

Stalinist Science

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NIKOLAI KREMENTSOV

PRINCETON UNIVERSITY PRESS

PRINCETON, NEW JERSEY

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Published by Princeton University Press, 41 William Street, Princeton, New Jersey 08540
In the United Kingdom: Princeton University Press, Chichester, West Sussex
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Library of Congress Cataloging-in-Publication Data

Kremensov, N.L.

Stalinist science / Nikolai Kremensov.

p. cm.

Includes bibliographical references and index.

ISBN: 0-691-02877-X (cl : alk. paper)

1. Science—Soviet Union—History—20th century. 2. Stalin,
Joseph, 1879–1953. 3. Soviet Union—Politics and
government—1936–1953. 4. Communism—Soviet Union—History—20th
century. I. Title.

Q127.R9K68 1997

306.4'5'090470904—dc20 96-14404

This book has been composed in Times Roman

Princeton University Press books are printed on acid-free paper and meet the guidelines for
permanence and durability of the Committee on Production Guidelines for Book
Longevity of the Council on Library Resources

Printed in the United States of America by Princeton Academic Press

1 2 3 4 5 6 7 8 9 10

FOR MY PARENTS

. . . Добру и злу внимая равнодушно,
Не ведая ни жалости, ни гнева.

. . . Regarding good and evil dispassionately,
With neither pity nor vengeance.

—A. S. Pushkin, *Boris Godunov*

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P R E F A C E

MY FIRST ENCOUNTER with what would later become the subject of this book occurred in 1976 when, as a student of a provincial university in Rostov-on-Don, I came to Leningrad to work in a Soviet mecca—the Pavlov Institute of Physiology of the USSR Academy of Sciences. At that time I believed deeply in the purity and omnipotence of experimental science, so I was delighted when the institute invited me to continue my experiments in Leningrad and to prepare a doctoral dissertation. For three years I learned about Soviet science from the inside, spending my nights experimenting in a laboratory and my days teaching science in a secondary school. This experience left me profoundly disillusioned. I left the institute to take up ecological and environmental studies at Leningrad University, but this only deepened my cynicism. I decided to abandon academic work altogether.

Then in 1984, almost by accident, I discovered the history of science. The head of the Department of the Theory and History of Evolution of the Leningrad Branch of the Institute of the History of Science and Technology of the USSR Academy of Sciences, Aleksandr Georgievskii, persuaded me to become a graduate student in his department, suggesting that I use my background to study the intellectual history of Soviet evolutionary and behavioral sciences. Thus, I became both a participant in the Soviet science system and an observer of its historical development. I began to study the history of ideas on animal behavior and evolution, but this seemed to leave out too much, so I started to collect archival documents on the sociopolitical history of Soviet science in the 1930s and 1940s.

With the dawning of *perestroika* and *glasnost*, what had been a private interest in the social history of Soviet science suddenly became an exciting public issue. Previously closed archives and borders opened, creating unexpected opportunities. My colleagues began eagerly to explore such once-forbidden subjects as purges, arrests, and repressions in Soviet science. I also paid tribute to this fashion, exploring the effects of T. D. Lysenko's antigenetics campaign on Soviet physiology. But the black-and-white picture then current—the oppressive state versus the victimized scientific community—fit neither my own experience in Soviet science nor the archival documents I was unearthing.¹

In 1988 a small group of young scholars, most of whom were equally dissatisfied with this simplistic approach, began informal discussions, and in May 1989 we organized in Leningrad the first conference on sociocultural aspects of the history of Soviet science.² At the end of the year Daniel Aleksandrov and I published a “manifesto” of this group, a work in which many of the ideas in the present volume were first, though not always clearly, articulated.³ As our first conference was followed by a second, and then a

third, our small community steadily grew, and the idea of this book began to take more definite form.

Also in 1988, a professor at the University of Pennsylvania, Mark B. Adams, visited Leningrad. Our acquaintance proved crucial in expanding my interests and shaping my perspectives. One of its results was my three-month visit to the United States in early 1990, which I spent working with him in Philadelphia and with Daniel P. Todes at the Institute of the History of Medicine at the Johns Hopkins University. This opened up to me the rich and varied trends in the social history of science that had been developed in the West. Shortly thereafter, I helped to organize the first Soviet-American conference of historians of science devoted to the prominent American geneticist and Russian émigré Theodosius Dobzhansky, which took place in Leningrad in late August 1990.⁴ This conference directed my attention to the international aspects of Soviet science and finalized my decision to write a book about a particular system of science, one that had assumed its final form under Stalin and had preserved its characteristic features well into the years of my own encounter with it.

This book would never have been written had it not been for these two friends, Mark Adams and Daniel Todes. Not only did they inspire me to put my inchoate ideas into writing; our innumerable and sometimes very heated discussions continuously shaped and reshaped its content over the course of five long years. The many months I spent with them in their homes in Philadelphia and Baltimore and during their visits to St. Petersburg, not to mention our hours of telephone calls and megabytes of e-mail correspondence, proved crucial to my understanding of my subject. Furthermore, they have encouraged my impudent attempt to write this book in English, taking on the considerable burden of editing (actually, rewriting) almost every sentence of my poor prose, after lengthy arguments over what I meant, exactly, by this or that incomprehensible expression. They have spent much time and done their best to improve the style and language of the book. Their intellectual and moral support has been inexhaustible and indispensable. All mistakes and misinterpretations that remain are entirely my own.

I am also grateful to many Russian and American colleagues for their helpful comments and criticisms: Pnina Abir-Am, Daniel Aleksandrov, Michael David-Fox, Vladimir Esakov, Gennadii Gorelik, Loren Graham, Lily Kay, Evelyn Fox Keller, Mikhail Konashev, Aleksei Kozhevnikov, Tat'iana Lassar, Daniel Lebedev, Elena Osokina, Diane Paul, Galina Smagina, Susan Solomon, Marina Sorokina, Amir Weiner, and Charles Weiner, who read or heard versions of various chapters.

As is increasingly the case with Russian scholars, I am indebted to several American institutions for their generous support of my research. The Andrew W. Mellon Foundation made possible a two-month research fellowship at the Library of the American Philosophical Society in spring 1992 and also a nine-month fellowship at the Science, Technology and Society Program at the Massachusetts Institute of Technology in academic year 1993–94, permitting

me to spend time in two stimulating American centers of the history of science in Philadelphia and Cambridge. The National Science Foundation, through a grant awarded to Mark B. Adams in 1993, provided me with a notebook computer that made a whole world of difference, greatly facilitating my work on the manuscript. The Kennan Institute for Advanced Russian Studies at the Woodrow Wilson Center of International Scholars granted me a six-month scholarship in 1994, where the final work on the manuscript benefited from discussions with colleagues and the resources of great libraries. I am also grateful to my research assistant, David Litteney, for his help in locating and copying needed materials from libraries and archives of the Washington, D.C., area.

I would also like to acknowledge the support of the St. Petersburg Branch of the Institute of the History of Science and Technology of the Russian Academy of Sciences, which permitted and even encouraged my absence from duties during the last four years.

As is the case with any historian, I owe a great debt to librarians. My research would have been impossible without enormous help from the staff of numerous Russian and Western archives and libraries, including the Archive of the Russian Academy of Sciences (both in St. Petersburg and Moscow), the State Archive of the Russian Federation, the St. Petersburg Central State Archive of Historico-Political Documents, the Moscow University Archive, the Scientific Archives of the Russian Academy of Medical Sciences and the Russian Academy of Pedagogical Sciences, the Russian State Archive of Economics, the Russian Center for the Storage and Study of the Documents of Recent History, the St. Petersburg Public Library, the Library of the Russian Academy of Sciences, the Library of the Royal Society (London), the Bodlean Library of Oxford University (Oxford), the Library of the American Philosophical Society (Philadelphia), the Widener Library of Harvard University (Cambridge), the Welch Library of the Johns Hopkins University (Baltimore), the Bancroft Library of the University of California (Berkeley), the National Medical Library (Bethesda), and the Library of Congress (Washington, D.C.).

Finally, I am deeply grateful to Natalia Ismailova, who understood, tolerated, and even nurtured my five-year obsession with this book.

Nikolai Kremmentsov
January 1995
Baltimore/Philadelphia

A B B R E V I A T I O N S

Agitprop	Upravlenie Agitatsii i Propagandy, the Administration of Agitation and Propaganda of the Central Committee of the Communist Party
AMN	Akademiia Meditsinskikh Nauk, the Academy of Medical Sciences
AN	Akademiia Nauk, the Academy of Sciences
APN	Akademiia Pedagogicheskikh Nauk, the Academy of Pedagogical Sciences
APS	the American Philosophical Society
ARAN	Arkhiv Rossiiskoi Akademii Nauk, the Archive of the Russian Academy of Sciences
GARF	Gosudarstvennyi Arkhiv Rossiiskoi Federatsii, the State Archive of the Russian Federation
GKO	Gosudarstvennyi Komitet Oborony, the State Committee of Defense
Glavlit	Glavnoe Upravlenie po Delam Literaturny i Izdatel'stv, the Main Directorate on Literature and Presses. Renamed the Main Administration of Censorship in 1936
GOELRO	Gosudarstvennaia Komissiiia po Elektrifikatsii Rossii, the State Commission on the Electrification of Russia
KEPS	Komissiiia po Izucheniiu Estestvennykh Proizvoditel'nykh Sil Rossii, the Commission for Studying the Natural Productive Forces of Russia
MGB	Ministerstvo Gosudarstvennoi Bezopasnosti, the Ministry of State Security. Formerly the Commissariat of State Security, created on the basis of several departments of the NKVD in 1941 and a predecessor of the KGB
MGU	Moskovskii Gosudarstvennyi Universitet, Moscow State University
NA	Nauchnyi Arkhiv, Scientific Archive
Narkomat	Narodnyi Komissariat, People's Commissariat
Narkompros	Narodnyi Komissariat Prosveshcheniia, the People's Commissariat of Enlightenment
Narkomtiazhprom	Narodnyi Komissariat Tiazheloi Promyshlennosti, the People's Commissariat of Heavy Industry
Narkomzdrav	Narodnyi Komissariat Zdravookhraneniia, the People's Commissariat of Public Health

Narkomzem	Narodnyi Komissariat Zemledeliia, the People's Commissariat of Agriculture
NEP	Novaia Ekonomicheskaiia Politika, New Economic Policy
NKVD	Narodnyi Komissariat Vnutrennikh Del, the People's Commissariat of Internal Affairs. The secret police, successor of the OGPU, renamed the Ministry of Internal Affairs (MVD) in 1946
NTU	Nauchno-Tekhnicheskoe Upravlenie, the Scientific-Technical Administration of the Supreme Council of the National Economy (VSNKh)
OGPU	Ob'edinennoe Gosudarstvennoe Politicheskoe Upravlenie, the United State Political Directorate. The secret police, created on the basis of the Cheka (Cherezvychainaia Komissiiia po Bor'be s Kontrevoliutsiei i Sabotazhem) in 1923, renamed NKVD in 1934
Orgburo	Organizatsionnoe Biuro, the Organizational Bureau of the Central Committee of the Communist Party
Politburo	Politicheskoe Biuro, the Political Bureau of the Central Committee of the Communist Party
<i>PZM</i>	<i>Pod Znamenem Marksizma</i> , Under the Banner of Marxism (a journal)
RGAE	Rossiiskii Gosudarstvennyi Arkhiv Ekonomiki, the Russian State Archive of Economics
RSFSR	Rossiiskaia Sovetskaia Federativnaia Sotsialisticheskaiia Respublika, the Russian Soviet Federated Socialist Republic
RTsKhIDNI	Rossiiskii Tsentri Khraneniia i Izucheniia Dokumentov Noveishei Istorii, the Russian Center for the Storage and Study of the Documents of Recent History
SNK	<i>Sovet Narodnykh Komissarov</i> , the Council of People's Commissars. The highest governmental agency, renamed the Council of Ministers in 1946.
SPb	St. Petersburg.
TsGAIPD	Tsentral'nyi Gosudarstvennyi Arkhiv Istoriko-Politicheskikh Dokumentov Sankt Peterburga, the St. Petersburg Central State Archive of Historico-Political Documents
TsGANTD	Tsentral'nyi Gosudarstvennyi Arkhiv Nauchno-Tekhnicheskoi Dokumentatsii, the Central State Archive of Scientific-Technical Documentation
TsIK	Tsentral'nyi Ispolnitel'nyi Komitet, the Central Executive Committee of the USSR Soviet of People's Deputies
VAK	Vyshshaia Attestatsionnaia Komissiiia, the Supreme Certifying Commission
VAN	<i>Vestnik Akademii Nauk SSSR</i> , Bulletin of the Academy of Sciences of the USSR (a journal)

- VARNITSO Vsesoiuznaia Assotsiatsiia Rabotnikov Nauki i Tekhniki dlia Sodeistviia Sotsialisticheskomu Stroitel'stvu, the All-Union Association of Scientific and Technological Specialists for Assisting Socialist Construction
- VASKhNIL Vsesoiuznaia Akademiia Sel'sko-Khoziaistvennykh Nauk Imeni V. I. Lenina, the Lenin All-Union Academy of Agricultural Sciences
- VIEM Vsesoiuznyi Institut Eksperimental'noi Meditsiny, the All-Union Institute of Experimental Medicine
- VIET *Voprosy Istorii Estestvoznaniia i Tekhniki*, Issues in the History of Science and Technology (a journal)
- VIR Vsesoiuznyi Institut Rasteniievodstva, the All-Union Institute of Plant Breeding
- VOKS Vsesoiuznoe Obschestvo Kul'turnykh Sviazei s Zagranitseiu, the All-Union Society of Cultural Relations with Foreign Countries
- VSNKh Vysshii Sovet Narodnogo Khoziaistva, the Supreme Council of the National Economy. Subordinate to the SNK
- VTsIK Vserossiiskii Tsentral'nyi Iсполnitel'nyi Komitet, the All-Russia Central Executive Committee of the Soviet of Peoples' Deputies

Stalinist Science

INTRODUCTION

THIS BOOK is an attempt to analyze Stalinist science as we analyze the social history of science in other countries—that is, to explore its organizational and professional structures, disciplinary agendas and interest groups, politics and patronage, cultures and forms of practice, and to examine how they interacted and how they fit into their broader political and cultural context.

The history of Stalinist science is full of striking, contradictory, and enigmatic events. Stalinist science was Big Science, a gigantic, centralized system with thousands of institutions and hundreds of thousands of scientists. Yet its explosive institutional growth was accompanied by the abolition of entire disciplines and research directions, and outstanding achievements coexisted routinely with backward doctrines. The greatest honor Stalinist science could bestow—membership in an academy—was shared by brilliant scientists and ignorant political functionaries. A scientist could be an adviser to the highest state bodies one day and an “enemy of the people” the next, and vice versa. Scientists conducted research in the well-equipped institutes of “Science Cities” and in *sharashki* prison camps. They made impressive showings on the international scene and then vanished behind the Iron Curtain. Furthermore, many of the greatest triumphs of Stalinist science occurred exactly at the time of the greatest repression: practically all Soviet Nobelists received this highest scientific award for research done when arrests were common and the Gulag camps overflowing.

This contradictory and puzzling history has, understandably, attracted the attention of Western scientists and historians.¹ Indeed, in the late 1950s the post-sputnik shock in the West contributed to the rapid institutionalization of the discipline of the history of science itself. Deprived of archival sources, many historians did their best, studying Soviet publications to explore the dynamics of science policy and its major actors. Working within a Cold War context, and laboring against the constraints of cultural differences and ideological polarization, they often resorted to explanations that relied upon the peculiarities of the Russian national character, the totalitarian nature of the Soviet state, the Marxist ideology of the Communist Party, or the personalities and power struggles within the Kremlin. Such attempts reinforced the already existing image of Stalinist science as something alien and strange, fundamentally different from science as practiced elsewhere in the world.

Of course, at the same time, some Western scholars were energetically arguing against such an exotic portrait. Using the techniques of the new social history of science, they sought to demonstrate that the similarities and differences with Western science had been shaped by the interactions of institutions, professions, disciplines, interest groups, and networks.² The inaccessibility of Soviet archival materials, however, forced these scholars to rely

largely on published sources and memoirs, substantially restricting the range of questions they could address and lending a hypothetical character to some of their interpretations.

Nevertheless, their works created an elaborate theoretical framework that can now be checked and refined using the flood of previously unknown materials from Russian archives. Since the late 1980s, the new accessibility of Soviet archives, particularly those of the Communist Party, the Council of Ministers, and other party-state agencies, has made it possible for the first time to explore the events and dynamics that were earlier hidden in a “black box.” We can now, for example, study the correspondence between scientists and the country’s leaders, analyze the minutes of Politburo meetings, and compare the content and consequences of party directives. Using these new materials, I have come to see both the triumphs and the tragedies of Soviet science as products of the same thing—the Stalinist science system.

This system was composed of two “symbionts”: science and the state, or, more precisely, the scientific community and the state control apparatus. In interpreting Soviet science, some scholars have tended to view science and the state as two opposing entities locked in an uneven conflict, with the state in the role of dictator and oppressor, and the scientists as victims, trying to defend their autonomy. This description is in certain respects correct, but it is nonetheless misleading: in fact, in pursuit of its interests, the state established a much more impressive and terrifying system of control over the scientific community than any critic of Soviet “totalitarianism” could have imagined—and the scientific community, in pursuit of *its* interests, developed much more elaborate devices to avoid, elude, and exploit this control system than any advocate of “academic freedom” could have reasonably hoped.

The key feature of Stalinist science was the total dependence of science on its sole patron, the party-state bureaucracy. With the 1917 Bolshevik revolution, science was “nationalized” and became a “property” of the state. This made the scientific community hostage to the ever-changing agendas of its patron: science policy became a prerogative of the state control apparatus and an integral part of the state’s foreign and domestic policies. For its part, the scientific community employed the importance and prestige given to science by the state to assert its own authority over science policy and to greatly expand its institutional base. Thus, the state apparatus and the scientific community each strove to acquire what it most wanted from the other. The state provided scientists with funds, resources, and great public prestige; the scientific community gave the state expertise and legitimacy in industry, agriculture, and medicine. Each developed various tactics to deal with its partner. The state established strict administrative control over institutional structures, scientific personnel, research directions, and scholarly communications. For their part, scientists cultivated patrons among the highest party-state bureaucrats and skillfully played upon their constantly changing policies and objectives.

Although the Soviet scientific community and the Soviet state have often been seen as opposing monoliths, their symbiosis was possible precisely because neither was monolithic. Despite its totalitarian character, the Soviet state had a very complex internal structure, and the numerous agents and agencies involved in the state science-policy apparatus pursued their own, often conflicting objectives and conducted their own, often conflicting policies. These different interests continued to exist even in the late Stalin era, when they expressed themselves within the limited range afforded by the policy dictates of the Central Committee of the Communist Party, its Politburo, and Stalin personally. Nonetheless, even this restricted range permitted Soviet scientists surprising room for maneuver in their dealings with their patrons and partners.

Nor was the Soviet scientific community monolithic. We are accustomed to thinking of the scientific community as something that “transcends the limits of nation, race, and religion,” whose members “are not bound together by the rigid ties of structured authority and formal organization but by spontaneously evolved shared goals, consensus of scholarly opinion, tacitly agreed-upon professional ethics, values built into science as a subculture, and community sentiment.”²³ The Soviet scientific community of the Stalin era contradicts almost every element of this description. It was delimited by national borders, administrative barriers, and ideological strictures. Its members *were* bound together by the “rigid ties of structured authority and formal organization” through the hierarchical state, scientific, and academic bureaucracies. Nor was the Stalinist Soviet scientific community a unitary entity sharing general goals, values, and professional ethics: on the contrary, it was fragmented into numerous subgroups that competed with one another, each of which had its own values, goals, and resources and cultivated its own special patrons scattered throughout the control apparatus. These groups produced spokesmen able and willing to undertake the “dirty” job of representing their disciplinary and institutional interests to the control apparatus and trying to persuade the decision makers to serve their particular agendas. Thus, far from being the conflict of two monoliths, the interaction between Soviet science and the state was shaped and mediated by a complex interplay of formal and informal community structures, and by the alliances and rivalries among them.

Furthermore, although the Soviet scientific community and the state control apparatus have often been treated as separate entities, the actual boundaries between them were frequently blurred. Their symbiosis resulted in their institutional integration and individual co-optation. At their apex, the control apparatus and the scientific community were blended and overlapping. Not only did scientists occupy key positions within various state agencies, but some scientific institutions, such as presidiums of Soviet academies, were in fact key elements of the party-state control apparatus itself. Moreover, all appointments to top positions in the scientific hierarchy had to be approved by the highest party officials. In such circumstances, it is hardly surprising that the

development of various Soviet scientific disciplines was greatly influenced by the personal relations between particular disciplinary spokesmen and their powerful party patrons.

The control apparatus and the scientific community became fused not only in their overlapping organizational structures and networks, but also, understandably, in a common and quite peculiar set of shared images, rituals, and rhetoric. I must ask the reader's indulgence for my use of the many strange acronyms, epithets, and "isms" that bespeckle my text. But this "Newspeak" is an indispensable part of the story: it embodies the complex bureaucratic system of party-state and scientific agencies and the very language it spoke, the language of an alternate, newly emergent kind of enterprise—"Stalinist" science. The symbiosis of science and the state, then, resulted also in their cultural unification, which profoundly affected what we may call the *social practice* of Soviet science.⁴

In my analysis of the social practice of Soviet scientists, I explore three major components of their professional culture: language, public behavior, and criticism. The professional culture of the Soviet scientific community clearly reflected its symbiosis with the state; scientists adopted the rhetoric, etiquette, and critical styles of the party-state bureaucracy, skillfully nurturing and exploiting the images and beliefs of their patron and partner to pursue their own intellectual, institutional, and career objectives. To justify and legitimize their own interests, scientists incorporated party pronouncements into their own language and employed party rhetoric to translate their own esoteric theories into the language of their patron. They adopted the militant style of inner-party struggles in their critical writings and speeches, and used it in the disputes and institutional struggles with their competitors. They embraced a peculiar party "etiquette" and displayed obedience and conformity to their patron in numerous rituals, striving at the same time to maintain their own authority over their enterprise. They played intricate games and performed puzzling ceremonies to improve relations with their patron and to advance their careers. They staged unusual public shows to promote their ideas and expand their disciplines.

The book's structure follows the origin, evolution, and consolidation of the Stalinist science system. Part 1 analyzes the emergence of Stalinist science. Chapter 1 outlines the expansion of Russian science under the Bolsheviks and the appearance of certain institutional and cultural forerunners of Stalinist science in the 1920s. Chapter 2 examines the genesis in the 1930s of the characteristic features of Stalinist science: a large, centralized, hierarchical system of scientific institutions; a politicized, fragmented, and isolated scientific community; a system of strict party control over the community's personnel, structures, communications, and research directions; and scientists' tactics and strategies in dealing with their party patrons. Chapter 3 analyzes the actual functioning of the Stalinist science system in the late 1930s through a

contextual case study of the institutional struggle between two competing groups within the scientific community—the geneticists, led by Nikolai Vavilov, and the agrobiologists, led by Trofim Lysenko.

Part 2 depicts the development of Stalinist science in the 1940s. Chapter 4 examines the impact of World War II on the institutional structures and the functional dynamics of the Stalinist science system—the reassertion of scientists' control over their activities and the restoration of their international contacts, both of which profoundly affected the dynamics of institutional struggles within the community. Chapter 5 documents the influence of the growing Cold War (during 1946–47) on the new, wartime Stalinist science system—the partial resurrection of party control over “external” (political and ideological) aspects of scientific activities, which resulted in the reestablishment of isolating barriers between Soviet and Western science. Chapter 6 chronicles Stalin's endorsement of a new, Cold War model of science—a particular “Soviet” science, entirely different from “Western” science and completely subordinate to the party—and the announcement of that new model at the infamous August 1948 meeting of the Lenin All-Union Academy of Agricultural Sciences that officially banished genetics in the Soviet Union.

Part 3 portrays the consolidation of the Stalinist science system, analyzing its internal mechanisms and dynamics in the last years of the Stalin epoch. Chapter 7 details the explosive expansion during autumn 1948 of the propaganda campaign “for Michurinist biology” into the entire Soviet science system, focusing on the rituals and rhetoric the community's leaders employed to demonstrate their “obedience and devotion” to the new model of Stalinist science—and, at the same time, to limit the effects of party intervention. Chapter 8 uncovers the role of various bureaucratic groups in the expansion and limitation of Lysenko's monopoly over the system of biological research and education in autumn 1948, examining the complicated “games” scientists played with the control apparatus to reassert their own control over the content of their research. Chapter 9 looks at how various interest groups and individuals within the scientific community exploited the Stalinist science system to advance their own institutional and careerist ambitions; it details the struggles among Soviet physiologists and physicists and analyzes why different disciplines experienced such apparently different fates during the final years of Stalinism. Within the text, I have provided chronologies of key events to assist the reader. Appendixes provide short biographies of the main actors and a glossary of Stalinist scientific “Newspeak.”

My analysis of the Stalinist science system and its underlying patterns could have been illustrated by details from the history of psychology, physics, chemistry, linguistics, geology, and many other Soviet disciplines, but I focus special attention on the life sciences, particularly genetics. Of course, the development of each discipline had its particularities, deriving in part from the different nature of the scientific materials, theories, and traditions involved.

My goal in treating genetics, thus, was to uncover what made it *Soviet*, and in particular the more general patterns in its development that could be understood by reference to its character as a Soviet discipline. The history of genetics, especially the so-called Lysenko controversy, has been the most studied topic in the history of Soviet science and has been seen as the most telling and egregious example of the party's interference in science. As a result, historians have tended to emphasize the peculiarities of genetics and its difference from other disciplines, treating it as the "great exception."⁵ My goal has been just the opposite: to understand Soviet genetics as a typical example of Stalinist science, to explore this extreme case in detail in order to discover what was *not* anomalous but universal in the Soviet science system. By studying what appears to be extreme pathology, I hope to discover the workings of the normal. I believe that the apparent anomalies of the development of Soviet genetics can be understood as a special case of pervasive, systemic properties—and that, understanding those properties, one can see that most studied of histories in a new way.

Thus, the underlying features that I study are general to the Stalinist science system: the merging of the scientific community and the party-state control apparatus on the level of both institutions and individuals; the subordination of science-policy decision making to the priorities of that apparatus; the centralized, pyramidal, rigid, hierarchical structure of scientific institutions; the fierce competition among various groups within both the community and the party-state agencies; the tight administrative control over institutional structures, appointment and certification of scientific personnel, research agendas, and international and domestic scholarly communications; the translation of the community's interests into the "Newspeak" of party bureaucracy; the militant style of scientific criticism; and the peculiar party "etiquette" that defined the required rituals of scientific behavior. These are some of the features of Stalinist science I will analyze, and *there was not a single scientific or scholarly discipline in the Soviet Union to which they did not apply and whose fate was not shaped by them.*

The power of such analysis, I will argue, is that these features explain not only what was common to all sciences in the Soviet Union, but also *why they had such apparently different fates.* These general features of the Stalinist science system help explain not only similarities, but also differences in the development of separate disciplines. Particular disciplines significantly differed in their positions *within* that system: in the degree of the centralization and monopolization of their institutions; the level of the polarization and fragmentation of their communities; their relative importance in the eyes of decision makers; their representation within Soviet academies and their governing bodies; the degree to which their agendas were translatable and actually translated into the party rhetoric; and their ability to produce authoritative spokesmen and to secure the support of influential patrons among party leaders.

These differences were a result of the Stalinist science system; they were induced and delimited by the system itself.

Of course, the development of Soviet science as a whole was affected by the personalities of scientists and officials: they obviously were not merely cogs in an enormous state machine, but also human beings with their own moral codes, tastes, beliefs, virtues, and vices. This personal dimension of the history of Stalinist science has been by far the most thoroughly treated in the countless Russian memoirs and reminiscences published in recent years, but it lies largely beyond the scope of my analysis. I focus on the “machine” itself, the Stalinist science system and its operating principles, on the standard roles and modes of behavior this system forced upon its actors, rather than on the idiosyncratic differences in the ways particular individuals performed these roles.

This book focuses on the decade from 1939 to 1949, when the world moved through World War II into the Cold War. These two wars each dramatically affected the Stalinist science system that had emerged during the 1930s. But it was the Cold War that consolidated Stalinist science, giving it its final form and enduring character. The rapid escalation of the Cold War in the spring and summer of 1948 reshaped the interactions between the control apparatus and the scientific community. The 1948 events influenced far more than just genetics and even biology—they had a profound impact on the Soviet science system as a whole. It was that pattern of interactions, structures, and styles, “frozen” by the Cold War, that from 1948 on defined the dynamics of Soviet science. So, on the basis of an exhaustive study of the archives, I will offer a somewhat different interpretation of the ominous events of that year in the history of Soviet science—one that tracks its aftermath, the development of a massive campaign that enveloped the whole of Soviet society, and the use of that campaign by many interest groups. This interpretation sets these events in the broader context of the Cold War and explores them in order to understand what “Stalinist science” was and how it worked.

P A R T I

The Making of Stalinist Science

You must give our barbarians one thing: they understand the value of science.

—Academician Ivan Pavlov, 1929

BETWEEN THE TWO world wars, Russia was transformed from a modest province of world science into one of its great centers, arousing the admiration and envy of scientists throughout the world. This quantum leap was a direct result of the Great Experiment, the Russian Revolution, and of the combined efforts of scientists and the Bolshevik government. The Bolsheviks were idealists and visionaries who dreamed of a New World. Their government was the first in the world to recognize the now common notion of science as a powerful instrument in national development. Materialists and revolutionaries, they spared no efforts—and their efforts were often brutal and barbarous—to realize this ideal in the one-sixth of the world under their control. They vigorously supported science and raised its prestige to the skies.

At roughly the same time, science was undergoing its own revolution. The small-scale enterprise of individual professors and their students, making their own simple instruments, was evolving into Big Science—a huge, industrylike production process that involved hundreds of workers, complex machinery, and more and more resources. Scientists all over the world desperately sought patrons and partners to provide the support and funding necessary for this emerging enterprise. The Bolshevik vision of science, then, well suited the agenda of Russian science; and, after a brief hesitation induced by the brutality of the Bolsheviks' actions, scientists joined in the Great Experiment. In the two decades that followed the October Revolution of 1917, Russian Bolsheviks and Russian scientists, working together, built one of the world's largest science systems. Each partner had its own visions of this joint venture, each had something to gain from it, and each had a price to pay.

Russian Science in Transition, 1890–1929

Personally, I am deeply interested in science and value it enormously.

When you need something, do appeal directly to me.

—Lenin to Sergei Ol'denburg, January 27, 1921

WE ARE USED TO thinking of Soviet science as a huge, hierarchical, centralized, politicized, isolated, and strictly controlled system. This system, however, emerged only after more than a decade of Bolshevik rule. Despite the trauma and shock of the revolutions and the Civil War, Russian science in the 1920s was actually an expanded, slightly modified version of the science system that had existed in Russia under the tsar: a diversified network of scientific institutions and an essentially autonomous scientific community with well-developed foreign contacts. Yet the modifications introduced in the 1920s—the creation of a single state patron for science, the lavish privileges and support it afforded, the takeover and transformation of the educational system—planted the seeds of the vast transformations that were to come.

With the Bolshevik revolution, science was nationalized—it became the property of the state and an instrument of its changing domestic and foreign policies. As the decade unfolded, the state and the scientific community developed increasingly close and symbiotic relations, making Russian science a hostage to the ever-changing interests of its sole patron.

SCIENCE IN THE RUSSIAN EMPIRE, 1890–1917

At the end of the nineteenth century, Russian science was a variant of European science, and its development from the 1890s through the 1910s paralleled developments elsewhere in Europe.¹ These parallels were reinforced by a steady flow of people and ideas: upon completion of their university studies, many Russian scientists spent several years in German, French, or British laboratories, and some of the scientific organizations and practices they experienced there were brought back and re-created on Russian soil. The development of Russian science was particularly influenced by the German model.² As in Germany, the major institutional base of Russian science was a system of state universities and specialized educational institutions.³ By World War I, the Russian Empire had ten universities and over eighty other higher educa-

tional institutions, such as the Military-Medical Academy, the Petrov Agricultural Academy, the Mining Institute, and the Technological Institute.⁴ A number of specialized research institutes were organized under the auspices of these educational institutions. For example, physiological institutes were established at Moscow, Kazan, and Kiev universities.⁵

As in Germany, the nobility in Russia patronized certain important scientific institutions, such as the Imperial Academy of Sciences, the Institute of Experimental Medicine, and the Russian Entomological Society. The development of Russian industrial capitalism stimulated corporations and entrepreneurs to subsidize scientific research and education. The Russian sugar trust, for example, financed extensive research in botany and entomology and subsidized scientific periodicals and conferences. From the 1890s through the 1910s, many new institutions for research and education were established with private financing, including the Psycho-Neurological Institute, Shaniavskii University, and the Institute of Experimental Psychology.⁶ In short, as in Europe and the United States, the expansion and professionalization of science in Russia involved the creation of numerous scientific societies, the founding of specialized periodicals and institutions, the organization of conferences and congresses, and the development of an international network of scholars in newly emerging disciplines and specialties.

During the prerevolutionary decades, then, Russian science flourished, and many Russian scientists won international fame. Such figures as Dmitrii Mendeleev in chemistry, Vladimir Lobachevskii and Pavel Chebyshev in mathematics, and Vladimir Dokuchaev in soil science firmly established the international reputation of Russian science. Russian contributions to medical fields were recognized with the awarding of Nobel prizes to Ivan Pavlov (1904) and Il'ia Mechnikov (1908).

As in other countries, the professionalization and institutionalization of science led to the creation of a professional culture in Russian science. In their discourse, self-image, and professional behavior, prerevolutionary Russian scientists were almost indistinguishable from their colleagues in other countries. As in the West, specialized scientific periodicals focused on the novelty and objectivity of research. These developments reflected the maturation of the Russian scientific community and served to insulate and protect it from interference by the ideological authorities, especially the church and the tsarist censor.⁷

The differentiation and institutionalization of research interests was clearly reflected in the manner in which various groups of scholars criticized each other in scientific periodicals. For example, in behavioral studies, proponents of three different approaches (psychological, physiological, and naturalistic) competed for authority over research on animal behavior. Their public criticism of each other concerned almost exclusively the objectivity and novelty of the competing methods and, hence, the relative reliability of their results and interpretations.⁸

As a rule, Russian scientists carefully avoided ideological, political, and social language in their scientific writings. For example, in specialized scientific publications the ideological significance of behavioral research was rarely mentioned. When a Russian translation of *The Outlines of Comparative Psychology*, written by the Jesuit Erich Wasmann, was offered to various editors for publication, one of them replied: "This mixture of science and theology creates a very unfavorable impression and directly interferes with reading the book. Personally, I deeply regret this, for otherwise this is an excellent book with many interesting facts and a profound psychological analysis."⁹ All publishing houses rejected the manuscript, which was eventually published at the translator's expense. Significantly, the reviews of Wasmann's book in scientific periodicals either totally ignored the religious aspect of his work or merely touched upon it in passing, concentrating on his factual contributions. A theistic treatment was inadmissible and incompatible with the standards of the scientific community.¹⁰

The avoidance of ideological, political, and practical references in their professional culture does not mean, of course, that Russian scientists were nonideological, apolitical, or impractical. On the contrary, they were probably one of the most civically active social groups in Russian society between the 1890s and 1910s. Prominent scientists headed the Constitutional-Democratic (Kadet) Party, one of the most influential liberal parties in Russia. The notion that scientific research would yield practical benefits, and indeed was the motive force of human progress, was central to the belief system of Russian scientists.¹¹ Yet, despite their broad social, political, and ideological activity, Russian scientists as *professionals* treated science itself as above politics, above ideology, and above narrow practical interests—and fiercely defended the "purity" of their scientific work.

At the turn of the century, the Russian government qualitatively expanded its support for scientific research. Russia's catastrophic defeat in the Russo-Japanese War of 1904–5, which resulted in the loss of the entire Russian fleet and several important colonies in the Far East, accelerated this process. Various tsarist ministries and departments created or expanded a number of special agencies to supervise and finance scientific activity, including the Scientific Committee of the Mining Administration (Uchenyi Komitet Gornogo Vedomstva), the Agricultural Scientific Committee of the Ministry of Agriculture (Sel'skokhoziaistvennyi Uchenyi Komitet Ministerstva Zemledeliia), and the Scientific Committee of the Ministry of State Properties (Uchenyi Komitet Ministerstva Gosudarstvennykh Imushchestv). The Ministry of Public Enlightenment, which supervised universities and other educational institutions, also expanded its support for scientific and technical research.

The outbreak of World War I greatly accelerated this trend. During the war, several authoritative commissions and committees, such as the Commission for Studying the Natural Productive Forces of Russia (KEPS) and the Scientific Committee of the Administration of Artillery, were established by and

within governmental agencies to employ scientific research for the country's military needs. Such prominent scientists as Vladimir Ipatieff, Aleksei Krylov, Vladimir Vernadskii, Aleksandr Karpinskii, and Vladimir Steklov played a significant role within these agencies.

By 1914 the Russian scientific community comprised about four thousand scientists working in 289 scientific institutions.¹² These institutions were organized into three independent networks of research laboratories and institutes: those associated with higher educational institutions, those under various tsarist ministries and committees, and those with private financing. Russian scientists complained constantly about the slow tempo of institutional development and especially the low level of state support. Like scientists in many other countries, they repeatedly criticized their own government for its neglect of science.¹³

The scientific community, then, enthusiastically supported the February 1917 revolution, which dethroned Tsar Nicholas II and created a liberal Provisional Government that promised to increase support for education and scientific research. Prominent scholars in the Kadet Party—including Aleksandr Manuilov (former rector of Moscow University), academician Sergei Ol'denburg (permanent secretary of the Imperial Academy of Sciences), and academician Vladimir Vernadskii (founder of the Academic Union)—played an important role in the Provisional Government, especially its Ministry of Enlightenment. This ministry formed several commissions composed of eminent scientists to develop a plan for the reorganization and expansion of education and research.¹⁴ Their endeavors were interrupted in October 1917, when a radical faction of the Russian Social-Democratic Labor Party, the Bolsheviks, suddenly came to power.

RUSSIAN SCIENCE AND THE BOLSHEVIKS, 1917–1929

On October 25, 1917, the Bolsheviks effected a coup d'état in Petrograd¹⁵ and declared the establishment of a socialist republic. Within months, a new form of governmental administration, "soviets," came to control almost all the territory of the former Russian Empire. In March 1918, the Bolsheviks concluded a separate peace treaty with Germany, ending Russia's participation in World War I. Shortly thereafter, however, the Russian Civil War began. The Red Army finally triumphed in 1921, and in 1922 the Union of Soviet Socialist Republics was established.

Seven years of continuous warfare had left Russia economically devastated. Industry was ruined, cities were depopulated, agriculture was destroyed, transport was shattered. Food, fuel, and raw materials were everywhere in short supply. During the Civil War of 1918–21, the Bolsheviks had adopted an economic policy of "War Communism," which featured the nationalization of industry, the forced requisition of agricultural production, the

abolition of money, and the administrative distribution of food and goods. In spring 1921, the economic crisis forced the Bolsheviks to announce the New Economic Policy (NEP), which abolished forced requisitions and restored money and the market. Preserving state control over key industries and banking, the Bolsheviks partially restored private property and initiative in trade and the production of consumer goods. NEP proved effective in reviving the economy: by the end of 1924, the Russian currency had stabilized, the market had been restored, agricultural production had increased, and industry and transport had revived. By the late 1920s, most foreign governments had granted the USSR diplomatic recognition.¹⁶

The Bolsheviks' primary concern during their first years of power was the restoration and maintenance of the national economy, which they considered crucial for the building of what their political program called "the first socialist society." This concern defined their policy and attitude toward science and scientists: science was to play an important role in "the building of socialism in Russia." This instrumental, utilitarian attitude is evident in a number of the documents that formulated Bolshevik science policy at the very beginning of the regime, such as "Proposals for a Project to Mobilize Science for the Needs of State Construction," issued in January 1918 by the People's Commissariat of Enlightenment (Narkompros),¹⁷ and "Draft Plan for Scientific-Technical Work," written in spring 1918 by Lenin.¹⁸

Like many liberal, democratic, and radical parties in Russia and elsewhere (and like most Russian scientists), the Bolsheviks were captivated by a technocratic vision of a future society that would reap the fruits of scientific progress.¹⁹ This technocratic ideal, together with urgent economic needs, I believe, defined the dual direction of Bolshevik science policy during the 1920s. On the one hand, the Bolsheviks strove to co-opt the existing "bourgeois" scientific community and to invite Russian scientists to collaborate with the new regime. On the other hand, they began to create their own "Communist" science and to prepare their own "proletarian" scientific cadres.

Co-opted Science

The initial encounters between Russian academics and the Bolsheviks were colored by a great deal of mutual suspicion and distrust. During the first years of Bolshevik power, however, the two groups compromised and developed a functioning symbiosis: the new government provided scientists with considerable resources and autonomy, while the scientists provided their expert knowledge to help revive industry, agriculture, and medicine.²⁰

Despite the open hostility of the scientific community to the Bolshevik coup d'état,²¹ from its very birth the Soviet state strove to win the confidence of Russian scholars.²² Scientists were considered a part of the bourgeoisie, but the new proletarian state did not hasten to liquidate them; quite the contrary. Under the harsh conditions of the Civil War, the Bolsheviks demonstrated

their “goodwill” by creating a number of privileges for scientists: enlarged food rations (*paiki*), immunity from confiscation of houses and apartments, and exemption from compulsory physical labor and military mobilization. In December 1919, while the Civil War raged throughout the country, the highest governmental body, the Council of People’s Commissars (Soviet Narodnykh Komissarov—SNK), issued a special decree, “On Improvement of Conditions for Scientific Specialists.” A special commission “to improve living conditions for scholars” was created.²³ The commission provided scholars with food and fuel to survive the harsh conditions of War Communism, hoping to prevent Russian scientists from emigrating and to preserve the nation’s scientific potential—this despite the fact that the very existence of this commission contradicted the officially proclaimed egalitarian policy of War Communism and the “proletarian nature” of the Soviet state.²⁴

During the 1920s, the Bolsheviks did everything possible to provide the conditions necessary for scientific work. They revived and expanded research institutions and spent large amounts of precious hard currency to buy scientific equipment, secure foreign publications, and send scientists to study abroad. They financed various conferences and congresses,²⁵ published scientific periodicals and monographs,²⁶ and organized numerous expeditions within the country and abroad. They provided scientific institutions with buildings, heat, and electricity, and scientists with food, housing, and salaries.²⁷

The Bolsheviks also raised the public prestige of scientific work. On June 23, 1925, the SNK issued a special decree establishing the Lenin Prize for scientific research. The first five prizes were awarded in 1926 to a plant scientist, Nikolai Vavilov; a pharmacologist, Nikolai Kravkov; a geologist, Vladimir Obruchev; an agrochemist, Dmitrii Prianishnikov; and a chemist, Aleksandr Chichibabin.²⁸ The same year the SNK issued another decree, “On Establishing the Title of ‘Worker of Merit’ of Science, Technology, and Art.” In 1927 the government marked the tenth anniversary of the October Revolution by decorating a number of scientists, and the Academy of Sciences as a whole, with the Order of the Red Banner of Labor.

During the 1920s, the government actively solicited scientists’ participation in discussions about industry, economics, culture, and even politics. The Bolsheviks created numerous consultative commissions and committees within various governmental agencies (for example, the State Commission on the Electrification of Russia—GOELRO). They invited scientists to work in these commissions as experts and advisers, ignoring what later would be considered mortal sins—nonproletarian class origin, previous hostile political sympathies, and service in the White armies.²⁹ Several scientists became members of the supreme governmental agencies and occupied high posts within the apparatus of the People’s Commissariats (*narkomats*).

This science system much resembled that of tsarist Russia, with one principal difference: the disappearance of private funding. Science in Soviet Russia had become an exclusively state enterprise. The Bolsheviks created a number

of governmental agencies that formulated science policies and supervised scientific institutions, while also granting the scientific community considerable autonomy.

The People's Commissariats assumed responsibility for supervising scientific research. At first, the People's Commissariat of Enlightenment (Narkompros) of the Russian Federation occupied the leading place among state agencies in charge of science.³⁰ Narkompros came to oversee almost all scientific institutions: the Academy of Sciences, scientific societies, and all higher educational institutions, including universities.³¹ A special department, the Main Administration of Scientific Institutions (Glavnauka), was created within Narkompros to supervise general science policy. A main direction of this policy was to expand the system of scientific institutions inherited from the tsarist regime. From the very beginning of Soviet power, Narkompros started organizing new research institutes, mostly within universities. About forty such institutes had been organized by 1922—eleven of them under the faculty of physics and mathematics of Moscow University alone.³²

A number of other governmental agencies took part in the building of Soviet science, notably the Supreme Council of the National Economy (Vysshii Sovet Narodnogo Khoziaistva—VSNKh), the All-Russia Central Executive Committee (Vserossiiskii Tsentral'nyi Ispolnitel'nyi Komitet—VTsIK), the All-Union Central Executive Committee (Vsesoiuznyi Tsentral'nyi Ispolnitel'nyi Komitet—TsIK), the SNK, the People's Commissariat of Public Health (Narkomzdrav), and the People's Commissariat of Agriculture (Narkomzem). These agencies established special scientific committees, departments, and councils to supervise scientific institutions related to state enterprises—public health, agriculture, geological explorations, industrial developments, and so forth.

One of the most important of these agencies was the VSNKh, which organized an extensive network of scientific institutions for Soviet industry. As early as 1918, the VSNKh created a Scientific-Technical Department (Nauchno-Tekhnicheskii Otdel—NTO), later renamed the Scientific-Technical Administration (Nauchno-Tekhnicheskoe Upravlenie—NTU). During its first years, the eminent chemist Vladimir Ipatieff presided over this body, and a number of prominent scientists, including Aleksei Bakh, Ivan Gubkin, and Leonid Ramzin, took part in its activities. By 1923 the NTU had organized fourteen large institutes; by the end of 1927 this number had increased to thirty-six.³³

In August 1925, TsIK created the Temporary Committee to Supervise Research and Educational Institutions (Vremennyi Komitet po Zavedyvaniiu Uchenymi i Uchebnymi Zavedeniiami). In spring 1926, the SNK established a special Commission to Support the Work of the Academy of Sciences (Komissiiia Sodeistviia Rabotam Akademii Nauk)³⁴ and a Department of Scientific Institutions (Otdel Nauchnykh Uchrezhdenii).³⁵ This state apparatus began to work quickly and actively.³⁶

All governmental agencies actively supported and promoted the institutional development of science, reviving and expanding what they had inherited from the tsarist regime. The Bolsheviks generously financed existing institutions and founded new ones. During 1918–19 alone—in the midst of the Civil War—scientists were able to win support for thirty-three new research institutions.³⁷ Almost every prerevolutionary institution managed to survive under the Bolsheviks, finding support in the appropriate governmental agencies. Narkompros subsidized museums, university research laboratories, and scientific societies, such as the Russian Geographical Society and the Russian Entomological Society. Narkomzdrav funded various medical and biological institutions, Narkomzem agricultural ones, the VSNKh chemistry and physics institutions.

Scientific institutions that had been financed by private patrons before the revolution found new patrons among the state agencies. For example, before the revolution Nikolai Kol'tsov had created the Institute of Experimental Biology with private financing. After the revolution, he found sufficient support for the institute in Narkomzdrav and several other agencies to greatly expand its staff and facilities.³⁸ The same was true of the Institute of Experimental Psychology, organized before the revolution by Georgii Chelpanov; the Psycho-Neurological Institute, organized by Vladimir Bekhterev; the Institute of Experimental Medicine; and other institutions.

Even the Imperial Academy of Sciences managed to survive under the new regime, despite the numerous declarations of militant Bolsheviks who wanted to abolish this odious remnant of the “bourgeois, imperialistic past.”³⁹ Soon after the revolution, the academy leadership began to collaborate with the Bolshevik government.⁴⁰ The practical significance of the Commission for the Studying Natural Productive Forces of Russia (KEPS), established during World War I, became a major argument for preserving and expanding the academy. The academy quickly gained considerable influence in governmental circles: on June 27, 1925, the SNK and TsIK issued a special joint decree transferring it from the authority of Narkompros to that of the SNK and declaring it “the supreme scientific institution of the USSR.” Renamed the USSR Academy of Sciences, it began to expand rapidly. Various sections and departments of KEPS gave birth to numerous research institutes, such as the X-Ray Institute, the Soil Institute, and the Optical Institute.

The main unit of the Soviet science system became the “scientific-research institute.”⁴¹ These institutes were usually composed of several laboratories or departments that studied related subjects. For example, the Institute of Experimental Biology included departments of cytology, genetics, eugenics, zoo-psychology, hydrobiology, histology, and embryology. The ruling body of the institute was its scientific council (*uchenyi sovet*), which included the heads of laboratories and other prominent scientists. The scientific council was responsible for research policy, while the institute’s director set administrative policy.

By the late 1920s, Bolshevik science policy had generated a large, diversified, and decentralized network of scientific institutions. Swift institutional growth reached beyond such traditional scientific centers as Moscow, Petrograd, Kiev, Kazan, and Khar'kov; important new research centers appeared in Tomsk, Perm, Sverdlovsk, Smolensk, and many other provincial cities. Furthermore, the republics of the new Soviet Union replicated the diverse Russian administrative structure, so that several republics had their own educational, agricultural, and industrial commissariats supervising science. As the deputy head of Narkompros, Mikhail Pokrovskii, reported to the Fifth Congress of the USSR Soviets in 1929: "Science [in the USSR] is a fragmented front. Numerous agencies are supervising science. . . . The agency that you will elect at this congress, the Presidium of TsIK, has a special Scientific Committee to Supervise Scientific Institutions. The SNK is also supervising science. . . . Industry has its own science, supervised by the VSNKh. . . . Other commissariats—Narkomzem, Narkomzdrav, and so forth—have their own science."⁴² According to official statistics, by 1929 the USSR boasted 1,263 scientific institutions, including 438 scientific-research institutes and 120 experimental stations.⁴³

Many of these institutions, however, originated not from a deliberate state science policy, but rather from the spontaneous efforts of scientists seeking funding to support their own research—or simply to survive under new social circumstances.⁴⁴ In 1919, for instance, Vladimir Durov, a famous animal trainer and owner of Russia's largest circus, received financial support from Narkompros "for the scientific formulation of his achievements in animal training."⁴⁵ He organized the Practical Laboratory for Zoopsychology, whose staff included a famous entomologist, Grigorii Kozhevnikov, and a prominent biophysicist, Aleksandr Chizhevskii. Neither scientist had ever had anything to do with zoopsychology—for them the laboratory was obviously only a temporary refuge.⁴⁶

The existence of various independent agencies supporting science created a certain freedom of choice for scientists looking for subsidies. A scientific project rejected by one agency (say, Narkompros) might find support in another (such as Narkomzdrav). Many Russian scientists no doubt employed Bolshevik science policy to institutionalize their own research interests. A number of disciplines and research fields that had been absent or weakly developed in tsarist Russia were quickly institutionalized during the first decade of Bolshevik rule.⁴⁷

Soviet science in this period was organized according to the principle of personal patronage. When scientists subordinate to a state agency (for example, Narkomzdrav or Narkompros) encountered some financial, material, or political difficulties, they appealed directly to the head of their patron agency for help. The agency, however, rarely interfered in the direction, content, or duration of research, the choice of personnel and equipment, or the structure of institutions; these were largely defined by the scientists themselves. So,

despite its financing of all scientific research, the state's influence on scientific work itself was minimal. Directors of institutes had to present to the financing agency only annual reports and a list of required funds, equipment, and materials.⁴⁸

The patronage system also allowed scientists to use the influence of their powerful patrons in various state and party agencies. This period was characterized by close personal contacts between scientists and the heads of financing agencies or their trustees. Lenin himself and his old comrades-in-arms—Anatolii Lunacharskii (head of Narkompros), Nikolai Gorbunov (executive secretary of the SNK), Nikolai Semashko (head of Narkomzdrav), Gleb Krzhizhanovskii (head of GOELRO)—often intervened personally on behalf of individual scientists and institutions. These officials were especially interested in supporting such prominent scientists as Pavlov, Vernadskii, Bekhterev, Ipatieff, Krylov, Steklov, and Abram Ioffe. Such patronage led to the concentration of great institutional power in the hands of a few famous scientists. As privileged governmental “trustees” and experts on particular scientific questions, they held considerable influence over the institutional development of their own fields. This policy often led to the rise of a “monopoly” of these prominent scientists over the development of their disciplines. Thus, practically the entire institutional development of plant science in the 1920s was in one way or another influenced by Nikolai Vavilov, as was geology by Aleksandr Fersman and Vladimir Obruchev and physics by Abram Ioffe.⁴⁹ These prominent scientists became spokesmen for their disciplines and exerted substantial influence on the state agencies in charge of science. An illustrative example is the aborted history of a proposed institute for the study of animal and human behavior. In 1921 G. Zelenyi, Pavlov's former student and collaborator, petitioned Narkomzdrav for support to organize such an institute in Petrograd. The commission that was considering the matter solicited Pavlov's opinion. He replied: “Studying human and animal reactions to the external environment is the subject of physiology. It is desirable that such new investigations not be removed from a physiological laboratory; on the contrary, it is necessary that they be more closely connected with a physiological laboratory.”⁵⁰ The commission adopted Pavlov's position that Zelenyi's institute was unnecessary.⁵¹

Bolshevik science policy, then, proved generally effective and attractive for Russian scientists. Most of them overcame their initial hostility toward the Bolshevik regime and began to collaborate with it. By the late 1920s, the scientific community had been completely co-opted into the new system of power relations and occupied a prominent place within the social structure of the Soviet state. Scientists enjoyed considerable authority and state support, while preserving a high level of professional autonomy. The network of close personal contacts between scientists and heads of governmental agencies (or their trustees) allowed scientists actively to influence state science policy and decision making.

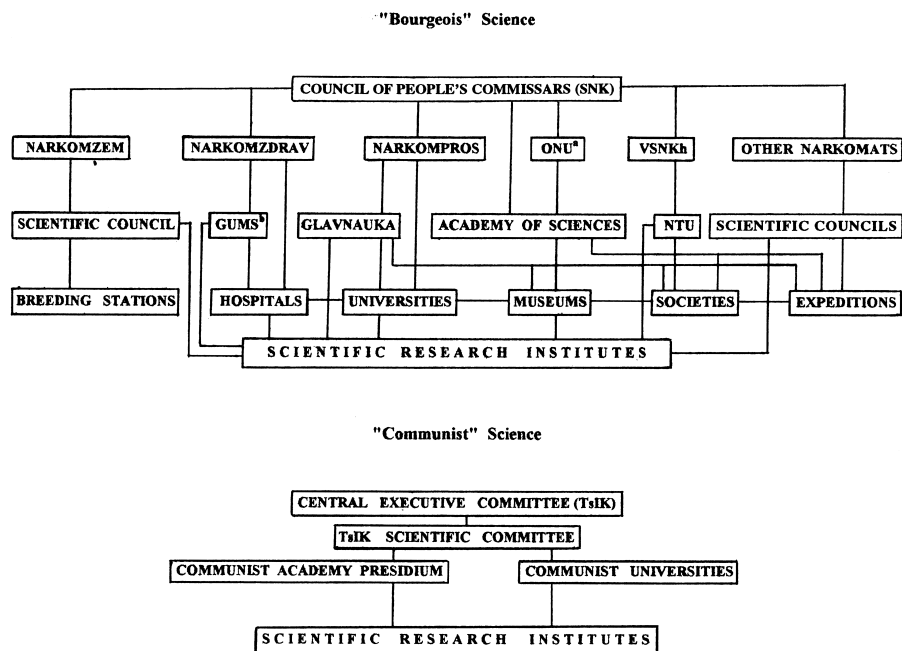


Figure 1-1. Russian Science System in 1926

^a ONU = Otdel Nauchnykh Uchrezhdeni, the Department of Scientific Institutions of the SNK

^b GUMS = Glavnyi Uchenyi Meditsinskii Sovet, the Main Scientific Medical Council of Narkomzdrav.

The 1920s were years of great scientific activity. In almost every field new institutes were organized, numerous conferences were held, periodicals and books were published. Russian scientists' international contacts were restored; they visited their foreign colleagues and were frequently visited in return.⁵² Foreign monographs and textbooks in various fields were translated, and Russian works appeared regularly in foreign periodicals. In short, science blossomed in the first decade of Soviet power.

"Communist" Science and Education

While co-opting the "bourgeois" scientific community they had inherited, the Bolsheviks actively prepared their own "proletarian" scholars and their own "Communist" science (see figure 1-1).

In contrast to the liberal and accommodating Bolshevik policy toward existing *research* institutions, Bolshevik policy toward *educational* institutions was stern and aggressive.⁵³ In 1918 Narkompros began to reform the system of higher education. The Bolsheviks organized new universities and specialized educational institutions in Russia's large cities to train new cadres for the

scientific and technical intelligentsia. They exerted strict control over syllabi, curricula, the professoriate, and the student body. A number of “ideologically harmful” disciplines (mainly in the humanities) were abolished. Numerous purges of educational institutions were conducted in the 1920s to “proletarianize” students and to “Bolshevize” professors.⁵⁴ As a result, a number of university professors quit teaching and concentrated exclusively on research. This dual policy, combining relative autonomy in research with strict control in education, created a dichotomy between teaching and research that became a characteristic feature of the Soviet science system.

In addition to the existing educational institutions that were reformed, a number of new “Communist” ones were created, such as the Communist Academy, the Institute of Red Professors,⁵⁵ and the Communist universities.⁵⁶ The main task of these institutions, as their names made plain, was to create a new, Communist intelligentsia.

The Bolsheviks also created their own Communist research institutions and scientific societies. A special place among these new institutions was occupied by the Socialist Academy, organized in 1918 under VTsIK and renamed the Communist Academy in 1923.⁵⁷ Established as a primarily educational institution, the academy in the early 1920s was transformed into the center of “Communist” research. It initially conducted research in social and humanitarian disciplines, but by mid-decade it also included several institutes devoted to the natural sciences. During the 1920s, it steadily expanded its institutional base, and its staff undertook several important projects—among them the compilation of the first *Great Soviet Encyclopedia*.

These Communist institutions presented a clear alternative to the “bourgeois” science inherited from the tsarist regime. The Communist Academy, for example, competed with the Academy of Sciences for the status of “the supreme scientific institution” in the USSR.⁵⁸ Perhaps some Bolshevik leaders believed it necessary to replace bourgeois science with their own Communist science; in any case, the leadership of the Communist Academy clearly articulated this goal.⁵⁹ Most importantly, however, the Communist Academy presented an alternative model of science organization—by replicating the centralized, hierarchical organization of the Bolshevik party itself. Unlike the democratic Academy of Sciences, which was governed by the general assembly of its members, the Communist Academy was governed by its so-called presidium, a self-appointed body of its high-ranking founders, later approved by the Central Committee of the Communist Party. Unlike the Academy of Sciences, which had neither the intention nor the authority to dictate the activities of its members and institutions, the presidium of the Communist Academy actively controlled subordinate institutions and exerted “party discipline” over its members and workers. Moreover, the party cell of the Communist Academy played the leading role in all its activities.

This Communist science profoundly affected the professional culture of Russian science as a whole: during the 1920s, a new lexicon and a new polemical style appeared in scholarly writings. References to Marxism and practi-

cality began to permeate scientific literature, and scientific criticism acquired a militant, combative tone. The Communist Academy played a leading role in introducing this new lexicon and polemical style into the culture of the scientific community. The editorial introducing the first issue of the academy's mouthpiece, *Under the Banner of Marxism* (1922), proclaimed: "We are not investigators who observe and study from a distance the development of ideas, the *struggle* of social and class forces and tendencies in our society. We are *fighters*, our journal is a journal *fighting* for the materialist worldview, our periodical is a periodical for debate."⁶⁰

The Communist Academy and the various Marxist professional societies that emerged in the 1920s—including the Society of Mathematician-Materialists, the Society of Biologist-Materialists, and the Society of Marxist Agrarians—played a critical role in introducing this "struggle" into scientific activity. For them, scientific discussion was first and foremost a "fight for materialism." The third issue of *Under the Banner of Marxism* carried an article entitled "On the Significance of Militant Materialism," written by no less a figure than Lenin himself. He explained: "No natural science, no materialism can withstand the *struggle* against the pressure of bourgeois ideas and the bourgeois worldview without a sound philosophical basis. In order to be able to withstand the *struggle* and to accomplish it successfully, a scientist *must* be an up-to-date materialist, a deliberate follower of the materialism presented by Marx, that is, he *must* be a dialectical materialist."⁶¹ Note both the mission Lenin assigned to scientists—the "struggle" against "bourgeois ideas"—and the imperative terms in which he expressed it—"must."

This article became the manifesto of Communist scholars. The editorial board of the journal called on them to "unfold the banner of *militant* materialism,"⁶² and Communist scholars opened broad debates over "materialism" and "idealism" in scientific research. As one might expect, the main target of their offensive was bourgeois science. Competing for the support of state agencies, Communist scholars launched a broad attack on bourgeois academics, accusing them of political and ideological alienation from the goals of the proletariat and the proletarian state. Moreover, state authorities clearly demonstrated to the scientific community that the "fight for materialism" could be conducted by severe administrative methods: in autumn 1922 about two hundred "idealist" scholars were exiled from the country. Many of them had previously been criticized by militant Marxists in *Under the Banner of Marxism*.

A characteristic feature of this polemical style was to criticize an opponent's point of view on ideological rather than scientific grounds. Ideologically minded critics paid little or no attention to the actual scientific content of criticized work. As one target of such criticism noted:

I said none of what [the critic] ascribes to me, but I did say something he does not mention in his article. This is only explicable by his not reading properly what he was supposed to read. And he did not read it because he is so sure of the perfection of his monistic creed that the slightest deviation from it, even the appearance of one,

deserves the most severe verdict, since everything beyond the shrine of his creed is rubbish and not worthy of honest discussion: phrases are quoted fragmentarily, [and] the obvious is explained pontifically.⁶³

Militant Marxists attacked the “ideological mistakes” of their opponents and insisted that only their own views were admissible. A tendency to establish a single “orthodox” point of view on a subject became characteristic for this style of criticism. Many scientists denounced this insistence upon an orthodoxy. One, for example, responded to the criticism that he had “diverged from materialism” by noting that his viewpoint “does differ, but not from the materialist worldview as such. It differs from the materialist creed, which supposes that science only dwells in its shrine and which demands that you take part in joint expiation with it or be excommunicated from the church.”⁶⁴ Ideological criticism was obviously intended not to bring out the objectivity or novelty of scientific propositions, but to pigeonhole a criticized scientist, according to the principle “whoever is not with us is against us.”

This peculiar style of scientific criticism clearly resembled the combative political culture⁶⁵ of the Bolshevik party in the 1920s and the heated inner-party struggle with various oppositions, deviations, and dissensions. Communist scholars simply transferred their experience of party struggle into science and employed it in their scientific writings. This is especially clear in these scholars’ use of the style and lexicon of party journalists. Such frequently used phrases as “the front of science and technology,” “the vanguard of science,” “weapons of investigation,” “soldiers on the scientific front,” and so forth testify to the influence of militant Communist Party culture upon the perceptions and tactics of Communist scholars.

Nor did Communist scholars alone employ Marxist lexicon and a combative polemical style. Numerous bourgeois academics came “under the banner of Marxism” and proclaimed the practical usefulness of their investigations. The well-known psychologist Konstantin Kornilov, for example, contributed an article to *Under the Banner of Marxism* in 1923 in which he argued for a “Marxist science”:

Marx once pointed out with regard to philosophy that “philosophers have only explained the world, but the point is to change it.” By applying this to psychology, we have every right to state that the aim of modern psychology is not only to provide an explanation of human psychology, but also to master this human psychology. And the best proof of the fact that modern psychology has embarked upon this road is modern psychotechnology [*psikhotekhnika*], which is the best example of the applied use of psychology to solve practical problems put forward by reality.⁶⁶

In the mid-1920s, the word “Marxism” began to appear in the titles of many scholarly publications, such as Vladimir Bekhterev’s *Psychology, Reflexology, and Marxism* (1925) and the proceedings of the Institute of Experimental Psychology, *Psychology and Marxism* (1925)—to say nothing of numer-

ous articles in party periodicals that proclaimed “Marxist” trends in various disciplines.⁶⁷

Many scientists used the new lexicon simply as a rhetorical cover for their own research interests. The term “Marxism” was usually used interchangeably with “materialism.” Antonyms of “materialism” included “vitalism,” “spiritualism,” “antimonism,” “metaphysics,” “idealism,” and “transcendentalism.” Bourgeois scientists used “Marxism” in their titles, but only rarely in their texts, where it was usually replaced by “materialism” (nor did they refer to Marx, Engels, or Lenin). Despite these lexical adaptations, the main subject of their polemical writings remained the methodology and objectivity of research.

This can be illustrated through the writings of Vladimir Borovskii, head of a laboratory in the Institute of Experimental Psychology and an active member of the Society of Biologist-Materialists. In an article entitled “Metaphysics in Comparative Psychology,” published in *Under the Banner of Marxism*, he analyzed behavioral research conducted from the 1890s through the 1920s in Russia and elsewhere. The main weakness Borovskii found in this research was its inadequate factual base. His evaluations of a series of scientists each ended similarly: “The experiment and its interpretation have nothing whatsoever to do with each other”; “The question is—what facts enable one to draw such conclusions?”; “First the theory is constructed, and then the observed facts are forced into this biased construction,” and so on.⁶⁸ Borovskii never used the word “Marxism” in the article, but he defined its main purpose as the removal of “transcendental factors from comparative psychology.” In two other publications, pompously entitled “On Behaviorism and Materialism” and *Psychology from the Standpoint of a Materialist*,⁶⁹ Borovskii also neglected the Marxist classics,⁷⁰ but he declared himself a “materialist psychologist” and analyzed the work of other scientists “from the viewpoint of dialectical materialism.”

The very same language was often used by scholars representing entirely different viewpoints. For example, Kornilov, Bekhterev, and Aleksandr Luria each used the same Marxist lexicon to justify utterly different (in some sense opposing) psychological ideas: for Kornilov the true Marxist psychology was his concept of “reactions,” for Bekhterev his own “reflexology,” and for Luria psychoanalysis.⁷¹

As this example suggests, groups and individuals employed Marxism as a powerful cultural resource in distinguishing their research interests and institutionalizing their own approaches.⁷² To bolster their appeals for state support, some scholars began to refer to the ideological and practical value of their work. To secure funding for their research, scientists needed to display their loyalty and the usefulness of their work to their employer—the Bolshevik state. The reference to Marxism was a demonstration of loyalty, and the reference to practicality was a pledge of usefulness. In other words, the rhetoric of Marxism and practicality became a negotiating language employed by

scientists to legitimate and justify their research agendas and institutional ambitions in the eyes of state officials.⁷³ Scientists learned the language of their Bolshevik patrons.

Marxist rhetoric proved effective in these institutional struggles. The discussion about Marxist psychology, for example, resulted in Georgii Chelpanov's dismissal from the directorship of the Institute of Experimental Psychology after his "pseudo-Marxism" had been "exposed."⁷⁴ His main opponent, Kornilov, captured Chelpanov's post, and the institute's research assumed an entirely new direction.⁷⁵ Thus, it is not surprising that a resolution of the Central Committee of the Communist Party of June 18, 1925, stated: "The infusion of dialectical materialism into entirely new fields (biology, psychology, natural sciences in general) has begun."⁷⁶

Along with the new lexicon, certain scientists adopted a militant style of scientific polemics. Kornilov, for example, wrote in his editorial for the first issue of a new journal, *Psychology*, in 1928: "Our call for Marxist psychology, which we issued five years ago, could not at first *defeat* the skepticism rooted in the field of psychology. It has taken five long years of hard *fighting* by the proponents of Marxist psychology to separate themselves from, on the one hand, the *enemies* on their right (the idealists in philosophy and extreme subjectivists in psychology) and, on the other hand, the '*friends*' on their left (the mechanistic materialists in philosophy and extreme objectivists in psychology)."⁷⁷

Kornilov was not the only scholar for whom a scientific opponent became an "enemy." The motif of "fighting" with opponents appeared in many critical writings. Marxist critics were intolerant of any criticism of their own drawbacks and errors, even if the criticism was of a purely scientific nature; it was immediately countered by calling its author "antimaterialist." One scientist remarked that if scientists were to follow this practice, "it would be logical to label a mathematician who criticized some mistakes and shortcomings in another mathematician's work as an anti-mathematician, and to label a critic of poetry an anti-poet."⁷⁸ Labeling opponents became a major instrument to identify "enemies," and accusing them of ideological nonconformity became a common means of "struggle."

Just as the two parallel systems of scientific institutions (the co-opted bourgeois institutions and the newborn Communist ones) coexisted in the 1920s, so too did the traditional scientific and Marxist critiques coexist in different settings: the former appeared mostly in scientific periodicals, the latter in party publications. As we have seen, Borovskii widely deployed Marxist lexicon in his critical articles for *Under the Banner of Marxism*; but the tone and rhetoric of his reviews for the specialized professional journal *Psychology* were quite different. The essence of his three-page review of the *Proceedings of the Practical Laboratory for Zoopsychology* is clear from a single paragraph: "All these writings are primitive from the point of view of experimentation, naive in their attempts at theorizing, [and] suffer from absolute neglect

of the contemporary level of investigations because they are ignorant of foreign literature. As a result, they produce an absolutely definite impression: amateurish work that pretends to be scientific research.”⁷⁹ Borovskii did not mention Marxism or materialism in his review, but rather followed the principles of traditional scientific criticism. In confining his ideological criticism and Marxist rhetoric to party and popular publications addressed to party-state officials, not to his professional colleagues, Borovskii was typical of many scientists working in that era.

. . . .

During the 1920s, then, a symbiosis between Russian science and the Bolshevik state began to develop. Moved by a utilitarian image of science, the Bolsheviks supported science generously and enhanced its public prestige, co-opting institutions and leading scientists into the new social system they were creating. The scientific community’s leaders quickly overcame their initial hostility to the new regime and made good use of its active science policy. They revived and greatly expanded scientific institutions, personnel, and domestic and international scholarly communications.

In its initial form, this symbiosis provided the scientific community with considerable autonomy in its internal affairs and influence on the state’s science-policy decision making. Eminent Russian scientists established close contacts with state leaders and became the scientific community’s spokesmen within numerous state agencies. As a result, Russian science regained the prerevolutionary momentum that had been lost during World War I, the revolutions of 1917, and the Civil War.

At the same time, the Bolsheviks began to construct their own “Communist” science. During this period, militant Bolsheviks were unable to replace “bourgeois” science and scientists: Communist science was too weak, too lacking in the expertise required by the state. It did, however, prepare an alternative institutional and cultural model of science organization, replicating in scientific practice the pattern of interactions, structures, and styles of the Bolshevik party. Although bourgeois science was quickly adapting to the new social circumstances (and some bourgeois academics mastered the lexicon and styles of their partners), its total dependence on its state patron set the stage for all that was to come.

By the end of the 1920s, the seizure and tremendous expansion of the educational system had provided the Bolsheviks with the necessary personnel to implement the new Communist model throughout the entire Russian science system. In May 1928, at the Eighth Congress of the Union of Communist Youth (Komsomol), Stalin clearly articulated the tasks and aims of the new specialists: “A fortress stands before us. This fortress is called science, with its numerous fields of knowledge. We must seize this fortress at any cost. Young people must seize this fortress, if they want to be builders of a new life, if they

want truly to replace the old guard. . . . *A mass attack of the revolutionary youth on science is what we need now, comrades.*"⁸⁰

Shortly thereafter, the assault began.

The Stalinization of Russian Science, 1929–1939

Every revolution evaporates and leaves
behind only the slime of a new bureaucracy.

—Franz Kafka

THE YEAR 1929 marked a dramatic change—a “Great Break” (*Velikii Pere-lom*), as Stalin termed it—in all aspects of the country’s life. The Bolsheviks launched a grandiose plan of rapid industrialization in order to build the “material-economic basis of socialism.” NEP was abolished, private initiative and the market were suppressed, the peasantry was collectivized, and the state established a total monopoly over resources and production. This economic policy led to a system of strict control and administrative fiat. Directives and plans of production and distribution became the main instruments of economic policy, leading to centralized control and diminished local autonomy.¹ The new economic policy also led to the creation of a gigantic bureaucratic apparatus for its implementation.

Crash industrialization demanded not only enormous financial and material resources, but also extensive mobilization of the population. This was accomplished by various means. The Bolsheviki orchestrated massive propaganda campaigns under the slogan of “sharpened class struggle” against external and internal enemies, both real and imagined. These campaigns portrayed industrialization as the only source of strength in the “unavoidable military conflict with imperialism” and included a series of show trials of “enemies of the people,” accompanied by numerous purges, arrests, and exiles. The Bolsheviki manipulated the food supply, leading to the famine of 1931–33 and forcing mass migration to industrial centers. They vastly expanded the secret-police apparatus (the OGPU, later the NKVD), which, through massive arrests of peasants and other “socially alien” groups, became the major supplier of labor for such giants of Soviet industry as Magnitka, Dneprostroi, and Kuznetskstroii. In August 1936, the show trial of the so-called Zinoviev-Kamenev bloc marked the beginning of the Great Terror, which ravaged the country for two years, encompassing the arrest of some eight million people and the execution of about one million.² The Great Terror completed the establishment of Stalin’s regime. During the 1930s, the Communist Party emerged as the only real power, transforming all Soviet and governmental agencies into puppets of its Politburo and the man who controlled it, Joseph Stalin.

In the tense international situation of the 1930s, Soviet foreign policy turned increasingly to isolationism. To the east, the tensions between Japan

and the USSR resulted in several local military conflicts. To the west, the rise of fascism undermined the long-term Soviet alliance with Germany without creating a new alliance with Britain and France. The Spanish Civil War became a training ground for the coming war in Europe. The threat of a new war forced the Bolsheviks to accelerate military and industrial development. The Molotov-Ribbentrop pact of August 1939 restored the Soviet-German alliance; a few days later, World War II began.

The 1930s also witnessed the emergence of the Stalinist science system. Science was profoundly affected by the radical reorganizations of the 1930s: it was mobilized to serve the new policies of the state. The grandiose plan of social and economic reconstruction reinforced the utilitarian attitude of the Bolsheviks toward science embodied in the infamous motto “science in the service of socialist construction.” The importance of scientific development in their socioeconomic programs led the Bolsheviks to establish a complicated system of control over all aspects of scientific activity. During the early 1930s, they greatly enlarged their support for science, vastly expanding the network of scientific institutions, and continued to raise the public prestige of science and scientists.³ They simultaneously began to limit the considerable autonomy enjoyed by the scientific community in the previous decade.

In the 1930s, then, the earlier policy of co-optation of the scientific community was replaced by a policy of active command and control. As in all other spheres of Soviet life, in science the Bolsheviks created a centralized, hierarchical complex of institutions and a bureaucratic apparatus to supervise and control it. The Bolsheviks exerted tight control over the personnel of scientific institutions: the scientific community was Bolshevized and its “commanding heights” were seized by party members and “nonparty Bolsheviks.” The two parallel systems of “bourgeois” and “Communist” science were welded into a unified whole. Shortly after the Bolsheviks began to plan the Soviet economy, they introduced planning in science, and this became their main instrument for controlling the direction of research. With the isolationism of Soviet foreign policy came the isolation of Soviet science; contacts between Soviet scientists and their foreign colleagues were severed.

The establishment of strict party control led to the politicization of the professional culture of Soviet scientists, who adopted the lexicon, polemical style, and modes of group behavior of the Communist Party. Mass propaganda campaigns, a series of purges, and widespread arrests stimulated the development of specific rhetoric and rituals to demonstrate the scientific community’s conformity to party policies and to justify its research and institutional agendas in the eyes of the party bureaucrats in charge of science.

THE CONTROL APPARATUS

The Communist Party’s strict administrative control over all aspects of life was clearly reflected in the creation of a new system of agencies supervising

science policy. In January 1930, the Central Committee of the Communist Party created a Sector of Science and Culture within its Department of Culture and Propaganda. A year later, the Central Committee established a separate Sector of Science.⁴ After the reorganization of the Central Committee apparatus in 1935, a Department of Science and Scientific and Technical Inventions and Discoveries was created.⁵ Headed by a member of the Central Committee, Karl Bauman, this department was in charge of the entire science policy of the party: it granted permission to organize new institutions, hold conferences, publish periodicals and books, appoint personnel, and bestow prizes and rewards for scientific research. After the Eighteenth Party Congress (1939), this department was liquidated and its functions were transferred to the Central Committee's Administration of Agitation and Propaganda (Agitprop).

As the party's influence on science policy increased, that of the state organs—TsIK, the SNK, and the commissariats—declined. Both the SNK's Commission to Support the Work of the Academy of Sciences and its Department of Scientific Institutions were liquidated in 1929. The VSNKh's Scientific-Technical Administration (NTU) was also reorganized in 1929. Its role was diminished⁶ and a number of its scientific institutions were directly subordinated to the appropriate agencies supervising various branches of industry. For instance, chemical-research institutes were subordinated to the All-Union Association of Chemical Industry.⁷ In 1932 the VSNKh was liquidated and replaced by a number of new commissariats that supervised various branches of industry and assumed responsibility for the relevant scientific institutions.⁸ The Scientific Committee of TsIK, which had played an important role in the early 1930s as a mediator between party agencies and the scientific community, lost its power and was abolished in 1938.

In the late 1930s, the various commissariats and the SNK served as mere intermediaries legalizing the party's decisions on science policy. Politburo decisions became known to the public (if ever) in the form of SNK decrees, which ratified all decisions concerning scientific institutes, the statutes and membership of academies, and the organization of scientific conferences and periodicals. Lower governmental agencies played a similar role, handling the budgeting of concrete projects (such as the organization of an institute or conference) if these had already been approved by the party apparatus.

As in every other aspect of Soviet life, the repressive apparatus—the OGPU (United State Political Directorate), reorganized in 1934 into the NKVD (People's Commissariat of Internal Affairs)—also had its role to play. Many scientists—for example, Ivan Pavlov—were constantly shadowed.⁹ The OGPU regularly investigated the loyalty of scientists, and it cleared every Soviet candidate for a visit abroad and every foreign scientist for a trip to the Soviet Union. In the late 1920s, the OGPU also gathered intelligence on “scientific-technical questions” abroad. Its Foreign Department organized a “scientific-technical service” that employed agents in various countries.¹⁰ Apart from this routine work, certain departments of the repressive agencies were deeply involved in science policy itself. They formed “analytical groups” that weighed

various science-policy proposals. The inaccessibility of their archives makes it impossible to judge the range of this kind of work and the personnel involved, but such activities were apparently regular. The party archive provides one striking example.

During the 1920s, Nikolai Vavilov and his coworkers embarked on numerous expeditions to various continents to collect plants and seeds for the Institute of Plant Breeding. They visited Iran, Japan, Peru, Ethiopia, Italy, Canada, and many other countries, gathering an extraordinarily rich collection of wild and cultivated forms of various plants. In 1932 Vavilov requested state funding for his next expedition to North and South America. The Central Committee sent Vavilov's proposal to the OGPU for an expert evaluation. The Economic Division of the OGPU replied with a ten-page memorandum analyzing Vavilov's foreign expeditions. It concluded:

For a number of years since 1924, the All-Union Institute of Plant Breeding, headed by Vavilov, has sent numerous expeditions to different parts of the world, including America. It has gathered an international collection of seeds and plants. The collected material has still not been studied, and almost no practical conclusions and achievements have been introduced into the national economy—this work never went beyond the institute's walls. The OGPU considers the organization of any botanical expedition to America inexpedient.¹¹

In the early 1930s, then, the Economic Division of the OGPU began to serve as a governmental adviser on science policy.

There is some circumstantial evidence that this same Economic Division was responsible for the creation and development of the unique system of *sharashki*, the labor camps where imprisoned scientists worked on research in their specialties. Very little is known about the number of such institutions in the Soviet Union, what they studied, and how many scientists worked there. There are only the reminiscences of former prisoners¹² and some scattered information that has become available in recent years.¹³ Many of these *sharashki* conducted industrial or military research,¹⁴ and some pursued biological and agronomic subjects. A well-known example is the Solovki Special-Purpose Reformatory Camp (Solovetskii Lager' Osobogo Naznacheniia—SLON), which in the early 1930s even issued a scientific journal that published prisoners' work.¹⁵

The system of personal links between science spokesmen and commissars that had emerged in the 1920s was undermined in 1929–30 by sudden changes in the leadership of practically all commissariats and governmental agencies. Such well-known patrons of the scientific community as Anatolii Lunacharskii, Nikolai Semashko, Nikolai Gorbunov, and Gleb Krzhizhanovskii were replaced by a new generation of “Stalin's Commissars” and party officials. All of the top patrons of science were demoted to the lower levels of the control apparatus: Lunacharskii became head of the TsIK Scientific Committee (1929–32), Nikolai Bukharin of the VSNKh Scientific-Technical Sector

(1929–32), and Krzhizhanovskii of the Committee for Higher Technical Education (1932–36); Semashko became head of the TsIK Child Commission (Detskaia Komissiiia) and a professor at the First Moscow Medical Institute. Having lost their ministerial offices, the old patrons “migrated” into the new scientific establishment, becoming members of academies and directors of academic institutions. For instance, in 1929 Gorbunov became a vice-president of the Lenin All-Union Academy of Agricultural Sciences (VASKhNIL). Lunacharskii, Krzhizhanovskii, and Bukharin became members of the USSR Academy of Sciences and played important roles in its party cell and its governing presidium. Bukharin became director of the Academy of Sciences Institute of the History of Science in 1932; Krzhizhanovskii became director of the Institute of Energy in 1930; and Gorbunov became a deputy director of the Institute of Chemistry in 1931. This trend of moving former party-state bureaucrats into high-level scientific positions became characteristic in the 1930s: a deputy head of Narkomzem from 1933 to 1936, Aleksandr Muralov, became president of VASKhNIL in 1935; the same year, Gorbunov became academician-secretary of the USSR Academy of Sciences; a deputy head of Narkomzdrav from 1937 to 1939, Nikolai Grashchenkov, became director of the All-Union Institute of Experimental Medicine (VIEM) and a corresponding member of the Academy of Sciences in 1939.¹⁶

With the sudden removal of their former patrons, scientists were compelled to seek new ones. The “Great Proletarian Writer” Maxim Gorky, for example, became one of the most influential patrons in biology and medicine in the early 1930s. Using his personal access to the highest level of party-state bureaucracy, he actively lobbied for the creation of such institutions as VIEM and the Medical-Genetic Institute, often intervened in administrative decisions affecting science, petitioned on behalf of arrested or purged scientists, and defended the autonomy of scientific institutions. In the early 1930s, scientists also occasionally managed to obtain support from such leaders as Sergo Ordzhonikidze (head of the People’s Commissariat of Heavy Industry—Narkomtiazhprom) and Valerii Mezhlauk (head of Gosplan), but the atmosphere of close personal contacts was gone. With the Great Terror of 1936–38, such contacts between scientists and high-level state officials became dangerous. Many scientists were arrested and imprisoned (and in several cases shot) for alleged association with such newly uncovered “enemies of the people” as Bukharin, Mikhail Chernov (head of Narkomzem), and Grigorii Kaminskii (head of Narkomzdrav). The multiple governmental and party patrons of the 1920s, then, were replaced in the late 1930s by a single patron—the Communist Party’s Central Committee. Scientists now sought the support of Politburo members, including Viacheslav Molotov, Andrei Zhdanov, Klim Voroshilov, Anastas Mikoian, Lazar Kaganovich, and Stalin.

In the mid-1930s, then, the Central Committee and its organs—the Secretariat, Organizational Bureau (Orgburo), and Politburo—emerged as the supreme agency in charge of science. All important questions of science policy

were discussed and settled at the sittings of these party bodies. Sometimes the Central Committee openly intervened in disciplinary development. A well-known example is its resolution of July 4, 1936, "On Pedological Perversions in the System of Narkompros," which abolished entire branches of psychology and pedagogy.¹⁷ As a result of this resolution, many scientific institutes were closed and reorganized. More often, however, the Central Committee acted behind the scenes.

THE MOBILIZATION OF SCIENCE

The new system of party-state agencies effectively controlled the development of Soviet science and the community of Soviet scientists. These agencies actively implemented new policies designed by the Communist Party leadership to mobilize "science in the service of socialist construction." They established strict control over institutional structure, personnel, research directions, and the scholarly communications of Soviet scientists.

Institutional Policy

The policy of active control endorsed in the 1930s profoundly affected the institutional structure of Soviet science. The model of science organization created and developed during the previous decade within "Communist" scientific institutions was fully implemented throughout the entire Soviet science system. The main direction of Bolshevik institutional policy was centralization, concentration, and stratification of the scientific community. The Stalinist policy of centralized control led to the creation of centralized institutions (academies) that governed the development of research in particular subjects and regions.

During the First Five-Year Plan (1928–32), the number of scientific institutions grew by about 50 percent, from 1,263 to 1,908; and the number of scientific-research institutes among them more than doubled, from 438 to 1,028.¹⁸ At the same time, the control apparatus experimented with different ways of organizing scientific administration in order to mobilize "science in the service of socialist construction." This led to numerous reorganizations of the administration, structure, and personnel of research institutes.¹⁹

During this time, the SNK created several centralized scientific institutions, including VASKhNIL in 1929 and VIEM in 1932.²⁰ Various centralized regional institutions were established, among them the Ukrainian Academy of Agricultural Sciences (1931) and branches of the USSR Academy of Sciences in the Urals (1931), the Caucasus (1931), Kazakhstan (1932), and the Far East (1932).²¹ The main goals of all these institutions were to direct scientific development in relevant fields and to serve as intermediaries between the party-state agencies and the scientific community.

In 1929 VASKhNIL was organized in Moscow under the presidency of Nikolai Vavilov. Its institutional base was the Institute of Applied Botany and New [Plant] Cultures, renamed the All-Union Institute of Plant Breeding (VIR) upon the organization of the academy. VASKhNIL united numerous agricultural experimental stations and research institutes established by Narkomzem during the previous period. In subsequent years, the academy was expanded and several large new institutes were created, such as the Institute of Animal Breeding.²²

In 1932 almost all institutions that conducted research in fields related to medicine were welded into one monstrous institute—VIEM.²³ VIEM was established in Leningrad and headed by Lev Fedorov, the former party appointee to Pavlov's laboratory. Previously independent research institutes lost their autonomy, becoming laboratories or departments of VIEM and being administratively subordinated to its directorate. In 1934 VIEM was moved from Leningrad to Moscow. Only a few institutes under Narkomzdrav managed to preserve their independence from VIEM, as a result of a fierce struggle by their directors. One was Nikolai Kol'tsov's Institute of Experimental Biology: Kol'tsov used his personal contacts with Maxim Gorky to win support from the highest state authorities (in this case, Stalin personally) to save his institute from VIEM's "occupation."²⁴

A special role among the centralized institutions was assigned to the USSR Academy of Sciences. During the 1930s, it grew from an honorific society with a few research facilities into the country's largest and most influential scientific institution, uniting about one hundred institutes, laboratories, observatories, and experimental stations throughout the USSR. In 1930 the government approved new academy statutes and transferred control of it from the SNK to TsIK. Then it was moved back under the SNK (1933) and, finally, relocated from Leningrad to Moscow (1934). Academician Aleksei Bakh explained the necessity of all these changes in the following words:

Beginning to build a socialist society in our country, Soviet power had to strive as best it could to use the Academy of Sciences for the achievement of its goals, . . . closing its eyes to the academy's class antagonism to the new regime. When the planning of scientific work as the most necessary part of the whole planned economy . . . encountered the academy's active resistance, the time came to reorganize it on new principles. . . . The academy had to be rejuvenated and enlarged. The Academy of Sciences has been brought closer to our new life, has become Soviet, and has acquired high status. It is easy to see that the academy's relocation from Leningrad to Moscow is a logical consequence of its high status. Having become the highest scientific institution of the [Soviet] Union under the SNK, . . . the Academy of Sciences must be in close, direct contact with the government and so must be in Moscow, the governmental center.²⁵

By the mid-1930s, the Academy of Sciences had acquired the leading position among all Soviet scientific institutions, absorbing institutes and laborato-

ries previously subordinate to various commissariats and agencies. The academy even devoured its main competitor—the Communist Academy. A draft of the joint decree of the SNK and the Central Committee, which was approved by the Politburo in February 1936, stated: “Due to the inexpediency of the parallel existence of two academies, the USSR Academy of Sciences and the Communist Academy, and in order to unite [all] scientific workers within one state scientific center, it is considered expedient to liquidate the Communist Academy and transfer its institutes and personnel to the USSR Academy of Sciences.”²⁶ The dual systems of “bourgeois” and “Communist” science were thereby welded into a single, centralized institutional system.

In the mid-1930s, the control apparatus also conducted a broad campaign to liquidate so-called parallel institutes. Numerous institutes conducting research in the same discipline but subordinate to different agencies were closed, reorganized, and often incorporated into the new centralized institutions. According to official Soviet statistics, between 1933 and 1939 the number of scientific institutions dropped from 1,908 to 1,557.²⁷ Along with dissolving and absorbing Communist scientific institutions, this campaign especially damaged the research institutes organized during the previous decade under Narkompros: roughly half of all research laboratories in universities and other educational institutions were closed. The earlier policy of separating education and research was reinforced.

The subordination of scientific institutes to the central academies led to the development of new administrative functions. The academies now had to control all the institutes that had been put under their direction, and this necessitated the creation of a new bureaucratic apparatus. The Communist Academy’s invention, the presidium, had been replicated in the Academy of Sciences by its 1927 statutes. But before the Bolshevization of the academy in 1929, this presidium was a nominal body without any real functions or powers. During the 1930s, it became the actual governing body, and its membership had to be approved by the Central Committee Secretariat. Although the academy was formally governed by a general assembly of all its members, after its Bolshevization these meetings merely rubber-stamped the presidium’s decisions. The presidium was transformed into a bureaucratic apparatus to mediate between the subordinate institutes and supervising agencies. It established various sections and departments necessary for administrative control: a secretariat, a department of personnel, a planning department, a department of graduate studies, and so forth. Analogous structures were replicated in VASKhNIL, VIEM, and the regional academies. The bureaucratic apparatus of these centralized institutions became the party’s instrument for controlling the scientific community.²⁸

The centralization of scientific institutions was accompanied by the stratification of the scientific community. The central academies acquired power not only over a subordinate institute’s funding, but also over its research policy, personnel, and structure. As a result, it became almost obliga-

tory for an institute director to be an academician, and, conversely, only an academician could aspire to a directorship.²⁹

In January 1934, a decree of the SNK restored the scientific degrees and titles that had been abandoned in the first years of Bolshevik rule.³⁰ The decree established two scientific degrees, Candidate of Sciences and Doctor of Sciences, and two titles, docent and professor. The degrees were awarded for research, the titles for teaching. The right to award them resided initially in the institutes' scientific councils: candidates for a scientific degree presented a dissertation to the council and publicly defended it before a council-appointed committee; the council then reached a decision by secret ballot. Subsequently, central institutions (the Academy of Sciences, VASKhNIL, and VIEM) acquired the right to approve or disapprove the decisions of the institutes' scientific councils. At the same time, a special governmental agency was created to approve every degree and title awarded throughout the system. This agency, the Supreme Certifying Commission (Vysshiaia Attestatsionnaia Komissiiia—VAK), was subordinate first to Narkompros and then (in 1936) to the Committee for Higher Education, and its membership had to be approved by the Central Committee. Degrees and titles became not only symbols of a scientist's qualifications as a researcher or teacher, but also an obligatory, formal requirement to occupy a post within the hierarchy of scientific institutions.

Personnel Policy

The primary instrument of party control over scientific institutions became the Bolshevization of their personnel. The main party slogan, "Cadres decide everything!" (*Kadry reshaiut vse*), although officially announced in the mid-1930s, had been in force ever since the Bolshevik revolution. In the 1930s, it was actively applied to the scientific community. The essence of this policy was the appointment of party members to key posts in scientific organizations. The principle of "red directors," tested in industry during the 1920s, was now widely applied to science.³¹ Although the government continued to respect the relative autonomy of a few prominent scientists (such as Pavlov and Vernadskii), it actively sought to deprive them of administrative power by appointing party members to direct the institutions where they worked.

The Bolshevization of the scientific community was greatly facilitated by the proclaimed "sharpening of the class struggle," which inaugurated a broad campaign against "bourgeois" specialists in all fields. Show trials, purges, arrests, and exiles ravaged the country.³² Political pressure on the scientific community was greatly increased. In the late 1920s and early 1930s, numerous political societies such as the All-Union Association of Scientific and Technological Specialists for Assisting Socialist Construction (VARNITSO) were organized within the scientific community and became an instrument of party personnel policy.³³ These societies used the purges to remove "suspicious elements" from scientific institutions and replace them with reliable

Communists; many scientists were dismissed, arrested, and exiled to remote regions of the country. Characteristically, in a report on the results of purges in biological institutes, every paragraph devoted to a separate institute ended with the same phrase: "The leadership of the institute has been Bolshevized."³⁴

One of the first scientific institutions to be Bolshevized was the Academy of Sciences.³⁵ This process began with the academy's first Soviet Statutes, prepared by the SNK apparatus and adopted in 1927. In 1929 the academy was forced to begin electing party members. In 1930 about a hundred Communists worked in the academy; in 1931, 220; in 1933, 348, including 17 academicians, 82 researchers, and 137 graduate students.³⁶ Party cells and party committees were established within scientific institutions, and their role in the life of these institutions steadily increased: during the early 1930s, the academy's party cell became its *de facto* governing body.³⁷

Another feature of party personnel policy in the early 1930s was the system of "promotion" (*vydvizhenie*). The "promotees," or *vydvizhentsy*—young people of proletarian or peasant origin, often party members—were rapidly promoted to various key posts in industry, agriculture, and science.³⁸ In February 1931, the Russian SNK decreed that "young scientists must be more decisively promoted [*vydvigat'sia*] to leadership in scientific institutes in order to proletarianize [*orabochivat'*] scientific personnel and to fight ideological and class enemies among the personnel of scientific institutes."³⁹ The main source of *vydvizhentsy* in scientific institutions became their *aspirantura* (graduate programs). Special institutes of graduate studies were organized within leading scientific institutions (in the Academy of Sciences in 1929, for example).⁴⁰ The goal of these institutes was to train Communist researchers. In June 1929, the Central Committee instructed local party committees that no less than 60 percent of all graduate students must be party members.⁴¹ This explains why in 1933 more than a third of all party members within the Academy of Sciences were graduate students. The "institutes of worker graduate studies" (*rabochaia aspirantura*) were also created to provide the *vydvizhentsy* with the necessary training for scientific work. In these institutes, former workers and peasants without a higher (sometimes even without a secondary) education were invited to become scientists after three years of education and study.⁴²

The main instrument of party personnel policy in general was the system of *nomenklatura*. *Nomenklatura* was, literally, a list of posts that could not be occupied or vacated without permission from the appropriate party committee. All party committees, from the Central Committee to the smallest one in the countryside, established personnel departments, whose main function was to approve candidates for appointment to any post included in their own *nomenklatura*. Initially devised for the personnel of party organs and agencies, the system was expanded in the early 1930s into the scientific community.

The *nomenklatura* system was strictly hierarchical—the higher the post, the higher the party committee controlling its personnel. The posts of president, vice-president, and scientific secretary of such central institutions as the

USSR Academy of Sciences and VASKhNIL were in the *nomenklatura* of the Politburo. The posts of institute director and editor-in-chief of a journal were in the *nomenklatura* of the Central Committee Secretariat. The position of laboratory head belonged to the *nomenklatura* of the regional party committee. Even the post of librarian in a scientific institute was in the *nomenklatura* of the local party committee. For example, a local committee once sent to Vavilov, the director of the Institute of Plant Breeding, a newly approved list of posts within his institute and informed him: "All replacements, nominations, and appointments in accordance with the approved *nomenklatura* can be made by permission of the Personnel Department of the Party Local Committee only."⁴³ Thus, to occupy any administrative post in a scientific institution, a scientist had to obtain permission from the party apparatus.

The system's operation can be illustrated by two examples. On August 8, 1935, the Politburo considered the "question of the main scientific secretary of the Academy of Sciences." It was decided to remove a Communist academician, Viacheslav Volgin, from this post and to appoint another Communist, Lenin's former secretary, Nikolai Gorbunov. At that time, however, Gorbunov was not a member of the academy. This fact barely slowed the appointment. The Politburo ordered the academy's party cell "to prepare his [Gorbunov's] election at the next meeting of the academy" and instructed the academy "to open an additional chair of physical geography for Gorbunov's election."⁴⁴ Three days later, the government's newspaper, *Izvestiia*, announced "the existence of a vacancy for a full member of the academy in geological science (physical geography)." The press immediately conducted a noisy campaign on Gorbunov's behalf. On October 10, the public learned that "N. P. Gorbunov was nominated [by the scientific community] for academy full membership to the chair of physical geography." At the next meeting of the academy, in November, Gorbunov was "elected" academician and officially confirmed as the academy's main scientific secretary.

An almost identical technique was employed in 1938 at VASKhNIL. On February 11, the Politburo appointed Trofim Lysenko and Nikolai Tsitsin as the academy's president and vice-president, respectively.⁴⁵ Tsitsin, however, was not a member of the academy, and, according to the academy's statutes, "full, honorary, and corresponding members of the Academy of Agricultural Sciences shall be elected by the General Assembly of [all] members of the academy." This, however, did not prove a serious obstacle. The heads of state agricultural agencies wrote a joint letter to the SNK to promote the appointment. They noted: "Since Comrade Tsitsin N. V. is not an academician, we suppose it possible to legalize his election after his appointment to the academy vice-presidency. At the same time, we are informing [you] that the academy's Statutes do not say that only an academician can be vice-president of the academy."⁴⁶

Nomenklatura thus became the main means of party control over the scientific community. At any given moment, any scientist could be dismissed from

any administrative post and replaced by a more suitable colleague. Indeed, the migration of high-level party-state bureaucrats into the scientific establishment, noted above, was facilitated by the *nomenklatura* system.

Research Policy

To turn science into a “productive force,” the party-state agencies strengthened their immediate control over research. Planning, which became a major instrument of control over the Soviet economy, was also introduced into science.

In the late 1920s, the Central State Planning Commission (Gosplan) created a Sector of Science and Culture to allocate funding and other resources for science. In 1930 Gosplan established a special section to organize the planning of scientific research for the entire country. This section elaborated “directives for the five-year plan of scientific research” to be employed by all scientific institutions in developing their own plans. Despite the resistance of several prominent academicians,⁴⁷ in May 1930 the Academy of Sciences established a Planning-Organizing Commission. By January 1931, the commission had prepared and published the academy’s first plan.

In April 1931, the First All-Union Conference on Planning Scientific Work convened in Moscow. The head of Gosplan, Valerian Kuibyshev, presented the main report, and the head of the VSNKh Scientific-Technical Sector, Nikolai Bukharin, delivered a lengthy address on the necessity of planning scientific research. Direct instructions of the state agencies began to play an increasingly decisive role in the direction of Soviet science. The resolution of the Seventeenth Party Conference in 1932 emphasized the importance of applied research: “The year 1931 was decisive in turning the entire system of scientific institutions (from the USSR Academy of Sciences to the institutes of narkomats) toward serving the needs of socialist industry and establishing their close relations to industry.”⁴⁸

In July 1932, Gosplan’s Sector of Science and Culture was reorganized into a Department of Culture that included three sectors: science, culture, and public education.⁴⁹ The Academy of Sciences planning apparatus also grew steadily, and in 1934 the academy presidium organized a Planning Department.

Planning in the early 1930s focused upon budgets for equipment and personnel. All scientific institutes required permission from the Central Personnel Commission (created under the SNK) for any change in the number and qualifications of their personnel. In the mid-1930s, the planning agencies began to plan directly not only the financial aspects of scientific activity, but also the direction of research. Gosplan’s *Directives and Forms to Complete the 1936 Plan* required central scientific institutions to plan the “main problems addressed by scientific work, the system of scientific institutes, the number of scientific workers, and the number of graduate students educated in

these institutions.”⁵⁰ Research plans and annual reports became the control agencies’ main source of information on Soviet scientific institutions and the principal basis for decision making in science policy. In 1938, for example, dissatisfied with the plan proposed by the Academy of Sciences, the government decided to completely reorganize the academy.⁵¹

Contacts and Publications Policy

Party-state agencies exerted special control over scholarly communications—scientific meetings and publications. The Soviet scientific community’s international contacts attracted particular attention. After a short period of relative freedom in the 1920s, all international contacts came under the strict control of the Central Committee. As Soviet foreign policy became increasingly isolationist, the control apparatus began to sever Soviet science’s international contacts. From the early 1930s, all invitations to foreign scientists to come to the USSR and all proposed foreign visits by Soviet scientists required approval by the Central Committee Secretariat and, in especially important cases, by the Politburo.⁵² Even when a group of scientists was invited to participate in an international congress, every candidate required individual approval.

An elaborate procedure was created to select candidates for trips abroad. In the late 1920s, the Central Committee apparatus created a Departure Commission (*Vyezdnaiia Komissiiia*) that prepared preliminary decisions for the Secretariat. Every candidate was presented to this commission by a petition from an appropriate agency, which had to be signed by the agency’s head. As a rule, all such petitions were first sent for approval to the Scientific Committee of TsIK, which served as an intermediary between the Departure Commission and the scientific community. The commission presented all collected documents—including a certificate of “clearance” from the OGPU—to the Secretariat, which made the final decision. This complicated bureaucratic procedure sharply decreased the number of foreign trips by Soviet scientists.⁵³

The party agencies also adopted a number of administrative measures to restrict other contacts. Beginning in 1934, the exchange of reprints with foreign scholars became officially possible only through the All-Union Society of Cultural Relations with Foreign Countries (VOKS), which became a de facto branch of the NKVD. All papers officially submitted for publication abroad had to be censored by the Main Directorate on Literature and Presses (Glavlit).⁵⁴ During the late 1930s, the number of translations of foreign monographs and textbooks also decreased.

State policy toward the international contacts of Soviet science in the 1930s reflected a certain ambivalence. On the one hand, the Bolsheviks desired international recognition of Soviet scientific achievements. For example, the government used a number of international congresses hosted by the USSR in

the 1930s—the International Congress of Soil Scientists (1930), the International Conference on Hydrology (1932), the International Physiological Congress (1935), and the International Geological Congress (1937)—to propagandize the progress of socialist society and its advances in education and science. On the other hand, the state strove to limit the international contacts of Soviet scientists. As the 1930s unfolded, isolationist considerations increasingly outweighed propaganda goals; beginning in 1935, for example, the Academy of Sciences stopped electing foreign members.⁵⁵ This isolationist policy accelerated in 1936, when a broad press campaign was organized against “servility to the West.”⁵⁶ At roughly the same time, the Soviet state abandoned the practice, widely used during the early 1930s, of inviting foreign specialists to work in its scientific institutions. After 1939, Soviet science’s international contacts were almost completely severed.

Party agencies also controlled domestic scholarly communications—the organization of scientific meetings and the publication and distribution of books and periodicals. In the 1920s, Narkompros established a special agency, Glavlit. Although officially subordinate to Narkompros, it was in fact an instrument of the Communist Party.⁵⁷ In 1936 Glavlit was transferred from Narkompros to the Central Committee and the SNK and was renamed the Main Administration of Censorship.⁵⁸ Its chief function was to censor all publications, including scientific ones. Glavlit also controlled the distribution of foreign literature, including scientific journals and books, and periodically removed “harmful” literature from libraries. During the late 1930s, the number of scientific periodicals published in the USSR steadily decreased.⁵⁹

The number of scientific conferences and meetings steadily decreased as well. For instance, the All-Union Congress of Zoologists, Anatomists, and Histologists convened four times in the 1920s, but the fifth congress met only in 1949. As mentioned above, permission to hold a conference could be obtained only through the party apparatus. The higher the level of a conference, the higher the party committee whose approval was required. International conferences were approved by the Politburo, all-union conferences by the Secretariat, regional conferences by regional party committees, and city conferences by city party committees. Each approval involved a complicated bureaucratic procedure. Only central institutions (such as the Academy of Sciences, VASKhNIL, and VIEM) had the right to hold large conferences (international and all-union), and they had to plan them at least two years in advance. To hold such a conference, the VASKhNIL presidium, for example, had to apply to Narkomzem. This application had to be approved by the head of Narkomzem and sent to the Central Committee Secretariat with his personal letter of support. The Secretariat sent the application and the letter to its Science Department for consideration. The Science Department sent its conclusions and recommendations back to the Secretariat, which made the ultimate decision.⁶⁰ Needless to say, this bureaucratic procedure seriously restricted the organization of scientific meetings and conferences.

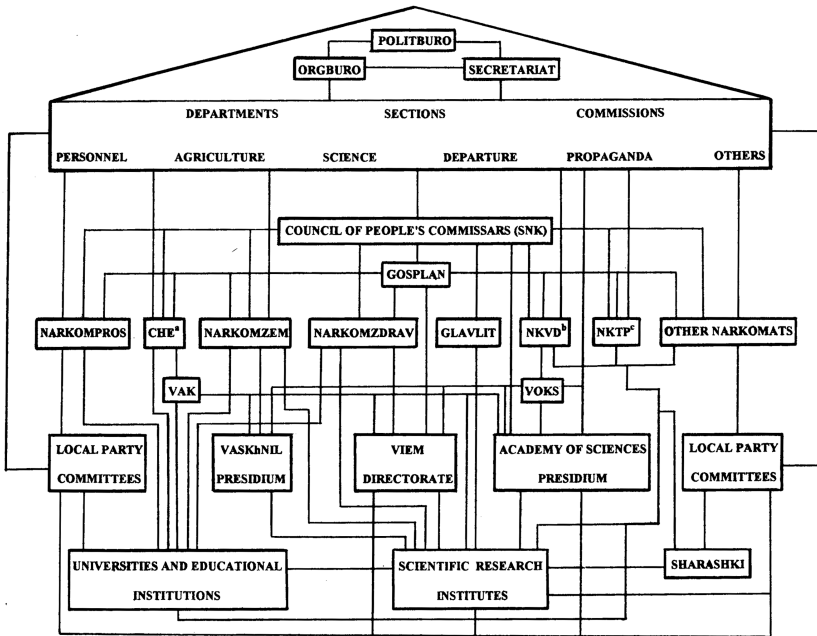


Figure 2-1. Stalinist Science System in 1938

^a CHE = Committee for Higher Education

^b NKVD = Narodnyi Komissariat Vnutrennikh Del, the People's Commissariat of Internal Affairs

^c NKTP = Narkomtiazhprom, the People's Commissariat of Heavy Industry

During the 1930s, then, the party apparatus established a complicated system of control over science and scientists: Soviet science was Bolshevized. All aspects of the scientific community's activities—the structure of institutions, the appointment and certification of personnel, the directions of research, and scholarly communications—were put under tight party control (see figure 2-1).

THE POLITICIZATION OF PROFESSIONAL CULTURE

In the 1930s, political pressure on the scientific community was greatly increased. Stormy political campaigns against “mechanistic materialism and menshevizing idealism,” “slavishness and servility to the West,” “pedological perversions,” and the like thundered over the scientific community. Together with numerous reorganizations of scientific institutions and purges and arrests of scientists, these campaigns reinforced the role of rhetoric in scientific writings and speeches. The mobilization of science “in the service of socialist construction” and the establishment of strict party control over scientific

activities politicized the professional culture of Russian science.⁶¹ Scientists employed all kinds of appropriate terms, such as “Marxist,” “practical,” and “patriotic,” to display their conformity to the “party line.” They invented a symbolic rhetorical device, the “founding father,” whose image became an embodiment of the party line in particular disciplines. They developed new styles of scientific writing—decorative prefaces, forewords, and afterwords, filled with “nomadic quotations.” They created a new genre of scientific literature—“jubilee papers,” glorifying Soviet power. They adopted party etiquette in their group behavior—“public repentance and self-criticism,” “jubilee meetings,” and “public discussions”—to demonstrate to the control apparatus their “devotion and obedience” and to legitimate their own agendas in the eyes of party officials. Traditional scientific criticism began to vanish, replaced even in specialized periodicals by “social” criticism: most polemical and critical writings claimed to “unmask,” “disclose,” “expose,” and “debunk” deviations from and perversions of the party line in science.

Political Campaigns

The “sharpening of the class struggle” announced by Stalin during the Great Break also sharpened the “struggle” in scientific polemics. In the 1930s, Soviet scientific criticism acquired a new form—public, massive, menacing campaigns. These campaigns enveloped practically all scientific fields and disciplines and were conducted under such universalistic slogans as “against menshevizing idealism and mechanistic materialism,” “science in the service of socialist construction,” “for the planning of science,” and “against servility to the West.” They were endorsed by party agencies and elaborated by party scholars, spreading through the public press into specialized scientific periodicals. These campaigns announced current party policies and were intended to create an ideological atmosphere justifying and supporting these policies. They were an obvious reflection of the new directions of state science policy: to mobilize, isolate, plan, and Bolshevize Soviet science.

The first campaign that marked the Great Break in scientific literature was conducted under the slogan of “the struggle against mechanistic materialism and menshevizing idealism.”⁶² Stalin personally endorsed this campaign in regard to philosophy. According to one witness, “At the meeting with party members of the Institute of Red Professors of Philosophy and Natural Sciences on December 9, 1930, Comrade Stalin set for Soviet philosophy the task of the struggle on two fronts: against menshevizing idealism on the one hand and mechanism on the other hand, as well as the task of developing Lenin’s philosophical legacy.”⁶³ Although launched in philosophy, the campaign was immediately expanded into science as well. Biologists and chemists, mathematicians and psychologists, geologists and historians began to struggle “against menshevizing idealism and mechanistic materialism” among their colleagues;⁶⁴ and “the development of Lenin’s legacy” became the slogan of numerous critical papers published by scientists in all disciplines.⁶⁵

The main thesis of the campaign was that science had a “class nature” and followed the principle of *partiinost*’ (literally, party-ness), hence, Soviet science must be “proletarian” and “Communist.” The term coined for the campaign, “menshevizing idealism,” was a transparent reference to the Menshevik party, a faction of the Russian Social-Democratic Labor Party that had opposed the Bolsheviks and was suppressed in the early years of Bolshevik power. This term clearly suggested that “menshevizing idealists” in science served the agenda of the Menshevik party and, therefore, were *political* enemies of Bolshevik science and scientists.

