study. In our tradition, Judeo-Christian-Muslim, there are two main myths—a myth about the creation of the world and a myth about the creation of man, and the second is a special aspect of the first. The creation myth in a secularized society and a modern intellectual environment assumed the form of evolutionary and cosmological hypotheses and theories. Both, because of their origin, possessed rich and very explosive associations; the consequences are obvious. For instance, in the early 1920s, Albert Einstein, with a true religious zeal, attempted to fight the ideas of a young Russian physicist, A.A. Friedman, which contradicted Einstein's postulate of a stationary universe. If the origin of the universe and evolution of the world so deeply touch both specialists and the broad public, what powerful energy must be carried by a hypothesis about man himself, about the causes of his diseases, abilities, and talents?

While anthropology was slowly accumulating its facts, it was not subjected to any demonization (however, the later natural-philosophic discussions of ultramaterialists and radical Darwinists caused a number of problems, including the Monkey Trials). The public now is not keenly interested in modern human molecular genetics. Even the widely publicized Human Genome Project did not capture the public interest as expected. In part, this is because biotechnologists have no idea of the meaning behind the nice pictures that they obtain. However, the lack of charisma of this project is largely due to the fact that molecules (as well as elementary particles) are objects that are as alien to man as are the fish in exotic seas, volcanoes on faraway islands, and comets and asteroids. The public is more interested in the cloning of mammals and humans, which is entirely limited to sensational reports in the mass media, but this subject is compromised by falsifications.

Modern evolutionary studies use genetic methods and approaches, and this is also completely true in the study of human evolution. But human genetics appeared rather late, much later than the direction of research that was shaped by the interest of scientists and laypersons alike in obtaining healthy and outstanding offspring over a number of generations. The teaching of Francis Galton on human evolution and heredity was the most developed and influential; he combined Charles Darwin's theory of natural selection, which he applied to man, with his own mathematical-statistical approach, and this he named "eugenics."

Galton's ideas deeply influenced British science. They provided legitimacy both to the creators of the Darwinist and mathematical-biological school (Karl Pearson) as

well as to the creators of the rival Mendelian school (William Bateson). Later Ronald Fisher, a biomathematician and ardent supporter of Galton's eugenics, removed the controversy, united both directions, and opened new prospects of study; it was precisely because of his interest in eugenics that Fisher developed mathematical population genetics. It should be noted that Galton's eugenics included two programs, a program of study and a program of practical action. The latter was logically divided into two types: negative (limiting the number of births of people with hereditary defects) and positive (encouraging reproduction of the most valuable members of society). Galton remarked on that matter, "It is nice to invent utopias," and admitted that he allowed himself this pleasure.

Although one admires the research program of Galton, one should be very cautious about specific implementation of his program of practical action. The British eugenicists, based on sophisticated research methods, further developed Galton's research program. Some of the American work, which was less sophisticated in its approach, based on class and racial feelings, increased interest and obtained serious financial support in the harsh conditions of the early 20th century, and this delayed other studies that later had great importance for the development of modern medical genetics. It was those American eugenicists who provided pseudoscientific justification for the 1924 law that limited immigration of certain races (the same law used when German Jews, threatened by concentration camps, fled to their relatives in the United States in 1940 and were sent from New York directly back into the Nazis' hands).^a It was precisely those eugenicists who created the Indiana program (named after the state where it was first used), the compulsory sterilization by court order of "undesirable" persons. In the United States, tens of thousands were subjected to this procedure. In Europe, a law on compulsory sterilization was discussed and generated both interest and opposition. In Germany, following the 1933 law that banned marriages between Aryans and non-Aryans, a law was enacted on the sterilization of the mentally ill.¹ (When the law was repealed, the initial concentration of the mentally ill in the population was reestablished, so the goal of racial cleansing was not achieved.) Such laws were adopted in all Scandinavian countries (in Denmark as early as 1929), in one of the Swiss counties, and in Estonia. In the United Kingdom, a law on voluntary sterilization was discussed starting in 1934 and was finally rejected in 1939. In France and Italy, no such law was discussed.

With the end of the Great Depression in the United States and the defeat of Nazism in Germany, these kinds of practical actions in demographic policy lost their former popularity. From that time, positive eugenics existed only as traditional measures for the care of mothers and newborns, professional and social hygiene, and negative eugenics existed as medical genetics.²

^a Babkov is probably referring to the fate of nearly 1000 Jewish refugees who sailed from Hamburg to Cuba in May 1939 aboard the *St. Louis*. Denied entry to Cuba or the United States, the passengers eventually were returned to Europe where just over a quarter perished in the Holocaust.—Ed.

¹ Voluntary sterilization for medical reasons is currently done in all countries with developed medical services.

² In the enthusiasm about biotechnology of the last 20 years, the term "positive eugenics" is used to describe plans for gene transplantations in humans to improve physical or mental abilities.

The beginning is the most interesting time. As in any field of human endeavor, science is based on something that is outside of itself, life circumstances specific to a certain time and place. This book clarifies the circumstances that inevitably led to the formulation of medical-genetic goals in our country, and the course of events as medical genetics was created and then liquidated. Stalin's clear and still unexplained hatred of gene theory in our country resulted first in the folding of eugenics, then in the liquidation of human genetics, and later in the general ban of scientific genetics. These processes were preceded by massive campaigns of the agitprop from which the citizens learned their lesson: To be interested in human genetics was to endanger one's life.

Meanwhile, Russian eugenics (an early stage of human genetics as well as human evolutionary studies) posed important and interesting issues. Based on the great traditions of Russian biology and medicine, and guided by N.K. Koltsov and other prominent biologists and physicians, it also lacked the abuses characteristic of the old-style American eugenics and German racial hygiene. On the contrary, the *Russian Eugenics Journal* of Koltsov constantly criticized any unjustified conclusions and deviations from strict scientific thought, which abounded in that period of general enthusiasm.

This book includes selected fundamental texts of the Russian eugenics movement and early Russian medical genetics, which have long been inaccessible to readers. Familiarity with discussions of the 1920s and the early 1930s on a number of issues concerning human evolution and genetics will no doubt be useful in social-ethical discussions of modern problems that arise in relation to the Genome Project, certain types of legal bills introduced in our parliament, as well as in the problems that will inevitably emerge in the process of globalization in which Russia is now also involved.

Leaving aside purely physical properties, I find that humankind undergoes a struggle between two definitive hereditary types: One is active, full of desire and the need to explore new roads, notwithstanding the hardships and dangers that are inevitable on those roads. I call this type *Homo sapiens explorans*. Another type is passive, *H. s. inertus*. . . . The fate of Russia depends primarily on whether the first, active type will be able to preserve and reproduce, or the inert type will win out and the precious genes of activity will perish.

—N.K. Koltsov