The political character of the campaign explains the fact that most critics paid no attention to the real content of the work criticized, focusing instead on its “contradictions” to the classics of Marxism—Marx, Engels, and Lenin. The typical line in such criticism was that the author’s statements on some subject or other “run counter to those of the Marxist classics.”⁶⁶ “Distortions” and “misinterpretations” of Marxism became the main subjects of criticism. One critic, for example, stated: “We have analyzed the ‘cultural-historical theory of psychology’ and have dwelt upon its authors’ errors and distortions of Marxism. What conclusions can we draw? There is no doubt that [Lev] Vygotskii and [Aleksandr] Luria are objectively the partisans of bourgeois influence on the proletariat. Not knowing Marxism, not being able to use the method of dialectical materialism, they constantly absorbed all kinds of ‘fashionable’ bourgeois directions in psychology, distorting and perverting Marxism.”⁶⁷

During the early 1930s, a campaign for the practicality of science also gained momentum. It was a clear reflection of the official party policy to mobilize science in the service of the state. In every discipline, scientists began to advertise the applied significance of their research. For example, the three principal reports at the plenary meetings of the First Congress on Behavioral Research (1930) were entitled “Psycho-Neurological Science and the Construction of Socialism,” “Psychotechnology [*psikhotekhnika*] in the Period of Reconstruction,” and “Marxist Psychology and the Construction of Socialism.”⁶⁸ Almost every issue of every scientific journal contained similarly titled articles, and every conference in every discipline heard similarly titled reports.⁶⁹

A new accent, however, appeared in the campaign: applied research started to be considered the essence of science. The leitmotif of “the separation of theory from practice” recurred in almost every critical publication. Here, “practice” referred not to experimental work in a particular field, but rather to the “practice” of the construction of socialism. According to the critics, science should only be engaged in solving problems “presented by practice.” Scientists were criticized for “fruitless theorizing,” “separation from reality,” “confining themselves in ivory towers,” and similar sins.

Scientific criticism also acquired a “patriotic” accent during the 1930s. A broad campaign to criticize foreign science began early in the decade. Foreign scientists were labeled “toadies of the bourgeoisie,” “servants of imperialism,” “lackeys of world capital,” and the like. The main aim of this kind of critique was to juxtapose Soviet science—which was “proletarian,” “material-

ist,” “Bolshevik,” and “Marxist”—with foreign science, which was “bourgeois,” “idealist,” “imperialist,” and “fascist.”⁷⁰ This kind of criticism was an obvious reflection of the international situation and Soviet isolationist policies in the 1930s. The attack on foreign science was accompanied by the critique of its “agents” and “adherents” among Soviet scientists. The best-known example of the organized “patriotic” campaign is the affair of academician Nikolai Luzin, who was accused of “servility to the West” for publishing his mathematical papers in foreign periodicals.⁷¹

The slogans and directions of the ideological campaigns were a product of the Communist Party’s science policy of the 1930s: to subordinate the scientific community to “party guidance,” to mobilize science in the state’s service, and to isolate the Soviet scientific community from its Western counterparts. The struggle for the “party line in science” was the main goal of the political campaigns. They all aimed to reaffirm the principle of *partiinost’*, that is, science’s subordination to party goals and aims. As one scientist put it: “In our time and in our Soviet Union, it is simply ridiculous to try to prove that any nonclass [*besklassovaia*] science exists.”⁷²

These campaigns reflected a particular image of science developed during the previous decade within Communist scientific institutions: science was a mere instrument of the party, and its ultimate goal was not “a search for objective truth,” but rather service to party objectives. This goal was to define the objectives and subjects of concrete research, its methodology and duration, and the necessary conventions in writing it up, including what constituted appropriate citations. The political campaigns reaffirmed and reinforced this image as the only one appropriate for Soviet scientists.

Moreover, the campaigns themselves became an instrument of party control over the scientific community. The frequency of such campaigns, the variety of issues Soviet scholars were forced to struggle *against* and to fight *for*, and the numerous changes in this struggle’s direction all created an atmosphere of “permanent struggle” in Soviet science. The community was constantly being artificially polarized into opposing “camps”—“us” and “them”—on the basis of political, ideological, and practical issues.

This situation allowed party agents and agencies to become the “referees” and “supreme judges” of disputes and discussions within the scientific community, even if these discussions were of a purely scientific nature and had no apparent ideological or political meanings. The party’s status as judge totally reversed the prerevolutionary criteria for scientific criticism: appeals to ideology, politics, and practical benefits became not only appropriate, but crucial elements in scientific polemics.

Styles of Criticism

The ideological campaigns reinforced and expanded the particular style of criticism that had emerged in the 1920s. The new generation of scholars was especially active in the campaigns. Many activists of the ideological battles of

the 1930s had graduated from the Institute of Red Professors or other Communist educational institutions, where this combative style of criticism had been developed.⁷³ These “young Communists” brought their experience in party schools into the practice of scientific criticism. One scientist described the style and tone of the militants: “[The critic] is trying to adopt the ‘pepper’ style that Marx, Engels, and Lenin used in their polemic writings. But . . . their ‘pepper’ was a tasty addition to a substantial meal. It is said that in bad cafes pepper is used to flavor rotten meat. [The critic] did an even simpler thing: he feeds you pepper alone, without any meat or other food. . . . It is not criticism, it is a fireworks show. And in pursuit of those fireworks, [the critic] does not think it necessary to keep to the content or to the letter of the criticized text.”⁷⁴ Ironically, this description came from the pen of an active “Marxist” polemicist of the previous decade, Vladimir Borovskii.

Criticism in the 1930s typically sought to “stigmatize,” to “debunk,” to “expose the class nature,” to “bring out the bourgeois essence,” and so on. The actual scientific content of criticized research lost any significance in the ideological campaigns. Borovskii, perhaps inadvertently, described precisely the way the “struggle on two fronts” was organized: “[The critic] does not give the slightest proof of my idealism. I guess he attached it to me by thinking like this: idealism is often linked with mechanicism, I will prove that he is a mechanist, hence, he is an idealist.”⁷⁵ The origin of this scheme of reasoning is clear. In the party disputes of the late 1920s and early 1930s, all sorts of “oppositions” were tongue-lashed in exactly the same way, and other people were found guilty by association. This style reflected the specific political culture of the Bolsheviks, with its emphasis on the central, leading role of the party in all aspects of life and its tendency to establish a single orthodox point of view—“the general line of the party.”

Rhetoric and Rituals

Under the “selective pressure” of stormy political campaigns accompanied by institutional reorganizations, purges, and arrests,⁷⁶ Soviet scientists developed numerous adaptations to defend themselves from ideological and political attack. Many scientists who in the 1920s had openly criticized “ideologically minded” colleagues or, on the contrary, had themselves used Marxist rhetoric in their own writings, now ceased doing so. From the mid-1930s, most of them left the interpretation of Marxism and the party line to official philosophers, ideologists, and party scientists. Instead, they developed specific rhetoric and rituals that served to demonstrate their “obedience and devotion” to the party.

In the mid-1930s, therefore, decorative prefaces, introductions, and conclusions began to appear frequently in scientific papers. These were ritualistic demonstrations of conformity to the current party line. An important part of this ritual ornamentation was the *nomadic quotation*. Particular quotations from Marxist classics or from the speeches of party leaders began to be

included in almost every publication. Scientists' search for appropriate citations was eased by the publication of volumes of quotations from the Marxist classics. For example, two members of the Society of Biologist-Materialists, Boris Tokin and Mariia Aizupet, compiled a collection titled *K. Marx, F. Engels, V. Lenin on Biology*, which ran into several editions. They stated in the preface: "There is not a single principal problem in modern biology, the approach to the solution of which has not been pointed out by the founders of Marxism."⁷⁷ One could rephrase this statement—there was not a single critical publication in Soviet science in the 1930s that did not contain "nomadic quotations" from Marxist classics or party leaders.

Scientists specializing in animal behavior, for example, managed to find only one statement in Lenin's entire "creative legacy" that in any way touched upon the subject of their study. In his notes on philosophy written in 1915 and first published in 1930, Lenin mentioned the "history of the intellectual development of animals" as one of the fields that "the theory of cognition and dialectics should be based upon."⁷⁸ This quotation was immediately picked up by critics and began to drift from one publication to another.⁷⁹ As a rule, "nomadic quotations" had nothing to do with the subject of the publication. They were used merely to signify the "Marxism," "practicality," and "patriotism" of the work and to certify its conformity to the party line.

Despite the statement of the "militant biologists" Tokin and Aizupet, Marxist classics and party authorities could not address all branches of science. Some fields never attracted their attention, others had not even come into being during their lifetimes. Nevertheless, the very logic of "struggle" resulted in candidates for "the only true teachings" and the *founding fathers* within every field. The atmosphere of permanent struggle thus led to the establishment of an "orthodoxy" within almost every discipline.

From the mid-1930s, references to the authority of a discipline's founding father permeated scientific literature. They became as common in scientific rhetoric as references to the classics of Marxism. A candidate for the title of founding father was usually chosen from among deceased Russian scientists and was approved by the political authorities—the Central Committee of the Communist Party, or sometimes Stalin personally. A founding father became the embodiment of these "supreme authorities" in a particular field.

Among the founding fathers of Soviet science were both world-renowned scientists such as Mendeleev, Pavlov, Lobachevskii, and Mechnikov and obscure figures such as Ivan Michurin and Vasilii Vil'iams. All were proclaimed "materialists," "great patriots," and "practitioners" and became indisputable authorities in their disciplines. Attempts to "deviate" from their concepts were immediately rebuffed by the defenders of the purity of the "great teachings." Any criticism of the founding father's research was regarded as an assault on an exalted ideological authority. Their legacies were invoked to legitimate almost every new approach within these disciplines; many scientists claimed that their work directly originated from a founding father's research. Their

authority was also widely used to contrast “native” and “foreign” science in the patriotic campaigns, or to validate the “practicality of science.”

Since references to a founding father and an “oath of devotion” to his ideas manifested ideological loyalty and devotion to the party line, they often replaced the ritual references to the classics of Marxism. The widespread use of references to the authority of founding fathers in the scientific literature of the 1930s suggests that the scientific community invented “founding-fatherism” in order to translate the general party line into the language of the various disciplines. Furthermore, this usage of an established authority of Great Scientists in scientific disputes replicated the formulaic references to the authority of the sacred founders of the party—Marx, Engels, and Lenin—in the inner-party discussions, representing another example of the adoption of party etiquette in the cultural repertoire of the scientific community.

In the 1930s, the scientific community also developed a new form of group behavior—*public discussions*. Russian science had always had a public face. It was customary, for example, to give public lectures and to hold public defenses of dissertations for scientific degrees. This “publicness,” however, now acquired a very specific character. Public disputes and discussions had become a common feature of Marxist societies in the late 1920s, a part of the party’s political culture. During the 1930s, the scientific community as a whole mimicked this form of group behavior, transforming “discussion” into a kind of demonstration. The number of public scientific events increased considerably. The political campaigns stimulated the organization of public discussions within various disciplines and institutions, and they became an instrument to demonstrate devotion and conformity to the party line embodied in the current campaign. Accounts of such discussions were published not only in scientific journals, but also in party periodicals and the daily press.

Scientists developed numerous ritualistic ceremonies associated with such public discussions. They elected “honorary presidiums” of scientific meetings, which usually included members of the Politburo and the highest state bureaucrats from the appropriate supervising agency, such as Narkomzdrav or Narkomzem. They sent letters “to Comrade Stalin” and other party bosses, written in a highly ritualistic form and permeated with all kinds of appropriate language. With the permission of the Central Committee Secretariat, these letters were usually published in the central party periodicals (such as *Pravda*), signifying Central Committee approval. The resolutions adopted at public discussions (and as a rule also published in the press) announced the obligatory party line in specific disciplines.

Public discussions also became an instrument of institutional struggles within disciplines. Various interest groups within a community employed public discussions to achieve their objectives, to expose the “deviations” and “heresies” of their competitors, and to demonstrate their own greater devotion to the current party line. These discussions, of course, emphasized ideological and political rather than scientific aspects of the subjects under dispute.

The explosion of political campaigns also spawned a new genre of scientific literature and form of group behavior—public *confession*, *self-criticism*, and *repentance*. This ritual was also borrowed from the repertoire of party group behavior: in the intense inner-party struggle, self-criticism and repentance by defeated “oppositionists” was obligatory. Self-criticism—the demonstration of loyalty by means of public self-revelation and confession of one’s scientific errors and ideological sins—became a requisite part of all scientific discussions. The following rhetoric was typical: “I admit from the outset that [the critic] is, overall, right. . . . I have to agree completely with . . . all the points he makes concerning the issues discussed. All his statements are true. . . . He was quite right to have noted a number of errors in my writings.”⁸⁰

During the 1930s, the scientific community adopted yet another form of group behavior, the celebration of various *jubilees*. Accordingly, a new genre of scientific literature blossomed in the USSR—jubilee papers. Many of the events commemorated had no direct relation to the disciplines or institutions that observed the anniversary. For example, the fifteenth and twentieth anniversaries of the Bolshevik revolution were celebrated by meetings in all scientific institutions and by publications in every discipline with such formulaic titles as “Achievements of [name of science] in the [number] years of Soviet power.” Luria, for instance, wrote: “The last fifteen-year period of the history of Soviet psychology is a reflection in a particular field of the struggle that the party and the Soviet people have carried out on the ideological front. The achievements of Soviet psychology in the last fifteen-year period are achievements in the struggle for the participation of science in building socialism and for the scientific theory appropriate to the new practice of socialism.”⁸¹

The language of this citation is typical and illustrative, reflecting the main goal of these jubilees: to display the conformity of research in a particular field to the current demands of state ideology and politics and therefore to legitimate the field’s very existence as a Soviet science. Scientists used every conceivable occasion for such demonstrations. For example, the Academy of Sciences commemorated the tenth anniversary of Lenin’s death with a special volume that included articles on genetics, biology, history, physics, soil science, and so forth.⁸² Anniversaries of founding fathers served the same function.

Thus, in the mid-1930s, social arguments—on the purported ideological, political, and practical significance of research—became dominant in Soviet scientific criticism. The earlier difference in style and content between critiques in specialized and party periodicals vanished almost entirely. Daily newspapers became a participant—and eventually the leading participant—in scientific disputes. Traditional scientific reviews and critiques were still published in specialized journals, but much more rarely. The disappearance of traditional scientific criticism is quite understandable—in the atmosphere of “permanent struggle” and fierce political campaigns, any criticism could be perceived as a signal to start a new campaign, and many scientists obviously strove to avoid such a possibility.

The professional culture of the Russian scientific community evolved within the new environment of a science system characterized by ever-expanding party-state control. Its evolution illustrates scientists' gradual adaptation to the new political, institutional, and cultural circumstances created by the radical reorganizations of the 1930s. They adopted the lexicon, critical styles, and modes of group behavior of their patron, the Bolsheviks. They observed party etiquette in their social practice and dealings with their patrons. This adaptation politicized scientific discourse and polarized the community into opposing camps—"us" and "them"—on the basis of political, practical, and ideological issues flowing from the current party line; and, as a by-product, reinforced the isolation of Russian scientists from their Western colleagues. By the end of the decade, Russian scientists no longer claimed that their work transcended ideological, political, and practical concerns; on the contrary, they pledged allegiance to a model of science wedded to Bolshevik theory and practice.

. . .

As we have seen, during the 1930s the symbiosis between the state and scientific community that had begun to form in the previous decade was refined. In pursuit of its economic, political, and social objectives, the Soviet state vastly expanded its support for science and considerably heightened its public prestige. At the same time, the state greatly increased its influence on the scientific community: every important aspect of scientific work—institutional structures, personnel, research directions, and communications—fell under tight control. To effect this control, the party-state created a complex bureaucratic apparatus that monitored and administered scientific personnel and their activities. By the end of the 1930s, a huge, centralized, hierarchical, isolated, planned, and politicized state science system had emerged in Russia.

Having enjoyed considerable autonomy during the previous decade, Russian scientists were compelled to learn the new rules of the game. They actively sought the support of their new patrons among the highest party-state officials and "absorbed" party-state bureaucrats as members of their own governing institutions. They incorporated the Bolsheviks' lexicon, polemical styles, and modes of group behavior into their professional culture. In order to justify and legitimate their own intellectual, institutional, and career ambitions, they greeted every new party line with the appropriate rituals and etiquette, signaling their conformity with their ultimate patron—the Central Committee of the Communist Party.

In 1939, the supreme patron of Soviet science established a prize of his own name for scientific research, the Stalin Prize. At the same moment, the "supreme national scientific institution," the USSR Academy of Sciences, elected him an honorary member. No other events could have so perfectly symbolized the new reality: by 1939, Russian science had been transformed into Stalinist science.

Stalinist Science in Action: The Case of Genetics

Luckily, at the rate at which Soviet science grows, those personal struggles, which seem to be inevitable between scientists of different temperaments and beliefs, need not lead to the same embitterment as they do in other countries, because, owing to the rapid expansion of science, there is always the possibility of the aggrieved or misunderstood junior setting up an institute of his own.

—John D. Bernal, *The Social Function of Science* (1939)

BY THE END of the 1930s, the Stalinist science system had come into being. A huge, centralized, hierarchical institutional structure had been created; the Soviet scientific community had been politicized and effectively isolated from its Western counterparts; and the party apparatus had established strict control over the institutions, personnel, communications, and research directions of Soviet science. But how did the system actually work? How did Soviet scientists function within it and interact with its control apparatus?

At the pinnacle of this vast system sat the Central Committee of the Communist Party, itself a large, pyramidal, hierarchical, and centralized structure. Not all Central Committee materials are open to scrutiny, and thus far we can only partially reconstruct its exact structure and functions.¹ The Central Committee was divided into various administrative units, such as departments of agriculture, agitation and propaganda, science, industry, party control, and personnel, each subdivided into separate sections and staffed with dozens of party bureaucrats. These departments supervised their assigned fields, processed incoming information, and drafted decisions.

The decision-making bodies that headed the Central Committee were its Organizational Bureau (Orgburo), Secretariat, and Political Bureau (Politburo).² The membership of the Orgburo and Secretariat overlapped considerably, as did their agendas.³ Usually once every two weeks, the Secretariat or Orgburo would discuss and approve decisions on various problems that had been prepared by the subordinate departments and presented for final action. The Secretariat and the Orgburo were subordinate to the Politburo, where Stalin presided. The Politburo included the party secretaries and the heads of the most important governmental agencies.⁴ At its sessions, it discussed drafts of decisions prepared by the Secretariat (and/or the Orgburo); it was supposed to consider only the most important, strategic problems. But often the Secretariat presented to the Politburo any problem that was likely to interest Stalin, regardless of its “strategic” significance.⁵

The general direction of Bolshevik science policy in the 1930s—the mobilization of science to serve practical, political, and social objectives—was set by the Orgburo, the Secretariat, and the Politburo. These general goals were translated into particular policies for specific institutions and disciplines through ongoing interactions between the bureaucratic control apparatus and various interest groups within the scientific community. Every competing group actively lobbied for its own interests, employing arguments and tactics calculated to influence the decision makers. During the 1930s, Soviet scientists became adept at dealing with the control apparatus, locating appropriate figures in the higher party organs to whom they could appeal for support. Particularly when local decisions were not going their way, scientists were well aware that a successful appeal to the Central Committee could quickly set things right.

The actual day-to-day operation of the pinnacle of the Stalinist science system, the “highest controlling organs,” has long been hidden in a “black box.” Only now, with the opening of the Communist Party archives, can the mechanisms begin to be analyzed in detail. Using such newly accessible materials as the protocols of the Central Committee of the Communist Party and scientists’ correspondence with party and state functionaries, I will here examine one instance of the Stalinist science system at work: a conference on “issues of genetics,” organized in October 1939 by the editorial board of a party journal, *Under the Banner of Marxism*. This conference is routinely mentioned in studies of the Lysenko controversy, but its origin, organization, goals, and actual impact have never been seriously examined.⁶ Historians have tended to view the conference as a manifestation of the Communist Party’s animus toward genetics—an animus that handed Lysenkoists victory after victory, culminating in the official suppression of genetics in 1948. Archival materials, however, tell a different story.

GENETICS AS A STALINIST SCIENCE

Soviet genetics provides a good example of the way scientists used Bolshevik science policy to serve their own interests. Before 1917, genetics did not exist in Russia as a discipline; there were no specialized genetics institutions or periodicals.⁷ Iurii Filipchenko and Nikolai Kol’tsov included materials on genetics in their courses on experimental zoology at Petrograd and Moscow universities, and several other professors taught some genetics in courses on plant and animal breeding. Only in 1916 did Kol’tsov manage to obtain private funding for his Institute of Experimental Biology, where he planned to establish a genetics laboratory.

Discipline Building

The Bolshevik revolution liquidated the endowments of Kol’tsov’s institute, but fueled the institutionalization of genetics. Filipchenko, Kol’tsov, and a

young plant scientist, Nikolai Vavilov, were the three men principally responsible for the flowering of Russian genetics in the 1920s. They organized genetics institutes and laboratories, established specialized periodicals, convened conferences, maintained a vigorous network of international contacts, and trained a new professional generation. The money and support for these discipline-building activities came from the numerous sources available in the 1920s, including Narkomzem, Narkomzdrav, Narkompros, the Academy of Sciences, and even the Communist Academy. In 1918 Filipchenko organized a department of genetics at Petrograd University, and two years later he established a genetics laboratory within the university's newly created Institute of Natural Sciences. In 1921 he organized the Bureau of Eugenics under the auspices of the Academy of Sciences.⁸ In 1920 Kol'tsov found a patron for his Institute of Experimental Biology—Narkomzdrav.⁹ In 1924 Vavilov created a large Institute of Applied Botany and New [Plant] Cultures under Narkomzem and established there a genetics department (headed by Georgii Karpechenko) and a cytological laboratory (headed by Grigorii Levitskii). During the 1920s, genetics laboratories were created in universities, medical and agricultural schools, and even zoos. Genetics courses were introduced, and genetics textbooks were written and translated.

International contacts played a crucial role in the rapid rise of Russian genetics. Its three founders had spent considerable time in Europe and became familiar with the rapid progress of genetics abroad, especially in Germany, Britain, and the United States. During the Russian Civil War, foreign scientists helped their Russian colleagues by sending them money, books, and issues of scientific journals. This acquainted them with the exciting developments in *Drosophila* genetics by the Morgan school, and in 1922 one of its members, the prominent American geneticist Hermann J. Muller, visited Russian centers and brought valuable fly stocks. Perhaps in appreciation of this help, in 1923 the leading Western geneticists, William Bateson and Thomas Hunt Morgan, were elected as foreign members of the Academy of Sciences, followed in 1924 by Godfrey H. Hardy, Herbert S. Jennings, Wilhelm L. Johannsen, and Hugo de Vries.¹⁰ In 1927 the Soviet delegation made an impressive showing at the Fifth International Genetics Congress in Berlin, being second in size only to the German contingent. Several hundred participants attended the first Soviet genetics conference, held in Leningrad in 1929. In sum, during the first decade of Bolshevik rule, genetics was quickly institutionalized as a discipline.

In the course of this explosive institutional growth, geneticists, like other Soviet scientists, employed the usual rhetorical tactics to legitimate their research in the eyes of state officials.¹¹ They fought for "Marxist" genetics against "bourgeois" or "racist" perversions.¹² They struggled against "Lamarckism" and for "Darwinism."¹³ They promised that discovering the secrets of heredity would lead to grandiose practical results in medicine, in agriculture, and even in the creation of a new socialist society.¹⁴ They maintained close personal connections with the principal patrons of science in the

state apparatus: the head of Narkomzdrav, Nikolai Semashko, and the head of Narkompros, Anatolii Lunacharskii, were enlisted as members of the Russian Eugenics Society organized in 1922 by Kol'tsov; Lenin himself promoted the creation of Vavilov's institute, and Nikolai Gorbunov headed its scientific council.

Although the Great Break had negative personal consequences for a number of geneticists,¹⁵ it accelerated the institutional expansion of Soviet genetics as a discipline. Despite the removal of Semashko and Lunacharskii from their posts and the suppression of the Russian Eugenics Society in 1930, genetics institutions under Narkomzdrav and Narkompros continued to grow. In 1930 a small laboratory of human genetics in Narkomzdrav's Medical-Biological Institute was expanded into a large department; in 1935 it became the Medical-Genetic Institute, directed by party member Solomon Levit.¹⁶ During the early 1930s, genetics departments and laboratories were established at Moscow University (under Aleksandr Serebrovskii¹⁷) and reestablished at Leningrad University (under Georgii Karpechenko and Aleksandr Vladimirkii). Genetics also prospered within the Academy of Sciences. After Filipchenko's death in 1930, Vavilov inherited his laboratory of genetics; it was converted three years later into a large Institute of Genetics, where many of Filipchenko's students continued to work.

The policy of mobilizing science announced in the late 1920s especially stimulated the growth of agricultural institutions. The severe agricultural crisis led in 1929 to the creation of VASKhNIL under the presidency of Vavilov. Vavilov considered genetics a key discipline in the development of Soviet agriculture, and he actively promoted its institutionalization and development. On the base of his Institute of Applied Botany, he created the gigantic All-Union Institute of Plant Breeding (Vsesoiuznyi Institut Rasteniievodstva—VIR), where seeds of various cultivated and wild plants collected throughout the world were used to breed new varieties for Soviet agriculture. He promoted the creation in 1931 of the All-Union Institute of Animal Breeding, where Serebrovskii became head of the genetics department. He also lobbied for introducing genetics courses in agricultural schools. Because of his considerable efforts in the early 1930s, agricultural institutions became a bastion of Soviet genetics.

In genetics, as in other Soviet sciences, the late 1920s and early 1930s saw the centralization of authority in important figures who "administered" the discipline for the state and negotiated for its needs. In the case of agricultural genetics, that figure was Nikolai Vavilov. In 1929 he was not only president of VASKhNIL, but also a member of TsIK and of Narkomzem's executive board. Meanwhile, other geneticists cultivated their own patrons. Kol'tsov established close ties with the new head of Narkomzdrav, Boris Vladimirkii, and maintained contacts with Maxim Gorky, who saved Kol'tsov's institute from absorption into VIEM. Levit maintained good connections with Grigorii Kaminskii, who became head of Narkomzdrav in 1934 and actively promoted the introduction of genetics courses into medical education.

When the planning of research became obligatory, geneticists led the way in 1932 by organizing a huge, well-publicized conference, “On the Planning of Breeding and Genetics Work.” At this conference, under the pretext of “better planning and organization” of research, they discussed and elaborated an agenda aimed at the further institutional expansion of their discipline.¹⁸

During the early 1930s, Soviet geneticists also strengthened and expanded their international contacts. In 1932 the Academy of Sciences elected the geneticists Morgan, de Vries, N. H. Nilsson-Elle, and E. von Tschermak as honorary members.¹⁹ During the winter of 1931–32, the eminent American geneticist Calvin Bridges spent six months in Vavilov’s genetics laboratory in the Academy of Sciences. In 1933 Muller came to work permanently in the laboratory, which was at almost the same time transformed into the Institute of Genetics. The same year, the Bulgarian geneticist Doncho Kostov joined the institute. In August 1935, the Politburo approved plans to hold the Seventh International Genetics Congress in Moscow in 1937.²⁰

Competitive Exclusion

As we have seen, several features of the Stalinist science system stimulated competition among different groups within the scientific community. First, the multiple patrons of the 1920s had been replaced by one, the Central Committee of the Communist Party. Second, the institutional structure of Soviet science had become centralized and hierarchical, which in many cases led to the emergence of an administrative monopoly and the shrinking of the institutional base of particular disciplines. Finally, the scientific community had been politicized, which infused disciplinary discourse with an “us versus them” mentality that drew on the ideological, political, and practical objectives of the latest party line.

Such competition emerged in the mid-1930s within agricultural plant science. A group of agronomists, headed by Trofim Lysenko, began to take over agricultural institutions. Lysenko’s swift ascent up the scientific hierarchy was apparently accelerated by party personnel policy and secured by the support of the agricultural bureaucracy—particularly that of Iakov Iakovlev, the head of Narkomzem and later of the Agriculture Department of the Central Committee.²¹ Lysenko was young, born in 1898 into a peasant family, and had neither formal academic training nor ties with the academic community²²—a package of biographical characteristics that fitted perfectly the ideal of the Soviet scientist endorsed in the late 1920s and early 1930s during the campaign for *vydvizhentsy*. Furthermore, Lysenko’s work was utterly “practical.” During the early 1930s, he was repeatedly praised not for his scientific ideas, but for his practical agricultural nostrums, particularly vernalization. The noisy campaign on behalf of Lysenko and his followers in newspapers and agricultural journals gained momentum as Lysenko’s institutional power grew. In 1932 Lysenko acquired his own periodical, the *Bulletin of Vernaliza-*

tion,²³ which became the main Lysenkoist mouthpiece. In 1934 he was appointed scientific chief of the Odessa Institute of Genetics and Breeding and was “elected” to the membership of the Ukrainian Academy of Sciences. As agriculture’s scientific spokesman in the late 1920s and early 1930s, Vavilov had helped lend legitimacy to Lysenko’s early work.

The strengthening of the party’s control over science in the mid-1930s enhanced Lysenko’s positions in agricultural institutions and had a number of negative consequences for genetics. In 1934 a professional Marxist, Isaak Present, joined Lysenko’s team and designed Marxist clothing for his doctrine. Soon afterwards, Lysenko began a public polemic in various agricultural periodicals with leading Soviet plant scientists. He developed a doctrine (later termed “agrobiology”) that drew upon various concepts of plant physiology, cytology, genetics, and evolutionary theory and was cast as the scientific basis for the whole of Soviet agriculture. A number of plant scientists, among them geneticists, took part in the polemic. The “Lysenko controversy” had begun. In 1935 Vavilov, the main spokesman for genetics, was dismissed from the presidency of VASKhNIL and replaced by Aleksandr Muralov, a longtime party member and the deputy head of Narkomzem. Simultaneously, Lysenko and a number of his allies were appointed members of the academy. In spring 1936, Lysenko replaced Vavilov’s ally, cytologist Andrei Sapegin, as director of the Odessa Institute of Genetics and Breeding. At the same time, one of Lysenko’s allies was appointed director of the Institute of Animal Breeding, previously a genetics stronghold.

The polemic over Lysenko’s doctrine led to a public discussion on “issues of genetics” initiated by the ruling body of VASKhNIL, its presidium, in summer 1936.²⁴ At that time, genetics was still seen as the scientific basis for “the socialist reconstruction of agriculture,” and VASKhNIL was its stronghold. Two vice-presidents of the academy, Vavilov and Mikhail Zavadovskii,²⁵ were known advocates and supporters of genetics. Two leading geneticists, Kol’tsov and Serebrovskii, were members of the academy. A number of academy members who worked on plant breeding, including Petr Lisitsin and Petr Konstantinov, supported Mendelian genetics. The discussion on “issue of genetics,” then, was an obvious reflection of the struggle between Lysenko’s team and the pro-Mendelian agriculturalists for control of the academy and agricultural institutions. The presidium promptly compiled a volume entitled *A Collection of Works on Controversial Problems of Genetics and Breeding*, which contained polemical papers by both Lysenkoists and geneticists and was distributed during the discussion.²⁶

The Fourth Session of VASKhNIL, held December 19–26, 1936, was entirely devoted to the controversy. Muralov, the new head of VASKhNIL, presided over the meeting. Genetics was represented by Vavilov, Kol’tsov, Serebrovskii, Muller, Zavadovskii, Levitskii, Karpechenko, and many of their coworkers and students. Their opponents were Lysenko, Present, and a group of Lysenko’s associates from the Odessa institute. Several other scientists,

some of them from Vavilov's VIR, also supported Lysenko's views. The main subject of discussion was Lysenko's doctrine on "the transformation of heredity." Lysenko rejected the concept of the gene as a material unit of heredity, denied Mendel's laws of heredity, and claimed that external conditions could directly affect the "heredity" of plants. A number of speakers criticized these views, demonstrating the unreliability of Lysenko's experiments and theoretical conclusions.

The debate in VASKhNIL was a good example of the politicized discourse of the day: much of the discussion featured personal attacks on rival scientists and revolved around the political, ideological, and practical connotations of genetics and Lysenko's doctrine. The term Lysenkoists coined to label Mendelian genetics—"formal" genetics—was a transparent reference to "formalism," one of the stigmatized "isms" of Soviet political rhetoric, used as an antonym to both "materialism" and "practicality." Lysenkoists attacked Kol'tsov and Serebrovskii, accusing them of "fascist links." They exploited ties between the early development of Soviet genetics and eugenics, and between eugenics and the Nazi concept of a "higher race," to condemn genetics as a "fascist science."²⁷ They attacked Vavilov, portraying his work "The Law of Homologous Series in Variation" (1922) as "anti-Darwinist." They criticized geneticists for their "purely theoretical" works and their lack of practicality. Geneticists, in turn, accused Lysenko and Present of Lamarckism. Predictably, both geneticists and Lysenkoists accused each other of "anti-Marxism" and used all kinds of "nomadic quotations" and politically correct language.²⁸

The conference participants also performed the prescribed rituals of a public discussion: they addressed political issues of the day, expressing their "indignation with the barbarous actions of the Fascists" in Spain; "confessed" to being mistaken in their earlier speeches and publications;²⁹ and sent "greetings" to all their key patrons—Iakov Iakovlev, head of the Central Committee's Agriculture Department; Karl Bauman, head of its Science Department; Mikhail Chernov, the commissar of agriculture; Moisei Kalmanovich, the commissar of state farms; and "the Great Leader and Teacher," Joseph Stalin.³⁰

Judging by its immediate results, the geneticists won the discussion. The resolution adopted by VASKhNIL's presidium endorsed the expansion of experimental work on "issues of heredity" and provided additional funding for genetics research.³¹ The materials of the discussion were quickly published as a special volume.³² Their position fortified, geneticists even managed to persuade the Politburo to reconsider its decision adopted in the wake of the "patriotic" campaign in November 1936 to cancel the International Genetics Congress scheduled for Moscow the next year: in March 1937, the Politburo agreed to hold the congress in Moscow in 1938.³³

Geneticists, then, rapidly adapted to the new policies and demands of the Soviet state bureaucracy in charge of science. The future of Soviet genetics seemed bright.

SCIENTISTS AND THE PARTY

A few months later, however, this improvement of the geneticists' position was swept away by the Great Terror. The terror had a profound effect on the entire Stalinist science system: it disrupted the interaction between science spokesmen and their partners in the party-state apparatus. It hit the mid- and upper-level bureaucracy with particular vigor, destabilizing the normal functioning of the system. Like the Great Break, it resulted in sudden changes in the leadership of practically all narkomats and departments of the Central Committee. Furthermore, a number of science spokesmen, particularly those who had come from various party posts to the scientific establishment during its Bolshevization, were purged.

Stalinist Science and the Great Terror

The Great Terror proved strategically damaging for genetics mainly because a number of its spokesmen, and *all* their principal partners within the party-state apparatus, perished. The addressees of the ritualistic letters sent by the participants of the 1936 discussion on "issues of genetics"—Iakovlev, Bauman, Chernov, and Kalmanovich—were all arrested and executed in 1937. The same fate befell the commissar of public health, Grigorii Kaminskii, and the commissar of enlightenment, Andrei Bubnov. With the arrest of Bauman, the Central Committee's Department of Science and Scientific and Technical Inventions and Discoveries was paralyzed and eventually faded away. A number of genetics spokesmen—including Isaak Agol, head of Narkompros's science administration (Glavnauka), Solomon Levit, director of the Medical-Genetic Institute, and Nikolai Gorbunov, a deputy head of the organizing committee for the International Genetics Congress—were arrested and shot for alleged association with the newly uncovered "enemies of the people."

With the complete disruption of its political support system, genetics suffered considerably. Not only were a number of geneticists arrested and executed,³⁴ but the terror also substantially undermined the field's institutional base. With the arrest of Levit in 1937, the Medical-Genetic Institute of Narkomzdrav faded away. A few months later, perhaps as a result of the arrest of Kaminskii, genetics lost Narkomzdrav as a source of institutional support, and in October 1938 Kol'tsov's Institute of Experimental Biology was moved into the Academy of Sciences. At the same time, the terror paved the way for Lysenko's takeover of agricultural institutions. The arrests of the president of VASKhNIL, Muralov, and of his successor Georgii Meister a few months later led in early 1938 to the appointment of Lysenko and his close follower, Nikolai Tsitsin, as president and vice-president of VASKhNIL, respectively. These appointments allowed Lysenko's team to capture complete institutional power in the agricultural sciences. Geneticists preserved only one institution within VASKhNIL—VIR, directed by Vavilov himself. Despite his presidency of VASKhNIL, Lysenko *did not have the authority* to dismiss Vavilov

from VIR's directorship—this post was in the *nomenklatura* of the Orgburo. Nevertheless, Lysenko did everything he could to diminish VIR's leading position among the academy's institutes and to limit its influence on provincial agricultural institutions. Geneticists were forced to "migrate" to institutions remote from agriculture, finding homes principally in the USSR Academy of Sciences and various universities.³⁵

By 1938 the Academy of Sciences had become the main institutional base for genetics. Its strongholds were Vavilov's Institute of Genetics and Kol'tsov's Institute of Experimental Biology. Understandably, however, the instability and shake-ups at the interface of science and the party also enveloped the academy's central scientific administration; a number of academicians were arrested and executed.³⁶ In May 1938, after a discussion of the academy's plan for that year at a special meeting of the SNK, the government decided to completely reorganize the academy—to increase the number of its divisions, enlarge its membership, and "strengthen" it with "young scientific forces."³⁷

Lysenko skillfully used his own position of power and the instability and uncertainty in the science system to undermine the position of his remaining competitors. As a member of the USSR Supreme Soviet³⁸ and the president of VASKhNIL, Lysenko participated in the fateful SNK meeting in May 1938 that discussed the Academy of Sciences' plan. The proposed plan dissatisfied the government, especially in the fields of geology and genetics.³⁹ As a result of this meeting, the Academy of Sciences presidium created a special commission headed by Lysenko's ally, academician Boris Keller, to "evaluate" research at Vavilov's Institute of Genetics. On the basis of the commission's evaluations, a special session of the presidium severely criticized Vavilov's research and invited Lysenko to work in the institute.⁴⁰ Lysenko organized his own department there and staffed it with his closest pupils from Odessa.

The SNK plan for the reorganization of the academy also included the election of new members, which was scheduled for January 1939. In the election campaign, Lysenko's team was represented by Lysenko himself and his closest ally, Tsitsin, the newly appointed vice-president of VASKhNIL. Their natural competitors were two other members of the agricultural academy: Zavadovskii, a former vice-president, and Kol'tsov, a corresponding member of the Academy of Sciences since 1915. The Lysenkoists organized a furious attack against them. A few days before the election, *Pravda* carried an article entitled "Pseudoscientists Have No Place within the Academy"; it was signed by Lysenko's backers, including academicians Aleksei Bakh and Boris Keller and accused Kol'tsov of fascist sympathies.⁴¹ Lysenko and Tsitsin were "elected" to the academy, and Lysenko was appointed to its ruling presidium.⁴²

Immediately after the elections, the Lysenkoists began an assault on Kol'tsov's Institute of Experimental Biology.⁴³ The academy presidium again created a special commission, headed this time by Bakh, to "examine" the institute's work. Lysenko's most active ideologist, Isaak Present, himself carried out the inspection. His preliminary decision was subsequently adopted by

the presidium; as a result, Kol'tsov was dismissed from the directorship.⁴⁴ At the same time, the Lysenkoists continued their attack on VIR, the last foothold of genetics within the agricultural academy. They also launched a campaign that aimed to change the syllabi for genetics courses in educational institutes. In early 1939, the struggle was raging in the corridors of various commissariats and other governmental agencies, where geneticists lobbied vigorously on behalf of their discipline and Lysenkoists pressed their offensive.⁴⁵

Along with this institutional attack, Lysenkoists skillfully used the press to create an atmosphere of suspicion around genetics. As one geneticist, Aleksandr Malinovskii, reported to the Academy of Sciences' vice-president Otto Shmidt in May 1939:

Just recently, difficult conditions for work in genetics and breeding have been created. This situation is due to the broad press campaign on the basis of academician Lysenko's declarations against genetics. . . . Academician Lysenko's *reputation and his political authority* gave much weight to this campaign. As a result, the opinion was created that studying genetics is a disgraceful and almost anti-Soviet thing. Most editorial boards refuse to publish even purely practical achievements of geneticists, some administrators use various means of pressure on geneticists, and, finally, there are actions aimed to liquidate or to diminish the role of theoretical laboratories.⁴⁶

Articles published in central newspapers and magazines were one of the main elements in forming this "public" opinion. A complaint by Serebrovskii addressed to Shmidt, though obviously exaggerated, is very revealing in this respect: "It is a pity and our Soviet geneticists' tragedy that during recent years we have been absolutely deprived of the support of most of the party and Soviet press."⁴⁷ With their upper echelons in disarray, bureaucrats at the lower levels of the control apparatus apparently perceived items in newspapers as "orders" from above. Lysenko's official status, which gave him close personal connections with the highest level of the state and party bureaucracy, apparently helped to create this impression. In spring 1939, Lysenko was president of VASKhNIL—that is, he was the leading official authority in Soviet agricultural science. He also was a member of the Academy of Sciences and its ruling body, the presidium. Moreover, he was a member of the Supreme Soviet and a deputy head of the Soviet of the Union—the highest legislative body of the USSR. As geneticists pointed out, he was able to use his administrative positions to promote antigeneitics articles in the press, particularly in agricultural newspapers and journals.

By the spring of 1939, then, Lysenko had tremendously improved his position and geneticists had lost much ground. The Great Terror had clearly contributed to Lysenko's success—not because that terror was directed against or intended to undermine genetics, but because, as we have seen, the geneticists had lost researchers, institutions, spokesmen, and their former collaborators and contacts in the party-state apparatus. Furthermore, because of

the continual reshuffling of the bureaucracy and the permanent threat of arrest, the terror prevented both the remaining spokesmen and party-state bureaucrats from reestablishing functional contacts. The entire Stalinist science system was shaken up as each of the symbionts went through a two-year fever.

Recuperation

In March 1939, the Eighteenth Congress of the Communist Party signaled the end of the Great Terror. In his address to the congress, Stalin announced that the base of socialism had been built and that the USSR had entered the second phase in its development: “finalizing the construction of socialism.” The main party objective now was the improvement of the “moral-political unity” of the Soviet people. The congress also denounced the purges and criticized the arbitrary administrative intervention of party organs in the economy. The new policy was clearly reflected in the reorganization of the internal structure of the Central Committee itself. Almost all its specialized departments were now welded into two main administrations: Agitation and Propaganda (Agitprop), supervised by a party secretary, Andrei Zhdanov; and Personnel, supervised by another party secretary, Georgii Malenkov.⁴⁸

The congress had a soothing effect on the Stalinist science system; it signaled the end of turmoil and uncertainty in relations between science and the party. The congress made clear that science policy was now in the hands of Agitprop. The main goal of this administration, as its name made plain, was the inculcation of the ideology of Marxism-Leninism-Stalinism. It was staffed by graduates of the Institute of Red Professors and the Communist Academy, particularly their philosophical sections. The party leaders declared that philosophy was “the science of sciences,” implying that Marxist philosophers were the best judges of concrete scientific research.

In his speech to the congress, Stalin emphasized the leading scientific role of Marxist philosophy:

There is no need for a specialist-physician to be a specialist in physics or botany, and vice versa. There is, however, one field of science, the knowledge of which is obligatory for Bolsheviks in all fields of science—this is the Marxist-Leninist science of society, the law of the development of society, the law of the development of proletarian revolution, the law of social development, of the victory of Communism, because one cannot be considered a real Leninist if one calls himself a Leninist but has confined himself within his own specialty, say, mathematics, botany, or chemistry, and does not see anything beyond his own specialty. A Leninist cannot be merely a specialist in his favorite field of science, he must at the same time be a politician, a social activist, who is vitally interested in the fate of his country, acquainted with the law of social development, and inspired to actively participate in the political guidance of the country.⁴⁹

This new emphasis on Marxism, which had become prominent with the publication of the infamous *Short Course on the History of the Communist Party* in

September 1938, had important institutional implications for Soviet science. Although Marxist philosophy had acquired some of the features of an established scholarly discipline, only in October 1938 was it elevated to the status of a dominant field in the Academy of Sciences with the creation of its new Philosophy Division. In January 1939, a number of party functionaries were “elected” to the Academy of Sciences’ membership and began to play an important role in its presidium, notably the philosophers Mark Mitin and Pavel Iudin and “Stalin’s Prosecutor,” Andrei Vyshinskii. The right of philosophers to participate in the making of science policy, thus was supported both ideologically and institutionally.

The Eighteenth Party Congress apparently inspired geneticists to make a new attempt to strengthen their institutional position. Not surprisingly, the initiative took place in the most important remaining stronghold of genetics, the Academy of Sciences. In summer 1938, after the SNK’s criticism of the Academy of Sciences’ plan for genetics, the academy presidium decided to organize a new discussion on “issues of genetics.” The impending reorganization of the academy and the subsequent elections delayed the matter, but in March 1939—a week after the party congress—the General Assembly of the academy returned to this problem, deciding that “in 1939 the Biology Division will hold a discussion on the main issues of genetics on the basis of debates over the results and research plans of the [Academy of Sciences] Institute of Genetics and the [Odessa] Institute of Genetics and Breeding.”⁵⁰ Shortly thereafter, the newly appointed vice-president Otto Shmidt began to prepare the discussion. He consulted with almost all the geneticists who worked in the academy, including the corresponding members Levitskii and Serebrovskii, and collected a large dossier of materials against Lysenko and his team. Serebrovskii even wrote a preliminary draft of the presidium resolution, “On the Genetics Discussion,” for adoption at the forthcoming discussion.⁵¹ He also prepared a thirty-page “Short Review of the Practical Applications of Genetics” for Shmidt. Geneticists clearly hoped that “a decisive improvement of the biological and agricultural fronts can come from an authoritative elucidation of the [present] situation by [a discussion of genetics in] the USSR Academy of Sciences.”⁵²

In seeking to improve their position, as they had done at the 1936 discussion, geneticists apparently intended to use the format of a public discussion to counter Lysenko’s main tactic, the press campaign. This attempt, I think, can be explained by the role of public discussions in announcing and justifying new party policies. According to the practice of Soviet science culture, records of such gatherings were published in the press, and geneticists apparently considered a public discussion to be their best hope to reverse the negative “public” attitude to their work, to demonstrate that the persecution of genetics was *not* a party policy, and thus to ensure the “cooperation” of lower-level bureaucrats in restoring their institutional positions—in Vavilov’s words, to “dispel the prevailing unhealthy atmosphere.”⁵³

The Leningrad Letter

Predictably, as part of their struggle to support and expand their institutional base, geneticists sent petitions to the supreme patron of Soviet science—the Central Committee of the Communist Party.⁵⁴ One such letter turned out to be especially significant.

In June 1939, a group of Leningrad biologists sent a letter to Zhdanov, the head of Agitprop, asking the party leader to permit a new discussion of the controversy between geneticists and Lysenkoists.⁵⁵ The six-page letter was signed by eight professors from Leningrad University and two from Leningrad pedagogical institutes. Six of the signatories were geneticists: Vavilov's coworkers Maria Rozanova, Grigorii Levitskii, and Georgii Karpechenko; and professors Aleksandr Vladimirovskii (head of the department of animal genetics at the university), Mikhail Lobashev (head of a genetics laboratory at the university), and Iurii Olenov (head of the genetics laboratory at the Pedagogical Institute). The four others were members of the biology faculty of Leningrad University: Iurii Polianskii (a protozoologist), Aleksandr Zuitin (a professor of biometry), Ivan Sokolov (a zoologist), and Boris Vasil'ev (a botanist). The letter addressed the current situation in Soviet genetics and dwelt on five major points: Lysenkoists' attempts to discredit genetics and geneticists, their administrative struggle against the discipline, their attempts to seize the teaching of genetics, the unreliability of their experimental research, and the incompatibility of Lysenko's ideas with Darwinism and the international consensus in genetics.

The Leningraders opened their letter with the flat declaration that "conditions for work in the field of genetics are absolutely abnormal at the present time." What made them abnormal was that "the discussion [between geneticists and Lysenkoists] is going beyond the limits of scientific polemics and, for no good reason, is being transformed into an administrative struggle against genetics." They stressed that Lysenkoists were organizing a broad antigeneics press campaign, portraying genetics as "formal," "bourgeois," and "pseudoscientific." As a result of these "errors" in the press, they lamented, "there is cultivated in certain circles an absolutely false and sometimes simply ignorant image of genetics as a science. There are some overcautious persons who respond to academician Lysenko's call by striving to abolish genetics as a 'bourgeois' science." The geneticists also complained that the defamation of genetics "is done under the banner of defending academician Lysenko's views." They declared that "Lysenko's authority, established due to his merits in the field of agriculture [and] his state position, is used by the administrators of institutions, babblers, and careerists as a 'scientific' argument against genetics," and they noted that such administrative struggle "stirs up wide circles of biologists against academician Lysenko rather than forcing them to become acquainted with the results of his work." Note that the geneticists adopted the same style of "name-calling" and "labeling" that the Lysenkoists had em-

ployed in their writings.⁵⁶ They observed that “a certain type of babler from ‘philosophy’ [*boltun ot filosofii*], like doctor of biological sciences I. I. Present, has emerged in the discussion. . . . These babblers, heating up the discussion under the slogan of ‘ideological struggle,’ are attempting to aggravate people, to create here in the USSR two camps of scientists (progressive and ‘pseudoscientists’).”

The letter’s emphasis upon the teaching of genetics reflected an institutional dimension of the controversy that was just then coming to a head. In 1938–39, the Committee for Higher Education had begun to implement a system of standard curricula for courses in educational institutes and universities. This system required that a particular discipline be taught in all institutes according to a single program approved by the committee. Concurrently, Narkompros implemented the same system in secondary education. If state agencies adopted the Lysenkoist program, geneticists would be expelled from educational institutions, one of their few remaining bastions. It is noteworthy, then, that the authors complained about the replacement of the genetics program in secondary and higher schools.

The Leningraders cast Lysenko’s meddling in education as being *contrary to party policy*: “Such a casual attitude toward [educational] programs strictly contradicts the Central Committee’s resolution on secondary schools (1932).”⁵⁷ They also noted that Lysenko had exercised his administrative power in agricultural institutions to prevent graduate students from working with the eminent geneticists there. Although this time there was no reference to a party resolution in the text, it was obviously implied: the Central Committee’s resolution on graduate studies (1936) explicitly criticized the practice of assigning students to insufficiently qualified scientific advisers. The authors also played the international card. They argued for the necessity of genetics courses in educational institutions by invoking the Western experience: “At the present time, the heredity and variability of animals and plants is one of the main subjects in the curriculum of any American agricultural school preparing students for practical work.” They referred to the Nobel Prize awarded to the American geneticist T. H. Morgan as a clear sign of the subject’s importance.

The letter’s authors also stressed Lysenko’s “deviation” from Darwinism. “If these experiments show that heredity can be reconstructed and controlled by external conditions without selection,” they argued, “Lysenko would lay the cornerstone for a new theory on the development of the organic world that would be absolutely divergent from Ch. Darwin’s theory of natural selection. There have been numerous such attempts in the history of biology, and every time they proved to be incorrect when the experiments were correctly examined.” The geneticists paid special attention to the scientific illegitimacy of Lysenko’s claims. His “hasty theoretical conclusions (denial of Mendelism-Morganism, the doctrine of ‘transformation,’ and so forth) are, we deeply believe, mistaken and must be discussed and seriously examined by

experiments. These conclusions, however, are considered and taught as indisputable truth.”

This letter illustrates the way geneticists, like other Soviet scientists of the time, sought to use the system to advance their own interests. The letter was constructed to defend the field of genetics according to the rules of Stalinist science. Like Lysenkoists, geneticists sought the support of the highest party authorities in the struggle with their competitors. They used all possible means to attract the attention of party officials, filling their letter with appropriate references to *partiinost'* and practicality. They justified their complaints by citing the party's decisions. They followed party etiquette by labeling their opponents and referring to the sacral authority of Darwin. They asked the Central Committee to intervene:

We are for wide scientific discussion, but we cannot resign ourselves to the idolatry in science developed by Lysenko's proponents, along with intolerable administrative command in the field of science. We are asking you, as a secretary of the Central Committee of our Party, to promote the creation of a normal situation for work and discussion in the field of genetics, to call to order those who, instead of struggling to mobilize science for the accomplishment of the tasks of the Third Five-Year Plan in the field of agriculture, attempt to sow discord among Soviet scientists. We strongly believe that genetics, together with other biological disciplines, ever more deeply involved in practical tasks, could and should serve the interests of our socialist agriculture.

Note well: the Leningrad scientists *petitioned* party officials to *intervene* in their controversy—they themselves recognized the power of the party bureaucracy to adjudicate their arguments. The essence of their complaints concerned their *institutional* struggle with Lysenkoists, which clearly fell under party purview. Furthermore, by addressing their letter directly to the Central Committee, geneticists may have hoped to leapfrog the long bureaucratic procedure required to organize the large conference on “issues of genetics” that they desired.

The geneticists were obviously aware of the reorganizations of the science-policy apparatus after the Eighteenth Party Congress and Zhdanov's appointment to head Agitprop. Furthermore, Zhdanov was not only a secretary of the Central Committee, but also the secretary of the Leningrad City Party Committee. Thus, there were good reasons for the Leningraders to write the letter and address it to Zhdanov personally: they might hope that he would notice and support a petition of his compatriots. And he did.

The Party Bosses

We do not know exactly how or when the Leningraders' letter reached the Central Committee. The original letter does not have any date on it, nor does the archival file preserve its envelope. This could mean that the letter was

handed to Zhdanov personally or was delivered in person to the Central Committee office in Moscow by one of the geneticists. Perhaps it was delivered by Vavilov, who constantly commuted between Leningrad and Moscow. In any case, on June 24 the geneticists' letter arrived at Zhdanov's office and began its passage through the apparatus of the Central Committee of the Communist Party.

Zhdanov read the letter attentively, scrawling notes in pencil over it. He boldly underlined numerous sentences and marked certain paragraphs with a vertical line in the margins, indicating the points and arguments that drew his attention.

The markings suggest that Zhdanov focused especially on the "administrative methods" used by Lysenko's supporters. He marked a passage in which the geneticists described how a student in the genetics department at Leningrad University was refused promotion to candidate party member "as a representative of 'old reactionary' science (genetics) only on the grounds that she declared her disagreement with a number of academician Lysenko's conclusions." He underlined all parts in which the geneticists pointed out the contradictions between Lysenko's actions and the party line and all parts in which they stressed their own conformity to party demands. He both underlined and marked with "NB!" a passage in which they complained that "officials of Narkompros have already replaced programs on the topic of 'Heredity and Variability' for the ninth grade in secondary school. The devotion of these 'writers' to T. D. Lysenko has gone to such extremes that the teaching of variability and heredity is based exclusively on Lysenko's and Michurin's experiments and writings, as if nobody had ever discovered anything correct before them." His attention was also drawn to the observation that "there is the same situation with the replacement of the genetics program in higher schools."

Zhdanov also marked the passages relating to the Lysenkoists' misuse of Marxism: "The teaching of biology according to [Lysenkoist] programs is intended to replace factual knowledge about nature by general declarations. This does not mean that we are against the teaching of Marxist principles; we adhere to them completely, but we are against the 'concoction' of Prof. Prezent and 'Darwinists' like him. . . . Such programs say a lot about the 'dialectics' of nature and very little about nature itself."

Zhdanov highlighted the geneticists' claim that "genetics gives us real opportunities to reconstruct, literally as ordered, the hereditary basis of organisms for a number of features in plants and animals," as well as their critique of Lysenko's experimental techniques and theoretical conclusions—particularly his conflicts with Darwin's doctrine. The party secretary also noticed the scientists' remark that Lysenko's "declaration that the discoveries of an honorary member of the USSR Academy of Sciences, T. H. Morgan, in the field of heredity, for which he was recently awarded a Nobel Prize, constitute a pseudoscience, evokes bewilderment at the very least."

From Zhdanov's markings, it appears that the letter persuaded him to take action. He presented it to the Secretariat for a decision. At that time, the Secretariat consisted of four members: the general secretary, Stalin, and the three party secretaries—Andrei Andreev, Zhdanov, and Malenkov.⁵⁸ Formally, as the general secretary of the party, Stalin was a member of both the Secretariat and the Orgburo, but he rarely participated in their discussions: his functions were limited mostly to the Politburo. The three secretaries were the actual decision makers. They ran the Secretariat's extensive staff and supervised the three major divisions of the Central Committee: Agitprop, headed by Zhdanov; Personnel, headed by Malenkov; and the Party Control Organs, supervised by Andreev. As we have noted, once every two weeks the Secretariat or Orgburo discussed and approved decisions that had been prepared by the subordinate departments and presented for final action. Sometimes, however, this process was replaced by a simplified procedure: the three party secretaries each read a proposed document in turn and simply signed "yes" or "no" on the draft. If the document was approved unanimously, the question it addressed did not need to be discussed at a formal Orgburo or Secretariat session—the document was sent directly to the agent or agency assigned to implement the decision. If a document was not approved unanimously, it was sent back to the department for further drafting.

Apparently from Zhdanov's dictation, his staff prepared a draft resolution, which, together with the original letter, was passed on to the two other party secretaries, Andreev and Malenkov. All three signed "yes" on the draft. On June 29, it was issued, without any discussion at a formal sitting, as a top secret resolution of the Secretariat. It read:

HEARD: Concerning the letter of a group of Leningrad professors about the questions of genetics.

DECIDED: To order the editorial board of *Under the Banner of Marxism* to hold a meeting on the questions raised in the letter from the Leningrad professors and to present the [editorial board's] proposals to the Central Committee.⁵⁹

Two days later, on July 1, the Secretariat relayed this directive to Mark Mitin, a member of the Central Committee, chief editor of *Under the Banner of Marxism*, director of the Marx-Engels-Lenin Institute, and recently appointed member of the Academy of Sciences; and to Petr Pospelov, another member of the Central Committee and chief editor of *Pravda*, the main party newspaper.

This resolution, together with Zhdanov's markings on the geneticists' letter, show that the party secretaries found it necessary to rebuke Lysenko's use of the *administrative fiat* against genetics as out of keeping with the general policy adopted at the Eighteenth Party Congress. They clearly had no definite policy toward the *scientific* questions at issue and appointed philosophers to judge the dispute, reserving the final judgment for themselves.

LET PHILOSOPHY JUDGE

The Secretariat's decision to put philosophers in charge of the 1939 genetics discussion clearly signaled their ascendance as experts and advisers in science policy. This group became an intermediary between the highest party agencies (the Secretariat, Orgburo, and Politburo) and the scientific community. During the late 1930s, philosophers became a part of the institutions of both the scientific community and the mid-level party bureaucracy: they were elected to the Academy of Sciences and its presidium and, at the same time, occupied various posts within the Central Committee apparatus. Philosophers, then, simultaneously served two masters—they formed a particular disciplinary group with its own institutional interests within the scientific community, and a distinct group within the party bureaucracy, with its own career interests. This naturally put them in the position of being the representatives and official interpreters of the party's interests to the scientific community, but, on the other hand, they also served as interpreters of the community's interests to the party. This dual position of philosophers explains the nature and results of the discussion they convened on "issues of genetics."

The Discussion

The discussion the geneticists had requested was held October 7–14, 1939, at the Marx-Engels-Lenin Institute. It was run by four members of the editorial board of *Under the Banner of Marxism*: Mark Mitin and Pavel Iudin, recently appointed members of the Academy of Sciences; Ernst Kol'man, former head of the Science Department at the Moscow City Party Committee; and Vladimir Kolbanovskii, head of the psychology department of the Institute of Philosophy and an active contributor to the journal.⁶⁰ All four "judges" were party members and had graduated from the Institute of Red Professors; all were "militant materialists" and had worked at the Communist Academy.

More than 150 persons attended the meeting, and fifty-three participated in the discussion. All the authors of the letter that had triggered the discussion were invited. Other leading geneticists were also present, including Vavilov, Serebrovskii, Mikhail Zavadovskii, Sergei Davidenkov, and their students Nikolai Dubinin, Anton Zhebrak, Sos Alikhanian, Aleksandr Malinovskii, Valentin Kirpichnikov, and Iulii Kerkis. All the opponents of genetics mentioned in the Leningrad letter took part in the discussion, including Lysenko, Prezent, Keller, and Basia Potashnikova, as well as a number of Lysenko disciples, such as Leonid Greben', Viktor Milovanov, and Artavazd Avakian. A small group of researchers who occupied an intermediate position between Lysenkoists and geneticists was also invited, including Boris Zavadovskii (the younger brother of Mikhail Zavadovskii) and Il'ia Poliakov.

Although the actual reason for the discussion was the Lysenkoist conquest of the institutional base of genetics by administrative fiat, the discussion itself was cast as a scientific dispute on “issues of genetics.” The agenda concerned the legitimacy of the basic concepts of genetics (Mendel’s laws, the concept of the gene, the chromosomal theory of heredity) and of Lysenko’s doctrines (vegetative hybridization and “adequate variability”). During the weeklong discussion, speakers from both camps argued about experimental techniques, methods, results, and theoretical conclusions. The report on the discussion published in *Under the Banner of Marxism* bore the general title “On the Controversy in Genetics and Breeding.”

However, the purpose of the discussion, according to the letter of invitation distributed by the philosophers, was “to define the *Marxist-Leninist line of work* in the field of genetics and breeding, which must mobilize all workers in this field in the general struggle for the *development of socialist agriculture* and the real *development of the theory of Darwinism*.”⁶¹ In his opening address, Mitin again underlined the “social and political” aspects of the discussion. Two major issues emerged in the discussion: “theory and practice” and “Marxism-Darwinism.” Not surprisingly, both geneticists and Lysenkoists employed this mandatory rhetoric in their arguments.

Each group claimed the “practicality” of its own research and accused the other of “impracticality.” Lysenkoists repeatedly pointed out that geneticists largely studied a useless fly, *Drosophila*, while Lysenko and his followers studied tomatoes, potatoes, and other useful plants and animals. They emphasized the leading role of “practice” over that of “theory”: “Only that theory which helps in the practical solution of problems undertaken or assigned earns the right to scientific labor [*sic*]. Mendelism and Morganism not only have not helped, but have frequently hindered,” Lysenko declared. “That is why for me Michurin’s theory is a colossal authority in agrobiolgy, while the theory of Mendel and Morgan, on the other hand, I can only call false.”⁶² Furthermore, genetics research was “too slow” and thus failed to fulfill party objectives in agriculture. A resolution of the Central Committee on January 6, 1939, had assigned VASKhNIL the task of creating new varieties of wheat and rye for sowing in Siberia in two to three years, Lysenko noted, but genetics was incapable of fulfilling this task.

Geneticists also referred frequently to the significance of the practical applications of genetics, but they considered theory the most important issue. Answering the accusation of the impracticality of genetic work with *Drosophila*, one of the authors of the Leningrad letter, Iurii Olenov, stated that it was the most convenient object for genetic research and declared categorically: “It is the right of science itself to choose the objects it studies.”⁶³ The geneticists repeatedly noted Lysenko’s faulty experimental technique and his “hasty theoretical conclusions,” which could lead to serious practical problems in agriculture. According to his memoirs, one of the younger geneticists at the meeting, Malinovskii, wanted to demonstrate the real impracticality of Lysenko’s

doctrine. He had suggested that Vavilov present the audience with agricultural data illustrating how much more productive the geneticists' crop varieties were than Lysenko's. "If there had been a volume with documented evidence . . . proving the practical [agricultural] usefulness of genetics," Malinovskii reminisced, "this would have been a weighty argument for the highest agencies and could have changed the situation."⁶⁴ Vavilov, however, rejected this plan, and the geneticists did not prepare such a volume.⁶⁵ In his speech at the conference, Malinovskii nonetheless provided some of the statistics himself; and others among his colleagues demonstrated certain practical achievements of genetics in plant and animal breeding.⁶⁶

The rhetoric of the discussion also reveals the importance to each competitor of authority over "Darwinism." In the 1930s, Darwinism had become blended with Marxism. The Marxist classics considered Darwin's theory the materialist explanation of biological evolution and praised it to the skies. "Marxist-biologists" widely propagandized this attitude in the late 1920s and early 1930s.⁶⁷ Major pronouncements on Darwinism had been given by such leading party figures as Bukharin and Iakovlev.⁶⁸ Most importantly, evolutionary doctrine was taught as a part of the official state ideology, dialectical materialism.⁶⁹ Darwinism had thereby become the domain of philosophers and ideologists. Geneticists (and biologists in general) had tried constantly to recapture Darwinism from philosophers and to establish their own authority over the field. They actively participated in the broad debate between Darwinists and Lamarckists, publishing numerous papers against Lamarckism in the late 1920s and early 1930s.⁷⁰ They included evolutionary problems in genetics courses and genetics problems in courses on evolutionary theory. In a certain sense, the struggle over Darwinism was the struggle for control over one of the most powerful cultural resources directly available to geneticists,⁷¹ because references to Darwin, as the "founding father of the materialist concept of evolution," could substitute for references to Marxist classics as expressions of an author's devotion to the party line in biological questions. So Darwinism naturally emerged as a major theme at the conference organized "under the banner of Marxism": for each competitor, it was one of the best available justifications for their own research agendas, allowing them to tie their own interests to the authority of sacral Marxism.⁷² Both camps repeatedly accused each other of being "anti-Darwinist." Both referred to the authority of the "founding fathers" of Soviet Darwinism, Ivan Michurin and Kliment Timiriachev. Characteristically, Lysenkoists dwelt upon the negative attitude toward Mendelism occasionally expressed in the founders' writings, while geneticists emphasized their declarations on behalf of Mendelian genetics.⁷³

Each group had to adjust its traditional rhetoric to the latest twist of the party line. This can be clearly seen in regard to the international situation. In August 1939, two months before the meeting, the Molotov-Ribbentrop pact had made Nazi Germany and the Soviet Union *de jure* allies. One of Lysenko's main arguments against genetics had been its alleged links with

fascist ideology and politics, a theme heavily exploited in spring 1939 during the Lysenkoist attack on Kol'tsov and his institute.⁷⁴ By October, the “fascist links” argument had obviously become inappropriate, so instead, Lysenkoists repeatedly juxtaposed the foreign “founding fathers” of genetics, Gregor Mendel and T. H. Morgan, with the native founding fathers of Lysenko’s doctrine, Michurin and Timiriazev.⁷⁵ The geneticists also amended their rhetoric. In spring 1939, while preparing for the discussion in the Academy of Sciences, geneticists had frequently reminded state and party officials of the antifascist attitude of the international genetics community, noting that while German geneticists had not been invited to participate in the forthcoming International Genetics Congress in Edinburgh, Soviet geneticists had been invited to preside over the congress and to deliver plenary addresses on a number of important issues.⁷⁶ At the October conference, geneticists continued to refer to the achievements of the international genetics community, but dropped their earlier antifascist references.

In their performance at the discussion, both geneticists and Lysenkoists reflected the same Soviet science culture. The two competing groups sought to translate their own agendas into the “Newspeak” of party bureaucrats; the real scientific agenda was covered by a thick layer of appropriate rhetoric. Each side appealed to the sacral authority of Darwinism. Each followed party etiquette, engaging in personal attacks and name-calling. Neither group seriously considered the possible scientific merits of the criticism leveled at its position.⁷⁷ Each camp believed its own views were absolutely “true” and those of its opponents were “pseudoscientific.” Each sought to establish its own views as the “orthodoxy” in genetics. Discussants who did not clearly adhere to one line or the other—for instance, Boris Zavadvovskii and Poliakov—were marginalized and considered “renegades” by both groups.⁷⁸

The Judgment

The editorial board of *Under the Banner of Marxism* heard the arguments of the competitors and passed its judgment—one that turned out to be somewhat ambiguous. Interestingly, the party philosophers espoused a much less militant position than did either group of competitors. In fact, they called on both groups to pay attention to their opponents’ criticism, to note the mistakes and exaggerations in their own views, and to take into account and study genuine issues in modern genetics rather than criticizing and accusing each other. On the last day of the meeting, Mitin delivered a concluding address that summarized the discussion.⁷⁹ Shortly thereafter, the editorial board prepared a report on the results of the conference and, in accordance with the Secretariat resolution of June 29, sent it to the Politburo.⁸⁰ This report was probably written by Kolbanovskii and edited by Mitin.

Not surprisingly, the philosophers, as the official interpreters of the party lingo, focused on the competitors’ rhetoric. The report characterized Lysenkoist work as “advanced, progressive, and innovative,” and genetics as

“conservative and acting against innovation [*novatorstvo*] in science.” This verdict did not rest upon scientific arguments—the “judges” themselves pointed out that “much in academician Lysenko’s work needs to be corrected and examined.” It was Lysenko’s “practicality” that carried the day. The report stated: “The theoretical views of academician Lysenko are not only fundamentally true and aimed against certain dogmas of ‘modern’ science, but also (and this is most important) they open up wide possibilities for man’s practical influence on the nature of plants and mobilize the attention of genetics and practical breeders to the struggle for changing nature in a way that is profitable and necessary to enrich the wealth of our socialist motherland.”

In contrast, “formal” genetics was “characterized as a whole by its distant separation from practice and by deviation into the realm of purely theoretical research.” The philosophers repeated one of the Lysenkoists’ main accusations: geneticists studied useless objects (flies, butterflies, and so forth) instead of economically important plants and animals. The report also depicted the geneticists themselves as “a self-enclosed group that not only does not want to listen to the voice of practice, but reacts to this criticism in a very negative way.” The editorial board, however, condemned the simplistic style of the Lysenkoists’ criticism and the fact that they ignored the achievements of genetics and cytology—for example, “the scientific meaning of the laws of heredity discovered by Mendel,” and Morgan’s chromosomal theory, which the report characterized as “one of the greatest achievements of modern science.” Thus, although endorsing Lysenko’s notion of practice, the philosophers at the same time endorsed the geneticists’ notion of theory. The “judges” also noted the difference between the relation of each competitor with the international scientific community. They pointed out that Lysenko’s work was based on the teachings of native scientists—Michurin and Timiriazev—while “geneticists manifested a slavishness before foreign authorities, from whom they uncritically accepted various suspicious ‘novelties’.”

The involvement of leaders in official philosophy undermined the influence of Lysenko’s chief ideologist, Isaak Prezent. Although these philosophers did not refute Prezent’s Marxist justification for Lysenko’s “Soviet Darwinism,” they did severely criticize his claim to be the main authority on Marxism in biology. This, after all, was their own domain. The philosophers nonetheless endorsed Lysenko’s critique of genetics as an anti-Darwinist field. While noting the ambiguity of Michurin’s and Timiriazev’s attitude toward genetics, the ideologists declared that Lysenko’s views were “Darwinist,” while geneticists held “positions hostile to Darwinism.” The report observed that geneticists rejected the work of Michurin, the Soviet founding father of Darwinism, while Lysenko’s doctrine was “relevant to the spirit of Darwinism, Timiriazev’s teaching, and Michurin’s teaching.”

During the discussion, the institutional and administrative disputes had hardly been mentioned by anyone. Nonetheless, the “judges” addressed these issues in their verdict. Their report did not propose any radical institutional measures on behalf of either geneticists or Lysenkoists. However, following

the pronouncements of the party congress against administrative fiat and the directive from the party secretaries clearly expressed in Zhdanov's underlining, the editorial board denounced Lysenkoist administrative methods. The authors of the report proposed to "call to order" officials of Narkompros and the Committee for Higher Education who had arbitrarily changed genetics syllabi. The philosophers' proposals were clearly aimed at asserting the ultimate authority of the party. This spirit permeated all the editorial board's suggestions about "a number of serious actions needed to organize scientific work correctly, to use all valuable scientific workers of biological institutions, and to create conditions for the work of new scientific staff." The authors proposed that "the membership of the Academy of Agricultural Sciences be enriched with party members who are real Communists" and that geneticists be required to work on Lysenko's ideas. They proposed that to accomplish this, the scientific research conducted at VIR and the Institute of Genetics be reconstructed. The philosophers did not forget to assert their own authority: they pointed out that "the theoretical positions of 'formal geneticists' need to be substantially criticized from the positions of Darwinism and dialectical materialism."⁸¹

In sum, the "judges" supported the geneticists' demand of scientific legitimacy for theoretical doctrines on heredity, endorsed the Lysenkoist rhetoric of practicality, patriotism, and Darwinism, and condemned Lysenko's administrative fiat. In so doing, they were serving their own professional interests, reinforcing their own territorial claims over issues of method, practice, Darwinism, and Marxism and at the same time attempting to demonstrate their usefulness as the new intermediaries between the scientific community and the Central Committee's new science administration, Agitprop.

Results

The geneticists were disappointed and vexed by the results of the meeting. Their discontent is evident in a letter Vavilov wrote to Mitin soon thereafter.⁸² Addressed "To Mitin personally," the letter was quite critical in its style. "The conclusions you drew at the conference on questions of genetics left us with a bitter aftertaste," he wrote.⁸³ Noting Mitin's correct account of the importance of Mendel's law and Morgan's chromosome theory, Vavilov pointed out that he was completely mistaken to divide genetics into "progressive" (Lysenkoist) and "reactionary" (formal genetics) camps. Lysenko's supposed agricultural achievements were fake, Vavilov declared; he hoped to discredit genetics, and Mitin's declarations could help him to succeed.

Vavilov noted that Mitin's declaration that "we must call to order scientific administrators who hamper the development of our science"⁸⁴ was timely; he complained that, on the eve of the discussion, Lysenko had already expelled "dissidents" from VIR's scientific council. Such councils, which were largely responsible for an institute's research policy and the certification of its person-

nel, were not directly controlled through the system of *nomenklatura*—their membership was nominated by the institute director and approved by the supervising central institution (in this case, VASKhNIL). In late September 1939, Lysenko had unilaterally dismissed Vavilov's allies (including three authors of the Leningrad letter—Rozanova, Karpechenko, and Levitskii) from the council and replaced them with his own, ignoring Vavilov as director. By this unilateral action, Lysenko had overstepped his administrative authority.

Vavilov's letter shows that he understood perfectly well the dual position of philosophers as members of both the party agencies and the scientific community, and their role as intermediaries between them. He could not possibly have written such a reproaching letter to party secretary Zhdanov or to the Central Committee, but he could and did write one to his fellow academician the philosopher. Mitin was clearly offended by this rebuke. He attached a copy of the letter to the report the editorial board sent to the Politburo and characterized its content as "an almost political declaration."⁸⁵ We can only speculate whether Vavilov counted on Mitin doing just that, so that the Central Committee would have reason to judge the judges. In any case, geneticists made certain that their party patrons were informed of the fact that Lysenko had again exercised his administrative power against genetics, contrary to their instructions.

A few days after Vavilov wrote to Mitin, a group of VIR workers, including Karpechenko, Levitskii, and Rozanova, sent a long letter to Zhdanov. They informed him of Lysenko's transgression against the rules of the Soviet bureaucratic system:

An order of the President of the All-Union Academy of Agricultural Sciences [Lysenko] of September 28 approved a new list of members of the Scientific Council of the All-Union Institute of Plant Breeding. Twelve doctors of science, thirty-three candidates of science, and most of the [VIR] division heads, who until this time have been members of the council due to their scientific degrees and titles, are now excluded from this list. . . . Instead, the President's order at the same time included persons who have no connections with the Institute, and those from among the Institute workers who are undoubtedly less competent than the excluded specialists who headed these branches of science.⁸⁶

The authors emphasized that the heads of the institute's main departments (fruit growing, berry growing, cereals and beans, genetics, and cytology) were not members of Lysenko's new council.

As in their previous letter, the authors underscored the contradiction between Lysenko's actions and party positions: "The entire Division of Industrial Plants, on which the Party and Government laid special emphasis in the current five-year plan, has not a single representative in the council."⁸⁷ Unlike in the previous letter, however, this time the authors did not refer to "scientific contradictions" between Lysenko and the geneticists, nor to the "scientific unreliability" of Lysenko's doctrine; they focused exclusively on his adminis-

trative dictate, hoping the party would limit his power in order to reassert its own authority.

Zhdanov again assented to the geneticists' petition. He presented their letter at the November 9 meeting of the Secretariat, which in turn forwarded it "for consideration" to Andrei Vyshinskii, a member of both the Central Committee and the Academy of Sciences presidium.⁸⁸ A month later, on December 7, Vyshinskii reported to Andreev, the party secretary in charge of Party Control Organs. Vyshinskii confirmed the letter's factual claims: the number of council members had been cut in half, and the new membership "in fact had not included many of the former members, mainly from among the scientific workers recommended by academician N. I. Vavilov."⁸⁹ As a result of several meetings with Lysenko, Vyshinskii had concluded that "the council had been constructed without regard to the matter pointed out in the letter of the group of VIR scientific workers."⁹⁰ One can speculate that this "matter pointed out" by the geneticists was in fact the "inconsistency" of Lysenko's actions with the party line. Shortly thereafter, geneticists were restored to the VIR scientific council. A special resolution of the VASKhNIL presidium reinstated the council membership of the heads of all departments, divisions, and experimental stations. Informing the Central Committee of this measure, Vyshinskii proposed "to consider the question closed" and "asked for instructions." No instructions followed—Andreev read Vyshinskii's report and sent it to the archive.

In sum, the results of the 1939 discussions and decisions with respect to institutions reinforced the status quo on the genetics front. Geneticists did not manage to substantially improve the public image of genetics or its institutional base, but they did successfully counteract Lysenko's latest assault at VIR and preserve their control over the Academy of Sciences' Institute of Genetics.

Nonetheless, a year later, in 1940, genetics lost these institutional strongholds. That summer, Vavilov was arrested by the secret police as a "British spy." Shortly thereafter, a number of his coworkers, including Karpechenko and Levitskii, were also arrested on similar charges.

We still do not know the exact reasons for Vavilov's arrest, which in turn proved to be the major cause of the subsequent arrests of his coworkers.⁹¹ We know that the secret police had been keeping a watchful eye on Vavilov (as they did on all high-ranking scientists) ever since the 1920s. Did the 1939 conference play a role? Probably not. Perhaps Vavilov's vigorously uncompromising position at the conference did add a few lines to his vast dossier, but it seems unlikely that it could have *provoked* such serious actions.⁹² Furthermore, there is a clear sign that Vavilov's authority in party-state circles in early 1940 was still quite high: he was assigned a very responsible mission, to survey the territories newly acquired in Poland and Finland as a result of the Soviet-Nazi pact and the Soviet-Finnish war.

What could have *triggered* his arrest was, perhaps, his international activity, notably his correspondence with his British colleagues. During late 1939 and

early 1940, despite the fact that the Molotov-Ribbentrop pact had made the USSR a German ally and a British enemy, Vavilov had continued his communications with British geneticists. In spring 1940, one of them, Cyril D. Darlington, volunteered to arrange for an English translation of the latest volume on genetics issued by Vavilov's institute, for publication in Britain. Vavilov eagerly agreed and informed Darlington that his coworkers would themselves prepare revised and improved translations of their articles. On June 24, 1940, Vavilov wrote another letter to Darlington, noting that about half of the volume had already been translated and that he hoped to "finish it soon."⁹³

In the "spy-hunt" atmosphere that prevailed in the NKVD at the beginning of World War II, Vavilov's continuous correspondence with his British colleagues, as well as his readiness to provide "British imperialists" with an account of the latest Soviet genetics research, might well have been the straw that broke the camel's back. A few days after he had sent the June 24 letter to Darlington, Vavilov left for his survey trip through the formerly Polish "Western Ukraine." In the middle of the trip, special agents from the secret police arrested him and brought him back to Moscow. Once in prison, Vavilov fell into the mincing machine of the NKVD. He was forced to sign the false accusations cooked up by his inquisitors against his coworkers, which provided a pretext for their subsequent arrests.

As had been the case with the Great Terror two years before, these arrests proved strategically damaging: they removed the most distinguished spokesmen for genetics, including Vavilov, Karpechenko, and Levitskii, and undermined genetics' links to the control apparatus. Not surprisingly, then, following these arrests, the genetics spokesmen were replaced by their competitors. Lysenko himself came to head Vavilov's Institute of Genetics, and he appointed one of his faithful allies to direct Vavilov's VIR; he also promoted another of his allies to head Karpechenko's department of plant genetics at Leningrad University. And, again as during the Great Terror, this development did not signify a deliberate, strategic policy of the party apparatus directed against genetics. This loss was more directly a consequence of a feature of Stalinist science that geneticists had used to their advantage until 1935—the centralization of the field. The arrest of the leading genetics spokesman, Vavilov, provided a pretext for the subsequent arrests of his associates and paved the way for his competitors' successful conquest of all the institutions that had been under his wing.

Although it had lost its most distinguished spokesmen and two major institutions, Soviet genetics continued. A small group of geneticists still worked in Kol'tsov's former Institute of Experimental Biology under the leadership of Kol'tsov's pupil Nikolai Dubinin; another group worked in the department of animal genetics at Leningrad University; another in the Narkomzdrav Institute of Evolutionary Physiology; and yet another in the Academy of Sciences' Institute of Evolutionary Morphology. Several other groups worked in various institutions in Leningrad, the Ukraine, and Armenia. Indeed, a few "for-

mal” geneticists even continued to work in the Institute of Genetics under Lysenko’s directorship. Although now scattered across various institutions, Mendelian genetics kept going.

In spring 1939, Vavilov had told a meeting of his coworkers: “[We] will go into the bonfire, we will burn, but we will not give up our principles.”⁹⁴ His arrest and subsequent death in prison became a symbol of devotion to the principles of science, and a terrifying lesson to his colleagues. Unlike many individual scientists, however, the scientific community as a whole survived such outrages and continued its adaptation to the Stalinist science system.

PRINCIPLES OF OPERATION

This episode of competition between two scientific groups exemplifies the Stalinist science system in action. It illuminates the particular institutional, political, and cultural terrain upon which Soviet scientists built their institutions and careers and advanced their own interests in their dealings with their state patrons. In particular, it shows the workings of the system’s “physiology,” the significance of the ramified symbiotic interconnections that had made science a part of the party-state.

At the end of the 1930s, the centralized, hierarchical structure of the scientific community replicated the centralized, hierarchical structure of the party-state apparatus, stimulating competition among various interest groups within the community for the favor of their patrons in the apparatus. Neither the scientific community nor the control apparatus was monolithic. Both were fragmented into subgroups, each of which had its own means and ends; and the complex interactions among these groups often led to outcomes unintended by any of the participants.

By 1939, Soviet scientists understood perfectly well the principles of operation of the Stalinist science system and had learned to use that system to their own advantage. They knew that the real power was concentrated in the highest party bodies—the Central Committee and its Secretariat—and they petitioned party bosses in numerous letters. For their part, the party bosses read scientists’ petitions and relayed them with their own remarks and notes to the lower level of the party hierarchy “for consideration” or “for implementation,” and sometimes “for archiving.” These second-echelon bureaucrats prepared concrete decisions and sent them back to the top for approval. The behavior of both the top officials and their subordinates was shaped by their own interests and agendas, and thus by considerations external to the scientific questions raised in the petition.

It was precisely this bureaucratic mechanism, the simple administrative mechanics of the system, that defined the outcome of a particular petition. The strict bureaucratic rules of authority, subordination, responsibility, and accounting often played a more important role in determining the outcome than

any scientific question at issue. In that system, plans and reports, declarations and promises, were of much greater significance than any actual scientific or even practical results. This considerably decreased the role of traditional scientific arguments in decision making and increased the role of rhetoric.

The leading party agencies clearly had no definite policy toward the particular scientific issues addressed in scientists' appeals. But the party secretaries did ground their decisions in certain general beliefs and models that defined decision-making priorities, priorities embodied in the language of the system. For party officials, science was an instrument to pursue the party's ideological, political, and practical objectives; service to the party's goals was the main criterion in defining the objects and subjects, and even the pace, of scientific studies (recall the party directive to create new varieties of wheat for sowing in Siberia in just two to three years). The concrete criteria of official evaluations changed in accordance with broader state policies in foreign and domestic affairs.

In 1939 the party secretaries apparently believed that scientific controversies could and should be resolved through public disputes between competitors, and judged by party philosophers—who were the official experts on the language of the system, the “Newspeak” by which the Stalinist system ran. The party secretaries delegated to them the function of defining the policy on the concrete scientific issues at hand. The promotion of party philosophers and functionaries to the key positions within both the science-policy apparatus and the scientific bureaucracy and their appointment as the supreme judges and experts on scientific questions, combined with their own professional self-interests, secured the priority of social (ideological, political, practical) rhetoric over scientific aspects in the scientific discussions, and hence in science-policy decision making.

Fundamentally, alas, the language of science was not the language of party bureaucrats. Mastering “party talk,” then, became an instrument of institutional struggle and career building. Scientists strove to attract the attention of party bosses to their problems and to win the support of party officials for their own agendas. They tried to write in the argot of their addressees, appealing to their patrons' interests, beliefs, and priorities and filling their letters with party rhetoric and references to party decisions. They sought to translate their own agendas into the “Newspeak” of party bureaucrats. To what extent particular agendas were *translatable* and *actually translated* into party lingo often defined the outcome of discipline building, career building, and institutional struggle. Thus, it was not some Communist Party position on an esoteric scientific issue, but rather agrobiolgy's ability to portray itself as the “right kind” of science and to translate its agendas into party language that gave Lysenkoists the upper hand in their 1939 discussion with their competitors.

This episode also demonstrates the profound influence of isolation—due to the administrative barriers erected between the Soviet and Western scientific communities in the late 1930s—on the internal dynamics of the system. This

isolation deprived scientists of an important cultural resource that they had successfully employed in their earlier dealings with party patrons: the prestige of Soviet science on the international scene. Had geneticists succeeded in convening the International Genetics Congress in Moscow in 1937, perhaps they would have been able to sustain or even expand their institutional base in 1938 and 1939, as had been the case following the International Physiological Congress (Moscow-Leningrad, 1935) and the International Geological Congress (Moscow-Leningrad, 1937). The isolation also had the effect of replacing the international disciplinary consensus with the legacies of sacral native “founding fathers” and of Marxism in scientific discussions. Had the Molotov-Ribbentrop pact not prevented geneticists from participating in the Edinburgh Congress in August 1939, had it not transformed Nazi Germany overnight from an enemy into an ally, the geneticists’ reference to the authority of the Anglo-American genetics community might have carried much more weight in October 1939.

The struggle between Lysenkoists and geneticists also illustrates the importance of the authoritative spokesmen for disciplinary development in the Stalinist science system. Its centralized, hierarchical structure invested great power and responsibility in the scientists who occupied its key administrative positions—directors of institutes and members of academy presidiums. They became the official “interpreters” of scientific language for the party-state bureaucracy and of the party “Newspeak” for the scientific community. Their ability to maintain contacts with the upper party-state bureaucracy (or act as its members), to comply with the system’s rules and culture, and to win support for their own intellectual and institutional agendas from the decision makers became vital to the prosperity of their fields.

The Great Terror, which hit the upper level of the state bureaucracy (including the scientific administrators) with particular force, proved disastrous for certain disciplines and institutions, because it destroyed the relations of their spokesmen with their special patrons in the party-state apparatus. On the one hand, the arrests of practically all the upper-level party-state bureaucrats involved with the science-policy apparatus disrupted the normal functioning of the entire science system. On the other hand, contrary to the infamous motto of the 1930s—“We do not have indispensable people!” (*U nas nezamenimykh net!*)—the arrests of certain spokesmen proved catastrophic for their fields. The arrest of Solomon Levit led to the eventual destruction of his Medical-Genetic Institute, in part because of the inability of scientists involved with human genetics at that time to produce another spokesman for their field. The discrediting of such spokesmen as Kol’tsov and Serebrovskii and, later, Vavilov, Karpechenko, and Levitskii in the eyes of state officials was a major factor in Lysenko’s successful conquest of the geneticists’ institutional base. And it was Dubinin’s ability to comply with the system, his mastery of party lingo, and his adherence to party etiquette that allowed him to become a spokesman for genetics and to preserve a genetics department within the reorganized Institute of Experimental Biology.

In such a system, it is easy to understand why personal attacks on scientific rivals became an important instrument of institutional struggles and careerism in Stalinist science. The centralization of the science system often led to the emergence of a single figure who represented a particular institution or an entire discipline to the control apparatus (as Vavilov did for Mendelian genetics). The removal of such a figure rendered the entire discipline and its institutional base vulnerable, and often led to its conquest or dismemberment by a competitor. This is exactly what happened in genetics: Lysenko succeeded Vavilov in almost all of his posts. We can now also understand why such personal attacks on rival scientists were as a rule directed at the “political face” rather than the scientific merits of a target. The *nomenklatura* system run by the party bureaucrats obviously favored a “bad scientist, good Bolshevik” over a “good scientist, bad Bolshevik”—the former was much more likely to be appointed to a key administrative post, to become an official spokesman for a discipline, and therefore to shape that discipline’s development.

By the late 1930s, then, the ability to reconcile party priorities and scientific agendas, skill at public performances, mastery of party etiquette, and fluency in party “Newspeak” had become vital characteristics for scientific administrators and a central feature of mature Stalinist science.

KEY EVENTS, 1917 – 1939

1917

- February 17 Tsar Nicholas II is dethroned.
April 16 First Congress of Russian Physiologists convenes in Petrograd.
October 25 Bolsheviks seize power in Petrograd.

1918

- January 26 Narkompros issues “Proposals for a Project to Mobilize Science for the Needs of State Construction.”
February 20 General Assembly of the Academy of Sciences adopts a resolution to collaborate with the Bolsheviks.
March 3 Soviet Russia signs a peace treaty with Germany. World War I ends for Russia.
March Russian Civil War begins.
April 12 SNK issues a decree on financing the Academy of Sciences.
April 18–25 Lenin writes “Draft Plan for Scientific-Technical Work”
June 25 Socialist Academy is organized under VTsIK (renamed the Communist Academy in 1923).
July 4–10 Fifth All-Russia Congress of Soviets adopts the first Soviet constitution.
August 16 VSNKh creates the Scientific-Technical Department, renamed the Scientific-Technical Administration in 1923.
October 1 SNK abolishes scientific degrees and titles.
December 5 SNK issues decree “On Preservation of Scientific Treasures.”

1919

- January 30 VSNKh creates Commission to Study the Russian North.
February 4–7 First Congress of Russian Physicists convenes in Petrograd.
March 10 VSNKh creates the Petrograd Branch of its Scientific-Technical Department.
April 18 SNK issues decree “On the Russian Academy of the History of Material Culture.”
July 3 First Communist University is established.
December 23 SNK issues decree “On Improvement of Conditions for Scientific Specialists.”

In compiling this chronology, I used various archival and published sources. I am profoundly grateful to Galina Smagina for the opportunity to use her unpublished work, “A Chronicle of the Major Events in Russian Science and Technology: 1917–1990” (Leningrad, 1991).

1920

- January 21 State Commission on the Electrification of Russia (GOELRO) is established.
- January 31 House of Scientists is opened in Petrograd.
- August 30 Narkomzdrav opens the State Scientific Institute of Public Health in Moscow.
- October 6 Lenin meets with H. G. Wells.

1921

- January 24 SNK issues decree "On Conditions of the Scientific Work of Academician I. P. Pavlov and His Coworkers."
- January 27 Lenin meets a delegation of Russian scientists, including the vice-president of the Academy of Sciences, Vladimir Steklov; the permanent secretary of the academy, Sergei Ol'denburg; and the president of the Military-Medical Academy, Vladimir Tonkov, to discuss the creation of conditions necessary for scientific research.
- February 11 Institute of Red Professors is established in Moscow.
- March 8-16 Tenth Congress of the Communist Party adopts the New Economic Policy (NEP).
- September 1-11 First Congress of Russian Astronomers convenes in Petrograd.
- September 26-October 5 First Congress of Russian Botanists convenes in Petrograd.
- December 6 SNK issues decree "On Improvement of Scientists' [Material] Conditions."

1922

- January First issue of *Under the Banner of Marxism* is published.
- March Lenin publishes "On the Significance of Militant Materialism."
- May 25 - June 1 First postrevolutionary Congress of Russian Chemists convenes in Petrograd.
- June 1-2 First Congress of Russian Geologists convenes in Petrograd.
- June 6 SNK establishes the Main Directorate on Literature and Presses (Glavlit).
- June 18 House of Scientists is opened in Moscow.
- June 20 SNK issues decree "On the Organization of the Special Temporary Scientific Committee of the SNK."
- September 15 Academy of Sciences organizes a Bureau for International Book Exchange.
- December 15-21 First Congress of Russian Zoologists, Anatomists, and His-

December 30 neurologists convenes in Petrograd.
 Union of Soviet Socialist Republics is formed.

1923

January 10-15 First Congress of Russian Neurologists convenes in Moscow.
 March 20-26 All-Union Conference for Studying the Natural Productive Forces of the USSR is held.
 September 16-21 First Congress of Pathologists convenes in Petrograd.
 November 23-27 First Congress of Scientific Workers convenes in Moscow.
 November Publishing House of the Academy of Sciences is created.
 December 19 VSNKh establishes its Scientific-Technical Administration.

1924

May 8 First Congress of Hydrologists convenes in Leningrad.
 July 18 SNK liquidates its Special Temporary Scientific Committee.
 September 16-20 Fourth Congress of Physicists convenes in Leningrad.
 September 25-29 Third Congress of Astronomers is held in Moscow.
 December 11 Communist Academy creates Section of Natural and Exact Sciences.

1925

May 17-24 First Congress of Geophysicists convenes in Moscow.
 June 18 Central Committee of the Communist Party issues resolution "On Party Policy in the Field of Literature," which notes that "the infusion of dialectical materialism into entirely new fields (biology, psychology, natural sciences in general) has begun."
 June 23 SNK issues decree on establishing the Lenin Prize for scientific work.
 June 27 TsIK and the SNK issue joint decree "On Recognition of the Russian Academy of Sciences as the Supreme Scientific Institution of the USSR."
 August TsIK creates the Temporary Committee to Supervise Research and Educational Institutions.
 September 11 Central Committee issues resolution "On the Work of the Specialists."
 September 5-14 200th anniversary of the Academy of Sciences is celebrated in Leningrad.
 December 18-31 Fourteenth Congress of the Communist Party convenes in Moscow.

1926

- April 20 SNK establishes Commission to Support the Work of the Academy of Sciences and Department of Scientific Institutions.
- May 24-29 Second Congress of Physiologists convenes in Leningrad.
- August 20 SNK of the RSFSR issues decree "On Establishing the Title of 'Worker of Merit' of Science, Technology, and Art."
- September 15 Lenin Prize is awarded to Nikolai Vavilov, Vladimir Obruchev, Dmitrii Prianishnikov, Aleksandr Chichibabin, and Nikolai Kravkov.
- September 30-October 6 Second Congress of Geologists convenes in Kiev.

1927

- January 1-7 First Congress of Mineralogists convenes in Leningrad.
- January 5-13 Fourth Congress of Soil Scientists convenes in Leningrad.
- February 8-13 Second Congress of Scientific Workers convenes in Moscow.
- April 27-May 4 First Congress of Mathematicians convenes in Moscow.
- June 18 SNK approves the first Soviet Statutes of the Academy of Sciences.
- June 19-25 "The Week of Russian Science" is held in Berlin.
- December 2-19 Fifteenth Congress of the Communist Party approves the program of industrialization.

1928

- January 9-16 Third Congress of Botanists convenes in Leningrad.
- February 21 SNK approves VARNITSO's statutes.
- April 23-26 First conference of VARNITSO convenes in Moscow.
- May 5-16 Eighth Congress of Komsomol convenes in Moscow.
- May 18-July 5 "Shakhty Trial" is held in Moscow.
- May 28-June 2 Third Congress of Physiologists convenes in Moscow.
- June 12 SNK issues decree "On the Organization of the Lenin All-Union Academy of Agricultural Sciences."
- June 30 Communist Academy establishes the Society of Biologist-Materialists.
- August 5-15 Sixth Congress of Physicists is held.
- August 7 SNK issues decree "On the Organization of Scientific Research for the Needs of Industry."
- October First Five-Year Plan is launched.
- November 15 Society of Militant Dialectical Materialists is formed in Moscow.

- November 19 Communist Academy establishes the Society of Neurologist-Materialists.
- December 23-29 Fourth Congress of Astronomers convenes in Leningrad.

1929

- January 10-16 First Congress on Genetics and Breeding convenes in Leningrad.
- January 12 Academy of Sciences elects its first three Bolshevik academicians.
- February 13 Academy of Sciences elects three more Bolshevik academicians.
- June 1 SNK and TsIK issue a joint decree on the purge of the apparatus of state, cooperative, and public institutions.
- June 25 Lenin All-Union Academy of Agricultural Sciences (VASKhNIL) is organized.
- September 12 Andrei Bubnov replaces Anatolii Lunacharskii as head of Narkompros.
- October 19 Narkompros of the RSFSR establishes the institute of *vydvizhentsy*.
- December 20-27 First All-Union Conference of Marxist-Agrarians convenes in Moscow.
- SNK liquidates its Commission to Support the Work of the Academy of Sciences and its Department of Scientific Institutions.
- VSNKh Scientific-Technical Administration is reorganized and renamed the Scientific-Technical Sector.

1930

- January 5 Central Committee passes a decree on collectivization.
- January Sector of Science and Culture is organized within the Department of Culture and Propaganda of the Central Committee.
- January Gosplan establishes section to organize the planning of scientific research.
- January 25-February 1 First All-Union Congress on Behavioral Research convenes in Leningrad.
- February 1 Academy of Sciences elects two more Bolshevik academicians.
- March 1 Academy of Sciences elects a new presidium and establishes a commission to revise the Statutes of the academy.
- March 26 SNK and TsIK issue joint decree "On Transfer of the Academy of Sciences under the Scientific Committee of TsIK."
- May Academy of Sciences creates Planning-Organizing Commission.
- May 23 TsIK approves new Statutes of the Academy of Sciences.

- June 26–July 13 Sixteenth Congress of the Communist Party convenes in Moscow.
- July 20–31 Second International Congress of Soil Scientists convenes in Moscow and Leningrad.
- August 5 SNK issues decree “On the Organization of the USSR Academy of Chemical Sciences.”
- November 25–December 7 Show trial of the Industrial Party (Prompartiiia) is held in Moscow.

1931

- April 6–11 First All-Union Conference on Planning Scientific Work convenes in Moscow.
- May 3 SNK creates Commission to Assist Scientists.
- May 22 Academy of Agricultural Sciences is established in the Ukraine.
- August 10 TsIK issues a decree “On the Work of the USSR Academy of Sciences.”
- September 8–13 Seventh International Conference on Psychotechnology (*psikhotekhnika*) convenes in Moscow.
USSR Academy of Sciences establishes branches in the Urals and Caucasus.

1932

- January VSNKh is liquidated and replaced by three separate narkomats.
- January 30–February 4 Seventeenth Conference of the Communist Party convenes in Moscow.
- July Gosplan’s Sector of Science and Culture is reorganized into a Department of Culture that includes three sectors: science, culture, and public education.
- October 15 All-Union Institute of Experimental Medicine (VIEM) is established under the SNK.
- December 20–23 Second conference of VARNITSO convenes in Moscow.
USSR Academy of Sciences establishes branches in Kazakhstan and the Far East.

1933

- December 14 Academy of Sciences is moved from TsIK to the SNK.
Second Five-Year Plan begins.

1934

- January 13 Decree of the SNK restores scientific degrees and titles.
- January 26–February 10 Seventeenth Congress of the Communist Party convenes in Moscow.

- April 8 VIEM is relocated from Leningrad to Moscow.
 April 25 USSR Academy of Sciences is relocated from Leningrad to Moscow.
 May 3-7 Fourth International Congress on Rheumatology convenes in Moscow.

1935

- May 14 Department of Science and Scientific and Technical Inventions and Discoveries is created within the Central Committee.
 August 9-17 Fifteenth International Physiological Congress is convened in Moscow and Leningrad.
 November 20 Academy of Sciences establishes new Division of Technical Sciences.
 November 23 SNK approves new statutes of the USSR Academy of Sciences.

1936

- February 7 Academy of Sciences and the Communist Academy are "unified."
 May 21 SNK and TsIK establish Committee for Higher Education.
 June 14 Head of Narkomtiazhprom, Sergo Ordzhonikidze, meets a group of academicians.
 July 3 *Pravda* publishes article "On Enemies in the Soviet Mask," which opens the "Luzin affair."
 July 4 Central Committee issues resolution "On Pedological Perversions in the System of Narkomproses."
 August 19 Show trial of the "Zinoviev-Kamenev bloc" begins in Moscow.
 November 24 SNK establishes the Supreme Certifying Commission (VAK) under the Committee for Higher Education.
 December 6 New constitution of the USSR is adopted.

1937

- January 23 Show trial of Georgii Piatakov, Grigorii Sokol'nikov, Karl Radek, and others begins in Moscow.
 March 20 SNK issues a new decree on scientific degrees and titles.
 July 21-29 Seventeenth International Geological Congress convenes in Moscow.
 August 2 SNK issues decree "On Changes in the Statutes of the Academy of Sciences."
 November 11 SNK liquidates its Commission to Assist Scientists.
 December 12 First election to the Supreme Soviet of the USSR is conducted.

1938

- March 2 Show trial of Nikolai Bukharin, Aleksei Rykov, and others begins in Moscow.
- April 26 SNK issues a new decree on scientific degrees and titles.
- May 8 SNK holds a special sitting on the Academy of Sciences' work; after discussions of the academy's research plan, the government decides to completely reorganize the academy.
- May 17 Stalin gives a reception in the Kremlin for workers in higher education.
- September 9-19 *Short Course on the History of the Communist Party* is published in *Pravda*.
- October 4 SNK issues a resolution on the reorganization of the Academy of Sciences and creation of eight divisions: Physics and Mathematics, Chemistry, Geology and Geography, Biology, Technology, Economics and Law, History and Philosophy, and Literature and Language.

1939

- January 28-29 Academy of Sciences elects 56 full and 102 corresponding members.
- March 10-21 Eighteenth Party Congress convenes in Moscow.
- August 23 Molotov-Ribbentrop pact is signed.
- September 1 World War II begins.
- October 7-14 Editorial board of the journal *Under the Banner of Marxism* convenes a discussion on "issues of genetics" at the Marx-Engels-Lenin Institute.
- November 29 Soviet-Finnish war begins.
- December 20 SNK issues a decree on establishing the Stalin Prize for scientific research.
- December 22 Academy of Sciences elects Stalin an honorary member.

P A R T I I

Stalinist Science in the 1940s

Science and scientists cannot be put in a box and kept under lock and key.

—Viacheslav Molotov, October 29, 1946

THE 1940S were the most dramatic and traumatic decade of the twentieth century. Beginning with the most devastating war in world history, the decade ended amidst the terrors of a Cold War that would last for almost forty years. These two wars each dramatically reshaped our world politics, literature, industry, art, and science.

Science contributed greatly to these two wars, and was profoundly affected by them. Its achievements—radar, antibiotics, computing machines, and new synthetic materials—played a highly visible role in the Allied victory. Science was drafted to serve military needs and became a top state priority; scientific institutions and personnel multiplied tremendously, consuming a large part of nations' resources and human power. World War II completed the transformation science had begun at the turn of the century: Big Science was now fully born.

Toward the end of the war, in the middle of that troubled decade, science produced its most awesome weapon—the atomic bomb—and the nuclear age began. This not only irreversibly changed our world; it also brought science unprecedented political significance, making it a crucial element of national security. The subsequent deterioration of the wartime alliance and the onset of the Cold War made science an instrument of superpower struggle, a battlefield in the confrontation between the two great blocs of East and West. This Cold War context lent scientific activities new ideological and political meanings that dramatically affected science all over the world.

These global processes, of course, were manifested differently in different places. In the USSR, their ramifications were inevitably shaped by the structure and dynamics of the Stalinist science system that had emerged in the 1930s, and that system was in turn transformed by them.

World War II and the Sweet Fruits of Victory

PANGLOSS: . . . Though war may seem a bloody curse
It is a blessing in reverse.

When cannon roar

Both rich and poor

By danger are united.

MAXIMILIAN: 'Til every wrong is righted.

PANGLOSS: Philosophers make evident

The point that I have cited:

'Tis war makes equal, as it were,

The noble and the commoner;

Thus war improve relations.

—John La Touche, “The Best of All Possible Worlds,”
in Leonard Bernstein, *Candide*

WORLD WAR II profoundly altered almost every aspect of Soviet life, including relations between scientists and the party-state apparatus. By the end of the 1930s, the Stalinist science system had reached maturity: the party apparatus had established strict control over the scientific community, and, concurrently, scientists had developed their skills at influencing the party-state bureaucracy. Isolated from its foreign counterparts, Soviet science seemed to follow exclusively domestic rhythms. In the early morning of June 22, 1941, the Nazis attacked the Soviet Union. Suddenly, everything changed.

With its very survival threatened, the party-state bureaucracy recognized the vital importance of science and gave its scientific community new responsibility and respect. Scientists again participated, as they had in the 1920s, in decision making on scientific, economic, and political questions. The party apparatus delegated considerable authority in science policy to the presidiums of the expanded academies that emerged during World War II, and the administrative apex of the scientific community became a part of the highest state elite.

The war also dramatically reshaped the cultural terrain of the Stalinist system. The mortal threat of fascism created a new basis for the collaboration between scientists and party bureaucrats—the defense of their native land from not an imagined, but a very real and ruthless foreign invader. It produced

a new language equally understandable and compelling to scientists and party bureaucrats—the language of patriotism, whose key phrase was “The Fatherland is in danger!” (*Otechestvo v opasnosti!*). Unlike the “patriotic” rhetoric of the 1930s that had aimed to isolate Soviet society from its foreign counterparts, wartime patriotism gave rise to a new internationalism. The antifascist coalition formed by the “Big Three”—the USSR, the United States, and Great Britain—greatly diminished the barriers between Soviet scientists and their Western colleagues.

Toward the end of the war, with the detonation of an atomic bomb by the United States in August 1945, scientific achievements acquired unprecedented strategic and symbolic significance. The bomb, which became the embodiment of both the advances of Western science and the superpower status of the United States, stimulated Soviet officials to invigorate their involvement with science in the hope that it would help them in their competition for superpower status.

The war, then, dramatically reshaped the political, institutional, and cultural terrain of the Stalinist science system, deepening the symbiosis between the scientific community and the control apparatus.

WAR AND THE SCIENTIFIC COMMUNITY

The German invasion created a critical situation for the Soviet system. During the war’s first year, the Nazis occupied practically the entire European part of the Soviet Union, where most of its industry and agriculture were concentrated. This caused enormous economic difficulties, compelling the USSR to evacuate its industrial and agricultural base to the Urals, Siberia, Central Asia, and the Far East. The urgent military and economic situation also drastically affected both the structure and functioning of the party-state apparatus.

At the end of the first week of the war, on June 30, the State Committee of Defense (*Gosudarstvennyi Komitet Oborony*—GKO) was established as the supreme agency responsible for all governmental decisions. The committee appointed representatives to supervise particular fields. At the same time, the independence of the various commissariat heads was enhanced.

One important impact of the war was the decline of party functionaries and the rise of professionals in all fields. Perhaps the clearest sign of this was the abolition of the position of party commissar in military units. Early in the war, on July 16, 1941, the GKO empowered these commissars to countermand orders issued by commanding officers.¹ A year later, on October 9, 1942, apparently under the pressure of numerous military failures, the GKO re-established the sole responsibility of commanding officers for conducting operations, limiting the commissars to propaganda.²

The war forced the party-state bureaucracy to rely on the expertise of military, industrial, scientific, and technical specialists, thus loosening party

control and increasing local autonomy and initiative. Indeed, the war undermined the ideological unity of the party itself. That unity had been achieved during the 1930s by waves of purges and the Great Terror. During the war, however, the party's membership was expanded considerably by a vast influx of new members with no party experience in that troubled decade. Moreover, many new members were admitted into the party directly on the battlefield, without the usual bureaucratic procedures, the traditional probationary period, and ideological "examinations." Most of these new members had had no previous ideological indoctrination, and they accepted the autonomy and authority of professionals as normal.

The scientific community saw its authority greatly expanded during the war. Scientists became state experts and advisers, replacing the party ideologists and functionaries who had occupied these positions since the mid-1930s.

The increased authority of scientists in decision making was reflected in the development of a new control apparatus in charge of science during the war. As early as July 10, 1941, the GKO appointed Sergei Kaftanov, head of the Committee for Higher Education, as its representative to the scientific community. His main task was to report to the GKO on the needs of scientific institutions, but he also transmitted GKO orders and instructions to these institutions. Kaftanov quickly organized a special Scientific-Technical Council composed of such eminent scientists as Abram Ioffe, Petr Kapitsa, Nikolai Bruevich, Nikolai Semenov, and Sergei Vavilov (the younger brother of Nikolai Vavilov).³ The council created sections for chemistry, physics, geology, and biology. It addressed issues ranging from the strategic directions of scientific research, such as development of the atomic bomb, to urgent practical problems, such as counteracting the acoustic and magnetic mines used by the Germans.⁴

During the war, practically all commissariats and central governmental agencies (such as Gosplan) created special scientific councils to supervise scientific developments in particular fields.⁵ These new bodies were run by eminent scientists.⁶ Moreover, in a reversal of the situation in the 1930s, when high-level party-state officials had become members of the scientific establishment, many scientists now became members of the highest state agencies. A number of scientists were promoted to the rank of deputy commissar, including academician Ivan Bardin (Commissariat of Metallurgy), corresponding member of the Academy of Sciences Aksel' Berg (Commissariat of the Electric Industry), academician Boris Vedeneev (Commissariat of Electric-Power Plants), and professor Vasili Parin (Narkomzdrav). Academician Petr Kapitsa became the *de facto* commissar of the oxygen industry.

Military agencies also created special scientific commissions. In 1941 a Commission for Geological and Geographical Service to the Red Army was formed under the presidency of academician Aleksandr Fersman. In 1942 a Commission on the Scientific-Technical Problems of the Navy was created under the presidency of Ioffe. To meet various medical needs, especially the

threat of epidemics in the army and the civilian population, a Commission on Military-Sanitary Issues was established under the presidency of academician Leon Orbeli. A number of scientists received the high military rank of general during the war: Orbeli became a colonel general; academicians A. Blagonravov, N. Bruevich, B. Iur'ev, and A. Iakovlev lieutenant generals; and A. Mikulin, V. Kovalenkov, V. Klimov, and many others major generals.

To create new industrial and agricultural centers in the east, the Commission to Mobilize the Resources of the Urals and the Commission to Mobilize the Resources of the Volga Region were established under the auspices of the Academy of Sciences and presided over by its president Vladimir Komarov and vice-president Evgenii Chudakov, respectively. These and other commissions planned and coordinated research on medical preparations and new sources of raw materials, food, and fuel.⁷

The wartime slogan “everything for the front, everything for victory” (*vse dlia fronta, vse dlia pobedy*) resonated with scientists, who were inspired to seek practical applications for their research.⁸ Kapitsa, a prominent physicist, used his work on low-temperature physics to organize the production of liquid oxygen, necessary for various military purposes. When attempts to implement his technology encountered bureaucratic obstacles, he himself organized and headed a special state agency—the Main Administration of the Oxygen Industry (equal to a People's Commissariat) under the SNK.⁹ The number of analogous examples is almost unlimited, even in fields seemingly distant from military applications. Botanists, for example, published a series of popular manuals on edible and medicinal wild plants.¹⁰

The Benefits of the War

Science made a great contribution to the nation's “arsenal of victory.” As Komarov, the president of the Academy of Sciences, declared in an article published in spring 1945:

Why can science be proud of our great victory? First of all, because scientists actively participated in bringing it about. Never before has there been such a great creative impulse as during the war. Soviet physicists created theoretical and experimental bases for the construction of new types of weapons; mathematicians worked out methods of rapid calculations for artillery, the air force, and the navy; chemists discovered and are discovering new methods to produce explosives, alloys, and drugs; biologists found and are finding additional nutritional resources for the Red Army and civilians; physicians were and are saving tens of thousands of lives by new methods of military medicine.¹¹

Stalin's personal meeting with Komarov on November 13, 1944—the first direct encounter between the country's leader and the Academy of Sciences' president—symbolized state recognition of the importance of scientific expertise. As Komarov described their meeting, Stalin was intensely interested in

the academy's work and discussed with him the main problems of the development of Soviet science.¹² At this meeting, it was decided to organize a special jubilee of the Academy of Sciences, commemorating the 220th anniversary of the establishment of the Russian academy by Peter the Great.¹³ This strange figure—220—suggests that the jubilee was contrived to acknowledge the scientific community's contribution in the war.¹⁴ As Stalin himself noted: "The Soviet intelligentsia, through its creative works, made a valuable contribution to the defeat of [our] enemies."¹⁵

For the scientific community, the fruits of victory over Nazi Germany were plentiful and sweet. During 1943–46, the government rewarded numerous scientists with the highest awards, orders, and prizes.¹⁶ The Central Committee Secretariat even discussed establishing special decorations for scientific work named after the "founding fathers" of Russian science Mikhail Lomonosov, Dmitrii Mendeleev, Ivan Pavlov, and Nikolai Pirogov.¹⁷ This project was not implemented, but scientists were instead given numerous existing decorations—the Order of Lenin, the Order of the Red Banner of Labor, and so forth. Many received the highest award, Hero of Socialist Labor.¹⁸ During the war, eighty-two full and forty-five corresponding members of the Academy of Sciences received the Stalin Prize for their research.

The prestige of science soared, bringing a host of new privileges. On March 6, 1946, the SNK issued a special decree (which was published in the central press) establishing high salaries for scientific workers, especially those in administrative posts.¹⁹ The decree provided scientists with priority access to housing, food, and goods. It also established special salary bonuses for those holding scientific degrees and titles; for instance, the salary of a doctor of sciences heading a laboratory in the Academy of Sciences was now almost twice that of a rank-and-file official in the Central Committee apparatus. These benefits are especially impressive if one bears in mind that almost half of the country lay in ruins and the population lived on the edge of famine. The sharp increase in salaries and other privileges even stimulated some governmental and party bureaucrats to seek a scientific career. The records of party and state agencies provide numerous examples of attempts by state bureaucrats to migrate into science. For instance, officials of the Ministry of Agriculture in charge of educational and scientific institutions tried repeatedly to enlist themselves as "scientific workers" in order to gain the privileges established by the March decree.²⁰

The government also issued a number of unpublicized decrees raising the status of leading scientists and scientific administrators. On March 24, 1947, for instance, the Council of Ministers (as the SNK had been renamed)²¹ approved a resolution that allowed full and corresponding members of academies to dine in the special restaurants created for local party apparatchiks.²² Two months later, the council approved another resolution on building dachas for academicians.²³ Other resolutions allowed academicians to use special hospitals and sanitariums established for the government and party apparatus,

and to receive pensions equal to those of the highest state officials. All these decrees and resolutions raised the privileges of high-level scientific administrators to the same (and in some cases a higher) level as those of the highest state bureaucrats. In short, after the war, the administrative apex of the scientific community joined the highest state elite.

The “sweet fruits of victory” also included abolition of the strict control by party philosophers and functionaries over the activity of scientific institutions that had been in practice since the mid-1930s. Although in 1942 the Central Committee restored its Science Department under Agitprop, the influence of this department on general science policy during the war was insignificant.²⁴ Moreover, by the end of the war, the department, for the first time in its existence, was run not by party ideologists but by scientists—physicist Sergei Suvorov and geneticist Anton Zhebrak. The war turned the attention of state officials away from the ideological loyalty of scientists and toward the immediate, practical outcome of their research.

Institutional Policy: The New Academies

During the first two years of the war, research and educational institutions were evacuated from the western to the eastern regions of the country—to the Urals, Siberia, and Central Asia. The war also greatly accelerated the institutional expansion of Soviet science; numerous new institutes were established throughout the nation. By the end of the war, the total number of scientific institutions had increased to 2,060 and the number of scientific-research institutes to 914.²⁵

During the war, the government established several new centralized scientific institutions: the RSFSR Academy of Pedagogical Sciences, the USSR Academy of Medical Sciences, and academies of sciences (or branches of the USSR Academy of Sciences) in various republics of the Soviet Union (see figure 4–1). These new institutions were subordinated to the appropriate governmental agencies, such as the RSFSR Narkompros and the USSR Narkomzdrav. The creation of new centralized institutions clearly reflected the coincidence of interests between the top-level scientific administrators and the state bureaucracy. During the 1930s, scientific administrators understood very well the advantages of centralized institutions: enormous financing and, as a result, quick institutional development. Furthermore, with scientists’ enhanced authority in governmental circles, academy presidiums became the de facto highest governmental agencies in charge of science. The presidiums defined the main directions of scientific development and made all decisions on scientific questions related to state concerns, such as industry, agriculture, medicine, and education. For the state bureaucracy, centralized institutions simplified administration: instead of dealing with numerous separate entities, it could deal with a few centralized administrations. In fact, during 1941–47, the state bureaucracy largely delegated its power to the presidiums of these

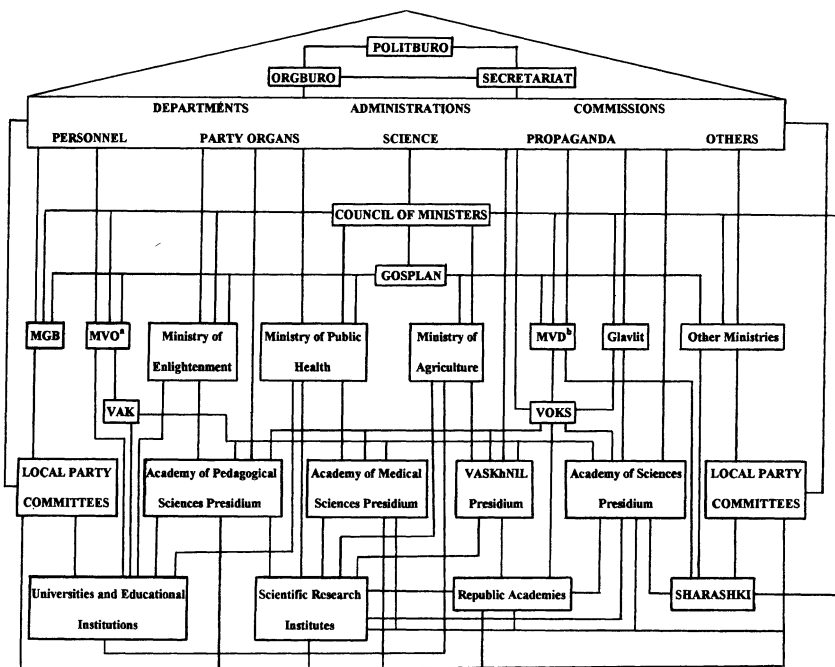


Figure 4-1. Stalinist Science System in 1946

^a MVO = Ministerstvo Vysshego Obrazovaniia, the Ministry of Higher Education

^b MVD = Ministerstvo Vnutrennikh Del, the Ministry of Internal Affairs.

institutions, approving practically all their proposals. State agencies hoped thereby to claim their share of the funding and prestige given to science during and after the war.

In autumn 1943, the Central Committee decided to organize the RSFSR Academy of Pedagogical Sciences.²⁶ A preliminary proposal was presented by Kaftanov and the head of Narkompros, Vladimir Potemkin; and on October 6, 1943, the SNK approved a resolution, “On the Organization of the RSFSR Academy of Pedagogical Sciences.”²⁷ In early 1944, the government approved the academy’s statutes, the list of included institutions, and its membership, funding, and personnel.

The academy was established in Moscow under the administrative authority of Narkompros, whose head, Potemkin, was appointed the academy’s president. There were thirteen full and thirteen corresponding members. The academy’s statutes and structure essentially replicated those of the USSR Academy of Sciences. All subordinate institutions were organized into three divisions—methodology, pedagogy, and psychology—each headed by a bureau. The president and two vice-presidents (who also headed the divisions of the academy), along with two full members, formed the presidium. On May 8, 1944, the first General Assembly of the academy “elected” the presidium and bureaus and discussed research priorities. These priorities are clear from the

commissions the presidium created. The first commission was to compile a chronicle entitled *School in the Great Patriotic War*; the second was to prepare materials for a multivolume edition, *School and the People's Education in the RSFSR during 30 Years of Soviet Power*; the third was to prepare a pedagogical encyclopedia, *Monumenta Pedagogica*; and the fourth was to publish *A Manual for Teachers of Primary Schools*.

During the first few years, however, the academy was mainly engaged in expanding its institutional basis. Major research institutes originally subordinate directly to Narkompros were now placed under the academy's authority. In 1945 a branch of the academy was established in Leningrad. Narkompros's main periodical, *Soviet Pedagogy*, became the academy's official journal. Moreover, several research institutes previously affiliated with educational institutions (such as the Institute of Psychology of Moscow University and the Institute of School Hygiene of the First Moscow Medical Institute) were also moved under the academy's auspices. Several new research institutes and periodicals (for example, *Biology in Secondary School* and *Family and School*) were also organized under the academy's supervision.²⁸

In June 1944, the Central Committee adopted a proposal by Narkomzdrav to create the USSR Academy of Medical Sciences. The head of Narkomzdrav, Georgii Miterev, and his deputy, Vasili Parin, presented the proposed statutes, structure, and membership of the future academy, which were approved by party and state officials.²⁹ The academy was established in Moscow under the auspices of Narkomzdrav, and by mid-November fifty-six full members had been appointed. Nikolai Burdenko, Surgeon General of the Red Army and head of Narkomzdrav's Scientific Council, was appointed president; Parin was appointed academician-secretary. Most members were eminent scientists and physicians—the heads of institutes and professors in medical schools. Many occupied high-level posts in the army medical corps.³⁰

In its statutes and structure, this academy, like the Pedagogical Academy, followed the USSR Academy of Sciences. All subordinate institutions were organized into three divisions: Biomedical Sciences, Clinical Medicine, and Hygiene, Microbiology, and Epidemiology. Each division was directed by a bureau headed by an academician-secretary. The academy was directed by a presidium composed of the president, two vice-presidents, the academician-secretary of the academy, the academician-secretaries of all divisions, and several prominent scientists (such as the president of the Ukrainian Academy of Sciences, Aleksandr Bogomolets, and the vice-president of the USSR Academy of Sciences, Leon Orbeli). Several departments were organized within the presidium, notably a secretariat, a personnel department, and a department of publishing and propaganda.

Numerous institutes previously incorporated into VIEM were subordinated to the new academy, and several new research institutes were established.³¹ A publishing house for medical literature was organized, and the academy began to issue its official journal—the *Bulletin of the USSR Academy of Med-*

ical Sciences.³² The publication of a multivolume monograph, *The Experience of Soviet Physicians in the Great Patriotic War*, was set as the academy's main task.

During 1943–47, an analogous procedure was followed to establish new academies in various republics of the Soviet Union. The research institutes of the Academy of Sciences evacuated to Siberia and the eastern republics (Kirgizstan, Kazakhstan, Tadzhikistan, and Uzbekistan) and various academy commissions created in the regions (such as the Commission to Mobilize the Resources of the Urals) became the base for the new academies. Their membership was made up of prominent scientists from these institutes, as well as from various local educational institutes and universities. In 1943 academies were established in Uzbekistan and Armenia, and branches of the USSR Academy of Sciences were set up in Kirgizstan and Western Siberia. In 1945 academies were created in Azerbaidzhan and Kazakhstan, and branches of the USSR Academy of Sciences were organized in Tataria, Dagestan, and Karelia. In addition, new academies were founded immediately after the war in the newly acquired western republics—Estonia, Latvia, and Lithuania.³³ These new academies directed research in numerous provincial institutes, but they were not autonomous from the metropolitan research centers. In spring 1945, the USSR Academy of Sciences created a council to coordinate research in the republic academies.³⁴

The military importance of scientific research also led to an expansion of the system of *sharashki*, the special “closed” research institutions organized under the auspices of various military and state-security agencies and often staffed by prisoners. The best-known example is the Soviet atomic-bomb project, which originated during the war and was vastly expanded after August 1945.³⁵ Other *sharashki* worked on aircraft, tanks, artillery, and explosives.³⁶ It is likely that similar facilities were created to study other strategically important military subjects, such as missiles, cosmic rays, microbiological weapons, and chemical toxins. Unfortunately, precise information on these facilities is impossible to obtain, as the archives are still closed.

Personnel Policy

Personnel policies during the war and the first postwar years also reflected the heightened authority of the scientific community. Although the *nomenklatura* system was still in force—and hence party personnel departments still wielded considerable influence over personnel decisions in scientific institutions—actual appointments generally followed the recommendations of the academies' presidiums.

The members of the new academies, as well as the new members of the Academy of Sciences elected in 1943, were mostly eminent scientists from the older generation. Almost all the members of the Academy of Medical Sciences, for example, were older than fifty, and about half were over sixty.

They represented a generation educated before the Bolshevik revolution and imbued with the values of the prerevolutionary scientific community. Although its members were well trained and skillful in their rhetoric and their dealings with the state bureaucracy, this generation was inclined to emphasize the proper scientific value of research over its ideological or political dimensions. These science spokesmen, who had risen to authority during the war, maintained close connections with the highest bureaucracy and exerted a profound influence on Soviet scientific development in the years to come.

The growing independence of the scientific community was also evident in the elections to the USSR Academy of Sciences in winter 1946. This was the biggest academy election of the Stalin era—almost fifty full academicians and more than a hundred corresponding members were elected. Most significantly, the Central Committee approved all the nominations proposed by the academy. Only four of the newly elected members represented ideological departments of the Central Committee, and only one of them—the head of Agitprop, Georgii Aleksandrov—was elected to full membership. All the other nominees were scientists. Moreover, most of them belonged to an older generation born before 1895. Eight of the nine youngest full academicians were physicists, which reflected the growing military importance of that science.

Research Policy

During and immediately after the war, research policy was defined by scientists themselves, not by party-state officials. The Academy of Sciences' plan for scientific development during the postwar period illustrates this convincingly. This very impressive document resulted from scientists' independent efforts and identified priorities in almost every field of contemporary research—from protein biosynthesis to nuclear physics, from high technology to fertilizers.

In spring 1944, the Academy of Sciences presidium requested all members of the academy to express their opinions on a series of questions: What research lines in their field of expertise were developing rapidly in the West and underdeveloped in the USSR? What research directions were most interesting and necessary? What measures should be taken to develop such research in the USSR? The responses were collected in the bureaus of the divisions and used to prepare special reports to the presidium detailing postwar research directions in various disciplines. These reports were used to construct the plan for the entire academy—the first strategic plan elaborated by scientists themselves without any pressure from the state apparatus. Most importantly, this plan was adopted and approved by the state, a development that reinforced scientists' confidence in their newly acquired independence from the state bureaucracy in the formulation of science policy.³⁷

The administrative apex of the scientific community itself, then, defined the main directions of science policy during and immediately after the war. During 1945–47, almost every request of the scientific community was granted. When scientists asked the government to increase the size or circulation of a periodical, establish a new institute, or increase their pensions, the state apparatus immediately agreed. The development of science clearly had acquired a strategic priority in Soviet policy. In his speech to a meeting of voters on February 6, 1946, Stalin included science prominently in the plans for postwar national development: “Special attention will be paid to . . . the building of various research institutes, which will enable science to develop its forces. I have no doubt if we provide the necessary help to our scientists, they will not only catch up with, but also soon overtake the achievements of science abroad.”³⁸ The state indeed provided “the necessary help” to the scientific community: in 1946, for example, the financial support for the Academy of Sciences was doubled.³⁹

The new relationship between the scientific community and the party-state apparatus had an important side effect: it fundamentally changed the terrain upon which competing groups within the scientific community struggled for institutional advantage.

GENETICS: THE HOME FRONT

In 1945 Soviet geneticists launched an attack against Lysenko’s domination over their field. As one might expect, they first sought support for their campaign in the Central Committee of the Communist Party. They wrote numerous letters to high officials, urging them to disband Lysenko’s institutional monopoly. Anton Zhebrak, who was appointed to head a sector of Agitprop in 1945 and thus became the geneticists’ official spokesman within the party apparatus, was especially active in this campaign. Geneticists attacked Lysenko’s positions within the Academy of Sciences, the universities, and his stronghold, VASKhNIL. By mid-1947, despite Lysenko’s fierce resistance, the geneticists had gained ground. This new turn in the struggle between Lysenkoists and geneticists clearly reflected the new relationships between the scientific community and the party apparatus.

Although Lysenko and his allies had seized almost every genetics institution within VASKhNIL and the Academy of Sciences after Nikolai Vavilov’s arrest in 1940, classical genetics had continued to develop in the USSR. Geneticists had found refuge in laboratories within various institutes of the Academy of Sciences. A small group even continued to work in the Institute of Genetics under Lysenko’s directorship. Another group, headed by Kol’tsov’s student Nikolai Dubinin, managed to preserve the department of genetics in Kol’tsov’s former Institute of Experimental Biology (now

renamed the Institute of Cytology, Histology, and Embryology and headed by histologist Grigorii Khrushchov). Still others worked in the Institute of Evolutionary Morphology, directed by the eminent evolutionist Ivan Shmal'gauzen. Several geneticists worked in institutions subordinate to the new Academy of Medical Sciences. Sergei Davidenkov, a leading specialist in medical genetics, neurology, and psychiatry, was appointed a full member of the academy. Research on behavioral genetics continued in the Institute of Evolutionary Physiology (formerly Pavlov's laboratory in Koltushi), directed by Leon Orbeli. Genetics research was also conducted in several antibiotics and cancer laboratories.

Geneticists had also managed to preserve powerful positions in educational institutions, particularly Moscow and Leningrad universities and the Timiriazev Agricultural Academy. At Moscow University, Aleksandr Serebrovskii headed a department and a laboratory of genetics, and Shmal'gauzen held the chair of Darwinism. A geneticist, Sos Alikhanian, was the secretary of the biology faculty's party committee. Genetics research continued in Mikhail Zavadovskii's laboratory of developmental mechanics in the university's Zoological Institute. In Leningrad, despite the appointment of Lysenko's ally Nikolai Turbin to head Karpechenko's former department of plant genetics, the geneticist Mikhail Lobashev headed a laboratory of animal genetics and was appointed dean of the biology faculty. Iurii Polianskii, a longtime opponent of Lysenko and one of the authors of the 1939 letter to Zhdanov, was appointed deputy rector of the university. In the Timiriazev Agricultural Academy, Zhebrak headed a department of genetics and a laboratory. These and several other institutions provided a base for the geneticists' counterattack against Lysenko in 1945–47.

The enhanced prestige of the USSR Academy of Sciences, Moscow University, and Leningrad University made these the major battlefields of this renewed struggle. The academy was the country's leading scientific institutions and had become almost a *de facto* Ministry of Science. The control apparatus assigned Moscow and Leningrad universities the unique role of training not only schoolteachers and technical specialists, but also new cadres for scientific research.⁴⁰

Geneticists began their efforts to overcome Lysenko's hegemony with an attempt to create a new institute for genetics within the Academy of Sciences. In May 1945, Zhebrak, a member of the Soviet delegation to the organizing conference of the United Nations in San Francisco, met with the Commissar of Foreign Affairs and deputy head of the SNK, Viacheslav Molotov. Zhebrak informed him about the current situation in genetics and asked for support. In October 1945, Zhebrak sent Molotov a long letter.⁴¹ He accused Lysenko of disrupting genetics research and proposed to create a special institute for experimental genetics and a "Soviet Journal of Genetics." Molotov sent a copy of the letter to Agitprop and the presidium of the Academy of Sciences. Apparently as a result of Molotov's instructions, the bureau of the academy's

Biology Division convened a special session in March 1946 to discuss its institutional structure. A new genetics institute was “proposed” at this meeting⁴² and actively supported by Orbeli, the division’s academician-secretary. Immediately thereafter, Zhebrak sent a long letter to Georgii Malenkov of the Politburo, urging him to support the creation of both a genetics institute and a genetics journal.⁴³

On June 18, 1946, the presidium decided to establish a new Institute of Genetics and Cytology as a counterweight to Lysenko’s Institute of Genetics.⁴⁴ The new institute was to be built around Dubinin’s genetics department at the Institute of Cytology, Histology, and Embryology, supplemented by up to seventy other geneticists. Zhebrak was nominated to be the director.

In January 1947, the presidium prepared a draft of the resolution of the Council of Ministers that would legalize the decision. The draft was sent to Lavrentii Beriia, a member of the Politburo and deputy head of the council, to obtain formal permission to establish the institute.⁴⁵ The Science Department of the Central Committee endorsed the project: Sergei Suvorov and Georgii Aleksandrov wrote to the Politburo that “this request needs to be supported.”⁴⁶ The Politburo, however, put the decision on hold, largely because of Lysenko’s active opposition.⁴⁷

At the Academy of Sciences presidium meeting in June 1946, Lysenko had delivered his “dissenting opinion” about the proposed new institute of genetics: “I have considered and do consider mistaken the organization of this institute aimed at developing Mendelism-Morganism, a doctrine opposing Michurinist, creative Darwinism.”⁴⁸ Lysenko knew that bureaucratic procedures required the presidium to include his “dissenting opinion” in its report to the Central Committee.⁴⁹ His comments, then, were not addressed merely to his fellow academicians, but also to party officials—who, Lysenko hoped, would block the organization of the institute. He succeeded, and the decision was shelved until June 1947.

Geneticists also apparently attempted to remove Lysenko from his position as a member of the presidium of the Academy of Sciences. As the term of the sitting presidium approached its expiration in January 1946, the academy president, Sergei Vavilov, and its academician-secretary, Nikolai Bruevich, presented a slate of new presidium members to the Central Committee. They excluded Lysenko and Mark Mitin because they had “not participated in the presidium’s work.” The Central Committee agreed to replace Mitin, one of the leading ideologists of the 1930s, but not Lysenko.⁵⁰

I know of no documentary or archival evidence that the proposal to discharge Lysenko from the presidium was inspired by geneticists. There is, however, much circumstantial evidence. The most influential member of the presidium representing the biological disciplines was Leon Orbeli, the first vice-president of the academy and academician-secretary of its Biology Division. Orbeli was a strong supporter of genetics, had good relations with a number of geneticists (notably Davidenkov and Serebrovskii), and had

invited several geneticists to work in his Institute of Evolutionary Physiology in Koltushi. It seems likely that Orbeli advised Vavilov, who had just recently become president of the Academy of Sciences, to raise the question of Lysenko's dismissal.

The attempt failed. The main argument for Lysenko's reelection was his presidency of VASKhNIL, which mandated his appointment to the Academy of Sciences presidium. Even so, party officials worried that, despite the Central Committee's instructions, Lysenko might be voted out. The head of Agitprop, Aleksandrov, reported to Molotov and Malenkov in December 1945: "At the last elections of the presidium [in 1942], academician Lysenko, despite the support of his candidacy [by the Central Committee], obtained only 36 out of 60 votes, fewer than anybody else. . . . There is some apprehension that Lysenko's chances in the future elections have decreased. It will be necessary to give special instructions to the presidium members and to work seriously with academicians for Lysenko to obtain a necessary majority of votes."⁵¹ The "special instructions" apparently proved effective, for Lysenko was reelected.

The only geneticist among the Academy of Sciences membership in 1945 was Serebrovskii, a corresponding member, and geneticists strove to improve their position by persuading the Central Committee to open new positions for genetics in the membership of this leading scientific institution. In his letter of March 7, 1946, to Malenkov, Zhebrak requested two new slots for full members—one for "evolutionary genetics" (obviously intended for Dubinin) and the other for "the genetics and cytology of cultivated plants" (obviously intended for himself).⁵² The Central Committee permitted two genetics vacancies, but only for corresponding members of the Academy of Sciences.⁵³

The Biology Division attempted to nominate Zhebrak and Dubinin for these vacancies. Lysenko, however, insisted that his allies be nominated for both positions. Finally, the presidium compromised—Dubinin was nominated for one vacancy, and Lysenko's disciple Artavazd Avakian for the other. At the General Assembly of the Academy of Sciences held November 29–December 4, 1946, both nominees were elected. Lysenko nevertheless did everything possible to prevent Dubinin's election. Once again, he issued a "dissenting opinion":

I consider it my duty as a scientist, who has worried about the fate of our genetic science and who is to a certain extent responsible for its development in the Academy, to inform the general meeting of academicians about my opinion on the election of Nikolai Petrovich Dubinin to corresponding membership.

Dubinin has no real merits either in the field of scientific biological theory or in the field of practice. At the same time, Dubinin is a leader [*vozhak*] of the antiscientific group of geneticists, representing in our genetic science the ideology of conservative and even reactionary foreign biologists.

I consider it my obligation to declare that this is my motivation for voting against Dubinin's election as a corresponding member of the Academy.⁵⁴

Despite Lysenko's objections, Dubinin was elected and began actively to organize anti-Lysenko resistance in the academy and elsewhere.

Geneticists also attempted to strengthen their positions at Leningrad University. During 1945–47, they made numerous efforts to dismiss Lysenko's allies Isaak Prezent, head of the department of Darwinism, and Nikolai Turbin, head of the department of plant genetics. Lysenko's long-standing opponents, the dean of the biology faculty Lobashev and the deputy rector of the university Polianskii, orchestrated a complicated bureaucratic game with the Ministry of Higher Education in an attempt to replace the Lysenkoists, but they were only partially successful.⁵⁵

Another sign of the enhanced strength of geneticists was a conference organized at the biology faculty of Moscow University in spring 1947. Geneticists resourcefully surmounted the bureaucratic obstacles to gaining the Central Committee's permission to hold the All-Union Genetics Conference. Officially, the meeting was called a "university conference," which required permission only from the university's Scientific Council and the local party committee. At that time, the party secretary of the biology faculty was a geneticist, Alikhanian—who, of course, used his influence on the geneticists' behalf. Almost every geneticist in the Soviet Union participated in this conference on March 21–26, 1947, making it the country's largest genetics meeting since 1932. For six days, about eighty speakers delivered reports on various subjects. Characteristically, the conference did *not* discuss the controversy between geneticists and Lysenkoists. Although several of Lysenko's disciples, including Nikolai Nuzhdin and Khilia Kushner, participated in the conference and delivered reports on their research, the conference lacked the combative atmosphere of the 1930s. Geneticists were obviously trying to avoid any public confrontation with their opponents.

They were also using all possible means to rehabilitate the public image of their science. In February 1947, the Central Committee had held a plenary session devoted to the situation in agriculture. Although its decisions touched upon science only in passing, scientists immediately began to justify their own suggestions by rhetorical references to the "decisions of the February Plenum of the Communist Party."

Geneticists strove to publicize the conference at Moscow University as much as possible. One tactic was the adoption of a "letter to Comrade Stalin." As discussed in chapter 2, in the 1930s it became a ritual of meetings and conferences to send a letter to Stalin expressing the authors' "devotion to the Great Teacher," using standard rhetorical formulas. The publication of such letters in the press was usually sanctioned by the Orgburo and bore witness to Central Committee support for the meeting's goals and results. The

geneticists' letter to Stalin obeyed the classical principles of the genre, emphasizing the practicality of their research, the development of Darwinism, their critique of "fascist race theories," and so forth. On April 4, Zhebrak sent the letter to Stalin's secretariat. In an attached note, which was also signed by Dubinin, Alikhanian, and Nikolai Tsitsin,⁵⁶ Zhebrak requested permission to publish the letter in the central press. He wrote: "Considering that the publication of this letter could greatly influence the unification of Soviet geneticists and breeders for the fulfillment of a number of tasks put forward in the decisions of the February Plenum of the Central Committee, I request your assistance in publishing this text in the central newspapers."⁵⁷ Publication, however, was postponed, again because of Lysenko's reaction.

On the day after the conference, Ivan Benediktov, the minister of agriculture, and two of his deputies, Pavel Lobanov and A. Kozlov, sent a long letter to Andrei Zhdanov—a letter obviously inspired by Lysenko. The authors noted that "Lysenko did not participate in the conference, nor did any of his supporters."⁵⁸ They emphasized that "the conference stands aside from the great practical and political tasks that the Central Committee February Plenum assigned to science in the field of agriculture."⁵⁹ They severely criticized Serebrovskii⁶⁰ for his "eugenic heresy" in the late 1920s, labeling him an "anti-Darwinist" and a supporter of "formal genetics." They also stressed that the conference paid no attention to Michurin or Timiriazev. The agriculture bosses proposed the organization of a special commission headed by Lysenko "to examine all materials of the [Moscow] conference and to provide an appropriate evaluation and suggestions."⁶¹

Zhdanov relayed the letter to the head of Agitprop, Aleksandrov, with a short note: "Urgent. Find out what happened."⁶² Aleksandrov ordered the Science Department to prepare a memorandum on the subject. Probably in consultation with Zhebrak, Suvorov (who had worked with Zhebrak at the Science Department in 1945–46) wrote a long analysis of the conference's content and the ministers' objections. His main conclusion was that "the conference held by Moscow University was very useful, and the attempt of comrades Benediktov, Lobanov, and Kozlov to defame it is unjust and based on one-sided information."⁶³ On April 15, Aleksandrov sent this memorandum to Zhdanov, who apparently was satisfied with its conclusions. The geneticists' letter to Stalin, however, was already outdated, and therefore remained unpublished.

Two weeks later, Zhebrak and Alikhanian appealed to Zhdanov, urging "*the Central Committee to discuss* the question of Soviet genetics and breeding and to *adopt an appropriate decision* that will provide for the normal development of these scientific fields in our country, eliminating the abnormalities that have been created by academician Lysenko's activity."⁶⁴ Having learned from their 1939 experience, this time geneticists did not ask for a *discussion* of "issues of genetics." Rather, they appealed for a *decision of the*

Central Committee that would “approve” classical genetics. Their petition, however, went unanswered.

Geneticists also sought to undermine Lysenko’s influence in his own fiefdom, VASKhNIL. Unlike all other Soviet academies, VASKhNIL did not expand its institutional bases and membership at the end of the war. On the contrary, fewer than half of its academicians were still alive in 1945. According to Lysenko, VASKhNIL controlled only about 10 percent of all agricultural scientific institutions.⁶⁵ Most academicians did not participate in official academy meetings and decision making. Lysenko and a small group of his allies, who occupied various administrative posts in the academy apparatus, ruled the academy. Numerous letters addressed to party and state officials testify to the growing opposition to Lysenko even within VASKhNIL.⁶⁶

Although his personal authority as a political figure remained unchallenged (he was even awarded the title of Hero of Socialist Labor in the summer of 1945), Lysenko’s position as a scientific administrator became insecure after the war. In spring 1946, the Central Committee liquidated its Agriculture Department, Lysenko’s main source of support within the party apparatus. The Politburo transferred its functions to the Department for Inspection of Party Organs and the Department of Personnel—which controlled only personnel, not agricultural development or science policy. This decision also signaled the declining postwar role of party functionaries in professional fields. The responsibility for research in the agricultural sciences was shared by the Ministry of Agriculture, the Ministry of Animal Industry, and the Ministry of Industrial Plants. There are some indications that, after the war, Lysenko’s authority in these agricultural ministries was endangered.

The major issue causing tension between Lysenko and the agriculture bosses was a proposed reorganization of VASKhNIL. In November 1946, the three ministers responsible for agriculture proposed to the Central Committee Secretariat a reorganization of the agricultural academy. Like their colleagues in other ministries, the agriculture ministers wanted to enlarge the academy membership, reorganize the network of its institutions, and enhance the Ministry of Agriculture’s administrative control over the academy’s research. Like their colleagues in other ministries, the agriculture bosses clearly intended to claim their share of the state funding and prestige that was flowing to scientific development. Lysenko, however, objected to their proposal. The Secretariat created a special commission to work out a decision of the Central Committee.⁶⁷ All three ministers and several high-ranking officials of the Central Committee departments participated in the commission.

Against the backdrop of the Central Committee Plenum meeting of February 1947 on the development of postwar agriculture, the commission presented a long report on the situation in agricultural research.⁶⁸ The authors severely criticized Lysenko for the “disintegration” of VASKhNIL and noted that most academicians were dissatisfied with his presidency. According to

the report, even Tsitsin, the vice-president of VASKhNIL, “in fact does not work in the academy and does not attend its plenary meetings, because of his disagreements with academician Lysenko over organizational matters and principles.”⁶⁹ The report emphasized that the academy was preoccupied exclusively with agrobiological problems invented by Lysenko and had neglected other important fields, such as agricultural economics and organization, animal breeding, fertilizers, and industrial plants. The commission proposed a number of measures to correct the situation—most importantly, elections of new full and corresponding members to the academy. Lysenko, however, fiercely opposed this idea. The authors noted: “We, together with the agriculture ministers, were unable to persuade the president of the Academy, Comrade Lysenko T. D., to present an acceptable proposal [on elections to the academy] to the government of the USSR and the Central Committee of the Communist Party.”⁷⁰ Under the commission’s pressure, Lysenko finally agreed to enlarge the academy membership, but he insisted on governmental appointment, not elections, of new members. He argued that elections could not resolve the problems of agriculture if the government did not first resolve the “methodological and organizational questions of agricultural science in our country.”⁷¹

This phrase—“methodological and organizational questions of agricultural science”—meant the struggle between geneticists and Lysenkoists, or, in Lysenko’s words, “between Michurinist (Darwinist) and Mendelist-Morganist trends in agricultural science.” Lysenko’s fear of elections is understandable in light of the election results in the other academies, where vacancies were filled by eminent scientists, mostly from the older generation. Replicated in VASKhNIL, such elections would end Lysenko’s dominance there. The commission’s members, however, did not support Lysenko’s claims. They wrote: “[We] think that the situation in the Academy of Agricultural Sciences does not facilitate resolution of the most important questions of agricultural science. [We] presume that, whatever value is attributed to discussions and controversies in agrobiology, one should not rest the fate of the country’s entire agricultural science on these discussions and on keeping the academy in a vegetative condition [*proziabanie*].”⁷²

On April 16, 1947, the Orgburo discussed the commission’s report and scheduled a special session for June “on the situation in VASKhNIL.” It ordered Lysenko to report on the academy’s work during 1939–46, and decided “to settle the question of elections of new members to VASKhNIL in relation to discussing Lysenko’s report.”⁷³ The question of organizing a new genetics institute in the Academy of Sciences would also be resolved at this session.

All interested parties prepared feverishly for the Orgburo session. The Ministry of Agriculture prepared a draft of the resolution of the Council of Ministers, “On the Academy of Agricultural Sciences.”⁷⁴ Lysenko’s apparatus prepared the required report.⁷⁵ Lysenko himself prepared his personal supple-

mental memorandum for the report and another document containing his objections to the ministry's draft of the resolution.⁷⁶

In these reports, Lysenko fiercely refuted the accusations that VASKhNIL "persisted in a vegetative condition." He claimed that while there were "many abnormalities and deficiencies in the Academy of Agricultural Sciences," these abnormalities and deficiencies were "not those that are usually pointed out."⁷⁷ The "real" abnormality, according to Lysenko, was the existence of two opposing trends in agricultural science. One was "dialectical-materialist Michurinist Soviet Creative Darwinism," represented by Lysenko and his disciples; the other was "metaphysical bourgeois Mendelism-Morganism." Lysenko declared that it was the resistance of "Mendelist-Morganists" to his work that prevented Soviet agriculture from flourishing. To raise the quality of Soviet agriculture, it was necessary "to put agricultural, science in better organizational order."⁷⁸ To do so, Lysenko proposed that VASKhNIL be transferred from the Ministry of Agriculture to the Council of Ministers, a request that clearly reflected the tension between Lysenko and his bosses. He also called upon the Central Committee "to improve the teaching of a number of biological disciplines."⁷⁹ The Orgburo session, however, was delayed.⁸⁰ During the summer of 1947, the Orgburo was preoccupied with another question—"the struggle against servility and slavishness before the West."

Lysenko took advantage of this situation to transfer the decision on VASKhNIL's problems from the party apparatus to the Council of Ministers. This move had great significance. The party apparatus headed by Zhdanov was hostile to Lysenko at this time. Suvorov represented the Science Department among the members of the Central Committee's commission, and, as the commission's report shows, party officials were generally ill-disposed toward Lysenko. The situation in the Council of Ministers was somewhat more favorable for him. The deputy head of the council in charge of agriculture was Malenkov, Zhdanov's long-term competitor for the leading position among Stalin's lieutenants. At this time, however, he had lost Stalin's confidence and had been "exiled" from the party apparatus to the Council of Ministers. In 1946–47, Malenkov was publicly noncommittal in the conflict between geneticists and Lysenkoists. There is, however, some evidence that he inclined toward the Lysenkoists. Most letters and petitions that Lysenko's opponents sent to "the highest agencies" were addressed to the Science Department and Zhdanov personally,⁸¹ whereas Lysenkoists sent most of their petitions to Malenkov. For example, Lysenko sent him a copy of all documents prepared for the Orgburo session in June, despite the fact that Malenkov was not a member of the Orgburo at that time.⁸² Furthermore, while the decisions of the Central Committee were usually prepared by various party departments, the apparatus of appropriate ministries prepared all decisions of the Council of Ministers. So the council's decisions "on the situation in VASKhNIL" were actually prepared by the apparatus of the agriculture ministries, which was filled with Lysenko's allies.

Nevertheless, despite these more favorable conditions, in summer 1947 Lysenko was unable to hinder the decision of the agriculture bosses to expand VASKhNIL: on July 22, 1947, the Council of Ministers issued a resolution on the elections in the academy.⁸³ The resolution established thirty-nine vacancies for full members and sixty for corresponding members and ordered VASKhNIL to elect the new members in October.

In the immediate postwar years, then, geneticists were on the offensive and Lysenko was forced to defend his position. The major principle of struggle, however, remained the same as in 1939: seeking the support of the highest party agencies, the Central Committee's Secretariat, Orgburo, and Politburo. The geneticists had learned a very important lesson from their previous defeats. This time, they struggled not over theoretical and scientific issues, but exclusively over administrative positions and institutions; and they did so not through public discussions, but through direct administrative and personal contacts with the party-state agencies. Geneticists did not publicly denounce Lysenko's views on genetics, but they did publicize their own achievements.

The enhanced authority of science and scientists in governmental circles gained during the war gave a significant advantage to the geneticists. Zhebrak had close personal ties with the highest party officials, including Molotov and Malenkov, and he attempted to use these connections to improve the institutional position of genetics. Moreover, the increased authority and autonomy of academies and their presidiums in science-policy decision making allowed the geneticists, with the support of such leading academicians as Orbeli, to decrease Lysenko's influence within the Academy of Sciences.

From 1945 through autumn 1947, then, Lysenko was in trouble. His authority as an administrator declined. With the liquidation of the Agriculture Department, he lost his major source of support within the Central Committee. The attempt of the agriculture bosses to get their share of funding for science through the expansion and reorganization of VASKhNIL created tensions between Lysenko and his long-standing backers at the top of the agriculture ministries. At this stage, the struggle between geneticists and Lysenkoists developed mostly within the administrative apparatus in charge of science—the presidium of the Academy of Sciences and various party departments—rather than in public. Both geneticists and Lysenkoists actively invited the party agencies to make the ultimate decision and to discharge their opponents. The party apparatus, however, did not make such a decision, and, moreover, showed no intention of doing so.

How did geneticists manage to assume the offensive in their struggle with the Lysenkoists? Clearly, the means used by both sides in their struggle remained practically unchanged. Zhebrak's personal ties to the highest level of the party apparatus apparently could not in themselves have reversed the dynamics of the struggle so drastically. Even the increased autonomy of the Academy of Sciences and its presidium in the making of science policy would not have sufficed to overcome Lysenko's hegemony without a broader justification. Both groups, the geneticists and the Lysenkoists, used the same

arguments they had used in the 1939 discussion. Why, then, was the party apparatus more inclined to hear the geneticists' arguments in 1945–47?

The answer, I believe, lies in the changed foreign policy of the Soviet state. With the restoration of relations between the Western and Soviet scientific communities, geneticists immediately employed their previously developed connections with the Anglo-American genetics community in their struggle with the Lysenkoists. They asked their colleagues to organize a “second front” against Lysenko in the West⁸⁴ and used international acclaim for Soviet genetics to undermine Lysenko's authority. During the heyday of Soviet-Western cooperation, from 1945 to mid-1947, this strategy proved very effective.

A “SECOND FRONT”

The wartime antifascist alliance created a new internationalist orientation in Soviet foreign affairs that profoundly affected Soviet science policy: the isolating barriers erected between the Soviet and Western scientific communities after the Molotov-Ribbentrop pact of 1939 were dismantled.

While fighting off the German invasion, the Soviet Union urgently needed its allies to open a second front in Europe and used every means to hasten it. Science became one such means.⁸⁵ With the outbreak of war, the All-Union Society of Cultural Relations with Foreign Countries (*Vsesoiuznoe Obshchestvo Kul'turnykh Sviazei s Zagranitsej*—VOKS), which had practically ceased to exist in the late 1930s, was revived. The renewal of international scientific contacts is dramatically evident in the number of letters VOKS sent and received during the war, compared to before it. For example, all “correspondence on scientific questions between Soviet and American scientists,” which went through VOKS from June 4, 1936, to December 13, 1940, amounted to only 130 pages;⁸⁶ in 1943 alone it consisted of several thousand pages.⁸⁷ VOKS became one of the major channels of exchanges and correspondence between Soviet and Western scientists. Furthermore, during the war the Central Committee created the Antifascist Committee of Soviet Scientists.⁸⁸ The main goal of the committee, as well as of VOKS, was to disseminate pro-Soviet propaganda among Western scientists. Through the committee, Soviet scientists appealed to their Western colleagues, asking them to exercise their influence and urge Western governments to help the Soviet Union and open a second front in Europe.⁸⁹

Soviet scientists immediately began to use for their own purposes opportunities to revive their contacts with Western colleagues. Exchanges of publications, materials, and scientific delegations were restored.⁹⁰ In 1942 the Academy of Sciences resumed electing foreign members. A number of American and British scientists were elected to the academy, including Walter B. Cannon, Henry Dale, J.B.S. Haldane, Gilbert N. Lewis, and Ernest O. Lawrence.⁹¹ The academy's main periodical, the *Bulletin of the USSR Academy of Sciences*, established regular columns entitled “On the Pages of Foreign

Scientific Periodicals” and “The Western Press on Soviet Science,” in which Western (mostly British and American) scientific works were summarized and reviewed. After the war, these international contacts were expanded. The International Publishing House was established under the authority of the USSR Academy of Sciences with instructions to publish a series of monographs on modern achievements by both Russian and Western scientists. The publishing house also was to publish an international scientific journal.⁹²

When the Soviet government organized a jubilee to celebrate the 220th anniversary of the Academy of Sciences in June 1945, Stalin personally suggested inviting scientific delegations from Allied countries, particularly the United States, the United Kingdom, France, and Canada.⁹³ In early June, special airplanes dispatched by the Soviet government brought a large group of foreign scientists to Moscow. The jubilee was organized with royal splendor: the government paid all expenses and provided participants with luxurious comfort, in stark contrast to the prevailing postwar conditions.⁹⁴ Foreign delegations were invited to witness the “Victory Parade” on Red Square and were fêted at a banquet in the Kremlin attended by all Soviet leaders, including Stalin. Here Molotov, the Commissar of Foreign Affairs and the first deputy head of the Soviet government, proposed a toast “to the development of close collaboration between Soviet and world science.”⁹⁵ Like the declarations of many other top officials (not to mention those of scientists), these words manifested a fundamental change in state science policy: the concept of a “single world science” was revived. It replaced the concept of two separate, opposing sciences—Western versus Soviet, “bourgeois” versus “proletarian”—which had dominated science policy in the 1930s. Cooperation between Soviet and Western scientists became an officially sanctioned part of Soviet science policy.

The American’s detonation of the atomic bomb in August 1945 added a new dimension to Soviet-Western scientific relations. A few days after the detonation, a special Politburo commission headed by Lavrentii Beria was created to promote the Soviet atomic-bomb project. Soviet officials obviously realized the need to improve science. As Molotov declared in his speech for the twenty-eighth anniversary of the October Revolution on November 6, 1945: “We must match the achievements of modern world technology in all fields of industry and the national economy and provide conditions for an extensive advancement of Soviet science and technology. . . . We will possess atomic energy and much more.”⁹⁶ From Stalin’s 1946 declaration that “I have no doubt if we provide the necessary help to our scientists, they will not only catch up with, but also soon overtake the achievements of science abroad,”⁹⁷ the phrase “catch up with and overtake” (*dognat’ i peregnat’*) would become a well-known slogan of Soviet science in the coming years.⁹⁸ Sergei Vavilov, who had replaced Vladimir Komarov in the post of Academy of Sciences president, answered this call in an article published in *Pravda*: “Scientists Will Justify Comrade Stalin’s Confidence.”⁹⁹

The U.S. atomic monopoly forced Soviet officials to recognize the importance of international scientific relations. As Molotov stated in his speech before the General Assembly of the United Nations on October 29, 1946, the atomic monopoly could not last long, because “science and scientists cannot be put in a box and kept under lock and key.”¹⁰⁰ The atomic bomb, which became the embodiment of both the advances of Western science and the superpower status of the United States, stimulated Soviet officials to expand their own support for science and to spur on Soviet science in the drive for superpower status. Scientific development acquired a strategic and symbolic importance in the growing international competition.

The policy of both cooperation and competition with Western science was immediately employed by various groups within the scientific community. The older generation of Soviet scientists (such as Ioffe, Kapitsa, and Orbeli) that had come to dominate science policy during the war strongly supported the image of a “single world science.” These scientists had personal international experience and solid international reputations. They considered the expansion of international relations crucial to the development of Soviet science, and they exercised all their influence to promote and encourage international exchanges. Soviet scientists frequently appealed to “the achievements of science abroad” and exploited “international arguments” in their dealings with the state apparatus. For example, in September 1945, Kapitsa sent a long letter to the Central Committee Secretariat requesting support for the publication of the *Journal of Physics*, a Soviet periodical published in English. The Secretariat immediately commanded Agitprop “to develop the necessary measures.”¹⁰¹

As one might expect, the restoration of relations between the Western and Soviet scientific communities allowed geneticists to deploy their well-developed connections with the Anglo-American genetics community in their struggle against Lysenko.

Soviet Genetics on the International Scene

Soviet geneticists had established close relations with their Western counterparts, especially in Germany¹⁰² and the United States, in the 1920s. Many Russian geneticists, including Kol'tsov, Zhebrak, Levit, Karpechenko, and Mikhail Zavadovskii, visited and worked in various German and American laboratories. An especially important role in establishing long-term contacts with Western geneticists was played by Nikolai Vavilov, Theodosius Dobzhansky, and Nikolai Timofeeff-Ressovsky.

Vavilov spent a year in R. C. Punnett's laboratory in Britain before the Bolshevik revolution. After the revolution, he visited genetics institutions throughout the world, officially representing Soviet genetics at many international meetings and conferences. He participated in the First International Congress of the History of Science in London in 1931, and he was the only

Soviet geneticist to attend the Sixth International Genetics Congress in Ithaca, New York, in 1932. Dobzhansky, a protégé of Iurii Filipchenko, arrived in the United States in 1927 as a Rockefeller Fellow to work in the mecca of genetics—T. H. Morgan's laboratory. After Filipchenko's death in 1930, Dobzhansky decided not to return to Russia and remained in Morgan's lab.¹⁰³ Timofeef-Ressovsky, a pupil of Kol'tsov, went to Berlin in 1925 to organize a genetics department in Oscar Vogt's Kaiser Wilhelm Institute for Brain Research and stayed there until the end of World War II.¹⁰⁴ Like Vavilov and Dobzhansky, he actively propagated the achievements of Russian genetics in the West.

In turn, foreign geneticists—including Erwin Bauer, Calvin Bridges, Leslie C. Dunn, Sidney Harland, Cyril D. Darlington, Julian Huxley, Richard Goldschmidt, Doncho Kostov, and Hermann Muller—visited Soviet genetics institutions. Bridges spent half a year (in 1931–32) and Muller about four years (from 1933 to 1937) working in Vavilov's Institute of Genetics. This active exchange helped establish close personal ties between Soviet and Western geneticists.

In the 1930s, Soviet genetics (like Soviet physics, astronomy, soil science, mathematics, physiology, and geology) enjoyed considerable acclaim on the international scene. This was manifested in the attempt to schedule the Seventh International Genetics Congress in Moscow in 1937. Soviet authorities initially granted the geneticists' petition to host it. At the end of 1936, however, the Politburo suspended its own decision and canceled the congress.¹⁰⁵ A few months later, geneticists persuaded the Politburo to reconsider, and the congress was rescheduled for 1938. This time, however, the Permanent International Organizing Committee of Genetics Congresses, presided over by the Norwegian geneticist Otto Mohr, decided to hold the congress in Edinburgh in August 1939.

Despite the failure of the Moscow project, Vavilov was nominated president, and about fifty Soviet geneticists were invited to the 1939 congress. Western geneticists spared no efforts to secure the participation of the Soviet scientists. None, however, was permitted to attend. A few days before the congress opened, Vavilov informed the organizers that he and his colleagues had withdrawn from the congress. In August 1939, with the signing of the Molotov-Ribbentrop pact, official contacts between the Soviet and Anglo-American genetics communities were broken off.¹⁰⁶

Yet Western geneticists remained deeply interested in the achievements and fate of their Russian colleagues.¹⁰⁷ They generally assumed that the severing of contacts was connected to the Lysenko controversy and attentively followed the debates between geneticists and their opponents in Russia.¹⁰⁸ Actually, the curtailment of the international contacts of Soviet science resulted from the state's general foreign policy and involved not only genetics, and not only science, but all aspects of Soviet-Western relationships.

The German attack on the USSR in 1941 drastically changed this situation.¹⁰⁹ The revival of international contacts was particularly successful in

genetics: not only was there a recent history of close personal relations, but, unlike physics or mathematics, genetics was not involved in military research. Thus, the restoration of contacts between Russian and Western geneticists attracted less attention from the Soviet control agencies.

Many Western scientists were eager to restore relationships with their Russian colleagues. The American scientific community was especially active in this enterprise. In 1943 the American-Soviet Science Society and the American-Soviet Medical Society were established specifically to facilitate relations between scientists of the two countries. From 1943 the correspondence between Soviet and Western geneticists began to revive. The exchange of genetics literature and even *Drosophila* stocks was organized through diplomatic and other channels.

During and immediately after the war, Soviet genetics became a hot topic in the Western press and scientific periodicals. Western geneticists organized a broad campaign in support of Russian geneticists and against Lysenko. Many members of the American and British genetics communities participated in the campaign.

A Request for Help

Why did the situation in Soviet genetics become so significant for Western geneticists? Why did they “take very much to their hearts these things?”¹¹⁰

During the war, Western geneticists obtained information on Russian genetics through various diplomatic, public, and private channels. Nevertheless, their knowledge was fragmentary until the end of the war.

In 1944 Eric Ashby, a botanist, came to Moscow as a member of the Australian legation. He spent a year in Russia and, through his persistence, managed to visit numerous scientific institutions and acquaint himself with many Russian biologists. He met a number of Soviet geneticists, including its most prominent spokesmen—Serebrovskii, Dubinin, and Zhebrak—and became personally acquainted with their research, as well as that of Lysenkoists. On his way back to Australia in summer 1945, he stopped for a few months in Britain. There he wrote private letters and articles for scientific periodicals that acquainted his colleagues with what he had learned about Russian genetics. In a letter to Sewall Wright, he remarked: “Genetics here is very vigorous. . . . I have [also] been making some study of the so-called ‘genetics’ of Lysenko. The story is quite fantastic.”¹¹¹ His book *Scientist in Russia*, published a year later, gave his firsthand account of the current Russian situation.¹¹²

The 220th jubilee of the Academy of Sciences provided another occasion to gather information on Russian genetics. Although American geneticists were not among the U.S. delegation, they had asked several of its members “to obtain specific information about [Russian] geneticists.”¹¹³ One of the members of the British delegation was Julian Huxley, who had visited Russia before the war (in 1931) and was personally acquainted with many prominent Soviet biologists. During the celebration, he visited all the genetics laborato-

ries in Moscow and Leningrad and met almost all leading Soviet geneticists. Huxley and Ashby also attended a special lecture by Lysenko, which was organized at their request. After returning to Britain, Huxley published an enthusiastic account of Russian wartime research in evolutionary biology and genetics¹¹⁴ and shared his impressions about Russian genetics and geneticists in a number of confidential letters.

Another important source of information about Russian genetics was Anton Zhebrak. In May 1945, Zhebrak came to San Francisco as a Belorussian representative to the conference to organize the United Nations. He used this opportunity to meet American geneticists and to confer with them on the situation in Soviet genetics. Ernst Babcock arranged for him to give a lecture at the Genetics Department of the University of California in Berkeley. At Zhebrak's request, apparently, this event was organized in a very official way. Babcock asked the university vice-president to write a letter of official invitation to the Soviet consulate in San Francisco: "At first this may not seem necessary to you, but if I may explain very briefly, the situation of genetics in the USSR at present is extremely critical. A faction has become powerful which is trying to discredit what might be termed orthodox genetics. Since Dr. Zhebrak is wholly loyal to scientific genetics and is trying to overcome the opposing faction mentioned above, it would mean a great deal to him to know that our invitation was officially endorsed by yourself."¹¹⁵ Babcock got his endorsement, and Zhebrak came to the lecture accompanied by Soviet correspondents from *Pravda* and *Izvestiia* and by some of his colleagues from the UN conference. He told the audience about the general situation in Soviet genetics and his own current work on wheat polyploids. The Genetics Department organized a reception for Zhebrak and invited Soviet diplomats. The Soviet consulate in San Francisco, in turn, held a reception for the university.

During his stay in San Francisco, Zhebrak met several times for long discussions with Berkeley geneticists—Ernst Babcock, Richard Goldschmidt, G. Ledyard Stebbins, and the Russian émigré I. Michael Lerner. He had almost daily private meetings with Lerner, who helped him in various ways, translating his lecture at Berkeley, scheduling his scientific meetings, and conducting an extensive correspondence on his behalf. After the UN conference, Zhebrak had planned to spend a few weeks in the United States visiting various genetics laboratories. This plan, however, had to be aborted: he was suddenly called back to Moscow and left a few days after the conference. Nevertheless, he succeeded in distributing information and establishing contacts with almost all American geneticists. The essence of Zhebrak's message to his American colleagues is clear from Lerner's note to Muller: "It will not be too long before Lysenko has enough rope to hang himself. In the present situation, the support of American geneticists is tremendously important."¹¹⁶

Zhebrak's news, as well as the results of Huxley's and Ashby's meetings with their Russian colleagues, spread quickly among members of the Western genetics community. American geneticists used their elaborate communications network to spread the word: any geneticist who received a letter with

some valuable information immediately distributed copies to other members of the community. For example, when the British geneticist Pius Koller wrote a letter to Milislav Demerec about the situation in genetics in postwar Europe, Demerec made more than forty copies and distributed them to his mailing list.¹¹⁷

One of the most exciting pieces of news was that “Lysenko’s position is less secure than it has been, and Russian geneticists are hoping to get [out] from under.”¹¹⁸ And for the first time, it seemed that American geneticists could make a difference, because “the Soviet Government at the moment is definitely disposed toward giving considerable weight to the opinion of the American scientists.”¹¹⁹

When Western geneticists learned that their Russian colleagues “personally and confidentially ask for support of those American colleagues who are known to be friendly to Russia,”¹²⁰ they enthusiastically responded to this request and took a number of measures to help their Russian colleagues, organizing a broad anti-Lysenko campaign. Four of the most eminent American geneticists—Dunn, Demerec, Dobzhansky, and Muller—orchestrated the American part of the campaign, while Huxley coordinated the British front.¹²¹

A Second Front in Genetics

These geneticists used all available resources to support Russian genetics and geneticists. Two organizations under their control played key roles. In 1944, the National Council of American-Soviet Friendship established the American-Soviet Science Society, under the presidency of Dunn. Then, in 1945, the American Genetics Society established its Committee to Aid Geneticists Abroad, headed by Muller.¹²² These two organizations arranged an extensive exchange of publications and materials. Large numbers of reprints, journals, and books were sent to Russian geneticists. In addition, from 1945 to 1948, some fifteen technical research papers of Soviet geneticists were published in Western periodicals, including *Journal of Heredity* and *Genetics*. A number of American geneticists undertook to translate, edit, or review Russian manuscripts, including Babcock, Dobzhansky, Dunn, Lerner, Muller, Stebbins, Walter Landauer, and Jack Schultz. They also orchestrated the publication of accounts of the situation in Soviet genetics in Western scientific journals. For example, they arranged for *Science* to publish Zhebrak’s and Dubinin’s survey articles.¹²³

The most important publications, however, were two small books that presented to the English-speaking audience the essence of Lysenko’s views and work. One was a comprehensive review of Lysenkoist work written by two British scientists, P. Hudson and R. Richens.¹²⁴ The second was an English translation of a 1943 book by Lysenko.

The history of the English edition of Lysenko’s book *Heredity and Its Variability*, published in 1946, is revealing. Early in spring 1945, the McGraw-Hill Publishing Company sent the Russian edition of Lysenko’s book to Dunn

with a view to its possible publication. Dunn immediately engaged Dobzhansky to read and review the book. Dunn then wrote a letter to the company's representative: "Notwithstanding the fact that most geneticists here believe that his views are erroneous, he [Lysenko] is a person of such importance and the question at issue is so important that it would probably be of much service both to American and Russian science to have this book available in English, even though the views expressed prove to be wrong."¹²⁵ As it happened, the company was not interested in publishing the book, but Dunn and Dobzhansky decided to publish a translation under their own auspices. As soon as he had read the book, Dobzhansky began translating it, and by the middle of May had already finished half of it. The news from Russia in the summer of 1945 encouraged their efforts. As Dunn wrote to Lerner: "We believe the best way to deal with Lysenko's influence is to make known his ideas and evidence in the form in which he himself has published them. We have no doubt that the judgment of Americans will be adverse and that this will strengthen the hands of those in the Soviet Union who oppose him."¹²⁶ In the middle of August 1945, the translation was finished; Dunn sent the manuscript to the King's Crown Press, a publishing house loosely affiliated with Columbia University, where both Dunn and Dobzhansky were professors. The manuscript was accepted, and was edited and revised in autumn 1945. Dobzhansky tried to keep the "flavor" of the original in the translation, while Carl Epling (a professor of botany at the University of California at Los Angeles) edited it "for style and sense" and Dunn "for English usage and clarity."¹²⁷

Dunn orchestrated a number of reviews of both Hudson and Richens's and Lysenko's books in American scientific periodicals; Huxley undertook the same job in Britain. All major biological journals reviewed the books. Dunn himself and Karl Sax submitted reviews to *Science*, Dobzhansky to *Journal of Heredity*, Kurt Stern to *American Naturalist*, Stebbins to *Chronica Botanica*, Goldschmidt to *Physiological Zoology*. Several other geneticists were urged by Dunn and Muller to write reviews or letters to the editors of other periodicals. British biologists also published a number of reviews in British periodicals—Ashby in *Nature*, Darlington in *Discovery*. As Muller informed his colleagues:

Huxley had written me that he is trying to get a number of reviews of the book, and other articles on the situation, to appear in British periodicals and that we in this country ought to try to do the same thing at about the same time. He has authoritative information, gained by the Australian Scientific Attaché in Moscow, . . . that adverse reviews of Lysenko's book by reputable scientists in western countries would be seriously considered in the USSR and have a beneficial effect for Genetics there, at the same time weakening Lysenko.¹²⁸

American geneticists were very cautious in their critique, focusing almost exclusively on scientific matters. They strove to avoid any political comments that might provoke Soviet authorities, trying to express their opinion in politically neutral or even "socialism-praising" language.

This, I think, was the reason that a group of American geneticists approached J.B.S. Haldane—at that time a member of the Political Committee of the British Communist Party and recently elected a foreign member of the USSR Academy of Sciences—with a request to write a review of Lysenko's book. They wrote:

It is our feeling that the initiative to explain the danger represented by Lysenko's ideas to the authorities responsible for scientific research in the Soviet Union should come from somebody who, besides being respected as [a] scientific authority, could not easily be attacked by Lysenko as a political enemy of Soviet Russia, using his prestige for the purpose of either a personal attack on Lysenko or of a campaign to defame Soviet science. We think you are the person most likely to lead successfully such an action, which would render a great service to the Soviet Union and to the world biology.¹²⁹

The letter was drafted by Salvador Luria and signed by Luria, Muller, Stern, Dobzhansky, Dunn, and Demerec. Haldane, however, refused to participate in the campaign. He returned the original letter of the six American geneticists to Muller, informing him: "I regret that I have not read Lysenko's book, and am therefore clearly not in a position to do anything about the matter."¹³⁰ This response "shocked" American geneticists.¹³¹ Muller was outraged, commenting that he "had expected something like this,"¹³² and terminated his correspondence with Haldane. His colleagues did the same, resulting in a long lapse in communications.

Among the measures taken to support Russian geneticists was another attempt to convene an International Genetics Congress in the Soviet Union. During his stay in the USSR, Ashby discussed this idea with Dubinin, Serebrovskii, and Zhebrak, all of whom enthusiastically approved it. He also discussed the matter with Orbeli, a vice-president of the Academy of Sciences and head of its Biology Division; Orbeli, "too was quite interested, but indirectly made it clear that, so long as Lysenko was in a strong position, he would not be willing to incur Lysenko's hostility by pushing the matter actively."¹³³ Ashby suggested to his Western colleagues that they coordinate the anti-Lysenko campaign in influential Western journals and make a "formal approach" to Academy of Sciences authorities regarding the future congress. He supposed that publications indicating "the views of foreign biologists on the worthless[ness] of Lysenko's work" would carry "at least considerable weight" in some quarters in the USSR and therefore would facilitate the organization of the congress there.¹³⁴

Western geneticists enthusiastically supported this project. Demerec, the American representative to the Permanent International Organizing Committee of Genetics Congresses, wrote to the Norwegian representative on the committee, Otto Mohr: "It would be well if the next Congress could be held in Russia, and I sincerely hope that this can be arranged. It might tip the balance in favor of the real geneticists as against the Lysenko school."¹³⁵ The Permanent Organizing Committee used a genetics conference that was held in

London in October 1945 to solicit the opinion of other geneticists on the subject. Although Russian invitees did not come to the conference, most of those attending approved the idea of holding the next international congress in Russia. As Francis Crew, president of the Edinburgh Congress, informed his American colleagues, it was decided that “it would be a very gracious gesture, and [a] helpful one, if we took appropriate steps to make it possible for our Russian colleagues to invite the next Congress to meet in the USSR.”¹³⁶ Crew discussed the “appropriate steps” with those members of the Permanent Committee who attended the conference and consulted with Ashby and Huxley.

The first step was to invite a Russian geneticist to join the committee.¹³⁷ Crew wrote a letter to the Soviet ambassador in Britain “telling him of the existence of this Permanent International Committee and of the desire of its members for the completion of its composition by the addition of a representative of the USSR, it being suggested that Zhebrak, well known to all of us, would be regarded as a very welcome reinforcement.” Crew asked the ambassador “to forward this request to the appropriate body in the USSR.” He stated that the committee would have to decide before the end of March 1946 which of the invitations it received for the holding of the next congress should be accepted and that, therefore, “the Russian nomination must be made immediately.”¹³⁸ In February 1946, Crew informed the Soviet embassy that the committee was still awaiting the Russian answer: “We are so eager to have the help and support of our Russian colleagues and so reluctant to come to any decision about the next Congress without having heard their views that we are willing to wait until the end of March before taking any final step.”¹³⁹ The embassy forwarded Crew’s letters to the Academy of Sciences, but the plan fell victim to Soviet bureaucratic delays. The correspondence over this project between the Academy of Sciences and the Central Committee dragged on until May 1946, far beyond the announced deadline.¹⁴⁰

Western geneticists anticipated the possible failure of their project, but hoped to at least make it possible for their Russian colleagues to attend. They considered the international congress “a very effective way to break down the isolation that now exists between us and the Russian geneticists.”¹⁴¹ As Demerec advised his colleagues on the Permanent Committee: “It seems to me that it would be of the utmost importance, if the Congress could not be held in Russia, to hold it at a place where we could meet the greatest possible number of Russian geneticists. In that case, Sweden might be a much better location than the United States.”¹⁴² He got his wish: the congress was scheduled for Sweden and Soviet geneticists were invited to participate.

“American Aid” on the Russian Front

In their debates with Lysenkoists in 1936 and 1939, Soviet geneticists often referred to the international acclaim for their work. At that time, such refer-

ences were probably counterproductive, for they contradicted the main direction of Soviet foreign policy. At war's end, with the shift of that policy toward internationalism, Soviet geneticists moved quickly to capitalize on their newfound advantage. They were the first Soviet scientists to begin the "close collaboration" with Western colleagues that Molotov had proclaimed in his toast at the Kremlin, and their first collaborative project was a broad anti-Lysenko campaign.

Once again, they made many references to the authority of Western geneticists in order to weaken Lysenko's domination over the field. In every letter to the Central Committee and the Council of Ministers, they stressed the contribution of Soviet genetics to the international prestige of Soviet science. For example, at the end of 1944, Zhebrak wrote a letter to Malenkov stating that "the development of genetics in the Soviet Union occurred in the period of Soviet power. During this short period, genetics in the USSR has achieved such a high level that it has reached a leading position in the world, second only to that of the USA."¹⁴³ His claim that Lysenko's campaign against genetics was damaging the international reputation of the Soviet Union was at that time a strong argument.

Moreover, Zhebrak's scientific activities in San Francisco were probably not undertaken merely on his personal initiative. There is some evidence that his efforts to reestablish close contacts with American geneticists and to inspire them to organize an anti-Lysenko campaign were endorsed by high officials in the state apparatus. In spring 1945, a few weeks before leaving for the United States, Zhebrak had an audience with Molotov. One of the subjects of their conversation was the situation in Soviet genetics.¹⁴⁴ It is possible that Zhebrak obtained Molotov's permission and support for his actions in the United States. This might explain his "confidential" declarations to American colleagues that "the Soviet Government at the moment is definitely disposed toward giving considerable weight to the opinion of the American scientists."¹⁴⁵

Predictably, the Western campaign on behalf of Soviet geneticists elicited an angry reaction from the Lysenkoists. In August 1946, the party cell of VASKhNIL, the main Lysenkoist stronghold, sent a memorandum "on the controversy in genetics" to Zhdanov.¹⁴⁶ Enclosed were Russian translations of fourteen Western publications on the subject, including reviews of both Lysenko's and Hudson and Richens's books, as well as Zhebrak's article in *Science*.¹⁴⁷ The Lysenkoists claimed, correctly, that the geneticists were trying to undermine Lysenko's authority and asked Zhdanov to take "appropriate measures." Their letter was not answered. Two months later, the party secretary of VASKhNIL again sent a letter to the Central Committee on the same subject.¹⁴⁸ This time he attached to his letter a manuscript on genetics prepared by Lysenko for an encyclopedia.¹⁴⁹ This letter also remained unanswered. As in the 1930s, Lysenkoists stressed the "foreign," "bourgeois," "Western" character of Mendelian genetics and the "native," "Soviet" character of their own doctrine. This time, however, the party apparatus was deaf to their arguments.

The campaign in Western periodicals achieved its goal and made a serious impression on the party-state apparatus in charge of science policy. Both international praise for the work of Soviet geneticists and international scientific denunciations of Lysenko's work were clearly having an effect. Even the Ministry of Agriculture, one of Lysenko's main footholds, preferred the advice of Soviet geneticists to that of Lysenkoists when dealing with international matters. For example, in February 1946 the head of the ministry's foreign department asked a longtime opponent of Lysenko, Mikhail Zavadovskii, to write an article for publication in the United States.¹⁵⁰

In late 1946, the Antifascist Committee of Soviet Scientists asked another geneticist, Dubinin, to write an article on the achievements of Soviet genetics for publication in Western periodicals. The paper concerned the Russian impact on theoretical genetics and contained a broad account of Russian research in the field. Through the American-Soviet Medical Society, the manuscript was sent to Dobzhansky, who translated it into English and submitted it to *Science*. The paper, published in spring 1947, assured its audience that Russian geneticists "are confident that they will achieve further great progress in genetics in the near future."¹⁵¹ Referring to this article, Dobzhansky noted in one of his letters: "It gives the first clear testimony of Lysenko's star declining. Not that Lysenko is mentioned—he is not. But things which Dubinin writes probably could not have been written two years ago—praise for Vavilov and Karpechenko, etc."¹⁵² The paper clearly signified the strengthening of the position of genetics in the Soviet Union.

Soviet geneticists, then, skillfully employed the change in foreign policy to tip the balance in their favor. To gain the support of the party apparatus, they effectively exploited the internationalist rhetorical slogans then in fashion: "the international prestige of the USSR," "catch up with and overtake" Western science, "match the achievements of science abroad," and the like. For example, in their "Letter to Comrade Stalin" from the genetics conference held at Moscow University in spring 1947, geneticists stated: "The conference demonstrated that activists of genetic science energetically work on the fulfillment of your, Comrade Stalin, instruction for Soviet science not only to catch up with, but to overtake foreign bourgeois science. In certain cases this instruction has already been fulfilled."¹⁵³ From 1945 through early 1947, this "second front" in genetics proved very effective. Geneticists successfully used the "Anglo-American aid" to improve their standing with the party-state apparatus and to strengthen their institutional positions.

The surging strength of the geneticists was evident in their ability to challenge Lysenko's hegemony over Darwinism. During the early 1940s, the greatest achievement in evolutionary theory in the West was the so-called evolutionary synthesis of Darwinism and genetics. This gave Soviet geneticists the opportunity to reestablish their priority over Darwinism as a scientific field and hence as a cultural resource. There is some evidence that Soviet biologists, and

geneticists in particular, actually attempted to do so. In 1946 Ivan Shmal'gauzen, the leading Soviet evolutionist, published a monograph, *Factors of Evolution*, that attempted to synthesize Darwinism and genetics.¹⁵⁴ The author was awarded a special prize from the Academy of Sciences, and the monograph was nominated for the Stalin Prize. That same year, Shmal'gauzen also published a voluminous textbook entitled *Problems of Darwinism* for use in university courses on biology. Both works elaborated the implications of genetics for evolutionary theory. In 1945–46, a number of new textbooks on Darwinism for pedagogical and agricultural educational institutes were published. All paid considerable attention to the evolutionary synthesis and the enhanced role of genetics in understanding the evolutionary process.

In an effort to preserve his authority over Darwinism, Lysenko wrote a long article in 1946 entitled “Natural Selection and Intraspecific Competition.” It addressed the problem of the intraspecific struggle for existence and was published in Lysenko’s journal *Agrobiologia*, then reprinted in two major agricultural periodicals, *Socialist Agriculture* (Sotsialisticheskoe Zemel'delie) and *Breeding and Seed Industry* (Selektsiia i Semenovodstvo).¹⁵⁵ The eminent botanist Petr Zhukovskii, a member of VASKhNIL, immediately responded with a critical review.¹⁵⁶ Lysenko answered the criticism with a rude article published in *Pravda* in June 1946, entitled “Mind Your Own Business.”¹⁵⁷ Another member of VASKhNIL, Boris Zavadovskii (at that time director of the Timiriazev Biological Museum in Moscow), also tried to publish a critical review of Lysenko’s work. In August 1946, he submitted a long article entitled “Darwinism and Intraspecific Competition” to the *Journal of General Biology* (Zhurnal Obshchei Biologii). The editorial board, however, refused to publish it. At the very beginning of 1947, Zavadovskii sent a letter to Zhdanov urging him to permit publication.¹⁵⁸ The Science Department supported his request. In April 1947, Suvorov sent a special memorandum to Zhdanov about the necessity of publishing Zavadovskii’s article, declaring: “I consider it useful for the development of science to discuss controversial biological questions in specialized periodicals.”¹⁵⁹ Although Suvorov had asked for instructions, none were forthcoming, and Zavadovskii’s review remained unpublished.

Nonetheless, early in 1947, Soviet biologists elaborated a plan to translate and publish several of the most influential Western books on the evolutionary synthesis, including *The New Systematics* (edited by Huxley), *Genetics and the Origin of Species* by Dobzhansky, *Systematics and the Origin of Species* by Ernst Mayr, *Organisers and Genes* by Conrad Waddington, and *Biochemical Evolution* by M. Florkin. Geneticists prepared the translations and managed to include all these monographs except Huxley’s in the 1947 plan of the Foreign Literature Publishing House. On July 25, 1947, the Orgburo approved this plan.¹⁶⁰

For geneticists, then, the fruits of victory proved sweet indeed. Strengthened by enhanced personal contacts with the highest party bureaucrats, the new

autonomy of presidiums in science-policy decision making, and officially sanctioned internationalism, they were able to reverse the discouraging momentum of the prewar struggle against Lysenkoists.

. . .

The new dynamics of the struggle between geneticists and Lysenkoists illustrate the profound changes that World War II produced in the Stalinist science system. The growing symbiosis between the control apparatus and the scientific community led to their increased interdependence and integration. Science acquired strategic significance, which enlarged state support and enhanced scientists' control over their institutions, personnel, research directions, and foreign and domestic communications and contacts. The authority of science spokesmen in the party apparatus and their influence on decision-making rose dramatically. Unlike in the 1930s, when high-ranking party-state bureaucrats had become members of the scientific establishment, during the war scientists became members of the highest party-state bureaucracy. The war also reshaped the political and cultural terrain of the system, breaking the isolating barriers between Soviet and Western scientists and reintroducing the notion of a "single world science."

The wartime Stalinist science system, however, preserved certain distinct features it had acquired in the 1930s: the bureaucratic mechanics of decision making, the centralization of scientific institutions, the *nomenklatura* system of control over scientific personnel, the stratification of the community, and its hierarchical structure and politicized professional culture. But now it seemed these very features could give Soviet science new vitality.

During the war and the immediate postwar years, Soviet scientists were able to take a leading role in their dealings with their "partners" in the party-state bureaucracy over the general direction of science policy and to exploit the Stalinist science system to their own advantage. They immediately capitalized on the new directions of the state's foreign and domestic policies to achieve their own ends, adjusting their rhetoric to the wartime "dialect" of the party pronouncements. Enjoying almost unlimited state support and high public prestige, Soviet scientists conceived grandiose plans for a further expansion of their institutions and new forms of international cooperation. Indeed, after the war it appeared that the Stalinist science system had been improved by a strong dose of reality, that the symbiosis had been refined, and that Soviet scientists might well achieve the independence and respect they had always regarded as their due. What they did not and could not plan for, however, was the Cold War.

On the Threshold of the Cold War, 1946–1947

The most important task of the party is the reeducation of the Soviet intelligentsia in a spirit of Soviet patriotism and devotion to the interests of the Soviet state.

—The Central Committee of the Communist Party, July 16, 1947

A CHANGE IN the international situation in 1946–47 had profound effects on the Stalinist science system. The beginnings of the Cold War were signaled in spring 1946 by Winston Churchill's "iron curtain" speech in Fulton, Missouri, and the confrontation between former allies developed steadily during 1947. Europe was its focus. The announcement in March 1947 of the Truman Doctrine, with aid to Greece and Turkey to counteract the influence of Communism, indicated American initiatives and interests in Europe. In May the Communists were expelled from the coalition governments in France and Italy. In June the Americans announced the Marshall Plan of large-scale economic assistance for European countries. These developments were countered in September by the creation of the Communist Information Bureau (Cominform) to coordinate the activity of Communist parties in Europe and elsewhere.¹ Meanwhile, two meetings of the Council of Foreign Ministers of the Allies to devise a German settlement, in March–April and November–December 1947, proved fruitless.

The deterioration of the wartime coalition and the emergence of a new, "cold" war precipitated a profound shift in practically all aspects of Soviet life: it restored the authority of party ideologists and revived the isolationism of the 1930s. Although it started more gradually than World War II, taking two years to develop fully, the Cold War's effect on Soviet science was no less profound than that of the world war.

The new atmosphere of this increasingly tense period was established by a new, strident ideological campaign that became known as *zhdanovshchina*. In summer 1946, Andrei Zhdanov, a member of the Politburo, introduced the Soviet public to a series of resolutions by the Central Committee: "On the Magazines *Zvezda* and *Leningrad*" (August 14, 1946), "On the Repertory of Theaters and on Measures for Its Improvement" (August 26), and "On the Film *Bol'shaia Zhizn*" (September 4).² Published in the central press, these decrees targeted "the pernicious influence of bourgeois culture" on the Soviet people. Writers, journalists, and film and theater directors were attacked for

“servility and slavishness before Western culture.”³ In autumn 1946, cultural activists organized numerous meetings to “discuss” the necessary conclusions to be drawn from these party resolutions. The main slogans of the new campaign were “for the principled ideological content of” [*za ideinost’*] and “against neglect of the ideological content of” [*protiv bezideinosti*] literature and art.⁴ *Zhdanovshchina* redefined Soviet “patriotism,” stripping away its wartime internationalist dimensions and restoring the isolationist nationalism of the 1930s.

The *zhdanovshchina* campaign was accompanied by institutional measures to strengthen the “ideological front.” In June 1946, Agitprop established a new newspaper, *Culture and Life* (*Kul’tura i Zhizn’*),⁵ and in August a new journal, *Party Life* (*Partiinaiia Zhizn’*), that became the principal oracles for party ideologists. On November 1, 1946, the Academy of Social Sciences was created in Moscow under Agitprop’s control.⁶ The Central Committee also organized a new Higher Party School. These new institutions were intended, in Zhdanov’s words, “to enlarge and improve the staff in the social science disciplines.”⁷

In spring 1947, *zhdanovshchina* was expanded into philosophy. The Central Committee organized several discussions of Georgii Aleksandrov’s textbook *A History of West European Philosophy*. Its author, the head of Agitprop,⁸ was accused of a now-familiar sin: an apolitical, unprincipled, nonideological treatment of Western philosophy.⁹

Clearly, the main goal of the campaign was to reestablish the ideological primacy and authority of the party apparatus that had loosened during the war. Using the growing confrontation with the West as a pretext, ideologists strove to strengthen the party’s role in domestic affairs and to enhance their own standing within the party apparatus.

Numerous scholars have explored the origin and development of *zhdanovshchina*, analyzing its international and domestic causes.¹⁰ Historians have thoroughly examined its consequences for Soviet politics, literature, music, and culture.¹¹ The impact of *zhdanovshchina* on the scientific community, however, has remained largely unexplored. This is understandable, for Soviet science was rarely mentioned in the campaign’s published materials.

Initially, *zhdanovshchina* had little impact on the scientific community. Of course, in accordance with the rules of party “etiquette,” scientific administrators paid lip service to the campaign in their speeches and publications. Viacheslav Volgin, vice-president of the Academy of Sciences, for example, declared at the meeting of its editorial council on September 14, 1946, that “the resolution on the magazines *Zvezda* and *Leningrad* has fundamental significance for science.”¹² The scientific community also held meetings on the party resolutions, adopting various decisions “on the reorganization of scientific work in relation to the Central Committee resolutions on ideological questions.”¹³ Apart from these rhetorical declarations and ritual gatherings, however, the campaign had no noticeable effect on science. During 1946 and

the first half of 1947, the scientific community continued to enjoy the “sweet fruits of victory,” including relative freedom from the ideological control of the party apparatus and continued contacts with their foreign colleagues.

The party archives, however, show that the new ideological campaign greatly affected state science policy and the attitude of state officials toward the scientific community. In summer 1947, *zhdanovshchina* expanded into science. Party ideologists began to reestablish their authority over science policy. Having earlier encouraged Soviet scientists to cultivate international contacts, they now attacked those contacts in order to fuel the isolationist campaign; scientific internationalism was again damned and replaced with a militant Soviet nationalism. This shift in foreign and domestic policy profoundly reshaped the cultural landscape of the Stalinist science system, dramatically changing the system’s language and reinstalling ideologists as authorities over science.

THE KLIUEVA-ROSKIN AFFAIR

In July 1947, the Central Committee clearly signaled that the period of relative scientific autonomy was coming to an end. The signal came in the form of a special instructive letter sent to local party committees on the “affair of professors Kliueva and Roskin,” the so-called KR affair. Although virtually unknown to Soviet and Western historians of science alike, the KR affair constituted a critical turning point in postwar Soviet science.¹⁴ Using Kliueva and Roskin’s alleged “divulgence of a state secret” to the Americans, the party apparatus waged a militant campaign against the “servility and slavishness of Soviet scientists before the West.” The campaign not only resulted in the restoration of barriers between the Soviet and Western scientific communities, but also signified the expansion of the party apparatus’s influence on and control over the scientific community.

A Miracle Cure

The immediate occasion for the Central Committee’s letter was the collaborative work on a cure for cancer by two scientists—Nina Kliueva, a corresponding member of the USSR Academy of Medical Sciences, and her husband, Grigorii Roskin, a professor at Moscow University.

In the 1930s, Roskin had begun experiments studying the effects of the parasitic microorganism that causes Chagas disease (*Trypanosoma cruzi*) on the growth of cells in mice. He found that the parasite destroys the cells into which it intrudes. This fact was used in further experiments conducted in collaboration with Kliueva. They studied the effects of the application of live and dead trypanosomes on cancer tumors in mice. The war interrupted the experiments, and the trypanosome culture used in their research was lost. In 1944,

however, the experiments resumed; the wartime collaboration between the Allies enabled Vasiliï Parin, then deputy head of Narkomzdrav, to arrange for the delivery of fresh trypanosome cultures from Britain.

The continuation of Kliueva and Roskin's experiments was apparently inspired by wartime work on antibiotics in Britain, the United States, and the USSR. In a sense, they were searching for the analog of an antibiotic against cancer. On the basis of their experiments, the Russian team invented a preparation, made from dead microorganisms, to cure malignant tumors. This "Preparation KR," or simply "KR," apparently manifested a specific selectivity for the destruction of tumor cells in mice. Clinical tests on patients with incurable cancer showed that the preparation was harmless for human beings and in several cases caused the dissolution of tumors. Kliueva and Roskin published several articles in medical journals describing their experiments,¹⁵ and information about their work appeared in the Soviet and Western media. In mid-March 1946, Moscow radio released to the Associated Press a story about Kliueva and Roskin's cancer cure. In early April, the *Information Bulletin* issued by the Soviet embassy in the United States published an article on KR research.¹⁶

It was apparently this publicity that led U.S. ambassador Walter B. Smith to visit Kliueva's laboratory, located at the Institute of Epidemiology, Microbiology, and Contagious Diseases. Smith arranged his visit through the vice-president of the Academy of Medical Sciences, Aleksei Abrikosov, and the minister of public health, Georgii Miterev. The ministry even provided Smith with an interpreter. The visit took place on June 20, 1946. A Soviet journalist, Eduard Finn, was also present and described the meeting in a letter to his superiors.¹⁷ According to Finn, Smith invited Kliueva and Roskin to visit the United States in order to acquaint themselves with the cancer research conducted in American institutions. He also indicated a willingness to supply their laboratory with all necessary equipment and chemicals, and asked that American scientists be permitted to visit. Finn noted that Roskin declined Smith's proposals "under a suitable pretext." Finn also remarked that the institute "provides a wretched impression" and concluded: "Informing you about all these [facts], I would like to promote the improvement of conditions for the work on KR."¹⁸ Several days later, Smith approached the ministry with a formal proposal to organize a collaborative Soviet-American project to study KR, offering for the American side to finance the project and provide all necessary equipment and materials.¹⁹ He also managed to arrange for American scientists to visit Kliueva's laboratory in August.²⁰

Smith's interest in KR drew the attention of the highest party and state officials to Kliueva and Roskin's research. In mid-July, Miterev issued a special order of the Ministry of Public Health providing their laboratory with additional equipment and materials. Kliueva and Roskin were urged to present a manuscript on their research "to be published without delay."²¹ Miterev informed Molotov about Smith's proposals and asked for instructions.²²

Information about Smith's visit soon reached the Central Committee. Finn's superiors sent his letter to its Secretariat. At the same time, the Ministry of Foreign Affairs and the secret police (now called the Ministry of State Security, or MGB), which naturally followed every step of the U.S. ambassador, informed the Politburo about Smith's interest.²³ In early August, the Central Committee's department of personnel sent a memorandum concerning Smith's visit to all members of the Politburo. In the opinion of a deputy minister of state security, "Smith's conversation with Kliueva and Roskin was conducted properly."²⁴

Kliueva and Roskin, in turn, petitioned the Central Committee to support their research, invoking the American interest and the alleged priority of Soviet science in the invention of a cancer cure. At the end of September, they sent several reports to the MGB and the Central Committee secretary Andrei Zhdanov urging state officials to provide the conditions necessary for their work. Their appeal proved highly persuasive. On November 19, Zhdanov sent a copy of their letters to three members of the Politburo who were also deputy heads of the USSR Council of Ministers—Lavrentii Beria, Anastas Mikoian, and Nikolai Voznesenskii—together with his own note: "Read this. I consider it necessary to confer on this question."²⁵

The result was a secret resolution of the Council of Ministers in December 1946, "On Measures to Help the Laboratory of Professor Kliueva." Officials in the Ministry of Public Health collaborated with Kliueva and Roskin on a preliminary draft of the resolution. More than thirty pages of the draft listed the equipment, materials, experimental animals, and chemicals they wanted.²⁶ The resolution also ordered that a special laboratory for KR research be built and provided with security.

In early January 1947, the first eighteen copies of Kliueva and Roskin's book, *The Biotherapy of Malignant Tumors*,²⁷ were sent to the highest state officials, including all members of the Politburo (which at that time consisted of Stalin, Molotov, Voroshilov, Zhdanov, Malenkov, Beria, and Voznesenskii).²⁸ The book contained a detailed account of their experimental research and the results of preliminary clinical examinations. It was written in a dry academic style and included numerous graphs, tables, pictures of experimental animals, and microphotographs of healthy and infected tissues before and after treatment. One thousand copies were printed, but those not held by party officials were stored at the publishing house while the officials considered whether the research should be classified as top secret. Meanwhile, the All-Union Oncological Conference held in January praised Kliueva and Roskin's work as "an outstanding achievement of Soviet science." At the beginning of February, the Science Department sent a memorandum to Zhdanov urging the book's immediate distribution: "A [further] delay in distribution could lead to the loss of priority for Soviet science, and the advantages of our country's invention of the preparation could be lost."²⁹

Finally, in mid-February 1947, the book was released. The Orgburo decided on February 18 “1. To permit the Publishing House of the Academy of Medical Sciences to distribute the book. . . . 2. To charge the Administration of Agitation and Propaganda with organizing reviews of the book in the specialized and popular press.”³⁰ The Central Committee also ordered that the size of the edition be increased from one to ten thousand copies. Predictably, the decision was immediately implemented: the book was distributed and the Science Department prepared several complimentary reviews that soon appeared in the press.³¹ During December 1946 and January 1947, both authors enjoyed the praise of their colleagues and the attention of officials in the Ministry of Public Health and the Central Committee.³²

“U.S., Soviet to Share Research in Cancer”

The KR research became an occasion for expanding Soviet-American contacts in medicine. In September 1946, two prominent American physicians visited Kliueva’s laboratory: Stuart Mudd, president of the American-Soviet Medical Society, and Robert Leslie, one of the society’s founders and its business manager. In turn, in autumn 1946 the U.S. surgeon general invited Vasili Parin, who had become the academician-secretary of the newly organized Academy of Medical Sciences, “to make an extensive inspection tour of U.S. hospitals and twelve major cancer research centers.”³³ To present Soviet achievements in the field of cancer research, Parin brought with him the manuscript of Kliueva and Roskin’s book and several samples of the KR preparation. He tried to arrange an English edition of the book and praised KR highly at various meetings with American researchers.³⁴ He proclaimed the need for close cooperation between the USSR and the United States in medical fields, especially cancer research. At the third annual meeting of the American-Soviet Medical Society in New York in December, he stated: “Our medical problems are similar to those you have here. The similarity shows that modern science has an international character and proves the necessity for mutual scientific liaisons between our two countries.”³⁵ KR research aroused an understandable interest among American scientists, and Parin promised to arrange a visit of American cancer specialists to Kliueva and Roskin’s laboratory.³⁶

These promises proved to be a mistake. On January 28, 1947, Zhdanov summoned Kliueva to the Kremlin for interrogation about “the circumstances surrounding the transfer to the United States of the documentation for preparing the anticancer vaccine.”³⁷ He was especially interested in “how it could happen that they [Kliueva and Roskin] were unable to maintain priority in the hands of Soviet scientists and [that] the secret of producing the preparation became known to the Americans.”³⁸ He remarked that “this has been done without governmental permission and has left an unpleasant impression from the standpoint of the interests of both Soviet science and the Soviet state.”³⁹

Zhdanov's "interrogation" of Kliueva was almost certainly a charade. As he knew, Molotov had been privy to the decision to share information on KR research. At the beginning of November 1946, Molotov, who at that time was attending a UN session in New York, sent a cable to the Ministry of Public Health about the possibility of transferring the KR manuscript to American scientists.⁴⁰ The cable was obviously sent at Parin's request. Medical officials, however, could not risk making such a decision by themselves. A deputy minister of public health sent a top secret, coded cable to Stalin—then at his dacha on the Black Sea—asking his permission to present the manuscript to the Americans.⁴¹ Stalin apparently did not receive the cable; it was delayed in the Central Committee Secretariat. It seems likely that, having received no response to his cable, Molotov made the decision himself. He was, after all, the minister of foreign affairs, and international exchanges were his domain. It seems inconceivable that, having requested Molotov's permission, such an experienced official as Parin would act without having received it. A copy of the medical officials' cable to Stalin is located in Zhdanov's personal archives, demonstrating that he was fully aware of Molotov's involvement in the decision to share the KR manuscript. During the interrogation, however, Zhdanov portrayed this decision as an initiative by Kliueva and Parin that contradicted "the state's interests." Zhdanov also questioned Kliueva about the circumstances of Smith's visit to her laboratory, especially about the role of the Ministry of Public Health in this affair.

The charade continued the next day, when Zhdanov called Miterev to the Kremlin and interrogated him about the same matter. He also ordered all participants in the event—Abrikosov, Miterev, Kliueva, Roskin, and even the interpreter for Miterev's conversation with Smith—to present written reports to the Central Committee.⁴² On February 1, Zhdanov sent all the materials to Stalin. During the next few days, Zhdanov and Voroshilov interrogated Parin (who had just returned from the United States) and three deputy heads of the Ministry of Public Health, and sent their written depositions to Stalin. Finally, on February 17, an enlarged meeting of the Politburo, chaired by Stalin, discussed the KR affair. As a result of this meeting, Parin was arrested as an "American spy" and Miterev lost his post in the ministry.

These events raise some puzzling questions. What were the "state interests" to which Zhdanov referred during the interrogations? Why did so seemingly obscure an issue as an exchange of scientific information become a major item on the Politburo's agenda? Without access to the records of Politburo meetings, it is impossible to give a definitive answer. The available materials, however, and particularly the records of the interrogations conducted by Zhdanov, suggest that the party officials wanted to maintain a monopoly over the "miracle cure."

The U.S. atomic monopoly was one of the most pressing issues on the Soviet foreign-policy agenda in the winter of 1946–47, as is evident from Molotov's speech at the UN on October 29, 1946. The Soviet leadership

employed all possible means to break this monopoly, ranging from diplomatic declarations to secret intelligence operations aimed at stealing atomic secrets. It is also relevant that by the mid-1940s cancer had become the top priority in U.S. biomedical research. According to official U.S. reports, cancer was the number one cause of mortality in the population. After the war, the U.S. government and private foundations began to finance extensive research on cancer. Soviet officials were obviously aware of the priority given to cancer research in the United States; in their letters to the Secretariat and the MGB, Kliueva and Roskin repeatedly referred to the importance of cancer research there. The interest in KR research repeatedly expressed by the U.S. ambassador⁴³ and American medical scientists may well have created an impression in the Politburo that the United States considered this research as of the utmost importance.

In his letter describing Smith's visit to Kliueva's laboratory, the journalist Finn had remarked: "If the preparation justifies our hopes, Kliueva and Roskin's invention would undoubtedly be *a kind of biological 'atomic bomb.'* Unfortunately, this is not yet understood by everyone."⁴⁴ Finn's metaphor went right to the point. Soviet leaders might have considered the KR research a possible instrument in the negotiations over the U.S. atomic monopoly. This might explain their discussions about classifying the research, the distribution of Kliueva and Roskin's technical book among members of the Politburo, and Stalin's reported description of it at the Politburo session of February 17: "Invaluable book!"⁴⁵

The Soviet leaders were almost certainly more interested in the international political benefits they might gain from this research than in its alleged scientific or medical value. As Finn's report had suggested, Kliueva and Roskin's invention could undoubtedly be *used* as a kind of biological "atomic bomb" in Soviet foreign affairs. This consideration might explain the arrest of Parin and the firing of Miterev: as the highest medical officials, they had failed to foresee the opportunities provided by the Soviet monopoly over a putative miracle cure for cancer.

Parin's arrest and Miterev's dismissal, however, were only the beginning of a much broader campaign.

The Honor Court

In late March 1947, the Council of Ministers and the Central Committee issued a joint decree on establishing so-called honor courts in ministries and other central agencies (such as the USSR Academy of Sciences).⁴⁶ In tsarist Russia, honor courts had been commonly used to rule on the propriety of personal moral behavior, mostly in the military officer corps. When someone engaged in conduct unbecoming an officer or breaking the moral code of the corps (for example, cheating at cards), an honor court was convened, usually consisting of the commander and a few other suitably upstanding elected

members. The court would conduct an investigation and announce its verdict at a public meeting of the entire corps; those judged guilty were thereby shamed into leaving the unit and sometimes the military. Honor courts were also convened in prerevolutionary Russian universities to deal with cases of plagiarism and the like. They were now resurrected by the Politburo on the occasion of the KR affair, as “a new and effective form of the reeducation [*vospitanie*] of the intelligentsia.”⁴⁷

At first, the main target was the high-level state bureaucracy. The courts aimed “to reeducate [*vospityvat*] workers of state institutions in the spirit of Soviet patriotism and devotion to the Soviet state’s interests.”⁴⁸ Zhdanov wrote in one of his notebooks of his intention: “Establish honor court for ministers and [their] deputies.”⁴⁹ During the interrogations in February, he also paid particular attention to the role of the minister of public health (Miterev), his deputies, and the academician-secretary of the medical academy (Parin) in the whole affair. In another notebook he wrote: “Courts of honor in 8–10 ministries in May. Prepare carefully.”⁵⁰ Clearly, the “honor courts” were intended to define for the high-level state bureaucracy the state’s interests amidst the growing Cold War.

During the spring, however, the target was changed. Sometime in May, Zhdanov wrote: “The minister did not lead them, they led the minister.”⁵¹ The “they” clearly meant Kliueva and Roskin. They were the first to be tried.⁵²

The main accusation against all participants in the KR affair was that they were unpatriotic and servile to the West, a charge that reflected the domestic consequences of growing international tensions.⁵³ In spring 1947, the reeducation of people in “the spirit of Soviet patriotism and devotion to the Soviet state’s interests” became the main direction of Soviet propaganda. In April, Agitprop issued a “Plan of Measures for the Propagation of Soviet Patriotism among the Population.”⁵⁴ A principal goal of the plan was “to eliminate servility to the West.” A broad campaign “against servility to the West” began in the late spring of 1947. The honor courts were to play an important role in the “inculcation of Soviet patriotism.” This perhaps explains why Kliueva and Roskin, not Miterev, were first to be put on the docket.

The main organizer of the honor courts was Zhdanov, whose notebooks from 1947 contain numerous references to the subject.⁵⁵ Moreover, it was Zhdanov himself who “directed” the first trial, that of Kliueva and Roskin. Indeed, he wrote a complete scenario for the forthcoming show. First, he created a series of roles, deciding that the trial should include a Public Prosecutor, a Chair, Court Members, Witnesses, the Accused, and Spectators (a Defense Counsel was not provided). He then selected “actors” to play these roles from among officials of the Ministry of Public Health and the Academy of Medical Sciences.

The March decree of the Central Committee and the Council of Ministers assigned responsibility for the initiation of an honor-court trial to the party committee of the appropriate governmental agency (in the KR case, the Min-

istry of Public Health). The party committee had to appeal to the agency head, who was to decide whether the accusation was well-founded and, if it was, order a trial. In the KR case, Zhdanov himself initiated the process by writing a draft of the party committee's appeal to the minister of public health and sending it to Stalin and other members of the Politburo for approval.⁵⁶ Moreover, he edited drafts of the public prosecutor's speech and of the indictment.⁵⁷ In May, the court held several preliminary hearings without an audience. During these rehearsals, the court questioned the accused and witnesses, and polished the scenario for the public show.

Finally, on June 5–7, in a large Moscow theater, before an audience of more than one thousand spectators carefully selected from the upper bureaucracy, the first public honor-court trial was held. The first day was devoted to the interrogation of the accused, the second to the declarations of court members, witnesses, and spectators, and the third to the public prosecutor's speech. The three-day show concluded with the verdict of a "public reprimand" for Kliueva and Roskin.

Stalin and other Politburo members attentively followed the KR trial. They received daily stenographic reports of the court's sessions and directed the flow of the trial.⁵⁸ For instance, during the rehearsals, Zhdanov, apparently dissatisfied with the attitude of participants toward the trial, contributed his own testimony that Kliueva and Roskin had "deliberately deceived the court."⁵⁹ Such close attention by the country's leaders suggests that this first show trial was intended to establish a model for all subsequent honor courts.

The "Closed Letter"

Surprisingly, the Central Committee did not *publicly* advertise the KR affair during the summer of 1947.⁶⁰ The press kept silent. In the middle of July, however, the Central Committee issued special instructions concerning the affair: a brochure entitled "Closed Letter of the Central Committee of the Communist Party about the Affair of Professors Kliueva and Roskin" was sent to party committees all over the country.⁶¹ The term "closed letter" (*zakrytoe pis'mo*) meant that the brochure was intended for party members only. It was classified as secret, with a warning on the back cover: "This letter must be destroyed within a month from the date of receipt."⁶² Fortunately for historians, one of the 9,600 copies was preserved by the Technical Secretariat of the Central Committee.

The brochure proper contained a three-page closed letter (written by Zhdanov and edited by Stalin) and court materials, including the party committee's appeal to organize the trial, stenographic reports from the first day of the trial, the public prosecutor's speech, and the court verdict.⁶³ The letter established the tone and rhetoric of the whole campaign, whose purpose was clearly defined in the Central Committee instructions: "The most important

task of the Party is the reeducation of the Soviet intelligentsia in a spirit of Soviet patriotism and devotion to the interests of the Soviet state, in a spirit of inculcating strong will and character, in a spirit of counteracting all insidious techniques of foreign intelligence services, and [in a spirit] of readiness to defend the interests and honor of the Soviet state under any circumstances and at any price."⁶⁴ The letter emphasized that "slavishness and servility to the West" was widespread within the Soviet intelligentsia, among scientists in particular.

The letter treated at length the "historical roots of Russian scientists' unpatriotic behavior and servility to Western science," which the authors found (predictably) in the politics of "the dominating classes of tsarist Russia." The letter repeatedly sounded the theme of the "lost" or "stolen" priority of Russian science. It enumerated examples of Russian inventions and discoveries (radio, the light bulb, the laws of the conservation of matter and energy) that had been "misappropriated" by foreigners to benefit Western capitalism.

"A certain retrograde part of the Soviet intelligentsia," the letter noted, preserved servility to Western science and culture as "remnants of the capitalist past," and Anglo-American imperialists, through their intelligence services, were seeking to use these remnants for their benefit. Kliueva and Roskin's "misdemeanor" was "depriving Soviet science of priority in the discovery [of a cancer cure], which caused a considerable loss to the interests of the Soviet Union." The struggle for the priority of Soviet science, then, was cast as part of a broader issue—the self-respect and self-assurance of the Soviet state on the international scene. The declaration of the Soviet delegation at an international conference in Atlantic City in June 1947 about Russian priority in the invention of radio may well have been directly inspired by the KR affair. Real and imagined advances of Russian and Soviet science were now widely used to confirm and justify the USSR's image as a superpower. The international aspect of the affair, however, was subordinate to its domestic goals. As the letter declared: "If we want to be respected, first we have to respect ourselves."⁶⁵

The peculiar form of the first stage of the campaign during summer 1947—the honor-court trial performed before an audience of high-level bureaucrats, the closed letter to party members only, the absence of press publicity—suggests that one of its major goals was to reestablish the authority of party committees within various state institutions and to increase the role of party ideologists and functionaries. As discussed in chapter 4, during the war the authority of professionals in all spheres had risen considerably. Moreover, the war had substantially increased the autonomy of commissariats and other state agencies, including autonomy in international relations. State agencies had established their own foreign departments during the war to deal with various aspects of cooperation with Allied countries. These departments were independent from the Commissariat of Foreign Affairs and had only to "coordinate" (*soglasovyvat'*) their activities with the commissariat. The new campaign clearly was intended to remind the upper administrators of the watchful

eyes of the party and its leading role in all spheres of life. The letter stated that “Party political work in the ministries is weak”⁶⁶ and had to be strengthened. As a result of the KR affair, the foreign departments in the ministries were liquidated, and all state agencies were ordered to conduct their foreign activities exclusively through the Ministry of Foreign Affairs.

The campaign also clearly aimed to strengthen inner-party discipline and hierarchy, which had been loosened by the massive and indiscriminate expansion of party membership during the war. The Central Committee ordered all local committees to organize special closed meetings to discuss the KR affair and to report back to the Central Committee.⁶⁷ Characteristically, the entire campaign was supervised by the Central Committee’s Administration for Control over Party Organs.⁶⁸ As early as July 25, the Moscow City Party Committee reported that it planned “to hold about five hundred meetings, which ninety-eight thousand Communists will attend.”⁶⁹ During August and September of 1947, all party cells throughout the country discussed the closed letter and sent their reports to the superior committees, which in turn reported back to the Central Committee, thus strengthening the “chain of command.”⁷⁰ In early autumn, a party campaign “for Soviet patriotism,” based on the KR affair, went public.

“For Soviet Patriotism”

The campaign “for Soviet patriotism” profoundly affected all aspects of intellectual and cultural life in the country, including science. The KR affair signaled a major shift in state science policy. The concept of two opposing sciences—Western and Soviet—was revived, and that of a “single world science” was once again abandoned. Moreover, the dynamic of the campaign suggests that it was shaped specifically to demolish the very notion of the international character of science.

In 1944, during the heyday of Soviet-Western cooperation, the eminent physicist Petr Kapitsa had sent a long letter to the Central Committee opposing secrecy in scientific research as inappropriate to the international character of science.⁷¹ The work of scientists in various countries was interdependent, he had stated, and scientific progress was possible only if all scientists freely exchanged their ideas and results. In 1944 Kapitsa’s letter was persuasive: the Central Committee agreed to permit publication of the results of several research projects that had previously been considered top secret. By August 1947, however, times had changed. The chief of Agitprop, Georgii Aleksandrov, sent a copy of Kapitsa’s letter to Zhdanov, commenting: “Kapitsa attempts to present a ‘theoretical’ substantiation of the international [*obshchechelovecheskii*], rather than national, character of scientific discoveries. This is, in essence, the same position as that of Kliueva, only expressed in elaborate form.”⁷² During the patriotic campaign, the KR affair was used to destroy the notion of the international character of science, and to reestablish the old image of a distinct and superior Soviet science. During the trial,

Kliueva and Roskin attempted to justify the exchange of information on the KR preparation by appealing to the “humanitarian” and “international” importance of anticancer research. This appeal was immediately rebuffed, and the closed letter specifically emphasized that such justifications “expose the low moral-political level of these persons, . . . a lack of elementary notions of the duty and honor of the Soviet citizen.”⁷³

The patriotic campaign singled out for special attention several Soviet scientists who had not returned to the USSR from foreign visits, notably George Gamow, Vladimir Ipatieff, Aleksandr Chichibabin, and Theodosius Dobzhansky. The official attitude toward such scientists is clear from Zhdanov’s notes: “Ipatieff. Is he deprived of [Soviet] citizenship? We are undermining the roots of patriotism. . . . Ipatieff is a scoundrel, wanted to seduce others. This is a temptation for scientists, if Ipatieff is not stripped [of his citizenship]. Tear off the umbilical cord.”⁷⁴ A special label was put back into circulation: *nevozyrashchentsy*, “those who did not come back.” This term, concocted during the patriotic campaign of the mid-1930s to describe all Russians living in Western countries, was widely used during the new, post-war campaign to discredit not only Russian scientists living abroad, but also Soviets who referred to their work or corresponded with them.⁷⁵

The KR affair was probably one reason for the decree of the USSR Supreme Soviet “On Responsibility for Disclosure of State Secrets” of June 14, 1947. Disclosing information regarded as a state secret was now “punishable by confinement in a reformatory labor camp for a term of from eight to twenty years.”⁷⁶ The Council of Ministers issued a list of what constituted state secrets. Besides various categories of military and economic information, the list included a section on scientific research. According to the instructions, state secrets included “discoveries, inventions, technical improvements, research, and experimental work in all spheres of science, technology and the national economy, until they are finally completed and permission has been obtained for publication.”⁷⁷ Despite the publication just two weeks earlier of the decree “On the Abolition of the Death Penalty,”⁷⁸ the June decree on state secrets raised the specter of another Great Terror.

The patriotic campaign, then, undermined one of the scientific community’s most powerful postwar arguments: that international contacts were necessary to allow Soviet science to “catch up with and overtake” Western science. The KR affair was probably responsible for halting the election of eminent Western scientists to the Academy of Sciences. In mid-June 1947, the Orgburo rejected the academy’s proposal to elect a number of British and American scientists as corresponding and honorary members “because not one of our [Soviet] scientists during recent years has been elected to membership in any American or British scientific institutions equal to our Academy.”⁷⁹ Instead, the Orgburo proposed that the academy elect scientists from such “friendly” countries as Bulgaria, Poland, and Romania.⁸⁰

About a month later, the Orgburo adopted—and the Politburo approved—a decision to close several academic journals, such as the *Journal of Physics*,

that had been previously published in foreign languages: “The Central Committee considers that the publication of Soviet scientific journals in foreign languages injures the interests of the Soviet state [and] provides foreign intelligence services with the results of Soviet scientific achievements. The Academy of Sciences’ publication of scientific journals in foreign languages, at a time when no other country publishes a journal in Russian, injures the Soviet Union’s self-respect and does not correspond to the task of scientists’ reeducation in the spirit of Soviet patriotism.”⁸¹ Immediately after this decision, on July 14, the Academy of Sciences issued a special instruction, “On Principles of Scientific Publications.” In accordance with this edict, all scientific journals of the academy ceased translating their abstracts and tables of contents into English and other Western languages. Needless to say, the column “On the Pages of Foreign Scientific Periodicals” vanished from the academy’s official journal. In September, Aleksandrov reported to the Secretariat that Agitprop “had instructed the editorial boards of medical and technical journals to stop publishing résumés and tables of contents in foreign languages.”⁸²

Within three months of its inception, then, the patriotic campaign had radically curtailed the international activities of the Soviet scientific community. Projects to organize an international publishing house and an international scientific journal were abandoned. Soviet scientists were required to resign from all foreign scientific societies. Foreign visits were cut back. The Central Committee issued special instructions for every delegation of Soviet scientists that was going abroad. These instructions prescribed in detail what the members of a delegation could and could not do, say, and vote for at international meetings.⁸³ In one of Zhdanov’s notebooks from 1947, I found an interesting suggestion: “The secretaries of commissions that are going abroad must be security officers [*chekisty*].”⁸⁴ This suggestion may well have been implemented. For example, the Soviet delegation to the Seventeenth International Physiological Congress in Oxford, appointed by the Orgburo in July 1947, included eight eminent Soviet scientists (among them Leon Orbeli, Ivan Razenkov, Aleksandr Palladin, and Ivan Beritashvili) and a ninth member—the secretary of the delegation, a certain G. Verkhogliadov.⁸⁵ I have been unable to find any reference to this name in the Soviet physiological literature. He was probably a “scientific secretary” from the MGB.

The patriotic campaign based on the KR affair, then, signaled a major change in the interrelations between the scientific community and the party apparatus. Of all groups within the Soviet Union, scientists had the most extensive relations with their foreign colleagues—so, as the confrontation between East and West grew, they became an obvious target (see table 5–1). The country’s leaders clearly concocted the affair to serve their own political and ideological agendas: to reestablish the authority of party ideologists in domestic affairs and to improve their positions on the international scene. Initially conceived as a way of controlling high-level state and party bureaucrats, the KR affair was transformed into a major party campaign that profoundly affected the Soviet scientific community. The country’s leaders used the inter-

national acclaim of KR research as a pretext to implement the isolationist policy of the coming Cold War. As a result of the affair, the Soviet scientific community was indeed, to paraphrase Molotov's statement, "put in a box and kept under lock and key." The new barriers that isolated the Soviet scientific community from its Western counterpart would soon harden into the Iron Curtain.

Aside from its international consequences, the patriotic campaign had serious domestic effects. Various interest groups and individuals within the scientific community immediately employed its "patriotic" rhetoric to achieve their own goals. Some scientists used such rhetoric to benefit the community itself. The party cell of the Academy of Sciences Institute of Physiology adopted a resolution that is particularly illuminating in this respect.⁸⁶ The resolution began with lengthy references to "patriotic spirit," "the need to raise vigilance," and so forth, but proceeded to suggest: "1. Increasing the size of the *Physiological Journal*; 2. hastening the publication of the institute's scientific works and monographs; 3. publishing candidate and doctoral dissertations defended in the institute; 4. organizing bibliographical abstracts of medico-biological literature."⁸⁷ Clearly, participants in the meeting were attempting to use the campaign to serve the agenda of science, in this case invoking the slogan "priority of Soviet science" to improve the system of publication of scientific works.

Many other Soviet scientists, however, employed the patriotic campaign to achieve quite different objectives. The KR affair revived public performances as part of the repertoire of the scientific community. Although at first this "publicity" had been limited to party members, a few months later it enveloped the entire community. The patriotic campaign brought back the stormy atmosphere of the 1930s, and public discussions of the "unpatriotic" behavior of certain scientists became an effective instrument not only to demonstrate "devotion and obedience" to a party line, but also to seek benefits and advantages in ongoing institutional and careerist struggles. Various groups, competing for the favor of the party-state agencies that supervised science policy, immediately began using patriotic rhetoric to discredit their competitors and improve their own position in the eyes of the bureaucracy. In physics and biology, chemistry and psychology, as in almost all other disciplines, competing groups began to appeal to state agencies on the basis of their own "priority" and "patriotism," and by attacking their opponents for "slavishness and servility to the West" and other "unpatriotic" sins.⁸⁸ They did not, however, always achieve their goals.

THE ZHEBRAK AFFAIR

Lysenko immediately employed the patriotic campaign to launch a counterattack against genetics and geneticists. With the shift of Soviet foreign policy from collaboration to confrontation with its wartime Allies, the elaborate Anglo-American links that had served Soviet geneticists so well from 1945

TABLE 5-1

Parallel Chronologies of Events on Domestic, Scientific, and International Fronts from June 1946 to July 1947

	<i>Domestic Front</i>	<i>Scientific Front</i>	<i>International Front</i>
1946			
June	28—Agitprop establishes newspaper <i>Culture and Life</i> .	20—U.S. ambassador Walter B. Smith visits Kliueva's laboratory.	15—Meeting of ministers of foreign affairs of Allied countries begins in Paris.
July		Ministry of Public Health issues order on KR research.	12—Meeting of ministers of foreign affairs of Allied countries in Paris ends.
August	2—Central Committee establishes Higher Party School in Moscow. 14—Central Committee issues resolution "On the Magazines <i>Zvezda</i> and <i>Leningrad</i> ." 20—Central Committee establishes journal <i>Party Life</i> . 26—Central Committee issues resolution "On the Repertory of Theaters and on Measures for Its Improvement."	Central Committee personnel department sends all Politburo members a memorandum concerning Smith's visit.	
September	4—Central Committee issues resolution "On the Film <i>Bol'shaia Zhizn'</i> ."	Kliueva and Roskin send petitions to MGB and Zhdanov. Mudd and Leslie visit Kliueva's Laboratory.	
October	5—Central Committee issues resolution "On the Work of the United State Publishing House [OGIZ] of the RSFSR."	18—Parin arrives in the USA for inspection tour of cancer-research centers. 29—Molotov delivers speech on international control over atomic energy at the UN General Assembly, underlining the international character of science.	
November	1—Agitprop creates Academy of Social Sciences in Moscow.	Molotov sends cable to Ministry of Public Health concerning KR manuscript. 19—Zhdanov sends copy of KR letters to Beria, Mikoian, and Voznesenskii.	4—Meeting of ministers of foreign affairs of Allied countries begins in New York.
December		Council of Ministers issues secret resolution "On Measures to Help the Laboratory of Professor Kliueva."	12—Meeting of ministers of foreign affairs of Allied countries in New York ends.

1947			
January		28—Zhdanov summons Kliueva to the Kremlin for interrogation.	
		29—Zhdanov summons Miterev to the Kremlin for interrogation.	
February		1—Zhdanov sends all KR materials to Stalin.	
		3—Zhdanov and Voroshilov interrogate Parin and three deputy heads of Ministry of Public Health.	
		17—Enlarged meeting of Politburo, chaired by Stalin, discusses KR affair.	
		18—Orgburo decides to release KR book.	
March			10—Meeting of ministers of foreign affairs of Allied countries begins in Moscow.
			12—Truman Doctrine is announced.
	28—Council of Ministers and Central Committee issue joint decree on establishing “honor courts.”		
April	15—Agitprop issues “Plan of Measures for the Propagation of Soviet Patriotism among the Population.”		24—Meeting of ministers of foreign affairs of Allied countries in Moscow ends.
May			Communists are expelled from coalition governments in France and Italy.
June		5–7—First public “honor court” trial, of Kliueva and Roskin, is held.	5—Marshall Plan is announced.
	14—USSR Supreme Soviet issues decree “On Responsibility for Disclosure of State Secrets.”		
	16–25—Discussion of Aleksandrov’s book <i>A History of West European Philosophy</i> .		27—Meeting of ministers of foreign affairs of the USSR, Britain, and France on the Marshall Plan begins in Paris.
July		14—Academy of Sciences issues a special instruction “On Principles of Scientific Publications.”	2—Meeting of ministers of foreign affairs of the USSR, Britain, and France in Paris ends.
	16—Central Committee sends “closed letter” on KR affair to party committees throughout the country.		

through early 1947, suddenly became a dangerous liability. In early autumn 1947, Lysenkoists began a noisy campaign against the “unpatriotic behavior” of Soviet geneticists, particularly Zhebrak and Dubinin.

Lysenkoists had attempted to use Western anti-Lysenkoist propaganda as a tool against genetics long before the patriotic campaign gained momentum. As mentioned in chapter 4, in August 1946 the VASKhNIL party committee sent a large collection of various Western publications about Soviet genetics (translated into Russian) to the Central Committee.⁸⁹ Then, however, the party committee’s appeal had not been granted; on the contrary, geneticists successfully used Western publications to persuade party officials to support the development of genetics. A year later, Lysenkoists chose another tactic, one very similar to what they used in the 1930s: they began a fierce campaign in the press against the “antipatriotism” of geneticists.

In late August 1947, the Central Committee’s Secretariat appointed Mark Mitin as the scientific editor of the newspaper *Literary Gazette*.⁹⁰ A few days later, the newspaper published an article entitled “To the Public Court.”⁹¹ The article called for several scientists to be put before a “public court” for their alleged “antipatriotism.” Zhebrak was one of the main targets of the article. This was no accident: at that time, Zhebrak was probably the most influential figure in the genetics community. In May 1947, he had been appointed president of the Belorussian Academy of Sciences, where he immediately organized a new genetics laboratory. At the same time, he preserved his position as head of the genetics department in the Timiriachev Agricultural Academy.⁹² He maintained good connections with the Central Committee’s Science Department and was among the most active and entrepreneurial geneticists in the immediate postwar period.

A few days later, on September 2, a similar article directed personally against Zhebrak and Dubinin was published in *Pravda* by Ivan Laptev, the editor of *Pravda*’s agricultural column.⁹³ Entitled “Unpatriotic Acts under the Banner of ‘Scientific Criticism’,” the article accused the geneticists of “servility to the West” and neglect of “native scientists.” The main “unpatriotic act” attributed to Zhebrak and Dubinin was the publication of their papers on Soviet genetics in *Science*.⁹⁴ The author stated: “Together with the most reactionary foreign scientists, he [Zhebrak] humiliates and defames our progressive Soviet biological science and its eminent modern representative, academician T. Lysenko. . . . He has deliberately omitted to mention such leaders of science as Timiriachev, Michurin, and Vil’iams, whose work is the basis of the modern Soviet investigations in this field.”⁹⁵ Laptev addressed the same accusations to Dubinin, and concluded: “A certain retrograde part of our Soviet intelligentsia still carries a slavish servility to bourgeois science, which is profoundly alien to Soviet patriotism. . . . To the court of public opinion with those who . . . defame our progressive Soviet science by their unpatriotic acts.”⁹⁶ The next day, Laptev’s article was reprinted in the main agricultural newspaper, *Socialist Agriculture*.

The *Pravda* article greatly disturbed geneticists. Archival documents bear witness that they responded immediately by sending numerous letters to the Central Committee defending Zhebrak and Dubinin from Lysenkoist accusations. Both defendants also wrote letters to the Central Committee.⁹⁷ All the correspondents clearly understood the article as an attempt to use the patriotic campaign to discredit geneticists and improve Lysenko's position. They noted that Laptev's accusations were based on a paper that Zhebrak had published two years before, but that Laptev had not criticized him then. As one of the correspondents observed: "They [Lysenkoists] realized that by accusing Zhebrak they could benefit from the Kliueva affair."⁹⁸ All of the letters criticized Lysenko and his backers for their demagogic attack on Zhebrak and requested that they be "called to order."

These letters, however, proved ineffective. The mincing machine of the ideological campaign was in high gear, and it was impossible to stop it. Both defendants' superiors were eager to "fulfill the party order." They badly needed to demonstrate that their work "accorded with the party line." Laptev's article provided them with much-needed victims—Zhebrak and Dubinin. The administrators and party committees of the institutes in which they worked immediately organized special meetings "to discuss the article of the party central newspaper, *Pravda*."

The party cell of the Timiriazev Academy held a special meeting on September 22 and decided that Zhebrak should be judged by an honor court. This decision was approved one week later by a special meeting of the Scientific Council of the academy. The Ministry of Higher Education, which supervised the academy, was also eager to win points from the campaign. On October 4, the minister, Sergei Kaftanov, informed the Central Committee that the academy's party committee had proposed sending Zhebrak before the ministry's honor court. On October 10, the ministry's party cell issued a formal accusatory letter. Three days later, the court started preliminary hearings. Four days after that, the Central Committee of the Belorussian Communist Party dismissed Zhebrak from the presidency of the Belorussian Academy of Sciences.

Zhebrak tried to find a way to defend himself. He wrote numerous letters to party officials, including Zhdanov (on September 5), Molotov (on October 20), and Voroshilov (on October 24), asking them to stop the campaign. In all these letters, he noted that just a few months before, when he had been appointed president of the Belorussian academy, the party apparatus had reviewed his publication in *Science* and "nobody at that time had noticed the negative aspects of my article."⁹⁹ He stated that the campaign against him was inspired by Lysenko and Prezent: "That unusual and rude form of press declaration, without any preliminary discussions in the Party or Soviet apparatus, forced me to think that this is crude political blackmail organized by my theoretical opponents from Lysenko's group, who are using a suitable international situation."¹⁰⁰ Zhebrak also tried to defend genetics as a field. He urged officials "to prevent the devastation of genetics."¹⁰¹ He succeeded in the latter

task, but was unable to stop the campaign against himself. On November 21–22, the ministry's honor court held open sittings that called for a "public reprimand" for Zhebrak.

Despite the fact that his removal from the Belorussian Academy presidency was approved by the Central Committee,¹⁰² Zhebrak was able to keep his genetics department in the Timiriazev Academy. In late November, he sent a repentant letter to the Central Committee's secretary, Aleksei Kuznetsov,¹⁰³ admitting "mistakes" and asking the Central Committee "to give [him] an opportunity to continue scientific work."¹⁰⁴ In response, Zhebrak was called to the Kremlin "for a conversation." The Central Committee then instructed Kaftanov to preserve the genetics department in the Timiriazev Academy and to permit Zhebrak to head it.

Furthermore, the Central Committee rejected the minister's proposal to publicize the "Zhebrak affair." Kaftanov had prepared a ministry pamphlet that mimicked the Central Committee's closed letter on the KR affair. The brochure included all the materials of Zhebrak's trial: the letter of the party committee and its appeal to organize the trial, stenographic records from the court sittings, the public prosecutor's speech, and the verdict. Kaftanov wanted to send this brochure to all educational institutions in the country, but the Central Committee found this proposal "inexpedient."¹⁰⁵

Dubinin's superiors in the Academy of Sciences were also eager to score a few points from the patriotic campaign. Their desire to display devotion to the party line was skillfully nurtured by Lysenkoists. On September 25, the party cell of Lysenko's Institute of Genetics held a special closed meeting, which criticized Dubinin for "antipatriotism" and demanded that the party committee of the Academy of Sciences bring him before the academy's honor court.¹⁰⁶

The academician-secretary of the academy, Nikolai Bruevich, requested that the director of the Institute of Cytology, Histology, and Embryology, in which Dubinin's laboratory was located, appoint a special commission "to examine the accusations against Dubinin in *Pravda's* article."¹⁰⁷ This commission concluded that Dubinin's article in *Science* had actually been written at the request of the Antifascist Committee of Soviet Scientists and had, therefore, resulted from a party order. A closed meeting of the institute's party cell on October 22 discussed the commission's findings, verified that Dubinin's article had had "a positive effect in the West," and rejected the proposal to put the scientist before an honor court.¹⁰⁸

Ten days later, however, a meeting of the party members of the Academy of Sciences Biology Division again demanded that Dubinin be tried.¹⁰⁹ The academy's top officials blocked this demand; the academician-secretary of the division, Leon Orbeli, declared that "there are no sufficient reasons to put Dubinin before the court," and the academy president, Sergei Vavilov, supported this opinion.¹¹⁰ Nevertheless, Dubinin's fate was put to the Central Committee. Bruevich informed Kuznetsov about the opinions of Vavilov and Orbeli and asked for instructions.¹¹¹ Kuznetsov requested that the Central

Committee's science and personnel departments consider the issue. On December 17, the heads of these departments replied in a memorandum. They agreed with Vavilov's opinion that "a second honor court [based] on the same matter could hardly give any positive results. The biological scientists who work in genetics could understand it as a campaign against researchers who disagree with the theoretical views of academician T. Lysenko."¹¹² Kuznetsov also agreed with these reasons, and the "Dubinin affair" never materialized.

Try as he might, then, Lysenko did not succeed in using the patriotic campaign to discredit genetics. A common assumption by many students of the Lysenko controversy, then, is mistaken: the publication of Laptev's article did not indicate an unfavorable attitude of the highest party officials toward genetics. On the contrary, it was these party officials who prevented the personal attacks against Zhebrak and Dubinin from expanding into a broad campaign against genetics as a discipline.

The patriotic campaign did, however, have one very important consequence. During the campaign, the party apparatus clearly exercised its growing influence over the scientific community. Although party officials still largely followed the advice of high-ranking academicians like Vavilov and Orbeli, the apparatus's role once again became crucial in decision making on scientific questions. Moreover, Lysenkoists once again created, as they had in the 1930s, an atmosphere of suspicion around genetics in the public press. Although the Central Committee halted the antigeneics campaign, the press ignored numerous requests by geneticists to publish Zhebrak's, Dubinin's, or anybody else's refutations of Lysenkoist accusations. Moreover, during the second half of 1947, Lysenkoists employed the press to widen their attack and strengthen their public positions.

"FOR SOVIET CREATIVE DARWINISM"

Along with the campaign against the "unpatriotic behavior" of Soviet geneticists, the Lysenkoists launched an assault "against the Malthusian errors" of Soviet evolutionists. When the evolutionary synthesis of the 1940s established genetics as a key discipline in evolutionary studies, Soviet geneticists, as we have seen, immediately employed this development to undermine Lysenko's hold on Darwinism as a cultural resource. With geneticists claiming Darwinism for themselves, Lysenkoists combined their personal attacks with new claims about their own priority in evolutionary theory. On the one hand, the new struggle over Darwinism was intended to confirm Lysenkoist control of this cultural resource and to prevent any changes in its content that might favor genetics. On the other hand, it was a clear invitation for party ideologists to resume their role of referee in discussions of scientific issues.

On October 18, 1947, *Literary Gazette* published an interview with Lysenko entitled "Why Does Bourgeois Science Rise against the Works of Soviet Scientists?" Here Lysenko broadened his attack on genetics by invoking

the question of Darwinism. The interview concerned the concept of the “struggle for existence” in Darwin’s theory and its interpretation by Western and Soviet evolutionists. Lysenko declared that the concept of a struggle for existence was a “Malthusian error” in Darwin’s theory: “Intraspecific competition never occurs in nature,” he declared, “and it is pointless to concoct it in science.” He referred to his own study of the so-called cluster sowing of plants as proof that only interspecific competition occurs in nature. He added: “Intraspecific competition is also recognized by certain of our biologists. . . . I regard this as a bourgeois remnant.”¹¹³

The cliché “bourgeois remnant” had been coined in the closed letter to explain the “servility to the West” among Soviet scientists; Lysenko deliberately adopted the lexicon invented during the patriotic campaign in his portrayal of the “errors” of Soviet evolutionists. He clearly intended to put his scientific discussion of Darwinism into the framework of the ongoing ideological campaign.

Lysenko’s interview evoked a fierce reaction from Soviet biologists. On November 4, the scientific council of the biology faculty of Moscow University convened a special, enlarged meeting to discuss the interview. More than a hundred biologists participated. The council adopted a resolution, signed by twenty-four of its members, and sent it for publication to *Literary Gazette*. The editorial board, however, did not publish the resolution immediately. A week later, the Lysenkoists continued their attack. The November 12 issue of *Socialist Agriculture* carried an article entitled “A Defense of Malthusianism under the Banner of Darwinism.”¹¹⁴ Two days later, the scientific council sent a copy of its resolution to the Central Committee secretary Mikhail Suslov,¹¹⁵ urging publication of the resolution in the press.¹¹⁶ Apparently on Suslov’s instructions, *Literary Gazette* published it two weeks later, but not as a resolution of the council. The editorial board entitled it “Our Objections to Academician T. Lysenko” and published it as an article signed by only four of the council members—Ivan Shmal’gauzen (chairman of the department of Darwinism), Aleksandr Formozov (chairman of ecology), Dmitrii Sabinin (chairman of plant physiology), and Sergei Iudintsev (dean of the biology faculty).

The same issue also carried a large article signed by five militant Lysenkoists—Artavazd Avakian, Donat Dolgushin, Neo Belen’kii, Ivan Glushchenko, and Fedor Dvoriankin. Entitled “For Creative Darwinism, against Malthusianism,” it was prefaced by an editorial, apparently written by Mitin, declaring that “*Literary Gazette* . . . attaches great importance to this discussion, and the editorial board will judge the results.”¹¹⁷ Two weeks later, the newspaper published three more articles on the same subject. One was written by Boris Zavadvskii and entitled “Under the Banner of ‘Novelty’ [*novatorstvo*].” Two others were written by Lysenko’s allies, Vsevolod Stoletov and Nikolai Turbin: “For Science Connected to Life” and “My Opinion on the Theoretical Views of Academician T. Lysenko.”¹¹⁸

Lysenko, I think, deliberately chose the “struggle for existence” to claim his priority in evolutionary theory. As Daniel P. Todes has clearly demonstrated, the “Malthusian errors” in this concept were much criticized by scientists and political commentators in tsarist Russia.¹¹⁹ By reviving this discourse, Lysenko was able to use the authority of “prominent native scientists” in his own attack upon his opponents.

Both Lysenkoists and biologists criticized Malthusianism, but the core and rhetorical framing of their arguments differed. Lysenko repeated earlier arguments that the claim of intraspecific competition in nature constituted a manifestation of Malthusianism. He insisted that a “struggle for existence” among individuals of the same species simply does not exist in nature, and that to claim it does was to defend Malthusianism. Lysenko’s opponents argued that intraspecific competition was a scientific fact proved by numerous investigations. Malthusianism, they argued, was the transference of this biological phenomenon (struggle for existence among individuals of the same species in nature) into interpretations of social processes. Soviet biologists, they claimed, had always emphatically rejected such Malthusianism.

Even the titles of published articles reveal the different rhetorical frameworks used by Lysenkoists and their opponents. Both, of course, followed standard Soviet rhetorical etiquette, including the newly fashionable patriotic lingo. The geneticists even argued that Lysenko’s views contradicted those of Michurin, whom they claimed for their own. But again, as they had in 1939, they emphasized the scientific deficiencies of Lysenko’s views, supporting their objections mainly with experimental data—including Lysenko’s own published materials. By contrast, as they had in 1939, Lysenkoists emphasized the practical, ideological, and political dimensions of the dispute and largely left the science out. Lysenkoists repeatedly accused their opponents of Malthusianism, and made good use of Marxist critiques of Malthus to discredit the views of biologists.

Attacking genetics by invoking issues of Darwinism was also a clear invitation for party ideologists to interfere in the dispute. As a part of official state ideology, Darwinism was the domain of party philosophers and ideologists. The editorial board of *Literary Gazette* obviously backed Lysenko: it published twice as many articles supporting him as opposing him. Judging from his editorial, Mitin was eager to play the role of judge in the dispute, seeing this as an opportunity to improve his position in the ideological establishment.

Biologists, however, had learned their lessons from the 1939 discussion. Attempting to transfer the controversy from the press to the scientific community, they organized a discussion of the “struggle for existence” in the Academy of Sciences. They apparently managed to convince the Central Committee of the necessity of conducting the argument within the academic community, with scientists as referees. On December 11, the bureau of the Biology Division held a closed meeting to deal with the problem. The composition of the meeting was deliberately constructed to benefit the biologists.

Orbeli, the academician-secretary of the division, presided. Appearing for the Lysenkoists were Lysenko himself and Avakian. Representing the opposition were eminent academicians: Shmal'gauzen (director of the Institute of Evolutionary Morphology), Vladimir Sukachev (member of the Biology Division's bureau and director of the Institute of Forestry), Pavel Baranov (vice-director of the Institute of Botany), Evgenii Pavlovskii (director of the Institute of Zoology), and a number of Moscow University professors. Two philosophers specializing in philosophical problems of biology were also invited to participate.¹²⁰ Mitin was present, but did not deliver a report.

The results of the bureau's discussion were issued as a resolution, confirming the existence of intraspecific struggle in nature and calling for further investigations into its various forms. The bureau also denounced Lysenkoist accusations of Malthusianism. The Academy of Sciences sent a thirteen-page report on the discussion to the Central Committee, carefully edited (probably by Orbeli and Sukachev) to omit personal and political remarks and to present the discussion as a purely scientific dispute.¹²¹ Scientific arguments against Lysenko's denial of the struggle for existence occupied a large part of the report. The original plan to publish materials from the discussion in academic periodicals was not implemented; only the resolution was published in the academy's bulletin.¹²²

Despite their setback in the Academy of Sciences, Lysenkoists continued their attacks in the press. In late December 1947, *Literary Gazette* published a special column entitled "What the Readers Say," compiled from readers' letters to Lysenko. The same issue also carried Mitin's article "For the Flourishing of Soviet Agrobiological Science." Apparently responding to the discussion at the Academy of Sciences, Mitin declared: "When academician Lysenko and his followers raise the question of the necessity of struggling against any manifestations of Malthusianism in biology, and also against the indisputable existence of Malthusianism in Darwin's theory, they are right and should be supported by the Soviet public."¹²³ On January 9, 1948, another Lysenkoist, Iosif Khalifman, published an article in *Socialist Agriculture* entitled "Bourgeois Ideology in Biological Science." The article repeated accusations of Malthusianism against biologists in general and Shmal'gauzen in particular.

Shmal'gauzen wrote several letters to the Central Committee urging it to stop the press campaign. In a letter to Zhdanov, he noted that the discussion in the press "has acquired an absolutely inadmissible character, for it aims not to discuss the subject, but to discredit the professors of Moscow University in the eyes of the public." It was necessary, Shmal'gauzen insisted, "to continue or widen scientific creative discussions among specialists in the field."¹²⁴ He also informed the Central Committee that such a discussion would be held at a conference organized by the biology faculty of Moscow University.

At this conference, held February 3–8, 1948, about forty biologists presented papers demonstrating the existence of intraspecific competition in nature. Neither Lysenko nor his disciples participated. Biologists tried to publi-

cize the meeting: a long review of the conference with a short résumé of all the reports was published almost immediately in a journal of the Academy of Sciences.¹²⁵ The Central Committee, however, did not allow biologists access to the public press.¹²⁶ Several prominent academicians, including Shmal'gauzen and Sukachev, requested permission to publish articles in the central newspapers.¹²⁷ Shmal'gauzen sent the Central Committee a long article entitled "Intraspecific Competition Is the Basis of the Only Materialistic Theory of Evolution, the Theory of Darwin," requesting that it be published in *Culture and Life*. Party officials, however, decided that this was "inexpedient."¹²⁸

In early February, Shmal'gauzen was called to the Kremlin by Iurii Zhdanov, the newly appointed head of the Science Department and son of the Central Committee secretary Andrei Zhdanov.¹²⁹ The two had a lengthy meeting. We do not know the content of their conversation, but one result was that all materials on the discussion of the struggle for existence were "archived" (in Zhdanov's phrase).¹³⁰ In party bureaucratic lingo, to "archive" papers on a subject usually meant consider the subject in question closed.

An editorial published in the Academy of Sciences bulletin in March 1948 seemed to confirm that the discussion was over. Aside from the usual rhetoric, the editorial noted: "An ultimate resolution of a concrete question can be expected *only* on the basis of research and *only* in accordance with collecting new facts, which enable [us] to draw well-grounded conclusions at every stage of the development of science."¹³¹ The editorial also quoted from the Biology Division's resolution (published in the same issue), confirming that "intraspecific struggle among organisms, which is understood in a wide Darwinian sense, indeed occurs in nature." The editorial emphasized that the resolution "warns scientists against hasty conclusions that contradict a large number of facts collected by science."¹³²

Iurii Zhdanov got the last word. On April 10, in the Moscow Polytechnic Museum, he delivered a long lecture, "On Issues of Modern Darwinism," before a special meeting of high-ranking party propagandists. He openly supported Shmal'gauzen's views on intraspecific competition. Moreover, he bitterly criticized Lysenko's views both on the struggle for existence and on genetics. Preparing the lecture, the younger Zhdanov used recent publications of Soviet biologists, as well as Hudson and Richens's book on Soviet genetics. A complete Russian translation of the book can be found in an archival file entitled "Appendixes to Iu. Zhdanov's lecture."¹³³ Zhdanov's intervention into discussions over Darwinism and genetics signified that the geneticists had found a powerful patron in the Central Committee apparatus, one who openly supported their struggle against Lysenko.

Thus, Lysenko's campaign proved abortive. The new ideological atmosphere created as a result of the KR affair had given Lysenko a chance to reverse the dynamics of his struggle with geneticists. He had skillfully employed the patriotic campaign to launch a counterattack on the genetics spokesmen Zhebrak and Dubinin, which had developed into a public

discussion over Darwinism in which party ideologists and philosophers were invited to intervene. But Lysenko had succeeded neither in expanding his personal attack against “unpatriotic” geneticists into a broad antigeneitics campaign nor in establishing his dominance over Darwinism. The administrative leadership of the scientific community had successfully countered his attack by transferring the discussion from the public to the academic arena. And Lysenko’s claim to authority over Darwinism was rebuffed by no less a figure than the head of the Central Committee’s Science Department.

Yet Lysenko’s offensive may have gained him something that proved critical—time. His noisy press campaigns may well have played a role in delaying the elections to VASKhNIL that would have deprived him of his stronghold. As was discussed in chapter 4, on July 22, 1947, the Council of Ministers issued a resolution establishing thirty-nine vacancies for full members and sixty for corresponding members of VASKhNIL.¹³⁴ The elections were scheduled for October. At the beginning of October, however, the Ministry of Agriculture asked for permission to delay them until November, and the Orgburo agreed.¹³⁵ On October 7, the Council of Ministers issued another resolution ordering elections in November.¹³⁶ The official newspaper of the Ministry of Agriculture, *Socialist Agriculture*, publicized the council’s resolution and began to publish lists of candidates.¹³⁷ The elections, however, were delayed again.

At the beginning of November, the Orgburo created a new commission headed by the newly appointed chief of Agitprop, Dmitrii Shepilov,¹³⁸ “to examine questions regarding the forthcoming elections in VASKhNIL.”¹³⁹ Shepilov several times convened meetings of all interested parties in an effort to speed up the elections. Only on December 11, however, did the Ministry of Agriculture issue the order “On the Membership of the [Ministry’s] Expert Commission and Regulations for the Elections of Full and Corresponding Members of VASKhNIL.” This directive required the expert commission to complete the selection of candidates for VASKhNIL membership by December 17, and to organize the elections at a special session of the academy on December 20–25.¹⁴⁰ Once again, however, the order was not fulfilled. Lysenko did everything possible to avoid the election of “inappropriate” candidates.

On December 24, Shepilov’s commission sent a long memorandum to Andrei Zhdanov and Kuznetsov regarding the elections. The memorandum detailed the disagreements between Lysenko and the rest of the commission. Knowing that inclusion on the party list of nominees was tantamount to election, Lysenko insisted that a number of his faithful allies be included. His opponents fiercely opposed the nomination of Lysenko’s supporters for VASKhNIL membership. As was noted in the memorandum: “In the course of the commission’s work, many of its members, full members of the academy, made serious objections against a number of candidates who represented the Michurinist trend in science and shared academician Lysenko’s views.”¹⁴¹

Shepilov's commission excluded a number of the most odious figures from the list of nominees. In particular, Isaak Present, Lysenko's most active ideologist, was omitted.

In early January 1948, the commission sent a report and a "final" list of nominees to the Central Committee secretary Suslov. Shepilov proposed that elections be held on February 10.¹⁴² Lysenko, however, was not about to capitulate. Once more he had issued his "dissenting opinion" about the commission's proposals. Naturally, the "dissenting opinion" was attached to the commission's report.¹⁴³ Lysenko once more repeated his favorite thesis about two directions in Soviet agricultural science. He argued that if elections were held according to the commission's recommendations, the situation in agriculture would not change: "Representatives of the advanced trend in science who develop, in close relation to practice, the scientific ideas of Michurin and Vil'iams are and will be in a minority. In this case, the academy will not produce the great practical benefits that our agricultural science could and should have already provided."¹⁴⁴ This dissenting opinion, together with the ongoing campaign over Darwinism, may have caused the next delay. The question of the VASKhNIL elections again vanished from the Central Committee's agenda.

In early May 1948, however, there were clear signs that the geneticists were about to overthrow Lysenko's dominance. The Science Department issued a draft of the Central Committee's resolution "On the Elections in VASKhNIL." The draft instructed the minister of agriculture, Ivan Benediktov, "to follow the list of nominees [prepared by Shepilov's commission] and to hold the elections on May 25."¹⁴⁵ This decision by the Science Department, as well as the lecture on Darwinism delivered at roughly the same time by Iurii Zhdanov, clearly signified that Lysenko had no support in the party agencies in charge of science.

. . . .

The KR affair and the changing dynamics of the struggle between geneticists and Lysenkoists exemplify the influence of the growing Cold War upon the interaction between scientists and the party-state. After World War II, scientific development acquired unprecedented strategic and symbolic significance. As before the war and even more so after it, the control apparatus employed science to pursue its changing objectives on the domestic and particularly on the international scene; the scientific community, for its part, used current party policies to pursue its own agendas. The Cold War, however, undermined the unifying base of the antifascist language spawned by World War II—a language that allowed the different interests of the two symbionts to combine easily. With the onset of the Cold War, the control apparatus changed the language, and the scientific community was forced to learn this new language of "patriotism."

Furthermore, the fragmentation of both the control apparatus and the scientific community into various, often conflicting factions, each with its particular goals and means, created a complex pattern of interaction between them. For instance, the policies conducted by Zhdanov and Molotov were clearly in conflict in late 1946. Molotov, as the minister of foreign affairs who had been deeply involved in constructing the Great Alliance and its child, the United Nations, continued the policy of international cooperation, while the chief ideologist Zhdanov fueled the policy of international confrontation as a means to strengthen his own position and that of his ideological department within the party hierarchy. Each figure employed science to pursue his own agenda, trapping scientists between their conflicting policies (see table 5–1).

After the war, the institutional merging of the control apparatus and the scientific community in academy presidiums and party-state agencies enabled prominent scientists to establish close ties with the highest party-state bureaucrats and to actively influence their decisions and resolutions on science policy. These science spokesmen belonged largely to the older generation that had graduated and entered the scientific scene before the Stalinist science system took shape in the 1930s. World War II brought them to key positions in the Stalinist system. Furthermore, they were able to exert a profound influence on the Central Committee Science Department, staffed for the first time by officials with a scientific, not party, educational background. Using the “internationalist patriotism” of the Great Patriotic War, the community’s leadership actively propagated the model of science as an international enterprise independent in its cognitive development and institutional structure from party demands and requirements.

The developing Cold War dramatically changed the political and cultural conditions in Soviet science. It enabled party ideologists to play upon the international contacts of Soviet scientists to fuel isolationist and nationalist policies. This once again isolated Soviet scientists from their Western colleagues and proved disastrous for certain individual scientists. Nevertheless, the community’s leadership, empowered by the new structure of the science system, was largely able to sustain its *de facto* control over other aspects of scientific activity—personnel, institutional structures, and research directions. With the outbreak of the patriotic campaign, scientists adapted to the new linguistic milieu, incorporating the new party pronouncements into their rhetoric and employing them in the continued pursuit of their own ends.

As both the KR affair and the subsequent campaign against “unpatriotic” geneticists suggest, these “ideological” considerations still did not outweigh the party apparatus’s concern with scientific development: all four targets of severe public denunciations—Kliueva, Roskin, Zhebrak, and Dubinin—were allowed to continue their research. Nor did such considerations undermine the authority of the community’s spokesmen in the party-state agencies. Lysenko’s attempt to stage a militant public discussion on Darwinism failed largely because his opponents in the academic establishment managed to con-

vince the apparatus that this discussion concerned scientific, not public, issues and so should be conducted by specialists within academic institutions.

Despite the dramatic change in the general ideological atmosphere and corresponding changes in the language of the system, the merging of the institutions and individuals of the control apparatus and the scientific community proved crucial in shaping concrete policies and local institutional conflicts. In the wake of the patriotic campaign, Lysenko was able to discredit several of his most influential opponents, but he proved unable to discredit genetics or deprive its spokesmen of important institutional and cultural resources. The scope of geneticists' victories was similarly limited. In the first postwar years, they gained ground rapidly and successfully neutralized Lysenko's counterattacks, but they remained unable to remove him from his high position within the scientific and bureaucratic hierarchy. He therefore, retained key resources—most importantly, his access to the highest party agencies.

The patriotic campaign did, however, once again enable party functionaries and philosophers to intervene in scientific discussions and to highlight the political and "ideological" significance of scientific research, which had been forgotten during the war. It revived public denunciations and recantations as part of the cultural repertoire of the scientific community. The campaign of 1947 demonstrated that, despite its enhanced authority, the scientific community remained, by the rules of the Stalinist science system, a hostage of the changing priorities of the Politburo and Stalin personally. The rapid escalation of the Cold War in the spring and summer of 1948 radically changed these priorities, and reshaped once again the interactions between the control apparatus and the scientific community.

The Fateful Year: 1948

The Central Committee can have its own position on scientific questions.

—Joseph Stalin, June 10, 1948

IN THE HISTORY of Soviet science, the year 1948 is commonly associated with Lysenko's infamous triumph at the August VASKhNIL meeting and the "death" of Soviet genetics, secured by Stalin's long-suspected—and recently proved—personal intervention in the struggle. No other single event has so colored our view of the final years of Stalin's reign, or of the character of Soviet science as a whole. Understandably, then, historians have paid much more attention to it than to any other subject in the history of Russian science. Lysenko's victory at the VASKhNIL session has long been portrayed as a result of exclusively domestic dynamics and analyzed within the limited framework of the development of Soviet genetics (or, more rarely, Soviet biology as a whole). Curiously, it has been seen as the inevitable overreaching of Stalinist totalitarianism into the content of the science of genetics, and much effort has been expended in analyzing why genetics was so dramatically singled out. Yet, despite much excellent historical work on the subject, little attention has been paid to why these events took place at precisely the time they did, and in the form they did. I believe the answer is clear.

The dramatic reversal of the struggle between geneticists and Lysenkoists in August 1948 can only be understood as part of a much larger story: the Stalinist science system under the conditions created by the Cold War. The year 1948—especially late July of that year—was the crescendo of the Cold War. It marked the final division of postwar Europe into U.S. and Soviet spheres of influence and the establishment of the two opposing camps of East and West.

Although the Cold War, as we have seen, had been gradually emerging over the previous months, it erupted most dramatically precisely during June, July, and August of 1948. The chain of escalating events began with the coup of February 20–25, 1948, that created a pro-Soviet Communist regime in Czechoslovakia. This triggered a culmination of the most pressing issue of European politics—the problem of Germany. As a response to the events in Czechoslovakia, the ministers of France, Britain, Belgium, the Netherlands, Luxembourg, and the United States gathered in London in March; by May, they had adopted a plan to create an independent German state on the territories occupied by the Western allies. On June 20, a new currency, the deutsche mark, was introduced in the Western zone. On June 24, the Soviet Union

imposed a blockade of Berlin. On July 1, the Western powers organized an airlift of supplies to the Western zone of Berlin, which continued for almost a year, until the division of Germany into two independent states and the special status of West Berlin were legalized by both opposing camps.¹ The independent position in European politics of the Yugoslavian leader, Josip Broz Tito, resulted in the formal excommunication of the Yugoslav Communist Party from the Cominform at its second meeting on June 19–23. In late July, the Fifth Congress of Yugoslav Communists announced its break with the Soviet camp. Also in July, the Communists were expelled from the coalition government in Finland. By the end of July, then, Europe was divided, and two superpowers were balancing on the edge of open military conflict. The events of 1948 that so profoundly shaped the structure and politics of the world inevitably also had a major impact on the Stalinist science system.

In my view, by far the most important factor in Stalin's decision to intervene on Lysenko's behalf in July 1948 was the escalating Cold War. Stalin used the competition between geneticists and Lysenkoists as a convenient pretext to announce a new party line in domestic and foreign policy: the final establishment of two opposing camps, Soviet and Western. His actions deliberately transformed a local institutional conflict between two groups within the Soviet scientific community into a broad propaganda campaign that spread not only over all Soviet scientific institutions, but all over the world. As had been the case with the KR affair, this intervention had international and domestic objectives. It was intended to advance the image of the USSR as the only force for world progress, and to reassert the ultimate authority of the party agencies over Soviet science, expanding this authority into the cognitive content of science itself.

LYSENKO AND STALIN

Stalin's exclamation "Bravo, Comrade Lysenko, bravo!" uttered on February 15, 1935, at a meeting of agricultural workers, is the first recorded sign of his attitude toward Lysenko.² Very little is known about the personal relations between the two during the 1930s and early 1940s.³ No doubt Lysenko's promotion to the VASKhNIL presidency in 1938 would have been impossible without Stalin's personal approval—this post was in the Politburo's *nomenklatura*. His nomination as deputy head of the USSR Supreme Soviet also would have required Stalin's personal approval. From the mid-1930s, Stalin apparently considered Lysenko the main authority in agricultural science. Lysenko twice received the Stalin Prize for his work in agriculture—in 1941 and 1943—and Stalin must have approved this as well.

A bit more is known about the personal contacts between Stalin and Lysenko after the war. Their first personal exchange was apparently brought about by an agricultural crisis. In summer 1946, the USSR suffered its worst

drought in fifty years, and the annual yield of wheat dropped to half that of 1940. Famine threatened. On New Year's eve of 1946, Stalin summoned Lysenko to the Kremlin. The subject of their conversation was so-called branching wheat—a variety of wheat that produces numerous spikes and a much larger number of seeds per plant than any other variety. Unfortunately, the total yield of branching wheat is significantly less than that of regular wheat, because the quantity of plants per acre is much less than that of other varieties. Stalin may have thought that the massive planting of branching wheat would help to overcome the current agricultural crisis. As a result of the meeting, Lysenko received two hundred kilograms of seeds to study.⁴

During 1947–48, Lysenko regularly informed Stalin about his work on branching wheat.⁵ In describing this episode, Valerii Soyfer has asserted that Lysenko deliberately deceived Stalin.⁶ Archival documents, however, show that Lysenko honestly reported the failures of his experiments, although he kept promising better results: “This year's experience has reinforced our conviction that branching wheat can give a significantly higher yield [than usual varieties]. We must only figure out how to get it; we will strive to achieve this next year.”⁷ Stalin obviously believed in Lysenko's ability to solve this problem, for the work was continued and expanded. Stalin's interest gave Lysenko the opportunity for direct correspondence with the country's leader, circumventing the usual bureaucratic hierarchy. This fact gave him considerable clout within the agricultural bureaucracy: he repeatedly reminded the minister of agriculture, Ivan Benediktov, that Stalin had personally assigned him to work on branching wheat.⁸ It was almost certainly Lysenko's wheat work that explains his successful resistance to the attempts to speed up elections in VASKhNIL. The bureaucrats scheduling the elections obviously had to take into account Lysenko's personal ties to the ultimate resource of the Stalinist science system—Stalin himself.⁹

Lysenko used his personal contact as an opportunity to inform Stalin about his views on genetics and Darwinism and to complain about the “harm” caused by Mendelism-Morganism. For example, in his report to Stalin of October 27, 1947, he included a five-page account of the controversy between Michurinists and Mendelists.¹⁰ He wrote:

The genuine science of living nature, creative Darwinism, the Michurinist doctrine, is built only in our country, in the Soviet Union. Although this science, because of its youth, is weak, this science is true in its basis. This science is a child of the socialist kolkhoz state. As a result, in its theoretical depth and practical activity, this science is so strong in comparison to bourgeois pseudoscience that metaphysicists, Mendelist-Morganists, both here and abroad, can do nothing but slander it, in order to hamper the development of this good, effective doctrine.¹¹

Claiming that Mendelism-Morganism was hindering the development of Soviet agriculture and his own work, Lysenko urged Stalin to intervene. Stalin, however, kept silent.

Stalin's attitude toward the struggle between Lysenkoists and geneticists changed sometime after May 1948, when he moved from being a spectator to an active participant. Historians differ regarding the reasons for this change.

Some early accounts of the Lysenko controversy held that Stalin had always supported Lysenko because Lysenko's doctrine was Marxist.¹² Other observers have assumed that Stalin supported Lysenko because his doctrine resembled Stalin's personal views on heredity and evolution.¹³ These "internalist" versions, however, do not consider one of the most important components of Stalin's shift—namely, the timing. If these assumptions are correct, Stalin should have intervened in the struggle before the summer of 1948. As we have seen, during 1945–47 Lysenkoists sent numerous petitions to the Central Committee and to Stalin personally, urging the party apparatus to abandon genetics—but without result.

Another version of the events, developed mainly by kremlinologists, asserts that Stalin's intervention was connected with the factional struggle between two of Stalin's potential heirs—Andrei Zhdanov and Georgii Malenkov—for the leading position in the Central Committee hierarchy.¹⁴ This version gives a more plausible account of the timing: Stalin's intervention into the controversy coincides exactly with Zhdanov's fall from power and Malenkov's rise early in the summer of 1948. On July 15, Stalin signed the Council of Ministers' resolution "On VASKhNIL," which gave Lysenkoists absolute dominance in the academy. The very same day, Malenkov's fiefdom, the Agriculture Department, was restored to the Central Committee,¹⁵ and Zhdanov's Agitprop was reorganized and its role in the Central Committee's apparatus considerably diminished.¹⁶ Two days later, on July 17, Malenkov replaced Zhdanov as head of the Orgburo.¹⁷

Some historians have speculated that Malenkov used Zhdanov's hostility to Lysenko to discredit his competitor in Stalin's eyes. It would be equally logical, however, to suppose that it was Lysenko who used the struggle between Malenkov and Zhdanov to achieve his own ends. As a high-ranking bureaucrat himself, Lysenko was obviously aware of the factional struggle in the Central Committee. He may well have cultivated Malenkov and sought to strengthen Malenkov's hand in order to discredit his most dangerous opponent in the Central Committee, Iurii Zhdanov. Malenkov, in turn, may have supported Lysenko's struggle against the younger Zhdanov in order to acquire additional evidence of his father's mismanagement of domestic affairs. In any case, the existence of a power struggle between Malenkov and Zhdanov does not explain why Stalin intervened on Lysenko's behalf at precisely this time.

Materials from the party archive provide us with a more or less complete timetable of the events between April and August 1948 (see table 6–1).¹⁸ From these materials, it appears that Stalin's intervention was triggered by Iurii Zhdanov's lecture "On Issues of Modern Darwinism," delivered on April 10, 1948, at the Moscow Polytechnic Museum before a gathering of party

TABLE 6-1

Parallel Chronologies of the Cold War and the Lysenko Affair

1948	<i>Cold War</i>	<i>Lysenko Affair</i>
February	4—USSR and Romania sign treaty on “friendship, collaboration, and mutual aid.” 18—USSR and Hungary sign treaty on “friendship, collaboration, and mutual aid.” 20–25—Communists effect coup in Czechoslovakia.	1–2?—Iurii Zhdanov, newly appointed head of Science Department, summons Shmal’gauzen to the Kremlin. 3–8—Moscow University holds conference on Darwinism.
March	6—Ministers of six Western countries (Belgium, Britain, France, Luxembourg, the Netherlands, and the USA) meet in London and announce plan to create independent German state on territories occupied by the Western allies. 17—Britain, Belgium, France, Luxembourg, and the Netherlands form Western Union at meeting in Brussels. 18—USSR and Bulgaria sign treaty on “friendship, collaboration, and mutual aid.”	
April		10—Iurii Zhdanov delivers lecture “On Issues of Modern Darwinism.” 17—Lysenko sends letters to Stalin, Malenkov, and A. Zhdanov with his notes on Iurii Zhdanov’s lecture and his objections to accusations raised in the lecture.
May	4—U.S. ambassador Walter B. Smith meets USSR minister of foreign affairs, Molotov, on Czechoslovakian events, Western Union, and Soviet-American relations. 9—Molotov announces Soviet reply to Smith’s declaration on Czechoslovakian events, Western Union, and Soviet-American relations.	1–5?—Malenkov’s apparatus (secretariat) demands that Iurii Zhdanov present text of his lecture. 11— <i>Culture and Life</i> publishes information about special meeting on agricultural education and economics convened by Science Department. Lysenko sends letter to minister of agriculture, Benediktov, with a request to resign from VASKhNIL presidency. 31—Lysenko sends Malenkov fifty pages of excerpts from Iurii Zhdanov’s lecture together with his own comments.
June	1—London meeting of ministers of six Western countries announces concrete program and timetable for establishment of independent German state in Western zone. 19–23—Second meeting of Cominform convenes in Bucharest. 20—Deutsche mark is introduced in Western zone.	[10]—At Politburo meeting Stalin raises question of Lysenko-Zhdanov controversy. 11?—A. Zhdanov assigns Shepilov and Mitin to start preparing Central Committee’s resolution “On the Michurinist Trend in Soviet Biological Science.”

- June 23–24—Ministers of foreign affairs of the USSR, Bulgaria, Czechoslovakia, Hungary, Poland, Romania, and Yugoslavia meet in Warsaw on Berlin crisis.
- 24—Soviet Union imposes blockade of Berlin.
- 29—Excommunication of Yugoslavian Communist Party from Cominform is announced in press.
- July 1—Western powers organize airlift of supplies to Western zone of Berlin.
- 5—Cominform’s Secretariat meets in Moscow.
- 14—Soviet government publishes reply to governments of Britain, France, and the U.S.A. on Berlin blockade.
- 21–26—5th Congress of Yugoslavian Communists announces its break with Soviet camp.
- 26—Military administration of Western zone meets with local German authorities on constitution of an independent German state.
- 27–30?—Communists are expelled from coalition government in Finland.
- August 2—Stalin meets with ambassadors of Britain, France, and the USA on Berlin crisis.
- 7—Shepilov and Mitin send preliminary text of the resolution to A. Zhdanov.
- 10—A. Zhdanov sends a draft of the resolution to all members of the Politburo, including Stalin.
- 12—Lysenko sends Malenkov a list of thirty-three “leading representatives of the Michurinist trend in agrobiological science” for appointment to VASKhNIL membership.
- 15—Stalin signs Council of Ministers’ resolution “On VASKhNIL,” appointing thirty-five new academicians. Central Committee restores its Agriculture Department and reorganizes Agitprop. Iurii Zhdanov writes “repentant” letter to Stalin.
- 17—Malenkov replaces A. Zhdanov as head of Orgburo.
- 23—Lysenko sends Stalin preliminary text of his report for forthcoming meeting of VASKhNIL.
- 28—*Pravda* announces appointment of new academicians to VASKhNIL and informs readers that the academy will hold a meeting in July.
- 30—Lysenko sends two copies of a final version of the report to Malenkov.
- 31—VASKhNIL meeting begins. Lysenko delivers presidential address, “On the Situation in Biological Science.”
- 4—*Pravda* begins publishing Lysenko’s address. Zavodovskii announces that Science Department did not participate in organizing the meeting.
- 6—Stalin and Malenkov meet with Lysenko.
- 7—*Pravda* publishes Iurii Zhdanov’s letter to Stalin. VASKhNIL meeting ends with Lysenko’s announcement that his report has been approved by Central Committee.
- 11—Orgburo discusses “publishing the materials of the VASKhNIL meeting.”
- 12—*Pravda* publishes editorial “Higher the Banner of Advanced Michurinist Biology.”
- 19—*Pravda* announces appearance of brochure “On the Situation in Biological Science” with Lysenko’s speeches at the VASKhNIL meeting.
- 27—*Pravda* publishes editorial “For the Flourishing of Our Advanced Science.”
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propagandists.¹⁹ The lecture supported Lysenko's opponents, asserted the existence of intraspecific competition in organic nature, and lambasted Lysenko's so-called creative Darwinism. The chief of Agitprop, Dmitrii Shepilov, and a secretary of the Central Committee, Mikhail Suslov, had officially sanctioned the lecture.²⁰ The main herald of party ideologists, *Culture and Life*, had published an announcement about it.²¹ Clearly, Zhdanov's lecture was a very serious threat to Lysenko: delivered to the faithful by the head of the Central Committee's Science Department, it signified the party apparatus's decision to support genetics and geneticists.

Lysenko did not attend Zhdanov's lecture. He did, however, overhear it through the public-address system while sitting in the office of his close ally, Mark Mitin, located in the same building. In this situation, Lysenko used his last available means of defense. A week after the lecture, on April 17, he sent a long letter, addressed to both Stalin and Andrei Zhdanov, with his objections to the younger Zhdanov's accusations.²² He attached to the letter four pages of notes he had taken on the lecture. Moreover, on the same day he sent a copy of the letter to Malenkov, providing the latter with "compromising" materials against the younger Zhdanov. I was unable to find either Stalin's or Zhdanov's response to Lysenko's letter. I did, however, find some materials indicating that he received a response from Malenkov.

By the end of April, Lysenko was assured of Malenkov's support. We know this from archival documents concerning an attempt by the Ministry of Agriculture to introduce the tetraploid variety of a rubber-bearing plant, *kok-sagyz*, invented by the well-known cytogeneticist Mikhail Navashin. Lysenko used every means to stop what he termed this "genetic monster" from being introduced into production.²³ By contrast, Iurii Zhdanov was an active promoter of this achievement of genetics, and in February 1948 he sent a long memorandum on the issue to Stalin, directly accusing Lysenko of "sabotage."²⁴ During the spring, the Council of Ministers prepared a resolution to introduce the variety into Soviet agriculture. At the end of April, Malenkov sent a draft of the resolution to Lysenko for consideration. The latter quickly responded: "In this project, Mendelist-Morganists have literally thrown aside all restraints—they propose that the Government do nothing less than legitimate Mendelism-Morganism in our country."²⁵ This case may also tie the younger Zhdanov to the struggle and may have been used by Malenkov to expose Andrei Zhdanov's hostility to Lysenko.

In his reminiscences, Iurii Zhdanov recalls that Malenkov's staff ordered him to send them the text of his lecture at the beginning of May.²⁶ A deputy minister of agriculture, Pavel Lobanov, then forwarded a copy of this text to Lysenko. Nevertheless, during April and early May, Lysenko received no clear sign of interest in his developing struggle with Iurii Zhdanov from either the elder Zhdanov or Stalin. Adding to Lysenko's worries was the resolution "On the Elections in VASKhNIL," prepared in the Central Committee by Iurii Zhdanov's Science Department at the beginning of May.²⁷ The draft instructed the minister of agriculture, Benediktov, to hold the elections on May

25 and to adopt the list of nominees prepared by Shepilov's commission. If this decision had been fulfilled, Lysenko would have lost control of the agricultural academy.

On May 11, Lysenko responded to this threat with a clever gambit. He wrote a letter to Benediktov, complaining about the younger Zhdanov's accusations and formally requesting permission to resign from the VASKhNIL presidency.²⁸ This was a very crafty move. As he knew perfectly well, the minister could neither accept nor reject his resignation: the post of VASKhNIL president was in the *nomenklatura* of the Politburo. By offering to resign, he was forcing Benediktov to send his letter both to Malenkov, who supervised agriculture in the Council of Ministers, and to the Politburo. Lysenko was clearly doing everything possible to attract the attention of Malenkov and Stalin to his clash with the younger Zhdanov. On May 31, Lysenko sent Malenkov fifty pages of excerpts from Zhdanov's lecture, together with his own comments. The package was marked "To G. Malenkov. Personal."²⁹

Eventually, then—probably in late May or early June—the text of Zhdanov's lecture reached Stalin's desk. We do not know exactly how it got there. Malenkov might have passed on the text his staff had demanded from Zhdanov in early May, or the materials Lysenko had sent him; or Lysenko's offer of resignation may have prompted Stalin to demand a copy. In any event, Stalin apparently read it carefully. I found in the party archive a complete text of the lecture with numerous remarks in the margins.³⁰ The essence and style of these remarks strongly suggest that they were Stalin's: "Ha-ha-ha," "Nonsense," "Get out!" and similar comments mark numerous pages of the text.³¹ The first page of the typescript bears the inscription "Sent to Malenkov," which indicates that it was probably Malenkov who provided Stalin with the text.

What was it in Zhdanov's report that persuaded Stalin to take Lysenko's side? Stalin's notations demonstrate his sympathy with Lamarckist views on heredity and evolution. Some of these views were long-standing: he first mentioned evolutionary problems in a 1906 pamphlet written in Georgian and entitled "Anarchism or Socialism?" In 1946 it was republished in Russian in the first volume of Stalin's *Collected Works*.³² In this paper, Stalin discussed the contradictions between quantitative and qualitative changes and between evolution and revolution, citing the views of Cuvier, Lamarck, and Darwin on organic evolution as examples.

I found in the party archive another proof of Stalin's early sympathy with the Lamarckist concept of evolution. In 1930, during the infamous campaign against "mechanists and menshevizing idealists," Stalin visited the party cell of the Institute of Red Professors in Philosophy and Natural Sciences. The goal of this visit was to direct "the struggle on the philosophical front." Among other questions discussed at the meeting, one of the participants asked Stalin: "What are our theoretical tasks in the field of natural sciences?" Stalin answered: "I am not a specialist in natural sciences. I did, however, many times read Lamarck and Weismann when I was young. I was captivated by neo-Lamarckism. Weismann contains a lot of mysticism."³³ One of the partic-

ipants at that meeting was Mark Mitin, who wrote the stenographic report of Stalin's speech preserved in the party archive.

The republication of Stalin's early paper in 1946 made his views on evolutionary questions known to the public. So his attitude toward "neo-Lamarckism" was no secret to Iurii Zhdanov, who, naturally, referred to Stalin's paper in his lecture.³⁴ Criticizing the Lamarckist concept of evolution, Zhdanov mentioned a "progressive side of neo-Lamarckism," namely, "the possibility of the reconstruction [*peredelki*] of the heredity of animals and plants under the influence of the external environment."³⁵ He stated: "We Communists are by nature more sympathetic to a doctrine that establishes the possibility of the reconstruction [*peredelka*], rebuilding [*perestroika*] of the organic world, without waiting for sudden, incomprehensible, accidental changes of some mysterious hereditary plasma. It is this aspect in the neo-Lamarckist doctrine that was emphasized and valued by Comrade Stalin in 'Anarchism or Socialism?'"³⁶ Stalin boldly underlined in pencil the words "It is this aspect" and commented in the margin: "Not only 'this aspect,' mister."³⁷ What Zhdanov failed to mention in his lecture, apparently, was Stalin's general sympathy with neo-Lamarckism. Clearly, Stalin's personal views on heredity and evolution may have played a certain role in his decision to support Lysenko.

Stalin's marginalia on Zhdanov's lecture, however, include another notation that suggests a more decisive reason for his intervention. In the introduction to his lecture, Zhdanov had declared: "I express here not the official, but only my own personal point of view."³⁸ Stalin underlined these words and wrote in the margin: "Aha!" (Vot kak!) Stalin's comment suggests that he considered it inappropriate for the head of the Central Committee's Science Department to address party functionaries on his *personal* views on such an ideologically important question as Darwinism. Besides, as we have seen, Zhdanov's personal views were contrary to Stalin's.³⁹ This may have moved Stalin to express an *official* point of view on the subject.

A decision to issue a resolution of the Central Committee, "On the Michurinist Trend in Soviet Biology,"⁴⁰ was adopted at a meeting of the Politburo that was reportedly held on June 10. In his recollections, Iurii Zhdanov described this meeting: "Stalin suddenly stood up and said: 'Here one comrade has delivered a lecture against Lysenko. He has left no stone unturned. The Central Committee cannot agree with this position. This is a mistaken declaration. . . .' I tried to explain my position and said that I had presented only my personal point of view, not the position of the Central Committee. He answered: '*The Central Committee can have its own position on scientific questions.*'"⁴¹ Uttered by Stalin, this answer might easily be interpreted as "The Central Committee *must* have its own position on scientific questions." Zhdanov's "repentant" letter to Stalin (written a month later, on July 15) seems to confirm this assumption. Zhdanov wrote: "I had obviously underestimated my new position as a worker in the Central Committee's apparatus, underestimated my own

responsibility; [I] had not thought that my lecture would be considered the *Central Committee's official point of view*.”⁴² The forthcoming resolution was intended to present the “Central Committee’s official point of view.”

Stalin assigned both Andrei Zhdanov and Malenkov to draft the resolution. Zhdanov’s notebook contains a list probably written during the same meeting of the Politburo and reflecting Stalin’s speech on the subject:

Take one of the Marxists in biology and make a report.

Short resolution from the Central Committee.

If it had been possible to work with Lysenko.

Article to “Pravda.” Something popular.

[Zhdanov’s] Report is wrong. Two trends—first based on mysticism—myst[ical], on mystery. Another—materialistic.

Zhdanov has been mistaken.

Everywhere biology in Shmal’gauzen’s spirit is taught.

Theory [is] bourg[eois], but experience.⁴³

These abrupt notes indicate both Stalin’s attitude toward the controversy (“Zhdanov has been mistaken”) and the nature of the Central Committee’s plans (“Take one of the Marxists in biology and make a report” and “short resolution”). Significantly, in portraying genetics Stalin used the same word, “mysticism,” that he had used in 1930 about Weismann.

Sometime in late June, Andrei Zhdanov assigned Shepilov and Mitin to draft the Central Committee resolution. This assignment showed clearly that party functionaries were now in charge of science policy.⁴⁴ On July 7, they sent a preliminary text entitled “On the Michurinist Trend in Soviet Biological Science” to Zhdanov, who edited it. In the course of this work, a “short resolution” was transformed into a twenty-two-page treatise entitled “On the Situation in Soviet Biological Science.”

The first nine pages were devoted to criticism of Mendelism-Morganism and its adherents in the USSR. The next nine pages glorified the achievements of Michurinist biology and Lysenko’s “school.” The final pages concerned “conclusions” and “the tasks of Soviet biologists,” dwelling on a critique of the younger Zhdanov’s lecture as “contradicting the position of the Central Committee of the Communist Party.”⁴⁵ The Central Committee’s position was clearly articulated in the following tasks assigned to Soviet biologists:

- a) to encourage and develop the Michurinist trend . . .
- b) to condemn and discard the Mendelist-Morganist trend . . .
- c) to reorganize correspondingly the work of research institutes, publishing houses, journals, [and] departments in higher educational institutions, [and] to revise the programs and textbooks on biology, genetics and breeding in order *to make the Michurinist trend completely dominant in Soviet biological science*.⁴⁶

On July 10, the draft of the resolution was sent to all members of the Politburo, including Stalin, who also edited it.

Two days later, on July 12, Lysenko sent Malenkov a list of thirty-three “leading representatives of the Michurinist trend in agrobiological science.” He explained in an attached letter that “the list has been compiled in a hurry. There are many more persons who could be included in the list.”⁴⁷ On July 15, Stalin signed a decree of the Council of Ministers that appointed thirty-five new academicians to VASKhNIL membership. Eleven persons from Lysenko’s list became academicians, including his chief ideologist, Isaak Present. The rest represented such important agricultural subjects as agricultural economics, farm mechanization, and chemistry.

The resolution of the Central Committee “On the Situation in Soviet Biological Science,” however, was not published or publicized. Apparently, sometime between July 10 and July 20, the Politburo decided not to issue it.⁴⁸ Instead, it was decided to hold a meeting of VASKhNIL with a “report of one of the Marxist biologists,” Lysenko, on the same subject—“On the Situation in Soviet Biological Science.”

On July 23, Lysenko sent Stalin a preliminary draft of his report to the forthcoming meeting.⁴⁹ Stalin attentively read the text, edited it, and sent it back with numerous corrections and suggestions.⁵⁰ On July 28, *Pravda* announced the appointment of the new academicians to VASKhNIL and informed readers that the academy would hold a meeting in July. On July 30, Lysenko sent two copies of the final version of his report to Malenkov. The only correction made this time was that the word “Soviet” was dropped from the title, which thus became “On the Situation in Biological Science.” The next day, July 31, the meeting began.

Why wasn’t the resolution of the Central Committee “On the Situation in Soviet Biological Science” published? After Lysenko had obtained Stalin’s complete support in June 1948, the August VASKhNIL meeting would seem to have been unnecessary. Historians have assumed that the major goal of the campaign that followed was a denunciation and banishment of formal genetics. If that had been the wish of the party apparatus, however, it had a more efficient way to abolish genetics: a simple resolution of the Central Committee (like the infamous 1936 resolution “On Pedological Perversions in the System of Narkomproses”) would have more than sufficed to secure Lysenko’s triumph over his competitors. The dispute between geneticists and Lysenkoists could have been resolved simply by publishing the drafted resolution of the Central Committee. The resolution, however, was not issued. Moreover, the fact of the Central Committee’s involvement (not to mention Stalin’s) in the preparation of the meeting was concealed—the party leadership decided to act behind the scenes.

The particular form of the Michurinist campaign suggests that the party agencies had a broader agenda than just the denunciation of genetics: they wished to completely reshape the system of relationships between the scientific community and the party. This, perhaps, was why the leadership decided

to employ the proven device of a “public discussion” as a way to announce the new party line and to revive the polarization of the scientific community into two camps: “us” and “them.”

TEN WORDS THAT SHOOK THE WORLD

The VASKhNIL meeting took place in the main auditorium of the Ministry of Agriculture from July 31 to August 7. It was staged in accordance with the rules of a “public discussion.” On the first day, Lysenko delivered the principal address, “On the Situation in Biological Science.” The next day was Sunday, and participants went on an excursion to Lysenko’s model farm in the Lenin Hills near Moscow. The next five days were devoted to discussion of Lysenko’s address. On the last day, Lysenko presented his concluding remarks, and the meeting adopted a resolution and a “letter to Comrade Stalin.”

The meeting’s scenario was obviously prepared in advance and carefully directed, possibly by Stalin himself. Not only had Stalin personally edited the text of Lysenko’s addresses; he met with Lysenko at least once while the meeting was in progress.⁵¹ Lysenko, in turn, had read and approved several of the reports to be delivered at the meeting by his allies.⁵²

The participants—some seven hundred in all—were also carefully chosen. Present were not only researchers and practitioners of Michurinist biology, but also philosophers and high-ranking members of the agricultural bureaucracy. Pavel Lobanov, deputy minister of agriculture and a newly appointed academician of VASKhNIL, presided. Numerous party officials attended, including Shepilov, the chief of Agitprop.⁵³ Only a few of Lysenko’s opponents were invited to contribute: Ivan Shmal’gauzen, Anton Zhebrak, Boris Zavadovskii, Il’ia Poliakov, Sos Alikhanian, and Petr Zhukovskii. One uninvited geneticist, Iosif Rapoport, also managed to slip into the auditorium.⁵⁴

The order of speeches was carefully prearranged: Lysenko’s opponents were not allowed to speak during the first half of the meeting. Fifty-six speakers delivered reports, forty-eight of whom supported Lysenko. At the evening session on August 2, Rapoport managed to break in and fiercely proclaim his objections to the Lysenkoists. This, of course, did not change the general flow of the meeting.

Lysenko’s presidential address set the tone. The titles of the sections of his address reveal its general contours:

1. Biology. The basis of agronomy
2. The history of biology: a history of ideological battle
3. Two worlds—two ideologies in biology
4. The scholasticism of Mendelism-Morganism
5. The idea of unknowability in the teaching of “hereditary substance”

6. The sterility of Morganism-Mendelism
7. Michurin's teaching, the foundation of scientific biology
8. Young Soviet biologists should study Michurin's teaching
9. For a creative scientific biology⁵⁵

Lysenko repeated his earlier "scientific" objections against formal genetics. He denied Mendel's laws and the role of genes and chromosomes in heredity, and claimed that acquired characteristics become inheritable. As at previous public discussions, however, his critique focused largely on three main assertions: the "sterility and fruitlessness" of genetics and its alienation from the needs of the people and of socialist construction; the "reactionary" character of genetics and its relationship to fascism and racism; and the "idealist" character of genetics and its incompatibility with Marxism-Leninism. Michurinist biology was portrayed as the exact opposite: practical, progressive, and materialist. Subsequent speakers developed and illustrated one or another statement from Lysenko's address. They glorified the achievements of Michurinist biology and severely criticized Mendelism-Morganism. Lysenko's opponents, in turn, tried to disprove the accusations and presented counteraccusations against Lysenkoists.

The August 1948 meeting, however, differed from all previous discussions between geneticists and Lysenkoists in that its subject was not genetics but *biology*. Both the proceedings of the 1936 discussion and the materials of the 1939 discussion had been entitled "On Issues of Genetics and Breeding," but the proceedings of the 1948 meeting were published under the title "On the Situation in Biological Science."

The essence of Lysenko's address was a juxtaposition of two opposing trends in biology: unscientific, idealist, scholastic, sterile, reactionary, anti-Darwinist Weismannism-Mendelism-Morganism versus scientific, materialist, creative, productive, progressive, Darwinist Michurinist biology. These two sets of antonymic labels obviously reflected the current sociopolitical situation: the escalating confrontation between the USSR and the West, or, as Lysenko phrased it, "two worlds—two ideologies in biology." Even the very names of the opposing doctrines—"Weismannism-Mendelism-Morganism" on the one hand and "Michurin's teaching" on the other—expressed the division between "ours" and "theirs," "us" and "them," "native" and "foreign." The juxtaposition of two sciences, Soviet and Western, was the major rhetorical device employed by Lysenkoists in 1948.

Personal criticism of "the aliens among us" made up a large part of the meeting. Almost every speaker (beginning with Lysenko himself) criticized "the adherents of Mendelism-Morganism among Soviet scientists." The list of these "Soviet Mendelists," however, is curious. The main target of the Lysenkoist attack was the comparative anatomist, morphologist, and evolutionary theorist Shmal'gauzen—almost every second speaker mentioned his name with appropriate epithets. Several speakers (again starting with Lysenko) crit-

icized Shmal'gauzen's works at length. Even stranger, of those criticized most frequently—Shmal'gauzen, Zhukovskii, Boris Zavadovskii, Mikhail Zavadovskii, Aleksandr Paramonov, Efim Lukin, Iurii Polianskii, Poliakov, Zhebrak, Alikhanian, and Dubinin—only the last three were geneticists. The rest were specialists in other fields, such as comparative anatomy, botany, protozoology, embryology, and entomology.

These targets, however, had one important thing in common: they had publicly opposed Lysenko's views on Darwinism during the preceding two years, and had written many letters to the Central Committee's Science Department about it.⁵⁶ Debates over Darwinism in 1946–48 had revealed a strong opposition to Lysenko, not only among geneticists, but also among biologists in general. These debates had clearly demonstrated both Lysenko's vulnerability in evolutionary questions and the possibility that geneticists might strengthen their position by capitalizing on the achievements of the contemporary evolutionary synthesis. Iurii Zhdanov's lecture showed that biologists had even managed to convince the party ideological apparatus that Lysenko's evolutionary concept was mistaken.

Lysenko's main *ideological* goal at the VASKhNIL session, then, was clearly to regain his authority over Darwinism. As he wrote in a letter to Stalin attached to the draft of his address for the VASKhNIL meeting: "I have formally avoided the report of Comrade Iurii Zhdanov, but the actual content of my report is in large part an answer to his false declarations."⁵⁷ Thus, Darwinism became the major issue of the VASKhNIL meeting, and all who opposed Lysenko's views on Darwinism were christened Mendelists, regardless of their specialty.

But Lysenko also had *institutional* goals at the August meeting. The principal one was to conquer the educational system. Most of those criticized as Mendelists occupied high-level posts in the system of biology education.⁵⁸ Lysenkoists emphasized that Mendelists had seized control of the teaching of biology and contended that "young Soviet biologists should study Michurin's teaching." Universities and educational institutes had indeed served as a main institutional base for the anti-Lysenkoist opposition in 1945–48. The July decree of the Council of Ministers had crushed the opposition to Lysenko in VASKhNIL through the appointment of his allies to academy membership. By labeling as Mendelists all professors who had criticized Lysenko, Lysenkoists prepared their removal from leading positions in biology education.

Another institutional goal was to strengthen Lysenko's weak position in the Academy of Sciences. The attempt to establish a new genetics institute had demonstrated the strength of Lysenko's opposition in the academy. His main critics among the academy's membership were Shmal'gauzen, director of the Institute of Evolutionary Morphology and a leading authority in evolutionary questions; and Dubinin, a candidate for the directorship of the new genetics institute and a prominent figure in evolutionary genetics. It is no wonder, then, that the Lysenkoists harshly attacked both.

Of course, Lysenko's ideological and institutional goals were mutually reinforcing. The ideological goal of establishing Lysenko's priority over evolutionary theory as a field of study, and hence over Darwinism as a cultural resource, greatly expanded his institutional options. Moving the focus from genetics to Darwinism provided Lysenkoists with a master key for their institutional expansion, not only into centers of genetics, agriculture, and breeding, but into all institutions of biology education and research, while also enhancing their authority in the party apparatus that controlled both ideology and science policy.

The most portentous moment of the VASKhNIL session came at the end. On August 7, the last day of the meeting, Lysenko opened his concluding address with a short statement:

The question is asked in one of the notes handed to me, What is the attitude of the Central Committee of the Party to my report? *I answer: The Central Committee of the Party has examined my report and approved it. (Stormy applause. Ovation. All rise.)*⁵⁹

This short statement, exactly ten words long in Russian, was the high point of the meeting.⁶⁰ Some historians have asserted that the Central Committee's "approval" was announced only on the last day of the meeting in order to smoke out Lysenko's opponents.⁶¹ Such an assertion does not make sense—first of all, because the list of invited opponents was carefully prepared in advance, and Lysenko's eight opponents among them were already well-known. Indeed, they were invited precisely because their objections to Lysenko's views made them a necessary element in the scenario of the public discussion.

I suspect that this open declaration was not part of the original scenario. The plan had probably been to conceal the Central Committee's involvement in the preparation of the VASKhNIL meeting. But this became highly problematic because, even with all the planning, something spontaneous happened that threatened to throw things off track. In his speech on August 4, Boris Zavadovskii declared: "Having come here . . . I had appealed to the Central Committee with a question—how should we understand this [meeting]? I was ready to make a speech, but have received a clarification that, although the Central Committee does not object [to my speech], it does not oblige me to speak. Hence, as I understand it, this conference is obviously taking place not in accordance with, or at least without the participation of, the Central Committee's Science Department."⁶² Zavadovskii's statement (as well as other speeches by Lysenko's opponents at the VASKhNIL meeting)⁶³ showed that the Mendelists did not perceive Lysenko's address as a party line. They clearly did not expect such a drastic reversal of the situation and were certain of the Science Department's support for the ongoing anti-Lysenko campaign.

Moreover, it seems that Lysenko's opponents did not expect the Central Committee to express its position through a public discussion. As we have seen, in 1945–47 the struggle between Lysenkoists and geneticists had tran-

spired mainly in the corridors of power. Geneticists perhaps expected an administrative decision from the Central Committee. In fact, they had asked for such a decision, not for a discussion, in spring 1947.⁶⁴ The December 1947 discussion of the struggle for existence in the Academy of Sciences was closed, not public; only about fifty persons were invited to attend. The huge public discussion staged at the VASKhNIL meeting apparently took Lysenko's opponents by surprise. Zavodovskii's reference to the Central Committee Science Department was a direct reference to the anti-Lysenkoist lecture delivered by its head, Iurii Zhdanov, which was well-known to the biology community. Zavodovskii clearly intended to demonstrate that the party apparatus favored genetics, not Lysenko. That, however, was not the case anymore.

Zavodovskii's declaration provoked a storm in the Central Committee's apparatus and forced it into immediate action. If his declaration was not refuted, word would spread immediately that Lysenko's position contradicted the party line, strengthening his opponents. Shepilov, who attended the meeting, at once informed Malenkov about Zavodovskii's speech and conducted an investigation. He learned that Zavodovskii had telephoned Iurii Zhdanov immediately after Lysenko's address late on the evening of July 31. Zavodovskii had asked for advice—should he speak at the meeting? According to a witness, Zhdanov answered that he “could neither object, nor recommend that he speak at the conference. Zavodovskii had to decide for himself.”⁶⁵ Shepilov wrote to Malenkov: “[I] am asking you to consider the question of whether I should make a special declaration at the meeting, giving the required evaluation of Zavodovskii's action.”⁶⁶ Apparently, Zavodovskii unwittingly compelled the Central Committee to tip its hand, to disclose its involvement publicly. Shepilov proposed that he make a short statement or deliver a special report, or that Lobanov make some appropriate declaration. Malenkov and Stalin, however, decided to employ another technique.

Zavodovskii's declaration was probably the reason for Stalin's meeting with Lysenko on the evening of August 6, the night before the last session of the VASKhNIL meeting and Lysenko's concluding remarks. There are some indications that they discussed how to deal with Zavodovskii's statement. It was obviously necessary to demonstrate to “slow-witted” biologists that Lysenko's address indeed represented the party line in biology. They apparently decided to publish in the press Iurii Zhdanov's repentant letter to Stalin, written in July, and to publicly announce the Central Committee's approval of Lysenko's claims. According to Present's comments to the Leningrad regional party committee shortly after the VASKhNIL meeting, Stalin actually dictated the opening paragraph of Lysenko's “Concluding Remarks”:

The concluding speech was approaching. Before presenting the concluding address, Trofim Denisovich Lysenko got an audience with Joseph Vissarionovich [Stalin]. (Here I can tell you all the “kitchen secrets.”) Joseph Vissarionovich asked Trofim Denisovich: “How would you tell people that the Central Committee of the Party

approved your report?" The latter said: "I do not know, I could not say." Comrade Stalin said: "You can. Take a pencil and write." And he dictated the introductory paragraph that the Central Committee had examined and approved the report.⁶⁷

On August 7, the same day that Lysenko announced the Central Committee's approval, *Pravda* published Zhdanov's letter to Stalin, in which he confessed that he had been mistaken in his critique of Lysenko and promised "to work hard to correct previous mistakes."⁶⁸

Lysenko's statement, together with *Pravda's* publication of Zhdanov's letter, finally convinced the VASKhNIL audience that the highest party officials had decided to support Lysenko openly and that his address indeed represented the party line in biology. Immediately after Lysenko's concluding remarks, three of his opponents (Zhukovskii, Alikhanian, and Poliakov) recanted. They confessed to being mistaken in their opposition to Lysenko's views. With their confessions, the repertoire of the public discussion was almost complete. The meeting unanimously adopted a resolution and a "letter to Comrade Stalin,"⁶⁹ and concluded with glorification of the "Great Stalin, Leader of the People, Luminary of Advanced Science" to the stormy applause and ovation of the audience.

Lysenko's doctrine became the officially sanctioned trend not only in Soviet genetics, but in Soviet biology as a whole.

"FOR THE COMPLETE DOMINATION OF MICHURINIST BIOLOGY"

The August VASKhNIL meeting marked the beginning of a new campaign that reverberated throughout the nation during the rest of 1948 and beyond. Stalin's intervention transformed the struggle between geneticists and Lysenkoists from a local conflict over scientific institutions into a universal ideological campaign. Numerous meetings of workers in biological science to "discuss" the results of the VASKhNIL meeting were conducted all over the country. The press launched a huge propaganda campaign, "for the complete domination of Michurinist biology."

On August 4, *Pravda* began to publish the entire text of Lysenko's address. Over the next *eight* days, the materials of the meeting, including the speeches of all participants, the letter to Stalin, and the final resolution, appeared in *Pravda*. Three of the nine issues contained six pages. Usually *Pravda* was printed in four pages; only in extraordinary cases, such as a session of the USSR Supreme Soviet, was it printed in six. The publication of these materials on the pages of the central party newspaper was exceptional and very meaningful for the readership.⁷⁰

Clearly, such extraordinary publicity resulted from the direct instructions of the party apparatus. The publication of the VASKhNIL materials was a special focus of propaganda. As early as August 11, the Orgburo discussed "pub-

lishing the materials of the VASKhNIL meeting." It ordered that a complete stenographic volume of the meeting be published "by August 29 in two hundred thousand copies" and that a brochure containing Lysenko's address and concluding report be published "within three days in three hundred thousand copies"⁷¹—remarkably large printings. On August 13, Shepilov reported to Malenkov that the brochure was already in print and that the volume would also be printed by the target date.⁷² A week later, on August 19, *Pravda* announced on its front page the appearance of the brochure "On the Situation in Biological Science" with Lysenko's speeches at the VASKhNIL meeting.

On September 1, *Pravda* announced the publication of the volume of stenographic records. This was obviously considered of great importance. That day's issue of *Pravda* was almost completely occupied by information about Andrei Zhdanov's death;⁷³ only one page was devoted to all other events in the country and the rest of the world. A large part of this single page was taken up by information on the publication of the stenographic report of the VASKhNIL meeting.⁷⁴ Lysenko's speeches were immediately translated into all the languages of the USSR,⁷⁵ as well as into foreign languages.

One of the high points of the propaganda campaign was the celebration of the fiftieth birthday of "the famous heir to the Michurinist doctrine T. D. Lysenko."⁷⁶ The jubilee was arranged and conducted with great fanfare. Almost all central and local newspapers carried congratulations from various persons and institutions. Academic journals joined the chorus. To mark the birthday, Lysenko was decorated with the highest Soviet award—the Order of Lenin—"for outstanding public service in the development of progressive Soviet science." The decree of the USSR Supreme Soviet announcing Lysenko's decoration was reprinted in all periodicals. In certain newspapers, the decree was published in the same issue devoted to the tenth anniversary of Stalin's *Short Course on the History of the Communist Party* and appeared under Stalin's portrait. The same issue of *Pravda*, for instance, published both the decree and an article entitled "A Brilliant Creation of the Luminary of Science," written by the recipient of the order and glorifying his benefactor.⁷⁷ The same article, slightly revised, was published in *Izvestiia* under the title "The Unsurpassed Guide for Understanding Nature and Society."⁷⁸ In relation to the jubilee, the Odessa Institute of Genetics and Breeding was named after Lysenko.

Propaganda for the Michurinist doctrine was the centerpiece of the 1948 campaign as a whole. During the campaign, the Central Committee paid special attention to the publication of literature on biology. Special decisions of the Orgburo commanded the revision of the plans and personnel in all publishing houses involved with such literature. As early as August 6, the Orgburo ordered the Ministry of Agriculture to prepare proposals on "strengthening the leadership of agricultural publishing houses."⁷⁹ At its next sessions, on August 9 and 11, the Orgburo again discussed the question of biology publications and ordered Agitprop to prepare a draft of a special resolution.⁸⁰ The order was immediately fulfilled: Shepilov presented a long memorandum on

needed changes in plans and personnel, uncovering a number of “Mendelists” on the editorial boards and administrative bodies of publishing houses.⁸¹ Finally, on August 17, the Orgburo issued a lengthy resolution “On Publishing Biology Literature.”⁸² Predictably, the resolution ordered all publishing houses to publish only Michurinist literature, and all “Mendelists” among their personnel were replaced by “Michurinists.”

Local party committees also adopted resolutions on the propagation of Michurinist biology. For example, a resolution of the Leningrad City Party Committee of August 26 resolved “to publish systematically articles and materials illuminating the development of Michurinist biology in the newspapers *Leningradskaia Pravda*, *Vechernii Leningrad*, *Smena* and in the journal *Propaganda i Agitatsiia*.”⁸³ Local newspapers regularly reprinted information from such central organs as *Pravda* and *Izvestiia*.⁸⁴ Columns entitled “For Progressive Michurinist Biology” or “For Advanced Soviet Science” were established in newspapers.

Predictably, acknowledged Michurinists played the major role in the popularization of Michurinist biology. Lysenko’s team published numerous articles in almost all central and republic newspapers.⁸⁵ Members of Lysenko’s group were sent to represent “true” Michurinism at various local meetings held during the autumn throughout the country. For example, in late August Agitprop sent several “consistent Michurinists” to various regions of the country “in order to apprise local scientific workers of the decisions of the VASKhNIL meeting, to examine the situation in biological science in local [institutions], and also to help local party organizations develop the Michurinist trend in biology.”⁸⁶

Party committees arranged for the production of popular films about Michurinist biology. The Leningrad City Party Committee decreed: “The question of producing a film, *Advances of Progressive Soviet Biological Science*, by the Leningrad studio of scientific films during 1948 must be discussed together with the Ministry of Cinematography.”⁸⁷ In December, a new color film, *Michurin*, was shown in all the country’s movie theaters and even abroad. The author of the scenario and director of the film was one of the country’s most famous film directors, Aleksandr Dovzhenko; the music was composed by Dmitrii Shostakovich; and the hero was played by one of the most popular actors of that time, Grigorii Belov.⁸⁸ A review, entitled “Film about a Great Scientist and Patriot,” was published in *Pravda*.⁸⁹

The party apparatus also directly orchestrated “the complete dominance of Michurinist biology” in research and educational institutions. Beginning on August 6, almost every other session of the Orgburo through the end of September discussed questions regarding Michurinist biology.⁹⁰ The Orgburo adopted several resolutions on the subject: “On the Teaching of Biology,” “On the Situation in Biological Research Institutions,” “On Publishing Biology Literature,” and the like. The Orgburo ordered the heads of all state agencies involved with the practice and teaching of biology “to work out measures to further development of Michurinist biology.”⁹¹

Local party agencies encouraged the organization of numerous meetings of “workers in biological science,” which discussed “the results of the August VASKhNIL meeting” throughout the country. Under instructions of the Central Committee, all local party committees issued resolutions “on the development of Michurinist biology.” For example, on August 26 the bureau of the Leningrad City Party Committee held a special session. The main item on the agenda was “the plan of immediate measures of the city committee for realization of the decisions of the meeting of the Lenin Agricultural Academy.”

The bureau approved a long resolution (three single-spaced, typed pages). To illustrate the range of the planned measures, I quote only a few points of the resolution:

To hold an all-city meeting of scientific workers of the institutes, faculties, and departments of natural sciences in the Tauride Palace on September 6, 1948. Academician I. Prezent will deliver the main report, “On Results of the VASKhNIL Meeting.”

To hold meetings of scientific workers devoted to discussion of measures for the reorganization [*perestroika*] of the work of departments and faculties in light of the decisions of the VASKhNIL meeting in all institutes of natural sciences. The date—September.

To hold a meeting of teachers of natural sciences in Leningrad secondary schools. To deliver the report “Results of the VASKhNIL Meeting and Tasks of Teaching of Natural Sciences in Secondary School.” The date—September.

To deliver lectures “On Results of the VASKhNIL Meeting” for party, state, trade-union, and Komsomol activists in all regions of Leningrad.

Lectures “On Results of the VASKhNIL Meeting,” “Advances of Progressive Soviet Biological Science,” and others must be organized in the Party lecture bureau, the House of Party Activists, institute lecture bureaus, the House of Teachers, the House of Scientists, the regional Higher Party School, and through the Society for the Dissemination of Political and Scientific Knowledge. The date—September.

The plans of Leningrad publishing houses for 1948 in regard to biological science must be revised. Publication of new biology textbooks, books, and brochures popularizing Michurinist doctrine must be included in the plans. The date—September–October, 1948.⁹²

Similar resolutions were adopted everywhere.⁹³

The party resolutions and instructions behind the Michurinist campaign were kept secret from the public. The high-level bureaucracy, however, was fully informed. At various meetings of high-level party bureaucrats, even Stalin’s personal involvement in the campaign was disclosed. For example, already on August 30, in a lecture for party instructors in Leningrad, Prezent said:

For the first time in the history of biological science, there has appeared in essence a party document that for many coming years will define the party line in biological science and in scientific questions in general. I can tell *this audience* some details of the preparation and organization of the [VASKhNIL] meeting. I can tell you that the

report of Trofim Denisovich Lysenko was read by Joseph Vissarionovich [Stalin] himself. He made necessary corrections to the report, paying so much attention to it that he even corrected the grammar where necessary and wrote several new paragraphs. So, as I already said, this report is essentially a party document in the direct sense of the word.⁹⁴

Moreover, at high-level party meetings it was repeatedly emphasized that Lysenko's report was a *party* document. For example, at a special session of the bureau of the Leningrad City Party Committee devoted to the reorganization of Leningrad University "in light of the decisions of the VASKhNIL meeting," the first secretary, Petr Popkov, said: "The report of academician Lysenko was directly arranged by the Central Committee of our Bolshevik party. And to speak directly *here*, this question [on the situation in biological science] was put by the Central Committee, was initiated by the Central Committee through Lysenko."⁹⁵ Nobody gave such declarations to the press or the nonparty public. Even at these party meetings, nobody cited or even mentioned the resolutions of the Orgburo on the "development of Michurinist biology."

Thus, a local conflict between two scientific groups was transformed into a huge ideological campaign orchestrated by central and local party agencies. In its form the Michurinist campaign appeared to be a strange mixture of previous ideological campaigns. The *zhdanovshchina* campaign of summer 1946 had started with resolutions of the Central Committee widely publicized in the press, and it was conducted as a public campaign. The campaign on the KR affair had been triggered by secret party instructions and initially conducted as an exclusively party affair, without any publicity in the press. During the Michurinist campaign, no party resolution was published and secret instructions were sent to local party committees and governmental agencies, but the press conducted a huge propaganda campaign. Moreover, all previous campaigns had been conducted under universal ideological slogans like "against the pernicious influence of Western culture," "against slavishness and servility to the West," or "for Soviet patriotism." The slogans of the Michurinist campaign were not general, but specific: "for Michurinist biology," "for advanced Soviet science." Direct party instructions and orders (unknown to the public), as well as all publications, formulated the goals of the campaign in concrete, not ideological terms: "to encourage and develop the Michurinist trend" and "to condemn and discard the Mendelist-Morganist trend" in Soviet biology.

These differences suggest that the Michurinist campaign, unlike previous ones, was addressed not to the general public or to party ideologists and functionaries, but rather to the scientific community. Behind the concrete formulations there lurked a more general message: "The Central Committee of the Communist Party has examined Lysenko's report and approved it." A major goal of the campaign was to announce the Central Committee's assumption of ultimate authority in scientific questions.

SOVIET SCIENCE VERSUS WESTERN SCIENCE

Like the patriotic campaign of 1947, the 1948 Michurinist campaign reshaped the symbiosis between the party-state and the scientific community, and the new rhetoric it introduced reflected and embodied Cold War ideology.

The party's approval of Michurinist biology signified much more than approval of Lysenko's doctrines; it also signified approval of the particular model of science embodied in Michurinist biology. The core of this model was the juxtaposition of "Soviet" and "Western" science. As a member of Lysenko's group stressed at the meeting in the Academy of Sciences called in 1948 "to discuss the decisions of the VASKhNIL meeting": "There is and can be nothing in common between our science and so-called 'world science'."⁹⁶ The infamous slogan "catch up with and overtake Western science" began to vanish from the rhetoric of Soviet scientists. Soviet science was now considered fundamentally different and superior.

This juxtaposition clearly reflected the Cold War confrontation, portraying science as a mere extension of politics. In this model, science had no broader loyalties to anything but the state; and no interests aside from those set by the state: it was merely an instrument for pursuing state objectives. The model implied that science must be completely subordinate to the state, not only institutionally, but also intellectually. This universal model was applied to Western science as well, which was depicted as completely subordinate to the political, economic, and ideological goals of Western countries, especially the United States. At the VASKhNIL meeting, for instance, one of the speakers said: "Today Mendelism-Morganism is the servant of its class, the militaristic bourgeoisie. In the arsenal of the capitalist world, modern Morganism is a weapon, a means for scientizing its methods of expansion."⁹⁷ Thus, Soviet science was pictured as "socialist and progressive" and Western science as "imperialist and reactionary." As Sergei Kaftanov stated at the meeting in the Academy of Sciences: "It is no accident that America, which is a center of everything reactionary in literature, science, art, and politics, is at the same time a citadel of reactionary biological doctrine, the citadel of Mendelism-Morganism."⁹⁸

The juxtaposition of "Soviet" and "Western" sciences was not new to Soviet scientists. Lysenkoists had deployed the notion of "ours versus theirs" in their struggle with geneticists at the 1936 and 1939 discussions, as well as in their later appeals to the party-state apparatus in the mid-1940s. In 1948, however, this juxtaposition acquired a new importance. As we have seen, after a short period of liberalization and "international scientific cooperation" during and immediately after World War II, the notion of a "common-to-all-humanity" science came under attack again. The campaign was sustained in the form of "nationalistic patriotism": the struggle for priority of Russian and Soviet science and technology and assertions of the superiority of Soviet science. Appeals to "the Soviet people's sense of national pride" began to circulate in the press.⁹⁹ In this respect, the Michurinist campaign was simply the extension

of Cold War politics to Soviet science, a reflection of the new phase of the contest that was escalating precisely in summer 1948.

The recently uncovered original text of Lysenko's address for the VASKhNIL meeting, as well as other materials from the party archive, provides convincing evidence that Stalin personally shaped the model of Soviet science embodied in Michurinist biology. This was probably an important reason why Stalin *personally* revised and edited Lysenko's address. Kirill Rossiianov has argued that Stalin was "editing Nature,"¹⁰⁰ but it seems more likely that here he was "editing" the Soviet model of science.

Stalin's corrections generalized and universalized the notion of science presented in Lysenko's speech: he clearly strove to portray science in the Soviet Union as "scientific" and truly "progressive," while picturing Western science as "unscientific" and "reactionary." In his preliminary draft, Lysenko often used the adjective "bourgeois" to describe Western science. Stalin deleted this word throughout, usually substituting for it "reactionary" and/or "unscientific." He also carefully removed the adjectives "proletarian" and "Soviet," which Lysenko used to depict his doctrine, sometimes replacing them with "scientific." Similarly, the title of the Central Committee's resolution prepared for the VASKhNIL meeting became more sweeping in its scope. The first version concerned only "the Michurinist trend in Soviet biology"; the second addressed more generally "the situation in Soviet biological science"; and the final version treated the entire "situation in biological science." The title of Lysenko's address underwent the same evolution. Stalin's corrections suggest that the task of "catching up with and overtaking Western science," which he himself had formulated in 1946, had ceased to be the top priority of party policy. It was supplanted by a new task: propaganda about the Soviet Union's superpower status and its image as the only source of world progress.

Why did the authority of Western science in party circles fall? Perhaps because the "atomic shock," which had induced the slogan "catch up with and overtake the West," had receded by summer 1948. The atomic bomb, a symbol of the superiority of Western science, had lost its primacy. As David Holloway has demonstrated, Stalin tended to underestimate the military and political aspects of the atomic bomb in the growing confrontation with the West.¹⁰¹ During the Berlin blockade of June–July 1948, Soviet intelligence reportedly assured Stalin that the United States did not have enough bombs to seriously threaten Soviet operations in Germany or elsewhere. Besides, by summer 1948 the Soviet atomic project was in high gear, promising that the country would have its own bomb in the near future. Moreover, at this time work on the Soviet hydrogen bomb had already begun. The fierce struggle for control over Europe that developed in spring 1948 and culminated in the Berlin blockade in June shifted the strategic priority from catching up with Western science to condemning everything associated with the West, including its science.

The growing Cold War clearly caused a drastic shift in the control agencies' reaction to Western criticism of Lysenko and praise for Soviet genetics. As we

have seen, from 1945 to 1947 Soviet geneticists had successfully employed Western authorities to undermine Lysenko's influence in the party-state agencies. In 1948 this tactic boomeranged. The party-state apparatus began to consider Western criticism of Lysenko (and other Soviet scientists) not as a critique of mistaken scientific concepts, but as anti-Soviet political propaganda, as a continuation of the politics of confrontation between East and West. Indeed, some of Lysenko's Western critics portrayed his doctrine as a result of "Marxist influence on science" and linked the rise of Lysenkoism to Soviet totalitarianism.¹⁰² Most Western geneticists, however, carefully avoided political commentary in their criticism of Lysenko. Nevertheless, the Michurinist campaign made good use of Western criticism as political propaganda inspired by the Cold War. It became the best proof that Lysenko was right and his opponents wrong.

June, July, and August 1948 witnessed the climax of the Cold War confrontation that led the United States and the USSR to the very edge of open military conflict. That, undoubtedly, was the overriding priority on Stalin's agenda, a priority that colored everything he and his Politburo did during those months. Yet this was *precisely* the time when Stalin not only intervened on Lysenko's behalf, but also lavished a great deal of time and attention on his prose. Consider, for example, Stalin's schedule during the week of the VASKhNIL meeting: on August 2, while the meeting was in progress, he met with the ambassadors of France, Britain, and the United States for a lengthy discussion of the Berlin crisis; four days later, he met with Lysenko for a discussion of how to react to Zavadovskii's declaration at the VASKhNIL meeting (see table 6-1). No doubt the ongoing discussions of Berlin and the Yugoslavian crisis profoundly affected Stalin's motives, ideas, and actions in the Lysenko affair. Stalin and his apparatus were deeply engaged in strategic world planning, and it is most unlikely that he would have spent on Lysenko's text the kind of time and attention he did, *when* he did, if he had not regarded it as critically important.

The model of a superior "Soviet" science reflected a general image that dominated Soviet politics during the Cold War confrontation: that of the USSR as the leader of the world community, the only progressive force in the world's development, the only source of truth and peace for the people of the world, the "right" side in the East-West conflict. This image served an important propagandistic function in the competition between the USSR and the United States for hegemony in world affairs. Soviet propaganda, for instance, repeatedly declared that, unlike the American scientists who created the atomic bomb, Soviet scientists mainly worked on peaceful applications of atomic energy.

This may explain the great attention given to the export of Michurinist biology to such newborn socialist countries as Bulgaria, Poland, Czechoslovakia, and Romania. For instance, the Soviet delegation to the World Congress for Peace in Wroclaw, Poland, in late August 1948 proposed a resolution

condemning formal genetics as an imperialist science. In winter 1948, the Romanian-Russian Friendship Society and the Romanian-Soviet Scientific Institute, for example, organized a number of lectures on the Michurinist doctrine. As a member of the Romanian academy, V. Myrza, declared at one of the lectures: "Michurinist methods have great significance not only for the Soviet Union, but for all people's democracies."¹⁰³ In subsequent years, Michurinist science expanded into the people's democracies and the third world.¹⁰⁴ Furthermore, the Soviet leadership exercised considerable effort to propagate Michurinist biology in such Western countries as Britain, France, and the United States.¹⁰⁵

The Cold War confrontation perhaps explains why genetics became the first discipline subjected to the rough intervention of the party apparatus. The world center of genetics was the United States. The elaborate international contacts of Soviet geneticists, and especially the campaign waged by American and British geneticists on their behalf, provided a perfect pretext to draw a line between Soviet and Western science and to introduce a new model of "Soviet" science corresponding to a new phase of Cold War confrontation. This may have been Stalin's reason for interfering in the struggle personally. It may also have been the reason a play was staged at the August VASKhNIL meeting under the guise of a scientific discussion, rather than simply issuing a resolution of the Central Committee. A resolution would have merely provided Lysenkoists with complete domination over biology institutions; a public discussion was a proven instrument to announce a party line.

Aside from this international objective, one of the major goals of the party apparatus in the Michurinist campaign was to introduce this new model of science into the practice of the Soviet scientific community and to strengthen the authority of the party bureaucracy over it. In spring 1947, when the party first developed a new policy suited to the Cold War atmosphere and politics, it had simply concocted a pretext—the KR affair—to begin a large patriotic campaign. In summer 1948, the party used a ready pretext—the ongoing struggle between Lysenkoists and geneticists—to broaden and deepen that campaign.

Thus, the events of summer 1948 marked a new stage in reshaping the relations between the two components of the Stalinist science system, the scientific community and party agencies, in accordance with the new ideological atmosphere and priorities of the Cold War. Stalin's sentence uttered at the Politburo sitting in June—"The Central Committee can have its own position on scientific questions"—signified a serious change in the posture of the party leadership toward science and the scientific community; the community would no longer be granted authority and autonomy in scientific matters. As we have seen, during the previous years Stalin and other Politburo members had largely abstained from direct interference in scientific controversies. In the 1930s they had assigned philosophers to judge scientific disputes, and in the 1940s they had allowed the administrative apex of the scientific community to decide its own internal institutional and research policies. In the course

of the 1947 patriotic campaign, party officials seized the right to direct “external” scientific policies, employing science as an instrument to achieve their international and domestic objectives. Stalin’s declaration in June 1948 signaled a further expansion of the authority of the party apparatus in science-policy decision making. Now, the intellectual content of scientific doctrines would be subject to “the point of view of the Central Committee.” The August meeting clearly signified the intentions of party agencies (above all the Central Committee) to establish complete control over the community, expanding their power from “external” (political, practical, and ideological) to “internal” (intellectual and cognitive) aspects of scientific activity. The party apparatus seized the right to judge scientific disputes and to dictate to Soviet scientists what theories to follow, what subjects to study, and what lines of research to pursue.

A few days before the opening of the VASKhNIL meeting, one of the most prominent Soviet plant breeders, academician Petr Konstantinov, sent a long letter to Stalin. He bitterly criticized Lysenko’s activity in the academy, asking: “Why does nobody listen to us? Why are decisions on this controversy assigned either to such persons as M. Mitin or to ministry officials? Why does nobody listen to the opinions of scientists and practitioners of agriculture? Why doesn’t our official position reflect the opinion of the scientific public, instead of striving to please Lysenko?”¹⁰⁶ The VASKhNIL meeting and the campaign that followed it answered these questions: now it was the party-state bureaucracy, not the scientific community, that was responsible for defining which scientific concept was correct. The party apparatus displayed unambiguously its power and intentions, turning the VASKhNIL meeting into a lesson Soviet scientists had to learn, an example they had to follow.

K E Y E V E N T S , 1 9 4 1 – 1 9 5 3

1941

- January 14 Academy of Sciences is established in Georgia.
January 16 Academy of Sciences is established in Lithuania.
June 22 German troops invade the USSR.
June 30 State Committee of Defense (GKO) is formed.
July 10 GKO creates Scientific-Technical Council presided over by Sergei Kaftanov.
July 16 GKO creates the position of party commissar in military units.
July Commission for Geological and Geographical Service to the Red Army is formed.
August 29 Commission to Mobilize the Resources of the Urals is formed.

1942

- April 3 Commission on the Scientific-Technical Problems of the Navy is formed.
April 3 Commission to Study Additional Nutritional Resources is formed.
May 8 Academy of Sciences elects new foreign members.
June 17 Commission on Military-Sanitary Issues is formed.
June Commission to Mobilize the Resources of the Volga Region is formed.
October 9 GKO reestablishes the sole responsibility of commanding officers over subordinate units and operations.

1943

- January 5 USSR Academy of Sciences creates a branch in Kirgizstan.
September 25–30 General Assembly of the Academy of Sciences elects thirty-six full and fifty-eight corresponding members.
September 27 Academy of Sciences is established in Uzbekistan.
September 19–30 Foreign ministers of the USSR, the United States, and Britain meet in Moscow.
October 6 SNK approves resolution “On the Organization of the RSFSR Academy of Pedagogical Sciences.”
October 21 USSR Academy of Sciences creates a branch in Western Siberia.
October 29 Academy of Sciences is established in Armenia.

1944

- June 6 British and American troops open a second front in Normandy.
- June *Under the Banner of Marxism* is severely criticized and shut down.
- June 30 USSR Academy of Medical Sciences is organized.
- November 13 Academy of Sciences president V. Komarov visits Stalin.

1945

- January 23 Academy of Sciences is established in Azerbaidzhan.
- February 4-12 Conference of the heads of government of the USSR, the United States, and Britain convenes in Yalta.
- February 13 Lithuanian Academy of Sciences restores its activity.
- March 24 USSR Academy of Sciences creates a council to coordinate the activity of republic academies.
- April 13 USSR Academy of Sciences establishes a branch in Tataria.
- June 16-28 220th anniversary of the USSR Academy of Sciences is celebrated in Moscow and Leningrad.
- July 7-August 2 Conference of the heads of government of the USSR, the United States, and Britain convenes in Potsdam.
- July 17 Sergei Vavilov replaces Vladimir Komarov as president of the Academy of Sciences.
- August 6 and 9 United States drops atomic bombs on Hiroshima and Nagasaki.
- August 20 Politburo creates a commission headed by Lavrentii Beria to promote the development of the Soviet atomic project.
- October 26 Academy of Sciences is created in Kazakhstan.
- October USSR Academy of Sciences creates branches in Dagestan and Karelia.
- November 4 Academy of Sciences is created in Latvia.

1946

- January 15-19 General Assembly of the Academy of Sciences "elects" a new presidium.
- February 6 Stalin delivers a speech before a meeting of voters.
- March 5 Winston Churchill delivers "iron curtain" speech in Fulton, Missouri.
- March 6 SNK issues decree on increasing salaries for scientists.
- March 15 SNK is renamed the Council of Ministers, and commissariats are renamed ministries.

- April 5 Academy of Sciences is created in Estonia.
- April 25–May 16 Ministers of foreign affairs of the Allied countries
and June 15– meet in Paris.
- July 12
- June 18 USSR Academy of Sciences presidium decides to es-
tablish a new Institute of Genetics and Cytology.
- June 20 U.S. ambassador Walter B. Smith visits Nina
Kliueva's laboratory.
- June 28 Agitprop establishes the newspaper *Culture and Life*.
- August 2 Central Committee establishes Higher Party School
in Moscow.
- August 14 Central Committee issues resolution "On the Maga-
zines *Zvezda* and *Leningrad*."
- August 20 Central Committee establishes the journal *Party Life*.
- August 26 Central Committee issues resolution "On the Reper-
tory of Theaters and on Measures for Its Improve-
ment."
- September 4 Central Committee issues resolution "On the Film
Bol'shaia Zhizn'."
- October 5 Central Committee issues resolution "On the Work of
the United State Publishing House [OGIZ] of the
RSFSR."
- October 18 Vasilii Parin arrives in the United States "to make an
extensive inspection tour of U.S. hospitals and twelve
major cancer research centers."
- October 29 Viacheslav Molotov delivers a speech at the UN Gen-
eral Assembly on international control over atomic
energy.
- November 1 Agitprop creates the Academy of Social Sciences in
Moscow.
- November 4– Ministers of foreign affairs of the Allied countries
December 12 meet in New York.
- November 29– USSR Academy of Sciences elects 43 full and 112
December 4 corresponding members. Nikolai Dubinin is elected a
corresponding member of the academy.
- December 31 Stalin summons Lysenko to the Kremlin for a discus-
sion of "branching" wheat.

1947

- January 28– Andrei Zhdanov interrogates participants of the KR
February 3 affair.
- February 7–11 Plenum of the Central Committee is held in Moscow on
the development of agriculture during the postwar
period.

- February 17 Enlarged meeting of the Politburo chaired by Stalin discusses the KR affair.
- March 10–
April 24 Ministers of foreign affairs of the Allied countries meet in Moscow.
- March 12 Truman Doctrine is announced.
- March 28 Council of Ministers and the Central Committee issue joint decree on establishing “honor courts.”
- April 15 Agitprop issues as “Plan of Measures for the Propagation of Soviet Patriotism among the Population.”
- May Communists are expelled from the coalition governments in France and Italy.
- June 5 Marshall Plan is announced.
- June 5–7 First “honor court” trial, of Nina Kliueva and Grigorii Roskin, is held in Moscow.
- June 14 USSR Supreme Soviet issues decree “On Responsibility for Disclosure of State Secrets.”
- June 16–25 Central Committee holds a discussion of Georgii Aleksandrov’s book *A History of West European Philosophy*.
- June 27–July 2 Ministers of foreign affairs of the USSR, Britain, and France meet in Paris on the Marshall Plan.
- June Branch of the USSR Academy of Sciences is established in Iakutiia.
- July 16 Central Committee sends its “closed letter” on the KR affair to party committees throughout the country.
- July 22 Council of Ministers establishes thirty-nine new vacancies for full members and sixty for corresponding members of VASKhNIL and schedules the election for October.
- August 30 *Literary Gazette* publishes article “To the Public Court,” which opens a public “patriotic” campaign in science.
- September 2 *Pravda* publishes Ivan Laptev’s article “Unpatriotic Acts under the Banner of ‘Scientific Criticism’,” which starts the “Zhebrak affair.”
- September 21–23 Meeting of nine European Communist parties (of the USSR, Poland, Bulgaria, Romania, Hungary, Yugoslavia, Italy, France, and Czechoslovakia) creates the Communist Information Bureau (Cominform).
- October 7 Council of Ministers issues resolution rescheduling the elections in VASKhNIL for November.
- October 18 *Literary Gazette* publishes an interview with Lysenko, which opens a campaign “for Soviet creative Darwinism.”
- November 21–22 Ministry of Higher Education puts Anton Zhebrak before an honor court.
- November 25–
December 15 Ministers of foreign affairs of the Allied countries meet in London.

December 11 Bureau of the Biology Division of the Academy of Sciences holds a closed discussion on issues of Darwinism.

1948

- February 3–8 Moscow University holds a conference on Darwinism.
- February 4 USSR and Romania sign a treaty on “friendship, collaboration, and mutual aid.”
- February 10 Central Committee issues a resolution “On the Opera *Velikaia Druzhba*.”
- February 18 USSR and Hungary sign a treaty on “friendship, collaboration, and mutual aid.”
- February 20–25 Communists effect a coup in Czechoslovakia.
- March 6 Ministers of six Western countries (Belgium, Britain, France, Luxembourg, the Netherlands, and the United States) meet in London and announce a plan to create an independent German state on the territories occupied by the Western allies.
- March 17 Britain, Belgium, France, Luxembourg, and the Netherlands form the Western Union at a meeting in Brussels.
- March 18 USSR and Bulgaria sign a treaty on “friendship, collaboration, and mutual aid.”
- April 10 Head of the Central Committee Science Department Iurii Zhdanov delivers lecture “On Issues of Modern Darwinism” before a special meeting of high-ranking party propagandists.
- April 17 Lysenko sends letters to Stalin, Georgii Malenkov, and Andrei Zhdanov with his objections to Iurii Zhdanov’s accusations.
- May 4 U.S. ambassador Walter B. Smith meets the USSR minister of foreign affairs, Viacheslav Molotov, for a discussion of the Czechoslovakian events, the Western Union, and Soviet-American relations.
- May 9 Molotov announces a Soviet reply to Smith’s declaration on the Czechoslovakian events, the Western Union, and Soviet-American relations.
- May 11 Lysenko sends a letter to the minister of agriculture, Ivan Benediktov, requesting permission to resign from the VASKhNIL presidency.
- June 1–
August 4 Berlin crises unfolds.
- June 10 (?) At a meeting of the Politburo, Stalin raises the question of the Lysenko-Zhdanov controversy and orders preparation of a Central Committee resolution “On the Michurinist Trend in Soviet Biology.”
- June 19–
July 26 Yugoslavian crisis unfolds.

- July 10 Andrei Zhdanov sends a draft of the resolution "On the Situation in Soviet Biological Science" to all members of the Politburo, including Stalin.
- July 15 Central Committee restores its Agriculture Department and reorganizes Agitprop.
- July 17 Malenkov replaces Andrei Zhdanov as head of the Orgburo.
- July 23 Lysenko sends Stalin a preliminary text of his report for the forthcoming meeting of VASKhNIL.
- July 31–August 7 VASKhNIL holds a meeting "On the Situation in Biological Science."
- August 6–20 Orgburo issues a number of resolutions on behalf of Michurinist biology.
- August 24–26 Enlarged meeting of the presidium of the USSR Academy of Sciences opens a cascade of Michurinist meetings in Soviet science.
- August–December Meetings to discuss the results of the VASKhNIL meeting are held by all scientific and educational institutions throughout the country.
- September 10–20 Orgburo discusses the situation in biology in regard to medical institutions.

1949

- January 5–10 Academy of Sciences convenes a special General Assembly on the history of Russian science.
- January–March Forty-two rehearsals of the Michurinist meeting in physics are conducted.
- February 11 *Pravda* publishes article "About One Unpatriotic Group of Theater Critics," which opens the campaign against "cosmopolitanism."
- July Discussion of "ideological questions" in astronomy is held.
- August 29 First Soviet atomic bomb is tested.
- September–October Pavlov's centenary is celebrated throughout the country.
- December 21 Stalin's seventieth birthday is celebrated throughout the country.

1950

- May 22–24 Discussion of Olga Lepeshinskaia's doctrine of "noncellular living matter" is held in Moscow.
- June 20 *Pravda* publishes Stalin's article "Marxism and Questions of Linguistics."
- June 28–July 4 Academy of Sciences and the Academy of Medical Sciences convene a joint meeting on "the development of

- Pavlov's doctrine."
- October 4 Lithuanian Academy of Sciences holds a special meeting on "the development of Pavlov's doctrine."
- November 1 Ukrainian Academy of Sciences holds a special meeting on "the development of Pavlov's doctrine."

1951

- October 11-15 Special joint meeting of the Academy of Medical Sciences and the All-Union Society of Psychiatrists and Neurologists discusses the "physiological doctrine of academician I. P. Pavlov."

1952

- March Academy of Pedagogical Sciences holds a meeting "on the situation in psychology and its reorganization on the basis of I. P. Pavlov's doctrine."

1953

- March 5 Stalin dies.
- August 12 First Soviet hydrogen bomb is tested.

PART III

The Consolidation of Stalinist Science

I am not the sort of person who, immediately after something has changed, begins to confess. . . . Understanding, however, that we are living now in a period of cold war, I am taking into account all the political significance of what is going on at the biological front.

—Academician Lina Shtern, September 10, 1948

DURING WORLD WAR II, Western science was drafted into state service, which drastically increased its budget and enhanced the control of Western state bureaucracies over scientific activities. The coming of the Cold War accelerated this trend. For Soviet science, on the contrary, World War II brought liberation from the overwhelming control of party-state bureaucrats and a significant increase in scientists' control over their own activities. The Cold War halted and reversed this trend. Both the Western and Soviet scientific communities used every available means to adjust their social practice to the new situation—to preserve the advantages and limit the disadvantages that resulted from these two wars.

In summer 1948, the escalating Cold War provoked the personal intervention of the supreme patron of Soviet science, Joseph Stalin, into the internal affairs of the Soviet scientific community. The institutional struggle between Michurinists and Mendelists became the pretext to launch a broad campaign that enveloped the whole of Soviet science. This campaign signaled the intention of party bosses to completely subject science to their own priorities, to discipline Soviet scientists accustomed to the authority and independence acquired during World War II, and to establish a new ideological atmosphere suited to the Cold War confrontation with the West.

Such an unfortunate turn in relations with their patrons did not handicap Soviet scientists; it consolidated the Stalinist science system. Adjusting their

rhetoric and rituals to the new party sentiments, scientists managed to turn a campaign designed to strengthen party control into a means of eluding such control and maintaining their own authority over their enterprise. They employed the very machine of the Stalinist system, created to strictly control their activities, to advance their own individual and institutional goals. The interplay of these political, cultural, and institutional factors created a complex pattern of interaction between the party-state and the scientific community, which, though varied in different disciplines and institutions, reflected the general principles of operation of the Stalinist science system.

Talking the Talk: Ritual and Rhetoric

“Your logic is impeccable,” the worried Director had said, “but I have learnt from fifteen years of experience that discussions tend to degenerate into games of blind man’s bluff. That is why I prefer a well-organized circus, where everyone performs his act amidst polite applause.”

—Arthur Koestler, *The Call-Girls*

THE AUGUST 1948 VASKhNIL meeting demonstrated the intention of party agencies to establish complete control over the scientific community and to affirm the status of the Central Committee of the Communist Party as the supreme authority in scientific questions. The scientific community understood perfectly well the lesson of the VASKhNIL meeting and hastened to display its compliance with the new “politically correct” line. During autumn 1948, the Michurinist campaign quickly spread to engulf almost all research and educational institutions in every field. Opened in late August by a gathering in the USSR Academy of Sciences, the cascade of meetings “to discuss decisions of the VASKhNIL meeting” swept through all Soviet academies during September and October.

Those who have written on the VASKhNIL meeting, it seems to me, have generally missed the forest for the trees. Transfixed by the so-called death of genetics, they have largely ignored similar gatherings in other scientific institutions. By focusing on the monopoly established by Lysenko and his allies in Soviet genetics as a result of the events of August 1948, they have mostly neglected the fact that, during the Michurinist campaign, scientific collectives in fields sometimes quite distant from genetics—including medical science, physics, technology, and linguistics—gathered to discuss the reorganization of their work “in light of decisions of the VASKhNIL meeting”; some even staged such sessions several times.¹ Clearly, these meetings had some purpose other than “to make the Michurinist trend completely dominant in Soviet biological science,”² as was ordered by the Central Committee.

It has often been assumed that Lysenko’s group was the driving force behind the Michurinist campaign of late 1948. The Lysenkoists, however, had already achieved their major goals by the end of August, before this broad campaign began. They had already replaced their opponents in all important administrative positions and had already seized all key posts in biological

research and education.³ Furthermore, they had no interest or ambition whatever in such fields as technology, medicine, physics, history, and linguistics, where this new wave of “Michurinist” meetings took place.

As it turns out, this Michurinist campaign was led and organized not by Lysenkoists, but by the scientific leadership. The Central Committee, to be sure, issued concrete directives to the scientific community—to remove certain scientists and to close certain institutions—but these were mostly limited to biology. The scientific leaders in academy presidiums and institute directorates greatly exceeded any instructions from above, expanding the Michurinist campaign far beyond genetics and even biology.

The history of these meetings, then, contradicts a stereotype about Stalinist science that sees everything as orchestrated from above and views the scientific community as a passive monolith victimized by party control and manipulation. Unlike the previous patriotic campaign associated with the KR affair, when meetings were organized according to strict guidelines set by the Central Committee, the meetings of the Michurinist campaign were largely initiated, orchestrated, and fine-tuned by the leadership of the scientific community itself.⁴

These meetings followed a set pattern. Scientific administrators enacted a standard ritual garnished with a standard rhetoric, reproducing the scenario of the August VASKhNIL meeting in miniature. The gigantic propaganda campaign in the press, together with the feverish activity of party agencies, clearly demonstrated to the scientific community that the Michurinist campaign was not only the party line, but also a top priority. Scientific administrators expressed their “obedience and devotion” to the new party line, giving their symbolic assent to the new role of the party apparatus in science. They employed Michurinist rhetoric to assure the party apparatus of their conformity and loyalty, their “political correctness,” and their embrace of the new model of science “approved by the Central Committee.”

This standardized pattern, however, was expressed differently in different institutions. Although these variations may appear insignificant to the casual observer, a careful comparative analysis of them demonstrates a remarkable fact: although scientific leaders followed the letter of the new “law,” they utterly contradicted its spirit. Despite their ritualistic rhetorical obeisance to the new party control of the content of science, they in fact sought to *counteract* the party’s seizure of control and to reassert their own hegemony over their disciplines.

THE RITES OF AUTUMN

In biology, medicine, pedagogy, psychology, and linguistics, scientific leaders sought to protect their existing intellectual and institutional agendas by sanctifying them as quintessentially Michurinist—and hence “preapproved”

TABLE 7-1

Decisions of the Central Committee on Michurinist Biology in August and September 1948

August 6	Secretariat assigns commission “to prepare proposals for strengthening biology departments in higher educational institutions.”
9	Orgburo issues resolution “On Measures for the Reorganization of the Work of Scientific Institutions, Departments, Publishing Houses, and Periodicals in the Field of Biology and for Strengthening Them with Qualified Michurinist Personnel,” and orders Agitprop “within three days to present to the Central Committee measures for the improvement of the Biology Division and biological research institutes of the USSR Academy of Sciences.”
11	Orgburo summons the leaders of the Academy of Sciences, the Ministry of Higher Education, and the Ministry of Agriculture for a special session at the Kremlin; approves resolution “On the Teaching of Biology.”
16	Orgburo issues resolutions “On the Situation in the Teaching of Biological Sciences and Measures for Strengthening Biology Departments in Higher Educational Institutions” and “On Measures for Improvement of Biology Institutions of the Academy of Sciences.”
17	Orgburo issues resolution “On Publishing Biology Literature.”
20	Orgburo orders the Ministry of Public Health to present a report and to prepare proposals for the “improvement of educational and scientific work in biology” within ten days.
September 10	Secretariat discusses the situation in the “scientific institutions subordinate to the Ministry of Public Health.”
20	Orgburo issues resolutions “On the Teaching of Biology in Secondary Schools,” and “On the Teaching of Biological Disciplines in Medical Educational Institutes.”

by the Central Committee. Meetings staged at the three largest central academies—the USSR Academy of Sciences, the Russian Academy of Pedagogical Sciences, and the USSR Academy of Medical Sciences—show this tactic in action.

For Michurinist Biology: The USSR Academy of Sciences

The campaign “for Michurinist biology” was opened by a special meeting of the Academy of Sciences on August 24–26.

The Central Committee had directly endorsed the reorganization of the Academy of Sciences’ biology institutions “according to the progressive Michurinist trend” (see table 7–1). As early as August 9—two days after Lysenko’s final declaration at the VASKhNIL session—the Orgburo ordered

Agitprop “within three days to present to the Central Committee measures for the improvement of the Biology Division and biological research institutes of the USSR Academy of Sciences.”⁵ The next day, Shepilov presented a long memorandum entitled “On the Activity of the Biology Division of the USSR Academy of Sciences and Measures for Strengthening Biology Institutes.” He severely criticized the leadership of the Biology Division for its patronage of Mendelist-Morganists and suppression of Michurinists. He also attached to the memorandum a draft of a resolution, “On the Guidance of Biology Institutions of the USSR Academy of Sciences.”⁶

The next day, August 11, the Central Committee Secretariat summoned the leaders of the Academy of Sciences to the Kremlin. There Sergei Vavilov (the academy president), Vasili Nikitin (its acting academician-secretary), and Leon Orbeli (academician-secretary of the Biology Division) attended a meeting of the Orgburo chaired by Malenkov. Vavilov and Orbeli reported on the work of the Biology Division. Malenkov severely criticized the academy’s work and observed that the Biology Division “suffers from grave shortcomings and at the same time has passed over in silence such a great event as the meeting of the Lenin Academy of Agricultural Sciences”: “The enemies of the Michurinist trend use the silence of the Biology Division for their own benefit, so [you] must not be silent, but must speak at the top of your voice.”⁷ The Orgburo appointed a commission “to draft an appropriate resolution.”⁸

On August 16, the Orgburo adopted a resolution, “On Measures for Improvement of Biology Institutions of the Academy of Sciences.” The resolution in particular ordered the academy

- To revise the research plans of biology institutions of the Academy of Sciences; to remove from the plans pseudoscientific Weismannist topics and replace them with pressing problems that correspond to the tasks of socialist construction . . .
- To strengthen the Bureau of the Biology Division and important biology institutions with Michurinist biologists . . .
- To liquidate Dubinin’s cytogenetics laboratory in the Institute of Cytology, Histology, and Embryology . . .
- To revise the plan of publications in the field of biology; to strengthen the editorial boards of biology periodicals with Michurinists . . .
- To revise the syllabi and curricula for graduate studies in the institutions of the Biology Division . . .⁹

The Orgburo resolution discharged Lysenko’s main opponents in the academy, Shmal’gauzen and Dubinin, from their administrative posts.

The decision to hold a special “enlarged meeting of the academy presidium on the questions raised by the August VASKhNIL meeting,” however, was made not by party officials, but by the academicians themselves. As early as August 14, Vavilov and Nikitin approved a preliminary plan for this gathering. Vavilov initially planned to hold a one-day meeting on August 21. A few days later, a more wide-ranging action was contemplated, and it was decided

to hold a three-day meeting on August 24–26. The party cell of the academy and the bureaucratic apparatus of the presidium (namely, its own Secretariat and the Department of Special Works)¹⁰ did most of the preparation. The head of the Department of Special Works, Viktor Kovda, served as an intermediary between the academy and the Central Committee. Nikitin was the main coordinator of these feverish preparations.

On August 18, Nikitin convened a small organizing committee to prepare the meeting. Fifteen persons were included: Kovda, Nikitin, Norair Sisakian, Nikolai Nuzhdin, Ivan Glushchenko, Mark Mitin, Grigorii Khrushchov, Khilia Kushner, Rakhil Dozortseva, Anatolii Nichiporovich, Aleksandr Studitskii, Khachatur Koshtoiants, Iakov Rautenshtein, Mariia Komarovich, and Iurii Vasil'ev. All were party members; most were known as disciples and allies of Lysenko; all except Nikitin and Mitin were nonacademicians who worked in the bureaucratic and party apparatus. Top officials of the presidium's apparatus participated in the committee: Kovda and Vasil'ev represented the Department of Special Works; Komarovich, the Secretariat of the presidium. The main task of the committee was to work out technical details of the forthcoming meeting: the list of participants and speakers, the text of the final resolution, the distribution of invitations, and so forth.

Nikitin informed the committee about the Orgburo's orders and Malenkov's critique of the academy. The main item on the agenda was the list and order of reports for the meeting. A leitmotif of the committee's first sitting was the forthcoming report by Orbeli: as academician-secretary of the Biology Division, he was slated to present a main address. Clearly, for the meeting's organizers, this question was the most complicated. Orbeli was the most influential figure in postwar Soviet biology. He was a member of three academies, the academician-secretary of the Academy of Sciences' Biology Division, the director of several research institutes, the head of the Military-Medical Academy (his military rank was colonel general), the chief editor of several periodicals, and a member of numerous governmental commissions and committees. Those who were preparing the meeting had to take into account his vast influence and connections.

All members of the committee agreed that Orbeli's address would not satisfy the demands of the Central Committee—he was known as a supporter of genetics and geneticists. It was even proposed that the text of his report be written by the secretary of the division's party cell, Koshtoiants.¹¹ But as Dozortseva, the scientific secretary of the division, informed the committee, Orbeli would never consent to this. Koshtoiants also objected to the idea. Orbeli would not take anyone's advice or instruction in preparing his report for the meeting. (The committee's expectations proved correct—his report would provoke a furious attack by Lysenkoists.)

The next day, August 19, the committee was summoned again, and this time Orbeli was present. They discussed the resolution prepared by the party cell of the Biology Division and the Department of Special Works.¹² The

essence of this resolution corresponded to the Central Committee's resolution of August 16: it also listed "Mendelists" to be dismissed and "Mendelist" institutions to be reorganized. The draft was sent "for correction and consideration" to five people: "A. Deborin—did not answer; G. Aleksandrov—made minor comments; M. Mitin—made remarks and wrote two new paragraphs; D. Shepilov and [F.] Novikov¹³—made corrections."¹⁴ The first three of these persons were philosophers and members of the academy; the last two were party officials.

The remarks made by the members of Nikitin's committee were mainly editorial and concerned only the introductory part of the resolution; they could not change the decisive formulations that repeated the Central Committee's resolution of August 16 almost word for word. In the process of further polishing and editing, however, the first paragraph was revised. The first draft (from August 18) stated: "To strengthen the leadership of the Biology Division. To include academician Lysenko in the Bureau of the Division."¹⁵ By August 21, the following had been added: "To satisfy academician Orbeli's request to resign from his duties as academician-secretary of the Biology Division. To appoint academician Oparin to the post of academician-secretary of the Biology Division."¹⁶ The next variant, marked "penultimate," is longer: "To discharge academician L. A. Orbeli from his duties as academician-secretary of the Biology Division. To appoint temporarily (until the election in a General Meeting [of the Academy]) academician A. I. Oparin to the post of academician-secretary of the Biology Division."¹⁷ In the next version, marked "The last. August 24, 11:00 AM," the first sentence returned to its August 21 version ("To satisfy . . .").¹⁸ This version, however, was not the last. Those who were preparing the resolution clearly had to move with caution in dealing with such a powerful figure as Orbeli. This is probably why its first paragraph regarding Orbeli was revised so many times.

The difference between "to satisfy Orbeli's request to resign" and "to discharge" was very significant. According to the Academy of Sciences' statutes, the post of academician-secretary of a division was elective; but in practice, appointment to this post (as to any other post in the presidium and the bureaus of divisions) fell within the *nomenklatura* of the Central Committee. So only the Central Committee could determine Orbeli's fate. Apparently, while the meeting was already in progress, the first sentence of the resolution was again corrected to "To discharge . . ."¹⁹ On the reverse side of this final version is a handwritten note: "corrected pages from the copy of Novikov and D. Shepilov." The strong formulation (discharging Orbeli) was probably intended to demonstrate that even such a powerful figure would not be allowed simply to resign from his post, but instead would be punished for his patronage of "Mendelists."

The Central Committee apparatus closely monitored these preparations, and the academy's apparatus carefully planned the forthcoming meeting and prepared decisions to satisfy the demands of the party apparatus. But despite these long and careful preparations, the meeting did not go as planned.

A stenographic report published in the academy's official journal, together with newly available archival materials, allows us to reconstruct the events of August 24–26. The first two days were taken up by reports and speeches, and the third was devoted to adopting the resolution. The audience was composed almost entirely of biologists. Twenty-two speakers took the floor (among them the academy's president and academician-secretary, and three ministers). "Because of a shortage of time for discussion," eight other persons submitted written reports to the presidium, and academician Nikolai Tsitsin sent a letter to the presidium that was read by the president. Almost all the members of Nikitin's committee delivered reports, but no Mendelists spoke at the meeting.

Curiously, the victory of Michurinism in the academy was staged without the main victor: although he was a member of the academy's presidium and was being newly appointed to the bureau of the Biology Division, Lysenko himself was absent.²⁰ Also absent were his main opponents, Shmal'gauzen and Dubinin.

The meeting began at noon on August 24. It was chaired by Vavilov, who delivered a short opening address admitting the mistakes of the academy's leadership and calling for the adoption of concrete decisions. "This [meeting] is not a discussion," he emphasized. "It is important to express our principled attitude to the problems [raised by the VASKhNIL meeting]."²¹

The first to "express his principled attitude" was Orbeli, who delivered a special report on behalf of the Biology Division. As members of Nikitin's committee had anticipated, his report was a polemic against Lysenko's address at the VASKhNIL meeting, but he did not even mention Lysenko's address or its approval by the Central Committee. Instead, he set about disproving Lysenko's accusations against Soviet *biology*, describing in detail the practical significance of research conducted in the institutions of the division. He enumerated a great variety of important problems studied by biologists and insisted that biology was not merely "the basis of agronomy," as Lysenko had declared. Orbeli said: "It seems to many people that the Biology Division is obliged only to work in one field. In fact, biologists have been called upon from all directions."²² He then detailed the many ways academy biologists had been useful, mentioning physiologists' work on various military-related problems and zoologists' research in parasitology and epidemiology. Orbeli was clearly trying to narrow Lysenko's authority: Lysenko's report concerned only genetics and could not be properly entitled "On the Situation in *Biological Science*."

Only then did Orbeli address the situation in genetics. He admitted the existence in *genetics* of two trends—"formal" and "Michurinist"—but he reduced the controversy between them to "purely biological debates" and to "careerist struggles to seize institutions."²³ Admitting that "formal genetics includes some *elements* of metaphysics, *elements* of idealism," he confessed that "he had underestimated the ideological struggle that was *partially* hidden behind it."²⁴

Among Lysenko's opponents, Orbeli named only Dubinin and Zhebrak, without mentioning the other geneticists and biologists that Lysenko had criticized (for example, Shmal'gauzen, who had been the main target of Lysenkoist attacks at the VASKhNIL meeting). Moreover, although the Lysenkoists referred to Nikolai Kol'tsov (who had died in 1940) only as a "fascist" and "reactionary," Orbeli termed him a "prominent biologist." Orbeli also tried to save two geneticists, Mark L. Bel'govskii and Aleksandra A. Prokof'eva-Bel'govskaia: listing them together with Nuzhdin, Lysenko's deputy in the Institute of Genetics, Orbeli declared that, since they worked in Lysenko's institute, they could not be "formal" geneticists. In conclusion, Orbeli uttered several formulaic phrases admitting his mistakes, including his "liberal attitude toward Mendelism." He also acknowledged Michurinists' victory over formal genetics, but he insisted that "the principal approach of our Biology Division should be the unrestricted study of biological problems coupled with broad-ranging analysis."²⁵

Anticipating the content of Orbeli's report, Nikitin's committee had instructed another speaker, Aleksandr Oparin, to report on behalf of the Biology Division. Oparin had already been elevated to the post of academician-secretary by party order. Unlike Orbeli, he toed the Lysenkoist line. He began by repeating a main thesis of Lysenko's report: "Biology was always the main bridgehead for the struggle between two uncompromising philosophical lines—materialism and idealism." "The Michurinist view on living nature," he continued, "reflects completely the dialectical materialist viewpoint."²⁶ Oparin devoted most of his report to a demonstration that he himself "supported and supports to the utmost the Michurinist point of view."²⁷ He concluded by enumerating the main tasks of the academy in eliminating the Biology Division's mistakes. He largely recapitulated a draft of the presidium's forthcoming resolution, but included only general phrases about changing research plans and training Michurinist personnel.

Next to speak on behalf of the Biology Division was academician Vladimir Sukachev, director of the Institute of Forestry and one of Lysenko's main opponents at the earlier discussion on the struggle for existence. Like Oparin, he talked at length about "the Michurinist trend" of his own research and that of his institute. A member of the division's bureau, he admitted that the division had mistakenly "permitted research along Morganist lines." Sukachev did not name any academy workers as Mendelists. Instead, he simply proposed that there should be conferences to discuss plans and publications "for the development of Michurinist biology."²⁸

Nikitin's committee had scheduled the next speaker to be one of Lysenko's main theorists, Ivan Glushchenko, who was to present a Lysenkoist vision "on the situation in the Biology Division of the Academy of Sciences." But instead, the minister of higher education, Sergei Kaftanov, took the floor. Understanding very well what Orbeli, Sukachev, and even to some extent Oparin were trying to do, Kaftanov declared that previous speakers had ignored "the

colossal significance of the VASKhNIL meeting.” The main target of his speech was Orbeli. During the first minutes of the speech, he used the word “must” six times, enumerating subjects Orbeli had neglected. He refuted Orbeli’s report point by point: Lysenko’s struggle against formal genetics was inspired “not by personal interests, but by those of science,” and Orbeli had falsely attempted “to tear the ideological side of the struggle away from the scientific one.” Kaftanov was the first speaker at the session to remind participants that Lysenko’s report had been “approved by the Central Committee” and that the struggle against Mendelism had a *political* meaning. He several times repeated that “enemies of the Soviet Union,” such as Dobzhansky and Timofeeff-Ressovsky,²⁹ “struggled against Soviet science, against Soviet progressive Michurinist biology” and that native “troubadours of Mendelism-Morganism” had joined in. Kaftanov ticked off the most “guilty” academic institutions and the Morganists working there—Zhebrak, Dubinin, Navashin, Shmal’gauzen, Sabinin, Davidenkov—devoting special attention to Zhebrak’s and Dubinin’s “sins.” He criticized Orbeli for his patronage of and connivance with Mendelism and for his attempt to defend Mendelists “even now, after the publication of the VASKhNIL meeting materials and Lysenko’s report that crushed Mendelism-Morganism completely.” Contradicting Orbeli, Kaftanov declared that the results of the VASKhNIL meeting were very important not only for genetics, but for all biological disciplines and for science as a whole. He castigated the “absolute deficiencies and gigantic defects in the work of academic biology institutions” and called upon academicians to develop criticism and self-criticism, repeating phrases from the Central Committee’s resolution that “Michurinist biology must occupy a dominant position in the Academy of Sciences” and insisting that this required “subordination of all important areas of biological science, especially the institutions of the Academy of Sciences, to Michurinists.”³⁰

After Kaftanov’s speech, almost all reports glorified Michurinist biology. They followed a general pattern. Speakers began with the “historical meaning of the VASKhNIL meeting” and especially that of Lysenko’s report. Almost all referred to “the Central Committee’s approval” and assured the audience that they themselves were long-standing and true Michurinists who had always struggled against Mendelism at home and abroad. Every speech targeted some Soviet or foreign Mendelist for having attacked “Lysenko and his teachings.” Homegrown Mendelists were denounced for “their slavishness and servility to foreign science.” Speakers also criticized the leadership of the academy for its bias in favor of Mendelism. Those who occupied high-level administrative posts criticized their subordinates and confessed their own mistakes: tolerance of Mendelism (and foreign science in general), insufficient attention to criticism and self-criticism, neglecting the *partiinost’* principle in science. Those speakers who did not occupy high administrative positions criticized the leadership of their own institutions. These critics of Mendelism used essentially the same arguments earlier employed by Lysenko

and other participants at the VASKhNIL meeting (arguments therefore approved by the Central Committee): the alienation of genetics from the needs of the people and socialist construction; and the reactionary character of genetics and its relations to fascism, eugenics, and idealism. Particularly critical were speeches by “outsiders” such as the minister of agriculture, Ivan Benediktov, and the minister of state farms, Nikolai Skvortsov, who blamed the academy for not paying much attention to agriculture.³¹

To these ritual themes, a new motif was added in the speeches of two philosophers, Mark Mitin and Georgii Aleksandrov. Both insisted that “conclusions from the VASKhNIL meeting should be applied to all disciplines” and that the meeting’s results demonstrated defects in the ideological stance of Soviet scientists. In Aleksandrov’s view, “it is necessary to organize the fundamental learning of Marxist-Leninist philosophy by our scientists much more seriously than was ever done before.” He reminded participants that the academy graduate school (*aspirantura*) “is the only one in the entire country where a course in Marxist-Leninist philosophy is not required” and demanded that “this abnormal situation be corrected immediately.”³²

At the Academy of Sciences’ session, in contrast to the VASKhNIL meeting, no Mendelists were allowed to speak. Indeed, they were not even allowed to attend. The organizers of the session apparently did not even want to give them an opportunity to “confess,” perhaps fearing that they would use the opportunity to propagate their “noxious” theory (as had occurred at the VASKhNIL meeting). There was good reason for their apprehension.

I found in the academy’s archive a letter from Shmal’gauzen dated August 19, 1948, and addressed to its presidium. Shmal’gauzen informed the presidium that he would be unable to attend the meeting because of illness³³ and therefore wanted to make a written declaration. Its conclusion was subservient: “I always gave all my strength to benefit Soviet science and in the future I will use all my knowledge to march together with Soviet progressive biology and its avant-garde—the Michurinist trend.”³⁴ The entire preceding text of the three-page letter, however, was a complete refutation of the accusations raised against him at the VASKhNIL meeting. In particular, he demonstrated that his works had been inaccurately cited and that his opponents had attributed to him statements he had never made. Further, he insisted that his Institute of Evolutionary Morphology had always conducted research necessary to the country and that the investigations castigated at the VASKhNIL meeting as “distant from the people” were in fact “a direct continuation of A. Severtsov’s phylogenetic research” and “had been successfully introduced into practice.” Clearly, Vavilov knew about the existence of this letter, but, unlike Tsitsin’s, it was not read at the meeting. Perhaps Vavilov wanted to carefully control the session in order to prevent an already difficult situation from deteriorating.

The last day of the meeting was devoted to adopting the resolution, which participants accomplished with little discussion. The resolution almost literally repeated the Orgburo’s resolution of August 16. Academy “Mendelists”

who had been named by the Orgburo, such as Shmal'gauzen, Dubinin, and Navashin, were removed from their posts. Genetics laboratories in the Institute of Evolutionary Morphology and the Institute of Cytology, Histology, and Embryology mentioned by the Orgburo were closed. The presidium ordered the bureau of the Biology Division to revise its plans for research, graduate studies, and publications in order "to develop Michurinist teaching and to subordinate research in the Division's institutions to the economic needs of the country." The resolution also ordered that a conference "concerning the problems of the further development of Michurinist biological science" be held in October with the participation of VASKhNIL, all republic academies, and all branches and bases of the Academy of Sciences.³⁵ The meeting ended with "applause from the entire audience" and unanimous approval of a letter "To Comrade J. V. Stalin."

The next day, *Pravda's* front page contained an editorial entitled "For the Flourishing of Our Advanced Science," the resolution of the Academy of Sciences presidium, and the letter to Stalin. The summary of speeches delivered at the meeting occupied the entire second page of the issue. All central and republic newspapers reprinted the information from the front page of *Pravda*.

The main goal of the Academy of Sciences' session was, clearly, to display the obedience of its administrative apex to the party apparatus. Following precise instructions, the meeting legitimated the Central Committee's decisions to crush Lysenko's opposition in the biology institutions of the academy. Michurinist biology was declared the only allowable doctrine in Soviet biology.

The dynamics of the meeting, however, suggest that the academy leadership, in displaying its obedience to the party line, strove to preserve and reassert its own control over its institution. Although Nikitin's committee prepared technical details of the meeting, its general directions and flow were carefully orchestrated by academy leaders—Vavilov and Orbeli. They regularly conferred with each other during the preparations and during the meeting itself, adjusting their scenario to emerging factors and events. They cautiously but persistently opposed the attacks launched by such powerful figures as ministers Kaftanov, Benediktov, and Skvortsov. Orbeli's concluding remarks at the last session on August 25 and Vavilov's concluding speech on August 26 clearly suggest that the academicians sought to prevent the interference of outsiders, even if they were party or state officials, in their "internal" policies.

Orbeli formally admitted that his report was "unsuccessful" (*neudachnym*) and thanked his critics for pointing out his "mistakes." After that, however, he began to reject point by point the concrete accusations made by his critics. Furthermore, he once again repeated the general argument of his opening report: academy biologists worked on a number of subjects with extremely important military and medical applications.³⁶ Similarly, Vavilov remarked that the academy could not substitute for all other scientific institutions subordinate to various ministries.³⁷ Both took a nasty swipe at their ministerial critics,

Benediktov and Skvortsov: after all, agriculture was their field and VASKhNIL was under their purview; if Soviet agricultural science was not developed as it should be, the scientists hinted transparently, it was their fault, not the fault of the Academy of Sciences, and they would do better to stop their slanders and mind their own business more attentively. Thus, while praising Michurinist biology and formally admitting the new model of Stalinist science it embodied—the complete subordination of science to party guidance—the academy leaders maneuvered to minimize its effects on their institution.

During the meeting in the Academy of Sciences, however, a new note was clearly sounded—the “broadening” of the meaning and significance of VASKhNIL’s decisions. At an early session of Nikitin’s committee, one of the participants had remarked: “The report of academician Lysenko and the questions discussed by the meeting of the Lenin Academy [of Agricultural Sciences] concern not only biological disciplines, but natural sciences in the widest sense of the word. . . . To construe the problem as concerning only biological disciplines would narrow the issues that were raised by academician T. D. Lysenko and which have great significance for all natural sciences.”³⁸ During these preliminary planning sessions, however, this idea did not find support.

A broadening of “the questions raised by Lysenko” into other disciplines began only during the meeting itself and reached its peak in the following months, when various groups within and without the scientific community grasped the unexpected opportunities such a “broadening” provided.

For Michurinist Pedagogy: The Academy of Pedagogical Sciences

One of the first efforts to expand the Michurinist campaign into nonbiological disciplines came at a meeting of the Academy of Pedagogical Sciences on September 4, 1948.

This institution occupied a special place in the Soviet scientific community. The academy was subordinate to the Ministry of Enlightenment, and its purpose was to provide scientific advice and support to secondary schools. The academy prepared syllabi, manuals, textbooks, and school supplies for various disciplines as required by the curricula of secondary and higher pedagogical schools. Several institutes carried out this mission: the Institute of the Theory and History of Pedagogy, the Institute of Teaching Methods, and the Institute of Pedagogical Education. The academy also included a number of institutes that conducted research in biology, hygiene, psychology, physiology, and pedagogy itself (for example, the Institute of Psychology and the Lesgaft Institute of Natural Sciences). This dual mission—education and research—explains the nature of the events that transpired there in 1948.

Unlike the meeting in the Academy of Sciences, the gathering in the pedagogical academy did not result from direct party criticism or instructions. Dur-

ing the Central Committee's many August sessions, the Academy of Pedagogical Sciences was not mentioned even once. I was unable to find any Central Committee documents concerning the "situation in the Academy of Pedagogical Sciences." Apparently, the enlarged meeting of its presidium devoted to the "results of the VASKhNIL meeting" was initiated by the top officials of the academy themselves. Despite the absence of direct party instructions, however, the broad press campaign against genetics made the task of the academy explicit—to remove genetics from biology education in secondary schools.

The session was organized in much the same way as that of the Academy of Sciences. Konstantin Kornilov, academy vice-president and academician-secretary of its Psychology Division, presided over the meeting. President Ivan Kairov delivered the principal address, "On the Results of the VASKhNIL Meeting and the Tasks of the Academy of Pedagogical Sciences." There followed speeches from representatives of various academic institutions.

The presidential report was built upon the example of the Academy of Sciences meeting. Kairov opened his report with the sacral phrase about "the party's approval" of Lysenko's report and declared that "the VASKhNIL meeting and its decisions are directly addressed to the Academy of Pedagogical Sciences and, most of all, to the teaching of biology in secondary and higher schools."³⁹ He bitterly criticized researchers in academic institutions for Morganism-Mendelism-Weismannism and threatened to take severe measures: "We are setting the task of examining all scientific workers in academic institutions and ascertaining their ideological positions regarding questions of natural sciences. We have already unmasked a group of biologists who held fallacious Weismannist positions. We have discharged a number of persons, scientific advisers, because these advisers took wrong positions and we could not permit them to advise on scientific work in the future." Kairov criticized with special vigor the authors of textbooks for secondary and higher pedagogical schools. He "unmasked" the influence of "idealist biology" in almost all biology textbooks and proposed that new programs, textbooks, and manuals for teachers be written as soon as possible in a Michurinist spirit. In the meantime, he suggested "a special instructive letter explaining [to teachers] how they have to teach natural sciences in secondary schools now."⁴⁰

This presidential speech, however, reached well beyond the teaching of biology. Kairov explained that "the VASKhNIL meeting should be a new stimulus to sort out a whole number of theoretical and practical problems in pedagogical science." He called upon his colleagues "to pay special attention in the teaching of pedagogy to questions of the influence of heredity, environment, and upbringing on the development and shaping of human beings."⁴¹ In order to do this, he suggested that the research plans of the academy's institutes be changed to conform to the "practice of Communist upbringing and education." Criticizing the "slavishness and servility of certain workers of the

academy to foreign science,” Kairov underlined the important heritage bequeathed by such native pedagogical authorities as Nadezhda Krupskaja and Anton Makarenko to Soviet pedagogical research. He also called on pedagogues to develop criticism and self-criticism.

Responding to this call, subsequent speakers unanimously criticized Weismannism-Morganism and vowed “to crush it completely.” Every researcher, textbook author, instructor, or teacher who employed “non-Michurinist” materials was labeled a Mendelist. Almost every speaker named the most “malicious” Mendelists working in his or her institution and urged that they be ousted.

The name of Boris Raikov—a member of the academy, the author of the best manual for biology teachers, and the editor of the academy journal *Natural Sciences in School*—was raised most often.⁴² Raikov had never been a geneticist; his specialty was the methodology of biology teaching. His main offense was a complimentary article about one of the founders of Soviet genetics, Iurii Filipchenko, published shortly before the VASKhNIL meeting. Almost every other speaker mentioned Raikov’s name together with appropriate epithets. For example, Mikhail Mel’nikov, the author of a textbook on Darwinism for secondary schools, characterized Raikov’s work in the following terms: “It is our duty today, in light of decisions of the VASKhNIL meeting, not only to totally unmask all the defective bases of this [Raikov’s] direction in the methodology of teaching, but to crush it totally and not to discuss it anymore, because the discussion has wasted very much time and strength, and we know from party experience that at important moments the party never permitted such discussions.”⁴³ Every speaker adapted Kairov’s report to his or her own situation: a member of an editorial board “struggled against the Morganism” of the editor-in-chief; textbook authors criticized rival textbooks for their “idealist content” (and sometimes, like Mel’nikov, they even criticized their own coauthors); researchers noted the “anti-Michurinist tendencies” or the “servility to the West” of their colleagues; and so forth.

Unlike the leadership of the Academy of Sciences, the pedagogical officials apparently decided that the “confessional” speeches of branded Mendelists were allowable and even desirable. For instance, the author of the first genetics textbook for pedagogical institutes, Vladimir Natali, who was repeatedly criticized during the meeting, was permitted a long speech that concluded as follows: “I am fully admitting and again underlining the deficiencies of my position. . . . I want to devote all my energy (while I have it) to . . . the propaganda of Michurinist teaching, to the reorganization of all biology on a Michurinist basis.”⁴⁴ Raikov took the floor twice, assuring the meeting that he had never been a Morganist and promising “to correct my mistakes and in the future to work in a strictly Michurinist direction.”⁴⁵

Speakers did not restrict themselves to questions of biology. Almost all called for the reorganization of their disciplines on a “Michurinist basis.” For instance, the director of the Institute of Psychology, A. Smirnov, urged that all

psychological works be reassessed from a Michurinist perspective. Nikolai Semashko, head of Narkomzdrav in the 1920s and now director of the Institute of Physical Training and School Hygiene, strove to convince the audience that Lysenko's report and the results of the VASKhNIL meeting were extremely important for solving problems in school hygiene. He explained: "Not without reason did academician Lysenko enunciate the expression: 'to bring up [*vospityvat'*] plants and animals by external influences on them.' Of course, it is necessary to adjust this for human beings, but we are also occupied with bringing up a growing generation. And here we have all the possibilities presented by the Soviet system for bringing up the next generation."⁴⁶ After similar speeches by twenty-three persons, ending only late at night, the enlarged presidium finished its work by unanimously adopting the resolution that had been prepared by its governing body.

Unlike the widely advertised meetings in VASKhNIL and the Academy of Sciences, the gathering in the pedagogical academy did not occasion a great press campaign. Pedagogical periodicals, however, publicized the meeting.⁴⁷ *Teachers' Gazette* provided brief information.⁴⁸ The official journal of the academy, *Soviet Pedagogy*, published a laudatory editorial, "The Triumph of Advanced Michurinist Science and the Tasks of Soviet Pedagogy."⁴⁹ The next issue of the journal published a shortened version of Kairov's opening address and concluding remarks, plus summaries of selected speeches, which occupied only about twenty pages⁵⁰ (compared with the six-hundred-page stenographic report of the VASKhNIL meeting). Surprisingly, the resolution adopted at the meeting was published neither in the newspaper nor in the journal, but in a specialized information bulletin that was printed in an edition of only two thousand copies.⁵¹

Despite such limited publicity, during the autumn of 1948 all institutions of the Academy of Pedagogical Sciences held Michurinist meetings. At these meetings psychologists and hygienists, pedagogues and specialists in physical education all loudly proclaimed their Michurinist convictions.

For Michurinist Medicine: The Academy of Medical Sciences

A further broadening of the Michurinist campaign occurred five days later at a meeting of the USSR Academy of Medical Sciences, on September 9–10, 1948.

Like their colleagues in the Academy of Pedagogical Sciences, medical officials did not wait for party orders. "The situation in educational and scientific work" in medical institutions was first mentioned at the Central Committee's sitting of August 20⁵² in relation to Kaftanov's memorandum on "serious deficiencies in the teaching of biological disciplines in medical [educational] institutes."⁵³ As early as August 16, however, the bureau of the academy's presidium held its first session to discuss a plan of action. Petr Anokhin,⁵⁴ a presidium member and head of its planning commission, delivered a report.

The main item on the agenda was determining which academic institutions were “infected by Morganism” and who among the academy’s workers had adhered to this “obnoxious doctrine.” At this session, however, there was already a tendency to discuss the results of the VASKhNIL meeting in a very broad sense and to organize purges, not only of “Morganist-Mendelist-Weismannists,” but also of “idealists.”⁵⁵

Ten days later, on August 26, the bureau discussed a plan for “removal of reactionary idealist biological concepts from medical science.”⁵⁶ It assigned Ivan Razenkov,⁵⁷ academician-secretary of the Biomedical Division, to prepare and deliver the principal report to an enlarged meeting of the presidium. It was decided, however, to first rehearse the report at a rump session on September 6. The chair of this meeting, academician-secretary of the academy Semen Sarkisov, underlined the great importance of the questions they discussed: “The question is not just a reorganization [*perestroika*] of our Academy; the question is a radical reorganization of our science and medical work. . . . We must develop our medical science alongside the point of view of Michurinist doctrine.”⁵⁸ He informed the audience that after the meeting Razenkov would have to report to the minister of public health, Efim Smirnov. He asked members of the presidium “to be very attentive and to discuss thoroughly” the proposed texts of the report and resolution.

The members were indeed very careful, correcting and polishing the documents for more than three hours. According to the stenographic report of a session of the bureau of the Biomedical Division held the next day, the minister approved Razenkov’s report with only a few corrections. He emphasized that the mistakes of idealist subordinates were in fact the fault of the institute directors who had permitted them to work.⁵⁹ The bureau took the corrections into account and made corresponding changes in Razenkov’s report. The administrators of the medical academy, then, carefully planned the scenario of the forthcoming meeting. Unlike their colleagues in the Academy of Sciences and the pedagogical academy, they even made certain that “the Michurin of our day,” Trofim Lysenko, attended their gathering.

Finally, on September 9, the academy president, Nikolai Anichkov, opened the enlarged meeting of the presidium with a short introduction. Razenkov then read his carefully prepared report to an audience of almost five hundred.⁶⁰ He began with ritual phrases about “the great historical meaning of the VASKhNIL meeting and of Lysenko’s address approved by the Central Committee.” He declared that deficiencies in medical science resulted from the activity of homegrown Weismannist-Morganists and from the laxness of the academic leaders who permitted them to work. He emphasized that Weismannist-Morganist concepts had influenced medicine no less than agriculture, and formulated the meeting’s goals: “The school of Michurin-Lysenko has accomplished the ideological rout of Weismannism-Morganism in biology. Our urgent task is, through concrete analysis, to lance and remove all elements of

idealist biology in specific areas of biomedical specialties. Such criticism and such analysis must be accompanied by appropriate measures dealing with the structure and personnel of some academic institutions and with further planning of the academy's scientific work in general."⁶¹ Assuming, correctly, that most of his audience had never even heard about Michurinist biology before August 1948, Razenkov reviewed the essence of Lysenko's views on heredity, contrasting them with "the opposite, good-for-nothing views of Morganism." He also tried to connect Lysenkoist ideas to problems of medical research. Then he moved to the "concrete analysis" of mistakes made by various institutes and scientists.

First on the list of "criminals" was the Institute of Experimental Biology.⁶² Razenkov targeted its director, Aleksandr Gurvich,⁶³ and the head of a laboratory, Leonid Bliakher, for their "obviously idealist and Weismannist positions."⁶⁴ Moreover, he said, "their works stand outside of the problems that our socialist economy has set for science." Razenkov demanded that "the institute be completely reorganized on the basis of the progressive Soviet Michurinist trend in biology."⁶⁵

Next came the Institute of the Evolutionary Physiology and Pathology of Higher Nervous Activity, directed by Orbeli. Razenkov's critique began with a member of the academy, Sergei Davidenkov, who until 1941 had been a genetics consultant in the institute. A prominent psychiatrist and neurologist who had advised Pavlov on genetic problems of higher nervous activity, Davidenkov had already been mentioned during the meeting in the Academy of Sciences. His worst offense was a monograph, *Evolutionary Genetic Problems in Neuropathology*, published in 1947 with Orbeli's enthusiastic foreword.⁶⁶ According to Razenkov, Davidenkov's main fault was an attempt "to justify autogenetic perversions by references to the authority of I. Pavlov and his school."⁶⁷ Razenkov continued by criticizing the institute itself for conducting Mendelist instead of Pavlovian research: "It is inadmissible," he declared, "that researchers of the Morganist trend . . . continue to work in the Institute of Evolutionary Physiology."⁶⁸

His next target was the Division of Clinical Medicine, where researchers paid too much attention to the autonomy of the human organism and too little to environmental influences on the development of diseases. For Razenkov, Michurinism demanded an environmental approach, yet (for example), "there is not a single topic in the plan of the Institute of Therapy where a question of the external factors contributing to high blood pressure (hypertension) or stomach ulcer has even been touched upon."⁶⁹ He also noted deficiencies and the "influence of the corrupting ideas of Weismannism" in oncology and clinical psychiatry.

Nor, Razenkov continued, had the Michurinist doctrine been used in the institutes of the Division of Hygiene, Microbiology, and Epidemiology. Instead, much research had been conducted "in the spirit of Weismannism-

Morganism.” He particularly criticized investigations in the Laboratory of Antibiotics, headed by Georgii Gauze, for supporting and developing Shmal’gauzen’s ideas. Microbiological research would surely have benefited, he said, “if Weismannist-Morganists had been banished in time from some institutions of the Academy.”⁷⁰

In his conclusion, Razenkov identified a familiar litany of causes for the unsatisfactory situation in the academy’s institutions: neglect of Bolshevik criticism and self-criticism, servility to foreign science, insufficient attention to the ideological and political upbringing (*vospitanie*) of personnel, alienation of medical institutions from practice, lack of the *partiinost’* principle in medical science. He called on medical scientists to correct the situation and to reorganize the academy in accordance with Michurinism. He briefly summarized the proposed resolution and finished his speech by glorifying the Great Teacher, Joseph Stalin.

In the course of the two-day meeting, about fifty persons expressed their attitudes toward “idealist biology and medicine.” Their speeches combined certain typical features—for example, rejection of Morganism and praise for Michurinism—with some new motifs appropriate to the special circumstances of the medical academy. Unlike the Academy of Sciences and the Academy of Pedagogical Sciences, the Academy of Medical Sciences had no specific task and received no specific orders from the party. Furthermore, the task assigned to the first two academies—banishment of genetics from research and teaching—had already been largely accomplished in medical research with the liquidation of Solomon Levit’s Medical-Genetic Institute in the late 1930s. Those few institutions where genetics studies were still conducted (such as the Laboratory for the Genetics of Higher Nervous Activity in Orbeli’s institute) provided material too scanty for a broad campaign. Besides, such material could not be used by *all* speakers, most of whom had no connection with genetics whatever. In these circumstances, Morganism was replaced by *idealism* as the *bête noire*.

Somehow, an analog of Mendelism had to be found or constructed in medicine. Physicians tried to find a worthy opponent for “Soviet progressive materialist medical science.” Many speakers named *virkhovianstvo* (a doctrine based on Rudolf Virchow’s cell theory) as the analog.⁷¹ Most, however, settled upon “homegrown idealists.” As one speaker put it: “We have our own Shmal’gauzens, Dubinins, and Zhebraks in our academy.”⁷² Each speaker nominated leading specialists in his or her own field as candidates for the roles of Zhebrak and Dubinin, usually accusing their nominees of idealism. For example, a number of speakers denounced the research of academician Lina Shtern on the blood-brain barrier as idealist.⁷³

Lysenko’s theories were virtually unknown to physicians, and a direct use of his theories in medical practice and research was rather difficult. As Lysenko himself declared at the meeting: “There is no direct connection between

Michurinist teaching and medical science.”⁷⁴ To imbue the campaign with “scientific” meaning, it was necessary to find a “materialist” theory that could substitute in medicine for the role of Michurinism. Razenkov had already proposed one—Pavlovism. This explains why so many speakers criticized the research of the well-known opponents of Pavlov’s doctrine Ivan Beritashvili and Nikolai Bernshtein,⁷⁵ and why Pavlov’s pupils who attended the meeting criticized each other for ignoring Pavlov’s heritage.⁷⁶

Olga Lepeshinskaia proposed an alternative: her own concept of “the origination of cells from noncellular matter.” Her speech was emotional: “What happiness! At last, the dialectical materialists have triumphed, the idealists are paralyzed and are being liquidated as the kulaks were once liquidated. To prevent their obstruction of the forward motion of science and their propaganda of idealism . . . it is necessary to remove them from all leading posts and to exercise a special vigilance toward repentants, because, perhaps, among the sincere repentants there are some wolves in sheep’s clothing, trying to save themselves from liquidation.”⁷⁷ Praising herself as a “materialist and innovator,” she characterized her opponents—almost all the country’s leading cytologists, histologists, and morphologists—as “idealists and reactionaries.”⁷⁸ But her gambit was rebuffed. Lepeshinskaia’s opponents did not “confess,” but instead criticized her views.⁷⁹ All, however, attempted to allay suspicions of their idealism by talking at length about the materialist character of their research.

As at the pedagogical meeting, those branded as “idealists” were allowed to speak. Davidenkov, Bliakher, and Gauze repented and promised to reorganize their work in accordance with Michurinist thinking. Not all “idealists” did so. For example, Shtern insisted that the accusations against her were baseless: “I am not the sort of person who, immediately after something has changed, begins to confess and say: ‘I am not me, and my horse is not mine.’ . . . Understanding, however, that we are living now in a period of cold war, I am taking into account all the political significance of what is going on at the biological front.”⁸⁰ Gurvich refused to say anything at all at the meeting. He sent the presidium a letter in which instead of admitting mistakes he declared his “irreversible decision to quit my work in the academy” and requested that he “not be listed as a worker in the Institute of Experimental Biology.”⁸¹ Orbeli admitted that his foreword to Davidenkov’s book was a mistake, but completely denied all accusations of misrepresenting Pavlov’s line and did everything he could to defend the workers of his institute; he took all the blame for their “mistakes” upon himself and tried to remove the names of his subordinates from the resolution of the presidium.⁸²

Following the standard ritual, the enlarged meeting of the Academy of Medical Sciences presidium ended with the unanimous adoption of a resolution and a letter “To Comrade J. V. Stalin.” Information about the academy meeting and the letter to Stalin was widely published in the central and local press and, of course, in all medical periodicals.

TABLE 7-2
Chronology of Michurinist Meetings in 1948

August	
July 31– Aug. 7	VASKhNIL meeting
17	Meeting of the presidium of the All-Union Society for the Dissemination of Political and Scientific Knowledge
24–26	Enlarged meeting of the presidium of the USSR Academy of Sciences
26–27	Meeting of workers of higher educational institutions in Moscow
26–28	Joint meeting of the divisions of biological and agricultural sciences of the Armenian Academy of Sciences
30–Sept. 2	Meeting of workers of Ukrainian biological, agricultural, medical scientific, and public institutions
September	
2	General assembly of the Latvian Academy of Sciences
3–4	Enlarged meeting of the presidium of the Belorussian Academy of Sciences
4	Enlarged meeting of the presidium of the RSFSR Academy of Pedagogical Sciences
6–7	Meeting of workers of biological science in Leningrad
7–8	Enlarged general assembly of the Latvian Academy of Sciences
9–10	Enlarged meeting of the presidium of the USSR Academy of Medical Sciences
11	Enlarged meeting of the presidium of the Kazakhstan Branch of VASKhNIL
13–15	Meeting of biology teachers of the Ukraine
14–16	Enlarged meeting of the presidium of the Uzbekistan Academy of Sciences
16–20	Joint meeting of the Division of Hygiene, Microbiology, and Epidemiology of the USSR Academy of Medical Sciences and VASKhNIL
17	Open meeting of the party organization of the Georgian Academy of Sciences
18–19	Meeting of workers of biological science in Tbilisi (Georgia)
20–22	Enlarged meeting of the presidium of the Lithuanian Academy of Sciences
24–25	Meeting of natural-sciences teachers of secondary schools, pedagogical colleges, and higher educational institutions of the Georgian Ministry of Enlightenment

The Ritual Spreads

During the following months, the campaign for “Michurinist” science quickly expanded throughout the Stalinist science system. Meetings were held in the academies of sciences of the Ukraine, Kazakhstan, Uzbekistan, Latvia, Armenia, Azerbaidzhan, Georgia, Estonia, and Belorussia, as well as in numerous

TABLE 7-2
(Continued)

September	
26	Scientific conference of biology teachers of Estonia
28–29	Enlarged meeting of the presidium of the Kazakhstan Academy of Sciences
29	Meeting of the scientific councils of medical institutions of Alma-Ata (Kazakhstan)
29–Oct. 2	Meeting of the administrative, scientific, and practical workers of public health of the USSR in Moscow
October	
4–6	Enlarged meeting of the presidium of the Ukrainian Academy of Sciences
5–7	Scientific meeting of the Kirgizstan Branch of the USSR Academy of Sciences
11–12	Joint meeting of the divisions of natural, medical, and agricultural sciences of the Latvian Academy of Sciences, the Latvian State University, and the Latvian Agricultural Academy
13–14	Meeting of agricultural workers of Armenia
16–17	Meeting of members, corresponding members, and scientific workers of the Leningrad Union of the institutes of the USSR Academy of Medical Sciences
18–19	General assembly of the Azerbaidzhan Academy of Sciences
18–23	Meeting of heads of biology departments of pedagogical and teachers' institutes of the Russian Federation
19–21	Meeting of the Technology Division of the USSR Academy of Sciences
20–21	Scientific meeting of the Estonian Academy of Sciences
23	Scientific conference of the Moldavian Base of the USSR Academy of Sciences
26–29	Meeting of the Biology Division of the USSR Academy of Sciences
November	
5	Meeting of workers of the Armenian Ministry of Public Health
December	
3–4	Meeting of agricultural specialists of the Far East in Vladivostok
10	Scientific meeting of the Division of Medical Sciences of the Estonian Academy of Sciences
26	Meeting of scientists, agricultural specialists, and party advisers of Kazakhstan

regional branches and bases (see table 7–2). The hierarchical structure of scientific institutions was an important factor in spreading the campaign. The meetings of presidiums were followed by meetings of subordinate divisions, which in turn were followed by meetings of the scientific councils of subordinate research institutes. Subordinate institutions followed the example and orders of their presidiums.⁸³ State agencies, such as the Ministry of Public Health, the

Ministry of Higher Education, the Ministry of Enlightenment, and the Ministry of Agriculture, also organized meetings in their subordinate scientific and educational institutions in Moscow, Leningrad, and republic capitals.

The campaign for “the complete domination of Michurinist biology,” then, having begun in biology, was quickly expanded far beyond biology institutions. Meetings to discuss “the reorganization of work in light of decisions of the VASKhNIL meeting” took place in psychological and technical, historical and linguistic, physical and geological institutions. All these meetings aimed to demonstrate that the scientific community understood and adopted the new “politically correct” line announced at the VASKhNIL meeting.

All the meetings were built upon the same model and followed the same pattern. Even the titles of the principal reports copied that of Lysenko’s address to VASKhNIL. For example, at the meeting in the Institute of Language and Thought, director Ivan Meshchaninov delivered a report entitled “On the Situation in Linguistic Science.” His deputy, Fedor Filin, titled his report “On Two Trends in Linguistics.”⁸⁴ The president of the Belorussian Academy of Sciences, Nikolai Grashchenkov, copied not only the title, but even the subtitles from Lysenko’s address.⁸⁵

The formal, routine scenario of these Michurinist meetings embodied a standardized ritual. Every meeting began with a declaration on “the historical meaning of the VASKhNIL meeting” and “the Central Committee’s approval of Lysenko’s address.” Every meeting opened with a task-setting speech by a top official of the specific institution or discipline. The principal speech set the tone and rhetoric of the meeting, and named the accused and their mistakes. Speeches by other officials followed, developing one or another rhetorical theme. As a rule, the representatives of ministries and party committees also spoke. For example, at the meeting in Tbilisi, the Georgian minister of agriculture presented the opening address and a secretary of the Central Committee of the Georgian Communist Party delivered the concluding report. At the conference in Alma-Ata, a secretary of the Central Committee of the Kazakhstan Communist Party gave the main report. Smirnov, the minister of public health, was the main speaker at the Moscow meeting of public-health workers. Kaftanov, the minister of higher education, delivered the principal report at the meeting of workers in education. At the meeting in the Ukraine, two ministers, three deputy ministers, and a deputy head of the Ukrainian Council of Ministers delivered speeches. At the conference in Tallinn, it was a secretary of the Estonian Central Committee.⁸⁶

Top administrators of scientific institutions admitted their mistakes and criticized their subordinates, who in turn criticized their leaders. At every meeting, Mendelism was damned and Michurinist biology glorified. In institutions remote from biology, scientists constructed their own analogs for the “sacred” and the “damned.” For example, at the meeting in the Institute of Language and Thought, participants found their own villains—their “Mendels” and their “formal genetics”—in the works of Wilhelm Humboldt and

Ferdinand de Saussure, and praised the concept of Nikolai Marr as the materialist analog of Michurinist doctrine in linguistics.⁸⁷ As a rule, known representatives of sacral doctrine delivered speeches showing the relations between their doctrine and the institution's research. Those branded as representatives of the condemned doctrine were allowed to deliver repentant speeches. Local "anti-Michurinists" confessed and were sometimes removed from their administrative positions.

Every meeting adopted a resolution formulating the main tasks of the institution "in light of decisions of the VASKhNIL meeting." At the meetings of the highest institutions (academies and ministries), letters to Stalin were adopted and published.⁸⁸ Republic academies also sent analogous letters to local party leaders. For example, the Ukrainian Academy of Sciences sent a letter to the first secretary of the Ukrainian Central Committee, Nikita Khrushchev.⁸⁹ The Armenian Academy of Sciences sent letters not only to Stalin and the first secretary of the Armenian Central Committee, but also to Lysenko.⁹⁰ Reports about the meetings (sometimes even a stenographic record of the proceedings) were widely published in the central and local press, as well as in academic journals. This scenario, with few variations, was followed at every single meeting held in the autumn of 1948.

The similarity of all the Michurinist meetings suggests that they had a ritualistic function. The various groups within the scientific community employed the very same techniques, copying the model that had been "approved by the Central Committee"—the VASKhNIL meeting. Top administrators deliberately chose this particular form, "public meetings," in order to publicize their own actions and to demonstrate to the party apparatus that the scientific community had learned the lesson of the VASKhNIL meeting: the ultimate authority in scientific questions belonged to the Central Committee. Through this ritual, they strove to display the scientific community's loyalty and obedience to the current party line and the ongoing ideological campaign. Like rain dances performed by a shaman in the desert, the "dances" performed by the scientific community aimed to call forth a golden rain from above and to avoid "the punishing hand" of angry gods. The Michurinist meetings were intended to demonstrate that "the necessary conclusions of the VASKhNIL meeting" had been drawn in every discipline and every institution; that the scientific administrators had indeed spoken, as Malenkov had suggested, "at the top of their voices"; and that Soviet scientists had fully adopted the new "political correctness."

"POLITICALLY CORRECT" SCIENCE

It is still unclear, however, how it became possible to use Michurinist *biology* for organizing ritual gatherings in pedagogy, medicine, and linguistics. What were the "necessary conclusions" to be drawn from the VASKhNIL meeting,

for example, by the Technology Division of the Academy of Sciences? What did the “light of the VASKhNIL meeting” actually illuminate in physics or psychology?

Like rituals, rhetoric had played a crucial role in the interactions of the scientific community and the party-state control apparatus from the very birth of the Stalinist science system. To defend and advance their own interests, scientists adopted and mastered the lexicon of their patron and partner, incorporating every word of party pronouncements in their own language. Three sets of universal rhetorical assertions—*partiinnost'*, Marxism, and practicality—embodied the Bolshevik image of science, an image that originated within the “Communist” science of the 1920s and developed through the political campaigns of the 1930s. They became the obligatory attributes of “Soviet” science and the “Soviet” scientist, which the scientific community routinely exploited in its self-portrayal and self-representation in its dealings with the party-state bureaucracy. The Nazi attack on the Soviet Union had temporarily displaced this rhetoric: “Everything for the front, everything for victory!” had become the main slogan of Soviet science. Subsequently, the escalating Cold War revived the 1930s rhetoric of *partiinnost'*, Marxism, and practicality.

As we have seen, the party’s approval of Michurinist biology signified not only approval of the content of Lysenko’s doctrines, but also its affirmation of the particular model of “Soviet” science embodied in Michurinist biology. It was precisely this model that was employed to draw “necessary conclusions” at the Michurinist meetings held in various institutions. Scientists in all fields sought to demonstrate their own “Michurinism,” and thus to affirm the model of a distinct “Soviet” science within their own specialties, using the same universal rhetorical assertions that Lysenkoists had used to portray Michurinist biology. As Vavilov emphasized in his concluding address to the Michurinist meeting at the Academy of Sciences, “our science, the science of the socialist country, is separated from bourgeois science by the gap of an entirely different ideology, the gap of an entirely different task that stands before us—the task of wholeheartedly serving the people, their wants, their practice, and their needs.”⁹¹ Not surprisingly, then, participants in all Michurinist meetings reaffirmed *partiinnost'*, Marxism, and practicality as the characteristic features of the Michurinist trend of their own disciplines and institutions.

The “*partiinnost'* of science”—that is, its subservience to party objectives and the subordination of the scientific community to “party guidance”—became the universal slogan of the Michurinist campaign. During the VASKhNIL meeting, very few speakers mentioned the *partiinnost'* of science, and they did so only in passing. The concluding chord of the meeting, however, with Lysenko’s declaration of the party’s approval of his doctrine, had an enormous resonance; and during all subsequent meetings *partiinnost'* became the major defining trait of Michurinist trends in all disciplines.

Almost every Michurinist meeting opened with a reference to the fact that Lysenko’s VASKhNIL address had been “approved by the Central Commit-

tee.” This phrase became a “nomadic quotation” of the Michurinist campaign. The principle of “*partiinnost’* of science” in this context clearly meant that science must, first of all, serve as an instrument of the party. “Workers at the pedagogical front must never forget the main Marxist thesis about the *klassovost’* [class character] of science, about the *partiinnost’* of science,” declared an editorial published in *Soviet Pedagogy*.⁹² One can speculate that the regular references to the *partiinnost’* principle in the late 1940s were intended to verify the scientific community’s recognition of party authority in scientific questions. Constant references to statements of party leaders—Lenin, Stalin, and Zhdanov (at local meetings to local party leaders, such as Nikita Khrushchev in the Ukraine)—and to various party decisions on scientific questions were used to acknowledge the leading role of the party in science policy and the submission of the scientific community to party agencies.

Adherence to Marxism became another major characteristic of the model of science embodied in Michurinist biology. “The results of the VASKhNIL meeting have shown once more that only the constant and creative usage of the principles of dialectical materialism in a concrete science can transform this science into a truly progressive one,” declared one psychologist.⁹³ Analogous statements rung out at every meeting and in every publication of 1948. This explains the frequent use of the adjective “idealist” to portray alleged analogs of Mendelism in every discipline. “Idealist perversions” were “unmasked” in biology and medicine, physics and geography, psychology and mathematics.⁹⁴ The meeting of the Academy of Pedagogical Sciences, for example, resolved that only “materialist science” should be taught to students. As was explained in an article entitled “Upbringing [*vospitanie*] in the Marxist-Leninist Worldview”: “Michurinist biology must be taught in school because it is the only [one] that scientifically explains the evolution of the organic world and arms us with the scientific methods of radically improving existing kinds of domestic plants and animals.”⁹⁵ It is especially instructive that the author of this statement was not a biologist, as one might expect, but rather the head of a pedagogical department in the Institute of Foreign Languages. In this context, “Michurinist biology” was not a kind of *biology*, but rather a particular model of science—so that everyone familiar with that model was thereby qualified to instruct biologists.⁹⁶

In the course of the Michurinist campaign, the incorporation of Marxism into the discourse of various disciplines, particularly the humanities, became obligatory. As was declared at the meeting of the Academy of Pedagogical Sciences: “One must never forget that the main content, the main foundation of Soviet pedagogy is the doctrine of Marx, Engels, Lenin, and Stalin about Communist upbringing.”⁹⁷ The substitution of sacral Marxism for scientific research became a characteristic feature of every Michurinist trend, whether in biology, physics, psychology, or linguistics. In their letter to the Central Committee “On Organization of the All-Union Meeting of Heads of Physics Departments,” Kaftanov and Vavilov wrote: “The physics course in many educa-

tional institutes is taught with the complete neglect of dialectical materialism. Lenin's brilliant work *Materialism and Empiriocriticism* has not been sufficiently used by professors of physics in their teaching."⁹⁸ The alleged idealism of physicists was a major pretext to organize a discussion of "the situation in physics in light of the VASKhNIL meeting."⁹⁹

The notion of the practicality of research also became a distinct feature of "Soviet" science endorsed by the Michurinist campaign. Lysenkoists frequently exploited the rhetoric of practicality to distinguish Michurinist biology from its opposite, Mendelism. In like manner, all other disciplines affirmed practicality as a distinctive feature of their own Michurinist trends. Such practicality was obligatory.¹⁰⁰ "The main lesson to be taken from the August VASKhNIL meeting is that the development of progressive science demands its subordination to the tasks of progressive socialist practice. It is impossible to create any progressive scientific theory without connections with wide practice," declared an article entitled "The Most Important Tasks of Soviet Psychology in Light of the Results of the VASKhNIL Meeting."¹⁰¹ The same lesson was absorbed by all other disciplines.

The references to practicality also served to demonstrate the subordinate position of the scientific community in relation to the party-state bureaucracy, for it was the bureaucracy that defined what was "practical" and "useful" or, on the other hand, "impractical" and "useless." This was clearly reflected in the speeches of the numerous state officials who participated in all Michurinist meetings. Ministers and their deputies criticized scientists for insufficient attention to practical problems in agriculture, medicine, education, and industry.¹⁰²

Soviet scientists skillfully employed the resources of their professional culture to show the party bureaucrats an image they wanted to see. To assert their *partiinost'*, Marxism, and practicality, they deployed three major rhetorical techniques developed and tested during the 1930s: the juxtaposition of "us" and "them," the use of "criticism and self-criticism," and the invocation of "founding fathers."

"Two Camps"

The rhetoric of "two camps"—"us" versus "them"—thoroughly permeated the professional culture of Stalinist science from its very birth to its final form in the late 1940s. The particular identities of the two scientific camps, however, constantly changed, reflecting the changing domestic and international policies of the party-state. In the 1920s, it was "proletarian and materialist" science versus "bourgeois and idealist" science. In the 1930s, it was "socialist, innovative, progressive, and collectivist" science versus "imperialist, conservative, reactionary, and individualist" science. During the war, it was "world" science versus "fascist" science. The beginning of the Cold War in 1946–47 drew the dividing line between "native" (*otechestvennaia*) and "foreign" sci-

ences; and the escalation of the Cold War in 1948 firmly established the dichotomy between “Soviet” and “Western” science.

The juxtaposition of “our,” “native,” “Soviet,” “socialist” science and “their,” “foreign,” “Western,” “imperialist” science became a central motif of the Michurinist campaign. Thus, every meeting heard a speech “On Two Trends in [name of science].” As one of the participants said at the Academy of Sciences meeting: “There is no science where the struggle of two worlds, two ideologies is not reflected.”¹⁰³

In every discipline, analogs for Mendelism and Michurinist biology were found and employed to organize corresponding campaigns. Patriotic rhetoric based on this juxtaposition was used to stamp scientists as “anti-Michurinists.” “Slavishness and servility” to Western science, publications in Western periodicals, quotations from and references to foreign research, and following Western (usually, “the worst Western”) models became the characteristic criteria defining “Mendelists” in every discipline. One speaker at the Academy of Sciences meeting stated: “There is no place in Soviet science for those who, under the slogan of ‘a single world science,’ openly or secretly try to hamper the development of our science. . . . They are unworthy to bear the exalted title of Soviet scientist.”¹⁰⁴

The struggle “against foreign science” was especially clear in the “expulsion” of two prominent foreign biologists from the Academy of Sciences. In early autumn 1948, both Hermann J. Muller, a Nobel-prize winning geneticist who had worked in Russia from 1933 to 1937, and Henry Dale, a past president of the Royal Society, resigned as foreign members of the academy. In their letters, both expressed their disagreement with the condemnation of genetics embodied in the academy’s resolution of August 26. Although never published in the Soviet press, these letters were used in propaganda juxtaposing “Soviet” and “foreign” science.¹⁰⁵

In early October 1948, the academy presidium informed the Central Committee about the letters of resignation. The academy’s officials proposed to publish responses and to expel Muller and Dale from the academy “at the next General Assembly.”¹⁰⁶ During the following months, the academy, in close collaboration with the Central Committee apparatus, polished and revised its replies. Finally, in December, *Pravda* and *Izvestiia* published the responses, which were then reprinted in almost every Soviet newspaper and academic journal.¹⁰⁷ In its response to Muller, the academy presidium emphasized that “in defining his position in scientific questions, professor Muller is guided not by the interests of science, not by the interests of truth,” and that “having spoken against the Soviet Union and its science, Muller got the applause and recognition of all reactionary forces of the United States.”¹⁰⁸ In early January 1949, a General Assembly of the academy formally “expelled H. J. Muller and H. Dale from the academy’s membership.” The campaign, however, was not limited to biology: a Norwegian philologist, Olaf Broke, also was expelled under the same pretext and at the same meeting. The “crime” of the Western

scientists was so “unforgivable” that their names were expunged from the academy’s rolls.¹⁰⁹ Furthermore, the academy ceased electing foreign members at all.¹¹⁰

Western critiques of Lysenko and other Soviet scientists were regularly used at Michurinist meetings to reaffirm the correctness and priority of Soviet science. For instance, Pavlov’s pupils regularly referred to Charles Sherrington’s critique of Pavlov’s concept of conditioned reflexes as proof of the superiority of Soviet science. On the other hand, any Western praise for a Soviet scientist’s work was used against the scientist as proof of “anti-Michurinism.” For example, Julian Huxley’s article “Science in the USSR: Evolutionary Biology and Related Subjects” became the basis for dismissing almost every biologist he mentioned.¹¹¹

“Criticism and Self-Criticism”

“Criticism and self-criticism” was a part of party etiquette appropriated by the scientific community in the late 1920s. It required everyone to take part in an ongoing campaign as either a “critic” or a “repentant sinner,” or both, demonstrating adherence to the latest party line announced by the campaign. It became an indispensable part of “public discussions” and a major instrument of institutional struggles within the scientific community. During the war, criticism and self-criticism practically vanished; Soviet scientists and party bureaucrats were united and preoccupied by one common goal—victory over fascism. The 1947 patriotic campaign revived public discussions and public repentances in the culture of the community. Predictably, the slogan “develop criticism and self-criticism” became a motto of the Michurinist campaign and resounded at every Michurinist meeting.

Criticism plays an important role in the life of every scientific community, fixing its values and orientations through an open discussion of particular concepts and facts. The Michurinist campaign manifested criticism of a very special kind. At almost every meeting, speakers noted that “this is not a discussion,” “we are not here to discuss,” “the discussion is over,” and so forth. The actual content of scientific concepts or the concrete material of investigations was usually not at issue. Nobody referred to methodological deficiencies or errors in calculation. Nobody proposed experimental tests of opposing views—indeed, at one Michurinist meeting it was declared that “Soviet Michurinist biology does not need any additional new data to prove its correctness. It is the only correct, scientifically substantiated doctrine.”¹¹²

The main goal of “Soviet criticism” was to reaffirm the basic characteristics of “Soviet” science embodied in Michurinist biology—*partiinosť*, Marxism, patriotism, and practicality. Criticism and self-criticism, as deployed in the Michurinist campaign, was strictly limited to reaffirming the politically correct Soviet virtues: the criticism was to refer only to the defects identified in stigmatized “isms.” When scholars attempted instead to analyze actual scientific facts and hypotheses, they were immediately accused of “objectivism.” It

is instructive that the highest value in scientific methodology—objectivity, that is, the opportunity and necessity to control, repeat, and verify data independently—was rejected by Soviet critics as the “bourgeois objectivism” of “world science.” In characterizing objectivity, speakers used such epithets as “apolitical,” “nonideological,” and “unprincipled.” At the meeting of the Academy of Sciences, for example, one of Lysenko’s supporters, describing the presidium’s attitude to the struggle between Michurinists and Mendelists, declared: “The Presidium and the Bureau of the Biology Division discussed this question as objectivists; [they] did not see behind the struggle of the two trends in biology the struggle between progressive and reactionary, the struggle between dialectical materialism and idealism.”¹¹³ In this rhetorical world, then, “objective” meant “objectivist” and was a damning pejorative.

“Soviet criticism” reaffirmed the primacy of political and ideological values of research over traditional scientific ones. “Michurinists” typically neglected controlled experiments and statistics and disregarded independent studies that undermined their data (to say nothing of their theoretical conclusions). Traditional scientific arguments lost their importance in public discussions among Soviet scientists and were completely replaced by rhetoric. It became possible, then, to praise Olga Lepeshinskaia’s doctrine on “noncellular living matter” or Gevork Bosh’ian’s concept of “the origin of viruses and microbes from noncellular living matter” as great achievements of Soviet science, despite numerous experiments refuting their speculations.¹¹⁴

An essential characteristic of this Soviet critical style was a special kind of name-calling. The names of scientists were transformed into “isms,” each defining a whole ideological position or category. These were then applied as shortcut labels that completely defined the positions of opponents: Weismanist, Mendelist, Morganist, Virkhovianist, Einsteinist, or (if the “ism” was based on the name of a “saint”) anti-Michurinist, anti-Pavlovian, anti-Darwinist, anti-Marrist. Using the names of officially approved friends and enemies was important, as it allowed a critic to pass silently over the actual content of scientific concepts en route to the real business at hand: exposing the “servility,” “sterility,” and “idealism” of opponents. For example, Mitin was not describing Shmal’gauzen’s writings but rather indicting their author when he noted: “The names of Timiriazev, Michurin, Lysenko are ignored in his works, but Dobzhansky, Timofeeff-Ressovsky, and others like them are praised.”¹¹⁵ Christening a scientist as Michurinist or Mendelist, Darwinist or anti-Darwinist defined the scientist’s positions not on scientific, but on social, ideological, and political issues, thereby definitively establishing or refuting a person’s political correctness.

“Founding Fathers”

References to the authority of Great Scientists are a typical component of the professional culture of every scientific community. Scientists routinely use such references to justify and legitimate their institutional, intellectual, and

career ambitions. During the 1930s, Soviet scientists adjusted this rhetorical technique to the requirements of their symbiont, the party-state apparatus. This adjustment was simplified and facilitated by the cult of “the founders of the party”—Marx, Engels, Lenin, and Stalin—that permeated the Bolshevik political culture. Soviet scientists included these sacral ideological authorities in their own pantheon of Great Scientists, spreading the authority of party founders over their own “founding fathers.” The party apparatus, in turn, recognized the authority of Great Scientists, establishing special prizes for scientific research named after such founding fathers, celebrating their various anniversaries, and giving their names to scientific institutions.

Soviet scientists regularly invoked the legacy of their alleged founding fathers to legitimate their own interests. It was always preferable to be able to justify one’s science by citing the ideological founders—Marx and Engels, Lenin and Stalin—but when it was impossible to find some relevant or useful quotation in their works that dealt with the discipline, subject, or problem at hand, suitable quotations from a founding father did the job. Celebrations of an event in a founding father’s life, such as birth, death, or publication of an important work, were used to stage public demonstrations—sanctioned, of course, by party authorities and signifying party approval of not only the founding father, but also the discipline or institution commemorating the jubilee. The very list of recognized founding fathers and their essential characteristics emphasized in numerous glorifications, then, reflected the image of science and the scientists endorsed by the party authorities.

As one might expect, during the Michurist campaign members of the scientific community employed the legacies of such founding fathers to create their own Michurins and Mendels and to adapt the universal rhetoric of *partiinost’*, Marxism, and practicality to the particularities of their discipline. At every institutional meeting, the names of founders were repeatedly invoked. One speaker gave a typical declaration at a meeting of the Academy of Pedagogical Sciences: “A. Makarenko is the same in Soviet pedagogy and psychology as I. Michurin is in biology.”¹¹⁶ The top officials of all scientific institutions used the legacies of the founders as a comprehensive substitute for the Michurist doctrine in their discipline. At the meeting of the Academy of Sciences, participants regularly invoked numerous founding fathers of Soviet biology and agronomy: Ivan Michurin, Ivan Sechenov, Aleksei Severtsov, Kliment Timiriachev, and Vasilii Vil’iams. At the Academy of Medical Sciences meeting, the favored founder was Pavlov. The joint meeting organized by the Institute of Russian Language and the Institute of Language and Thought on October 22, 1948, invoked Nikolai Marr.¹¹⁷ As one of the participants put it: “The only possible position for a Soviet linguist is the materialist doctrine of N. Marr.”¹¹⁸

Conversely, “anti-Michurinists” in all disciplines were accused of neglecting the legacies of their respective founding fathers. At the meeting of the Academy of Sciences, for instance, Mitin declared: “How could [one] consider

academician Shmal'gauzen's *Factors of Evolution* a scientific book if [the author] deliberately ignores such a significant work by Timiriazev as his article on factors of evolution?"¹¹⁹ Present and other Lysenkoists accused Shmal'gauzen of the "perversion" of the ideas of Severtsov. A number of medical scientists were similarly attacked for "deviation from Pavlov's teaching."

The importance of asserting control over a founder's legacy is clear in Lysenko's letter to the Central Committee *after* the VASKhNIL meeting: "I consider it my obligation to inform you that anti-Michurinists, such as Zhebrak, B. Zavodovskii, and a number of others, some time before and even during the [VASKhNIL] meeting, attempted to sever my theoretical work in biology from Michurin's teaching. . . . They do everything to prove that their Mendelist-Morganist views do not diverge from Michurin's teaching. *They want to tinker with Michurin's teaching to make it fit Mendelism-Morganism.*"¹²⁰ Of course, Lysenko was quite right in his accusation (although he was as guilty as any): all interest groups indeed wanted to "tinker with" the legacies of their founding fathers to make them fit their agendas.

The Cold War, however, added a new twist to the use of founding fathers: they all now had to be "native." During the war, the scientific community used various celebrations related to founding fathers to improve its links with its Western counterparts. For instance, Newton's three hundredth anniversary in 1943 was commemorated by a special meeting of the Academy of Sciences, a new biography written by Sergei Vavilov, and a collection of articles written by leading Soviet physicists.¹²¹ Although the Cold War did not destroy the authority of the Great Scientists such as Newton and Darwin, it made Western founders inappropriate for "Soviet" science. The banishment of genetics as "foreign Mendelism-Morganism-Weismannism" and the party approval of Michurinist biology initiated a broad search for native founders in various disciplines immediately after the VASKhNIL meeting. It is not surprising, then, that instructions to commission biographies of such founding fathers and to publish "new" (as a rule, revised) editions of their collected works occupied a prominent place in the resolutions of all Michurinist meetings. Furthermore, in early January 1949, a special General Assembly of the Academy of Sciences was held on the history of Russian science. The meeting's main goal was to certify the founding fathers for various disciplines.¹²²

Countless biographies of founding fathers published in the late 1940s and early 1950s resembled the *Lives of the Saints*. All were constructed in accordance with the same plan: the founding father of every field, as it happened, had been (with very few exceptions) a Russian; he had been a materialist; he had sympathized with socialism, worked fruitfully for the common good, and criticized foreign science (and had often been defamed, abused, mistreated, or insufficiently appreciated by it). If the founder had died before the revolution, he had struggled against (or at least been unsympathetic to) the tsarist government; if he had lived during the Soviet period, his research had been generously nurtured by the party (and usually by Lenin and Stalin personally); and,

as a result, he had left a legacy of unique and astonishing achievements. A typical line in the portrayal of a founder was: "Here we encounter a man who had mastered Marxism-Leninism, practiced it in his life for sixteen years, and moved from practice to theory."¹²³ The resultant image, of course, had little in common with historical reality. Constructing a founding father involved emphasizing certain biographical facts while passing over others in silence, juggling and falsifying ideas and words, and, most importantly, emphasizing ideological and political issues instead of scientific ones. That was the purpose of founding fathers, after all: to acclimatize the values of "Michurinist science" to a particular disciplinary landscape.

It is hardly surprising that the image of every discipline's founding father had to exemplify the official point of view: as a rule, the "title" of founding father was directly confirmed by the highest party organs. For example, in its resolution "On the Development of I. Michurin's Legacy" (1936), the Central Committee certified Michurin's status as a founding father of Soviet biology. Every mention of Michurin's name at the 1948 meetings emphasized that "Michurin was discovered for our people and for progressive science by the genius of Lenin and Stalin."¹²⁴ Scientific institutions were often named for the founding father of the discipline, and the Central Committee approved the name to be used in the christening. In June 1948, for example, the Academy of Medical Sciences established a new Institute of Physiology of the Central Nervous System. The institute was organized on the basis of two institutions: the Institute of the Brain (formerly Vladimir Bekhterev's institute) and the Institute of Physiology (formerly Lina Shtern's institute). The new institute was originally to bear Bekhterev's name, but after a discussion in the Central Committee, it was instead named after Ivan Sechenov.¹²⁵ In 1949, with the sanction of the Central Committee, the entire country celebrated Pavlov's centenary with great fanfare. And the overthrow of Marr as the founding father of Soviet linguistics in 1950 was done by Stalin personally.¹²⁶

In such circumstances, oaths of "faithfulness" to the legacy of great teachers confirmed not only scientific, but also ideological and political succession. Conversely, "neglect" and "perversion" of a founding father's ideas were treated as sacrilege as well as violations of scientific authority. Founding fathers, then, not only embodied the essential characteristics of "Soviet" science and the "Soviet" scientist, they also represented the authority of the highest party and state agencies in specific fields.

Thus, the rhetoric of the Michurinist campaign reveals the specific images of "Soviet science" and the "Soviet scientist" established in the late 1940s. The most important element was "Soviet," which signified the fundamental difference between "Soviet" and "Western" sciences that resulted in turn from the differences between the Soviet and Western states, enhanced by the Cold War confrontation. The images reflected the complete subordination of science to the party, the obligation of the scientific community to obey orders from above and the current imperatives of power. The rhetoric employed in

the campaign emphasized the main vectors of this political correctness—patriotism, *partiinost*, Marxism, and practicality.

THE DIALECTICS OF SYMBIOSIS

In the fall of 1948, the Michurinist campaign swept through the Soviet scientific community like a storm, bringing with it the standard rituals and privileged rhetoric that had been worked out between the Central Committee and the scientific leadership. Both geographically and intellectually, the Michurinist campaign soon transcended genetics and even biology. Various institutional and disciplinary groups constructed their own substitutes for the “sacred” and the “damned,” preserving the essential form of the ritual. The instrumental meaning of the ritual performed at the numerous Michurinist meetings was to reassure the control agencies that the scientific community assented to the images of “Soviet science” and the “Soviet scientist” endorsed by the party. Skillfully using the resources of their professional culture, scientists quickly incorporated these images into their rituals and rhetoric. They demonstrated to the control apparatus that scientists agreed completely with the model of relations among science, the party, the state, and ideology embodied in these images, and that the new “political correctness” had been fully implemented in the Soviet scientific community.

In covering their institutions with a Michurinist veneer, however, top administrators of the scientific community were not merely displaying their obedience. They were also trying to camouflage their institutions and disciplines, hoping to immunize them from further party encroachment (for example, the kind of specific edicts that dismembered genetics) by portraying them as already covered—“preapproved,” as it were—by Michurinism. Hurrying to declare their own institutions and research agendas as already “Michurinist,” they hoped to limit future interventions by party bureaucrats into their own business.

The differences between the dynamics of the meetings held in the Academy of Sciences, the Academy of Pedagogical Sciences, and the Academy of Medical Sciences clearly show that the leadership in each of these academies had its own, quite different agenda, with tactics suited to serve it. The Orgburo instructions on behalf of Michurinist biology unambiguously demonstrated to the academies’ leaders that their partners in the Stalinist science system—high-level party-state bureaucrats—intended to interfere directly in their domain: the institutional structure and intellectual content of science. Not surprisingly, to counteract these intentions of the party bureaucracy, the academy leaders developed special tactics.

In the Academy of Sciences, the nation’s largest scientific institution and the center of genetics and biological research, the academy leaders followed the Orgburo’s direct instructions, at the same time obviously striving to limit the

effects of the party approval of Lysenko's doctrine to genetics only. The Orgburo instructions to dissolve the Institute of Evolutionary Morphology and to fire its director, Shmal'gauzen, were very dangerous precedents, presenting a serious threat to the academy leaders' control over their institutions. Orbeli's dismissal and Oparin's appointment were also a very serious warning to the academy leaders, signifying the possible decline of authority in party-state circles of all the scientists from the older generation who had come to occupy key positions in the Stalinist science system during the war. Academy leaders reaffirmed their own control by carefully but persistently opposing the attacks of influential "outsiders"—the ministers of higher education, agriculture, and state farms—who represented the party-state agencies of the Stalinist science system. They also reaffirmed their control by seeking to prevent Michurinist biology from spreading to other biology institutions, declaring that all the institutions *not* mentioned in party edicts were actually "Michurinist."

In the Academy of Pedagogical Sciences, the nation's main center for scientific advice on secondary education, the leaders did not await party edicts. They hurried to "purify" the institutions involved with biology education *before* direct party orders would provide them with concrete instructions that could be much more devastating. They also sought to defend nonbiology institutions by declaring them to be "Michurinist."

In the Academy of Medical Sciences, the country's second largest scientific institution, the leaders probably had the same motives as their colleagues in the pedagogical academy. Their position, however, was more complicated: although closely connected with such biological fields as anatomy, physiology, cytology, and microbiology, medical research was remote from Michurinist agrobiology. To assert their "Michurinism," leaders of the medical academy invited Lysenko himself to deliver a report at their gathering and actively searched for an analog of the Michurinist doctrine in their own fields.

Thus, the leaders of all three academies used the Michurinist campaign, which had been intended to assert the party's authority over science, for the opposite purpose—to reassert their own control over their "internal" policies and to limit party intervention. Despite their rituals of obedient subservience and their rhetoric of political correctness, they knew that words were mere words. Scientists retained their real interests and quickly co-opted the rituals and rhetoric of the Michurinist campaign to serve and defend those interests—which they managed to do more adeptly than a naive observer of their rituals and rhetoric might have guessed.

Walking the Walk: Education versus Research

... To reorganize the work of research institutes, publishing houses, journals, [and] departments in higher educational institutions, [and] to revise the programs and textbooks on biology, genetics and breeding in order to make the Michurinist trend completely dominant in Soviet biological science.

—The Central Committee of the Communist Party, July 10, 1948

THE DICHOTOMY between education and research was a characteristic feature of the Stalinist science system. This is understandable in that the party-state patrons of science needed and demanded very different things from these two enterprises. From scientific research, they required the production of knowledge that would help them to build the economy and a strong military defense. The product of education, however, was to be above all a loyal adept of the party line.

The educational system was a focus of particular attention by the Communist Party from the earliest days of its rule. The urgent need for professional education and, more importantly, the ideological and political “upbringing” of new generations, led the Bolsheviks to reorganize and strictly control education. The curricula of all educational institutions included courses on Marxism-Leninism, the history of the Communist Party, dialectical materialism, atheism, and other ideologically important subjects. The numerous research laboratories and institutes that had flourished within educational institutions in the 1920s were all closed or reorganized in the 1930s. Thus, the educational system became an apparatus for inculcating the party-state’s ideological and political concepts, largely detached from the research system.

The ideological role of education led to the establishment of strict party-state control not only over curricula and syllabi, but also over the professoriate. The primary goal of the Institute of Red Professors (established in the 1920s) was, as its very name made plain, to prepare reliable cadres for the system of higher education. The appointment of party members to the key administrative positions in schools and universities became a characteristic feature of Bolshevik educational policy. A number of professors quit teaching and migrated into the research system, particularly the academies. As a result, the leadership of the educational community and, hence, the educational bureaucracy was dominated by party bureaucrats who had neither connections with nor any particular interest in research.

These differences between the functions, structures, and personnel in the research and educational systems help explain the very different dynamics and results of the Michurinist campaign in each.

In August and September 1948, the Central Committee issued a number of edicts aimed at reorganizing biological research *and* education and discharging practically all of Lysenko's opponents from their high-level positions. The implementation of these orders, however, rested upon various groups of educational and scientific bureaucrats. Each of these groups had its own objectives, and each used the Michurinist campaign to achieve them. The educational bureaucracy established Lysenko's monopoly over the system of biology education, but scientific administrators worked carefully and persistently to limit Lysenko's influence within the research system.

EDUCATION: THE WAYS OF BUREAUCRACY

The system of education in the USSR included three main levels: secondary schools, supervised by the Ministry of Enlightenment;¹ higher educational institutions, subordinate to the Ministry of Higher Education;² and graduate studies (*aspirantura*), directed by academy institutions and ministries. The degrees awarded by the graduate programs had to be approved and issued by a special agency, the Supreme Certifying Commission (VAK), which was subordinate to the Ministry of Higher Education. The two educational ministries maintained tight control over subordinate schools through a system of standardized curricula for all courses. This system required that a particular discipline be taught in all institutions according to a single approved program. Professors in higher educational institutions as well as teachers in secondary schools were obliged to follow the approved syllabi and curricula to the letter, and to use only approved textbooks. Moreover, the appointment of professors was also under the direct control and supervision of the ministries.

In the course of the Michurinist campaign, the party-state agencies paid particular attention to the teaching of Michurinist biology in the entire educational system, from secondary schools to graduate programs. This special attention suggests that party approval of Lysenko's doctrine signified its authorization not only as the only permissible scientific theory, but also as a part of official ideology. Lysenko's success in conquering biology education, however, was in large part secured by the actions of the educational bureaucracy. Bureaucrats demonstrated their obedience and devotion to the party by their direction of subordinate institutions. Driven by typical bureaucratic motives—getting credit, preserving their positions, shifting the blame for mismanagement—the educational bureaucracy strove to overfulfill party orders and conducted a grandiose witch hunt in all the nation's schools and universities.

The Ministry of Higher Education

Higher educational institutions were a main target of the party apparatus's activity in implementing Michurinist biology in education (see table 8–1). On August 6, 1948, during the VASKhNIL meeting, the Central Committee's Secretariat created a commission "to prepare proposals for strengthening biology departments in higher educational institutions."³ Three days later, the Orgburo issued a long resolution, "On Measures for the Reorganization of the Work of Scientific Institutions, Departments, Publishing Houses, and Periodicals in the Field of Biology and for Strengthening Them with Qualified Michurinist Personnel." The resolution ordered the minister of higher education, Sergei Kaftanov, "to present to the Central Committee a report on the situation in the teaching of biological sciences in higher educational institutions and measures for strengthening it."⁴

At the next session of the Orgburo, on August 11, Kaftanov presented the required report and a draft of the Central Committee's resolution "On the Teaching of Biology." The Orgburo adopted the draft and ordered Kaftanov and the Agitprop chief, Dmitrii Shepilov, to polish it and present it to the Central Committee.⁵ At the next session, on August 16, the Orgburo approved the resolution, which noted the "unsatisfactory situation" in the teaching of biology and blamed the ministry for a liberal attitude toward Mendelist-Morganists. It listed a number of measures to improve the teaching of biology: dismissing Mendelists from educational institutions, revising syllabi and curricula, increasing the number of graduate students in "genetics and Darwinism," and organizing meetings of workers in the system of higher education devoted to the "results of the VASKhNIL meeting."⁶

The Ministry of Higher Education was the driving force in carrying out these party decisions (see table 8–1), and the minister himself was one of the most active figures in the campaign.⁷ Kaftanov did not participate in the VASKhNIL meeting. He was on leave and perhaps did not even know it was being held. He was called back from vacation immediately after the VASKhNIL meeting and summoned to the Kremlin to attend the sessions of the Orgburo.

The seizure of higher educational institutions was one of the major institutional goals of Lysenkoists in 1948. As we have seen, educational institutions had been one of the main bases of anti-Lysenkoist activity in the postwar years. In his address at the VASKhNIL meeting, Lysenko constantly repeated that Mendelists occupied leading positions in education, especially in Moscow and Leningrad universities and the Timiriazev Agricultural Academy, and all these were in Kaftanov's domain. At the meeting, Lysenko's main opponents were also Kaftanov's subordinates: the rector of the Timiriazev Academy, Vasili Nemchinov; the head of the biology section of VAK, Petr Zhukovskii; the heads of departments in Moscow University, Ivan Shmal'gauzen and Sos Alikhanian; and the head of a department in the Timiriazev Academy, Anton

TABLE 8-1
Implementation of Michurinist Biology in Education, 1948.

August	
13	VAK presents to MVO ^a report "On the Work of Expert Commissions for Biological, Agricultural, and Veterinary Specialties."
14, 20	MVO Board holds special meetings regarding biology education.
23	MVO issues first three orders, "On the Situation in the Teaching of Biological Disciplines and on Measures for Strengthening Biology Teaching with Qualified Michurinist Biologists" (nos. 1208, 1210, and 1213), addressed respectively to universities, agricultural institutes, and veterinary institutes.
26–27	MVO holds meeting of workers of higher educational institutions in Moscow.
30	MVO issues order no. 1259, "On Conditions of the Teaching of Biological Sciences in Pedagogical and Teachers' Institutes."
31	Council of Ministers issues resolution (no. 12328), "On Improvement of the Biology Faculties of Moscow and Leningrad Universities."
31	MVO issues order no. 1264, "On Conditions of the Training of Graduate Students of Biological Sciences in Universities and in Agricultural, Veterinary, and Other Higher Educational Institution."
September	
1	Council of Ministers issues resolution (no. 3318) that transfers agricultural institutes and colleges under the authority of the Ministry of Agriculture.
16	MVO issues order no. 1364, "On Measures for the Improvement of the Work of the Biology Faculties of Moscow and Leningrad Universities."
16	MVO issues order no. 1365, "On Measures for the Improvement of the Work of Forestry and Timber-Industry Institute."
20	Ministry of Enlightenment sends a "methodological letter on reorganizing the teaching of biology in secondary school" to all the nation's schools.
October	
7	MVO issues order no. 1455, "On the Improvement of the Ideological and Political Level and the Quality of Training for Teachers of Natural Sciences in Pedagogical and Teachers' Institutes."
11	MVO issues order no. 1473, "On Measures for the Improvement of the Teaching of Principles of Marxism-Leninism and Philosophy in Higher Educational Institutions."
18–23	Ministry of Enlightenment convenes all-union conference of the heads of biology departments in pedagogical and teachers' institutes.

^aMVO = Ministerstvo Vysshogo Obrazovaniia, the Ministry of Higher Education.

Zhebrak. The resolution adopted at the VASKhNIL meeting complained that “the teaching of genetics, plant breeding, seed cultivation, general biology, and Darwinism in universities and colleges is based on syllabi and plans permeated with the ideas of Mendelism-Morganism,”⁸ and called for an immediate end to this “abnormal” situation. Clearly, Kaftanov was to blame for the “Mendelist domination” of educational institutions, for his ministry had approved programs and syllabi for genetics and Darwinism “permeated with pernicious doctrines.” For these and other offenses, Malenkov bitterly criticized the ministry’s work at the sessions of the Central Committee.

The ministry had also committed a great “crime” on the eve of the VASKhNIL meeting by suggesting that a monument be erected to one of the most “malicious” Mendelists, Aleksandr Serebrovskii.⁹ The head of the genetics department at Moscow University, Serebrovskii had died in June 1948 after a long illness. As was customary at that time, the rector of Moscow University, Aleksandr Nesmeianov, began the process of the “immortalization of the memory of the VASKhNIL academician, corresponding member of the USSR Academy of Sciences, and professor of Moscow University, A. S. Serebrovskii.” On June 29, he sent to the Ministry of Higher Education a draft of an appropriate resolution of the Council of Ministers, together with his own explanatory letter. The draft envisaged a monument on Serebrovskii’s grave and a memorial tablet on the building of the university’s biology faculty. A lifelong pension would be provided to Serebrovskii’s widow. Since Kaftanov was on vacation, his deputy Aleksandr Samarin received Nesmeianov’s package. He approved the draft and, according to the usual bureaucratic procedure, sent it, together with his own explanatory letter, to a member of the Politburo, a deputy head of the Council of Ministers, Klim Voroshilov.

Summoned from his vacation, Kaftanov was no doubt terrified by this story, and he moved quickly to try to protect himself. By August 11, he had already written explanatory letters to Voroshilov in the Council of Ministers and Malenkov in the Central Committee. In the letter to Voroshilov, he observed that Serebrovskii “joined a reactionary group of Mendelist-Morganists and as a formal geneticist struggled against the Michurinist trend in biological science.” He criticized his deputy and the rector and requested that “the recommendation for a memorial to Serebrovskii be withdrawn.”¹⁰ It seems likely that this matter was raised at the Orgburo’s session of August 11, where Kaftanov received a severe reprimand.

The Orgburo adopted a number of special decisions directly addressed to the ministry, and Kaftanov, as a true functionary, made every effort to “correct his mistakes” and justify himself in the eyes of his chiefs. Following the Orgburo’s instructions, the ministry scheduled a meeting of more than seven hundred workers in higher educational institutions for August 26–27. The title of the minister’s address to the meeting speaks for itself—“For the Undivided Rule of Michurinist Biology.” For two days, twenty-eight speakers delivered reports, repeating in various tones the ritual castigation of Mendelists and

glorification of Michurinists, and concluding with a formulaic resolution and a letter to Stalin.

The main direction of the ministry's work for establishing "the undivided rule of Michurinist biology" was the dismissal of Mendelists. The Central Committee, however, had already discharged a number of Lysenko's opponents who occupied high positions in biology education; indeed, the Orgburo had already removed from their posts all Mendelists mentioned at the VASKhNIL meeting.¹¹ Its edicts of August 9, 11, and 16 had dismissed Shmal'gauzen from the department of Darwinism at Moscow University; Sergei Iudintsev as dean of the biology faculty of Moscow University; Mikhail Zavodovskii from the department of developmental dynamics at Moscow University; Nemchinov as rector of the Timiriazev Agricultural Academy; Zhebrak from the department of genetics in the Timiriazev Academy; Mikhail Lobashev as dean of the biology faculty of Leningrad University; Iurii Polianskii as vice-rector of Leningrad University; Zhukovskii as head of the biology section of VAK; and Il'ia Poliakov from the department of Darwinism at Khar'kov University. The removal of the most influential anti-Lysenkoists, such as Shmal'gauzen, Zhukovskii, Nemchinov, and Zhebrak, had been directly approved by the Politburo.

On its own initiative, however, the ministry considerably expanded the Orgburo's list of professors to be discharged. Beginning on August 11, it began to work feverishly. The ministry board scheduled special meetings concerning biology education and invited known Michurinists who worked in educational institutions, such as Isaak Prezent, Nikolai Turbin, and K. Kostriukova, to participate. These meetings approved various "measures for strengthening biology education" based on reports from all ministry departments.¹² Typical of these reports was one prepared by the Department of Agricultural Institutes, which noted: "Among 202 scientific workers employed in the departments of botany, zoology, breeding, and seed growing, there are 59 supporters of Mendelism-Morganism, 32 allies of Michurinism, and 111 scientific workers whose positions are still undetermined."¹³ A resolution prepared by the department proposed that all "Mendelists" named be discharged and that "to fill the open teaching positions in the listed institutes, Lysenko, Glushchenko, Dolgushin, . . . [there followed a long list of known Michurinists—N. K.] be invited."¹⁴ The report also suggested the adoption of new curricula and the prohibition of a number of textbooks.

The departments that controlled medical, pedagogical, veterinary, and other institutes prepared similar reports. The Department of Personnel composed a general report, "On the Strengthening of the Main Biology Departments with Qualified Michurinist Personnel."¹⁵ It concluded that of twenty-nine deans in various institutes, "five must be immediately replaced," and lamented the finding that of 178 department heads, only 24 percent were Michurinists, while 54 percent were "Morganists." The educational bureaucracy's feverish work produced a number of special orders. Most were published during the last week of August in the ministry's official bulletin.

On August 23, the ministry issued three orders. The first was entitled "On the Situation in the Teaching of Biological Disciplines in Universities and on Measures for Strengthening Biology Faculties with Qualified Michurinist Biologists";¹⁶ the second and third were analogous orders addressed respectively to agricultural and veterinary institutes.¹⁷ The next day, August 24, the ministry issued a similar order for medical institutions.¹⁸ This order was signed not only by Kaftanov, but also by a deputy minister of public health, N. Vinogradov, and mandated the revision of curricula for practically all disciplines, including general biology, anatomy, histology, embryology, physiology, pathological physiology, microbiology, psychiatry, and neurology. A week later, on August 30, the ministry issued an order addressed to pedagogical and teachers' institutes.¹⁹ In mid-September, Kaftanov signed yet another order for forestry and timber-industry institutes.²⁰ These orders discharged hundreds of Mendelists and replaced them with Michurinists in educational institutions throughout the country.

Special actions were taken against Moscow and Leningrad universities, the main anti-Lysenkoist centers. At the meeting of biology workers in Leningrad on September 6, Turbin, a leader of Leningrad's Lysenkoists, said: "The document on measures for strengthening the biology faculty of Leningrad University, which we obtained with the signature of Joseph Vissarionovich Stalin, showed the very deep, very paternal attention of our great leader to biological science."²¹ Turbin was referring to a resolution of the Council of Ministers concerning the biology faculties of Moscow and Leningrad universities. As Prezent informed a party meeting at Leningrad University: "The Central Committee devoted more than one session specifically to the situation in Moscow and Leningrad universities. A special decision of the Party Central Committee was adopted, which was then issued through the Council of Ministers with J. V. Stalin's signature."²² Naturally, following party instructions, the ministry started to actively "improve" the universities. On September 16, the minister issued an order, "On Measures for the Improvement of the Work of the Biology Faculties of Moscow and Leningrad Universities." The order repeated the resolution of the Council of Ministers and included various measures ordering each university to recruit students to the biology faculty, to add ten new positions for graduate students, and to organize five new laboratories for Michurinist research. The August 23 order addressed to all universities had already liquidated a number of "Mendelist" departments and research laboratories at Moscow and Leningrad universities.

Shmal'gauzen's department of Darwinism at Moscow University was dissolved, as was the university's department of genetics. In their place, a new department of Darwinism and genetics was created under Prezent, who was also appointed dean of the university's biology faculty. The department of plant physiology, headed by another opponent of Lysenko, Dmitrii Sabinin, was reorganized.²³

Some scientists attempted to resist Kaftanov's orders and prevent a complete rout of the biology faculties. Mikhail Zavadovskii, for instance, sent a

desperate cable to a member of the Politburo and deputy head of the Council of Ministers, Anastas Mikoian: "The Ministry of Higher Education is threatening to close the department of developmental dynamics at Moscow University, where I work on the problem of multi-foetus in sheep, cows, and other domestic animals. This is the only laboratory where I work. After a recent stroke, this is threatening me with death."²⁴ The letter was signed "Laureate of the Stalin Prize, academician Mikh[ail] Zavadovskii." The bureaucratic machine, however, was in high gear, and even a Stalin-prize winner was unable to stop it. Mikoian simply forwarded Zavadovskii's cable to Kaftanov "for consideration"; and the latter, naturally, let his original decision, which had been approved by the Central Committee, stand.

The same fate befell Leningrad University: "Mendelists and their sympathizers" were dismissed and replaced by Michurinists. This campaign was directly controlled by the city party committee. Three separate times during autumn 1948, the bureau of the committee discussed the question of "the situation in the teaching and scientific work of the biology faculty of Leningrad University." Several party meetings, some of them closed, as well as sessions of the university's party committee, took place in the university itself.²⁵ As a result of the campaign, the biology faculty was practically destroyed—all the leading professors were dismissed. The list of discharged persons included the dean (and head of the laboratory for animal genetics), Mikhail Lobashev; the head of the department of animal genetics and chief of the embryological laboratory, Pavel Svetlov; the head of the department of general biology, Nikolai Gerbil'skii; the head of the department of vertebrate zoology, Pavel Terent'ev; a professor of the department of invertebrate zoology, Iurii Polianskii; and many others.²⁶ Their positions were filled by Michurinists.

The ministry also encouraged a broad campaign in local institutions. The deputy minister of higher education M. Svetlov told a meeting of biology workers in Leningrad on September 6: "There is no need to conclude that the heads of higher educational institutions should wait for certain special orders. . . . Now it is necessary to really examine all personnel in biology departments and to take measures for strengthening them with Michurinists, promoting talented pupils and followers of Michurin and Lysenko, even if [today] they do not have a scientific degree, a title. If they have good heads on their shoulders, the degree and title will be theirs tomorrow."²⁷ In addition to the dismissal of Mendelists, the ministry also announced changes in syllabi and programs for practically all biological disciplines in all educational institutions.

All university departments of genetics were closed or reorganized. In accordance with a resolution of the Council of Ministers, a new specialty, "Darwinism and genetics," was to be established in biology faculties. As a result, new departments of Darwinism and genetics arose; other institutions added courses on Darwinism to the curriculum. Departments of Darwinism were established in veterinary institutes, and a special course on Darwinism was included in the curricula of all agricultural and pedagogical institutions.²⁸

The ministry also prohibited the use of almost all existing biology textbooks and manuals. A long list of forbidden books (with a short annotation for every book) included not only textbooks for genetics, Darwinism, and general biology, but also for other disciplines such as physiology, animal breeding, and anatomy. For example, the annotation for one book read: "To characterize this book, it is enough to quote one of the author's sentences on the main question of biology: 'The theory of inheritance of acquired characteristics is an idealist and mechanistic doctrine that caused great injury to animal breeding and hampered scientific work.' Such a phrase is reactionary and has nothing to do with science."²⁹ Not satisfied with banishing such texts from the classroom, Kaftanov wrote a letter to Malenkov asking the Central Committee to order the Main Administration of Censorship (Glavlit) to remove them from libraries.³⁰ As one might expect, there was an investigation of the ministry's publishing house (Sovetskaia Nauka), which led to the "reorganization" of its plans and personnel.

Kaftanov also reorganized graduate programs, paying special attention to the personnel of VAK. Before the VASKhNIL meeting, the biology section of VAK was controlled mainly by Lysenko's opponents, who had prevented Lysenkoists from acquiring desirable degrees and titles. Lysenkoists had regularly complained about Mendelist domination of expert commissions. For example, when in late 1946 VAK did not confirm the degree of Doctor of Sciences for a Lysenkoist, he complained to the Central Committee: "While Morganists very easily and quickly obtain degrees and titles thanks to their patrons in the expert commission of VAK, various obstacles are created for Michurinists. . . . Morganists sit in all institutions with a right to award the degree of Doctor of Sciences, and deprive their opponents of any opportunity to obtain scientific degrees."³¹ Predictably, after the VASKhNIL meeting, VAK was immediately "reorganized." The Orgburo's resolution of August 11 dismissed Zhukovskii, the head of VAK's biology section. He was replaced by one of Lysenko's disciples, Donat Dolgushin. On the Central Committee's instructions, the deputy scientific secretary of VAK presented a report on August 13, "On the Work of Expert Commissions for Biological, Agricultural, and Veterinary Specialties." The report listed "allies of the Mendelist-Morganist reactionary trend" among members of expert commissions.³² The ministry board resolved "to revise the membership of experts . . . and to improve the membership with scientists of the progressive Michurinist trend."³³ On August 31, Kaftanov signed an order, "On Conditions of the Training of Graduate Students of Biological Sciences in Universities and in Agricultural, Veterinary, and Other Higher Educational Institutions." Scientific councils of institutions were to revise the curricula of graduate programs and dismiss Mendelists from advisory positions in graduate studies.

Dissertations were to conform to "Michurinist science." The VAK plenary meeting of October 11 resolved "to demand from candidates work devoted to current problems of Soviet science and the national economy and imbued with

Bolshevik *partiinost'*."³⁴ After the VASKhNIL meeting, VAK adopted a new procedure to review dissertations. Formerly, VAK had routinely reviewed and controlled dissertations for the degree of Doctor of Sciences, but paid much less attention to dissertations for the degree of Candidate of Sciences. According to the new rules, VAK began "*to control all defended dissertations* for the degree of Candidate of Sciences."³⁵ VAK also took measures to review dissertations that had been defended in 1945–48, that is, before the VASKhNIL meeting.³⁶ As a result, VAK reversed its own previous decisions and stripped several Mendelists of their titles and degrees.

As a result of these measures, Lysenko's opposition in higher educational institutions was completely crushed. Lysenkoists vastly expanded their control over educational institutions. Genetics was purged from curricula and replaced by a new specialty, "Darwinism and genetics," through which Lysenkoists assumed complete control over the training of future Darwinists.

The Ministry of Enlightenment

Secondary education at first drew somewhat less attention from the party apparatus than higher education, perhaps because the Lysenkoists who prompted party officials had no particular interest in secondary schools. The relationship between secondary education and the VASKhNIL meeting was first raised at the Orgburo's session of August 20. The Orgburo gave the Ministry of Enlightenment ten days "to present proposals for improvement of the teaching of biological sciences in secondary schools, pedagogical colleges and institutes."³⁷

The state officials involved in secondary education, however, did not wait for direct party instructions. As early as August 13 and 14, the Academy of Pedagogical Sciences scheduled special sessions, chaired by vice-president Konstantin Kornilov, on "the reorganization of the teaching of biology in relation to decisions of the VASKhNIL meeting."³⁸ Participants mainly discussed new teaching programs and new textbooks and manuals, with much of the meeting devoted to criticizing the existing ones.

At the August 13 session, one of the major subjects of discussion was a textbook on evolutionary theory for pedagogical institutes written by Aleksandr Paramonov.³⁹ The book was one of the first to discuss modern evolutionary concepts, including genetic aspects of evolution. During the VASKhNIL meeting, several speakers labeled Paramonov a Mendelist. Speakers at the meeting in the Academy of Pedagogical Sciences repeated the accusations, excoriating Paramonov for idealism, Mendelism, Morganism, and other "sins." Paramonov responded: "Because the book does not correspond to the principles of evolutionary theory expounded in T. D. Lysenko's report, and because the report of academician T. D. Lysenko was approved by the Central Committee, this latter condition, i.e., because this is apparently the point of view of the Central Committee, makes it impossible for me to follow a path that

does not correspond to the Central Committee's point of view."⁴⁰ Paramonov was ordered to rewrite the book completely "in the spirit of Michurinist biology." The same demand was addressed to the authors of other biology textbooks. But neither Paramonov nor the other authors had any opportunity to do so. An order of the Ministry of Higher Education prohibited the use of Paramonov's *Course on Darwinism* as a textbook, along with many others.

A number of "measures that flowed from decisions of the VASKhNIL meeting" were elaborated at the meetings of pedagogical officials. Their essence was the removal of "formal genetics" from the syllabi and programs of all biological disciplines in secondary-school curricula, the revision of textbooks and manuals, and the dismissal of all teachers suspected of Mendelism. On August 26, *Teachers' Gazette* promised that "Soviet schools will rear millions of young Michurinists."⁴¹

At the special enlarged meeting of the presidium of the Academy of Pedagogical Sciences held on September 4 and devoted to the "results of the August VASKhNIL meeting," the reorganization of biology education was declared a main task of the academy. In his report to the meeting, the academy's president, Ivan Kairov, announced that almost all biology textbooks for secondary school contradicted Michurinist doctrine, and he called for the immediate reorganization of biology education.

The priority given to such a reorganization is clear from the fantastic speed with which syllabi and programs for secondary education were rewritten. Already on September 16, the academy's presidium approved the outlines of new programs for all biological disciplines.⁴² By September 20, a "methodological letter on reorganizing the teaching of biology in secondary school" had been prepared and sent by the Ministry of Enlightenment to all the nation's schools.⁴³ On September 26, the presidium discussed and approved the outlines of new biology textbooks.⁴⁴ The explanatory notes and drafts of textbooks for all biological disciplines—botany, anatomy and physiology, zoology, and Darwinism—were completed in time for this session.⁴⁵

Another focus of official efforts was "young naturalists."⁴⁶ At the end of August, the all-union meeting of "young gardeners" took place in Michurinsk.⁴⁷ The young gardeners and their advisers criticized "bourgeois genetics" and glorified Lysenko's achievements. Kairov's report of September 4 emphasized that "in light of resolutions of the VASKhNIL meeting, the Academy of Pedagogical Sciences must pay especially great attention to questions of the young naturalists' movement."⁴⁸ Corresponding decisions were also included in the resolution adopted by the academy's presidium.

Reorganizing teaching, of course, also involved reorganizing teachers. As Nikolai Semashko, director of the Institute of School Hygiene, said at the academy's meeting of September 4: "Teachers of the natural-science disciplines must be persons who are able to correctly, interestingly, scientifically, materialistically teach the natural sciences. Weismannists must not even cross the threshold of a Soviet school."⁴⁹ During September, educational ministries held

meetings and teachers' conferences devoted to "resolutions of the VASKhNIL meeting" in all republics of the Soviet Union. At these meetings, Michurinists explained to the audience "the current tasks of biology schoolteachers."

Special attention was paid to the system of teacher training. On August 30, the minister of higher education issued a special order, "On Conditions of the Teaching of Biological Sciences in Pedagogical and Teachers' Institutes." "Morganist professors" were discharged, educational plans and programs were revised, and unsuitable textbooks and manuals were banished. The resolution of the Academy of Pedagogical Sciences of September 4 ordered the Institute of Pedagogical Education to develop new programs for pedagogical institutes within a month.

These measures, however, did not satisfy the Central Committee. On September 20, the Orgburo bitterly criticized the Ministry of Enlightenment and the Academy of Pedagogical Sciences in a three-and-a-half-page resolution that listed further measures necessary to improve biology education.⁵⁰

Following the party's instructions, the bureaucracy redoubled its efforts. On October 18–23, the Ministry of Enlightenment held an all-union conference of the heads of biology departments in pedagogical and teachers' institutes. More than seven hundred participants heard the address of the minister, Aleksandr Voznesenskii, "On Resolutions of the VASKhNIL Meeting and the Tasks of Reorganization of Teaching and Scientific Work in Biological Disciplines in Pedagogical and Teachers' Institutes." Lysenko himself delivered a special report explaining Michurinist biology and how it should be taught to students.⁵¹

The Orgburo's resolution of September 20 paid special attention to the "re-training" of teachers. Teachers of secondary school, however, were directly subordinate not to the Academy of Pedagogical Sciences and not even to the Ministry of Enlightenment, but to the departments of people's education within local soviets. So local soviets, stimulated by local party committees, joined the campaign. On October 13, for example, the Leningrad City Party Committee held a special session of its bureau to consider "the improvement of the teaching of biological sciences in Leningrad secondary schools."⁵² The Leningrad City Soviet then approved a special "Decision No. 52–47" (dated November 6), which decreed: "The City Department of People's Education, together with workers in biology departments of higher educational institutions, must maintain permanent control and watchfulness over the teaching conditions and levels of training of teacher-biologists; anti-Michurinists must be decisively discharged from work in the system of people's education."⁵³ The decision also ordered that an "agrobiological field" be financed in every school and that regional schools of "young naturalists" be organized. During winter vacations, the ministry and local authorities organized special courses and seminars on Michurinist biology for teachers all over the country.

All these measures created a situation in which "formal genetics," as well as other "idealist perversions in biology" (for instance, the concept of natural selection), simply disappeared from school textbooks and programs. The "un-

divided rule” of Michurinist biology was firmly established in the educational system. The attempt to establish a “Michurinist monopoly” in biological research, however, would prove much less successful.

RESEARCH: THE GAMES SCIENTISTS PLAYED

Party decisions provided Lysenko with complete administrative control over the Soviet agricultural academy, VASKhNIL, and ordered a complete reorganization of biological research in the Soviet Union. However, the “undivided rule” of Michurinist biology in research institutions subordinate to practically all academies other than VASKhNIL existed largely on paper.

All Michurinist meetings in academy institutions adopted resolutions that listed “the measures necessary for reorganization of work in light of decisions of the VASKhNIL meeting.” A comparison of these resolutions shows that the top officials of various scientific institutions employed the same techniques for this “reorganization.” All resolutions contained the same “measures”: discharging “guilty” scientists, changing publishing policy, and revising research plans. One might attribute this similarity to the instructions of party agencies that paid particular attention to these three aspects of the campaign. There are indications, however, that the leadership of the scientific community itself attached great significance precisely to these aspects.

In the months after the first wave of the campaign in September and October 1948, all institutions reported to the control agencies that the resolutions had been successfully implemented, and that the “undivided rule” of Michurinism had been established. The actual situation, however, was much more complex. High officials in various institutions had established *rhetorical* conformity between “progressive Michurinist biology” and the tangible aspects of scientific activity (personnel, publications, and research plans) subject to party control. The *actual* content of research conducted in institutions outside of Lysenko’s direct administrative reach, however, remained largely untouched. Academic officials played intricate games with the party-state bureaucracy, displaying their obedience to the current party line while trying to advance their own policies.

Game 1. “Repentance”: The Dismissal of Mendelists

The first paragraphs of all resolutions adopted at academic meetings underlined the necessity of discharging all “Mendelists” from their posts. As a rule, the resolutions listed a number of scientists to be discharged in subordinate institutions. Not all academies, however, were able to find Mendelists among their personnel.

Geneticists were just a small fraction of the Soviet biology community; there were barely one hundred in all, working mostly in Moscow and Lenin-

grad.⁵⁴ In spring 1946, Serebrovskii, preparing a report on Soviet genetics for the Academy of Sciences presidium, listed active geneticists in various cities and wrote: “Fellows, we are few and far between!”⁵⁵ Fewer than one hundred participants contributed to the all-union genetics conference held in spring 1947 at Moscow University. Not surprisingly, the academies of Estonia, Latvia, Lithuania, and other republics were unable to “discharge” anybody in 1948, reducing their resolutions to empty declarations.

The central academies, such as the Academy of Sciences, the Academy of Medical Sciences, the Academy of Pedagogical Sciences, and the Ukrainian Academy of Sciences, found their “villains” and fulfilled party instructions. The resolutions of these academies identified by name the most “inveterate,” “malicious” Morganists in their institutions and ordered that all be discharged. As a rule, the resolutions named persons who had already been dismissed by the Central Committee. Those named who had not already been dismissed by the Central Committee stood a very good chance of preserving their position, despite the menacing resolution. For example, the resolution of the Academy of Pedagogical Sciences ordered that Leon Orbeli be discharged from his directorship of a physiology laboratory in the Lesgaft Institute, yet he kept this post. The resolution of the Academy of Medical Sciences ordered that Georgii Gauze be discharged from his directorship in the Laboratory of Antibiotics, but this decision was never executed.

This strange situation obviously resulted from the *nomenklatura* system. The Central Committee directly controlled all nominations, appointments, and dismissals for key administrative posts in scientific institutions. The scientific bureaucracy could not dismiss anyone without approval by the Central Committee, and initiatives by the academies’ apparatus did not always find support in the party agencies. This was clearly the case with Gauze’s laboratory. Antibiotics research was particularly important to the Central Committee, and Gauze, the leading authority in this field, had developed the most effective Soviet antibiotic, gramicidin. Not only was he not fired, he even hired in his laboratory several Mendelists dismissed from other institutions (for instance, Aleksandra Prokof’eva-Bel’govskaia).

Furthermore, the apparatus of the Academy of Sciences strove actively, but carefully, to counteract even the Orgburo’s decisions. For instance, despite Orbeli’s dismissal from the post of academician-secretary of the Biology Division, less than a month later Sergei Vavilov petitioned the Central Committee for Orbeli’s appointment as a member of the academy’s presidium—an even higher position than his previous post.⁵⁶ Moreover, despite the menacing resolution, the academy’s officials found a way to employ even such “malicious” Mendelists as Shmal’gauzen and Navashin: the former became a senior researcher in the academy’s Institute of Zoology, the latter in the Institute of Botany. Academy officials observed the proverb “out of sight, out of mind,” moving a number of other dismissed Mendelists to its bases and branches in remote regions of the country. They presented to the Central Committee a list

of *eighteen* discharged geneticists, together with a plan to “use” them in, as a rule, geographically remote institutions.⁵⁷

The fate of Mendelists and their “sympathizers” who were not in the Central Committee’s *nomenklatura*—that is, rank-and-file scientists who did not occupy a high-level administrative post—was in the hands of their institution’s directorate and party committee. Their fate, therefore, depended entirely on the situation in their institution.

The purge in the Academy of Medical Sciences’ Institute of Evolutionary Physiology, for example, was totally subverted by its director, Orbeli. On September 17, the institute’s scientific council scheduled a special enlarged session, where Orbeli delivered a report, “On the Resolutions of the VASKhNIL Meeting.” He informed his coworkers about the meetings in the various academies that he had attended. He recounted the accusations against him and his institute.⁵⁸ A commission headed by the secretary of the institute’s party cell had prepared a resolution for the session, which stated: “The leadership and personnel of the institute are definitely guilty of the fact that formal genetics research ([by] R. Mazing, I. Kanaev, [and] L. Krushinskii) has been conducted until recently, and that measures to remove them were not taken in time.”⁵⁹ The resolution decreed that “senior researchers professor I. Kanaev and R. Mazing be discharged as representatives of the Mendelist-Morganist direction and as unsuitable for their positions in the institute.”⁶⁰

Interestingly, in his report to the meeting of the Academy of Medical Sciences, Ivan Razenkov had identified *five* Mendelists affiliated with the institute: Sergei Davidenkov, Roza Mazing, Ivan Kanaev, Nataliia Kryshova, and Leonid Krushinskii. The party committee, however, decided to “sacrifice” only two out of the five. Why? Academician Davidenkov was listed in 1948 as a member of the institute’s scientific council, but archival documents show that during a two-year period (1946 and 1947) he had only once attended its sessions. So the resolution proposed only that his work be criticized at a session of the scientific council and that he be removed from that leadership body.⁶¹ Kryshova, Davidenkov’s former wife and coworker, headed the institute’s neurological clinic; she was accused of publishing “only one formal genetics article.”⁶² The party committee proposed that a special board inspect her scientific work and resolve “the question of the possibility that professor N. Kryshova remain in an administrative post.”⁶³ As for Krushinskii, though he conducted most of his research at Orbeli’s institute, he was not officially affiliated with it; “measures” against him were taken where he officially worked, at the laboratory of developmental dynamics of Moscow University, which was closed under Kaftanov’s order. So only two of the five identified Mendelists affiliated with the institute were officially Orbeli’s employees. Moreover, Kanaev’s major post was his professorship of biology at the Lenin-grad Medical Institute; the position in Orbeli’s institute was his second job. Razenkov, of course, knew that Mazing was the only Mendelist actually employed at Orbeli’s institute. He needed, however, to demonstrate the “perni-

cious influence” of Mendelists on medical institutions, and so composed a long list of Mendelists to expose Orbeli’s “patronage” of Mendelism. The institute’s party committee, on the contrary, tried to downplay the presence of Mendelists in the institute and to limit its own “guilt.”

In fact, yet another Mendelist, a pupil of Nikolai Kol’tsov and Sergei Chetverikov, headed the institute’s Ornithological Laboratory: Aleksandr Promptov. His name, however, was completely omitted from Razenkov’s list. Indeed, at the meeting in the Academy of Medical Sciences, Razenkov characterized the work of the Ornithological Laboratory in almost Michurinist terms:

Until now, the working plan of the Institute of Evolutionary Physiology has paid insufficient attention to the question of the influence of environmental factors on the constitution of higher nervous activity. Despite the fact that the Ornithological Laboratory of the Institute of Evolutionary Physiology has demonstrated the great influence of upbringing on such seemingly invariable, hereditary fixed forms of bird behavior as nest-building and feeding, these subjects are almost absolutely absent from other works on the genetics of higher nervous activity.⁶⁴

This quotation shows either a misunderstanding or a deliberate falsification of Promptov’s work. Promptov employed a classical genetic method, hybrid analysis, to refute the false dichotomy of “hereditary” versus “acquired” characteristics in birds’ behavior. Julian Huxley, who visited Promptov’s laboratory in 1945, characterized research there as follows: “This, I believe, is the only work that has been done on the genetics of behavior in wild bird species.”⁶⁵ Apparently, Razenkov was unaware of Huxley’s article, for such an appraisal was sufficient reason to close the laboratory and dismiss Promptov. Orbeli valued Promptov highly both as a scientist and as a person, and used every possibility to protect this obvious Mendelist from the purge.

Moreover, unlike many of the 1948 meetings, the institute’s session did not unanimously adopt the resolution proposed by the party committee. After a draft of the resolution had been read, two of the institute’s workers—Nataliia Traugott and Lev Leibson—objected to the dismissal of their colleagues. Orbeli supported them, but a number of administrators called for the dismissal. Orbeli then proposed that the board created to inspect Kryshova’s works also examine those of Kanaev and Mazing; only afterwards would the question of their dismissal be discussed. This proposal was put to a vote and adopted by the session.⁶⁶

The decision of the scientific council, however, was not final. About September 20, a special commission arrived that had been created in accordance with the resolution adopted by the Academy of Medical Sciences “to review and revise scientific personnel” at the institute. The commission demanded that Mazing and Kanaev be discharged.⁶⁷ Orbeli, however, did not comply. The question was once again raised at a special November session of the academy’s bureau devoted to “discussion of the direction, structure, and personnel of the Institute of Evolutionary Physiology.”

Orbeli persuaded members of the bureau not to discharge his coworkers. He employed a very effective technique to do so: invocation of the authority of the Central Committee and his personal ties to the highest party circles. He said: "I was told in the Central Committee that the directive is that people should be reeducated [*perevospiyvat*'] in order to make them work."⁶⁸ He insisted that dismissals were senseless; it was necessary to involve scientists in work, not to deprive them of it. Orbeli did not allow the dismissal of any of his subordinates. Indeed, he even hired several geneticists discharged from other institutions: after Kanaev's dismissal from the Leningrad Medical Institute (under Kaftanov's order), he received a permanent position as a senior researcher in Orbeli's institute; in December, yet another geneticist dismissed from Leningrad University, Mikhail Lobashev, obtained a similar position. Unlike the educational bureaucracy, then, many top-level scientific administrators clearly tried to limit the purge of Mendelists in their institutions.⁶⁹ They had other ways to demonstrate their "obedience" to the party line.

Game 2. "Masquerade": Publishing Policy

One of the first steps in the implementation of Michurinist biology was the reorganization of the scientific publication process. Published material was an aspect of scientific activity accessible to scrupulous scrutiny: the Main Administration of Censorship (Glavlit) reviewed all scientific publications and reported to party agencies. Not surprisingly, academic institutions paid particular attention to publishing scientific, especially popular scientific, literature.

Publishing activity had always been under the strict control of the party apparatus. Before the August 1948 VASKhNIL meeting, scientific publications (both periodicals and books) were regularly criticized on the pages of the party press in the course of the patriotic campaign. At that time, the main target of the criticism was "slavishness and servility to the West." For instance, on June 26, 1948, *Pravda* published an article entitled "Should the Journal *Priroda* Be Like That?" The article targeted a review on biophysics, where "fifteen foreign names and not one Soviet name were listed." "The journal," the author concluded, "should be a fighting, militant periodical of scientific materialism, a journal with its own, Soviet face."⁷⁰ Naturally, after such a reprimand from the party's central newspaper, the editorial board of *Priroda* immediately admitted its "mistakes" and pledged to correct itself "at once."⁷¹ The editors, however, did not have time to keep their promise. Immediately after the VASKhNIL meeting, a broad campaign to propagate Michurinist biology and to "reorganize" scientific periodicals—first of all biological ones—began.

From the very beginning of the Michurinist campaign, the Central Committee paid particular attention to scientific literature. On August 21, *Culture and Life* carried a large article, "Captive to Idealist Views," which bitterly criticized the Academy of Sciences' biology journals. The article mentioned that

“30 of 36 published articles were presented by Shmal’gauzen,” that “in nine issues six articles on genetics were published, and five of them dealt with *Drosophila*,” that in one of the published articles “63 of 73 references were to foreign authors,” and so forth. The authors concluded: “It is necessary that the biology journals of the Academy of Sciences become a tribune of advanced materialist Michurinist biological science, that their content be close to the most important problems of agriculture, . . . that they take a leading role in the struggle against Weismannist views.”⁷² No wonder the question of biology periodicals was one of the main items on the agenda of all academic meetings. The main accusations against scientific periodicals, as one might expect, concerned the presence of Mendelists on the editorial boards, the publication of Morganist articles and neglect of Michurinist doctrine, servility to the West, and alienation from practice.

The academy leadership admitted these “mistakes.” In his opening address to the meeting of the Academy of Sciences, Sergei Vavilov proposed that “measures be adopted for popularizing Michurin’s doctrine [and] his works in our popular publications, . . . and representatives of Michurinist science be actively involved in editing our biology journals.”⁷³ The subject of academic publications took up a large part of all the following speeches. Aleksandr Oparin, for instance, said: “The Presidium and [Biology] Division are facing a great amount of work concerning scientific biology journals. Publications by the academy were strongly imbued with the spirit of the Morganist approach to living nature. This, of course, must be eliminated; we must press for a much wider illumination of Michurinist works in our publications.”⁷⁴ Corresponding decisions occupied three of the resolution’s twelve paragraphs. The next day, August 27, *Pravda* announced that the academy was prepared to print two hundred thousand copies of a new *Collected Works of Michurin*.⁷⁵ On September 9, at the meeting of the Academy of Medical Sciences, academician Evgenii Pavlovskii reported on the accomplishment (note the speed!) of the resolution adopted by the Academy of Sciences: “The editorial boards of *all* biology journals of the USSR Academy of Sciences have been revised. . . . *All* supporters of formal genetics have been removed from, and supporters of the Michurinist direction included in, the editorial boards. A commission to revise *all* biology literature of the Academy of Sciences’ Publishing House has been organized. *All* works reflecting the concepts of formal genetics have been removed.”⁷⁶

Other academies followed suit. They paid particular attention to changing the public face of their journals. Popular periodicals and popular science publications converted completely to propaganda for the Michurinist doctrine.⁷⁷ The main popular journal of the Academy of Sciences, *Priroda*, was occupied by Lysenkoists and, issue by issue, printed Lysenko’s report to the VASKhNIL meeting.⁷⁸ *Priroda* became Lysenko’s main mouthpiece among academic periodicals. The émigré geneticist Theodosius Dobzhansky noted in

his diary: "October 19, 1951. Read Russian journals—such a decline in Russian science. . . . October 22, 1951. In the evening read *Priroda*. It is horrible how people are forced systematically to lie. Perhaps a lie in Russia has become something that goes without saying and people do not even think about."⁷⁹

The "reorganization" of specialized scientific journals, however, was not so successful as Pavlovskii had claimed, at least not in the Academy of Sciences. In October 1948, the director of the Leningrad branch of the academy's publishing house reported to the city party committee:

Despite the decision of the Academy of Sciences' Presidium, the editorial boards of biology journals have not been changed, and present memberships are unable to cope with the reorganization of the journals in the spirit of progressive Michurinist science. The planned contents of biology journals contain old materials irrelevant to the present-day tasks of biological science. Michurinist works are absolutely absent there. . . . Certain editorial boards try to replace a radical reorganization of the journals by unessential declarations such as footnotes "from editors," "forewords," and so forth.⁸⁰

Indeed, the specialized biology journals of the Academy of Sciences had been "reorganized" mainly on paper. The goal of this superficial reorganization is obvious: to demonstrate obedience to the control agencies. All academic biology (and not only biology) journals during autumn and winter 1948 published various "Michurinist" articles. Their editorial boards obviously adopted the tactics described in the letter cited above—publishing "editorials," "forewords," "introductions," "notes from the editors," and other such camouflage.

Game 3. "Charades": The Planning of Research

All 1948 academic meetings paid particular attention to the planning of scientific research. The revision of institutions' research plans "in accordance with the Michurinist trend" was considered the most important task of all academies and was included in all resolutions adopted at academic meetings. As was declared at the meeting of the Academy of Sciences: "One of the first major tasks of the Biology Division and every one of its institutions, which directly flows from the general tasks set before biological science by the meeting of the Academy of Agricultural Sciences, is a very scrupulous review and revision of work plans and programs from the perspective of developing and implementing the principles and methods of Soviet Michurinist biology in *all fields* of biological science."⁸¹ In his opening address to the meeting of the academy, Vavilov highlighted the need for "a new plan of our biologists' work for 1949."⁸² Almost every subsequent speaker who occupied any administrative post said something about "the necessity of revising plans" in their institutions, in the Biology Division, and in the academy as a whole. Speakers

urged an emphasis on “the practical use of biological knowledge” in future plans.⁸³ Four of the twelve paragraphs in the academy’s resolution called for the prompt revision of existing plans.

The situation was the same in the Academy of Pedagogical Sciences. Its resolution decreed: “Within two weeks, directors of the academy’s institutes must review and revise the research plans of the institutes in order to subordinate their research completely to the task of developing the Michurinist trend in biological science.”⁸⁴ This was rapidly accomplished. On September 29, the academy’s presidium scheduled a special session “to discuss a reorganization of work in the academy’s institutes.”⁸⁵ For this session, the Institute of Pedagogical Theory and History, the Institute of Methods of Education, and the Lesgaft Institute of Natural Sciences presented “certificates about the reorganization of work in light of the VASKhNIL meeting.” These certificates detailed directors’ “achievements” in the implementation of Michurinist doctrine.

In the Academy of Medical Sciences, the theme of “reorganizing the work of all divisions of the academy in light of Michurinist doctrine” sounded in the reports of Razenkov and all other academic leaders at the enlarged meeting of the presidium on September 9–10. Several paragraphs of the academy’s resolution noted “insufficient control over the planning of institute research” in its divisions and resolved:

To charge the divisions’ bureaus to review critically the contents of the plans of the academy’s institutes for 1948 in the shortest time in order to correct the subjects [of investigations] in accordance with the progressive theory of Soviet medicine and the demands of public health.

To base the planning of science for 1949 upon the necessity of completely freeing subjects from Weismannist-Morganist perversions and of decisively implementing Michurin-Lysenko’s doctrine in biomedical disciplines.⁸⁶

Corresponding instructions were given to all institutions of the academy. The presidium was particularly attentive to such “guilty” institutions as the Institute of Evolutionary Physiology, the Institute of Experimental Biology, and the Laboratory of Antibiotics, and created commissions to inspect and revise their research plans.⁸⁷

It was obviously impossible to actually reorganize research in the short time allotted to this task by the academies’ resolutions—even if academy officials had been genuinely committed to doing so. Most academy leaders, perhaps, were acting exactly as the director of the Soil Institute, Boris Polynov, warned in a story he related at the Academy of Sciences meeting: cautioning his audience against a “superficial attitude to the reorganization of research planning,” he noted that one of his subordinates “had simply added to all titles [of his research plans]: ‘on the basis of Vil’iams’s concept’.”⁸⁸ It seems very likely that most academic institutions revised their plans in exactly this spirit, adding something like “in accordance with Michurinist doctrine” or “on the

basis of Lysenko's theory." For example, in the Academy of Medical Sciences, a topic entitled "Studying the variability of microorganisms in light of academician Lysenko's doctrine of variability" appeared in the plan of the Division of Hygiene, Microbiology, and Epidemiology.⁸⁹ Ritualistic forewords and afterwords for such plans obligatorily mentioned Lysenko's report "approved by the Central Committee" and emphasized that the direction of disciplinary development was "outlined by the results of the VASKhNIL meeting."

Biology institutions further adapted rhetorically by inserting one or another of Lysenko's favorite ideas into revised plans. Especially popular was "the inheritance of acquired characteristics," which was included in the revised plan of almost every biology institution.⁹⁰ Zoologists and botanists, physiologists and anatomists began to retitle their research, using various elements of Michurinist biology.⁹¹ Zoologists, for example, referred frequently to Lysenko's declarations about the decisive role of the external environment in speciation and adaptation. The actual content of their work, however, remained largely unchanged.⁹²

The planning activity of Orbeli's Institute of Evolutionary Physiology is a good illustration of how this worked. On October 20, a special session of the Scientific Council discussed research plans for 1949.⁹³ One researcher included two subjects in his plan: "Studying types of higher nervous activity in ontogenesis" and "The origin and development of conditioned reflex activity in puppies' ontogenesis." Orbeli listened to the presentation of the proposed subjects and observed: "These could be included in genetics, in *the new understanding of genetics*."⁹⁴ That is what was done—these subjects were included in the research plan on the genetics of higher nervous activity. Using the specific notion of genetics elaborated by Michurinists, Orbeli and his co-workers substituted "genetic" for "ontogenetic." The laboratory of the genetics of higher nervous activity began to conduct research on the ontogenetic development of various forms of behavior, but called it "genetics."⁹⁵

All this stormy planning activity in academy institutions produced an illusion of the "complete and final victory" of Michurinist doctrine. Work was "reorganized" and academic officials could, with a clear conscience, report to the Central Committee and relevant ministries that the tasks "set by the party and government" were accomplished. Such reports were the main goal of the "reorganization" of research plans. A special session of the Academy of Medical Sciences' apparatus, which discussed "the direction, structure, and personnel of the Institute of Evolutionary Physiology" on November 4, is very revealing in this respect. Said Razenkov: "The first and main question we must address is this: did the Institute of Evolutionary Physiology manage a reorganization of its plan and is the reorganization *visible*? All speakers have noted that the reorganization has been managed and is *reflected* in the plan. *This is what is essential*."⁹⁶ It seems likely that officials in all academies grounded their planning activity upon the same "essential."

The revision of research plans acquired such great importance at the Michurinist meetings because such plans, and reports of their fulfillment, were virtually the only documents that the academies received from their subordinate institutions. They were also practically the only source of information about the actual situation in these institutions available to the academies' apparatus, control agencies, the ministries, and the Central Committee. These plans defined the significance and usefulness (and hence the necessity of financing) of proposed research in the eyes of party and state officials.

The role of research plans in the relations between the academies and the control agencies can be illustrated through a session of the presidium of the Medical Scientific Council of the USSR Ministry of Public Health.⁹⁷ The heads and scientific secretaries of the Medical Scientific Councils of all republics were present. The head of the USSR Medical Scientific Council, Lev Fedorov, was the main speaker. In his address, he noted that the Academy of Medical Sciences cost almost one million rubles per day and that the party and government wanted to know how such an expenditure was justified. He reminded his audience that the main "duty [of a Medical Scientific Council] is to be an observer of the state's interests in the field of science, in the field of the organization of science." He emphasized research planning and urged participants to strictly control not only the subjects of investigation, but also methods. He added: "I am afraid that here we will encounter big obstacles, that we will be criticized for dictatorship. So be it. We'll quarrel a little. There is no other alternative. If we want to resolve the tasks in the state's way, let's organize the mission in the state's way, but if we would try to persuade peacefully, the mission would not be accomplished."⁹⁸ Understandably, in such a situation academies paid great attention to research plans and demanded that subordinate institutions present the appropriate papers "at once."

Intended for the eyes of ignorant bureaucrats, research plans became a rhetorical device shaped to demonstrate the conformity of scientific administrators to current party policy. During the Michurinist campaign, top-level academy officials used research plans to show the control agencies that all institutions were being "reorganized" in accordance with the Michurinist biology "approved by the Central Committee." They filled their plans with appropriate buzzwords and slogans to conceal and justify their own research agendas. They shaped all visible aspects of scientific activity to fit "progressive Michurinist science." Thus, they simultaneously displayed their "obedience" to the party line in biology questions and sustained their own policies.

Lysenko's "dominance" in academy biology research, then, extended only so far as his institutional reach. Scientific administrators showed the control agencies what the agencies wanted to see: that formal genetics was banned and that all biological research had become "impregnated" with Michurinist biology. Beyond Lysenko's administrative reach, however, the "monopoly" of Michurinist biology remained little more than the formulaic rhetoric of top-level administrators.

WORDS AND DEEDS

Although the Central Committee's approval of Lysenko's address to the VASKhNIL meeting established Michurinist biology as the only allowable theoretical framework in Soviet biological research and education, Michurinists did not succeed in monopolizing the whole of Soviet biology: they conquered education, but proved unable to take over the research system. The different consequences of the Michurinist campaign in education and research clearly reflected the different positions of research and education within the Stalinist science system.

The conquest of higher educational institutions was a major Lysenkoist goal. This success both crushed an important stronghold of the opposition and provided Lysenkoists with numerous prestigious and well-paid positions.⁹⁹ By seizing control of VAK, Lysenkoists gained the ability to reward supporters with scientific degrees and titles that brought great dividends for the bearers.¹⁰⁰ Lysenko's supporters, then, had good reason to press party agencies for the "reorganization" of higher education.¹⁰¹

The conquest of secondary education provided fewer rewards, and Lysenkoists never strove actively to achieve it—but party agencies orchestrated its "reorganization" for their own reasons. The range of the campaign suggests that the party apparatus's efforts can be explained by the "ideological meaning" of Lysenko's doctrine. "Ideological" education and upbringing was a major concern of the party apparatus, and Lysenkoists had skillfully exploited the "ideological meaning" of their doctrine. During the VASKhNIL meeting, Lysenko repeatedly stated that higher education in biology was controlled by Mendelists and claimed that this was "gravely prejudicial to the *ideological training* of our cadres."¹⁰² The party's approval of Lysenko's address signified its support for his claim to authority over evolutionary theory. Darwinism, apparently because of its specific role in state ideological doctrine, was taught not only in higher educational institutions, but also in secondary schools, and was considered the basis of biology as a whole. Party approval of Lysenko's "Soviet creative Darwinism," then, signified its approval as an ideological concept, which might explain the great efforts to establish Michurinist biology in secondary as well as higher education.

The important "ideological meaning" of Lysenko's doctrine was clearly articulated in special actions to maintain "ideological education" and to strengthen the teaching of Marxist-Leninist philosophy. On October 11, Kaf-tanov signed the order "On Measures for the Improvement of the Teaching of Principles of Marxism-Leninism and Philosophy in Higher Educational Institutions."¹⁰³ The order stated:

As was shown by the August 1948 meeting of the Lenin Academy of Agricultural Sciences, many departments of Marxism-Leninism and philosophy did not lead the struggle against idealist philosophy, which diffused into higher educational institu-

tions together with the Mendelist-Morganist direction in biology. Departments of philosophy and Marxism-Leninism did not demonstrate Bolshevik persistence in upholding the progressive teaching of our great compatriots, the reformers of nature—I. V. Michurin and his pupil, T. D. Lysenko.¹⁰⁴

Special attention was paid to the “ideological reeducation” of the mentors of the next generation. Four days earlier, Kaftanov had signed a special order, “On the Improvement of the Ideological and Political Level and the Quality of Training for Teachers of Natural Sciences in Pedagogical and Teachers’ Institutes.”¹⁰⁵ The order added a course of 140 hours on dialectical and historical materialism to the curriculum of natural-sciences faculties.

Various state agencies actively participated in the implementation of Michurinist biology in the educational system. Some, such as the Ministry of Higher Education, were fulfilling direct party orders. Others, such as the Ministry of Enlightenment, did not wait for orders, striving to gain credit for their initiative. The interests of different agencies sometimes contradicted each other and provoked serious clashes between different bureaucratic groups.

One of the best examples of such clashes is the case of agricultural educational institutions. Before the VASKhNIL meeting, such institutions were subordinate to the Ministry of Higher Education. Lysenko apparently did not trust educational officials and wanted to secure his control over agricultural education. After the meeting, following Lysenko’s request, the Orgburo decided to subordinate agricultural educational institutions to the Ministry of Agriculture, thus ensuring Lysenko’s control. This decision meant that the Ministry of Higher Education would lose control over a significant part of the educational system. Kaftanov did everything he could to reverse the Orgburo’s decision, even writing a letter to Stalin.¹⁰⁶ His efforts, however, proved fruitless. A resolution of the Council of Ministers (dated September 1) transferred agricultural institutes and colleges to the Ministry of Agriculture. Predictably, Michurinists immediately occupied dominant positions in these institutes. Lysenko himself replaced Zhebrak as head of the genetics department in the Timiriazev Academy.

The establishment of the Michurinist “monopoly” in education seems to have resulted in large part from the frenzied activity of educational-ministry bureaucrats. The only way for them to demonstrate their complete obedience to the party line was to exercise their power over subordinate institutions as strictly and eagerly as they could. Their success resulted from the direct administrative control of educational ministries over personnel, syllabi, and curricula. Ministerial orders appeared sufficient to discharge all personnel suspected of Mendelism, to stamp out formal genetics, and to replace it with Michurinist biology.

Scientific administrators, on the contrary, actively tried to limit the officially approved dominance of Michurinist biology within the research system. They played intricate games with the control apparatus, bringing all the tangible as-

pects of their activity—personnel, publications, and research plans—into rhetorical conformity with Lysenko’s doctrine. Following the direct orders of the party apparatus, they sacrificed “formal genetics” as a discipline, but exercised considerable efforts to save “formal geneticists.” They filled their publications and research plans with Michurinist camouflage, but continued to pursue their own research agendas in their laboratories and institutes.

Educational and research administrators, then, uttered similar words but performed different deeds. This is explicable by the differing nature of education and research. The major purpose of the educational system was professional training, but, according to the rules of the Stalinist system, this was completely subordinated to ideological and political inculcation, and party agencies exercised strict control over educational programs. As a result, all the latest party pronouncements were immediately incorporated into syllabi and curricula, and educational personnel were immediately purged in accord with the latest party line. For educational bureaucrats, then, the rhetoric of the Michurinist campaign became the guideline for and constituted the content of their actions. By changing its rhetoric, educational bureaucrats changed the actual content of biology education.

The major purpose of the research system was the production of new knowledge, and, despite the strict control and numerous limitations imposed over this system by the party apparatus, the actual content of research was far beyond its control and often its comprehension. Not surprisingly, then, for scientific administrators, Michurinist rhetoric became not a guideline for their actions, but a device to protect their colleagues and their own research agendas. They changed the way they *described* their research in official and public settings, but not the content of the research itself.

The different nature of education and research was clearly reflected in the publishing policies adopted by educational and research administrators. The latter published Michurinist camouflage in the form of prefaces, introductions, and notes from editors, but kept the editorial boards and the body of journals largely intact. The former, on the contrary, immediately purged the editorial boards and changed not only the content of journals, but also textbooks and manuals. For example, only one of the eight members of the editorial board of the Academy of Pedagogical Sciences’ journal *Natural Sciences in School* survived that academy’s Michurinist meeting; their positions were immediately occupied by such Michurinists as Fedor Dvoriankin, Khilia Kushner, and Nikolai Nuzhdin.¹⁰⁷ The new editors’ efforts did not go unappreciated. A columnist in *Teachers’ Gazette* noted that “the new issue of the journal cast a fighting party light on a number of very important questions regarding biological science and methods of teaching it in school.”¹⁰⁸

As we have seen, the party apparatus was a driving force behind the Michurinist campaign, and ideological considerations were one of the main motifs of its actions. However, the ideological concerns of the party apparatus did not outweigh the strategic significance of scientific research to the Cold War. As

a result, despite its official banishment, even genetics research survived, albeit in a very limited form, in the Soviet Union. How could this have possibly happened? Documents in the party archive provide some clues.

One of the orders of the Ministry of Higher Education liquidated the department of genetics and breeding in Voronezh University and dismissed all personnel in that department's genetics laboratory. At the end of August, the head of the department, Dmitrii Petrov, sent a long letter to Stalin.¹⁰⁹ In many respects, this letter was a typical "confession" of a discharged Mendelist. It was very enthusiastic. The author described at length his long-standing struggle for Michurin's legacy: "Before the grave of Michurin, I took an oath to use all my strength to realize [Michurin's] ideas in life and to propagandize Michurin's theory in that form which had crystallized in my mind as a result of my personal conversations with him."¹¹⁰ Predictably, Petrov enumerated practical results achieved in his laboratory in the course of genetics research with various microorganisms. He described the grandiose achievements of Soviet agriculture and medicine that could result if he were permitted to continue his work.

The second part of the letter concerned the possible military importance of genetics work with microbes. Petrov warned that the United States was obviously engaged in military research on microorganisms: "Although the work with microbes that has military significance is, of course, top secret, it is clear from theoretical works appearing in specialized journals that breeding work with microbes, aimed to select highly pathogenic microbes specifically for military goals, is intensively conducted on a wide scale in the USA. One can with full assurance suppose that very serious results have already been achieved there." He declared that "bacterial weapons" might be very important in a future war, and urged Stalin to organize a special "closed" laboratory for research in "bacteriological weaponry." He added: "I am sure that, if only you would support this idea, then we, due to our more advanced breeding methods, could very quickly overtake the achievements of the USA, which are obtained by the methods of formal genetics. Such breeding work would also help, if necessary, to quickly find effective means to struggle against epidemics that may result from a bacterial war."¹¹¹ In conclusion, Petrov asked that the department of genetics in the university be preserved as an organizational base for such special secret laboratories.

The letter proved effective. Stalin's secretary, apparently following his instructions, passed the letter on to Malenkov. The latter instructed the head of the Central Committee's Agriculture Department "to prepare proposals" and "to call Comrade Petrov to Moscow."¹¹² I was unable to find any further information about the "Petrov affair" in the party archive. It seems likely, however, that the very absence of such materials means that a secret laboratory was established. Unfortunately, the archives of the KGB and the Ministry of Defense, where the documentary evidence of such a laboratory would be found, are closed.

Although no precise information is available on research in the *sharashki*, we know that at least one of them continued genetics research without any interruption. Nikolai Timofeeff-Ressovsky who was regularly mentioned at various Michurinist meetings in 1948 as an “enemy of the people” and a “foreign Mendelist,” at that very time was conducting genetics research in a top secret *sharashka* in the Urals that was a part of the Soviet atomic-bomb project. In his reminiscences, he mentioned that in 1948 he did not even know about the August VASKhNIL meeting and the banishment of genetics from Soviet science. He continued work on the radiation genetics of *Drosophila*, an organism that was officially condemned as a symbol of “useless,” “imperialist,” “idealist” genetics.¹¹³

Genetics research, then, was protected in the Soviet Union by the very same factor that spurred its official banishment: the Cold War. Even within a system thoroughly dominated by the party apparatus, scientists pursued their own interests by playing upon the sometimes contradictory concerns of the ruling group. Decision makers at the apex of the party—in the Politburo, Orgburo, and Secretariat—could sometimes be forced to choose between their ideological, political, military, and economic priorities. This was facilitated by the instrumentalist attitude of party leaders toward science: since they valued science primarily for its potential usefulness, any scientific research could be justified in their eyes through a connection to the party’s practical priorities at the moment.

Scientists skillfully employed Cold War priorities, and especially the real or imagined military applications of their research, to influence decision makers. Petrov, for example, used this overriding strategic objective to nullify a policy—the abolition of genetics—that was based on the lower-priority concerns of ideology and agriculture. Military considerations were obviously of much higher priority than any position on esoteric scientific issues, especially since, as we have seen, party leaders usually cared little about these issues in themselves. In the absence of firm internal convictions, party leaders made science-policy decisions in response to external stimuli, usually the appeals of scientists. It was these scientists, then, who provided the information upon which party leaders based their decisions. Although these decisions were reached not for the sake of science per se, but in service to whatever larger priorities preoccupied decision makers at the moment, they nevertheless served the scientists’ own agendas.

The party monopoly over decision making in science policy, then, did not reduce Soviet scientists to passivity. They retained the ability to influence decision makers at the highest level of the party apparatus, and some managed to do so with great ingenuity.

The Realities of Stalinist Science: Careerism and Institutional Rivalry

The greatest productive force is human selfishness.

—Robert A. Heinlein, *Time Enough for Love*

THE BUILDING OF a successful career and the institutionalization of certain kinds of research are among the most important elements of the social practice of scientists the world over. In the Stalinist science system, the party's strict control over personnel and institutions profoundly affected the way Soviet scientists built their careers and institutionalized their research.

The events of autumn 1948, dramatic as they were, did not alter the fundamental character of Stalinist science: the hierarchical, bureaucratic system of decision making, the vital role of personal contacts of science spokesmen with top officials, the ultimate dependence of science policy on the party's general priorities of the moment, and the significance of rhetoric as a negotiating language between scientists and party bureaucrats. Nor did the Michurinist campaign signal the end of the careerist ambitions and institutional rivalries that had always characterized Soviet science. It is not surprising, then, that some individuals and groups saw the Michurinist campaign not as a danger, but as an opportunity.

As Michurinist biology presented to the scientific community a new model of "Soviet" science, so the Michurinist campaign presented to Soviet scientists an efficient model for successful career building and institutional struggle. Just as various groups imitated and reproduced the new model of "Soviet" science in their own disciplines, so, too, various individuals and groups attempted to use Lysenko's example to advance their own careers and institutional agendas. For them, Lysenko had demonstrated how to use the new Cold War system of interrelations with the party apparatus to accumulate personal and professional power.

For many Soviet scientists, then, the lessons of the VASKhNIL meeting went far beyond a new dialect of party "Newspeak" or minor modifications of the rules of party "etiquette." Ambitious administrators in physics and physiology, chemistry and linguistics, mathematics and technology emulated Lysenko's technique, not only adding considerable breadth and virulence to the 1948 Michurinist campaign, but also consolidating the Stalinist science system.

ROLES, CAREERS, AND INSTITUTIONS

The *nomenklatura* system and the strict regulation of institutional structures were the major mechanisms of the party's control over the scientific community. To advance a career or to reshape the institutional structure of a discipline, scientists had to obey the rules and canons imposed by the control apparatus, and some managed to do so with great ingenuity.

As we have seen, the polarization of the scientific community into opposing camps—"us versus them"—was a characteristic feature of Stalinist science from its very beginnings. Such polarization had served as a convenient instrument of party control that enhanced the role of the party bureaucracy as "supreme judge." But it also became a convenient instrument for career building within the rigid academic hierarchy. The broad propaganda campaign "For the domination of Michurinist biology" not only identified the current polarization of the scientific community into "us" (Michurinists) and "them" (Mendelists), it also endorsed an image of the ideal "Soviet" scientist that was immediately mimicked by scientists in all fields for their own personal advantage.

Although Lysenkoists and geneticists together represented a very small fraction of Soviet scientists, the entire community was swept up in the Michurinist campaign. The total number of Soviet geneticists hardly exceeded one hundred; "true" Lysenkoists (Lysenko's pupils and close associates) were no more numerous. The Michurinist campaign of 1948, however, involved in one way or another practically all Soviet scientists—about 150,000. Many, of course, were not active participants, and merely provided a passive audience for the performances staged by scientific administrators. Many others, however, either deliberately or not, played an active public role. "Unmasked Mendelists" performed numerous repentances and confessions, admitting previous mistakes and promising to work in the future only along Michurinist lines. Rank-and-file scientists declared their allegiance to Michurinist biology, joining the chorus to condemn Mendelism and all other pernicious "isms" in Soviet science. Still others employed the Michurinist campaign to bolster their careers within scientific institutions and to better their positions within the rigid hierarchy of the Soviet science system.

Almost every dismissed "Mendelist" in one way or another admitted "committing errors."¹ As we have seen, most performed confessions at the meetings held in the institutions where they worked. Another means of repentance was a letter to the Central Committee; immediately after the meetings, almost every Mendelist sent a letter to the Central Committee, addressed personally to Stalin, Malenkov, or other party leaders.² These letters were almost identical. The authors confessed to being mistaken in their critique of Lysenko's doctrine and asked for permission to continue to do research, promising "to devote all my energy to work in the field of advanced Soviet biological science directed to the victory of Communism."³ All letters were heavily permeated with Michurinist rhetoric. As a rule, their authors described the possible

practical applications of their genetics research.⁴ Sometimes geneticists referred to their research in areas far removed from genetics; one, for example, referred to his work on the transplantation of teeth as a possible alternative employment.⁵ The goal of all these letters is clear—to assume a new identity, to become a “Michurinist” in order to preserve the opportunity to continue scientific work.

Many participants in the Michurinist meetings played the role of “August Michurinist.” Their speeches were richly decorated with all the prescribed rhetoric, but were otherwise empty. The speakers did not maneuver for personal or institutional advantage, nor did they call for the elimination of known Mendelists. Obviously, the intensive campaign stimulated the personnel in research and educational institutions to imitate Michurinists. At every meeting, numerous biologists (and not only biologists) declared that they were and had always been “true Michurinists,” true followers of Lysenko, Pavlov, Timiriachev, and all other founding fathers of Soviet science. As a party commission charged with examining a pedagogical institute in Leningrad reported to the city party committee: “‘August’ Michurinists are growing in the institute like mushrooms, and this hides a danger that the reorganization of work will take place not in substance but only in form.”⁶ Obviously, many “August Michurinists” were seeking to escape the purges conducted in all educational and research institutions and to avoid the attacks of their militant colleagues who hoped to ride the Michurinist bandwagon to a coveted title or post. By joining the condemnatory chorus, scientists could simultaneously demonstrate their obedience to the control agencies and insure themselves against possible accusations by jealous colleagues and personal enemies. Assuming the new identity of a Michurinist, scientists in all fields demonstrated that they embraced the new “politically correct” language and had become truly “Soviet” scientists.⁷

The severe measures against Mendelists and the slew of new Michurinist openings for deans, directors, and heads of laboratories and departments stimulated fierce careerism in scientific institutions. Many scientists sought a promotion or favor from the new favorites, especially from Lysenko himself. Lysenko’s personal archive contains numerous letters from various scientists asking for help. One worker in the Academy of Medical Sciences, for example, wrote: “I am sending you a short résumé of my thirty-year struggle on the medical front, hoping that it will be of interest to you and that you will consider it necessary to help.”⁸

Most career builders, however, relied on their own abilities. An alliance of two workers at the Institute of Epidemiology and Microbiology of the Academy of Medical Sciences, Nikolai Zhukov-Verezhnikov and Lev Kalinichenko, provides a telling example. Before the Michurinist campaign, Zhukov-Verezhnikov had headed the immunological laboratory at the institute and was the editor-in-chief of the medical academy’s publishing house. He apparently grasped immediately the opportunities presented by the Michurinist campaign. As early as August 25, the newspaper *Medical Worker* re-

ported on an open party meeting held at the publishing house and presided over by Zhukov-Verezhnikov. There he delivered an address titled "The Situation in Biological Science and Tasks of the Publishing House." The meeting decided to revise publishing plans and to begin issuing collections entitled "Biological Problems in Medical Science," which would illuminate medical questions from the point of view of Michurinist biology. The same newspaper also carried an article entitled "Studying Microbial Heredity and the Michurinist Doctrine," written by Zhukov-Verezhnikov in cooperation with Vladimir Timakov, the director of the institute in which he worked.⁹ Kalinichenko, a junior researcher in the Biochemical Department of the same institute, also quickly grasped the "superiority" of Michurinist doctrine. By the beginning of September, Zhukov-Verezhnikov and Kalinichenko had already prepared two collaborative works: "The Doctrine of Michurin-Lysenko and Certain Contemporary Biomedical Problems" and "On Biological Problems in Medical Science."¹⁰ Both were lead articles in the main medical periodicals.

Zhukov-Verezhnikov's initiative earned him an invitation to help prepare Ivan Razenkov's report to the meeting of the Academy of Medical Sciences. At a session of the academy apparatus on September 7, Razenkov noted: "Among the persons I invited to work on the report, I should especially note N. Zhukov-Verezhnikov. In this work he showed himself to be a remarkably staunch worker, upon whom [one] can always rely (with respect to both his political and specialized knowledge) as a very responsible, correct, and accurate man."¹¹ Zhukov-Verezhnikov's devotion was valued at its true worth: he was appointed acting director of the Institute of Experimental Biology, replacing the dismissed Aleksandr Gurvich. He was also appointed to the Commission for Preparing and Publishing the Complete Stenographic Report of the Academy of Medical Sciences' Meeting" (at first as its head and then, after academician-secretary Semen Sarkisov pressed his claim to this prestigious post and seized it, as deputy head). In December, Zhukov-Verezhnikov was "elected" to the academy and appointed its vice-president.

He, in turn, did not forget his coauthor, Kalinichenko, appointing him secretary of both the Commission for Examining the Institute of Evolutionary Physiology and the Commission for Preparing and Publishing the Complete Stenographic Report. On September 17, he also petitioned for Kalinichenko's promotion from junior to senior researcher. After Kalinichenko's successful work on the commissions, Zhukov-Verezhnikov transferred him to the Institute of Experimental Biology. At the beginning of October, he wrote a letter to the director of the Institute of Epidemiology and Microbiology: "I am asking for your agreement to transfer candidate of biological science Kalinichenko, L. A., to the Institute of Experimental Biology, where he will be employed as acting head of the Laboratory of Pathological Heredity. The transfer is dictated by the necessity of strengthening the Institute of Experimental Biology with Michurinist biologists. Comrade Kalinichenko, as is known, is not a microbiologist but a general biologist, which is the reason for his transfer to the institute."¹² The next day, the presidium appointed Kalini-

chenko to the desired post with a salary of 4,500 rubles per month.¹³ In the autumn, he also began teaching a course on Darwinism in the Moscow Pedagogical Institute, and in 1950 he published his lectures as a textbook, *An Introduction to Michurinist Biology*.¹⁴ This story (and there are many similar ones) illustrates how certain members of the scientific community successfully used the Michurinist campaign to advance their own careers.

The different roles that scientists chose for themselves in the course of the Michurinist campaign—"Michurinist Converts," "August Michurinists," and "Militant Michurinists"—were obvious adaptations to the system of *nomenklatura*, one of the most powerful instruments of party control over the scientific community. The personnel departments of party and state agencies directly controlled all promotions, appointments, and dismissals in scientific institutions. To discharge anyone from a high-level position, however, the control apparatus required a "good" reason, one that outweighed the other good reasons for which the apparatus had appointed the scientist in the first place. The basic criterion for decision making in personnel departments was not scientific merit (which, in any case, was beyond the competence of bureaucrats to judge), but rather conformity to the party line. In cooperation with the secret police, personnel departments closely monitored the "loyalty" and "political correctness" of those whose appointments they controlled. For example, during the Michurinist campaign, the Leningrad department of the Ministry of State Security (MGB) regularly reported to the city party committee on "declarations of the Leningrad intelligentsia concerning the publication of academician Lysenko's address at the VASKhNIL meeting."¹⁵

The *nomenklatura* system forced practically all Soviet scientists who occupied any administrative post to participate actively in ongoing ideological campaigns in order to maintain their high position within the hierarchy of academic institutions and to continue their research. Every member of the community had to take part in these campaigns. Silence or neutrality was treated as a "conspiracy" of those supporting the outlawed concepts. This, I believe, was one reason the Michurinist campaign, and all subsequent ones, acquired such a broad scope: the active demonstration of conformity to ongoing party campaigns was the best way not only to preserve one's administrative position, but also to win a promotion, for such conformity was the key criterion used by party bureaucrats in charge of personnel departments.

The party bureaucracy controlled the disciplinary structure of Soviet science as strictly as its personnel. Institutional development clearly reflected the principles of operation of Stalinist science: an institution could not be established and, once established, its structure could not be changed without the apparatus's approval. To win such approval, science spokesmen needed weighty arguments. Not surprisingly, then, various interest groups actively used the ongoing Michurinist campaign to enhance the position of their disciplines and institutions. They exploited Michurinist biology as a particular cultural resource approved by the party, exercising all their rhetorical skills to

imitate its intellectual content, ideological connotations, and social applications within their own disciplines in order to gain the support of party agencies for their institutional ambitions.

The use of "Michurinism" to advance institutional agendas was already apparent at the meeting of the Academy of Sciences in August 1948. After a lengthy speech praising Michurinist biology, academician Evgenii Pavlovskii, director of the academy's Institute of Zoology, demanded that "the specific weight of the zoological specialty in the Academy of Sciences be increased" and "its representation among academicians and corresponding members of the Academy be enlarged." He demanded four new positions in the academy membership: for an invertebrate specialist, a vertebrate specialist, a hydrobiologist, and an entomologist.¹⁶ The eminent parasitologist and academician Konstantin Skriabin presented similar demands, emphasizing the close links between his research in veterinary parasitology and Michurinist biology. He requested "two new academicians, a veterinary microbiologist and a specialist in animal industry, and also four new corresponding-member positions for specialists in veterinary and zootechnical sciences." Skriabin also proposed that "an institute for veterinary and zootechnical problems be organized in the academy."¹⁷ A speech by academy corresponding member and director of the Laboratory of Soil Biology, Vladimir Bushinskii, provides another revealing example. He severely criticized the Soil Institute (subordinated at that time to the Geology and Geography Division), accusing its workers of idealism and the neglect of Vil'iams's legacy. As was obvious from his speech, however, his real complaint was that he did not want his laboratory subordinated to the institute's authority. Bushinskii proposed that the institute be transferred from the Geology to the Biology Division, apparently hoping that this would allow him, as a "true follower of Lysenko and Vil'iams," to obtain a leadership post in the institute and to expand his laboratory.¹⁸ Neither of these proposals, however, was approved by the party agencies.

Several groups of biologists outside the academy also attempted to employ the Michurinist campaign to improve their institutional positions. For example, among institutions subordinate to the Ministry of Fisheries was a small Institute of Fishing and Hunting. In autumn 1948, the director of the institute's Leningrad Branch sent a long report to the Central Committee, requesting that "an Institute of Ichthyology be organized under the supervision of the Academy of Sciences" and that "the Ministry of Agriculture be ordered to finance applied ichthyological science."¹⁹ The Main Administration for Nature Reserves sent a similar request to the Central Committee and the Council of Ministers, proposing that an Institute of Nature Reserves be organized.²⁰ Both requests were richly decorated with appropriate rhetoric and promises "to develop Michurinist biology."

The Michurinist campaign fueled institutional struggles and fierce career seeking not only within biology institutions, but also throughout institutions of medicine, physics, chemistry, pedagogy, and history. It provided scientific

administrators with both an approved model and a powerful tool for institutional and disciplinary expansion, and created favorable conditions for scientific careerists.

PLAYING WITH PAVLOV

Soviet physiology provides another revealing example of the operation of Stalinist science. A campaign “for the development of Pavlov’s legacy,” which also enveloped all three central Soviet academies, exemplifies the lessons certain Soviet physiologists learned from the Michurinist campaign and their use of the Stalinist science system to pursue their own individual and institutional agendas.

At the time of the Bolshevik revolution, physiology, unlike genetics, had been a well-developed Russian discipline. Physiology laboratories and institutes had been established in almost all medical schools and universities, as well as in such privately financed institutions as the Institute of Experimental Medicine and the Psycho-Neurological Institute. A number of eminent researchers, including Vladimir Bekhterev, Aleksei Kuliabko, Ivan Pavlov, Aleksandr Samoilov, Mikhail Shaternikov, Bronislav Verigo, and Nikolai Vvedenskii, had taken part in building Russian physiology. The Nobel Prize awarded to Ivan Pavlov in 1904 certified that Russian physiological research had gained considerable acclaim on the international scene. Shortly before the revolution, Russian physiologists created their own society and immediately began to publish the *Russian Physiological Journal*.

As was the case with genetics, the Bolsheviks’ active science policy fueled the institutional expansion of physiology in the 1920s. Old institutions were revitalized, and new ones were established through the efforts of such distinguished spokesmen for physiology as Bekhterev, Vasilii Danilevskii, Pavlov, Samoilov, and Shaternikov. A number of younger researchers, including Orbeli and Aleksei Ukhtomskii, managed to create physiology departments within the numerous medical schools and universities organized throughout the country, which trained a new professional generation. Specialized physiological research institutes were created under Narkompros, Narkomzdrav, the Academy of Sciences, and the Communist Academy. For instance, Lina Shtern, who had returned to Russia in 1925, organized a new physiology institute in Moscow in 1929. International contacts were restored and domestic communications improved; in just five years, from 1926 to 1930, Russian physiologists held three large all-union congresses. Like all Soviet scientists, physiologists deployed the appropriate rhetoric and established contacts with influential patrons in the Bolshevik government.

In the early 1930s, physiology continued its institutional expansion. The Physiology Department became one of the three major divisions of VIEM,

and the institute itself was headed by a physiologist, Lev Fedorov. Important new research centers emerged in the Caucasus, the Ukraine, and Siberia under the leadership of such eminent researchers as Ivan Beritashvili, Vasili Chagovets, and Aleksandr Bogomolets. The international contacts of Soviet physiology were also improved: about one thousand Soviet physiologists participated in the Fifteenth International Physiological Congress in Moscow and Leningrad in 1935. Like all Soviet scientists, physiologists continued to adjust their rhetoric to the ever-changing party line, expounding on the relations of “Physiology and Dialectics,”²¹ the necessity of planning their research,²² its practical importance, and its “native roots.”

As it did in all Soviet disciplines, the Great Terror took its toll on physiology; a number of physiologists were arrested and some were executed.²³ In contrast to the case of genetics, however, these losses did not prove strategically damaging. All spokesmen for physiology preserved their positions.

Unlike genetics, whose institutional base shrank considerably in the late 1930s and was concentrated mostly in the Academy of Sciences and Moscow and Leningrad universities, physiology flourished under the auspices of all possible agencies—including Narkomzem, Narkomzdrav, the Academy of Sciences, Narkompros, the Committee for Higher Education, and even the Red Army—and in practically all regions of the USSR. Furthermore, physiology was established as the theoretical and experimental basis for the whole of Soviet medicine. It also enveloped and “devoured” practically all studies in animal behavior²⁴ and expanded into psychology, psychiatry, and pedagogy.²⁵ By the end of the 1930s, physiology had become the most developed biological discipline in the Soviet Union—and perhaps, considering the number of physiology institutions, the most developed discipline in all of Soviet science.²⁶

The 1930s policy of active party control and centralization also profoundly affected Soviet physiology. During that decade, Soviet physiology was “Pavlovized.”

Ivan Pavlov dramatically influenced the development of Soviet physiology. Despite his initial open hostility to the Bolshevik regime and his opposition to various aspects of Bolshevik science policy (particularly the Bolshevization of the Academy of Sciences and the planning of research), the Bolsheviks quickly recognized him as the leading authority in Soviet physiology.²⁷ Pavlov’s exceptional position among Soviet scientists—he was the only Nobelist—allowed him to establish personal contacts with the highest party authorities: first Lenin and Bukharin, and later Kirov and Molotov. He became an expert adviser for the government and was able to exert a profound influence on the development of his discipline. The Bolsheviks provided unlimited support for his institutions, with which he built an ever-expanding scientific empire that enveloped not only physiology per se, but also psychology, psychiatry, neurology, and pedagogy. Pavlov converted his small labora-

tory at the Academy of Sciences into a huge institute of physiology and created a large experimental station in Koltushi, a small village near Leningrad, which became his “capital of conditioned reflexes.” At the same time, his laboratory in the Institute of Experimental Medicine became a large department of physiology in VIEM. Pavlov’s institutions became a veritable factory for the production of physiologists. During the 1920s and 1930s, most Soviet physiologists spent some time working in his laboratories, which became a mecca for both Soviet and foreign scientists. At the Fifteenth International Physiological Congress in 1935, participants named Pavlov the “Leading Physiologist of the World.”

After Pavlov’s death in 1936, his doctrine of conditioned reflexes was canonized. Almost every leading Soviet physiologist claimed to be Pavlov’s pupil and a cultivator of “Pavlov’s legacy.” During the late 1930s, various groups and individuals successfully used Pavlov’s name as a rhetorical umbrella to legitimate research not only in physiology, but also in psychology, psychiatry, neurology, hygiene, and other disciplines.

Pavlov’s death began a war not only over his legacy as a founding father of Soviet physiology, but also over his institutional empire. At that time, the Central Committee appointed Orbeli, one of Pavlov’s oldest and most talented pupils, the principal heir.²⁸ He inherited Pavlov’s institute in the Academy of Sciences and his experimental station in Koltushi, converting the latter into a large institute under Narkomzdrav (it was later transferred to the Academy of Medical Sciences). Other Pavlov pupils regularly tried to challenge Orbeli’s position and to limit his authority in their field. They informed party agencies of his “misconduct” and “monopoly,” and accused him of “deviations” from Pavlov’s legacy.²⁹ These attempts proved fruitless, as Orbeli’s authority in party, government, and military circles was very strong.

World War II affected physiology the same way it did many other Soviet disciplines. Its spokesmen became members of the highest party-state agencies, its institutional base was strengthened, and its international contacts were revived. Physiology institutes and laboratories were established in practically all new academies created during and immediately after the war.

The newly established Academy of Medical Sciences became the domain of physiologists.³⁰ The community of medical scientists brought together in 1944 in the new academy was highly differentiated, including numerous disciplinary and institutional groups that competed against each other in such fields as anatomy, cytology, physiology, microbiology, and embryology. Physiologists were the largest disciplinary group within the academy, and Pavlov’s pupils and disciples constituted a majority of that group. In 1945 there were twelve physiologists among the fifty-six full members of the academy, including its academician-secretary (Vasilii Parin); the academician-secretary of its Biomedical Division (Razentov); three members of its presidium (Orbeli, Bogomolets, and Fedorov); and head of the presidium secretariat (Petr Anokhin).³¹

“Pavlov the Michurinist”

The physiologists' dominance of the apparatus of the Academy of Medical Sciences explains the nature of the events that happened in the academy in autumn 1948. At the time of the Michurinist campaign, Pavlov had been the acknowledged founding father of Soviet physiology for almost fifteen years. With the beginning of the campaign, several of Pavlov's pupils who occupied high-level administrative positions in the physiology community attempted to adapt the proven rhetoric of “Pavlovianism” to the new ideological circumstances. They used Pavlov's legacy not only to assert the universal features of “Soviet” science—*partiinost*, practicality, patriotism, and Marxism—but also to create a comprehensive surrogate for Lysenko's doctrine in their own field. They tried to stretch the meaning of Michurinist biology, as propagated by Lysenko and “approved by the Central Committee,” to include Pavlov's doctrine. To establish an “unbreakable link” between Pavlovian physiology and Michurinist biology, Soviet physiologists employed Pavlov's murky ideas about the transformation of conditioned (acquired) reflexes into unconditioned (inherited) ones in the process of biological evolution. The newly created myth of “Pavlov the Michurinist” was used in public rituals organized to demonstrate the agreement of medical scientists with the Stalinist image of science. The history of this episode is an instructive example of the careerist interests and maneuvers that both fueled and exploited not only the Michurinist campaign, but the machine of the Stalinist science system itself.

The myth unfolded only gradually. At the VASKhNIL meeting, Pavlov's name was not even mentioned. At the follow-up meeting of the Academy of Sciences, several speakers mentioned him, but only as “a great Soviet scientist” embodying the features characteristic of “Soviet” science—*partiinost*, practicality, patriotism, and Marxism. Pavlov's name was first associated with Michurinist biology at the August 16 session of the bureau of the presidium of the Academy of Medical Sciences, which discussed “the academy's measures in relation to academician T. Lysenko's report ‘On the Situation in Biological Science’.”³² The meeting's resolution stated that “the central principle of [Pavlov's genetics] research was as follows: hereditary features of nervous activity can be easily changed under the influence of external factors created by experiment.”³³ Beginning with this session, Pavlov's work on genetics became the principal link between Michurinist biology and Pavlovian doctrine, a link that was developed and elaborated at every subsequent meeting during the Michurinist campaign. In the process of preparing the principal report for the meeting at the Academy of Medical Sciences, a number of participants transformed Pavlov into an “active fighter against Morganism-Mendelism” and a “true Michurinist.”

Pavlov's early ideas on the inheritance of conditioned reflexes provided the basis for this myth. Like many other physiologists and psychologists early in the twentieth century, Pavlov had endorsed the idea of the evolutionary trans-

formation of acquired behavioral features into hereditary ones. In his report to the International Physiological Congress of 1913, he suggested that “some conditioned, newly-formed reflexes later became transformed into unconditioned [ones]”³⁴ Only ten years later, however, did he make an effort to prove this idea experimentally. In 1921–23 one of Pavlov’s coworkers, Nikolai Studentsov, conducted a series of experiments that allegedly demonstrated this transformation.

Studentsov studied conditioned reflexes in mice. He trained a mouse to run to a feeding rack only after a bell had sounded. The formation of this conditioned reflex in the first mouse proved very difficult—Studentsov repeated the experiment 298 times before the reflex was established. He then studied the formation of the same reflex in the mouse’s offspring. The first generation established the reflex much faster than their parents (after 114 repetitions), the second generation even faster (29 repetitions), the third faster still (11 repetitions), and the fourth almost immediately (6 repetitions). Studentsov presented the results of his experiments to “Physiology Conversations,” a seminar of Leningrad physiologists, and concluded that the conditioned reflex of the first generation had become unconditioned by the fourth generation—the conditioned reflex was now transmitted hereditarily from parents to offspring.

In 1923, during a lecture tour abroad, Pavlov enthusiastically informed British and American audiences about the new experimental results of his laboratory, including those of Studentsov.³⁵ His British audience reacted favorably.³⁶ In the United States, however, the geneticist T. H. Morgan attended Pavlov’s lecture and reportedly raised serious objections to Studentsov’s conclusions. Nevertheless, Studentsov’s experiments were published in the *Russian Physiological Journal* in 1924.³⁷

Soon after Pavlov’s return to Russia, the geneticist Nikolai Kol’tsov paid him a visit and convinced him that Studentsov’s experiments were flawed. It was actually not the mice, but rather Studentsov, Kol’tsov suggested, whose performance had improved over time. He proposed to repeat the experiments in such a way as to exclude any possible influence of the experimenter on the process of reflex formation.³⁸ Reportedly, Pavlov agreed with Kol’tsov’s objections and assigned another coworker, Evgenii Ganike, to construct a mechanism to conduct the experiments without the participation of an experimenter.

The control experiments made with this machine reportedly proved that *all* mice established a conditioned reflex to the sound of a bell very quickly, after just four to five repetitions. These results, however, were never published. During the infamous discussion between “Darwinists” and “Lamarckists” in 1927, Mark Levin published in *Pravda* an excerpt from a letter Pavlov had written to a foreign colleague. In the letter, dated March 1, 1927, Pavlov stated that experiments using Ganike’s machine did not confirm the prior suggestion about the hereditary transmission of conditioned reflexes and that “I cannot be considered a proponent of [the idea of] such transmission.”³⁹ A year later,

however, at the Third Congress of Soviet Physiologists, a coworker of one of Pavlov's oldest pupils, Ivan Tsitovich, delivered a report on the inheritance of conditioned reflexes in guinea pigs. The author claimed to have observed the acceleration and facilitation of reflex formation in three successive generations.⁴⁰ At the time, this report went absolutely unnoticed.

After 1928, the question of the inheritance of conditioned reflexes completely vanished from physiology publications, and Pavlov became increasingly devoted to genetics. Pavlov himself organized a laboratory to study the genetics of behavior and the genetic determination of various types of higher nervous activity in his "capital of conditioned reflexes" at Koltushi. He invited Sergei Davidenkov and two other geneticists to serve as consultants. Kol'tsov also recommended to Pavlov one of his own pupils, Leonid Kruhinskii, to conduct research on the genetics of canine behavior. At Pavlov's instruction, a monument to Gregor Mendel was erected in front of the laboratory building.

After Pavlov's death in 1936, Orbeli continued Pavlov's research on the genetic determination of various types of higher nervous activity, and expanded research on behavioral genetics. In 1938, he invited Roza Mazing, a student of Iurii Filipchenko, to work in the institute, where she conducted a large-scale investigation of the genetics of phototropism and geotropism in *Drosophila*. A year later, Orbeli invited another geneticist, Aleksandr Promptov, to study the genetics of avian behavior. Another geneticist, Ivan Kanaev, also joined the institute and began research on behavioral genetics in human identical twins. By the 1940s, the Institute of Evolutionary Physiology had become a leading center of behavioral genetics.⁴¹

Shortly before the August VASKhNIL meeting, several of Pavlov's pupils published biographies of their "Great Teacher" and histories of his physiological concepts. These publications noted Pavlov's interest in genetics and the genetics research conducted in his laboratories. Almost all of them mentioned his initial interest in and subsequent retreat from the inheritance of conditioned reflexes. For instance, in *Essays on the History of Physiology in Russia* (1946), Khachatur Koshtoiants retold the story in detail.⁴² Just before the August meeting, another of Pavlov's pupils, Fedor Maiorov, published a history of the concept of conditioned reflexes, in which he stated that Pavlov "considered Studentsov's experiments to be methodologically incorrect."⁴³

The Michurinist campaign radically reversed the portrayal of Pavlov's attitude toward both Mendel's genetics and Studentsov's experiments. The question of the hereditary transmission of conditioned reflexes and their transformation into unconditioned ones reappeared. Several of Pavlov's pupils revived this forgotten and compromised idea, portraying it as the central theme of Pavlov's work. For instance, at the meeting of the bureau of the Biomedical Division of September 7, Fedorov, a former party appointee to Pavlov's laboratory, stated: "I am a living witness to this. . . . Pavlov always retained the point of view that . . . conditioned reflexes formed under the influence of the

external environment become fixed and are transmitted by heredity.” Fedorov stressed that Pavlov had never refuted the idea of inheritance of conditioned reflexes and proposed “to revive Pavlov’s approach in this matter, to correct mistakes that have been made.”⁴⁴

Pavlov’s legacy in genetics was a special focus of attention at the meeting in the Academy of Medical Sciences on September 9–10. In his report to the meeting, Razenkov, also a Pavlov pupil, talked about Studentsov’s experiments and Pavlov’s ideas on inheritance of conditioned reflexes:⁴⁵ “In a whole series of investigations, it was proved that typical characteristics of higher nervous activity could be radically changed under the influence of external factors artificially created in an experimental environment. This Pavlovian position wholly corresponded to his anti-Morganist orientation on the question of the inheritance of acquired activity. The belief in the possibility of such transmission through heredity had led him to his personal dispute with Morgan and to his arranging of special experiments.”⁴⁶

Pavlov’s pupils at the academy meeting spoke at length about both Studentsov’s experiments and Pavlov’s “negative attitude” toward Mendelian genetics, portraying research on the inheritance of conditioned reflexes as central not only to Pavlov’s genetics work, but also to the entire concept of conditioned reflexes.⁴⁷ Anokhin declared that “we have to decide the question about the implementation of this subject [inheritance of conditioned reflexes] in various fields of medical science.”⁴⁸

There was, however, one dissenting voice—Orbeli’s. He recounted in detail the history of Studentsov’s experiments and the further development of such investigations in Pavlov’s lab. Furthermore, he declared that these experiments were not central to Pavlov’s legacy even on the genetics of higher nervous activity, not to mention such other subjects as the physiology of the nervous system and the muscular apparatus, or evolutionary and ontogenetic physiology.⁴⁹

Orbeli’s report was challenged by no less a figure than Lysenko himself. Appearing in the audience on the second day of the meeting, he was greeted by “long ovations” and was invited to join the presidium. He had clearly been extended a special invitation by medical officials, who asked him to address the meeting. Lysenko declared: “We Michurinists do appreciate Pavlov’s teaching to the same extent as Michurin’s teaching. . . . The direction of Michurin and Vil’iams, Pavlov and Sechenov, is our unified, materialist, Soviet direction.”⁵⁰ Lysenko indicated that he had read Pavlov’s work and knew about conditioned and unconditioned reflexes. He bitterly attacked Orbeli’s report, particularly the statement that Pavlov had ultimately rejected the idea of inheritance of conditioned reflexes. Said Lysenko: “Let me say as a Michurinist: I do not believe it. Show me where Pavlov himself has written [this]. I have said this before, I do not believe that Pavlov rejected [the idea] and cannot find it anywhere.”⁵¹ He emphasized that the central problem at the August meeting of the agricultural academy had been the question of the in-

heritance of acquired characteristics, and that this should be the central question in medical research as well. Declaring that the experimental demonstration of the inheritance of conditioned reflexes “is an extremely simple thing,” Lysenko proposed that Orbeli organize collaborative research: “Let’s show the inheritance of conditioned reflexes, their transformation into unconditioned ones, in all wild birds, mice, rats.”⁵² In conclusion, Lysenko asserted that Michurinist biology held the key to a better understanding of Pavlovian doctrine.

After the meeting, the myth of “Pavlov the Michurinist” circulated widely and was repeated in numerous speeches and publications. In late September, the Ministry of Public Health organized a large meeting of “administrative and practical workers” in Soviet medicine. More than a thousand medical scientists and officials from all over the country attended the meeting in Moscow. Pavlov’s teaching occupied an important place in many reports, beginning with the opening address delivered by the minister, Efim Smirnov—who even titled one of its sections “To Develop Maximally the Doctrine of Academician I. P. Pavlov.” Said Smirnov: “I must point out some other questions . . . that have a unique significance for a correct scientific development of medicine. I mean ‘criticism’ of I. P. Pavlov’s doctrine by certain of our scientists. We cannot allow them to slander Pavlov and his doctrine.”⁵³ Numerous speakers praised the relationship between Michurinist biology and Pavlovian doctrine in various fields of medicine. For instance, though one of the speakers lamented that “we do not yet have our own Michurins in psychiatry,”⁵⁴ another psychiatrist declared: “No doubt, the concepts of Michurin and Lysenko correspond to the teaching of Pavlov’s school . . . because both methods are dialectical and deeply scientific.”⁵⁵ Konstantin Bykov, a disciple of Pavlov and director of the Academy of Medical Sciences’ new Institute of the Physiology of the Central Nervous System, articulated especially clearly the “unity” between Michurinist biology and Pavlov’s legacy: “These distinctive characteristics of I. P. Pavlov—his ideologically correct approach to studying living nature, his love for his country, and his devotion of his life to his country—are identical to the distinctive characteristics of Michurin, with whom Pavlov’s teaching resonates. Michurin also grounded his studies of plants on advanced philosophical concepts, and he also loved our Motherland, as Pavlov did.”⁵⁶ Other Pavlov pupils also insisted on the close connections between Michurinist biology and Pavlov’s legacy. They proposed to develop Pavlov’s line in studying behavioral genetics as a means to develop Michurinist biology in medical fields. Anokhin even proposed organizing a special meeting “to discuss the development of Pavlov’s heritage.”⁵⁷

Clearly, medical scientists and officials strove to present “Pavlov’s legacy” as an important part of Michurinist biology, to incorporate “Pavlov’s teaching” into Michurinist biology—and thus to have it also “approved by the Central Committee.” They employed various means to do so. They portrayed Pavlov as a great “Soviet” scientist and his teaching as a true “Soviet” science,

underlining its *partiinost*, Marxism, patriotism, and practicality. They used the authority of Lysenko himself to demonstrate the close connection between Michurinist biology and Pavlov's teaching. They revived the idea of the transformation of conditioned reflexes into unconditioned ones, which Pavlov had once supported, to show the correspondence between Lysenko's and Pavlov's ideas in genetics.

The myth of "Pavlov the Michurinist" served an essential ritualistic function. Pavlov's legacy provided medicine with its own Lysenko and its own sacred doctrine, allowing medical scientists to reaffirm within their own fields the new models of Soviet science and the Soviet scientist embodied in Michurinist biology. It also provided them with their own "condemned" doctrines and their own "Mendelists." As one of the speakers at the Academy of Medical Sciences meeting put it: "We have our own Shmal'gauzens, Dubinins, and Zhebraks in our academy."⁵⁸ And Pavlov's name was successfully used to "unmask" numerous "deviationists" in medical fields. For instance, at the meeting of "administrative and practical workers" in Soviet medicine, one speaker criticized a textbook written by the well-known psychologist Sergei Rubinshtein: "There is only one place where Pavlov's name is mentioned, and even there it is printed in brevier."⁵⁹ The Academy of Medical Sciences even planned to organize a "show" meeting of the Physiology Society specifically to criticize the works of Beritashvili, one of the most vocal critics of Pavlov's concept of behavior in the late 1930s and early 1940s.

Medical scientists and officials, then, employed "Pavlov's legacy" as a specialized rhetorical device to organize ritual meetings aimed at demonstrating to the control apparatus their agreement with the new model of science and the scientist that had been approved by the Central Committee. Behind this purely demonstrative function, various groups within the community of medical scientists exploited "Pavlov's legacy" to serve their own institutional and careerist agendas.

The War over Pavlov's Legacy

After World War II, Leon Orbeli became the most influential figure in Soviet physiology—a member of three academies (the Academy of Sciences, the Academy of Medical Sciences, and the Armenian Academy of Sciences), director of two large institutes and several separate laboratories, head of the Military-Medical Academy, president of the All-Union Physiology Society, and a member of numerous governmental commissions and committees. Not surprisingly, in 1948 several physiologists used the Michurinist campaign to launch an attack on Orbeli's positions, employing the newly created myth of "Pavlov the Michurinist," in order to seize his administrative and institutional riches for themselves. Orbeli, in turn, skillfully defended his positions: in the research plans of his institutes, he included the very same idea of inheritance of conditioned reflexes that he had openly rejected days earlier.

As we have seen, during the preparation of the meeting in the Academy of Sciences, Orbeli's report was a major issue for organizers. It was even proposed that the text of Orbeli's report be written by Koshtoiants, also a former Pavlov student and at that time the secretary of the Biology Division's party cell.⁶⁰ But Koshtoiants objected to this idea: "I suppose we need a document from academician L. Orbeli. It is of utmost importance. If it is a party order, I could take it upon myself. I could take on the task, since I enjoy Leon Abgarovich [Orbeli's] confidence, of advising him, giving him instructions on a number of questions. I can do this. But it is very important to obtain a document written by him. I do not want to develop this idea in detail."⁶¹ Koshtoiants clearly wanted Orbeli to submit a document with his well-known anti-Lysenkoist sentiments, which would make him vulnerable to a Michurinist assault.

At the meeting of the medical academy, Razenkov repeated the accusations that had been sounded earlier at the meeting in the Academy of Sciences—that Orbeli patronized formal genetics and geneticists. Razenkov, however, made an important addition to the list of Orbeli's faults: he emphasized that Orbeli's Institute of Evolutionary Physiology and its laboratory for the genetics of higher nervous activity were run by "formal geneticists" and had "deviated" from the true Pavlovian path. Pavlov's pupils Anokhin and Anatolii Ivanov-Smolenskii elaborated this theme.

Orbeli refuted these accusations and even tried to justify the genetics research conducted in his institute. "If you are entering a scientific debate," he remarked, "you have to know not only your own point of view, but your opponent's point of view as well."⁶² Still, the meeting ordered a commission of the presidium to inspect "the personnel, structure, and research directions of the Institute of Evolutionary Physiology in order to further develop Pavlov's ideas on the genetics of higher nervous activity, which attribute the leading role to external factors."⁶³

On September 17, the scientific council of the Institute of Evolutionary Physiology held a special enlarged session "on the questions raised by the August VASKhNIL meeting." The session was primarily devoted to a ritualistic condemnation of "formal genetics." In his report, Orbeli briefly repeated his response to allegations that he had deviated from Pavlov's line in genetics, and nobody at this meeting revived these allegations. The only result of the session was that the monument to Gregor Mendel that had been erected in the early 1930s in front of Pavlov's lab was removed from its prominent place and put in storage.

A few days later, however, the commission created by the presidium—composed of three of Pavlov's pupils (Anokhin, Maiorov, and Petr Kupalov) and two other medical officials⁶⁴—arrived at the institute. It again raised the questions of "deviations" and reviving Pavlov's work on the inheritance of conditioned reflexes. In a report to the academy's president, the commission concluded: "The most important question raised by I. P. Pavlov about the

inheritance of acquired characteristics has not been developed in spite of the excellent opportunities for studying this question [in the institute].”⁶⁵ The institutional dimension of the attack on Orbeli was clearly articulated in the commission’s proposal to separate the Moscow branch of the institute, then directed by Ivanov-Smolenskii.⁶⁶ The commission proposed that research on the inheritance of acquired features be made the institute’s central focus. Further: “For a successful development of I. P. Pavlov’s scientific legacy in the field of higher nervous activity, the commission considers it extremely desirable that the scientific head of the institute, academician L. A. Orbeli, must devote all his attention to this important part of Soviet science. In order [for him] to do so, it is necessary to relieve him of the other services and duties that hamper this work.”⁶⁷ A week later, at the meeting of “administrative and practical workers” in Soviet medicine, the head of the commission, Anokhin, repeated this proposal: the main cause of the “abnormal” situation in the institute, he said, was the director’s work overload, which prevented him from concentrating on institute affairs. This was a clear hint that Orbeli should be “freed” from all other administrative posts.

Orbeli again refuted all the accusations of deviation from Pavlov’s line and pointed out their source:

When, under the instructions of our government and party, I took upon myself the work of principal guardian of Pavlov’s scientific legacy, I had the enormous support of a number of comrades both from Pavlov’s school and from my own. There was a large group of comrades, however, who did not regard my appointment very positively, and they were sometimes even offensive. I have had to do the difficult work of, on the one hand, actively developing Pavlov’s scientific legacy and, on the other hand, defending [myself] from those accusations, suspicions, and reproaches that have been raised by those of Pavlov’s pupils who did not support my work.⁶⁸

A few weeks later, at the next Michurinist meeting, this one organized by the Leningrad Branch of the Academy of Medical Sciences, Orbeli once again refuted both the accusations of deviations from Pavlov’s line and the idea of the inheritance of conditioned reflexes. The only point on the agenda of this gathering (held October 16–17) was “the tasks of the Academy of Medical Sciences institutes in light of the decisions of the Academy of Agricultural Sciences, the enlarged meeting of the Academy of Medical Sciences, and the meeting of administrative and practical workers of the Ministry of Public Health.” At this meeting, Orbeli criticized the commission that had inspected his institute for a biased and prejudiced attitude. Moreover, he once again denied the idea of inheritance of conditioned reflexes:

Imagine that all conditioned reflexes acquired during our life were transmitted by heredity—what kind of brain would one have to have to preserve all conditioned reflexes from generation to generation and to transmit them further? It is absolutely clear that the question should be raised in somewhat different form; the question

should be raised about the ability to acquire one or another [behavioral] reaction, and we see that the evolutionary process goes not in the direction of infinite preservation of all reflex reactions acquired in the life of an individual, but in the opposite direction—in the direction of the development of a [nervous] apparatus that can acquire new reactions.⁶⁹

Despite this forceful refutation of the central tenet of Michurinist biology, Orbeli was too experienced not to use that same tenet for his own purposes. Four days after this declaration, he included the inheritance of conditioned reflexes in the research plans of his institutes. On October 20, the scientific council of the Institute of Evolutionary Physiology held a special meeting on research planning. Orbeli assigned the laboratory of physico-physiology (formerly E. Ganike's laboratory) "to elaborate the methods of studying the hereditary transmission of acquired features in mice."⁷⁰ He appointed Viktor Fedorov, Ganike's pupil, to do the research. When Fedorov began to present his ideas on conducting this research, Orbeli interrupted him and said: "We will talk about it later. What we need now is a *title* for the plan. I think it could be entitled [something like] 'The Fixation of the Changes in Functional Characteristics of the Nervous System'."⁷¹ As one might expect, the "corrected" plan was sent to the Academy of Medical Sciences and approved. The same procedure was employed in Orbeli's Institute of Physiology of the Academy of Sciences. The scientific council of this institute recommended that all researchers "think thoroughly and concretize plans for future work on the inheritance of acquired characteristics."⁷²

In the following year, "the inheritance of acquired behavioral features" appeared frequently in the plans and reports produced by Orbeli's institutes—despite the fact that only Viktor Fedorov actually studied it, and that his experiments disproved its existence. In late 1949, Fedorov reported to the institute directorate on his accomplishments: "Having rejected attempts to obtain data on the transformation of conditioned reflexes into unconditioned ones, we approached the problem in another way."⁷³ Fedorov studied the flexibility of nervous processes in mice and trained mice in order to increase that flexibility. He then studied the flexibility of the nervous processes in their progeny. During the year he studied twenty "parent" mice, fifty-six mice of the first generation, and twenty-six mice of the second generation. The results were apparently disappointing, for they were never mentioned anywhere. Fedorov's report was very modest: "The results were reported to the head of the laboratory, L. A. Orbeli."⁷⁴ Nevertheless, a deputy director of the institute reported loudly to the Academy of Medical Sciences presidium that "all work is subordinated to the task of discovering the mechanisms of the influence of external environment on the functional characteristics of the nervous system," and stated further that "these experiments are undertaken in order to find ways for . . . studying physiological mechanisms that could hereditarily fix acquired characteristics."⁷⁵ Despite his objections to the content of Lysenko's doctrine

and his fierce resistance to the attempts to establish intellectual links between Michurinist biology and Pavlovian physiology, Orbeli successfully used Lysenko's ideas as a rhetorical cover for his own research agendas.

Orbeli's involvement in military research also proved especially important in this respect. At the meeting in November 1948 called to discuss reorganization of his institute, he successfully defended himself and his subordinates by noting pointedly: "I have to add the following: here only open subjects [of research] have been discussed, but I must say that, aside from these subjects, we have begun a series of works that I cannot mention at this open meeting, and we have received an important order from the Council of Ministers in this direction. We hope that all the material and theoretical opportunities at our disposal will be used to accomplish this special order."⁷⁶ Military subjects were discussed only at closed meetings before an audience with special clearance. Orbeli was warning the participants that his institute was engaged in military research and that the academy's apparatus therefore had no authority to interfere with his policies.

In 1948, then, the attack against Orbeli in the medical academy failed. Despite his dismissal as academician-secretary of the Biology Division of the Academy of Sciences, he preserved all his other administrative positions. The physiology institutions he directed were part of three different administrative hierarchies (the Academy of Sciences, the Academy of Medical Sciences, and the Academy of Pedagogical Sciences), which strengthened his position in each. Orbeli's competitors had influence only within the medical academy, which was insufficient to undermine his authority. He skillfully used all possible means—the "reorganization" of his research, his involvement in military research, and his personal ties to the highest party circles—to defend his institutions from the attack launched by medical administrators.

Following the Model: The Pavlov Session

In 1948 Orbeli's competitors were unable to incriminate him sufficiently to challenge his standing with the party apparatus. Less than two years later, the issue was revisited. A special joint meeting of the Academy of Sciences and the Academy of Medical Sciences "on the problems of Pavlov's physiological doctrine" was organized specifically to remove Orbeli from his leading positions in the physiology community.⁷⁷ His "perversion" of Pavlov's line on the inheritance of conditioned reflexes once again became a central point of the struggle. This time, Orbeli's opponents found considerable support in the party apparatus (particularly from the head of the Central Committee's Science Department, Iurii Zhdanov) and succeeded.⁷⁸

The joint meeting of the academies took place from June 28 to July 4, 1950, in the main auditorium of the Moscow House of Scientists. The principal addresses were delivered by Konstantin Bykov ("The Development of I. P. Pavlov's Ideas: Tasks and Perspectives") and Anatolii Ivanov-Smolenskii

(“The Paths of Development of I. P. Pavlov’s Ideas on the Pathological Physiology of Higher Nervous Activity”). The reports had been printed in advance as a booklet and distributed among participants during the meeting. The gathering drew the unprecedented attention of the scientific community. The auditorium could hold eight hundred persons, but this turned out to be insufficient: more than a thousand came. The organizers equipped two adjoining rooms with a public-address system to accommodate all those interested. Two hundred and three individuals expressed the desire to give a report, but, despite the fact that the meeting was extended by one day beyond the original plans, only eighty had a chance to speak.

The joint meeting was in many respects identical to the fateful August 1948 VASKhNIL meeting. The Central Committee’s Science Department prepared the scenario, defining the “righteous” and the “guilty.”⁷⁹ Iurii Zhdanov, keeping his promise to Stalin that he would “work hard to correct previous mistakes,”⁸⁰ was the show’s principal director.⁸¹ The order of the major reports was prearranged, and Zhdanov edited their contents.⁸² Stalin personally read and edited Bykov’s principal address.⁸³ *Pravda* published daily reports. Participants exercised their rhetorical skills, incorporating in their speeches the latest word from the “Luminary of Soviet Science,” Joseph Stalin, published just a week before the meeting in connection with a discussion in linguistics.⁸⁴ The six-day show ended with a resolution and a letter to “Comrade Stalin,” which appeared immediately on *Pravda*’s front page.⁸⁵ A few weeks later, *Pravda* published Zhdanov’s article “Certain Results of the Meeting in Physiology.”⁸⁶ The stenographic records of the meeting—appropriately edited, of course—were soon published as a volume of more than six hundred pages.⁸⁷

Orbeli was the principal target. More than half of the speakers criticized his “perversions of Pavlov’s line” and “idealism.” His associates and pupils were also subjected to severe criticism. The most active critics were Pavlov’s students—Bykov, Ivanov-Smolenskii, Erast Asratian, Mikhail Usievich, and Dmitrii Biriukov. The resolution of the meeting stated that Orbeli “led scientific collectives” of his institutions “away from the development of the principal tasks of Pavlov’s scientific legacy and, having covered [himself] with a formal recognition of Pavlov’s teaching, he in fact perverted a number of its most important elements.”⁸⁸

Predictably, one of these “most important elements” was the inheritance of acquired characteristics. The resolution declared: “Work in the genetics of higher nervous activity has been developed absolutely unsatisfactorily. The formal genetics approach of academician L. A. Orbeli has led to a situation where this work has been developed in isolation from the principles of Michurinist biology.”⁸⁹ Michurinist rhetoric, and particularly “the transformation of conditioned reflexes into unconditioned ones,” occupied a prominent place in participants’ speeches.

As a result, Orbeli was dismissed from all his administrative posts within both the Academy of Sciences and the Academy of Medical Sciences. His

institutes (the Institute of Physiology of the Academy of Sciences and the Institute of Evolutionary Physiology of the Academy of Medical Sciences) were united in a new Pavlov Institute of Physiology under Bykov's directorship. The Moscow branch of his Institute of Evolutionary Physiology was expanded into a new Institute of Higher Nervous Activity, under the directorship of first Asratian and later (in 1952) Ivanov-Smolenskii. Both institutes were subordinated to the Academy of Sciences. Most of Orbeli's associates were fired, though some made astonishing careers criticizing their teacher and patron.

Moreover, a special joint "Scientific Council on the Problems of the Physiological Doctrine of Academician I. P. Pavlov" was created by the two academies in order to supervise *all* physiological research in the country. The council was composed of the leading participants in the joint meeting, with Bykov as its head. Orbeli was allowed to continue his research in a small laboratory at the Lesgaft Institute of Natural Sciences of the Academy of Pedagogical Sciences. The council, however, kept a "watchful eye" on his work.⁹⁰

Orbeli was not the only one under attack. When in 1948 Anokhin suggested organizing a special meeting "to discuss the development of Pavlov's heritage,"⁹¹ he obviously could not anticipate that he would find himself cast in the role of "the accused" at that meeting. Yet Anokhin, Petr Kupalov, and other critics of Orbeli in 1948 themselves became victims of the joint meeting. They were severely criticized for "distortions" of Pavlov's line and dismissed from their administrative posts—Anokhin from his directorship of the Institute of Normal Physiology, and Kupalov from the directorship of the Physiology Department of the Institute of Experimental Medicine of the Academy of Medical Sciences.⁹² Their positions were seized by approved Pavlovians: Usievich was promoted to head Anokhin's institute, and Biriukov became head of the Institute of Experimental Medicine.

As was the case with Michurinist biology, the struggle for "Pavlovian doctrine" was spread through the scientific community by numerous follow-up meetings staged by scientific administrators in various institutions. For instance, on October 4 the Lithuanian Academy of Sciences held a special meeting on the "development of Pavlov's doctrine," and on November 1 the Ukrainian Academy of Sciences followed suit. A year later, in October 1951, a special joint meeting of the Academy of Medical Sciences and the All-Union Society of Psychiatrists and Neurologists discussed the "physiological doctrine of academician I. P. Pavlov."⁹³ In March 1952, psychologists staged a meeting in the Academy of Pedagogical Sciences "on the situation in psychology and its reorganization on the basis of I. P. Pavlov's doctrine." Psychologists and pedagogues, psychiatrists and linguists, immunologists and biochemists fought for "true" Pavlovian directions in their own disciplines. Even microbiologists found a way to attach "Pavlovian doctrine" to their work.⁹⁴ As had been the case two years earlier with Michurinist biology, numerous interest groups and individuals used the Pavlovian campaign to pur-

sue their own institutional and career objectives and to demonstrate their rhetorical conformity to the approved party line.

PLAYING WITH THE ATOM

No discipline seems more remote from the intellectual claims of Michurinist biology than physics. Neither the inheritance of acquired characteristics nor the alleged triumphs of vernalization offered even the most imaginative physicist or bureaucrat a “truly Michurinist” approach to this field. The attempt of some physicists to convene an all-union meeting on physics “in light of the VASKhNIL meeting” and to launch a Michurinist campaign in their discipline, then, casts the nature of such campaigns into sharp relief. As in biology and other fields, the central issue was not intellectual content, but the new image of “Soviet” science and the “Soviet” scientist. The dynamics of this episode are explicable not by ideological issues, but by the structure of and relations within the Stalinist science system; and the ability of competing groups to exploit the resources of that system to their own advantage defined who won and who lost the battle. This episode is an illuminating example of an institutional struggle between two opposing groups within the Soviet scientific community—“university” and “academy” physicists⁹⁵ and illustrates how these groups used the Stalinist science system to pursue their own interests.⁹⁶

Stalinist Physics: A Snapshot

Soviet physics obeyed the same general principles of the Stalinist science system as did genetics and physiology, and it was no less a product of that system than was any other discipline. Like genetics, physics attained an embryonic disciplinary form in tsarist Russia and experienced explosive institutional growth after the Bolshevik revolution.⁹⁷ In the 1920s, the major centers of physics development were Moscow University, the Academy of Sciences, and several institutes organized under the VSNKh, most notably the Leningrad Physico-Technical Institute. In the 1930s, rapid industrialization and the efforts of several authoritative spokesmen combined to bring the discipline unprecedented prosperity. Abram Ioffe, Dmitrii Rozhdestvenskii, Sergei Vavilov, and Petr Kapitsa managed to establish and maintain close links with the highest party-state officials, including the commissar of heavy industry, Sergo Ordzhonikidze, and Stalin personally.⁹⁸ As was the case with genetics and many other disciplines, the mid-1930s policy of centralization diminished the role of regional scientific centers (such as Ioffe’s Physico-Technical Institutes) and increased that of the Academy of Sciences in the development of physics.

Like all Soviet scientists, physicists began in the 1920s to master the Marxist “Newspeak”⁹⁹ and in the 1930s employed fashionable rhetoric, performed prescribed rituals, and participated actively in the ongoing ideological cam-

paigns to justify and promote the development of their discipline.¹⁰⁰ Like geneticists, Soviet physicists developed broad contacts with their Western colleagues in the 1920s and gained considerable acclaim on the international scene. In the late 1930s physics, too, suffered from the administrative isolation imposed by party-state agencies and lost a number of its talented members to the purges and the Great Terror.¹⁰¹

The physics community was also fragmented into several subgroups that competed for the favor of their patrons. These competitive struggles surfaced in a number of “public discussions” (largely on the pages of *Under the Banner of Marxism*) conducted by the physics community in the 1930s.¹⁰² A special meeting of the Academy of Sciences in March 1936 addressed the development of physics and witnessed a fierce struggle between two groups, one headed by Ioffe and another by Rozhdestvenskii. Both groups (largely affiliated with Narkomtiazhprom) were challenged by yet another, newly arisen group that was largely affiliated with the Academy of Sciences. Like discussions on “issues of genetics,” discussions in physics clearly reflected the new professional culture of Soviet science: they revolved around the practicality and Marxism of physics and featured personal attacks on rival scientists.

World War II brought Soviet physics numerous benefits. During the war, a number of physicists came to occupy important posts within various industrial commissariats and to head influential governmental committees. During and immediately after the war, physicists entered the prestigious Academy of Sciences in greater numbers than any other disciplinary group. The physicist Sergei Vavilov became the academy’s president. As in all other disciplines, the war also revived the international contacts of Soviet physics. The *Journal of Physics*, a Soviet periodical published in English, was revitalized and expanded. *Personal* international exchanges, however, were limited by physicists’ involvement in military research.

The U.S. detonation of the atomic bomb boosted the importance of physics and the authority of physicists in the highest party-state circles. The Politburo commission headed by Lavrentii Beriia that was established in August 1945 to promote the development of the Soviet atomic project included two prominent physicists, Petr Kapitsa and Igor Kurchatov, and immediately created a special Scientific-Technical Council composed of eminent physicists.¹⁰³ This strengthened personal links between physics spokesmen and high party officials.

The growing Cold War also affected physics in much the same way as it did all other disciplines. During the patriotic campaign of 1947, several physicists attempted to employ this campaign for advancing their institutional positions and personal careers. They sent letters to the Central Committee Secretariat attacking their opponents and competitors for “ideological slavishness before the West” and other unpatriotic sins.¹⁰⁴ The article in *Literary Gazette* in late August 1947 that opened the public patriotic campaign in science targeted not only the geneticist Anton Zhebrak, but also a prominent physicist, Iakov Frenkel’.¹⁰⁵

Not surprisingly, then, the Michurinist campaign was also employed in physics to advance personal and institutional agendas.

“For Advanced Soviet Physics”: The University versus the Academy

Physicists were much more numerous than geneticists,¹⁰⁶ and the physics community was fragmented into several competing subgroups associated with different institutions. Competition between one group of physicists largely affiliated with Moscow University and another group largely affiliated with the Academy of Sciences developed steadily through the late 1930s and early 1940s, reaching its peak in the wake of the Michurinist campaign in late 1948.

In the 1920s and early 1930s, Moscow University was one of the major physics centers in the USSR. Its Institute of Physics housed an influential group headed by a prominent academician, Leonid Mandel'shtam. Gradually, however, the deepening dichotomy between teaching and research, which became a characteristic feature of the Soviet science system, undermined the university's physics faculty. Prominent researchers who had worked there in the 1920s and early 1930s, including academicians Grigorii Landsberg, Igor' Tamm, Sergei Vavilov, and Mikhail Leontovich, migrated to other physics centers (mainly in the Academy of Sciences).¹⁰⁷ From the late 1930s, physics at the university fell under the leadership of such professors as Arkadii Timiriazev, Dmitrii Ivanenko, Anatolii Vlasov, Aleksandr Predvoditelev, V. Kessenikh, and A. Sokolov, most of whom were more active in rhetorical exercises than in actual research. By the mid-1940s, the university had lost its prominence as a center of physics research.

From the late 1930s, the academy physicists actively hindered the “infiltration” of their university competitors into their domain. They prevented the election of several university professors to the Academy of Sciences membership¹⁰⁸ and attempted to reestablish their own influence at the university.

During the war, in July 1944, a group of academicians, including Ioffe and Kapitsa, sent a letter to the head of the Committee for Higher Education, Sergei Kaftanov, describing the “abnormal situation” at the physics faculty of Moscow University. They complained that leading Soviet physicists, members of the academy, were prevented from teaching at the university by the administrative intrigues of faculty members. They suggested that the Physics Division of the academy be assigned to “reorganize teaching at the physics faculty of Moscow University.”¹⁰⁹ The academicians proposed that the faculty be headed by a prominent academician (Ivan Obreimov, Mikhail Leontovich, or Vladimir Fok).¹¹⁰ Two months later, Kapitsa sent another letter on the same subject to Molotov.¹¹¹ He enclosed a copy of the letter to Kaftanov and asked Molotov to give academicians the authority to reorganize the physics faculty.

In summer 1945, probably as a result of academicians' letters, a commission created by the Ministry of Higher Education but headed by academician-

physicist and the future president of the Academy of Sciences, Sergei Vavilov, inspected the faculty. The commission found the situation “unsatisfactory” and suggested changes in the faculty leadership. The dean and director of the university’s Institute of Physics, Predvoditelev, was dismissed. He was replaced in May 1946 by a corresponding member of the academy, a specialist in X-ray analysis, Sergei Konobeevskii. Konobeevskii was unable, however, to overcome the opposition of other faculty members and was forced to resign a year later. As one might expect, his opponents capitalized on the ongoing patriotic campaign. One of the key accusations was that Konobeevskii was a member of a foreign scientific society—the British Institute of Metals.¹¹² In autumn 1947, university physicists reclaimed the post: first Kessenikh, then Sokolov, became dean. The academy physicists, nevertheless, were successful in organizing a new “physico-technical” faculty at the university in late 1946. This provided an entree for a number of prominent academicians, including Kapitsa, Lev Landau, and Sergei Khristianovich.¹¹³

In autumn 1948, in the wake of the Michurinist campaign, the university group launched an attack on academy physicists. This attack was supported by the minister of higher education, Kaftanov, who clearly wanted to demonstrate his “vigilance” and to rehabilitate himself after his “mistake” with Mendelism. In early December, Kaftanov proposed to Malenkov the convening of an all-union meeting of heads of physics departments at educational institutions to discuss “the situation in physics in light of the VASKhNIL meeting.” Kaftanov, however, could not raise the question of “the situation in physics” without first consulting the official physics spokesman—Vavilov, now the president of the Academy of Sciences. He first sent a draft of the proposal to Vavilov, who amended it substantially. The final version sent to Malenkov bore both Kaftanov’s and Vavilov’s signatures.¹¹⁴

The Central Committee Secretariat assigned both the ministry and the academy to organize the meeting. An Organizing Committee presided over by a deputy minister of higher education, Aleksandr Topchiev, was created to carefully prepare the gathering of more than six hundred physicists. Ioffe, the academician-secretary of the Physics Division, was appointed deputy head of the committee. Vavilov was to deliver the principal report, “On Modern Physics and the Tasks of Soviet Physicists.” In January, February, and March 1949, the organizing committee conducted *forty-two rehearsals* of the forthcoming meeting. About a hundred physicists from both camps took part in the preparations.¹¹⁵

Unlike physiologists, physicists could not use Michurinist biology directly, but they could employ the image of Soviet science it embodied. The Marxism, *partiinost’*, patriotism, and practicality of their own research and the “idealism,” “servility to the West,” and “sterility” of that conducted by their opponents were the main issues at the rehearsals. For instance, one of the university physicists entitled his report “Against Nonpartyiness [*bespartiinost’*] in Science—for Soviet Patriotism.” A new party line announced in January 1949,

“the struggle against cosmopolitanism,” was also immediately incorporated into the meeting’s rhetoric.

The main subject at the rehearsals was “idealist” physics—that is, quantum mechanics and the theory of relativity. Speakers found their own “Mendels” and “Morgans” in such prominent Western physicists as Niels Bohr, Werner Heisenberg, Albert Einstein, and Paul Dirac. Leading academy physicists, including Ioffe, Frenkel’, Kapitsa, Landau, and Moisei Markov, were selected for the role of homegrown “idealists.”

For two days, the organizing committee discussed the principal address by Vavilov, deciding to retitle it “On the *Ideology* of Modern Physics and the Tasks of Soviet Physicists.” It was to begin as follows: “A broad movement of the scientific public in our country, which was begun by the discussion of philosophic issues and practical results of biological science at the meeting of the Lenin All-Union Academy of Agricultural Sciences in August 1948, gradually enveloped all branches of knowledge, including physics.¹¹⁶ Numerous reports by other participants, including “repentant” speeches by the accused (Ioffe, for instance, took the floor seven times), were also rehearsed and polished. Using the proven arsenal of Michurinist rhetoric, representatives of the university group severely attacked their academy opponents, who used the same rhetoric to defend their positions.

These rehearsals, however, never culminated in a public show: the Michurinist meeting in physics was delayed several times and finally canceled.¹¹⁷ The main reason for the cancellation was apparently the atomic bomb. As one might expect, a major issue at the rehearsals was the “practicality” of Soviet physics. The university group bitterly criticized their opponents for “fruitless theorizing” and insufficient attention to the problems of “socialist practice.” They did not know that academy physicists were deeply involved in a most “practical” problem—the atomic-bomb project. A statement by one member of the university group at a rehearsal is illuminating: “In chemistry the problem of biosynthesis of proteins has been formulated and is being solved; this would have an even more profound influence on the life of humankind than the discovery of atomic energy.”¹¹⁸ The university group was clearly unaware that the atomic bomb had made atomic research a top priority for the Politburo.¹¹⁹

But their opponents certainly were aware of this. Unlike the university physicists, at least half of the accused academicians—including Tamm, Ioffe, and Landau—in one way or another were participating in the atomic project. The academy physicists apparently managed to persuade the highest party leaders (reportedly, Beria) to abandon the scheduled performance and to drop all the accusations against them.¹²⁰ First scheduled for January and then rescheduled for March 21–26, 1949, the meeting of Soviet physicists “in light of the VASKhNIL meeting” was never convened. Less than half a year remained before the first Soviet atomic-bomb explosion on August 29, 1949.

Thus, the attack of the university physicists failed and the academy physicists sustained their positions.

STALINIST SCIENCE: THE GENERAL AND THE PARTICULAR

The year 1948, then, proved crucial not only in deciding the long-term struggle between geneticists and Lysenkoists, but also in shaping and consolidating the Stalinist science system as a whole. The Michurinist campaign provided Soviet scientists with a convincing example and a powerful cultural resource “approved by the Central Committee.” Many attempted to exploit the “intellectual” content of this resource, establishing “unbreakable links” between various elements of Lysenko’s doctrine and their own theories. Others exploited ideological and political concepts, particularly the model of “Soviet” science embodied in Michurinist biology. Various interest groups sought to use the ongoing campaign for institutional and disciplinary expansion. Furthermore, inspired by Lysenko’s triumph over his opponents, they initiated analogous campaigns within their own disciplines in order to discredit their competitors and to gain personal and institutional advantage.

During Stalin’s last years, the Stalinist science system was completed by a cascade of campaigns in almost every discipline. In astronomy, the campaign culminated in a discussion of its “ideological questions” in 1949.¹²¹ In linguistics, the followers of the “true Soviet” direction, Nikolai Marr’s “new doctrine of language,” claimed the Michurinist mantle at a meeting in 1948—only to have it dramatically snatched away by Stalin’s personal intervention in 1950.¹²² In cytology, Olga Lepeshinskaia’s concept of “noncellular living matter” was sanctified at two Michurinist meetings in 1950 and 1952.¹²³ Geologists enshrined their own Michurinists in 1952.

One leading Soviet mathematician, academician Aleksandr Aleksandrov, provides an illuminating account of one attempt to launch an analogous campaign “against formalism”¹²⁴ in his field:

Once in 1949, a worker at [Leningrad] university sent a letter to the Central Committee, unmasking formalism in the theory of numbers [*teoriia mnozhestv*]. This situation was discussed at a special meeting in the dean’s office. I strongly objected, saying that everything [in the letter] was nonsense, there was no science [in it], but only a desire to discredit certain individuals. The bureau of the party cell suggested that a discussion be called. I agreed. The next morning I brought my thesis on formalism in mathematics to the bureau. I was the first to take the floor and, therefore, defined the trend of the discussion—we did criticize formalism severely, but did not find any formalists in Soviet mathematics, not to mention our university. The discussion ended without administrative consequences [*orgvyvodov*]. The initiator of the discussion tried to say that the discussion was deviating from the real issues, and so forth. But nobody listened to him. On the surface, all of this, of course, looked very serious (and, from a current point of view, even nasty [*skverno*])—idealism and all that. But the discussion had already been provoked—a letter to the Central Committee was a very serious matter. And the most important thing was to prevent the crushing of science and scientists. It was necessary to act quickly and firmly.¹²⁵

It was not always so easy to extinguish a campaign and to silence individuals and groups who hoped to score a few points in this manner. For instance, in chemistry, a discussion of the theory of resonance bonds slowly developed for two years before that theory was finally “damned” at a Michurinist meeting in 1951.¹²⁶ Soviet chemists found their own “Mendels” and “Morgans” in the prominent Western scientists Linus Pauling and Christopher K. Ingold, and their own “Michurin” in a founding father of Russian chemistry, Aleksandr M. Butlerov. Copying Lysenko’s technique, they even coined a label, “Ingoldist-Paulingist,” to demonize their opponents.¹²⁷

These campaigns, all modeled on Lysenko’s stunning triumph, brought varying success to their initiators and participants. The Pavlovian campaign of 1950, for example, yielded two new physiology institutes, a new journal for the Academy of Sciences, and a number of new physiology institutions for republic academies and ministries.¹²⁸ The 1950 campaign in linguistics resulted in the complete rearrangement of the discipline’s institutional structure and leadership.¹²⁹ And, as we have seen, many scientists built remarkable careers criticizing various stigmatized “isms” in Soviet science. Institutional and career goals could be advanced more easily and rapidly on the stream of a current campaign, by employing rhetoric and cultural resources endorsed from above, than through the usual bureaucratic channels and procedures.

Individuals and interest groups within the scientific community, then, successfully exploited the new system of relations between science and the state to advance their own agendas: they employed the ultimate authority over science policy—the party bureaucracy—to their own ends. Intended to establish complete control over scientific activities, this system instead became an object of manipulation by careerists and high-ranking scientific administrators. Built to make science serve the state, it could also be used to make the state serve scientists.

We can now address a much-discussed question: Why did some disciplines prosper while others suffered in the Soviet Union? Or, more broadly, why and how did the fate of various disciplines differ in the Stalinist science system? In answering this question, historians have often resorted to the notions of “ideology” and “ideologization.”¹³⁰ Some have even rated various disciplines as “soft” or “hard” according to the extent to which their content could be infused with ideology. Others have resorted to the notions of “real science” and “pseudoscience.”

As we have seen, however, the varying fate of different disciplines had very little to do with their actual content, but clearly reflected the general principles of operation of the Stalinist system and the different positions of disciplines *within* that system. Let us compare, for example, the fate of Soviet genetics (or more generally biology) with that of Soviet physics in the late 1940s.

In a sense, the “death” of genetics and the “survival” of physics resulted from exactly the same ultimate cause: the operation of the Stalinist science system within the Cold War context. Despite the intentions of party bosses to

completely subdue science for their own objectives, they were not interested in scientific issues per se (whether genetics or quantum mechanics) and had no definite policies toward particular disciplines. Their intervention in specific scientific issues arose not from their internal convictions on esoteric scientific problems, but rather from various “external” stimuli, and was almost always provoked by a particular group of scientists. Their adjudication of such issues derived not from any “ideological” considerations, but from their hierarchy of general priorities at the moment.

The geneticists’ failure was in large part determined by the acceleration of the Cold War in summer 1948. This transformed their elaborate international contacts—a big advantage in the earlier stage of their struggle against Lysenko—into a perfect pretext to fuel the anti-Western propaganda campaign and thus to introduce a new model of distinctly “Soviet” science, a model supportive of the image of the Soviet Union as the “right” side in the Cold War confrontation.

The success of academy physicists was also clearly grounded in the acceleration of the Cold War, which fueled the nuclear race between the superpowers. The strategic importance of the military applications of physics, above all the atomic and hydrogen bombs, gave physicists the protection of military agencies and a very convincing appeal to the party’s highest priorities. The same military connections to a certain extent helped Orbeli fend off the Michurinists in Soviet physiology in 1948. Obviously, the development of the atomic bomb stood much higher among the party’s priorities than did yet more propaganda concerning the superiority of Soviet science.¹³¹

Genetics as a discipline was largely associated with agriculture and had no clear military links at that time. With the escalation of the Soviet atomic project in 1945, a small group of geneticists under Timofeeff-Ressovsky began research on radiation genetics in a top secret *sharashka* in the Urals. But the role of genetics in the atomic project was such a well-guarded secret that neither the “Mendelists” nor the middle-level party-state bureaucrats who banned genetics even suspected it.¹³² As we have seen, certain geneticists did refer to the *possible* military applications of their work in their appeal to the highest party authorities, and one can imagine circumstances under which this tactic might have succeeded for genetics as a whole. Had the Cold War military competition between East and West concentrated upon the development of biological weapons (say, a superpathogenic virus) instead of an atomic bomb, geneticists would probably not have been routed in 1948, academy physicists might well have been purged in 1949, and Orbeli might well have successfully defended his position in 1950.

Academy physicists succeeded where geneticists failed, then, *not* because they were “exempt” from the Stalinist science system, but because that system gave them an important advantage; they succeeded *not* because physics was a “hard” science, but because they had *better connections*. In other words, they succeeded in the same way that Lysenko did—by using their privileged

contacts with the political leadership to achieve their own ends. Physicists' involvement in nuclear research, a top priority for party decision makers, gave them direct access to the top level of decision making, which they used to persuade the party leadership to stop the campaign against the academy physicists.

Similarly, geneticists failed not because the agricultural sciences were "a great exception," as David Joravsky has stated,¹³³ but because Lysenko succeeded in both discrediting such genetics spokesmen as Zhebrak and Dubinin and maintaining his own personal contacts with the highest level of decision makers.

The merging of the scientific community and the control apparatus gave science spokesmen tremendous power to define concrete policies. Both physicists and biologists had their spokesmen in party-state circles. World War II, however, changed substantially the disciplinary composition of the USSR Academy of Sciences, whose authority after the war rose dramatically as its presidium became the nation's de facto Ministry of Science. Before the war, biologists dominated the academy: a biologist, Vladimir Komarov, was its president and its Biology Division was the largest. During the war, and particularly with the beginning of the nuclear race, physicists considerably expanded their representation in the academy and came to dominate its governing body, the presidium—a physicist, Sergei Vavilov, became its president. The voice of physicists in the party-state circles came to carry much more weight than that of any other disciplinary group. This clearly contributed to the success of the academy physicists in defending their positions against the offensive launched by their university competitors, and thus in "preserving" their discipline.

Personal contacts with party-state leaders became a major instrument of influence upon decision makers and gave scientific administrators an opportunity to exercise their influence for their own ends. At the same time, however, these personal contacts with particular patrons at the top level of the party apparatus made scientific development very sensitive to the outcomes of the constant bureaucratic intrigues, inner-party struggles, and reorganizations. Those scientific administrators who had the ear of an important boss in the party apparatus and therefore the chance to advance their interests could lose their influence almost overnight, as geneticists learned in August 1948 and Orbeli learned in June 1950. Lysenko's opponents managed to secure the support of the head of the Central Committee Science Department, Iurii Zhdanov; but Lysenko was able to reach even higher authorities—Malenkov and Stalin personally—and to use inner-party power struggles to his own advantage.

The same factor was obviously in play in the confrontation of the university and academy physicists. The former had the support of the minister of higher education, Kaftanov (and, through him, of the Central Committee's Agitprop), but the latter had access to a much higher authority—Beria, a member of the Politburo. It is also worth noting that just before the announced date

of the physics meeting, in March 1949, the head of its Organizing Committee, the deputy minister of higher education Topchiev, was appointed the main academician-secretary of the academy presidium.¹³⁴ He thus became a member of the academy's highest establishment (second in importance only to its president) and was now interested in downplaying the "mistakes" of the academy that had become his responsibility, so that perhaps his appointment also contributed to the cancellation of the meeting.

On the other hand, as we have seen, a scientist could easily enough obtain the ear of party bosses by appealing to their own priorities through a letter to the Central Committee. Ongoing public campaigns made the control apparatus very sensitive to scientists' use of the "approved" rhetoric. These campaigns stimulated the apparatus to react immediately by endorsing scientists' suggestions about organizing "a critical analysis of the contemporary condition of theoretical problems in all fields of knowledge and a struggle against alien ideas of bourgeois science."¹³⁵ Low-ranking party-state bureaucrats used such letters to demonstrate their own "vigilance" and advance their own careers within the apparatus, promoting the organization of "discussions" in various disciplines and institutions.¹³⁶

The fate of various disciplines, then, was in large part determined by the general structural and functional characteristics of the Stalinist science system, by its principles of operation and its "physiological" mechanisms. All disciplines were certainly affected by such features of the system as the merging of the control apparatus and the scientific community; the subordination of science-policy decision making to priorities of the party-state apparatus; the centralized, pyramidal structure of scientific institutions; the rigid hierarchy of academic positions; the fierce competition among various groups within both the community and the party-state agencies; the tight administrative control over research agendas, institutional structures, appointment and certification of scientific personnel, and international and domestic scholarly communications; the high public prestige of science and numerous privileges for scientists; the vital importance of rhetoric in translating the community's interests into the "Newspeak" of party bureaucracy; the militant style of scientific criticism; and the peculiar Soviet "etiquette" that defined the modes and repertoire of scientists' behavior.

Of course, as we have seen, various disciplines differed significantly in their relative positions *within* that system. They differed in their importance for the party decision makers; their representation within Soviet academies; the number of institutions and the degree of their centralization, monopolization, and hierarchization; the level of fragmentation of their communities and the intensity of competition among various groups; the breadth and strength of their international contacts; their ability to produce authoritative spokesmen, capable and willing to represent their particular interests to the control apparatus; and the extent to which their research agendas were translatable and actually translated into the party lingo.

These differences certainly contributed to defining the particularities of Soviet disciplinary development. The general trends of Soviet science, its tempo and evolution, however, were determined by the general character of the Stalinist science system itself and the special symbiosis between the scientific community and the party-state control apparatus.

C O N C L U S I O N

IN OUR EXAMINATION of some three decades of Soviet science, we have chronicled its development from a scattered set of relatively autonomous institutions into a huge, centralized, hierarchical, and highly politicized system with its own language and etiquette. We have explored a sometimes bewilderingly complex set of institutional reorganizations and policy decrees, several waves of political campaigns, the fluctuating fortunes of various competing groups, and the rise and fall—and rise and fall again—of the status of science. We have witnessed the amazing careers of several dozen scientists and party bureaucrats, the peculiar games they played, and the roles and ceremonies they performed. Our exploration concluded with the shocking story of Lysenko's triumph and the broad Michurinist campaign of public recantations and rituals, fierce career seeking and institutional struggles, and the worship of heroic “founding fathers”—many of whom, like “Pavlov the Michurinist,” never existed.

These bizarre events—or so they may well seem to modern readers—were precisely what made Western observers see Soviet science as fundamentally different from their own, something that might provide lessons, ideals, or warnings, but something essentially alien. Our recounting of these events in no way diminishes their strangeness. And yet, as we have so clearly seen, these events grew naturally out of the Stalinist system of science, a system whose contours we have understood in terms of the very same processes and modes of analysis—institutional structures, interactions among competing groups and individuals, and professional cultures—that Western historians have used to understand their own science. Thus, while this book is about the peculiar features of a peculiar system of science, it is at the same time an exploration of the character and mechanisms of one kind of twentieth-century Big Science, resonant with the other forms it has assumed in other national settings.

The critical feature of the Stalinist science system was the total dependence of science on state funding, which led to the coevolution and convergence of its two components—the party-state agencies and the scientific community—and to the development of a close and symbiotic relationship between them. The dynamics of this relationship and the interactions it involved in the Soviet context flowed from the different interests and agendas of the party-state and the scientific community. The Communist Party's generous funding for science rested upon a simple instrumentalist view that science could serve its political and economic objectives, which meant not simply heightened agricultural productivity or a better atomic bomb, but also an image of science and the scientist consonant with Soviet politics and culture. This instrumentalism was embodied in a special state apparatus that controlled the scientific community, one that defined and redefined science policy in accordance with the

state's changing domestic and international agendas. This apparatus imposed strict administrative control over the community's institutions, personnel, research agendas, and communications, leading to its politicization and polarization. For its part, the scientific community incorporated the party's rhetoric and rituals into its professional culture and managed to secure state funding, expand its institutions, raise its status, and pursue its own intellectual agendas, and so, ironically, to elude, avoid, and exploit such control.

Neither the party-state apparatus nor the scientific community was monolithic. Each included numerous agents and agencies who were in conflict or at odds, such as Malenkov and Zhdanov in the Politburo, or geneticists and Lysenkoists in the biology community. Nor did rigid boundaries separate the party-state and the scientific community: party-state bureaucrats became members of the scientific establishment and, likewise, the community's leaders became members of the highest party-state agencies. Furthermore, these boundaries were not static. They changed over time, as we have seen, with the rise of the Communist science sector in the 1920s and its integration into the broader scientific community in the 1930s; and with the passage of the role of state expert adviser from "bourgeois" scientists in the 1920s to party philosophers in the 1930s, back to scientists during World War II, and to party bureaucrats in the early years of the Cold War.

Each component of the system used the resources at its disposal. Those available to the party-state were enormous: its financial monopoly, the *nomenklatura* system, propaganda campaigns, administrative control over scholarly communications, and the repressive apparatus—both the reality and the threat of purge and arrest. For their part, scientists employed personal ties to state officials, their own positions in various state agencies, the resources of their institutions and professional culture, their international contacts, the shifting priorities of the decision makers, and the limited ability of bureaucrats to understand esoteric scientific issues. They exploited the conflicting priorities of different groups within the party-state bureaucracy and played skillfully upon the personal interests and human weaknesses of their patrons. (Aleksandr Bogomolets's pursuit of a "rejuvenating serum," Olga Lepeshinskaia's "sodium bath" remedy for old age, and the KR putative cure for cancer may all have received generous support in the late 1940s because of their appeal to the aged Stalin.) Scientists also proved capable of invoking the sacral doctrine of Marxism-Leninism-Stalinism on their own behalf and of mastering the party's rhetoric and rituals to camouflage their continuing pursuit of their own interests. As Marx might have predicted, then, the party made its own history, but not exactly as it pleased.

The development of Soviet science has sometimes been portrayed as the inevitable consequence of imposing the "totalitarian" system on science, with the changes induced by World War II being a temporary and reluctant aberration. This scheme, I think, is based on at least three misleading assumptions: the *overestimation* of the importance of "ideological" considerations in con-

crete science-policy decision making in the 1930s *and* the 1940s; the *underestimation* of the profound changes in the structural and functional dynamics of the Stalinist science system that were induced by the war and reinforced by the Cold War; and the assumption that the scientific community was *passive* in its interaction with its party patrons. The *cultural and political terrain* of Cold War Stalinist science did indeed resemble that of the 1930s, but its *institutional terrain* was substantially different; and various interest groups within the Soviet scientific community had become much more adept at playing the system, themselves *often initiating* and *always actively exploiting* shifting policies of the party authorities.

Soviet physics is often portrayed as having somehow managed to stand apart from Stalinism and preserve its “intellectual autonomy” from party interference. It serves better, however, as an example of the Stalinist system of science-policy making in action and an illustration of its two characteristic features—the mandatory *rhetorical conformity* to a particular “approved” doctrine and the successful *institutional struggle* and dominance of a particular interest group. In the late 1940s, physicists had no more autonomy than did biologists or any other scientific group: the institutional structure, personnel, and research agendas of Soviet physics were, according to the system’s rules, a prerogative of the party apparatus. It was the party apparatus, not the physics community, that decided to embark upon a full-scale atomic project. Despite the numerous petitions by physicists before and during the war, this decision was made by the Politburo, and only after Hiroshima and Nagasaki. The Politburo also determined the line of research, overruling Soviet physicists who wished to create their own improved bomb design in order simply to copy the American design for the atomic bomb. Furthermore, physicists, no less than biologists, were subjected to strict “thought control” and obliged to perform rituals of “obedience and devotion” to the party. In 1948, physicists, like biologists, were divided into competing groups—“academy” and “university” physicists. As in other disciplines, one of these groups (the university physicists) attempted to use the Michurinist campaign to conquer the institutional base of its competitors. Its failure to do so resulted not from the “intellectual autonomy” of Soviet physics, but from the dynamics of the competitive struggle in the Stalinist science system. The fact that, after forty-two rehearsals, a Michurinist meeting in physics was *not* staged as a public show reflected not the “intellectual autonomy” of Soviet physics, but rather the successful efforts of academy physicists to prevent an impending ritualistic meeting from turning into a rout of their institutional positions, an effort that succeeded by virtue of their intimate contact with top state priorities and the highest levels of the state apparatus.

It was the Cold War that gave Stalinist science its final form and enduring character. The pattern of interactions, structures, and styles “frozen” in place by the Cold War from 1948 on defined the dynamics of the Lysenko controversy, Soviet science, and world science generally. If the Cold War had not

terminated the international scientific cooperation of World War II, the geneticists would almost certainly have triumphed over Lysenko in the postwar years. If not atomic but biological weapons had defined the arms race, biology rather than physics probably would have vastly expanded its institutions and been seen as preserving its “intellectual autonomy.” Had Soviet geneticists rid themselves of Lysenko by means of a party decision in 1946–48—as they very nearly did—it seems unlikely that Western historians would have wasted much ink on the “thought control” established by Mendelian genetics, or lamented the destruction of Lysenko’s “intellectual autonomy” in the Soviet Union. If there had not been a continuous “arms race” and “space race,” genetics would perhaps never have “revived” in the USSR. Had it not been for the waxing and waning tensions between the two great blocs that the Cold War set into place, it seems unlikely that either the American or the Soviet system of Big Science would have survived, or evolved as they did. Both systems prospered and developed in synchrony with, and in part because of, the other.

The Cold War gave defining form to two systems of Big Science, two mutually isolated but interdependent creatures, each almost unthinkable without the other. However specific its form in the USSR, state control over science policy became a typical component of Big Science in the second half of our century. Throughout the world, scientists employed nationalistic and practical rhetoric, played intricate games, demonstrated their “political correctness,” and performed numerous rituals in their drive for individual and institutional advantage and their competition for government funding. Soviet scientists were the first to confront the potentially profound influence that their marriage with a state bureaucratic machine could have on science, and their experience has served their Western colleagues well. Indeed, not only did Soviet scientists use positive and negative examples from the West to gain the attention and support of their government; Western scientists also used positive and negative Soviet examples—both Sputnik and Lysenkoism, for instance—to advance their own agendas with their own Big Science patrons and to develop strategies and tactics for their dealings with their own government bureaucracies. The Cold War thus secured the lasting existence of the Stalinist science system, the symbiosis between the scientific community and the party-state control apparatus, providing the community with almost unlimited resources and the state with the ultimate tokens of Cold War politics—nuclear weapons, missiles, and spacecraft.

In 1991 the Soviet Union ceased to exist, and the Communist Party lost its dominating position in Soviet society. Predictably, the Stalinist science system has fallen into disarray. Rhetorically, Russian scientists have proved to be as adaptive as ever. But with its major justification—the Cold War—ended, and its symbiont and patron—the Communist Party—ousted, the Russian scientific community now searches desperately for new patrons and new justifications, struggling to survive and sustain its previous privileged position within the political, cultural, and institutional landscape of the new Russian

state. It seems clear that Russian science must be some kind of Big Science supported by the government: that is what late-twentieth-century science has become everywhere. But how to build this new “Russian” science without also re-creating the unfortunate features of the old—centralization, monopolization, hierarchy, politicization, and the separation of teaching from research?

I hope, perhaps naively, that this historical analysis may serve those who now are attempting to reconstruct a Russian system of science that builds, only selectively, upon the legacy of Stalinist science.

Stalinist Scientific “Newspeak”: A Glossary

academism (*akademizm, akademichnost'*) — one of the stigmatized “isms” of Soviet political rhetoric. Synonyms: *formalism*, practical sterility. Antonym: *practicality*.

against (*protiv*) — see *for*.

agrobiology (*agrobiologiya*) — one of the names of Lysenko’s doctrine and the title of his journal. Commonly used after 1946. Synonym: *Soviet creative Darwinism*.

apolitical (*apolitichnyi*) (scientist, artist, writer, etc.) — a pejorative referring to those who did not follow the party line. Synonyms: *unprincipled*, *nonideological*, *objectivist*.

archive (send to the archive) — to consider a problem settled or unimportant.

Bolshevization (*kommunizatsiya*) — appointment of party members to key posts, a common practice in the 1920s and early 1930s. To Bolshevize: *kommunizirovat'*.

bourgeois (*burzhuaiznaia*) (science, art, literature, etc.) — an adjective defining the identity of the opposing camp (“theirs,” not “ours”). Commonly used in the 1920s and 1930s. Antonym: *proletarian*.

Cadres decide everything! (*Kadry reshaiut vse*) — a slogan of the Second Five-Year Plan, widely used thereafter.

catch up with and overtake the West (*dognat' i peregnat'*) — a slogan commonly used in the 1920s and 1930s in regard to technology and industry and applied to science after World War II. In the late 1950s and early 1960s, under Nikita Khrushchev, it took the form “catch up with and overtake America” and was applied largely to agriculture.

closed letter (*zakrytoe pis'mo*) — a letter issued by the Central Committee and intended for party members only.

closed (*zakrytyi*) (subject) — a subject that had military or national-security importance and could be discussed only at closed meetings before an audience with special clearance.

cosmopolitanism (*kosmopolitizm*) — one of the stigmatized “isms” of Soviet political rhetoric, with anti-Jewish connotations. Introduced in January 1949 and widely used in the last years of Stalinism.

criticism and self-criticism (*kritika i samokritika*) — an element of party etiquette that required everyone to take part in campaigns as either a “critic” or a “repentant sinner” or both. The scientific community turned it into a rhetorical device to protect its interests.

- criticize (kritikovat)* — to “stigmatize,” “debunk,” “unmask,” “disclose,” “expose,” and “bring out” the *deviations* from and *perversions* of the party line in science, as identified in the rhetoric of a campaign.
- deviation (uklon)* — what *deviationists* did. Synonym: *perversion*.
- deviationist (uklonist)*; often “left” or “right” deviationist — someone who deviated from the party line.” In science, the term was applied to those who had perverted, or deviated from the legacies of the *founding fathers*.
- dialectical materialism (dialekticheskii materializm)* — neither dialectical nor materialism, but a collection of nomadic quotations used to identify “ours” in *public discussions*. A characteristic trait of “Soviet” science. Synonym: *Marxism*.
- everything for the front, everything for victory (vse dlia fronta, vse dlia pobedy)* — a slogan of the *Great Patriotic War*.
- The Fatherland is in danger! (Otechestvo v opasnosti!)* — a slogan of the *Great Patriotic War*.
- for (za)* — a preposition identifying the right side out of the “two camps.” Often accompanied by *against (protiv)*, which identified the wrong side. For instance, the initial slogans of the patriotic campaign of 1946 — “for the principled ideological content of . . .” (*za ideinost’ . . .*) and “against neglect of the ideological content of . . .” (*protiv bezideinosti . . .*) — identified the dual direction of the party policy. The slogan “for Michurinist biology” therefore also meant “against Mendelism.”
- formal (formal’naia)* — a pejorative derived from *formalism*. Common uses: “formal genetics,” “formalistic” music and art, “formal mathematics.” Synonyms: abstract, detached from *practice, idealist, bourgeois*.
- formalism (formalizm)* — one of the stigmatized “isms” of Soviet political rhetoric. Widely employed in campaigns in art, literature, music, and science in the 1930s. Returned to circulation with the Central Committee resolution “On the Opera *Velikaia Druzhba*” of February 1948. Antonyms: materialism, *practicality*.
- founding father (osnovopolozhnik)* — a real or alleged Great Scientist who had sacral status and whose legacy was used as a rhetorical cover.
- front of science and technology (front nauki i tekhniki)* — a phrase that was used as the title of a journal published by VARNITSO in the early 1930s.
- general line of the party (general’naia liniia partii)* — the latest policy announced by the Central Committee. The ability to comply with the constant changes in party policy—as the Soviet intelligentsia put it, “to twist and turn with the party line” (*izgibat’sia vmeste s liniei partii*) — constituted a vital characteristic of any bureaucrat, including scientific administrators.
- Great Leader and Teacher (Velikii Vozhd’ i Uchitel’)* — the title of, and salutation to, Joseph Stalin; it came into use in the mid-1930s.
- Great Patriotic War (Velikaia Otechestvennaia Voina)* — the Soviet-Nazi war of 1941–45.

- honor court (sud chesti)* — in tsarist Russia, a public institution used to rule on the propriety of personal moral behavior, mostly in the military officer corps. Resurrected by the Politburo in March 1947 as an instrument to *reeducate* the Soviet intelligentsia and inculcate *Soviet patriotism*.
- honorary presidium (pochetnyi prezidium)* — a “virtual” body elected by the participants in a ritual gathering, such as a *public discussion*. Usually included all the patrons of the group conducting the ritual.
- idealism (idealizm)* — one of the stigmatized “isms,” identifying “theirs” in all fields. Antonym: *dialectical materialism*.
- idealist (idealist)* — one who manifested *idealism*.
- Ingoldist-Paulingist (ingol'dist-paulingist)* — an analog of *Mendelist-Morganist-Weismannist*, coined and used by certain Soviet chemists to label their opponents in the discussion on the theory of resonance bonds in 1949–52. Alluded to Christopher K. Ingold and Linus Pauling.
- innovation (novatorstvo)* — a keyword of the Stakhanovite movement, a campaign for innovations made by practitioners (e.g., workers and peasants) in a particular field as opposed to those of theoreticians (e.g., engineers and agronomists). In science, the campaign for *novatorstvo* became particularly fierce after Stalin’s speech at the reception for workers in higher education at the Kremlin in May 1938.
- Malthusianism (mal'tuzianstvo)* — an analog of *Mendelism-Morganism-Weismannism* in evolutionary theory, used by Lysenkoists to label their opponents in the discussion on the struggle for existence. Alluded to Thomas Malthus.
- Marrist (marrist)* — a follower of Nikolai Marr’s “new doctrine of language,” a “true Soviet” linguist of the 1930s and 1940s. Transformed into a pejorative after Stalin’s intervention in the linguistics discussion in June 1950.
- Marxism (marksizm)* — one of the characteristic traits of “Soviet” science, usually used interchangeably with “materialism” or “*dialectical materialism*.” An identification of “ours” in *public discussions*. Antonyms: *idealism*, *vitalism*, *spiritualism*, *antimonism*, *metaphysics*, *formalism*, and *transcendentalism*.
- master (ovladet') the method of dialectical materialism* — to master party lingo.
- mechanistic materialism (mekhanisticheskii materializm)* — a label for the “left” *deviationists* introduced in the philosophical discussions during the Great Break. Together with *menshevizing idealism*, identified the directions of the *struggle on two fronts*, conducted by *militant materialists*. Commonly used in the 1930s.
- Mendelism-Morganism-Weismannism* — a label coined by Lysenkoists for genetics. Alluded to the Western founders of genetics, Gregor Mendel, Thomas Hunt Morgan, and August Weismann.

- menshevizing idealism* (*men'shevistvuiushchii idealizm*) — a label for the “right” *deviationists* introduced in the philosophical discussions during the Great Break. Together with *mechanistic materialism*, identified the directions of the *struggle on two fronts*, conducted by *militant materialists*. Commonly used in the 1930s.
- methodological problems* (*metodologicheskie problemy*) (of a science) — a discussion of “methodological problems” was an indication that some error had been committed in translating the agenda of a particular science into party lingo.
- militant materialist* (*voinstvuiushchii materialist*) — an activist in the introduction of party rhetoric into scientific disputes.
- nevozvrashchentsy* — (*those who did not come back*) — coined in the mid-1930s to label Russians who did not return to the USSR after foreign trips. Put back into circulation during the patriotic campaign of 1947.
- nomenklatura* — a list of posts that could not be occupied or vacated without the permission of some specific level of the party apparatus.
- nonideological* (*besideinyi*) (scientist, artist, writer, etc.) — a pejorative referring to those who did not follow the party line. Synonyms: *apolitical*, *unprincipled*, *objectivist*.
- nonparty Bolshevik* (*bespartiinyi bol'shevik*) — a person who adhered to the party line without being a party member.
- nonparty-ness* (*bespartiinnost'*) — an antonym of *partiinnost'*.
- objectivism* (*ob'ektivizm*) — a pejorative employed to portray “world science” and its adherents among Soviet scientists. To “fall into objectivism” usually meant to not take into account the party position on a particular issue. Commonly used with such epithets as *apolitical*, *nonideological*, *unprincipled*, and *bourgeois*. Derivation: *objectivist*.
- partiinnost'* — (party-ness) — adherence to a party line, subordination of one's activities to party objectives. One of the characteristic features of “Soviet” science. The term was also widely used in the fields of art and literature.
- party guidance* (*partiinoe rukovodstvo*) — the leading role of the party in everything.
- pedological perversions* (*pedologicheskie izvrashcheniia*) — a cliché coined by the infamous party resolution of 1936 “On Pedological Perversions in the System of Narkomproses.”
- personal file* (*lichnoe delo*) — a dossier collected and kept by the appropriate personnel department on a person under its aegis (for example, by the personnel department of an institute on all scientists working there). The personal file was usually requested by a higher agency when the promotion or demotion of that person was discussed.
- perversion* (*izvrashchenie*) — usually meant a “perversion of the party line.” In science, the term was widely applied to *deviations* from the legacies of the *founding fathers*.

practicality (*praktichnost'*) — one of the characteristic traits of “Soviet” science and an identification of “ours.” Derived from *practice*. Antonyms: practical sterility, fruitless theorizing, *academism*.

practice (*praktika*) — the “dialectical” opposite of *theory*; meant “the practice of socialist construction” that must lead and direct the theory. In science, this meant that practical work (say, in agriculture) must lead and direct research (in agricultural science).

priority (*prioritet*) of Russian science — an aspect of the patriotic campaign of 1947–48, involving the construction of Russian priority in every possible field of science, industry, medicine, and so forth. The public immediately coined a joking slogan for it: “Russia is the birthplace of elephants.”

proletarian (*proletarskaia*) (science, art, literature, etc.) — an adjective defining “ours.” Widely used in the 1920s and early 1930s. Antonym: *bourgeois*.

proletarianize (*orabochivat'*) — to promote proletarians to all important positions in a student body, the administration of an institution, etc. Widely used in the 1920s and early 1930s.

public discussion (*diskussiia*) — an element of the party’s political culture. In essence, neither public nor a discussion, but a kind of ritual demonstration. In science, it was widely employed in institutional power struggles.

public reprimand (*obshchestvennoe poritsanie*) — a verdict of an *honor court*. Attached to a person’s *personal file*.

red director (*krasnyi direktor*) — a party functionary assigned to watch the actual director.

red professor (*krasnyi professor*) — a graduate of the Institute of Red Professors, which provided new Bolshevik cadres for higher education in the 1920s and early 1930s.

reeducate (*perevospytyvat'*) — to raise the moral-political level, to inculcate certain ideological concepts.

remnant (of the capitalist past) (*perezhitok kapitalizma*) — a cliché used to describe, explain, and stigmatize something ideologically incompatible with, but nevertheless existing in, Soviet life—for instance, crime. Widely used in the patriotic campaign of 1947 to explain the *slavishness and servility* to the West among Soviet scientists. Synonyms: the imprints of capitalism (*rodimye piatna kapitalizma*), bourgeois remnant.

reorganization (*perestroika*) — a ritualistic game played by scientists to bring all the tangible aspects of their activities into conformity with a changed party line.

retrograde part (*otstalaia chast'*) (of the Soviet intelligentsia) — a cliché for labeling certain scientists, artists, writers, etc. considered *deviationists* from the general line of the party.

science in the service of socialist construction (*nauku na sluzhbu sotsialisticheskomu stroitel'stvu*) — a slogan of the First and Second Five-Year Plans.

- self-criticism (samokritika)* — an element of party etiquette that consisted of public recantation and admission of one's ideological and political mistakes. Became a mandatory part of *public discussions* in the 1930s. See also *criticize* and *criticism and self-criticism*. Synonym: self-revelation (*samorazoblachenie*).
- sharpening of the class struggle (obostrenie klassovoi bor'by)* — a justification for party policies in the late 1920s and 1930s.
- slavishness and servility (nizkopoklonstvo i rabolepie)* (to the West) — an antonym of *Soviet patriotism*, commonly used during patriotic campaigns in the mid-1930s and late 1940s.
- Soviet creative Darwinism (sovetskii tvorcheskii darvinizm)* — another name for Lysenko's doctrine.
- Soviet patriotism (sovetskii patriotizm)* — devotion to the Soviet state's interests. Antonym: *slavishness and servility* to the West.
- Stalin's Commissars (stalinskie narkomy)* — the collective name for a new generation of the highest state and party bureaucrats, notable for their adherence to the general line of the party and to Stalin personally. Commonly used in the 1930s.
- strengthen (ukrepit')* — to appoint politically reliable cadres to key posts in an institution. For instance, "strengthening the Academy of Sciences with young scientific forces" in 1939 meant the appointment of new vice-presidents and presidium members.
- struggle on two fronts (bor'ba na dva fronta)* (usually "against enemies on our right and 'friends' on our left") — a tactic of Bolshevik politics. Appropriated and widely used by Soviet scientists in the late 1920s in their institutional struggles. An example of the "struggle on two fronts" was a campaign against *menshevizing idealism* and *mechanistic materialism*.
- theory (teoriia)* — the "dialectical" opposite of *practice*. Often meant science per se.
- theory and practice (teoriia i praktika)* — a motto of the early 1930s and widely used thereafter. Implied the subordinate position of *theory* and theoretical work in relation to *practice* and practical work.
- two worlds—two ideologies (dva mira—dve ideologii)* (in biology, linguistics, physics, etc.) — one of the slogans of the 1948 Michurinist campaign, defining the identity of two camps — "ours" and "theirs."
- unprincipled (besprintsipnyi)* (scientist, artist, writer, etc.) — a pejorative referring to those who did not follow the party line. Synonyms: *apolitical*, *nonideological*, *objectivist*.
- upbringing (vospitanie)* — ideological training, inculcation. See also *reeducate*.
- (to raise) vigilance (bditel'nost')* — to multiply ritualistic demonstrations of adherence to the party line and unmasking of *deviationists*.
- virkhovianstvo* — an analog of *Mendelism-Morganism-Weismannism* in cytology. Alluded to Rudolf Virchow's cell theory.

vydvizhentsy—young proletarian cadres promoted to leading positions in industry, agriculture, science, and so forth during the Great Break and immediately thereafter.

Whoever is not with us is against us (*Kto ne s nami, tot protiv nas*) — a slogan of the 1920s and 1930s embodying the technique of juxtaposing “two camps” — “us” and “them,” “ours” and “theirs” — in party etiquette, appropriated by the scientific community.

Worker of Merit (*zasluzhennyi rabotnik*) of Science and Technology — a title awarded “for especially valuable work in the field of science or technology, for inventions and discoveries especially important for socialist construction, for outstanding activity in practical scientific research or the popularization of science.”

Key Figures

ALEKSANDROV, Georgii Fedorovich (1908–1961). Philosopher, party member (1928), graduated from the Moscow Institute of History and Philosophy (1932), head of Agitprop (1940–47), Stalin Prize (1943), member of the Academy of Sciences (1946), director of the Institute of Philosophy of the Academy of Sciences (1947–54), Minister of Culture (1954–55).

BENEDIKTOV, Ivan Aleksandrovich (b. 1902). Party member (1930), graduated from Timiriazev Agricultural Academy (1927), member of the Central Committee of the Communist Party (from 1939), Commissar of Agriculture (1938–43), Minister of Agriculture (1946–55), ambassador to India (1953, 1959–67) and to Yugoslavia (from 1967).

BERIA, Lavrentii Pavlovich (1899–1953). Party member (1917), first secretary of the Georgian Communist Party (1931–38), member of the Central Committee of the Communist Party (1934–53), deputy head and then head of the NKVD (1938–45), deputy head of the Council of Ministers (1945–53), member of the Politburo (1945–53), head of the Soviet atomic project (1945–53).

BRUEVICH, Nikolai Grigor'evich (1896–1987). Party member (1921), technologist, graduated from Moscow University (1923) and the Moscow Aviation Institute (1930), member (1942) and academician-secretary (1943–49) of the USSR Academy of Sciences, professor of the Military-Aviation Academy (1929–61).

DUBININ, Nikolai Petrovich (b. 1907). Geneticist, head of the genetics department of the Institute of Experimental Biology (1932–48), corresponding member (1946) and full member (1966) of the USSR Academy of Sciences, head of the laboratory of radiation genetics in the Institute of Biophysics (1956–66), director of the Institute of Cytology and Genetics (1957–60).

FEDOROV, Lev Nikolaevich (1891–1952). Party member (1921), physician, physiologist, graduated from Tomsk University (1914), deputy head of the Department of Public Health of the Petrograd Soviet (1923–25), party appointee to Ivan Pavlov's laboratory (1923–27), deputy director (1927–31) and director (1931–32, 1945–48) of the Institute of Experimental Medicine, director of VIEM (1932–38), editor of the *USSR Physiological Journal* (1934–38), member of the Academy of Medical Sciences (1948), head of the Scientific Council of the USSR Ministry of Public Health (1948–50), professor at Moscow University (1950–52).

GORBUNOV, Nikolai Petrovich (1892–1938). Party member (1917), graduated from Petrograd Technological Institute (1917), secretary of the SNK (1917–19), head of the VSNKh Scientific-Technical Department (1918–19), executive secretary of the SNK (1920–29), head of the SNK Department of Scientific Institutions (1926–29), rector of Moscow Higher Technical College (1923–29), vice-president of VASKhNIL (1929), deputy director of the Institute of Chemistry (1931–33), member and academician-secretary of the USSR Academy of Sciences (1935–38).

IOFFE, Abram Fedorovich (1880–1960). Physicist, graduated from St. Petersburg Technological Institute (1902), worked in Wilhelm C. Roentgen's laboratory (1902–6), corresponding member (1918), full member (1920), and vice-president (1926–29, 1942–45) of the USSR Academy of Sciences, academician-secretary of its Physics Division (1942–45), director of the Physico-Technical Institute (1918–50), director of the Agro-Physical Institute (1932–60), party member (1942), Stalin Prize (1942), Hero of Socialist Labor (1955).

KAFTANOV, Sergei Vasil'evich (1905–1978). Party member (1926), candidate member of the Central Committee of the Communist Party (1939–52), head of the Committee for Higher Education (1937–46), representative of the GKO in science (1941–45), Minister of Higher Education (1946–51), head of the Committee for Television and Radio Broadcasting (1957–61).

KAPITSA, Petr Leonidovich (1894–1984). Physicist, student of Abram Ioffe, graduated from the Petrograd Polytechnical Institute (1919), professor at Cambridge University (1921–34), corresponding member (1929), full member (1939), and member of the presidium (1957–84) of the USSR Academy of Sciences, director of the Institute of Physical Problems (1935–46, 1955–84); head of the SNK Main Administration of the Oxygen Industry (1943–46), Stalin Prize (1941, 1943), Hero of Socialist Labor (1945), Nobel Prize (1978).

KOL'TSOV, Nikolai Konstantinovich (1872–1940). Biologist, graduated from Moscow University (1894), professor at the university (1895–1911), worked in Germany, France, and Italy (1897–1900, 1902–3), professor at the Higher Educational School for Women (1903–18), corresponding member of the Academy of Sciences (1915), member of VASKhNIL (1929), director of the Institute of Experimental Biology (1917–39).

KOMAROV, Vladimir Leont'evich (1869–1945). Botanist, graduated from St. Petersburg University (1894), professor at the university (1898–1934), corresponding member (1914), full member (1920), vice-president (1930–36), and president (1936–45) of the USSR Academy of Sciences, president of the All-Union Botanical Society (1930–45), honorary president of the Geographical Society (1940–45), deputy of the USSR Supreme Soviet (1938–45), Stalin Prize (1941, 1942), Hero of Socialist Labor (1943).

KRZHIZHANOVSKII, Gleb Maksimilianovich (1872–1959). Party member (1893), technologist, graduated from St. Petersburg Technological Institute (1894), member of the Central Committee of the Communist Party (1924–39), head of GOELRO (1920–25), head of Gosplan (1925–30), member (1929) and vice-president (1929–39) of the USSR Academy of Sciences, head of the Committee for Higher Technical Education and deputy Commissar of Enlightenment (1932–36), director of the Academy of Sciences Institute of Energy (1930–59), Hero of Socialist Labor (1957).

LENIN (Ul'ianov), Vladimir Il'ich (1870–1924). Founder of the Bolshevik party, passed exams and received diploma from the Law School at St. Petersburg University (1891), first head of the SNK (1917–24).

LUNACHARSKII, Anatolii Vasil'evich (1875–1933). Party member (1895), writer and literary critic, studied philosophy at Zurich University (1895–98), lived abroad (1904–17), head of Narkompros (1917–29), head of the TsIK Scientific Committee (1929–32), member of the USSR Academy of Sciences (1930), deputy head of the Soviet delegation to the conference on disarmament in the League of Nations (1927–28), ambassador to Spain (1933).

LYSENKO, Trofim Denisovich (1898–1976). Agronomist, graduated from the Kiev Agricultural Institute (1925), member of the Ukrainian (1934) and the USSR (1939) Academy of Sciences, member (1935) and president (1938–56, 1961–62) of VASKhNIL, director of the Odessa Institute of Genetics and Breeding (1936–38), director of the Academy of Sciences Institute of Genetics (1940–65), head of the genetics department of the Timiriazev Agricultural Academy (1948–65), editor of the journals *Vernalization* (1935–41) and *Agrobiology* (1946–65), deputy head of the USSR Supreme Soviet (1938–56), Stalin Prize (1941, 1943, 1949), Hero of Socialist Labor (1945), director of the Lenin Hills experimental station of the Academy of Sciences (1966–76).

MALENKOV, Georgii Maksimilianovich (1902–1988). Party member (1920), graduated from the Moscow Higher Technical College (1925), head of the Department of Party Organs of the Central Committee of the Communist Party (1934–39), secretary of the Central Committee (1939–57), member of the GKO (1941–45), member of the Politburo (1946–55), head of the Council of Ministers (1953–55), Hero of Socialist Labor (1943), dismissed by Khrushchev in 1957.

MICHURIN, Ivan Vladimirovich (1855–1935). Amateur horticulturist and plant breeder, honorary member of the USSR Academy of Sciences and VASKhNIL (1935), “founding father” of Soviet biology.

MITIN, Mark Borisovich (1901–1974). Party member (1919), graduated from the Institute of Red Professors (1929), member of the Central Committee of the Communist Party (1939–44, 1950–56), director of the Marx-

Engels-Lenin Institute (1939–44), editor-in-chief of *Under the Banner of Marxism* (1939–44), member of the Academy of Sciences (1939) and its presidium (1939–46), editor of the Cominform newspaper *For Peace, for People's Democracy* (1950–56), head of the Society for the Dissemination of Political and Scientific Knowledge (1956–60), editor of the journal *Problems of Philosophy* (1960–67), Stalin Prize (1943).

MOLOTOV (Skriabin), Viacheslav Mikhailovich (1890–1986). Party member (1906), studied in the St. Petersburg Polytechnical Institute (1911–12), secretary of the Central Committee of the Communist Party (1921–30), head of the SNK (1930–41), Minister of Foreign Affairs (1939–49, 1953–56), deputy head of the SNK (1941–57), member of the Politburo (1926–52), member of the presidium of the Central Committee (1952–57), dismissed by Khrushchev in 1957, ambassador to Mongolia (1957–60).

OL'DENBURG, Sergei Fedorovich (1863–1934). Orientalist, graduated from St. Petersburg University (1885), professor at the university (1889), member (1900) and permanent secretary (1904–17) of the Imperial Academy of Sciences, member of the Russian Constitutional-Democratic (Kadet) Party (1906–17), Minister of Education in the Provisional Government (1917), permanent secretary of the Academy of Sciences (1917–29), director of its Institute of Oriental Studies (1930–34).

ORBELI, Leon Abgarovich (1882–1958). Physiologist, graduated from the Military-Medical Academy (1904), Pavlov's assistant at the Institute of Experimental Medicine (1907–20), worked in Germany and Britain (1909–10), head of the physiology department of the Leningrad Medical Institute (1920–31), head of the physiology department (1925–50) and director (1943–50) of the Military-Medical Academy, member (1935), academician-secretary of the Biology Division (1939–48), and first vice-president (1942–46) of the USSR Academy of Sciences, director of its Institute of Physiology (1936–50) and Institute of Evolutionary Physiology (1956–58), member of the Armenian Academy of Sciences (1943), member of the Academy of Medical Sciences (1944) and director of its Institute of Evolutionary Physiology and Pathology of Higher Nervous Activity (1939–50), head of the All-Union Physiology Society (1937–50), Stalin Prize (1941), colonel general (1944), Hero of Socialist Labor (1945).

PARIN, Vasilii Vasil'evich (1903–1971). Physiologist, party member (1939), graduated from Perm University (1925), head of the physiology department and rector of the Sverdlovsk Medical Institute (1932–41), rector of the First Moscow Medical Institute (1941–43), deputy head of Narkomzdrav (1942–45), member (1944–47, 1956–71) and academician-secretary (1944–47, 1957–60) of the Academy of Medical Sciences, imprisoned as an American spy as a result of the KR affair (1947–54), head of the physiology laboratory at the Institute of Therapy (1954–56), director of the Academy of Medical Sciences Institute of Normal and Pathological Physiology (1960–65),

member of the Academy of Sciences (1966), director of the Institute of Medico-Biological Problems (1965–69).

PAVLOV, Ivan Petrovich (1849–1936). Physiologist, graduated from St. Petersburg University (1875) and the Medical-Surgical Academy (1879), head of the physiology department at the Military-Medical Academy (1895–1924) and at the Institute of Experimental Medicine (1891–1936), Nobel Prize (1904), member of the Academy of Sciences (1907) and director of its Institute of Physiology (1925–36).

PREZENT, Isaak Izrailevich (1902–1969). Party member (1921), graduated from the faculty of social sciences of Leningrad University (1926), professor at Leningrad University (1931–37, 1943–52), member of VASKhNIL (1948), head of the department of Darwinism at Moscow and Leningrad universities (1948–52), dean of the biology faculty of Moscow University (1948–52).

RAZENKOV, Ivan Petrovich (1888–1954). Physiologist, graduated from Tomsk University (1914), professor at Tomsk University (1918–22), student of Pavlov at the Institute of Experimental Medicine (1922–24), head of the physiology department at the Institute of Professional Diseases (1924–34), deputy director of VIEM (1934–44), director of the Academy of Medical Sciences Institute of Physiology (1944–49), member (1944), academician-secretary of the Biomedical Division (1944–48), and vice-president (1948–50) of the Academy of Medical Sciences, Stalin Prize (1947).

SEMASHKO, Nikolai Aleksandrovich (1874–1949). Party member (1893), physician, graduated from Kazan' University (1901), secretary of the Foreign Bureau of the Central Committee of the Communist Party (1908–10), head of Narkomzdrav (1918–30), member of the VTsIK presidium (1930–36), professor at the First Moscow Medical Institute (1930–49), member of the Academy of Medical Sciences (1944) and director of its Institute of the Organization and History of Medicine (1947–49), member of the Academy of Pedagogical Sciences (1945) and director of the Institute of Hygiene (1942–44) and the Institute of School Hygiene (1945–49), president of the All-Union Society of Hygienists (1940–49).

SEREBROVSKII, Aleksandr Sergeevich (1892–1948). Geneticist, student of Nikolai Kol'tsov, graduated from Moscow University (1914), candidate member of the party (1930), worked at the Institute of Experimental Biology (1921–27), corresponding member of the Academy of Sciences (1933), member of VASKhNIL (1935), head of the genetics department of the Timiriazev Biological Institute (1929–32) and of Moscow University (1930–48).

SHEPILOV, Dmitrii Trofimovich (1905–1995). Party member (1926), jurist and economist, graduated from Moscow University (1926) and the Institute of Red Professors (1932), deputy head (1935–37) and head (1937–41) of the

section of agricultural science in the Central Committee of the Communist Party, professor of economics at the Higher Party School (1935–41), head of Agitprop (1947–53), member of the presidium of the Central Committee and Minister of Foreign Affairs (1956–57), dismissed by Khrushchev in 1957.

SHMAL'GAUZEN, Ivan Ivanovich (1884–1963). Morphologist, graduated from Kiev University (1907), professor at the university (1912, 1921–41), member of the Ukrainian Academy of Sciences (1922) and director of its Zoological Institute (1930–41), member of the USSR Academy of Sciences (1935) and director of its Institute of Evolutionary Morphology (1936–48), head of the department of Darwinism at Moscow University (1939–48), senior researcher (1948–55) and head of the embryology laboratory in the Institute of Zoology at the Academy of Sciences (1955–63).

STALIN (Dzhugashvili), Joseph Vissarionovich (1879–1953). Studied in theological school in Georgia (1894–99), party member (1898), member of the Central Committee (1912–13, 1917–53), member of the Politburo (1919–53), and general secretary of the Communist Party (1922–53), honorary member of the USSR Academy of Sciences (1939).

VAVILOV, Nikolai Ivanovich (1887–1943). Plant scientist, graduated from the Moscow Agricultural Institute (1911), director of the Institute of Applied Botany (1924–29), member of the Ukrainian and the USSR Academy of Sciences (1929), director of VIR (1930–40) and the Institute of Genetics (1933–40), member (1929), president (1929–35), and vice-president (1935–38) of VASKhNIL, member of TsIK (1926–35) and VTsIK (1927–29), president of the All-Union Geographical Society (1931–40), arrested in 1940 as a British spy. Died in prison.

VAVILOV, Sergei Ivanovich (1891–1951). Physicist, younger brother of Nikolai Vavilov, graduated from Moscow University (1914), professor of physics at Moscow University (1918–32), head of the physics department at Narkomzdrav's Institute of Physics and Biophysics (1918–32), scientific head of the Optical Institute (1932–45), member (1932) and president (1945–51) of the USSR Academy of Sciences, director of its Institute of Physics (1932–51).

ZHDANOV, Andrei Aleksandrovich (1896–1948). Party member (1915), secretary of the Nizhnii Novgorod (1924–34) and Leningrad (1934–45) party committees, member (1930) and secretary (1934–48) of the Central Committee, member of the Politburo (1938–48).

ZHDANOV, Iurii Andreevich (b. 1919). Son of Andrei Zhdanov, chemist, graduated from Moscow University (1941), party member (1944), head of the Central Committee Science Department (1946–54), rector of Rostov-on-Don University (1957–89), corresponding member of the Academy of Sciences (1970).

ZHEBRAK, Anton Romanovich (1901–1965). Geneticist, party member (1928), graduated from the Timiriazev Agricultural Academy (1925) and the Institute of Red Professors (1929), Rockefeller Fellow at T. H. Morgan's laboratory at Columbia University (1930–31), head of the genetics department of the Timiriazev Agricultural Academy (1935–48), member (1940) and president (May–October 1947) of the Belorussian Academy of Sciences, official of the Central Committee Science Department (1945–46), professor of botany at the Moscow Institute of Timber Industry (1948–49) and the Moscow Pharmacological Institute (1949–65).

N O T E S

PREFACE

1. I was able to publish some of my archival findings only much later; see N. L. Kremmentsov, "Ot Sel'skogo Khoziaistva do . . . Meditsiny," in *Repressirovannaia Nauka* (Leningrad: Nauka, 1991), pp. 93–113.

2. See D. A. Aleksandrov and N. L. Kremmentsov, "Sotsiokul'turnye Aspekty Razvitiia Sovetskoi Nauki v 1920–1930 gg.," *Voprosy Istorii Estestvoznaniia i Tekhniki* (hereafter *VIET*), 1990, no. 1, pp. 166–168.

3. D. A. Aleksandrov and N. L. Kremmentsov, "Putevoditel' po Neizvedannoi Zemle: Predvaritel'nyi Oчерk Sotsial'noi Istorii Sovetskoi Nauki," *VIET*, 1989, no. 4, pp. 67–80.

4. See Mark B. Adams, ed., *The Evolution of Theodosius Dobzhansky: Essays on His Life and Thought in Russia and America* (Princeton, N.J.: Princeton University Press, 1994).

INTRODUCTION

1. For a comprehensive bibliographical essay on English-language studies, see Loren R. Graham, *Science in Russia and the Soviet Union: A Short History* (Cambridge: Cambridge University Press, 1993), pp. 293–306. For Russian-language studies, see *Istoriia Estestvoznaniia: Literatura, Opublikovannaia v SSSR, 1917–1980*, 8 vols. (Moscow: Nauka, 1949–85).

2. See especially Mark B. Adams, "Biology after Stalin: A Case Study," *Survey: A Journal of East/West Studies*, 1977–78, vol. 23, pp. 53–80; Kendall Bailes, *Technology and Society under Lenin and Stalin: Origins of the Soviet Technical Intelligentsia, 1917–1941* (Princeton, N.J.: Princeton University Press, 1978); and Linda L. Lubrano and Susan G. Solomon, eds., *The Social Context of Soviet Science* (Boulder, Colo.: Westview Press, 1980), especially Susan G. Solomon, "Reflections on Western Studies of Soviet Science," pp. 1–29; Mark B. Adams, "Science, Ideology, and Structure: The Kol'tsov Institute, 1900–1970," pp. 173–204; and Loren R. Graham, "Reasons for Studying Soviet Sciences: The Example of Genetic Engineering," pp. 205–240. This new trend in understanding the relationship between science and society in the Soviet Union has been further elaborated by a group of American historians in a very interesting volume edited by Loren R. Graham, *Science and the Soviet Social Order* (Cambridge: Harvard University Press, 1990).

3. Alexander Vucinich, *Empire of Knowledge: The Academy of Sciences of the USSR, 1917–1970* (Berkeley: University of California Press, 1984), p. 1.

4. Western sociologists and historians of science have paid considerable attention to the influence of culture on scientific practice. There are, however, two different kinds of practice. The first can be called *experimental* practice, which produces scientific knowledge, facts and artifacts, hypotheses and theories, instruments and techniques. Western historians have focused principally on this kind of scientific practice. See, for example, Bruno Latour and Steve Woolgar, *Laboratory Life: The Social Construction of Scientific Facts* (Princeton, N.J.: Princeton University Press, 1976); Everett Mendelsohn, Peter Weingart, and Richard Whitley, eds., *The Social Production of Scientific Knowledge* (Dordrecht: D. Reidel, 1977); Adele E. Clarke and Joan H. Fujimura, eds., *The Right Tools for the Job: At Work in Twentieth-Century Life Sciences* (Princeton, N.J.: Princeton University Press, 1992); Andrew R. Pickering, ed., *Science as Practice and Culture* (Chicago: University of

Chicago Press, 1992); Robert E. Kohler, *Lords of the Fly* (Chicago: University of Chicago Press, 1994); and many others.

The second kind of scientific practice is what can be called *social* practice, which produces formal and informal organizations, patrons, careers, roles, and policies. The cultural influences on this kind of scientific practice have been largely neglected by historians and have only recently begun to attract attention. See, for instance, Pnina G. Abir-Am, "The Politics of Macromolecules: Molecular Biologists, Biochemists, and Rhetoric," in Arnold Thackray, ed., "Science after '40," *Osiris*, 2d ser., 1992, vol. 7, pp. 164–191; also "Special Issue on the Historical Ethnography of Scientific Rituals," *Social Epistemology*, 1992, vol. 6, no. 4.

5. David Joravsky, *The Lysenko Affair* (Chicago: University of Chicago Press, 1986), p. 307. Loren R. Graham, for example, even remarked that "the Lysenko episode was a chapter in the history of pseudo-science rather than the history of science." *Science and Philosophy in the Soviet Union* (New York: Vintage Books, 1974), p. 195.

CHAPTER 1

RUSSIAN SCIENCE IN TRANSITION, 1890–1929

1. See Mark B. Adams, "Soviet Union: The Russian Research System," in *The Academic Research Enterprise within the Industrialized Nations: Comparative Perspectives* (Washington, D.C.: National Academy Press, 1990), pp. 51–65. For a general overview of the Russian science system, see Alexander Vucinich, *Science in Russian Culture: A History to 1860* (Stanford, Calif.: Stanford University Press, 1963); Alexander Vucinich, *Science in Russian Culture, 1861–1917* (Stanford, Calif.: Stanford University Press, 1970); and E. V. Soboleva, *Organizatsiia Nauki v Poreformennoi Rossii* (Leningrad: Nauka, 1983).

2. See James C. McClelland, *Autocrats and Academics: Education, Culture, and Society in Tsarist Russia* (Chicago: University of Chicago Press, 1979); and Samuel D. Kassow, *Students, Professors, and the State in Tsarist Russia* (Berkeley: University of California Press, 1989).

3. For an account of the organization of Russian science at the beginning of the twentieth century, see M. S. Bastrakova, "Organizatsionnye Tendentsii Russkoi Nauki v Nachale XX Veka," in *Organizatsiia Nauchnoi Deiatel'nosti* (Moscow: Nauka, 1968), pp. 150–186; and M. S. Bastrakova, *Stanovlenie Sovetskoi Sistemy Organizatsii Nauki, 1917–1922* (Moscow: Nauka, 1973), pp. 16–56.

4. See A. E. Ivanov, *Vysshhaia Shkola Rossii v Kontse XIX–Nachale XX Veka* (Moscow, 1991), pp. 377–383.

5. See *Fiziologicheskie Nauki v SSSR: Stanovlenie, Razvitie, Perspektivy* (Leningrad: Nauka, 1988), pp. 49–115. On specialized research institutes, see Bastrakova, *Stanovlenie Sovetskoi Sistemy Organizatsii Nauki*, pp. 35–41.

6. For a detailed analysis of the patronage system in agricultural science, for example, see O. Iu. Elina, "Nauka dlia Sel'skogo Khoziaistva v Rossiiskoi Imperii: Formy Patronazha," *VIET*, 1995, no. 1, pp. 40–63.

7. For a discussion of the early interactions of the Russian scientific community and the censor, see Daniel P. Todes, "Biological Psychology and the Tsarist Censor: The Dilemma of Scientific Development," *Bulletin of the History of Medicine*, 1984, vol. 58, pp. 529–544.

8. See, for example, V. A. Vagner, "Fiziologiia i Biologiia v Reshenii Psikhologicheskikh Problem," in V. Vagner, *Biopsikhologiia* (St. Petersburg, 1914), pp. 1–37.

9. V. Karavaev, "Psikhologicheskie Vzgliady V. Vagnera," in E. Wasmann, *Itogi Sravnitel'noi Psikhologii* (Kiev, 1906), p. vii.

10. See, for example, V. A. Vagner, *Biologicheskii Osnovaniia Sravnitel'noi Psikhologii. Biopsikhologiya* (St. Petersburg: Vol'f, 1910), vol. 1.

11. On the general attitude of Russian scientists toward the principles of science organization, see Bastrakova, *Stanovlenie Sovetskoi Sistemy Organizatsii Nauki*, pp. 34–56.

12. *Kul'turnoe Stroitel'stvo SSSR* (Moscow: Gosstatizdat, 1956), p. 244. These official statistics clearly do not include numerous agricultural experimental stations. According to O. Iu. Elina, by 1914 there were about three hundred such stations in Russia. See "Nauka dlia Sel'skogo Khoziaistva."

13. See, for example, Kendall Bailes, "The Politics of Moral Indignation: Vernadskii in Science and Politics," chapter 3 of *Science and Russian Culture in an Age of Revolutions* (Bloomington: Indiana University Press, 1990), pp. 80–129.

14. See Bailes, *Science and Russian Culture*, pp. 141–142.

15. Renamed Leningrad in 1924 and St. Petersburg in 1991.

16. For a general discussion of the social, economic, cultural, and political aspects of NEP, see Sheila Fitzpatrick, Alexander Rabinowitch, and Richard Stites, eds., *Russia in the Era of NEP* (Bloomington: Indiana University Press, 1991).

17. "Polozheniia k Proektu Mobilizatsii Nauki dlia Nuzhd Gosudarstvennogo Stroitel'stva," in *Dokumenty po Istorii Akademii Nauk SSSR, 1917–1925* (Leningrad: Nauka, 1986), pp. 25–26.

18. V. I. Lenin, "Nabrosok Plana Nauchno-Tekhnicheskikh Rabot," in *Dokumenty po Istorii Akademii Nauk SSSR, 1917–1925*, p. 62.

19. A colorful description of the visionary Bolshevik attitude toward science and its role in the future socialist society, based on his interview with Lenin, can be found in H. G. Wells' *Russia in the Shadows* (Westport, Conn.: Hyperion Press, 1973), reprint of 1921 edition.

20. On the early period of this collaboration, see A. V. Kol'tsov, *Lenin i Stanovlenie Akademii Nauk kak Tsentra Sovetskoi Nauki* (Leningrad: Nauka, 1969); Bastrakova, *Stanovlenie Sovetskoi Sistemy Organizatsii Nauki*; and Bailes, *Science and Russian Culture*. Daniel P. Todes's excellent essay "Pavlov and the Bolsheviks," in *History and Philosophy of the Life Sciences*, (1995), 17:379–418, presents a detailed picture of the developing interrelations between the Russian Nobel laureate Ivan Pavlov and the regime.

21. For an analysis of the causes of the initial hostility of the scientific community to the Bolsheviks, see James C. McClelland, "The Professoriate in the Russian Civil War," in D. P. Koenker, W. G. Rosenberg, and R. G. Suny, eds., *Party, State, and Society in the Russian Civil War* (Bloomington: Indiana University Press, 1989), pp. 243–266.

22. The Bolshevik party in the early 1920s, however, was by no means a monolith, and various groups strongly objected to any compromise with "bourgeois" scientists. Many party members called for the complete destruction of the "old, bourgeois" science and the creation from scratch of "new, proletarian" science and scientists. The actual policy conducted by the Bolshevik leadership, however, was quite distant from such radical declarations and sought to use the "tsarist scientific heritage" rather than to destroy it.

23. For a brief account of the commission's activity, see Paul R. Josephson, *Physics*

and *Politics in Revolutionary Russia* (Berkeley: University of California Press, 1991), pp. 48–55.

24. For a brief survey of the evolution of scientists' salaries and privileges during the first years of Bolshevik rule, see G. A. Lakhtin, *Organizatsiia Sovetskoi Nauki: Istorii i Sovremennost'* (Moscow: Nauka, 1990), pp. 182–187.

25. For example, in just six years (1918–24), four All-Russia Congresses on Phytopathology and Entomology were organized. For other conferences, see the chronology of key events at the end of Part 1.

26. Already in 1923, forty-eight scientific journals were being published in Russia. See *Pravda*, 12 June 1923, p. 4.

27. For example, on June 25, 1927, the government issued a resolution to increase the salaries of scientific workers.

28. See *Pravda*, 19 September 1926, p. 1.

29. See, for instance, the Central Committee of the Communist Party resolution “On Work of the Specialists,” issued in 1925, in *Resheniia Partii i Pravitel'stva po Khoziaistvennym Voprosam* (Moscow: Politizdat, 1967), pp. 496–498.

30. The Russian Soviet Federated Socialist Republic (RSFSR) was the leading republic of the Soviet Union. The governmental system created by the Bolsheviks in Russia was replicated throughout all other republics. Every republic established its own separate commissariats supervising relevant fields (and, accordingly, its own Council of People's Commissars) and its own science-policy apparatus within such commissariats. In addition, with the formation of the USSR, a special central apparatus to administer all-union enterprises was created and also took part in building the Soviet science system. On the organization and evolution of the USSR state apparatus, see T. P. Korzhikhina, *Sovetskoe Gosudarstvo i Ego Uchrezhdeniia: Noiabr' 1917—Dekabr' 1991* (Moscow: RGGU, 1994).

31. In *The Commissariat of Enlightenment: Soviet Organization of Education and the Arts under Lunacharsky* (Cambridge: Cambridge University Press, 1970), Sheila Fitzpatrick analyzes the role of Narkompros, mainly in education. For a brief discussion of Narkompros's role in the development of science, see Bastrakova, *Stanovlenie Sovetskoi Sistemy Organizatsii Nauki*, pp. 121–159; Bailes, *Technology and Society under Lenin and Stalin*, pp. 162–171; and Josephson, *Physics and Politics in Revolutionary Russia*, pp. 66–70.

32. Lakhtin, *Organizatsiia Sovetskoi Nauki*, p. 70.

33. On the role of the NTU in organizing scientific research, see V. D. Esakov, *Sovetskaia Nauka v Gody Pervoi Piatiletki* (Moscow: Nauka, 1971), pp. 79–167; Bastrakova, *Stanovlenie Sovetskoi Sistemy Organizatsii Nauki*, pp. 160–177; Bailes, *Technology and Society under Lenin and Stalin*, pp. 56–58; Vucinich, *Empire of Knowledge*, pp. 109–118; and Josephson, *Physics and Politics in Revolutionary Russia*, pp. 58–66.

34. This commission is better known as the (A. S.) Enukidze Commission, for its chairman.

35. In 1922 the SNK had established a Special Temporary Scientific Committee (Osobyi Vremennyi Komitet Nauki), which was abolished in 1924.

36. On the activities of these agencies, see S. P. Strekopytov, *Gosudarstvennoe Rukovodstvo Naukoi v SSSR, 1936–1958* (Moscow: RGGU, 1991); also F. F. Perche-

nok, "Akademiia Nauk na Velikom Perelome," in *Zven'ia* (Moscow: Ateneum, 1992), vol. 1, pp. 163–235.

37. *Organizatsiia Nauki v Pervye Gody Sovetskoi Vlasti (1917–1925). Sbornik Dokumentov* (Leningrad: Nauka, 1968), p. 8.

38. See Adams, "Science, Ideology, and Structure"; and V. V. Babkov, "N. K. Kol'tsov: Bor'ba za Avtonomiiu Nauki i Poiski Podderzhki Vlasti," *VIET*, 1989, no. 3, pp. 2–19.

39. The best brief account of the academy's internal structures and its evolution remains Alexander Vucinich, *The Soviet Academy of Sciences* (Stanford, Calif.: Stanford University Press, 1956). For an extended discussion of the academy's history, see Vucinich, *Empire of Knowledge*.

40. On the early period of this collaboration, see Kol'tsov, *Lenin i Stanovlenie Akademii Nauk*; Bastrakova, *Stanovlenie Sovetskoi Sistemy Organizatsii Nauki*; and Vucinich, *Empire of Knowledge*.

41. On the origin and early development of the system of "scientific-research institutes," see Bastrakova, *Stanovlenie Sovetskoi Sistemy Organizatsii Nauki*, pp. 35–41; and Loren R. Graham, "The Formation of Soviet Research Institutes: A Combination of Revolutionary Innovation and International Borrowing," *Social Studies of Science*, 1975, vol. 5 (August), pp. 303–329.

42. *Organizatsiia Sovetskoi Nauki v 1926–32 gg. Sbornik Dokumentov* (Leningrad: Nauka, 1974), p. 43.

43. *Kul'turnoe Stroitel'stvo SSSR*, p. 244.

44. A good illustration of this process has been provided by the government itself. In 1927 a commission of the Commissariat of Worker Inspection reviewed the structure and organization of research institutes under the VSNKh. The commission concluded that most of the institutes originated "spontaneously, around separate individuals, without the necessary control from the NTU." See Esakov, *Sovetskaia Nauka v Gody Pervoi Piatiletki*, pp. 83–85.

45. A. V. Leontovich, "Neskol'ko Slovo o 'Prakticheskoi Laboratorii po Zoopsikhologii' i o V. L. Durove kak Zoopsikhologe," *Trudy Prakticheskoi Laboratorii po Zoopsikhologii Vedeniia Glavnauki Narkomprosa*, 1928, no. 1, pp. 5–10, cit. on p. 7.

46. See V. L. Durov, *Dressirovka Zhitovnykh: Psikhologicheskie Nabludeniia nad Zhitovnymi, Dressirovannymi po Moemu Metodu, 40-letnii Opyt* (Moscow, 1924).

47. See, for example, the accounts of the institutional development of Soviet genetics in Adams, "Science, Ideology, and Structure"; and of Soviet physics in Josephson, *Physics and Politics in Revolutionary Russia*.

48. See, for example, the annual reports of scientific institutes subordinate to Narkompros in Gosudarstvennyi Arkhiv Rossiiskoi Federatsii (State Archive of the Russian Federation, hereafter GARF), f. 2307, op. 2, dd. 44, 172; op. 11, d. 7.

49. See *Nauchno-Organizatsionnaia Deiatel'nost' Akademika A. I. Ioffe* (Leningrad: Nauka, 1980); also Josephson, *Physics and Politics in Revolutionary Russia*.

50. *Perepiska I. P. Pavlova* (Moscow: Nauka, 1970), pp. 23–25.

51. For details, see Iu. A. Shilinis, "Mnenie I. P. Pavlova o Netseseoobraznosti Sozdaniia Spetsial'nogo Instituta dlia Izucheniia Reaktsii Organizma na Vneshniuiu Sredu," *Zhurnal Nevropatologii i Psikhiiatrii*, 1962, vol. 62, pp. 477–487.

52. See, for instance, a collection of documents published by the Archive of the

USSR Academy of Sciences, *Mezhdunarodnye Nauchnye Sviazi Akademii Nauk SSSR: 1917–1941* (Moscow: Nauka, 1992).

53. For a detailed analysis of Bolshevik educational policy, see Fitzpatrick, *The Commissariat of Enlightenment*; Sheila Fitzpatrick, *Education and Social Mobility in the Soviet Union, 1921–1934* (Cambridge: Cambridge University Press, 1979); and Sh. Kh. Chanbarisov, *Formirovanie Sovetskoi Universitetskoi Sistemy* (Moscow: Vysshaia Shkola, 1988).

54. For detailed documentary examples of purges in a university, see Merle Fainsod, *Smolensk under Soviet Rule* (New York: Vintage Books, 1958), pp. 343–363; also Fitzpatrick, “Professors and Soviet Power,” chapter 4 of *Education and Social Mobility in the Soviet Union*.

55. On the early history of the Institute of Red Professors, see Michael S. Fox, “Political Culture, Purges, and Proletarianization at the Institute of the Red Professors, 1921–1929,” *The Russian Review*, 1993, vol. 52 (January), pp. 20–42.

56. Michael David-Fox is presently writing a detailed account of the development of the Communist educational and research system in the 1920s based on extensive new material from the Communist Party archives. I am profoundly grateful to him for the opportunity to read his manuscript, *Revolution of the Mind: Higher Learning among the Bolsheviks, 1918–1929* (Ithaca, N.Y.: Cornell University Press, forthcoming). My treatment of the role of “Communist” science in the Soviet science system relies heavily on his analysis of the history of the Communist Academy and the Institute of Red Professors.

57. For an early analysis of the impact of the Communist Academy on the development of Soviet science, see David Joravsky, *Soviet Marxism and Natural Science, 1917–1932* (New York: Columbia University Press, 1961). For a lengthy discussion of the Communist Academy and its role, based on published sources, see Joel Shapiro, “A History of the Communist Academy, 1918–1936” (Ph.D. diss., Columbia University, 1976).

58. See David-Fox, *Revolution of the Mind*.

59. In *Revolution of the Mind*, David-Fox has analyzed in detail the Communist Academy’s “quest for hegemony” and its leadership’s numerous attempts to diminish the role of the Academy of Sciences and to subordinate it to the “guidance” of the Communist Academy.

60. “Ot Redaktsii,” *Pod Znamenem Marksizma* (hereafter *PZM*), 1922, no. 1–2, pp. 3–4, cit. on p. 3. Italics added.

61. V. I. Lenin, “O Znachenii Voinstvuiushchego Materializma,” *PZM*, 1922, no. 3, p. 29. Italics added.

62. “Ot Redaktsii,” p. 4. Italics added.

63. V. A. Vagner, *Vozniknovenie i Razvitie Psikhicheskikh Sposobnostei* (Leningrad: Nachatki Znaniia, 1927), no. 5, p. 29.

64. *Ibid.*, p. 28.

65. For a discussion of this term, see Robert Tucker, “Culture, Political Culture, and Soviet Studies,” in *Political Culture and Leadership in Soviet Russia* (Brighton: Wheatsheaf Books, 1987); also Fox, “Political Culture, Purges, and Proletarianization”; and David-Fox, *Revolution of the Mind*.

66. K. N. Kornilov, “Sovremennaia Psikhologiia i Marksizm,” parts 1, 2, *PZM*, 1923, no. 1, pp. 41–50; no. 4–5, pp. 86–114; cit. in part 1, p. 50.

67. Practically every issue of *Under the Banner of Marxism* carried such an article. See, for example, Kornilov, “Sovremennaia Psikhologiia i Marksizm”; and A. S. Sere-

brovskii, "Teoriia Nasledstvennosti Mendelia i Morgana i Marksisty," *PZM*, 1925, no. 3, pp. 98–117. Collections of articles on "Marxist," "materialist" trends were published in virtually all disciplines. See, for instance, *Darvinizm i Marksizm* (Khar'kov, 1923); *Teoriia Atmositel'nosti i Materializm* (Leningrad: GIZ, 1925); *Meditcina i Dialekticheskii Materializm* (Moscow: GIZ, 1926); and many others.

68. V. M. Borovskii, "Metafizika v Sravnitel'noi Psikhologii," *PZM*, 1927, no. 7–8, pp. 159–191, citations on pp. 174–175, 178, 183.

69. V. M. Borovskii, "O Bikheviorizme i Materializme," *PZM*, 1928, no. 7–8, pp. 207–216; *Psikhologiiia s Tochki Zreniia Materialista* (Moscow-Leningrad: GIZ, 1929). The title of the book is an obvious allusion to John B. Watson's famous book, *Psychology from the Standpoint of a Behaviorist* (Philadelphia, 1918).

70. There is only one reference to Plekhanov in *Psikhologiiia s Tochki Zreniia Materialista*.

71. See Kornilov, "Sovremennaia Psikhologiiia i Marksizm"; V. M. Bekhterev, *Psikhologiiia, Refleksologiiia i Marksizm* (Leningrad, 1925); and A. Luriiia, "Psikhoanaliz kak Sistema Monisticheskoi Psikhologii," in *Psikhologiiia i Marksizm* (Leningrad: GIZ, 1925), pp. 47–80.

72. For certain scientists, Marxism as a philosophical concept no doubt became a genuine source of inspiration, and their acquaintance with dialectical materialism seriously affected their research programs and scientific writings. See Joravsky, *Soviet Marxism and Natural Science*; and especially Graham, *Science and Philosophy in the Soviet Union*.

73. Adams has argued that Marxist ideology served as a negotiating language and mediator between the scientific community and the government. See "Science, Ideology, and Structure." In his history of Soviet conservation and ecology, Douglas R. Weiner has also noted attempts of Russian conservationists to use the party vocabulary for a "protective coloration" of their own agendas during the Great Break. See *Models of Nature* (Bloomington: Indiana University Press, 1988), pp. 134–148.

74. See G. Chelpanov, *Psikhologiiia i Marksizm* (Moscow, 1924).

75. For a description of the debate, see David Joravsky, *Russian Psychology: A Critical History* (Cambridge: Basil Blackwell, 1989), pp. 220–230.

76. "Rezoliutsiia TsK VKP(b) o Politike Partii v Oblasti Khudozhestvennoi Literatury. 18 iunია 1925," in *Kul'turnoe Stroitel'stvo v SSSR: 1917–1927* (Moscow: Nauka, 1989), pp. 229–234, cit. on p. 230.

77. K. N. Kornilov, "Ot Redaktsii," *Psikhologiiia*, ser. A, 1928, vol. 1, no. 1, pp. 3–4, cit. on p. 3. Italics added.

78. Vagner, *Vozniknovenie i Razvitie Psikhicheskikh Sposobnostei*, no. 5, p. 29.

79. V. M. Borovskii, "Retsenziiia," *Psikhologiiia*, ser. A, 1929, vol. 2, no. 1, pp. 155–157, cit. on p. 157. The review was of *Trudy Prakticheskoi Laboratorii po Zoopsikhologii Vedeniia Glavnauki Narkomprosa*, 1928, no. 1.

80. I. V. Stalin, "Rech' na VIII S"ezde VLKSM," in *Sobranie Sochinenii* (Moscow: Partizdat, 1947), vol. 11, p. 77. Emphasis is Stalin's.

CHAPTER 2

THE STALINIZATION OF RUSSIAN SCIENCE, 1929–1939

1. On the development of the system of centralized control and planning in the Soviet economy, see Peter Ruthland, *The Myth of the Plan: Lessons of Soviet Planning Experience* (La Salle, Ill.: Open Court, 1985).

2. See Robert Conquest, *The Great Terror* (New York: Oxford University Press, 1990).

3. On August 10, 1931, TsIK and the SNK issued a new joint decree, “On the Title of ‘Worker of Merit’ of Science and Technology.” This title was awarded “for especially valuable work in the field of science or technology, for inventions and discoveries especially important for socialist construction, for outstanding activity in practical scientific research or the popularization of science.” A number of named prizes were established for scientific work, such as the Pavlov Prize in animal physiology (1936), the Mendeleev Prize in chemistry (1936), the Timiriazev Prize in plant physiology (1939), and finally the Stalin Prize for general work in science and technology (1939). The special commissions created to award these prizes chose from among nominees approved by the Central Committee Secretariat and, in the case of the Stalin Prize, by the Politburo, which meant by Stalin himself.

4. Rossiiskii Tsentr Khraneniia i Izucheniia Dokumentov Noveishei Istorii (Russian Center for the Storage and Study of the Documents of Recent History, hereafter RTsKhIDNI), f. 17, op. 114, d. 253, l. 9.

5. See RTsKhIDNI, f. 17, op. 120, d. 114, ll. 1–38.

6. It was renamed the Scientific-Technical Sector of the VSNKh Planning Administration.

7. Lakhtin, *Organizatsiia Sovetskoi Nauki*, p. 49.

8. At first there were three commissariats—Heavy Industry, Light Industry, and Timber Industry. In 1934 the Commissariat of the Food Industry was created. For a detailed analysis of the reorganizations of the state apparatus in the Soviet Union, see Korzhikhina, *Sovetskoe Gosudarstvo*.

9. See Todes, “Pavlov and the Bolsheviks.”

10. See V. B. Barkovskii, “Nauchno-Tekhnicheskaiia Razvedka na Sluzhbe Sovetskogo Gosudarstva,” *VIET*, 1995, no. 2, pp. 76–87.

11. RTsKhIDNI, f. 17, op. 114, d. 307, ll. 34–35.

12. See, for example, Alexander I. Solzhenitsyn, *The Gulag Archipelago, 1918–1956: An Experiment in Literary Investigation*, 3 vols. (New York, 1973, 1975, 1978); G. Ozerov, *Tupolevskaia Sharaga* (Frankfurt: Possev-Verlag, 1971); and N. V. Timofeev-Resovskii, “Lager’ i ‘Sharashka,’” *Chelovek*, 1993, no. 2, pp. 148–162.

13. See E. N. Shoshkov, *Repressirovannoe Ostekhbiuro* (St. Petersburg: Memorial, 1995).

14. See A. A. Berzin, “Parovozy za Koliuchei Provolokoi,” *VIET*, 1991, no. 4, pp. 35–37.

15. I am grateful to Daniel Aleksandrov for calling my attention to this source.

16. Another example is N. Osinskii (real name Valerian Obolenskii), deputy commissar of agriculture from 1921 to 1923 and head of the Central Statistics Administration from 1926 to 1932 who became a member of the USSR Academy of Sciences in 1932 and of VASKhNIL in 1935.

17. *Pravda*, 5 July 1936, p. 1. For an English translation of the resolution, see Joseph Wortis, *Soviet Psychiatry* (Baltimore: Williams & Wilkins Co., 1950), pp. 242–245. On the consequences of the 1936 resolution, see A. V. Petrovskii, “Zapret na Kompleksnoe Issledovanie Detstva,” in *Repressirovannaia Nauka*, pp. 126–135.

Pedologiia, a complex discipline studying childhood and including elements of psychology, physiology, hygiene, psychiatry, and pedagogy, developed rapidly in the 1920s and early 1930s in Russia.

18. *Kul’turnoe Stroitel’stvo SSSR*, p. 244.

19. See, for example, the SNK decree of October 1931 “On Rationalization of the Network of Scientific Institutions.”

20. In 1930 VASKhNIL was subordinated to the newly created Narkomzem of the USSR. The same year, the SNK decided to establish the Academy of Chemical Sciences, but this decision was not fulfilled. Instead, a year later the Chemical Association was created within the Academy of Sciences. See Esakov, *Sovetskaia Nauka v Gody Pervoi Piatiletki*, pp. 103–104. In 1934 the SNK also established the Academy of Architecture, which included six scientific-research institutes and a number of other institutions.

21. See A. V. Kol'tsov, *Rol' Akademii Nauk v Organizatsii Regional'nykh Nauchnykh Tsentrov SSSR: 1917–1961 gg.* (Leningrad: Nauka, 1988), pp. 47–175.

22. See Esakov, *Sovetskaia Nauka v Gody Pervoi Piatiletki*, pp. 219–256.

23. In 1944 VIEM was reorganized into the USSR Academy of Medical Sciences (see chapter 4). For a detailed account of the institutional structure of VIEM, see B. Sh. Nuvakhov, I. E. Karneeva, and Iu. A. Shilinis, *Istoriia, Khronologiia i Dinamika Struktury Rossiiskoi Akademii Meditsinskikh Nauk* (Moscow, 1995), pp. 50–92. For a historical account of VIEM, see *Pervyi v Rossii Issledovatel'skii Tsent v Oblasti Biologii i Meditsiny: K 100-letiiu Instituta Eksperimental'noi Meditsiny, 1890–1990* (Leningrad: Nauka, 1990).

24. See Babkov, “N. K. Kol'tsov.”

25. “K Voprosu o Perevode Akademii Nauk. Beseda s Akademikom A. Bakhom,” *Front Nauki i Tekhniki*, 1934, no. 5–6, pp. 142–143.

26. RTsKhIDNI, f. 17, op. 3, d. 974, l. 84.

27. *Kul'turnoe Stroitel'stvo SSSR*, p. 244.

28. Statistics on the growth of scientific personnel from 1929 to 1931 found in the party archives by Esakov provide a good illustration of the bureaucratization of science. During this period, the number of research workers in the institutions under the VSNKh increased sixfold (from 1,457 to 8,757) and the number of administrative workers eightfold (from 362 to 2,903). So, while in 1929 there was one administrator for every four researchers, in 1931 there was one administrator for every three. See Esakov, *Sovetskaia Nauka v Gody Pervoi Piatiletki*, pp. 116–117.

29. The recently published diaries of academician Boris Polynov, who was appointed director of the Soil Institute of the Academy of Sciences in 1937, provide a revealing example of this situation. See S. P. Lialin and F. F. Perchenok, “Zapiski B. B. Polynova o 1937,” in *In Memoriam* (Moscow-St. Petersburg: Atheneum, 1995), pp. 253–271.

30. See *Dokumenty po Istorii Akademii Nauk SSSR, 1926–1934 gg.* (Leningrad: Nauka, 1988), pp. 259–261.

31. During the 1920s, Bolsheviks frequently used “bourgeois” technical specialists to revive dead factories. These specialists, as a rule prominent engineers, were subordinate in every factory to the so-called red directors—party members who controlled the engineers' activity. This technique was first tested during the Civil War, when professional army officers, who actually commanded military operations, were controlled by party commissars.

32. On the most important show trials of the late 1920s and early 1930s, see Bailes, *Technology and Society under Lenin and Stalin*, pp. 69–140.

33. For an account of VARNITSO activities in the late 1920s and early 1930s, see Esakov, *Sovetskaia Nauka v Gody Pervoi Piatiletki*, pp. 65–70; and especially I. A. Tugarinov, “VARNITSO i AN SSSR, 1927–1937,” *VIET*, 1989, no. 4, pp. 46–55.

See also a collection of documents on VARNITSO activities, “Dokumenty ob Organizatsii i Provedenii Repressivnoi Politiki v Otnoshenii Nauki i Uchenykh v Nachale 1930-kh gg.,” in *Repressirovannaia Nauka*, pp. 475–495.

34. GARF, f. 2307, op. 16, d. 47.

35. On the Bolshevization of the academy, see Loren R. Graham, *The Soviet Academy of Sciences and the Communist Party, 1927–1932* (Princeton, N.J.: Princeton University Press, 1967); Esakov, *Sovetskaia Nauka v Gody Pervoi Piatiletki*, pp. 168–218; and Perchenok, “Akademii Nauk na Velikom Perelome.”

36. G. D. Komkov, B. V. Levshin, and L. K. Semenov, *Akademii Nauk SSSR: Kratkii Istoricheskii Oчерk* (Moscow: Nauka, 1977), vol. 2, pp. 67–68.

37. The Ukrainian Academy of Sciences, established in 1918, was Bolshevized at exactly the same time and by the same means. See L. V. Matveeva and E. G. Tsygankova, “Vseukrainskaia Akademiia Nauk. God 1929,” in *In Memoriam* (Moscow-St. Petersburg: Atheneum, 1995), pp. 112–140.

38. On the role of *vydvizhentsy*, see Bailes, *Technology and Society under Lenin and Stalin*, pp. 159–264; also Fitzpatrick, *Education and Social Mobility in the Soviet Union*.

39. *Organizatsiia Sovetskoi Nauki v 1926–32 gg.*, pp. 48–49.

40. *Dokumenty po Istorii Akademii Nauk SSSR, 1926–1934 gg.*, pp. 113–115.

41. See Chanbarisov, *Formirovanie Sovetskoi Universitetskoi Sistemy*, p. 179.

42. Western scholars have often portrayed young, “proletarian” *vydvizhentsy* as an instrument of the party to replace old, “bourgeois” professors. Although such replacements did sometimes occur, *vydvizhentsy* played a much more important role in filling new positions created by the tremendous proliferation of scientific institutions during the First Five-Year Plan. There simply were not enough scientific personnel to staff the numerous new institutes and laboratories created to mobilize science for “socialist construction,” particularly under the auspices of industrial and agricultural narkomats and in regions remote from Moscow and Leningrad.

43. Tsentral’nyi Gosudarstvennyi Arkhiv Nauchno-Tekhnicheskoi Dokumentatsii (Central State Archive of Scientific and Technical Documentation, hereafter TsGANTD), f. 318, op. 1, d. 17, l. 37. I would like to thank Tat’iana Lissan for calling my attention to this document.

44. RTsKhIDNI, f. 17, op. 3, d. 970, l. 22.

45. RTsKhIDNI, f. 17, op. 3, d. 996.

46. Rossiiskii Gosudarstvennyi Arkhiv Ekonomiki (Russian State Archive of Economics, hereafter RGAE), f. 7486, op. 1, d. 2138, l. 54.

47. Pavlov, for example, was opposed to the planning of science; see *Perepiska I. P. Pavlova*, p. 33.

48. *KPSS v Rezoliutsiakh i Resheniiakh* (Moscow: Politizdat, 1971), vol. 5, p. 23.

49. *Kul’turnaia Zhizn’ v SSSR, 1928–1941: Khronika* (Moscow: Nauka, 1976), p. 292.

50. *Ukazania i Formy k Sostavleniiu Plana na 1936 God* (Moscow: Gosplan, 1935), pp. 412–413.

51. See “V Sovnarkome SSSR,” *Pravda*, 11 May 1938, p. 2. For a brief description of the reorganization of the academy, see Vucinich, *Empire of Knowledge*, pp. 189–198.

52. See, for instance, Politburo decisions on the invitation of foreign scientists and

on foreign visits by Soviet scientists in 1932 in RTsKhIDNI, f. 17, op. 3, dd. 889, 892, 893, 897.

53. See, for example, correspondence between scientists, the TsIK Scientific Committee, and the Departure Commission on Soviet participation in the Sixth International Genetics Congress in Ithaca, N.Y. (1932), in GARF, f. 7668, op. 1, d. 317, ll. 1–44. For Politburo decisions on the Departure Commission in the mid-1930s, see *Stalinskoe Politbiuro v 30-e Gody* (Moscow: AIRO—XX, 1995), pp. 70–72.

54. See, for instance, Arkhiv Moskovskogo Gosudarstvennogo Universiteta (Archive of Moscow State University, hereafter AMGU), f. 43, op. 1, d. 121, l. 46.

55. Elections of foreign members to the academy resumed in 1942. See chapter 4.

56. The pretext for organizing the campaign was the accusation that the prominent mathematician Nikolai Luzin had published original works in foreign periodicals. On the “Luzin affair,” see A. P. Iushkevich, “‘Delo’ Akademika N. N. Luzina,” in *Repressirovannaia Nauka*, pp. 377–394; and Alex E. Levin, “Anatomy of a Public Campaign: ‘Academician Luzin’s Case’ in Soviet Political History,” *Slavic Review*, 1990, vol. 49, no. 1, pp. 90–108.

57. On the early history of Glavlit, see Michael S. Fox, “Glavlit, Censorship, and the Problem of Party Policy in Cultural Affairs, 1922–1928,” *Soviet Studies*, 1992, vol. 44, no. 6, pp. 1045–1068. This work, based on the thorough analysis of numerous archival documents, illuminates Glavlit’s role in conducting party policies toward art and literature in the 1920s. Unfortunately, there is no equally comprehensive study of its role in science policy. For a brief account of the work of regional sections of Glavlit, see T. S. Prot’ko, “Glavlit Belorussii kak Organ Politicheskoi Tsenzury: 20–30e gg.,” in M. Konashev, ed., *Svoboda Nauchnoi Informatsii i Okhrana Gosudarstvennoi Tainy* (Leningrad, 1991), pp. 40–43.

58. RTsKhIDNI, f. 17, op. 120, d. 228, ll. 130–132. Despite the new name, the public continued to use the old shortened form, Glavlit.

59. See A. B. Kozhevnikov and A. G. Petrosova, “Nauchnaia Periodika v SSSR (1917–1949): Kolichestvennyi Analiz,” *VIET*, 1991, no. 4, pp. 44–50.

60. See, for example, the correspondence between scientists, the SNK, and the party agencies on the organization of the Seventh International Genetics Congress in Moscow in RTsKhIDNI, f. 17, op. 3, d. 985; and in GARF, f. 5446, op. 20, d. 2487.

61. Most Western sociologists use the term “politicization” in a somewhat different sense, meaning scientists’ engagement in political actions and their involvement in political processes. See, for instance, Stuart S. Blume, *Toward a Political Sociology of Science* (New York: The Free Press, 1974), especially chapter 5, “Unionization and Politicization,” pp. 131–176.

In her discussion of the “politicization of science,” Susan G. Solomon has suggested that “science should be considered subject to political pressure (that is, ‘politicized’) only when scientists are forced to accept as true propositions imposed by a political authority and/or when the standing of a scientist in the scientific community is affected by his political beliefs or affiliations.” (“Reflections on Western Studies of Soviet Science,” p. 19.) I use the term “politicization” in a different way. For me, science is “politicized” when scientists adopt the rhetoric and etiquette of a political authority and when their standing in the scientific community (and the society as a whole) is affected by their use of such rhetoric and etiquette. As I will argue further, scientists’ usage of “politically correct” rhetoric and rituals was one of the major instruments of the scientific community’s adaptation to the system of control established by the political

authorities in Soviet Russia. I use such terms as “political correctness” and “politically correct rhetoric” in their *literal* meaning: following the direction of political authority, the line of the party.

62. On the general directions of the campaign, see Joravsky, *Soviet Marxism and Natural Science*.

63. V. M. Teplov, *Sovetskaia Psikhologicheskaia Nauka za 30 Let* (Moscow, 1947), p. 19.

64. See, for example, the collections *Protiv Mekhanisticheskogo Materializma i Men'shevstvuiushchego Idealizma v Biologii* (Moscow-Leningrad: Medgiz, 1931); and *Na Bor'bu za Materialisticheskuiu Dialektiku v Matematike* (Moscow: GIZ, 1931).

65. V. Maliarov, “Vul'garnyi Materializm i Idealizm pod Vyveskoi Dialekticheskogo Materializma,” *Psikhologiya*, ser. A, 1931, vol. 4, no. 1, pp. 150–159, cit. on p. 151.

66. For example, “[Vladimir] Borovskii's statements on intelligence and consciousness run counter to those of the Marxist classics.” P. Razmyslov, “Protiv Mekhanitsizma v Psikhologii,” *Kniga i Proletarskaia Revoliutsiia*, 1933, no. 10, pp. 83–90, cit. on p. 84. See also A. Talankin, “Protiv Men'shevstvuiushchego Idealizma v Psikhologii,” *Psikhologiya*, ser. A, 1932, vol. 5, no. 1–2, pp. 38–62.

67. P. Razmyslov, “O ‘Kul’turno-Istoricheskoi Teorii Psikhologii’ Vygotskogo i Lurii,” *Kniga i Proletarskaia Revoliutsiia*, 1934, no. 4, pp. 78–86, cit. on p. 86.

68. See *Psikhonevrologicheskie Nauki v SSSR* (Moscow-Leningrad, 1930), especially A. B. Zalkind, “Psikhonevrologicheskie Nauki i Sotsialisticheskoe Stroitel'stvo,” pp. 5–13; I. P. Shpilrein, “Psikhotekhnika v Rekonstruktivnyi Period,” pp. 14–18; and K. N. Kornilov, “Marksistskaia Psikhologiya i Sotsialisticheskoe Stroitel'stvo,” pp. 12–14.

69. See, for example, V. Kolbanovskii, “Psikhologiiu na Sluzhbu Promyshlennosti,” *Psikhologiya*, ser. A, 1932, vol. 5, no. 3, pp. 3–7.

70. See, for example, V. M. Borovskii, “Zoopsikhologiya i Fashizm,” *Psikhologiya*, ser. A, 1932, vol. 5, no. 3, pp. 78–85; also A. R. Lurii, “Krizis Burzhuznoi Psikhologii,” *Psikhologiya*, ser. A, 1932, vol. 4, no. 1–2, pp. 63–88.

71. See note 56.

72. V. M. Borovskii, “Otvét na Kritiku V. Maliarova,” *Psikhologiya*, ser. A, 1932, vol. 5, no. 4, pp. 123–128, cit. on p. 127.

73. For a detailed discussion of the specific atmosphere in the Institute of Red Professors, see Fox, “Political Culture, Purges, and Proletarianization,” pp. 20–42.

74. Borovskii, “Otvét na Kritiku V. Maliarova,” p. 123.

75. *Ibid.*, p. 127.

76. The main basis for the purges and arrests of scientists in the late 1920s and the 1930s was their “class origin” and “ideological” or “political” affiliations, *not* the nature of their research. For instance, in the mid-1930s a number of scientists were arrested on the basis of their alleged links to Bukharin.

77. B. P. Tokin and M. P. Aizupet, “K Pervomu Izdaniiu,” in *Marks K., Engels F., Lenin V. o Biologii* (Moscow: Partizdat, 1936), pp. 5–12, cit. on p. 11.

78. V. I. Lenin, “Filosofskie Tetradi,” in *Polnoe Sobranie Sochinenii*, 5th ed. (Moscow: Politizdat, 1963), vol. 29, p. 314.

79. See, for instance, P. Razmyslov, “Ob Oshibkakh t. Borovskogo,” *Kniga i Proletarskaia Revoliutsiia*, 1934, no. 3, pp. 105–107, cit. on p. 107.

80. V. M. Borovskii, "Ob Oshibkakh Vskrytykh t. Razmyslovym," *Kniga i Proletarskaia Revoliutsiia*, 1934, no. 3, pp. 102–105, cit. on p. 102.

81. A. R. Lurii, "Puti Sovetskoi Psikhologii za 15 Let," *Sovetskaia Psikhonevrologiia*, 1933, no. 1, pp. 25–35, cit. on p. 25.

82. *Pamiati V. I. Lenina* (Moscow-Leningrad: Izd. AN SSSR, 1934).

CHAPTER 3

STALINIST SCIENCE IN ACTION: THE CASE OF GENETICS

1. For instance, I did not find the files of the Central Committee Department of Science and Scientific and Technical Inventions and Discoveries for the period from 1935 to 1939 in RTsKhIDNI. I was able to find only separate documents prepared by that department scattered among the papers of the Central Committee Secretariat.

2. The new Statutes of the Communist Party adopted at the Eighteenth Party Congress in 1939 stated: "The Central Committee of the Communist Party organizes: for political work—the Political Bureau; for organizational work—the Organizational Bureau; for current executive work and administration—the Secretariat; for control of Party decisions—the Commission for Party Control." *VKP(b) v Rezoliutsiakh i Resheniakh S"ezdov, Konferentsii i Plenumov TsK*, part 2, 6th ed. (Moscow: Politizdat, 1941), p. 759.

3. For a list of members of the Central Committee and its Secretariat, Orgburo, and Politburo in 1926, see "Sostav Tsentral'nykh Organov VKP(b)," in *VKP(b) v Rezoliutsiakh i Resheniakh S"ezdov, Konferentsii i Plenumov TsK*, 5th ed. (Moscow: Partizdat, 1936), vol. 2, pp. 80–82, 92; for 1934, see "Sostav Rukovodiashchikh Organov Partii," in *ibid.*, pp. 604–607; for 1939, see "Sostav Rukovodiashchikh Organov Partii," in *VKP(b) v Rezoliutsiakh i Resheniakh S"ezdov, Konferentsii i Plenumov TsK*, part 2, 6th ed., pp. 766–768.

Despite the differences in the membership of the Orgburo and the Secretariat, in the late 1930s these two bodies covered largely the same areas of responsibility. Their materials in the party archive form a single collection entitled "Protocols of the Meetings of the Orgburo and the Secretariat of the Central Committee of the Communist Party" ("Protokoly Zasedanii Orgbiuro i Sekretariata Tsentral'nogo Komiteta VKP(b)," RTsKhIDNI, f. 17, op. 115–116). Perhaps depending on who participated in actual discussions and decisions, protocols were issued under the name of either the Secretariat or the Orgburo. In 1939, for instance, protocol no. 8 (June 1–July 2) was issued under the Secretariat, protocol no. 9 (August 20) under the Orgburo, protocols no. 10 (July 3–August 1) and no. 11 (August 2–19) under the Secretariat, and protocol no. 12 (October 15) under the Orgburo. There are only slight differences between the agendas of the Orgburo's meetings and those of the Secretariat; from the available materials, it seems that the Orgburo discussed personnel and appointments, for example, more often than the Secretariat.

4. In 1939 the Politburo included Andrei Andreev, Lazar Kaganovich (commissar of transport and the fuel industry), Mikhail Kalinin (head of the Supreme Soviet), Nikita Khrushchev (secretary of the Ukrainian Communist Party), Anastas Mikoian (deputy head of the SNK and commissar of foreign trade), Viacheslav Molotov (head of the SNK and commissar of foreign affairs), Klim Voroshilov (commissar of defense), and Andrei Zhdanov. Lavrentii Beriia (head of the secret police) and Nikolai Shvernik (head of the Soviet trade unions) were candidate members of the Politburo.

VKP(b) v *Rezoliutsiakh i Resheniakh S*’ezdov, *Konferentsii i Plenumov TsK*, part 2, 6th ed., p. 768.

5. A recently published volume of Politburo documents, *Stalinskoe Politbiuro v 30-e Gody*, demonstrates the range of Politburo decisions.

6. A bibliography of the Lysenko controversy would include hundreds of items ranging from solid monographs to short notes in periodicals. For the most voluminous and detailed studies, see Zhores Medvedev, *The Rise and Fall of T. D. Lysenko* (New York: Columbia University Press, 1969), and the recently published, more detailed Russian version, *Vzlet i Padenie Lysenko: Istoriia Biologicheskoi Diskussii v SSSR, 1929–1966* (Moscow: Kniga, 1993); Joravsky, *The Lysenko Affair*; Graham, *Science and Philosophy in the Soviet Union*; Dominique Lecourt, *Proletarian Science? The Case of Lysenko* (London: NLB, 1977); Adams, “Biology after Stalin”; Mark B. Adams, “Lysenko, Trofim Denisovich,” in Frederic L. Holmes, ed., *Dictionary of Scientific Biography*, vol. 18, supp. 2 (New York: Charles Scribner’s Sons, 1990), pp. 574–578; and V. A. Soyfer, *Vlast’ i Nauka. Istoriia Razgroma Genetiki v SSSR* (Ann Arbor, Mich.: Hermitage, 1989). The recently published English edition of the latter book—*T. D. Lysenko and the Tragedy of Soviet Science* (New Brunswick, N.J.: Rutgers University Press, 1994)—is an abridged translation of the 1989 edition, so I will discuss Soyfer’s views by reference to the Russian version.

7. For a detailed account of the institutional history of Soviet genetics, see Mark B. Adams, “Eugenics in Russia,” in Mark B. Adams, ed., *The Wellborn Science: Eugenics in Germany, France, Brazil, and Russia* (New York: Oxford University Press, 1990), pp. 153–216.

8. It was later renamed the Bureau of Eugenics and Genetics, then the Laboratory of Genetics. For a short biography of Filipchenko, see Mark B. Adams, “Filipchenko, Iurii Aleksandrovich,” in Holmes, *Dictionary of Scientific Biography*, vol. 17, supp. 2, pp. 297–303.

9. Earlier, in 1918, he obtained support from Narkomzem for the institute’s Laboratory of Genetics, headed by Kol’tsov’s most talented student, Aleksandr Serebrovskii.

10. See *Akademiia Nauk SSSR. Personal’nyi Sostav, bk. 2, 1917–1974* (Moscow: Nauka, 1974), pp. 366–383.

11. The use of appropriate rhetoric for the legitimization and justification of genetics research has been discussed by Adams in his excellent essay “Science, Ideology, and Structure.”

12. See, for instance, Serebrovskii, “Teoriia Nasledstvennosti Mendelia i Morgana i Marksisty.”

13. See Abba E. Gaissinovitch, “The Origin of Soviet Genetics and the Struggle against Lamarckism, 1922–1929,” trans. Mark B. Adams, *Journal of the History of Biology*, 1980, vol. 13, no. 1, pp. 1–51.

14. See N. K. Kol’tsov, “Uluchshenie Chelovecheskoi Porody,” *Russkii Evgenicheskii Zhurnal*, 1922, vol. 1, no. 1, pp. 1–27; A. S. Serebrovskii, “Antropogenetika i Evgenika v Sotsialisticheskom Obschestve,” *Trudy Kabineta Nasledstvennosti i Konstitutsii Cheloveka pri Mediko-Biologicheskome Institute*, 1929, no. 1, pp. 1–19; and many other publications by geneticists in the 1920s and early 1930s.

15. For example, Sergei S. Chetverikov, a founder of Soviet population genetics and head of the genetics department in Kol’tsov’s institute, was arrested and exiled from

Moscow in 1929. On his life and work, see the articles by Mark B. Adams, “The Founding of Population Genetics: Contributions of the Chetverikov School, 1924–1934,” *Journal of the History of Biology*, 1968, vol. 1, no. 1, pp. 23–39; “Sergei Chetverikov, the Kol'tsov Institute, and the Evolutionary Synthesis,” in Ernst Mayr and William B. Provine, eds., *The Evolutionary Synthesis: Perspectives on the Unification of Biology* (Cambridge: Harvard University Press, 1980), pp. 242–278; “Chetverikov, Sergei Sergeevich,” in Holmes, *Dictionary of Scientific Biography*, vol. 17, supp. 2, pp. 155–165; also N. M. Artemov and T. E. Kalinina, *Sergei Sergeevich Chetverikov* (Moscow: Nauka, 1994).

16. For an account of the institute's activities and its director, see Adams, “Eugenics in Russia.”

17. On Serebrovskii's, life and work, see Mark B. Adams, “Serebrovskii, Aleksandr Sergeevich,” in Holmes, *Dictionary of Scientific Biography*, vol. 18, supp. 2, pp. 803–811; and N. N. Vorontsov, ed., *Aleksandr Sergeevich Serebrovskii* (Moscow: Nauka, 1993).

18. See *Materialy k Vsesoiuznoi Konferentsii po Planirovaniu Genetiko-Seleksionnykh Issledovaniu* (Leningrad: VASKhNIL, 1932).

19. See *Akademiia Nauk SSSR. Personal'nyi Sostav, bk. 2, 1917–1974*, pp. 406–408. This edition bears a clear sign of censorship—it does not mention that Hermann Muller was elected a corresponding member of the academy in February 1933.

20. RTsKhIDNI, f. 17, op. 3, d. 970, l. 9.

21. See Joravsky, *The Lysenko Affair*, pp. 54–62.

22. Lysenko graduated from an agricultural college and in the early 1920s worked as an agronomist.

23. *Biulleten' Iarovizatsii*, renamed *Iarovizatsiia* in 1936 and *Agrobiologiia* in 1946. Despite the Academy of Sciences resolution of 1935 to establish a Soviet journal of genetics, that publication never appeared.

24. See RGAE, f. 8390, op. 1, dd. 757–767, 789. It has traditionally been assumed that the Lysenkoists initiated, organized, and held the discussion of 1936 in order to discredit genetics and geneticists. This, however, is dubious. Lysenko did not need any public discussion of his scientific views: the support of the agricultural bosses had already enabled him to put his ideas into practice, to seize scientific institutions, and to promote his allies to various high-level posts within the agricultural hierarchy.

25. Zavadovskii, a pupil of Kol'tsov, at that time worked mostly on embryology and “developmental mechanics.” See his memoirs, *Stranitsy Zhizni* (Moscow: MGU, 1991).

26. See *Sbornik Rabot po Diskussionym Probleмам Genetiki i Seleksii* (Moscow: VASKhNIL, 1936).

27. For a detailed account of the relation between genetics and eugenics in Russia, see Adams, “Eugenics in Russia.”

28. Compare, for example, N. P. Dubinin's and I. I. Prezent's speeches in *Spornye Voprosy Genetiki i Seleksii* (Moscow: Sel'khozgiz, 1937).

29. See, for instance, Serebrovskii's “confession” in *Biulleten' IV Sessii VASKhNIL*, no. 8, 30 December 1936, p. 21.

30. *Ibid.*, pp. 26–30.

31. RGAE, f. 8390, op. 1, d. 781, l. 1.

32. See *Spornye Voprosy Genetiki i Seleksii*.

33. RTsKhIDNI, f. 17, op. 3, d. 985, l. 5. By this time, however, the Permanent

International Organizing Committee of Genetics Congresses had decided to hold the congress in Britain in 1939.

34. See the list of arrested geneticists in Joravsky, *The Lysenko Affair*, app. A, pp. 317–328.

35. The reader might wonder whether these events reflected the party's turn against genetics. The argument that the arrest of geneticists signified a negative attitude of the party apparatus toward genetics as a discipline has often been made in historical studies of the Lysenko controversy. Yet an equal or greater number of physicists and astronomers, for example, were also arrested during the Great Terror, and the party had no animus toward their disciplines (on the arrests of physicists, see G. Gorelik, "Neuspevshie Stat' Akademikami," in *Repressirovannaia Nauka*, pp. 335–351; and Josephson, *Physics and Politics in Revolutionary Russia*, pp. 276–317; on arrests of astronomers, see R. A. McCutcheon, "The 1936–37 Purge of Soviet Astronomers," *Slavic Review*, 1991, vol. 50, no. 1, pp. 100–117; and N. I. Nevskaia, "Zabytye Stranitsy Istorii Pulkovskoi Observatorii," in *Repressirovannaia Nauka*, vol. 2 [St. Petersburg: Nauka, 1994], pp. 140–145). Furthermore, as Joravsky has demonstrated, supporters of both agrobiolgy and Mendelian genetics were arrested at this time (see the list of arrested geneticists and Lysenkoists in *The Lysenko Affair*, app. A, pp. 317–328).

36. For a general list of the arrested members of the Academy of Sciences, see F. F. Perchenok, "Spisok Chlenov AN SSSR, Podvergavshikhsia Repressiiam," in *Tragicheskie Sud'by: Repressirovannye Uchenye Akademii Nauk SSSR* (Moscow: Nauka, 1995), pp. 236–252.

37. "V Sovnarkome SSSR," *Pravda*, 11 May 1938, p. 2.

38. In 1935 Lysenko began his career as a state official as well, becoming a member of the Ukrainian Central Executive Committee; in 1936 he became a member of the All-Union TsIK and was a delegate to the Eighth Congress of Soviets, which adopted a new constitution; in 1938 he became a member of the USSR Supreme Soviet. He was a deputy head of the Soviet of the Union—the highest legislative agency of the USSR.

39. Some historians have suggested that the government's dissatisfaction with the plan in genetics was directly inspired by Lysenko. See Soyfer, *Vlast' i Nauka*, pp. 299–302.

40. Although Lysenko was not yet a member of the academy, he nevertheless participated in the meeting.

41. See "Lzhe-Uchenym Ne Mesto v Akademii Nauk," *Pravda*, 11 January 1939, p. 2. The article was signed by A. Bakh, B. Keller, Kh. Koshtoiants, A. Shcherbakov, R. Dozortseva, E. Polikarpova, N. Nuzhdin, S. Kraevoi, and K. Kostikov. It also attacked another candidate for academy membership, Lev Berg, an eminent ichthyologist and evolutionist. Predictably, Berg was not "elected."

42. Their "election" was a result of the *nomenklatura* system—the list of candidates for the election was first approved by the Central Committee Secretariat.

43. Before 1938, the institute was named the Institute of Experimental Biology and was subordinate to Narkomzdrav. In October 1938, the institute was transferred to the authority of the Academy of Sciences and renamed the Institute of Cytology, Histology, and Embryology. See Adams, "Science, Ideology, and Structure"; and Babkov, "N. K. Kol'tsov."

44. See Arkhiv Rossiiskoi Akademii Nauk (Archive of the Russian Academy of Sciences, hereafter ARAN), f. 2, op. 1a, dd. 68, 160a.

45. The struggle was reflected in the press. For example, the main newspaper of Narkomzem, *Socialist Agriculture* (Sotsialisticheskoe Zemledelie), carried two articles on February 1, 1939, devoted to genetics education—one written by Vavilov, the other by Lysenko.

46. ARAN, f. 2, op. 1-1939, d. 172, l. 90. Italics added.

47. ARAN, f. 1595, op. 1, d. 411, l. 2.

48. We do not know about those parts of the apparatus that dealt with military, security, and secret-police matters; of the specialized departments we know about, only the Agriculture Department remained intact following the Eighteenth Party Congress. It was abolished in 1946 and then resurrected as a major department in 1948, under Malenkov (see chapter 6).

49. I. V. Stalin, “Otchetnyi Doklad XVIII S”ezdu.” *Vestnik Akademii Nauk SSSR* (hereafter VAN), 1939, no. 4–5, pp. 3–40, cit. on p. 30. This sentiment became a “nomadic quotation” used by Soviet scientists in all disciplines.

50. See VAN, 1939, no. 4–5, p. 82.

51. ARAN, f. 2, op. 1-1939, d. 172, ll. 27–30.

52. ARAN, f. 1595, op. 1, d. 411, l. 26.

53. Nikolai Vavilov, “Speech from the 1939 Conference on Genetics and Selection,” *Science and Society*, 1940, no. 4, pp. 184–196, cit. on p. 187.

54. See, for example, Serebrovskii’s letter to the Central Committee in ARAN, f. 1595, op. 1, d. 348, ll. 5–6.

55. The letter is found in RTsKhIDNI, f. 17, op. 119, d. 1102, ll. 68–77.

56. Soyfer obviously did not see this letter, since he wrote about it that “all external appearances of the passions so inherent to Lysenkoists were refuted. The letter was written in quiet tones.” *Vlast’ i Nauka*, p. 315.

57. The authors here referred to the Central Committee resolution “On Teaching Programs and Regimes in the Elementary and Middle School,” issued on August 25, 1932.

58. See *VKP(b) v Rezolutsiakh i Resheniakh S”ezdov, Konferentsii i Plenumov TsK*, part 2, 6th ed., p. 768.

59. RTsKhIDNI, f. 17, op. 119, d. 1102, l. 67.

60. A review by Kolbanovskii (“Obzor Soveshchaniia po Genetike i Seleksii,” *PZM*, 1939, no. 11, pp. 90–139), together with several reports by the participants published in the journal, presents a clear picture of the discussion. Unfortunately, I was unable to find the complete stenographic records of the discussion. The published reports have obviously been tendentiously edited.

61. ARAN, f. 1595, op. 1, d. 348, ll. 9–10. Italics added.

62. Trofim Lysenko, “Speech from the 1939 Conference on Genetics and Selection,” *Science and Society*, 1940, no. 4, pp. 196–218, cit. on p. 217.

63. Quoted in Kolbanovskii, “Obzor Soveshchaniia po Genetike i Seleksii,” p. 100.

64. Cited in E. B. Muzrukova and L. V. Chesnova, “Sovetskaia Biologiia v 30–40-e Gody: Krizis v Usloviakh Totalitarnoi Sistemy,” in *Repressirovannaia Nauka*, vol. 2, pp. 45–56, on p. 55.

65. Vavilov did refer to the practical achievements of American genetics, but he failed to present similar data for his own work. See Vavilov, “Speech from the 1939 Conference on Genetics and Selection.” Only much later, in the 1950s, did one of the geneticists prepare a detailed analysis of Lysenko’s “achievements” in agriculture. See

V. P. Efroimson, "O Lysenko i Lysenkovshchine," parts 1–4, *VIET*, 1989, no. 1, pp. 79–93; no. 2, pp. 132–148; no. 3, pp. 96–110; no. 4, pp. 100–111.

66. See Kolbanovskii, "Obzor Soveshchaniia po Genetike i Seleksii," p. 124.

67. For example, almost half of the infamous collection *K. Marx, F. Engels, V. Lenin on Biology* was devoted to evolutionary problems. See Tokin and Aizupet, eds., *Marks K., Engels F., Lenin V. o Biologii*. This explains why it was the philosopher Prezent who first organized a department of "the dialectics of nature and evolutionary teaching" at Leningrad University and compiled the first collection of readings in evolutionary theory. See I. Prezent, ed., *Khrestomatiiia po Evoliutsionnomu Ucheniiu* (Leningrad: Leningrad University, 1934).

68. N. Bukharin presented a long paper on Darwinism and Marxism in 1932 at a special meeting of the Academy of Sciences devoted to the fiftieth anniversary of Darwin's death. See "Darvinizm i Marksizm," *Sotsialisticheskaia Rekonstruktsiia i Nauka*, 1932, no. 5, pp. 10–33. In 1937 Iakovlev, the head of the Central Committee's Agriculture Department published an article on Darwinism in which he argued that genetics was anti-Darwinist. See "O Darvinizme i Nekotorykh Anti-Darvinistakh," *Pravda*, 12 April 1937, p. 1.

69. For example, graduate students at VASKhNIL studied Darwinism in courses on the history of philosophy and on dialectical materialism. See RGAE, f. 8390, op. 1, d. 770, ll. 63–64.

70. See Gaissinovitch, "Origin of Soviet Genetics."

71. The institutionalization of Darwinism began in the mid-1930s. The struggle for control over various "Darwinist" institutions, such as chairs of evolution in educational institutions, apparently also played a significant role in discussions of Darwinism in the Soviet Union.

72. The struggle for control over Darwinism was transparent at numerous public gatherings commemorating the scientist. Every conceivable jubilee was used to organize public "celebrations"—fifty years from Darwin's death (1932), fifty-five years from Darwin's death (1937), eighty years from the publication of *The Origin of Species* (1939), and so forth. All the interest groups—Lysenkoists, philosophers, and geneticists—used these celebrations to declare their unbreakable links with Darwinism. For example, at the special jubilee meeting of the Academy of Sciences in November 1939, leaders of all three groups—Lysenko, Mitin, and Vavilov—delivered reports.

73. For details on these conflicting attitudes, see Abba E. Gaissinovitch, "Contradictory Appraisal by K. A. Timiriazev of Mendelian Principles and Its Subsequent Perception," *History and Philosophy of the Life Sciences*, 1985, vol. 7, pp. 257–286.

74. See I. I. Prezent, "O Lzhe-Nauchnykh Vozzreniakh Prof. N. K. Kol'tsova," *PZM*, 1939, no. 5, pp. 146–153.

75. See T. D. Lysenko, "Vystuplenie," *PZM*, 1939, no. 11, pp. 148–168.

76. Ironically, that summer Soviet officials forbade geneticists to attend the congress in Edinburgh, but about twenty German geneticists did attend.

77. For example, Lysenkoists correctly pointed out the gap between contemporary genetics and embryology, between existing concepts of heredity and concepts of individual development. They were right to note the geneticists' exaggeration of the role chromosomes played in heredity; cytoplasmic heredity would become a major subject of genetics research some fifteen to twenty years later. On the impact of the Lysenko controversy upon studies of cytoplasmic heredity, see Jan Sapp, *Beyond the Gene* (Cambridge: Cambridge University Press, 1988).

78. See also the reminiscences of Vavilov's coworker Evgeniia Sinskaia describing the negative reaction of geneticists to her criticism of their views from an ecological point of view. E. N. Sinskaia, *Vospominaniia o N. I. Vavilove* (Kiev: Naukova Dumka, 1991), pp. 149–150. I would like to thank Daniel Aleksandrov for calling my attention to this source.

79. See M. Mitin, "Za Peredovuiu Sovetskuiu Geneticheskuiu Nauku," *PZM*, 1939, no. 10, pp. 147–176. This article, in slightly revised form, was also published in *Pravda*, 7 December 1939, p. 3.

80. The report is in RTsKhIDNI, f. 71, op. 3, d. 109, ll. 282–289. I would like to thank Vladimir Esakov for calling my attention to this document.

81. Apparently as a result of this critique, Vavilov's Institute of Genetics was assigned the task of preparing a special volume entitled *A Critical Revision of the Theoretical Foundations of Genetics*. See ARAN, f. 2, op. 1/735, d. 172, ll. 68–89.

82. The letter was recently published in the academy bulletin. See N. Boiko, "Kak Gotovilas' Rasprava nad Genetikoi," *VAN*, 1990, no. 9, pp. 113–115. For the original see RTsKhIDNI, f. 71, op. 3, d. 109, ll. 296–292.

83. Boiko, "Kak Gotovilas' Rasprava nad Genetikoi," p. 113.

84. Mitin, "Za Peredovuiu Sovetskuiu Geneticheskuiu Nauku," p. 175.

85. RTsKhIDNI, f. 71, op. 3, d. 109, l. 285.

86. RTsKhIDNI, f. 17, op. 117, d. 54, l. 48.

87. *Ibid.*

88. RTsKhIDNI, f. 17, op. 116, d. 21. As a member of the presidium, Vyshinskii participated in the meeting of the academy's scientific workers on November 19, where the results of the October meeting on genetics were discussed, and demanded that geneticists "master the method of dialectical materialism." See Boiko, "Kak Gotovilas' Rasprava nad Genetikoi," p. 115.

89. RTsKhIDNI, f. 17, op. 117, d. 54, l. 50.

90. *Ibid.* Andreev underlined this sentence in Vyshinskii's original text.

91. The most popular hypothesis in the numerous accounts of Vavilov's tragic fate is Stalin's personal animus toward him. See, for example, Mark Popovskii, *The Vavilov Affair* (Humden, Conn.: Archon Books, 1984).

92. Considering what we know about the Stalinist system, his arrest and imprisonment were impossible without at least a consultation with the party-state officials in charge of agriculture—the minister, the head of the Central Committee Agriculture Department, and possibly the president of VASKhNIL, Lysenko. Vavilov's position at the conference might have influenced their considerations.

93. See C. D. Darlington's Papers in the Bodleian Library of Oxford University, Box C. 39, file E. 71–73, Russian genetics 1936–39.

94. TsGANTD, f. 318, op. 1-1, d. 1705. I would like to thank Tat'iana Lassan for calling my attention to this document.

CHAPTER 4

WORLD WAR II AND THE SWEET FRUITS OF VICTORY

1. See "Iz Polozheniia o Voennykh Komissarakh Raboche-Krest'ianskoi Krasnoi Armii," in *Sbornik Dokumentov i Materialov po Istorii SSSR Sovetskogo Perioda, 1917–1958* (Moscow: Izd. MGU, 1966), p. 403.

2. See "Ukaz Prezidiuma Verkhovnogo Soveta SSSR ob Ustanovlenii Polnogo

Edinonachaliia i Uprazhnenii Instituta Voennykh Komissarov v Krasnoi Armii,” in *Sbornik Dokumentov i Materialov po Istorii SSSR*, pp. 418–419.

3. In 1943, when the council’s functions were expanded, Sergei Vavilov was appointed as a second GKO representative for science.

4. See Kaftanov’s reminiscences on the council’s work in S. V. Kaftanov, “Organizatsiia Nauchnykh Issledovaniĭ v Gody Voiny,” in *Sovetskaia Kul’tura v Gody Velikoi Otechestvennoi Voiny* (Moscow: Nauka, 1976), pp. 54–63; also S. Kaftanov, “Po Trevoĭge,” *Khimiia i Zhizn’*, 1985, no. 3, pp. 6–10.

5. See Strekopytov, *Gosudarstvennoe Rukovodstvo Naukoi v SSSR*; and B. V. Levshin, *Sovetskaia Nauka v Gody Velikoi Otechestvennoi Voiny* (Moscow: Nauka, 1983).

6. Academician Aleksandr Vinter was deputy head of the Scientific-Technical Council of the Commissariat of Electric-Power Plants; academician Vladimir Obraztsov was a member of the Expert Council of the Commissariat of Railroads; academician Nikolai Gudtsov was on the Scientific-Technical Council of the Commissariat of Metallurgy; academician Aleksandr Baikov headed the Council of Scientific-Technical Expertise in Gosplan; academician Nikolai Burdenko headed the Scientific Council of Narkomzdrav; and professor E. Satel’ headed the Scientific-Technical Council of the Commissariat of Armament.

7. See Levshin, *Sovetskaia Nauka v Gody Velikoi Otechestvennoi Voiny*, pp. 44–59.

8. See P. L. Kapitsa, *Eksperiment, Teoriia, Praktika* (Moscow: Nauka, 1977); S. E. Frish, *Skvoz’ Prizmu Vremeni* (Moscow: Politicheskaiia Literatura, 1992); *Front i Tyl: Geologi Akademii Nauk SSSR v Gody Velikoi Otechestvennoi Voiny* (Moscow: Nauka, 1990); S. I. Vol’fkovich, “Iz Vospominanii o Rabote Khimikov v Gody Velikoi Otechestvennoi Voiny,” *Zhurnal Vsesoiuznogo Khimicheskogo Obshchestva im. D. I. Mendeleeva*, 1975, vol. 20, no. 4, pp. 430–442; and many others.

9. See A. Kozhevnikov, “Piotr Kapitsa and Stalin’s Government,” *Historical Studies in the Physical and Biological Sciences*, 1991, vol. 22, pp. 131–164.

10. See Levshin, *Sovetskaia Nauka v Gody Velikoi Otechestvennoi Voiny*, pp. 326–339.

11. V. L. Komarov, “Berlinskoe Napravlenie,” *VAN*, 1945, no. 3, pp. 6–8, cit. on p. 7.

12. See V. L. Komarov, “Volnuiushchaia Beseda,” *VAN*, 1945, no. 1–2, pp. 6–11.

13. See the special volume published for the jubilee, *220 Let Akademii Nauk SSSR* (Moscow-Leningrad: Izd. AN SSSR, 1945).

14. Usually, jubilees of events were organized on round dates—for example, at intervals of twenty-five years. Unusual figures generally signal unusual occasions.

15. Cited in Komarov, “Volnuiushchaia Beseda,” p. 8.

16. In June 1945, on the occasion of the Academy of Sciences’ jubilee, 1,465 scientists were decorated with various orders and medals.

17. See RTsKhIDNI, f. 17, op. 25, d. 453, ll. 1–37.

18. See, for example, *Geroi Sotsialisticheskogo Truda* (Moscow: Izd. Izvestiia Sovetov Narodnykh Deputatov, 1988), pp. 13–88.

19. See “V Sovnarkome SSSR,” *Pravda*, 7 March 1946, p. 2.

20. See GARF, f. 5446, op. 50, d. 2038, ll. 109–125.

21. In 1946 the People’s Commissariats were renamed ministries; correspondingly, the SNK (Sovet Narodnykh Kommissarov, Council of People’s Commissars) was renamed the Soviet Ministrov (Council of Ministers).

22. GARF, f. 5446, op. 1, d. 290a, l. 45.

23. *Ibid.*, 1. 128.
24. See *Istoriia Kommunisticheskoi Partii Sovetskogo Soiuz*a (Moscow: Politizdat, 1970), vol. 5, pt. 1, p. 448.
25. *Kul'turnoe Stroitel'stvo SSSR*, p. 244.
26. At that time, a united Narkompros of the USSR did not exist. Each republic had its own Narkompros, and that of the RSFSR served as a leading educational agency of the entire Soviet Union. In 1966 the USSR Ministry of Enlightenment was created, and the RSFSR Academy of Pedagogical Sciences was simultaneously renamed the USSR Academy of Pedagogical Sciences.
27. See *Sobranie Uzakonenii SNK RSFSR*, 1944, no. 1, p. 22.
28. For an account of the development of the academy, see I. A. Kairov, *Ocherki Deiatel'nosti Akademii Pedagogicheskikh Nauk RSFSR* (Moscow: Izd. APN, 1973).
29. Resolution of the SNK, no. 797, of June 30, 1944. See *Spravochnaia Kniga Akademii Meditsinskikh Nauk SSSR* (Moscow: Izd. AMN, 1945).
30. For instance, besides Burdenko, Sergei Girgolav was a deputy Surgeon General of the Red Army, Iustin Dzhanelidze the Surgeon General of the Navy, Petr Kupriianov the Surgeon General of the Leningrad Front, and Nikolai Grashchenkov the Surgeon General of the 33rd Army. See I. V. Aleksanian and M. Sh. Knopov, *Glavnye Khirurgi Frontov i Flotov v Velikoi Otechestvennoi Voine, 1941–1945 gg.* (Moscow: Meditsina, 1985).
31. For a detailed account of the institutional structure of the academy, see Nuvakhov, Karneeva, and Shilinis, *Istoriia, Khronologïa i Dinamika Struktury Rossiiskoi Akademii Meditsinskikh Nauk*.
32. *Vestnik AMN SSSR*.
33. For a detailed account of the organization of the republic academies, see Kol'tsov, *Rol' Akademii Nauk v Organizatsii Regional'nykh Nauchnykh Tsentrov SSSR*, pp. 176–216.
34. For an account of the council's activity, see V. D. Esakov, "Stanovlenie Koordinatsii Nauchno-Issledovatel'skikh Rabot v SSSR," in B. B. Piotrovskii, ed., *Sovetskaia Kul'tura: 70 Let Razvitiia* (Moscow: Nauka, 1987), pp. 222–230.
35. See David Holloway, *Stalin and the Bomb* (New Haven, Conn.: Yale University Press, 1994); also L. P. Goleusova, "'Arzamas-16': Kak Vse Nachinalos . . .," *VIET*, 1994, no. 4, pp. 89–97.
36. See, for instance, Georgii Ozerov's *Tupolevskaia Sharaga*, his recollections on his work in the *sharashka* involved with the building of airplanes.
37. See RTsKhIDNI, f. 17, op. 125, d. 447, ll. 1–11.
38. *VAN*, 1946, no. 2, p. 11.
39. See P. G. Shidlovskii, "O Rezhime Ekonomii v Akademii Nauk SSSR," *VAN*, 1947, no. 5, pp. 88–93.
40. See, for example, the recollections of the party secretary of the university in 1945–48: E. M. Sergeev, *Moskovskii Universitet—Vzgliad Skvoz' Gody* (Moscow: Izd. MGU, 1992).
41. ARAN, f. 2, op. 1-1945, d. 450, ll. 1–6.
42. RGAE, f. 8390, op. 1, d. 1997, ll. 18–19.
43. RTsKhIDNI, f. 17, op. 125, d. 449, ll. 108–111.
44. See *VAN*, 1946, no. 8–9, p. 155.
45. RTsKhIDNI, f. 17, op. 125, d. 527, ll. 113–123; also ARAN, f. 2, op. 1-1947, d. 36, ll. 1–7.
46. RTsKhIDNI, f. 17, op. 125, d. 527, ll. 124–125.

47. RGAE, f. 8390, op. 1, d. 1997, ll. 40–41.
48. *Ibid.*, l. 41.
49. Lysenko's "dissenting opinion" was actually attached to a draft of the Council of Ministers resolution that was prepared by the Academy of Sciences presidium and sent to Beria for approval. See ARAN, f. 2, op. 1-1947, d. 36, ll. 4–5.
50. During the war, Mitin obviously fell out of favor. His stronghold, *Under the Banner of Marxism*, was severely criticized and eventually shut down in June 1944; he was also dismissed from the Central Committee's membership. His removal from the academy presidium clearly signified the decline of the role party ideologists played in science-policy decision making after the war.
51. RTsKhIDNI, f. 17, op. 125, d. 359, l. 119.
52. RTsKhIDNI, f. 17, op. 125, d. 449, ll. 48–49. This and many other letters of geneticists to the Central Committee have been published in V. Esakov, E. Levina, and S. Il'ina, eds., "Iz Istorii Bor'by s Lysenkovshchinoi: Pis'ma Uchenykh," parts 1–3, *Izvestiia TsK KPSS*, 1991, no. 4, pp. 125–141; no. 6, pp. 157–173; no. 7, pp. 109–121 (hereafter "Pis'ma"). Zhebrak's request is in part 1, pp. 131–132; in the publication, the letter is misdated March 1.
53. The summer issue of the Academy of Sciences bulletin published the announcement. See *VAN*, 1946, no. 5–6, pp. 137–138.
54. RGAE, f. 8390, op. 1, d. 1997, l. 44.
55. ARAN, f. 1593, op. 1, d. 103, ll. 3–7.
56. Tsitsin, Lysenko's deputy at VASKhNIL and his close partner in the 1930s, began to support the geneticists after the war. Perhaps he hoped to replace Lysenko as a leading figure in the agricultural sciences.
57. GARF, f. 5446, op. 85, d. 12, l. 77.
58. RTsKhIDNI, f. 17, op. 125, d. 547, l. 126. Zhdanov, who read the letter, underlined this sentence.
59. *Ibid.*
60. Serebrovskii officially presided over the conference, but actually attended only two sessions. He was very ill and could not even speak. His opening address was read by his pupil.
61. RTsKhIDNI, f. 17, op. 125, d. 547, l. 127.
62. *Ibid.* l. 126.
63. *Ibid.* l. 131. Suvorov's memorandum is also published in "Pis'ma," part 1, pp. 135–137.
64. RTsKhIDNI, f. 17, op. 125, d. 548, l. 114 (also published in "Pis'ma," part 2, pp. 157–158). Italics added.
65. RTsKhIDNI, f. 17, op. 125, d. 450, l. 2.
66. See "Pis'ma."
67. RTsKhIDNI, f. 17, op. 116, d. 284, l. 38.
68. RTsKhIDNI, f. 17, op. 117, d. 733, ll. 5–10.
69. *Ibid.*, l. 8.
70. *Ibid.*
71. *Ibid.*, l. 6.
72. *Ibid.*, l. 10.
73. RTsKhIDNI, f. 17, op. 116, d. 303, l. 2.
74. RGAE, f. 8390, op. 1, d. 2126, ll. 87–89.
75. *Ibid.*, ll. 45–85.

76. Ibid., ll. 5–15, 91–92.

77. RTsKhIDNI, f. 17, op. 125, d. 450, l. 8.

78. Ibid., l. 13.

79. Ibid., l. 14.

80. Ibid., ll. 2–54.

81. See, for example, the anti-Lysenkoist letters from the party archive in “Pis’ma.” The only geneticist who addressed Malenkov in 1945–47 was Zhebrak, who probably became personally acquainted with him while working in the party apparatus in 1945, when Malenkov headed the Secretariat.

82. See GARF, f. 5446, op. 85, d. 12. Another indication that Malenkov leaned toward the Lysenkoists was that he had personally prevented Zhebrak’s appointment as a member of the Permanent International Organizing Committee of Genetics Congresses in spring 1946. See RTsKhIDNI, f. 17, op. 121, d. 537, l. 26 reverse.

83. GARF, f. 5446, op. 1, d. 290a, l. 180.

84. For more detailed account of the second front in Soviet genetics, see Nikolai Kremontsov, “A ‘Second Front’ in Soviet Genetics: The International Dimension of the Lysenko Controversy, 1944–1947,” *Journal of the History of Biology*, 1996, no. 2 (forthcoming).

85. On the use of science as a tool to strengthen the antifascist coalition, see, for example, the reminiscences of the Soviet ambassador to Britain on his activities during the first months of the war, in I. M. Maiskii, *Vospominaniia Sovetskogo Posla* (Moscow: Nauka, 1965), pp. 192–195.

86. See GARF, f. r5283, op. 14, d. 7 (1936–40), 130 ll.

87. See GARF, f. r5283, op. 14, dd. 175, 183, 193, 195, 199, 200, 201, 207, 208, 209, 210, 214, 216, 217, 219, 223 (1943).

88. The party established a number of other antifascist committees, including ones for Soviet writers, youth, women, and Jews.

89. A revealing example of such correspondence is a letter from academician Nikolai Grashchenkov to a British scientist, Archibald V. Hill, of October 7, 1943. Grashchenkov wrote: “I hope that the second front in Europe which we have long awaited will soon be a reality and speed the smashing of the Nazis and thus enable us to pursue our research work in pre-war scope and effect even closer contact between the scientists of the great democratic countries.” Henry Dale’s Papers in the Royal Society Library, 93 HO, 8. 8. 69, p. 3.

90. By the end of the war, the Academy of Sciences had exchanged literature with more than five hundred foreign scientific institutions. See *Pravda*, 30 August 1945, p. 4.

91. See *Akademiia Nauk SSSR. Personal’nyi Sostav, bk. 2, 1917–1974*, pp. 409–410. This edition does not mention the election of the British physiologist and president of the Royal Society Henry Dale.

92. See RTsKhIDNI, f. 17, op. 125, d. 449, ll. 188–199.

93. RTsKhIDNI, f. 17, op. 121, d. 331, l. 54.

94. See “Impressions of Soviet Science,” *American Review of the Soviet Union*, 1945, no. 11, pp. 32–43.

95. *VAN*, 1945, no. 7–8, p. 51.

96. V. M. Molotov, “Doklad 6 Noiabria 1945,” *VAN*, 1945, no. 10–11, pp. 1–15, cit. on p. 15.

97. *VAN*, 1946, no. 2, p. 11.

98. In the late 1920s and early 1930s, the slogan “catch up with and overtake the West” was commonly used in regard to technology and industry, identifying the strategic direction of the party’s policy of industrialization. Its transfer to science after the war signaled the strategic importance attached to science.

99. S. I. Vavilov, “Uchenye Opravdaïut Doverie Tovarishcha Stalina,” *Pravda*, 13 February 1946, p. 2; see also *VAN*, 1946, no. 2, pp. 14–15.

100. V. Molotov, “World Arms Cut,” *Vital Speeches of the Day*, vol. 13 (October 15, 1946–October 1, 1947), pp. 74–80, on p. 78.

101. RTsKhIDNI, f. 17, op. 116, d. 235, l. 72.

102. German-Soviet relations in genetics have been partially explored in Paul Weindling, “German-Soviet Cooperation and the Institute for Racial Research, 1927–c. 1935,” *German History*, 1992, vol. 10, no. 2, pp. 177–206.

103. See Adams, *The Evolution of Theodosius Dobzhansky*.

104. See Diane B. Paul and Kostas B. Crimbas, “Nikolai V. Timofeeff-Ressovsky,” *Scientific American*, 1992 (February), pp. 86–92.

105. See “Abandonment of the Moscow Meeting of the International Congress of Genetics,” *Science*, 1936, vol. 84, pp. 553–554.

106. The personal archives of Western geneticists reveal a break in correspondence with Russian colleagues from 1939 to 1944–45. See, for example, the Manuscript Collections of the American Philosophical Society Library (hereafter APS), L. C. Dunn and Th. Dobzhansky papers.

107. For example, in 1940 Paul Mangelsdorf organized a seminar on Russian genetics at Harvard University.

108. See, for example, J. B. S. Haldane, “Lysenko and Genetics,” *Science and Society*, 1940, no. 4, pp. 433–437; and K. Mather, “Genetics and the Russian Controversy,” *Nature*, 1942, vol. 149, pp. 427–430.

109. See the wartime issues of *Science*, *VAN*, and *Nature*.

110. Th. Dobzhansky to L. C. Dunn, July 4, 1945, in APS, L. C. Dunn papers.

111. E. Ashby to S. Wright, July 22, 1945, in APS, S. Wright papers.

112. E. Ashby, *Scientist in Russia* (New York: Penguin Books, 1947).

113. M. Demerec to P. S. Koller, August 1945, in APS, M. Demerec papers.

114. J. S. Huxley, “Science in the USSR: Evolutionary Biology and Related Subjects,” *Nature*, 1945, vol. 156, pp. 254–256.

115. E. Babcock to M. Deutch, June 6, 1945, University of California Archives, Berkeley.

116. M. Lerner to H. J. Muller, June 29, 1945, in APS, M. Lerner papers.

117. See Koller to Demerec, July 27, 1945, Demerec papers.

118. Dobzhansky to Dunn, July 4, 1945.

119. Lerner to Dunn, June 27, 1945, Lerner papers.

120. Dobzhansky to Dunn, July 4, 1945. Underlining by Dobzhansky.

121. Aside from personal reasons, there may have been several equally important domestic reasons for such commitments by Western scientists in their discussions about Soviet genetics. One of the most important was the ongoing concern about possible future relations between science and government in the West. In 1946–47 a number of articles about the Soviet science system were published in Western periodicals touching on the postwar organization of Western science. The most important subject of this discussion was the so-called freedom of science. Many disputants referred to the

Lysenko controversy and the fate of executed Soviet geneticists as an example of the dangers presented by state control over science. See, for instance, Robert Simpson, "Science, Totalitarian Model," *Saturday Review of Literature*, 1946 (March 9), pp. 28–32. In their critique of Lysenko's doctrine, however, Western geneticists carefully omitted any political remarks.

122. There was an attempt to organize a special committee to aid Russian geneticists, but this project failed; see Lerner to Dunn, July 23, 1945; and Lerner to B. McClintock, June 27, 1945, both in Dunn papers.

123. A. R. Zhebrak, "Soviet Biology," *Science*, 1945, vol. 102, pp. 357–358; N. P. Dubinin, "Works of Soviet Biologists: Theoretical Genetics," *Science*, 1947, vol. 105, pp. 109–112.

124. P. S. Hudson and R. H. Richens, *The New Genetics in the Soviet Union* (Cambridge: W. Heffer & Sons, 1946).

125. Dunn to W. Bara, May 26, 1945, Dunn papers.

126. Dunn to Lerner, June 29, 1945, Dunn papers.

127. Dunn to H. Silver, August 17, 1945, Dunn papers.

128. Muller to K. Stern, February 11, 1946, in APS, K. Stern papers.

129. Stern and others to J. B. S. Haldane, April 17, 1946, Stern papers.

130. Haldane to Muller, May 15, 1946, Demerec papers.

131. Stern to Muller, June 12, 1946, Stern papers.

132. Muller to Demerec, June 5, 1946, Demerec papers.

133. J. S. Huxley to Demerec, December 31, 1945, Demerec papers.

134. *Ibid.*

135. Demerec to O. Mohr, November 28, 1945, Demerec papers.

136. F. R. A. Crew to Demerec, January 15, 1946, Demerec papers.

137. Before the war, the Russian representative to the committee was Nikolai Vavilov.

138. Crew to Demerec, January 15, 1946.

139. Crew to the Soviet ambassador, February 11, 1946, in ARAN, f. 2, op. 1-1945, d. 401, ll. 18–20. A copy of this letter is also in the Demerec papers.

140. See RTsKhIDNI, f. 17, op. 121, d. 537, l. 26 reverse.

141. Demerec to Huxley, February 18, 1946, Demerec papers.

142. Demerec to all members of the Permanent Committee, August 9, 1945, Demerec papers.

143. RTsKhIDNI, f. 17, op. 125, d. 360, l. 9.

144. ARAN, f. 2, op. 1-1945, d. 450, l. 4.

145. Lerner to Dunn, June 27, 1945.

146. RTsKhIDNI, f. 17, op. 125, d. 451, ll. 1–2.

147. *Ibid.*, ll. 4–102.

148. *Ibid.*, l. 103.

149. *Ibid.*, ll. 105–140.

150. ARAN, f. 1657, op. 1, d. 154, ll. 36–37.

151. Dubinin, "Works of Soviet Biologists," p. 112.

152. Dobzhansky to Dunn, between November 25 and December 5, 1946, Dunn papers.

153. GARF, f. 5446, op. 85, d. 12, l. 75.

154. On this and other works by Shmal'gauzen, see Mark B. Adams, "Severtsov

and Schmalhauzen: Russian Morphology and the Evolutionary Synthesis,” in Mayr and Provine, *The Evolutionary Synthesis*, pp. 193–225; and Mark B. Adams, “A Missing Link in the Evolutionary Synthesis,” *Isis*, 1988, vol. 79, pp. 281–284.

155. T. D. Lysenko, “Estestvennyi Otbor i Vnutrividovaia Konkurentsia,” *Selektsiia i Semenovodstvo*, 1946, no. 1/2, pp. 3–36.

156. P. M. Zhukovskii, “Darvinizm v Krivom Zerkale,” *Selektsiia i Semenovodstvo*, 1946, no. 1/2, pp. 71–79. On the prehistory of this review, see Medvedev, *Vzlet i Padenie*, pp. 154–156.

157. T. D. Lysenko, “Ne v Svoi Sani ne Sadis’,” *Pravda*, 28 June 1946, p. 2.

158. RTsKhIDNI, f. 17, op. 125, d. 547, ll. 1–3.

159. *Ibid.*, ll. 128–131.

160. RTsKhIDNI, f. 17, op. 115, d. 315, ll. 34–38.

CHAPTER 5

ON THE THRESHOLD OF THE COLD WAR, 1946–1947

1. For a detailed account of the Cominform’s origin and activities based on documents from the party archive, see G. M. Adibekov, *Kominform i Poslevoennaia Evropa* (Moscow: Rossiia Molodaia, 1994).

2. A month later, on October 5, the Central Committee issued yet another resolution, “On the Work of the United State Publishing House [OGIZ] of the RSFSR.” For a detailed account of the preparation of these decrees based on documents from the party archive, see D. L. Babichenko, *Pisateli i Tsenzory* (Moscow: Rossiia Molodaia, 1994).

3. See, for instance, the editorial “Marksistsko-Leninskoe Vospitanie Intelligentsii,” *Pravda*, 18 September 1946, p. 1.

4. See issues of *Pravda* in September and October 1946.

5. Because this newspaper launched all postwar ideological campaigns, the Soviet intelligentsia soon rechristened it “Culture and Death.”

6. The Soviet notion of “social sciences”—*obshchestvennye nauki*—meant, first of all, philosophy and political economy, that is, Marxism-Leninism. Unlike the USSR Academy of Sciences, this academy was not a research, but an educational institution.

7. “Doklad A. A. Zhdanova 6 Noiabria 1946 goda,” *VAN*, 1946, no. 11–12, pp. 27–41.

8. Aleksandrov was appointed head of Agitprop in September 1940, while Zhdanov continued to supervise its activities.

9. For a detailed account of the discussions based on an extensive study of the party archive, see V. D. Esakov, “K Istorii Filosofskoi Diskussii 1947 Goda,” *Voprosy Filosofii*, 1993, no. 2, pp. 83–106. For an English translation of this work, see Vladimir Esakov, “Toward a History of the Philosophical Discussion of 1947,” *Russian Studies in Philosophy*, 1994, vol. 32, no. 4, pp. 6–47.

10. See Gabriel Ra’anan, *International Policy Formation in the USSR: Factional “Debates” during the Zhdanovshchina* (Hamden, Conn.: Archon Books, 1983); Werner G. Hahn, *Postwar Soviet Politics: The Fall of Zhdanov and the Defeat of Moderation, 1946–1953* (Ithaca, N.Y.: Cornell University Press, 1984); and Sheila Fitzpatrick, *The Cultural Front* (Ithaca, N.Y.: Cornell University Press, 1992). Hahn has argued that the main goal of the campaign was to dismiss Zhdanov’s rival,

Malenkov, from his leading position in the party apparatus. However, Malenkov had already been removed from the Central Committee Secretariat on May 6, 1946—at least three months before the campaign started. See *Izvestiia TsK KPSS*, 1990, no. 7, pp. 75–76.

11. See, for example, H. Swayze, *Political Control of Literature in the USSR, 1946–1959* (Cambridge: Harvard University Press, 1962); B. Schwarz, *Music and Musical Life in Soviet Russia* (Bloomington: Indiana University Press, 1983); and Babichenko, *Pisateli i Tsenzory*.

12. *VAN*, 1946, no. 10, p. 119.

13. See, for example, *O Perestroike Uchebnoi i Nauchnoi Raboty Moskovskogo Universiteta v Sviazi s Resheniiami TsK VKP(b) po Voprosam Ideologii* (Moscow: Izd. MGU, 1946).

14. Only recently have the first publications on the KR affair begun to appear; these are based largely on the recollections of participants and portray the affair as an example of Stalin's repression of the intelligentsia. See Ia. Rapoport, "Delo 'KR'," *Nauka i Zhizn'*, 1988, no. 1, pp. 101–107; Iu. Gritsman, *Meditsinskie Mify XX Veka* (Moscow: Znanie, 1993), pp. 91–131; and V. D. Kallinikova and V. Ia. Brodskii, "Delo 'KR,'" in *Repressirovannaia Nauka*, vol. 2, pp. 113–120. Vladimir Esakov and Elena Levina have recently published a large amount of archival materials on the KR affair; see V. D. Esakov and E. S. Levina, "Delo 'KR' (Iz Istorii Gonenii na Sovetskuiu Intelligentsiu)," parts 1, 2, *Kentavr*, 1994, no. 2, pp. 54–69; no. 3, pp. 96–118. Unfortunately, I was unable to use this publication during my work on this book. I would like to express my deep gratitude to Vladimir Esakov for our numerous discussions in the smoking area of the party archive, which have very much helped me to clarify my own view of these events. See Nikolai Kremontsov, "The 'KR Affair': Soviet Science on the Threshold of the Cold War," *History and Philosophy of the Life Sciences*, 1995, vol. 17, pp. 419–446.

15. N. Kliueva, "Puti Bioterapii Raka," *Vestnik AMN SSSR*, 1946, no. 2–3, pp. 44–53; N. Kliueva and G. Roskin, "Kantseroliticheskoe Veshchestvo *Schizotrypanum Cruzei*," *Vrachebnoe Delo*, 1946, no. 3–4, pp. 105–112.

16. E. Finn, "New Achievements in Cancer Research," *Information Bulletin, Embassy of the USSR*, 9 April 1946, pp. 293–294.

17. RTsKhIDNI, f. 17, op. 121, d. 620, ll. 1–2.

18. *Ibid.*, l. 2.

19. RTsKhIDNI, f. 17, op. 121, d. 619, l. 6.

20. For Smith's account of the events, see his reminiscences: Walter B. Smith, *My Three Years in Moscow* (Philadelphia: J. B. Lippincott Co., 1950).

21. RTsKhIDNI, f. 17, op. 121, d. 620, ll. 12–13.

22. *Ibid.*, l. 10.

23. RTsKhIDNI, f. 77, op. 3, d. 147, ll. 1–7.

24. RTsKhIDNI, f. 17, op. 121, d. 620, l. 7.

25. RTsKhIDNI, f. 77, op. 3, d. 148, l. 7.

26. RTsKhIDNI, f. 17, op. 121, d. 619, ll. 37–72.

27. N. G. Kliueva and G. I. Roskin, *Bioterapiia Zlokachesvennykh Opukholei* (Moscow: Izd. AMN SSSR, 1946).

28. RTsKhIDNI, f. 17, op. 121, d. 619, ll. 7–8. Klim Voroshilov and Georgii Malenkov were members of the Politburo and deputy heads of the Council of Ministers.

29. *Ibid.*, l. 11.
30. RTsKhIDNI, f. 17, op. 116, d. 297, l. 58.
31. See A. Strukov, "Vydaiushcheesia Otkrytie Sovetskoi Nauki," *Kul'tura i Zhizn'*, 11 March 1947, p. 4; and N. Petrov, "Vydaiushchiisia Uspekhi Sovetskoi Nauki," *Pravda*, 24 March 1947, p. 3.
32. Kliueva was even nominated for membership in the RSFSR Supreme Soviet.
33. "Cultural Relations: US-USSR," *Department of State Bulletin*, 1949, vol. 20, no. 509, pp. 403–417, cit. on p. 408.
34. See "Vaccine Held Cure on Animal Cancer," *New York Times*, 24 October 1946, p. 18.
35. "Soviet Health Aim Is Described Here," *New York Times*, 22 December 1946, p. 7.
36. See "Russian Physicians End American Tour," *New York Times*, 24 December 1946, p. 20; and "U.S., Soviet to Share Research in Cancer," *New York Times*, 18 January 1947, p. 2.
37. RTsKhIDNI, f. 77, op. 3, d. 149, l. 1.
38. *Ibid.*, l. 2.
39. *Ibid.*
40. The timing of the cable—two weeks after Molotov's October 29 speech at the UN meeting—suggests that the decision to share information on KR research might well have been stimulated by the reaction to Molotov's declaration about the open, international character of scientific discoveries.
41. For the text of the cable, see RTsKhIDNI, f. 77, op. 3, d. 147, l. 9.
42. RTsKhIDNI, f. 17, op. 121, d. 620, ll. 52–54, 56–81.
43. During the autumn and winter of 1946–47, Smith repeatedly asked the Ministry of Foreign Affairs to release information on KR research and to permit American cancer specialists to visit and work in Kliueva's laboratory.
44. RTsKhIDNI, f. 17, op. 121, d. 620, l. 2. Italics added.
45. See Rapoport, "Delo 'KR'," p. 104.
46. See I. Murin, "Sudy Chesti," *Izvestiia TsK KPSS*, 1990, no. 11, pp. 135–137.
47. RTsKhIDNI, f. 17, op. 122, d. 258, l. 3.
48. Murin, "Sudy Chesti," p. 135. Italics added.
49. RTsKhIDNI, f. 77, op. 3, d. 177 (bk. 2), l. 2. This file contains four separate notebooks, each with its own pagination. Although there is no direct evidence, it is possible that Zhdanov took these notes (as well as some of the other abrupt notations that are so numerous in his notebooks) during his conversations with Stalin.
50. RTsKhIDNI, f. 77, op. 3, d. 177 (bk. 3), l. 13.
51. *Ibid.*, l. 33.
52. Miterev was put before an honor court in August 1947. See RTsKhIDNI, f. 17, op. 121, d. 622.
53. One should remember that the March 1947 Moscow meeting of the foreign ministers of the allied countries was a complete failure.
54. RTsKhIDNI, f. 17, op. 125, d. 503, ll. 39–48.
55. RTsKhIDNI, f. 77, op. 3, dd. 176–177.
56. RTsKhIDNI, f. 77, op. 3, d. 151, ll. 1–21.
57. RTsKhIDNI, f. 77, op. 3, dd. 150–152.
58. RTsKhIDNI, f. 17, op. 121, d. 621, ll. 9–74.
59. RTsKhIDNI, f. 77, op. 3, d. 151, ll. 1–21.

60. Only later, in 1948, did Stalin decide to publicize the KR affair. Three plays based on the KR trial were written and produced at theaters throughout the country. One of them even came out as a movie. On the history of one of these plays, see K. Simonov, *Glazami Cheloveka Moego Pokoleniia* (Moscow: Izd. APN, 1989).

61. RTsKhIDNI, f. 17, op. 122, d. 258, ll. 1–25.

62. *Ibid.*, l. 2 reverse.

63. Large excerpts from the brochure have been published in Esakov and Levina, “Delo ‘KR’.”

64. RTsKhIDNI, f. 17, op. 122, d. 258, l. 4. The style of this passage suggests that it may have been written by Stalin.

65. *Ibid.*

66. RTsKhIDNI, f. 17, op. 122, d. 259, l. 3.

67. RTsKhIDNI, f. 17, op. 116, d. 319, l. 13.

68. This administration (Upravlenie po Proverke Partiinykh Organov) was organized in May 1946.

69. RTsKhIDNI, f. 17, op. 122, d. 259, l. 2.

70. The party archive has preserved numerous volumes of reports on such meetings from all regions of the country. See RTsKhIDNI, f. 17, op. 122, dd. 258–265.

71. A shortened version of the letter has been published in P. Kapitsa, *Pis'ma o Nauke* (Moscow: Moskovskii Rabochii, 1989), pp. 218–220.

72. RTsKhIDNI, f. 17, op. 125, d. 545, ll. 64–67.

73. RTsKhIDNI, f. 17, op. 122, d. 258, l. 3.

74. RTsKhIDNI, f. 77, op. 3, d. 177 (bk. 3), ll. 4 reverse–5.

75. For example, in December 1947, Agitprop’s newspaper *Culture and Life* carried an article bitterly criticizing the editorial board of a major journal of the Academy of Sciences for publishing a survey article on American geology written by a Russian geologist, P. Gudkov, who lived in the United States. See V. Solov’ev, “Nedostoinoe Povedenie Redaktsii Sovetskogo Nauchnogo Zhurnala,” *Kul'tura i Zhizn'*, 10 December 1947, p. 2.

76. For the text of the decree, see “Responsibility for Disclosure of State Secrets,” *American Review of the Soviet Union*, 1947, no. 8, pp. 86–87.

77. “Information Constituting State Secrets,” *American Review of the Soviet Union*, 1947, no. 8, pp. 87–88.

78. See *Pravda*, 27 May 1947, p. 1.

79. RTsKhIDNI, f. 17, op. 116, d. 312, l. 18. This declaration was patently false. For example, Nikolai Vavilov and Ivan Vinogradov were elected to the Royal Society in 1942; Leon Orbeli was elected to the British and American Physiological Societies, to the French Medical Academy in 1946, and to the New York Medical Academy in 1947; Petr Kapitsa was elected to the U.S. National Academy of Sciences and to the Dutch Royal Academy of Sciences in 1946.

80. The only exception was made for the French physicists Irène Joliot-Curie and her husband, Frédéric Joliot-Curie, who was a member of the French Communist Party.

81. RTsKhIDNI, f. 17, op. 116, d. 314, l. 54.

82. RTsKhIDNI, f. 17, op. 122, d. 262, l. 206.

83. Similar instructions were given to all Soviet representatives at international forums. See, for example, the Central Committee’s instructions for the Soviet delegation at the World Congress for Peace in Wroclaw, Poland, in August 1948, in RTsKhIDNI, f. 17, op. 118, d. 120, ll. 68–69; and for the Soviet delegation at the Congress of the

International Astronomic Union in Zurich in 1948, in RTsKhIDNI, f. 17, op. 115, d. 737, l. 3.

84. RTsKhIDNI, f. 77, op. 3, d. 177 (bk. 3), l. 9 reverse.

85. RTsKhIDNI, f. 17, op. 116, d. 313, l. 15.

86. RTsKhIDNI, f. 17, op. 122, d. 261, ll. 49–55.

87. *Ibid.*, l. 55.

88. See, for example, RTsKhIDNI, f. 17, op. 125, dd. 543, 545, 618.

89. RTsKhIDNI, f. 17, op. 114, d. 451, ll. 1–103.

90. RTsKhIDNI, f. 17, op. 116, d. 318, l. 66.

91. A. Surkov, A. Tvardovskii, and G. Fish, “Na Sud Obshchestvennosti,” *Literaturnaia Gazeta*, 30 August 1947, p. 3.

92. The Timiriazev Agricultural Academy was the highest educational institute in agricultural disciplines and was subordinate to the Ministry of Higher Education, not to VASKhNIL.

93. I. Laptev, “Antipatrioticheskie Postupki pod Flagom ‘Nauchnoi Kritiki’,” *Pravda*, 2 September 1947, p. 2. For an English translation of the article, see “‘The Truth’ about Genetics,” *Journal of Heredity*, 1948, vol. 39, no. 1, pp. 19–21. Probably as a reward for publishing this article, Lysenko put Laptev’s name on the list of nominees for VASKhNIL membership, which he presented to the Central Committee in February 1948.

94. See chap. 4, n. 123.

95. “‘The Truth’ about Genetics,” p. 19.

96. *Ibid.*, p. 21. The italicized part of the sentence is an almost exact citation from the Central Committee’s letter on the KR affair. See RTsKhIDNI, f. 17, op. 122, d. 258, l. 3.

97. Letters of E. Radaeva, I. Rapoport, D. Sabinin, I. Lisitsyn, A. Zhebrak, and N. Dubinin to A. Zhdanov, in RTsKhIDNI, f. 17, op. 125, d. 528, ll. 1–4, 22–27, 30–32, 33–36, 37–39, 40–53. These letters have also been published in “Pis’ma,” part 2, pp. 159–172.

98. RTsKhIDNI, f. 17, op. 125, d. 528, l. 25.

99. Zhebrak to Voroshilov, October 24, 1947, in GARF, f. 5446, op. 54, d. 42, l. 223. He used the same argument four days earlier in a letter to Molotov. See RTsKhIDNI, f. 17, op. 125, d. 548, l. 69.

100. RTsKhIDNI, f. 17, op. 125, d. 548, l. 67.

101. *Ibid.*, l. 70.

102. RTsKhIDNI, f. 17, op. 116, d. 326, l. 17.

103. Kuznetsov had been the second secretary of the Leningrad City Party Committee during Zhdanov’s tenure as head of the Leningrad party organization and succeeded him in this post in early 1945. He was promoted to secretary of the Central Committee in spring 1946 and replaced Malenkov as head of the Administration of Personnel.

104. RTsKhIDNI, f. 17, op. 125, d. 548, ll. 119–122.

105. RTsKhIDNI, f. 17, op. 114, d. 66, ll. 2–5.

106. See RTsKhIDNI, f. 17, op. 125, d. 547, ll. 210–261.

107. *Ibid.*, l. 133.

108. *Ibid.*, ll. 185–205.

109. *Ibid.*, ll. 206–207.

110. *Ibid.*, l. 151.

111. *Ibid.*, l. 152.

112. *Ibid.*, 1. 141.
113. *Literaturnaia Gazeta*, 18 October 1947, p. 3.
114. F. Dvoriankin and I. Khalifman, “Zashchita Maltuzianstva pod Flagom Darvinizma,” *Sotsialisticheskoe Zemledelie*, 12 November 1947, p. 2.
115. Suslov, a member of the Central Committee and secretary of the Stavropol Regional Party Committee during 1939–44, began to work in the Central Committee apparatus in March 1946. He was appointed a secretary of the Central Committee in autumn 1947.
116. RTsKhIDNI, f. 17, op. 125, d. 547, ll. 144–144 reverse.
117. “Nauchnye Diskussii,” *Literaturnaia Gazeta*, 29 November 1947, p. 2.
118. See *Literaturnaia Gazeta*, 10 December 1947, p. 2.
119. See Daniel P. Todes, *Darwin without Malthus* (New York: Oxford University Press, 1989).
120. The invited philosophers did not belong to Mitin’s faction. Both of them worked in the Biology Division, and their careers were thus dependent on biologists’ goodwill.
121. RTsKhIDNI, f. 17, op. 125, d. 619, ll. 2–13. A draft of the report is in ARAN, f. 1521, op. 1, d. 290, ll. 255–271.
122. See *VAN*, 1948, no. 3, p. 106.
123. *Literaturnaia Gazeta*, 27 December 1947, p. 2.
124. RTsKhIDNI, f. 17, op. 125, d. 619, l. 15. Underlining by Shmal’gauzen.
125. See V. Polianskii and A. Zelikman, “Moskovskaia Konferentsiia po Problemam Darvinizma,” *Priroda*, 1948, no. 6, pp. 85–87. At the same time, the biology faculty published a brochure with the principal reports delivered at the enlarged meeting of its Scientific Council in November. See *Vnutrividovaia Bor’ba u Zhivotnykh i Rastenii* (Moscow: MGU, 1948).
126. *Pravda* published only scant information about the conference. See *Pravda*, 19 February 1948, p. 2.
127. See Shmal’gauzen’s letter to Suslov, December 4, 1947, in RTsKhIDNI, f. 17, op. 125, d. 619, l. 23; and Sukachev’s letter to Iurii Zhdanov, in ARAN, f. 1557, op. 2, d. 6, l. 1.
128. RTsKhIDNI, f. 17, op. 125, d. 619, l. 22.
129. Iurii Zhdanov graduated from the chemistry faculty of Moscow University in 1941. At the age of twenty-eight, he was appointed to head the Science Department (on 8 December 1947). See RTsKhIDNI, f. 17, op. 116, d. 330, l. 69.
130. RTsKhIDNI, f. 17, op. 125, d. 619, l. 21.
131. *VAN*, 1948, no. 3, pp. 5–15, cit. on p. 6. Italics added.
132. *Ibid.*, p. 8.
133. RTsKhIDNI, f. 17, op. 125, d. 621, ll. 15–281.
134. GARF, f. 5446, op. 1, d. 290a, l. 180.
135. RTsKhIDNI, f. 17, op. 116, d. 322, l. 22.
136. GARF, f. 5446, op. 1, d. 290a, l. 241.
137. See *Sotsialisticheskoe Zemledelie*, 9 October 1947, p. 1.
138. Georgii Aleksandrov, who had occupied this post, had been removed from the Central Committee apparatus and appointed director of the Academy of Sciences Institute of Philosophy.
139. RTsKhIDNI, f. 17, op. 116, d. 324, l. 20.
140. RGAE, f. 8390, op. 1, d. 2128, ll. 70–71. During December 14–24, *Socialist*

Agriculture published lists of the nominees.

141. RTsKhIDNI, f. 17, op. 121, d. 591, l. 87.

142. RTsKhIDNI, f. 17, op. 125, d. 619, ll. 43–46, 49–61.

143. *Ibid.*, ll. 47–48.

144. *Ibid.*, l. 47.

145. *Ibid.*, l. 104. In early May, the Science Department also convened a meeting on agricultural economics and education. See *Kul'tura i Zhizn'*, 11 May 1948, p. 2.

CHAPTER 6

THE FATEFUL YEAR: 1948

1. For details, see Avi Shlaim, *The United States and the Berlin Blockade, 1948–1949* (Berkeley: University of California Press, 1983).

2. For details, see Soyfer, *Vlast' i Nauka*, pp. 120–152.

3. The archival materials that are available thus far do not support the rumors about Stalin's personal involvement in the organization of the genetics discussions of 1936 and 1939.

4. Soyfer has portrayed this meeting between Stalin and Lysenko as very close, almost intimate, implying (incorrectly) that Stalin actually *handed* Lysenko 200 grams of seeds. See Soyfer, *Vlast' i Nauka*, p. 395.

5. See RGAE, f. 8390, op. 1, d. 2127, ll. 10–16, 17–23, 218–240; d. 2283, ll. 77–84.

6. See Soyfer, *Vlast' i Nauka*, pp. 394–400.

7. RGAE, f. 8390, op. 1, d. 2283, l. 84.

8. See Lysenko's letters to Benediktov in RGAE, f. 8390, op. 1, d. 2127, ll. 17–23, 216; d. 2283, l. 12.

9. For instance, despite the fact that Lysenko was not a party member, he participated in the February 1947 plenary meeting of the Central Committee of the Communist Party. His pass to the meeting (number 114) was signed by Stalin's personal secretary, head of the Special Sector of the Central Committee, Aleksandr Poskrebyshv.

10. This insertion is absent in the copy of his report that Lysenko sent to Benediktov.

11. RGAE, f. 8390, op. 1, d. 2127, l. 239.

12. See Conway Zirkle, *Evolution, Marxian Biology, and the Social Scene* (Philadelphia: University of Pennsylvania Press, 1959), pp. 353–415.

13. See Soyfer, *Vlast' i Nauka*, pp. 429–433.

14. As political historians have shown, the main conflict in the Malenkov-Zhdanov struggle lay in international politics, particularly the Yugoslav crisis. See Ra'anani, *International Policy Formation in the USSR*, pp. 101–135; and Hahn, *Postwar Soviet Politics*.

15. It has to be remembered that Malenkov headed the Bureau for Agriculture in the Council of Ministers at this time.

16. The demotion was expressed even in its name—the administration (*upravlenie*) was renamed a Department (*otdel*) and became just one of the numerous departments within the Central Committee. Correspondingly, the former departments of Agitprop, such as the Science Department, were renamed sectors. This renaming signified an essential decrease of the administration's role within the party hierarchy.

17. All these changes resulted from Politburo decisions, presumably adopted on July 15.

18. See RTsKhIDNI, f. 77, op. 1, d. 991; op. 3, dd. 177, 180. For published accounts of these events, see Soyfer, *Vlast' i Nauka*, pp. 383–399; K. O. Rossiianov, “Stalin Kak Redaktor Lysenko,” *Voprosy Filosofii*, 1993, no. 2, pp. 56–69; and Kirill Rossianov, “Editing Nature,” *Isis*, 1993, vol. 84, pp. 728–745.

19. Although certain scholars deny this possibility (see, for example, Rossiianov, “Stalin Kak Redaktor Lysenko,” p. 69), there is good evidence for it.

20. See Shepilov's recollections in *Voprosy Istorii KPSS*, 1989, no. 2, pp. 48–55; also Iu. Zhdanov, “Vo Mgle Protivorechii,” *Voprosy Filosofii*, 1993, no. 7, pp. 65–92.

21. See *Kul'tura i Zhizn'*, 11 April 1948, p. 1.

22. For the original of the letter, see RGAE, f. 8390, op. 1, d. 2284, ll. 4–8. The letter has been published in Soyfer, *Vlast' i Nauka*, pp. 390–391.

23. Besides his usual resistance to everything that came from genetics, in this case Lysenko also had some personal interests. His father had worked on agrotechnical techniques to increase the yield of the same plant, and implementation of the geneticists' “monsters” threatened his authority as the expert in this field. It is worth noting that sometime in July, the elder Lysenko was nominated for the Order of Lenin for his work on *kok-sagyz*. See RGAE, f. 8340, op. 1, d. 2286, ll. 10–12.

24. RTsKhIDNI, f. 17, op. 125, d. 619, ll. 62–67. Excerpts from this report have been published in “Pis'ma,” part 3, p. 110.

25. RGAE, f. 8390, op. 1, d. 2284, l. 99.

26. Zhdanov, “Vo Mgle Protivorechii,” p. 74.

27. RTsKhIDNI, f. 17, op. 125, d. 619, l. 104.

28. RGAE, f. 8390, op. 1, d. 2284, ll. 16–17. Perhaps his complaint was also inspired by a special session on agricultural economics and education convened by the Science Department in early May. Information about this session was published in *Culture and Life* exactly on May 11. See *Kul'tura i Zhizn'*, 11 May 1948, p. 2.

29. RGAE, f. 8390, op. 1, d. 2284, l. 21.

30. RTsKhIDNI, f. 17, op. 125, d. 620, ll. 2–45.

31. It is impossible to attribute them definitely to Stalin without thorough analysis by a handwriting expert, but Stalin's authorship is very likely. His editing of Lysenko's speech for the August VASKhNIL meeting shows a significant resemblance to the remarks on Zhdanov's report.

32. See I. V. Stalin, *Sochineniia* (Moscow: Izd. Politicheskoi Literatury, 1946), vol. 1, pp. 294–372.

33. RTsKhIDNI, f. 17, op. 120, d. 24, l. 6.

34. Iurii Zhdanov in his reminiscences also mentioned that Stalin spoke out for “neo-Lamarckism” during their meeting in the autumn of 1947, at which Zhdanov's appointment for the Science Department was discussed. See “Vo Mgle Protivorechii,” p. 70.

35. RTsKhIDNI, f. 17, op. 125, d. 620, l. 20.

36. *Ibid.*

37. *Ibid.*

38. *Ibid.*, l. 3.

39. Early accounts of the Lysenko affair denied the resemblance between Lysenko's and Stalin's personal views on neo-Lamarckian concepts of evolution and heredity. See Medvedev, *The Rise and Fall of T. D. Lysenko*, pp. 103–140.

40. RTsKhIDNI, f. 77, op. 1, d. 991, ll. 84–103.

41. Zhdanov, “Vo Mgle Protivorechii,” pp. 86–87. Italics added.

42. See *Pravda*, 7 August 1948, p. 3. Italics added. For an English translation of the letter, see Julian Huxley, *Heredity: East and West* (New York: Henry Shuman, 1949), pp. 228–232.

43. RTsKhIDNI, f. 77, op. 3a, d. 180, l. 21. Underlined words are boldly underlined in the original manuscript.

44. Mitin's involvement in this work demonstrated his heightened authority in the party apparatus.

45. RTsKhIDNI, f. 77, op. 1, d. 991, l. 124.

46. *Ibid.*, l. 125. Italics added.

47. RGAE, f. 8390, op. 1, d. 2284, ll. 199–200.

48. Unfortunately, the protocols of postwar Politburo sittings were unavailable in the party archive, and it was impossible to determine the exact date of this decision.

49. RTsKhIDNI, f. 558, op. 1, d. 5285, l. 51. For the text of Lysenko's letter to Stalin, see "Pis'ma," part 3, pp. 119–120.

50. See Rossianov, "Editing Nature." I will discuss the nature of Stalin's corrections later.

51. Tsentral'nyi Gosudarstvennyi Arkhiv Istoriko-Politicheskikh Dokumentov Sankt Peterburga, (St. Petersburg Central State Archive of Historico-Political Documents, hereafter TsGAIPD), f. 25, op. 2, sv. 495, d. 7083, ll. 22 reverse–23.

52. For example, he read and approved the text of the opening speech written by Pavel Lobanov. See RGAE, f. 8390, op. 1, d. 2286, l. 37.

53. Iurii Zhdanov did not attend the meeting. From August 1, he was listed as being "on vacation," but his subordinates regularly appeared in the auditorium. In his reminiscences, Zhdanov stated that during the meeting he was out of the city, which is obviously not true. On July 31, at least, he was in Moscow and appeared in his office (see below).

54. See his recollections: I. A. Rapoport, "Kruglyi Stol: Stranitsy Istorii Genetiki v Literature Poslednikh Let," *VIET*, 1988, no. 1, pp. 126–131.

55. See *The Situation in Biological Science* (New York: International Publishers Co., 1949), pp. 11–33.

56. Among the most active anti-Lysenkoists, only Dubinin was absent. Supposedly, he was out of the city and did not receive the invitation. In his reminiscences, Dubinin did not mention why he did not attend the VASKhNIL meeting. See N. P. Dubinin, *Istoriia i Tragediia Sovetskoi Genetiki* (Moscow: Nauka, 1992), pp. 177–203.

57. RGAE, f. 8390, op. 1, d. 2285, l. 7.

58. I will discuss in detail the system of biology education in chapter 8.

59. *The Situation in Biological Science*, p. 605. Emphasis added. The original Russian sentence read "Ia otvechaiu: TsK partii rassmotrel moi doklad i odobril ego."

60. Steven Jay Gould has called this statement "the most chilling passage in all the literature of twentieth-century science." *Hen's Teeth and Horse's Toes* (New York: Norton, 1983), p. 135.

61. Soyfer, *Vlast' i Nauka*, pp. 410–411.

62. RTsKhIDNI, f. 17, op. 132, d. 40, l. 3. This part of Zavadovskii's speech was omitted in the published "Complete Stenographic Report" of the meeting. See *The Situation in Biological Science*, pp. 334–360.

63. It seems likely that the published versions of their speeches were also heavily edited.

64. RTsKhIDNI, f. 17, op. 125, d. 548, l. 114. See also “Pis’ma,” part 2, pp. 157–158.

65. RTsKhIDNI, f. 17, op. 132, d. 40, l. 4.

66. *Ibid.*, l. 1.

67. TsGAIPD, f. 25, op. 2, sv. 495, d. 7083, ll. 22 reverse–23. Rossianov found the original text of the note written by Lysenko in Stalin’s personal archive. See “Editing Nature.”

68. See *Pravda*, 7 August 1948, p. 3. *Pravda* usually appeared on the streets at 6:00 A.M. So participants in the meeting, which started at 11:00 A.M., already knew about Zhdanov’s letter when Lysenko announced that the Central Committee had approved his speech.

69. *The Situation in Biological Science*, p. 627.

70. I could not find any similarly lavish coverage of a scientific event in the postwar issues of *Pravda*. When important scientific events were described in its pages, there was usually only a brief TASS dispatch or occasionally an article written by a high-level scientific bureaucrat. For example, the issue of January 23, 1948, contained a brief note on the All-Union Congress of the Society for the Dissemination of Political and Scientific Knowledge (p. 3); the February 11 issue carried a notice on an annual meeting of the Academy of Sciences devoted to the centenary jubilee of the *Communist Manifesto* (p. 2); and the July 11 issue published a short note on a General Assembly of the Academy of Sciences (p. 3).

71. RTsKhIDNI, f. 17, op. 116, d. 366, l. 6.

72. RTsKhIDNI, f. 17, op. 118, d. 120, l. 55.

73. He died of a heart attack at his dacha on August 31.

74. See *Pravda*, 1 September 1948, p. 4.

75. See, for instance, *Sovetskaia Estoniia*, 15 and 17 September; 14 and 15 October, 1948.

76. *Pravda*, 30 September 1948, p. 2.

77. *Pravda*, 1 October 1948, p. 1.

78. *Izvestiia*, 1 October 1948, p. 2.

79. RTsKhIDNI, f. 17, op. 116, d. 364, l. 2.

80. RTsKhIDNI, f. 17, op. 116, d. 365, ll. 3–4; d. 366, l. 5.

81. RTsKhIDNI, f. 17, op. 118, d. 129, ll. 28–32.

82. RTsKhIDNI, f. 17, op. 116, d. 365, ll. 1–6.

83. TsGAIPD, f. 25, op. 2, sv. 478, d. 6839, l. 2.

84. For example, the editorials published in *Pravda* on August 12 and 27 were reprinted by all republic newspapers. See “Vyshe Znamia Peredovoi Michurinskoi Biologicheskoi Nauki,” *Pravda*, 12 August 1948, p. 1; *Sovetskaia Moldaviia*, 13 August 1948, p. 1; *Zaria Vostoka*, 13 August 1948, p.1; *Sovetskaia Estoniia*, 13 August 1948, p. 1; *Leningradskaia Pravda*, 13 August 1948, p. 1; *Bakinskii Rabochii*, 14 August 1948, p. 1; *Kommunist* (Armenia), 14 August 1948, p. 1; *Kazakhstanskaia Pravda*, 15 August 1948, p. 1; *Sovetskaia Kirgiziia*, 17 August 1948, p. 1; and “Za Protsvetanie Nashei Peredovoi Nauki,” *Pravda*, 27 August 1948, p. 1; *Zaria Vostoka*, 28 August 1948, p. 1; *Kommunist* (Armenia), 29 August 1948, p. 1; *Bakinskii Rabochii*, 29 August 1948, p. 1.

85. See, for example, I. Laptev, “Torzhestvo Michurinskoi Biologicheskoi Nauki,” *Pravda*, 11 September 1948, pp. 2–4; I. Glushchenko, “Pobeda Michurinskoi Biolo-

gii," *Izvestiia*, 17 September 1948, p. 2; I. Prezent, "KraKh Morganistskoi Lzhenuki," *Leningradskaia Pravda*, 29 August 1948, p. 3; and M. Varuntsian, "Pobeda Sovetskogo Tvorcheskogo Darvinizma," *Leningradskaia Pravda*, 19 August 1948, p. 2; *Kazakhstanskaia Pravda*, 21 August 1948, pp. 2–3; *Sovetskaia Kirgiziia*, 24 August 1948, p. 2; *Sovetskaia Moldaviia*, 25 August 1948, pp. 2–3; *Bakinskii Rabochii*, 2 September 1948, p. 3; 5 September 1948, p. 3.

86. RTsKhIDNI, f. 17, op. 132, d. 40, l. 13.

87. TsGAIPD, f. 25, op. 2, sv. 478, d. 6839, l. 3.

88. His popularity could be compared to that of Jimmy Stewart in the United States at roughly the same time.

89. See G. Ob'edkov, "Film o Velikom Uchenom i Patriote," *Pravda*, 31 December 1948, p. 3.

90. See RTsKhIDNI, f. 17, op. 116, dd. 365–370.

91. RTsKhIDNI, f. 17, op. 116, d. 373, l. 6.

92. TsGAIPD, f. 25, op. 2, sv. 478, d. 6839, ll. 2–3.

93. For example, on August 18 the Central Committee of the Ukrainian Communist Party issued a resolution entitled "On the Measures for Reorganization of the Work of Ukrainian Scientific Institutions, Departments, Publishing Houses, Journals, and Newspapers in the Field of Biology and [on] Strengthening These Institutions by Qualified Personnel—Michurinists." See RTsKhIDNI, f. 17, op. 132, d. 70, ll. 34–37. The Central Committee of the Kazakhstan Communist Party adopted two separate resolutions: "On the Situation in Biological Scientific Research" and "On the Situation in the Teaching of Biology in Secondary Schools and Higher Educational Institutions of the Republic." See *Kazakhstanskaia Pravda*, 29 December 1948.

94. TsGAIPD, f. 25, op. 2, sv. 495, d. 7083, l. 1. Italics added.

95. TsGAIPD, f. 25, op. 2, sv. 484, d. 6921, l. 11. Italics added.

96. N. Nuzhdin, "Vystuplenie," in "Rasshirennoe Zasedanie Prezidiuma Akademii Nauk SSSR 24–26 Avgusta 1948 Goda po Voprosu o Sostoianii i Zadachakh Biologicheskoi Nauki v Institutakh i Uchrezhdeniakh Akademii Nauk SSSR. (Stenograficheskii Otchet)," *VAN*, 1948, no. 9 (hereafter "Stenograficheskii Otchet"), pp. 17–208, cit. on p. 159.

97. "Speech by I. E. Glushchenko," in *The Situation in Biological Science*, pp. 215–227, cit. on p. 224.

98. S. Kaftanov, "Vystuplenie," in "Stenograficheskii Otchet," p. 52.

99. See, for instance, the editorial "Chuvstvo Natsional'noi Gordosti Sovetskogo Cheloveka," *Sovetskaia Pedagogika*, 1948, no. 1, pp. 3–11.

100. Rossianov, "Editing Nature."

101. See Holloway, *Stalin and the Bomb*, pp. 150–171.

102. See Karl Sax, "Soviet Biology," *Science*, 1944, vol. 99, pp. 298–299; and Simpson, "Science, Totalitarian Model," pp. 28–32.

103. *Izvestiia*, 28 December 1948, p. 3.

104. See L. A. Schneider, "Learning from Russia: Lysenkoism and the Fate of Genetics in China, 1950–1986," in F. Simon and M. Goldman, eds., *Science and Technology in Post-Mao China* (Cambridge: Harvard University Press, 1989), pp. 45–65; and Bentley Glass, foreword to "The Grim Heritage of Lysenkoism: Four Personal Accounts," *Quarterly Review of Biology*, 1990, vol. 65, no. 4, pp. 413–421.

105. In 1949 VOKS sent the Central Committee a thirty-six-page report about its

“propaganda activity in relation to the August VASKhNIL meeting” in foreign countries. See GARF, f. 5283, op. 1, d. 433, ll. 1–36.

106. RTsKhIDNI, f. 17, op. 125, d. 619, l. 169. The letter has been published in “Pis'ma,” part 3, p. 113–119.

CHAPTER 7

TALKING THE TALK: RITUAL AND RHETORIC

1. See the chronology of key events following chapter 6.
2. RTsKhIDNI, f. 77, op. 1, d. 991, l. 125.
3. See chapter 8.
4. When local party committees issued such instructions for meetings, they were addressed exclusively to the local “institutes of natural sciences” that conducted biological research. See, for instance, TsGAIPD, f. 25, op. 2, sv. 478, d. 6839, ll. 2–3.
5. RTsKhIDNI, f. 17, op. 116, d. 365, l. 4.
6. RTsKhIDNI, f. 17, op. 118, d. 120, ll. 39–44.
7. ARAN, f. 2, op. 1-1948, d. 150, l. 25.
8. RTsKhIDNI, f. 17, op. 116, d. 366, l. 4.
9. RTsKhIDNI, f. 17, op. 116, d. 368, ll. 5–6.
10. This department conducted a number of “special” projects and linked the Academy of Sciences with governmental agencies such as the Central Committee, the MGB, and the Ministry of Defense.
11. Formerly Pavlov’s pupil, at that time Koshtoiants was director of the Institute of the History of Science and Technology.
12. ARAN, f. 2, op. 1-1948, d. 181, l. 1.
13. The archival document does not include the initials of this person. It was probably F. A. Novikov, who worked in the Central Committee’s Department of Personnel.
14. ARAN, f. 2, op. 1-1948, d. 181, l. 1 reverse.
15. *Ibid.*, l. 43. This sentence was preserved without change in all subsequent versions.
16. *Ibid.*, l. 67.
17. *Ibid.*, ll. 83–84.
18. *Ibid.*, l. 92.
19. *Ibid.*, l. 118.
20. From August 16, according to a decision of the Central Committee Secretariat, Lysenko was “on vacation in order to improve his health.” See RTsKhIDNI, f. 17, op. 116, d. 365, l. 19.
21. “Stenograficheskii Otchet,” p. 26.
22. *Ibid.*, p. 27.
23. *Ibid.*, pp. 33, 35, 36.
24. *Ibid.*, p. 35. Italics added.
25. *Ibid.*, p. 37.
26. *Ibid.*, pp. 38, 39.
27. *Ibid.*, p. 41.
28. *Ibid.*, pp. 44–47.
29. Nikolai Timofeeff-Ressovsky was at that time working in a *sharashka* near the Urals.

30. S. Kaftanov, "Vystuplenie," in "Stenograficheskii Otchet," pp. 48–59.
31. "Stenograficheskii Otchet," pp. 71–79, 96–105.
32. *Ibid.*, p. 137.
33. He had even attached to the letter a certificate from his physician confirming that he was sick.
34. ARAN, f. 2, op. 1-1948, d. 149, l. 19.
35. "Postanovlenie Prezidiuma Akademii Nauk SSSR ot 26 Avgusta 1948 Goda po Voprosu o Sostoianii i Zadachakh Biologicheskoi Nauki v Institutakh i Uchrezhdeniiakh Akademii Nauk SSSR," in "Stenograficheskii Otchet," pp. 23, 24.
36. L. A. Orbeli, "Zakliuchitel'noe Slovo," in "Stenograficheskii Otchet," pp. 164–171.
37. S. I. Vavilov, "Zakliuchitel'noe Slovo," in "Stenograficheskii Otchet," pp. 173–176.
38. ARAN, f. 2, op. 1-1948, d. 150, ll. 2–3.
39. I. A. Kairov, "Itogi Sessii Vsesoiuznoi Akademii Sel'sko-Khoziaistvennykh Nauk Imeni V. I. Lenina i Zadachi Akademii Pedagogicheskikh Nauk," *Sovetskaia Pedagogika*, 1948, no. 11, p. 38.
40. Nauchnyi Arkhiv Akademii Pedagogicheskikh Nauk (Scientific Archive of the Academy of Pedagogical Sciences, hereafter NA APN), f. 25, op. 1, d. 503, ll. 38, 39.
41. NA APN, f. 25, op. 1, d. 503, l. 35.
42. For Raikov's biography, see T. A. Lukina, *Boris Evgen'evich Raikov* (Leningrad: Nauka, 1970).
43. NA APN, f. 25, op. 1, d. 503, l. 109.
44. *Ibid.*, l. 62.
45. *Ibid.*, l. 66.
46. *Ibid.*, ll. 54–56.
47. See "V Akademii Pedagogicheskikh Nauk RSFSR: Obsuzhdenie Itogov Sessii Vsesoiuznoi Akademii Sel'sko-Khoziaistvennykh Nauk Imeni V. I. Lenina," *Narodnoe Obrazovanie*, 1948, no. 10, pp. 70–73.
48. See *Uchitel'skaia Gazeta*, 9 September 1948, p. 1.
49. "Torzhestvo Peredovoi Michurinskoii Nauki i Zadachi Sovetskoi Pedagogiki," *Sovetskaia Pedagogika*, 1948, no. 10, pp. 10–19.
50. See Kairov, "Itogi Sessii Vsesoiuznoi Akademii Sel'sko-Khoziaistvennykh Nauk," pp. 37–43; "Obsuzhdenie Doklada Prezidenta Akademii Pedagogicheskikh Nauk I. A. Kairova," *Sovetskaia Pedagogika*, 1948, no. 11, pp. 43–54.
51. "Postanovlenie Prezidiuma Akademii Pedagogicheskikh Nauk RSFSR ot 4 Sentiabria 1948 Goda," *Sbornik Informatsionnykh Materialov Akademii Pedagogicheskikh Nauk RSFSR*, 1948, no. 33, pp. 2–7.
52. See RTsKhIDNI, f. 17, op. 116, d. 369, l. 32.
53. RTsKhIDNI, f. 17, op. 118, d. 150, ll. 50–56. Kaftanov sent the memorandum to Malenkov on August 19. The next day, the Central Committee ordered the Ministry of Public Health to present a report in ten days and to prepare proposals for "improvement of educational and scientific work in biology." Not until September 10, however, did the Central Committee again discuss the situation in the "scientific institutions subordinate to the Ministry of Public Health." RTsKhIDNI, f. 17, op. 116, d. 374, ll. 3–4. And not until September 20 did the Central Committee approve a resolution prepared by the ministry officials and party apparatus. The resolution noted "insuffi-

cient guidance of the ministry in the teaching of biological disciplines” and emphasized that “many questions of biological science were elaborated [in medical institutions] not from positions of advanced biology, but from positions of reactionary Mendelism-Morganism.” RTsKhIDNI, f. 17, op. 116, d. 378, l. 17.

54. Anokhin was a physiologist and one of Pavlov’s pupils.

55. Nauchnyi Arkhiv Akademii Meditsinskikh Nauk (Scientific Archive of the Academy of Medical Sciences, hereafter NA AMN), f. 1, op. 1, d. 255, ll. 195–200.

56. *Ibid.*, ll. 213–216.

57. Ivan Razenkov was also a physiologist and pupil of Pavlov. For his biography, see L. G. Okhnianskaia and I. N. Vishniakova, *Ivan Petrovich Razenkov* (Moscow: Nauka, 1991).

58. GARF, f. r9120, op. 2, d. 514, l. 8.

59. GARF, f. r9120, op. 2, d. 588, ll. 184–185.

60. GARF, f. r9120, op. 2, d. 538, ll. 9–35.

61. *Ibid.*, ll. 10, 13.

62. This institute was not connected with Kol’tsov’s Institute of Experimental Biology. It was a different institution, subordinate to the Academy of Medical Sciences.

63. For a biography of Gurvich, see L. V. Belousov, A. A. Gurvich, S. Ia. Zalkind, and N. N. Kannegisser, *Aleksandr Gavrilovich Gurvich* (Moscow: Nauka, 1970).

64. GARF, f. r9120, op. 2, d. 538, l. 17.

65. *Ibid.*, l. 20.

66. Kaftanov had excoriated this as “an antiscientific and indisputably pernicious book.” “Stenograficheskii Otchet,” p. 55. The president of the Belorussian Academy of Sciences, Nikolai Grashchenkov (who had superseded Zhebrak in this post), devoted the largest part of his talk at the meeting in the Academy of Sciences to attacking the book. See “Stenograficheskii Otchet,” pp. 150–153. On the day of his talk, he also published a long review of the monograph, eloquently entitled “An Obvious Proponent of Idealism.” N. Grashchenkov, “Otkrovennaia Propaganda Idealizma,” *Meditsinskii Rabotnik*, 25 August 1948, p. 2.

67. GARF, f. r9120, op. 2, d. 538, l. 21.

68. *Ibid.*, l. 24.

69. *Ibid.*, l. 27.

70. *Ibid.*, l. 31.

71. See the speeches of A. Speranskii, O. Ostrovoi, O. Lepeshinskaia, N. Khlopin, and others in GARF, f. r9120, op. 2, dd. 538–539.

72. GARF, f. r9120, op. 2, d. 539, l. 216.

73. See, for instance, S. Sarkisov’s speech in GARF, f. r9120, op. 2, d. 538, ll. 335–346. For a biography of Shtern, see Ia. A. Rosin and V. B. Malkin, *Lina Solomonovna Shtern* (Moscow: Nauka, 1987).

74. GARF, f. r9120, op. 2, d. 538, l. 307.

75. In the late 1930s, both Beritashvili and Bernshtein developed concepts of animal and human behavior that contradicted Pavlov’s concept of conditioned reflexes.

76. See the speeches of P. Anokhin, I. Razenkov, A. Ivanov-Smolenskii, and other physiologists in GARF, f. r9120, op. 2, d. 538.

77. GARF, f. r9120, op. 2, d. 538, l. 85.

78. Lepeshinskaia’s list included Aleksei Abrikosov, Dmitrii Nasonov, Nikolai Khlopin, Aleksei Zavarzin, and Boris Tokin.

79. They were forced to “confess” two years later. See *Soveshchanie po Probleme Zhivogo Veshchestva i Razvitiia Kletok. 22–24 Maia 1950 g. Stenograficheskii Otchet* (Moscow: Nauka, 1951).

80. GARF, f. r9120, op. 2, d. 539, l. 238.

81. NA AMN, f. 1, op. 2, d. 28, l. 32.

82. GARF, f. r9120, op. 2, d. 539, ll. 276–288, 349–351.

83. See, for example, A. M. Terpigorev and L. I. Baron, “K Perestroike Akademicheskoi Nauchnoi Raboty v Oblasti Tekhnicheskikh Nauk,” *VAN*, 1948, no. 11, pp. 45–50; E. A. Chudakov, “K Perestroike Akademicheskoi Raboty v Oblasti Tekhnicheskikh Nauk,” *VAN*, 1948, no. 12, pp. 6–9; and “O Polozhenii v Lingvisticheskoi Nauke,” *VAN*, 1948, no. 12, pp. 71–74.

84. See I. I. Meshchaninov, “O Polozhenii v Lingvisticheskoi Nauke,” *Izvestiia AN SSSR, Seriya literatury i iazyka*, 1948, no. 6, pp. 4–16; also “O Polozhenii v Lingvisticheskoi Nauke.”

85. See N. I. Grashchenkov, “Polozhenie v Biologicheskoi Nauke i Zadachi Biologicheskoi Nauki v Belorusskoi SSR,” *Izvestiia AN Belorusskoi SSR*, 1948, no. 5, pp. 15–33.

86. Information about these meetings was published in the local press and in periodicals of the institutions that organized the meetings.

87. See “O Polozhenii v Lingvisticheskoi Nauke”; also *Nauchnaia Sessiya Moloдых Uchenykh, Posviashchennaia Pamiati N. Ia. Marra* (Moscow-Leningrad, 1949).

88. See, for example, “Pis’mo Uchastnikov Nauchnoi Sessii Akademii Nauk Latvii SSR Tovarishchu Stalinu,” *Izvestiia AN Latvii SSR*, 1948, no. 10, p. 5; and “Pis’mo t. Stalinu ot Uchastnikov Rasshirenogo Zasedaniia Prezidiuma AN Belorusskoi SSR,” *Izvestiia AN Belorusskoi SSR*, 1948, no. 5, pp. 3–5.

89. See “Pis’mo N. S. Khrushchevu ot Uchastnikov Rasshirenogo Prezidiuma AN USSR,” *Visnik AN Ukrainkoi SSR*, 1948, no. 10, pp. 5–6.

90. See “Pis’mo G. A. Arutiunovu ot Uchastnikov Sessii Armianskoi Akademii Nauk,” *Kommunist* (Armenia), 29 August 1948, p. 1; “Pis’mo T. D. Lysenko ot Uchastnikov Sessii Armianskoi Akademii Nauk,” *Kommunist* (Armenia), 31 August 1948, p. 1.

91. Vavilov, “Zakliuchitel’noe Slovo,” p. 173.

92. “Torzhestvo Peredovoi Michurinskoi Nauki,” p. 12.

93. A. N. Leont’ev, “Vazhneishie Zadachi Sovetskoi Psikhologii v Svete Itogov Sessii VASKhNIL,” *Sovetskaia Pedagogika*, 1949, no. 1, pp. 76–85, cit. on p. 82.

94. See, for instance, “Protiv Reaktsionnykh Teorii v Psikhologii i Nevropatologii,” *Leningradskaia Pravda*, 14 September 1948, p. 3.

95. N. K. Goncharov, “Vospitanie Marksistko-Leninskogo Mirovozzreniia,” *Sovetskaia Pedagogika*, 1948, no. 11, p. 16.

96. One can thus understand the publication in the press of numerous articles about a science written by those who had no links whatever to this science. For example, the Azerbaidzhan party newspaper published an article entitled “Malthusian Pseudoscience at the Service of Reactionary Bourgeois Biology” that was written by an economist. See G. Dadashev, “Mal’tusovskaia Lzhenauka na Sluzhbe Reaktsionnoi Burzhuznoi Biologii,” *Bakinskii Rabochii*, 18 December 1948, p. 2.

97. “Torzhestvo Peredovoi Michurinskoi Nauki,” p. 15.

98. GARF, f. 9396, op. 1, d. 123, l. 161.

99. See A. S. Sonin, “Soveshchanie, Kotoroe Ne Sostoialos’,” parts 1–3, *Priroda*,

1990, no. 3, pp. 97–102; no. 4, pp. 91–98; no. 5, pp. 93–99; G. E. Gorelik, “Fizika Universitetskaia i Akademicheskaia,” *VIET*, 1991, no. 2, pp. 31–46; and Holloway, *Stalin and the Bomb*, pp. 207–213.

100. For example, the academic-secretary of the Technology Division of the Academy of Sciences, Evgenii A. Chudakov, in an article describing the main directions of reorganization of the academy’s work in technical sciences “in light of the VASKhNIL meeting,” stated that “maximum attention must be paid to hastening the introduction of acquired results [of scientific research] into practice.” See “K Perestroike Akademicheskoi Raboty v Oblasti Tekhnicheskikh Nauk,” p. 7.

101. Leont’ev, “Vazhneishie Zadachi Sovetskoi Psikhologii,” p. 84.

102. See, for example, the speeches of the three ministers who participated in the meeting at the Academy of Sciences: Minister of Higher Education Kaftanov, Minister of Agriculture Benediktov, and Minister of State Farms Skvortsov, in “Stenograficheskii Otchet,” pp. 48–59, 71–79, 96–105.

103. G. K. Khrushchov, “Vystuplenie,” in “Stenograficheskii Otchet,” p. 87.

104. *Ibid.*

105. Dale’s letter was published in Russian by a British newspaper, *British Ally*. See “Pis’mo Prezidentu Akademii Nauk SSSR,” *Britanskii Soiuznik*, 12 December 1948, p. 4.

106. RTsKhIDNI, f. 17, op. 132, d. 40, l. 104.

107. See “Otvét Professoru Genri Deil,” *Pravda*, 29 December 1948, p. 3; *Leningradskaia Pravda*, 30 December 1948, p. 4; and “Otvét Professoru G. D. Melleru,” *Leningradskaia Pravda*, 14 December 1948, p. 4; *Bakinskii Rabochii*, 15 December 1948, p. 3; *Kommunist Armenia*, 16 December 1948, p. 3; *Kazakhstanskaia Pravda*, 17 December 1948, p. 3; *Zaria Vostoka*, 17 December 1948, p. 4.

108. “Otvét Professoru G. D. Melleru,” *VAN*, 1948, no. 12, p. 5.

109. The latest published list of academy members does not even mention that they were ever elected to the academy. See *Akademiia Nauk SSSR. Personal’nyi Sostav, bk. 2, 1917–1974*.

110. The election of foreign members to the Academy of Sciences was resumed only ten years later, in 1958.

111. See R. Dozortseva, “Vystuplenie,” in “Stenograficheskii Otchet,” p. 184.

112. GARF, f. 8009, op. 1, d. 716, l. 113.

113. A. Avakian, “Vystuplenie,” in “Stenograficheskii Otchet,” p. 80.

114. See V. Ia. Aleksandrov, *Trudnye Gody Sovetskoi Biologii* (Leningrad: Nauka, 1989).

115. M. Mitin, “Vystuplenie,” in “Stenograficheskii Otchet,” p. 116.

116. See “Obsuzhdenie Doklada Prezidenta Akademii Pedagogicheskikh Nauk I. A. Kairova,” pp. 50–51.

117. See “O Polozhenii v Lingvisticheskoi Nauke.” For details about the campaign in linguistics, see V. M. Alpatov, *Istoriia Odnogo Mifa: Marr i Marrizm* (Moscow: Nauka, 1991).

118. “O Polozhenii v Lingvisticheskoi Nauke,” p. 73; see also Meshchaninov, “O Polozhenii v Lingvisticheskoi Nauke.”

119. Mitin, “Vystuplenie,” p. 115.

120. RGAE, f. 8390, op. 1, d. 2285, ll. 122–123. Italics added.

121. See S. I. Vavilov, *Isaak N’iuton* (Moscow: Izd. AN SSSR, 1943); and S. I. Vavilov, ed., *Sbornik Statei k Trekhstolietiiu so Dnia Rozhdeniia Isaaka N’iutona* (Moscow: Izd. AN SSSR, 1943).

122. See *Voprosy Istorii Otechestvennoi Nauki. Obsheche Sobranie AN SSSR, Posvia-shchennoe Istorii Otechestvennoi Nauki, 5–11 Ianvaria 1949 g. Doklady* (Moscow-Leningrad: Izd. AN SSSR, 1949).

123. This is from Kairov's characterization of Anton Makarenko at the meeting of the Academy of Pedagogical Sciences. See I. A. Kairov, "Zakliuchitel'noe Slovo," *Sovetskaia Pedagogika*, 1948, no. 11, p. 56.

124. "Postanovlenie Prezidiuma Akademii Nauk SSSR ot 26 Avgusta 1948 Goda," p. 22.

125. RTsKhIDNI, f. 17, op. 132, d. 40, ll. 15–22. Apparently, Bekhterev's name was considered inappropriate by Pavlov's pupil Konstantin Bykov, who was appointed director of the institute and fiercely objected to the idea.

126. See Alpatov, *Istoriia Odnogo Mifa*.

CHAPTER 8

WALKING THE WALK: EDUCATION VERSUS RESEARCH

1. At the same time, secondary schools were subordinate to local soviets' departments of people's education.

2. Certain specialized institutions were also subordinate to the relevant ministries. For example, medical educational institutes were under the Ministry of Public Health and pedagogical institutes under the Ministry of Enlightenment.

3. RTsKhIDNI, f. 17, op. 116, d. 364, l. 2.

4. RTsKhIDNI, f. 17, op. 116, d. 365, l. 3.

5. RTsKhIDNI, f. 17, op. 116, d. 366, ll. 1–2.

6. RTsKhIDNI, f. 17, op. 116, d. 368, ll. 2–3.

7. See S. V. Kaftanov, "Za Michurinskuiu Biologiiu v Vysshei Shkole," *Izvestiia*, 8 September 1948, p. 1.

8. *The Situation in Biological Science*, pp. 630–631.

9. See GARF, f. 9396, op. 1, d. 140.

10. *Ibid.*, l. 146.

11. See RTsKhIDNI, f. 17, op. 116, dd. 365–370.

12. RTsKhIDNI, f. 17, op. 116, d. 158, ll. 1–244.

13. *Ibid.*, ll. 77–78.

14. *Ibid.*, ll. 84–90.

15. *Ibid.*, ll. 195–205.

16. *Biulleten' Ministerstva Vysshego Obrazovaniia SSSR* (hereafter *Biulleten' MVO*), 1948, no. 9, pp. 6–9.

17. *Ibid.*, pp. 10–12.

18. *Ibid.*, pp. 12–15.

19. *Biulleten' MVO*, 1948, no. 10, pp. 3–5.

20. *Biulleten' MVO*, 1948, no. 11, pp. 7–8.

21. TsGAIPD, f. 25, op. 2, sv. 496, d. 7085, l. 182.

22. TsGAIPD, f. 984, op. 3, sv. 98, d. 3, l. 22 reverse.

23. See AMGU, f. 1, op. MGU, d. 110.

24. GARF, f. 9396, op. 1, d. 141, l. 147.

25. TsGAIPD, f. 984, op. 3, sv. 98, d. 1, 149 ll.

26. See T. A. Ginetsinskaia, "Biofak Leningradskogo Universiteta Posle Sessii VASKhNIL," in *Repressirovannaiia Nauka*, pp. 114–125; also L. V. Chesnova, "Iu. I.

Polianskii i Biologiia v Leningradskom Universitete,” in *Repressirovannaia Nauka*, pp. 212–222.

27. TsGAIPD, f. 25, op. 2, sv. 496, d. 7085, l. 217.

28. GARF, f. 9396, op. 1, d. 178.

29. GARF, f. 9396, op. 1, d. 123, l. 14. The book in question was O. A. Ivanov, *Razvedenie Sel'skokhoziaistvennykh Zivotnykh* (Moscow: Sel'khozgiz, 1946).

30. GARF, f. 9396, op. 1, d. 123, ll. 10–11.

31. RTsKhIDNI, f. 17, op. 114, d. 449, l. 254.

32. GARF, f. 9396, op. 1, d. 158, l. 178.

33. *Ibid.*, l. 169.

34. *Biulleten' MVO*, 1948, no. 12, p. 17.

35. See A. D. Danilov, “Novoe v Attestatsii Nauchnykh Kadrov,” *Vestnik Vysshei Shkoly*, 1948, no. 12, pp. 15–16. Italics added.

36. GARF, f. 9396, op. 1, d. 560, l. 63.

37. RTsKhIDNI, f. 17, op. 116, d. 369, l. 32.

38. See NA APN, f. 25, op. 1, d. 573, 118 ll.; d. 574, 158 ll.

39. A. A. Paramonov, *Kurs Darvinizma* (Moscow: Sovetskaia Nauka, 1945).

40. NA APN, f. 25, op. 1, d. 573, l. 107.

41. *Uchitel'skaia Gazeta*, 26 August 1948, p. 1.

42. NA APN, f. 25, op. 1, d. 486, ll. 176–177.

43. NA APN, f. 25, op. 1, d. 574, 58 ll.

44. NA APN, f. 25, op. 1, d. 507, 75 ll.

45. That the Ministry of Enlightenment constantly monitored the production of the new textbooks is demonstrated by the following document signed by the minister, Aleksandr Voznesenskii, and addressed to Kairov: “According to an order from directive organs, textbooks for secondary schools should be printed before 1 July 1949. In connection with this, it is necessary to send the manuscript of a textbook, *Principles of Darwinism*, to a publishing house not later than December 1948. The Institute of Methods of Education set a later date—1 March 1949—for the authors of the textbook, so a timely printing would become impossible. To arrange the accomplishment of the authors' work by the prescribed date, they are to be released from all other work until the end of December 1948.” NA APN, f. 25, op. 1, d. 580, l. 55.

46. “Young naturalists” (*iunnaty*) was the name for students engaged in various kinds of after-school work dealing with biological and agricultural subjects: handling pets, growing flowers, collecting biological objects (such as insects), and so forth.

47. Michurinsk, formerly Kozlov, is a small town in central Russia where Michurin was born.

48. NA APN, f. 25, op. 1, d. 503, l. 55.

49. “Obsuzhdenie Doklada Prezidenta Akademii Pedagogicheskikh Nauk I. A. Kairova,” p. 43.

50. RTsKhIDNI, f. 17, op. 116, d. 378, ll. 13–16.

51. After Lysenko, almost his entire team—including Artavazd Avakian, Neo Belen'kii, Isaak Present, and Fedor Dvoriankin—delivered special lectures. See *Narodnoe Obrazovanie*, 1948, no. 12, pp. 68–70.

52. See TsGAIPD, f. 25, op. 25/2, pt. 4, d. 6908.

53. ARAN, f. 534, op. 1–1948, d. 99, l. 12.

54. Small groups of geneticists worked in the Ukraine and Armenia.

55. ARAN, f. 1595, op. 1, d. 355, l. 20.

56. See RTsKhIDNI, f. 17, op. 132, d. 40, ll. 65–67.
57. RTsKhIDNI, f. 17, op. 132, d. 40, ll. 176–181.
58. SPb ARAN, f. 806, op. 1-1948, d. 24, 131 ll.
59. SPb ARAN, f. 806, op. 1-1948, d. 28, l. 2.
60. *Ibid.*, l. 7.
61. *Ibid.*, l. 6. According to official instructions, the membership of the scientific council of an institute was to be confirmed by a corresponding agency: in academic institutions, by academies; in institutions subordinate to various ministries, by the corresponding ministry.
62. See N. A. Kryshova, “Nekotorye Svoeobraznye Cherty Sna Cheloveka i Ikh Nasledstvennaia Peredacha,” *Zhurnal Obshchei Biologii*, 1946, no. 4, pp. 297–306. In fact, this work was not the only genetics paper she published.
63. SPb ARAN, f. 806, op. 1-1948, d. 28, l. 6.
64. GARF, f. r9120, op. 2, d. 538, ll. 24–25.
65. Julian Huxley, “Science in the USSR,” p. 254.
66. SPb ARAN, f. 806, op. 1-1948, d. 24, ll. 129–131.
67. SPb ARAN, f. 806, op. 1-1948, d. 29, l. 26.
68. GARF, f. r9120, op. 2, d. 589, l. 158.
69. Similar examples could be given about the situation in other institutions. For instance, a known Mendelist and active opponent of Lysenko at the 1939 discussion, Valentin Kirpichnikov, was not fired from the Institute of Fishery. See E. I. Kolchinskii, “Rytsar’ Nauki: Interv’iu s V. S. Kirpichnikovym,” in *Repressirovannaia Nauka*, vol. 2, pp. 228–238; see also “Protocols of the Party Meetings in the Institute of Zoology in 1948,” in TsGAIPD, f. 3021, op. 2, sv. 3, d. 1, pp. 1–99. Another geneticist, Sergei Gershenzon, preserved his post in the Ukrainian Zoological Institute. See S. M. Gershenzon, “Vospominaniia o Lysenkovshchine,” in *Repressirovannaia Nauka*, vol. 2, pp. 209–218.
70. K. Demidov, “Takim li Dolzhen Byt’ Zhurnal ‘Priroda’?” *Pravda*, 26 June 1948, p. 3.
71. See *Pravda*, 12 July 1948, p. 3.
72. I. Sizov and T. Zarubailo, “V Plenu Idealisticheskikh Vozzrenii,” *Kul’tura i Zhizn’*, 21 August 1948, p. 2.
73. S. Vavilov, “Vystuplenie,” in “Stenograficheskii Otchet,” pp. 26–27.
74. A. Oparin, “Vystuplenie,” in “Stenograficheskii Otchet,” p. 43.
75. *Pravda*, 27 August 1948, p. 3.
76. NA AMN, f. 9120, op. 2, d. 458, l. 380.
77. See *Knizhnaia Letopis’* from 1948 to 1950.
78. See *Priroda*, 1948, no. 10–12.
79. Notebooks, Dobzhansky papers, APS.
80. ARAN, f. 2, op. 1-1948, d. 149, ll. 57–59.
81. Khrushchov, “Vystuplenie,” p. 87. Italics added.
82. Vavilov, “Vystuplenie,” p. 27.
83. Oparin, “Vystuplenie,” p. 43.
84. NA APN, f. 25, op. 1, d. 484, l. 31.
85. NA APN, f. 25, op. 1, d. 507, ll. 1–7.
86. *Vestnik AMN SSSR*, 1948, no. 5, pp. 6–8.
87. For the report of the commission that examined Orbeli’s institute, see N. L. Kremetsov, “Ot Sel’skogo Khoziaistva do . . . Meditsiny,” pp. 103–113.

88. B. Polynov, "Vystuplenie," in "Stenograficheskii Otchet," p. 147.
89. See F. G. Krotkov, "Zadachi Otdeleniia Gigieny, Epidemiologii i Mikrobiologii Akademii Meditsinskikh Nauk SSSR," *Vestnik AMN SSSR*, 1948, no. 6, pp. 43–47.
90. E. N. Pavlovskii and P. S. Pervomaiskii, "Ob Eksperimental'nom Izmenenii Nasledovaniia Okraski Shersti u Krolika," *Izvestiia AN SSSR, Serii Biologicheskaiia*, 1949, no. 6, pp. 702–708.
91. See, for instance, E. N. Pavlovskii, "Blizhaishie Zadachi Entomologii v Svete Michurinskoi Biologii," *Entomologicheskoe Obozrenie*, 1949, vol. 30, pp. 181–184; and V. I. Zhadin, "Sovremennoe Sostoianie i Zadachi Hidrobiologii v Svete Ucheniia Vil'iamsa-Michurina-Lysenko," *Zoologicheskii Zhurnal*, 1949, vol. 28, no. 3, pp. 197–212.
92. See N. L. Kremontsov, "Evolutsionnye Aspekty Povedeniia Zhivotnykh: Istoriiko-Kriticheskii Analiz Otechestvennykh Issledovaniia" (diss., IIET, Leningrad, 1989).
93. See SPb ARAN, f. 806, op. 1-1948, d. 26, l. 53.
94. *Ibid.*, l. 3 reverse. Italics added.
95. See "Protokoly Proizvodstvennykh Soveshchaniia Laboratorii Genetiki Vysshei Nervnoi Deiatel'nosti," in SPb ARAN, f. 806, op. 1-1948, d. 30.
96. GARF, f. r9120, op. 2, d. 589, l. 153. Italics added.
97. See GARF, f. 8009, op. 2, pt. 2, d. 1225, 28 ll.
98. *Ibid.*, l. 8.
99. In accordance with the Council of Ministers resolution of March 6, 1946, the salary of a professor in educational institutions was at least as high as that in research institutes.
100. See the speech of M. Svetlov cited on p. 234.
101. See, for instance, I. Prezent's letter to G. Malenkov, August 21, 1948, in RTsKhIDNI, f. 17, op. 121, d. 670, ll. 74–75.
102. *The Situation in Biological Science*, p. 631. Italics added.
103. *Biulleten' MVO*, 1948, no. 11, pp. 3–4.
104. *Ibid.*, p. 3.
105. *Ibid.*, pp. 7–8.
106. See GARF, f. 9396, op. 1, d. 178, ll. 122–124.
107. Compare issues 4 and 5 of 1948.
108. *Uchitel'skaia Gazeta*, 16 December 1948, p. 4.
109. RTsKhIDNI, f. 17, op. 118, d. 147, ll. 48–54.
110. *Ibid.*, l. 48.
111. *Ibid.*, ll. 51, 52.
112. *Ibid.*, l. 48.
113. See Timofeev-Resovskii, "Lager' i 'Sharashka'."

CHAPTER 9

THE REALITIES OF STALINIST SCIENCE: CAREERISM AND INSTITUTIONAL RIVALRY

1. I know of only one geneticist (Iosif Rapoport) who did not perform a "repentance," and of very few other scientists (among them Aleksandr I. Gurvich, Ivan S. Beritashvili, and Lina Shtern) who refused to admit their "sins."
2. See, for example, N. Dubinin to Stalin, August 30, 1948, in RTsKhIDNI, f. 17, op. 118, d. 151, l. 75; D. Petrov to Stalin, September 1948, in RTsKhIDNI, f. 17, op. 118, d. 147, ll. 55–61; Iu. Polianskii to the Central Committee's Science Depart-

ment, October 14, 1948, in RTsKhIDNI, f. 17, op. 132, d. 72, ll. 125–126; A. Malinovskii to Stalin, October 19, 1948, in GARF, f. 5446, op. 50, d. 3558, ll. 57–55; P. Rokitskii to Stalin, October 30, 1948, in RTsKhIDNI, f. 17, op. 132, d. 67, ll. 118–121; A. Zhebrak to Stalin, October 31, 1948, in RTsKhIDNI, f. 17, op. 118, d. 151, ll. 73–74; and many others.

3. Polianskii to the Central Committee's Science Department, October 14, 1948.

4. See, for example, Zhebrak's letter to the editor, *Pravda*, 15 August 1948, p. 3; and his letter to Stalin of October 31, 1948.

5. Malinovskii to Stalin, October 19, 1948.

6. TsGAIPD, f. 25, op. 18, sv. 1341, d. 62, l. 21.

7. One philologist, for instance, declared at a party meeting at Leningrad University that "the defeat of Weismannism-Morganism in biology has a very close relation to philology, for many philologists came from alien schools and directions, and ultimately support the very same philosophical conclusions that Weismannists support." TsGAIPD, f. 984, op. 3, sv. 98, d. 3, l. 30. Published and archival materials provide innumerable such declarations by geographers, mathematicians, chemists, and other specialists.

8. RGAE, f. 8390, op. 1, d. 2280, l. 56.

9. N. Zhukov-Verezhnikov and V. Timakov, "Izuchenie Nasledstvennosti Mikroorganizmov i Uchenie Michurina," *Meditsinskii Rabotnik*, 1948, no. 36, p. 2.

10. N. Zhukov-Verezhnikov and L. Kalinichenko, "Uchenie Michurina-Lysenko i Nekotorye Sovremennye Mediko-Biologicheskie Problemy," *Sovetskaia Meditsina*, 1948, no. 10, pp. 1–5; and "O Biologicheskikh Problemakh v Meditsinskoi Nauke," *Vestnik AMN SSSR*, 1948, no. 4, pp. 5–17. The articles were probably written by the younger partner and then edited and signed by his senior colleague.

11. GARF, f. r9120, op. 2, d. 588, l. 183.

12. NA AMN, f. 9120, op. 2v, d. 13, l. 111.

13. *Ibid.*, l. 110.

14. L. A. Kalinichenko, *Vvedenie v Michurinskuiu Biologiiu* (Moscow: Uchpedgiz, 1950).

15. TsGAIPD, f. 24, op. 45, d. 155, ll. 1–196.

16. E. Pavlovskii, "Vystuplenie," in "Stenograficheskii Otchet," pp. 111–112.

17. K. Skriabin, "Vystuplenie," in "Stenograficheskii Otchet," p. 202.

18. V. Bushinskii, "Vystuplenie," in "Stenograficheskii Otchet," pp. 119–129.

19. RTsKhIDNI, f. 17, op. 132, d. 40, ll. 163–168.

20. *Ibid.*, ll. 184–201; see also GARF, f. 5446, op. 50, d. 2040, ll. 83–89.

21. This was the title of the main resolution adopted by the Fourth Congress of Soviet Physiologists in 1930. See *Chetvertyi Vsesoiuznyi S'ezd Fiziologov. Rezoliutsii i Postanovleniia* (Khar'kov, 1932), pp. 11–14.

22. In 1933 the First All-Union Conference on Planning Physiological Research was convened in Leningrad.

23. See, for instance, A. A. Firsov, "Iz Istorii Koltushskogo Primatologicheskogo Tsentra," in *Repressirovannaia Nauka*, vol. 2, pp. 200–208.

24. See Nikolai Kremmentsov, "W. A. Wagner and the Origin of Russian Ethology," *International Journal of Comparative Psychology*, 1992, vol. 6, no. 1, pp. 61–70.

25. See Joravsky, *Russian Psychology*, pp. 203–220, 379–414.

26. See *Fiziologicheskie Nauki v SSSR*.

27. See Todes, "Pavlov and the Bolsheviks."

28. In 1925, when Pavlov quit his work in the Military-Medical Academy, Orbeli had inherited his department of physiology.

29. See, for example, the personal file (*lichnoe delo*) of E. A. Asratian in TsGAIPD, no. 791606.

30. In 1948 there were four large physiology institutes in the Academy of Medical Sciences—the Institute of Normal Physiology, headed by Petr Anokhin; the Institute of Physiology, headed by Razenkov; the Institute of the Evolutionary Physiology and Pathology of Higher Nervous Activity, headed by Orbeli; and the Institute of the Physiology of the Central Nervous System, headed by Konstantin Bykov—and a number of physiology laboratories in other institutions, such as the Institute of Nutrition and the Institute of Experimental Medicine. In comparison, in the Academy of Sciences there was only one—the Pavlov Institute of Physiology, headed by Orbeli.

31. In comparison, only three microbiologists were in the academy membership. See *Akademiia Meditsinskikh Nauk SSSR: Spravochnik na 1946 g.* (Moscow: Izd. AMN SSSR, 1946).

32. See NA AMN, f. 1, op. 1, d. 255, ll. 195–200.

33. *Ibid.*, l. 195.

34. I. P. Pavlov, *Dvadsatiletanii Opyt Ob"ektivnogo Izucheniia Vyshei Nervnoi Deiatel'nosti (Povedeniia) Zhivotnykh*, 2d ed. (Moscow-Leningrad: Gosizdat, 1925), p. 251.

35. See "International Physiological Congress," *British Medical Journal*, 1923, vol. 2 (August 11), pp. 256–257; and I. P. Pavlov, "New Research on Conditioned Reflexes," *Science*, 1923, vol. 58, pp. 359–361.

36. See "Current Topics and Events," *Nature*, 1923, vol. 112, p. 664.

37. See N. P. Studentsov, "Nasledovanie Priruchennosti u Belykh Myshei," *Russkii Fiziologicheskii Zhurnal*, 1924, vol. 7, no. 1–6, pp. 317–318.

38. See N. K. Kol'tsov, "Noveishie Popytki Dokazat' Nasledstvennost' Blagopriobretennykh Priznakov," *Russkii Evgenicheskii Zhurnal*, 1924, vol. 3, no. 2–3, pp. 159–167; and N. K. Kol'tsov, "I. P. Pavlov: Trud Zhizni Velikogo Biologa," *Biologicheskii Zhurnal*, 1936, vol. 5, no. 3, pp. 387–402.

39. See M. Levin, "E. Smirnov, 'Problema Nasledovaniia Priobretennykh Priznakov'," *Pravda*, 13 May 1927, p. 4. In a footnote, Levin mentioned that a copy of the letter had been provided to him by the addressee, Dr. Gutten.

40. See N. A. Golubev, "Skorost' Obrazovaniia Individual'no-Priobretennykh Refleksov u Trekh Pokolenii Morskikh Svinok," in *Trudy III S"ezda Fiziologov* (Leningrad, 1928), pp. 89–90.

41. See Huxley, "Science in the USSR."

42. Kh. S. Koshtoiants, *Ocherki po Istorii Fiziologii v Rossii* (Moscow-Leningrad: Izd. AN SSSR, 1946), p. 292.

43. F. P. Maiorov, *Istoriia Ucheniia ob Uslovykh Refleksakh* (Moscow-Leningrad: Izd. AN SSSR, 1948), p. 142.

44. GARF, f. r9120, op. 2, d. 588, ll. 186, 187.

45. GARF, f. r9120, op. 2, d. 538, ll. 21–22.

46. *Ibid.*, l. 21.

47. See, for example, Anatolii Ivanov-Smolenskii's speech, in GARF, f. r9120, op. 2, d. 539, ll. 59–73.

48. GARF, f. r9120, op. 2, d. 539, l. 294.

49. *Ibid.*, ll. 276–288.

50. Ibid., l. 302.
51. Ibid., l. 303.
52. Ibid., l. 308.
53. GARF, f. 8009, op. 1, d. 715, l. 51.
54. GARF, f. 8009, op. 1, d. 716, l. 215.
55. Ibid., l. 150.
56. Ibid., ll. 171–172.
57. See, for example, Anokhin’s speech, in GARF, f. 8009, op. 1, d. 716, ll. 243–256.
58. GARF, f. r9120, op. 2, d. 539, l. 216.
59. GARF, f. 8009, op. 1, d. 716, l. 228.
60. Koshtoiants was director of the Institute of the History of Science and Technology.
61. ARAN, f. 2, op. 1–1948, d. 150, l. 38.
62. GARF, f. 8009, op. 1, d. 716, l. 279.
63. NA AMN, f. 1, op. 1, d. 236, l. 121.
64. The two were Arkadii Makarychev, former head of the academy’s personnel department and recently appointed deputy director of its Institute of Nutrition, and Lev Kalinichenko, the acolyte of Nikolai Zhukov-Verezhnikov in the latter’s quest for the vice-presidency.
65. SPb ARAN, f. 895, op. 2, d. 96, l. 92. For the complete text of the report, see Kremontsov, “Ot Sel’skogo Khoziaistva do . . . Meditsiny,” pp. 95–112.
66. SPb ARAN, f. 895, op. 2, d. 96, l. 92.
67. SPb ARAN, f. 895, op. 2, d. 97, l. 94.
68. GARF, f. 8009, op. 1, d. 716, l. 185.
69. GARF, f. r9120, op. 2, d. 593, ll. 78 reverse–79.
70. SPb ARAN, f. 806, op. 1–1948, d. 16, ll. 29–30.
71. SPb ARAN, f. 806, op. 1–1948, d. 26, l. 52. Italics added.
72. SPb ARAN, f. 153, op. 1–1948, d. 17, ll. 41–41 reverse.
73. SPb ARAN, f. 806, op. 1–1949, d. 11, l. 327.
74. Ibid.
75. SPb ARAN, f. 806, op. 1–1949, d. 15, ll. 2–3.
76. GARF, f. r9120, op. 2, d. 589, l. 141.
77. See *Nauchnaia Sessiia, Posviashchennaia Problemam Fiziologicheskogo Ucheniia Akademika I. P. Pavlova, 28 Iiunia–4 Iiulia 1950 g.: Stenograficheskii Otchet* (Moscow: Izd. AN SSSR, 1950).
78. See “‘Pavlovskaiia Sessiia’ 1950 g. i Sud’by Sovetskoi Fiziologii,” parts 1–3, *VIET*, 1988, no. 3, pp. 129–141; no. 4, pp. 147–156; no. 5, pp. 94–108.
79. RTsKhIDNI, f. 17, op. 132, d. 347, ll. 1–130.
80. Zhdanov’s letter to Stalin of July 15, 1948, published in *Pravda*, 7 August 1948, p. 3.
81. See RTsKhIDNI, f. 17, op. 132, d. 177, ll. 144–162. He also perhaps had a personal reason to begin a campaign against Orbeli. In the late 1970s, when I was a graduate student at the Pavlov Institute of Physiology in Koltushi, I several times heard a story about the serious personal quarrel between Orbeli and Zhdanov during the preparation of Pavlov’s centenary in spring 1949. The timing of Zhdanov’s involvement in the anti-Orbeli campaign seems to support this story.
82. RTsKhIDNI, f. 17, op. 132, d. 347, ll. 1–4. In his memoirs, Zhdanov “modestly”

omits his own very active role in the organization of the “Pavlovian campaign.” See Zhdanov, “Vo Mgle Protivorechii,” p. 88.

83. RTsKhIDNI, f. 17, op. 132, d. 347, ll. 10–94.

84. See I. V. Stalin, “Marksizm i Voprosy Iazykoznaniiia,” *Pravda*, 20 June 1950, p. 1.

85. See *Pravda* from 29 June through 5 July 1950.

86. Iu. Zhdanov, “Nekotorye Itogi Sessii po Fiziologii,” *Pravda*, 28 July 1950, p. 2.

87. See *Nauchnaia Sessia*. For an abridged English translation of the meeting’s materials, see *Scientific Session on the Physiological Teaching of Academician I. P. Pavlov, June 28–July 4, 1950. Inaugural Address, Reports, Resolution* (Moscow: Foreign Language Publishing House, 1951).

88. *Nauchnaia Sessia*, p. 7.

89. *Ibid.*

90. See L. G. Leibson, “‘Pavlovskaiia Sessia’ 1950 g. i Sud’by Sovetskoi Fiziologii,” *VIET*, 1988, no. 4, pp. 147–152; and L. G. Leibson, *Akademik L. A. Orbeli. Neopublikovannye Glavy Biografii* (Leningrad: Nauka, 1990).

91. GARF, f. 8009, op. 1, d. 716, l. 248.

92. Upon the organization of the Academy of Medical Sciences, VIEM was dissolved. Its Leningrad branch was reorganized into a separate Institute of Experimental Medicine under the academy.

93. See, for example, *Fiziologicheskoe Uchenie Akademika I. P. Pavlova v Psikhiiatrii i Nevropatologii. Stenograficheskii Otchet Ob’edinennogo Zasedaniia Rasshirenogo Prezidiuma AMN SSSR i Plenuma Pravleniia Vsesoiuznogo Obshchestva Nevropatologov i Psikhiatrov, 11–15 Oktiabria 1951 g.* (Moscow: Izd. AMN SSSR, 1951).

94. See, for example, V. D. Timakov, “Fiziologicheskoe Uchenie I. P. Pavlova i Zadachi Mikrobiologii,” *Vestnik AMN SSSR*, 1950, no. 5, pp. 8–15. A long bibliography of works on “Pavlov’s legacy” published soon after the Pavlov session provides numerous examples of such attachment of Pavlov’s name to research subjects. See N. A. Chebysheva, “Literatura o I. P. Pavlove, Vyshedshaia za Period 1949–51 gg.,” *Fiziologicheskii Zhurnal SSSR*, 1951, vol. 37, no. 5, pp. 632–660; and N. A. Chebysheva and L. V. Bobovskaia, “Literatura o I. P. Pavlove, Vyshedshaia za Period 1949–52 gg.,” *Fiziologicheskii Zhurnal SSSR*, 1952, vol. 38, no. 5, pp. 655–670.

95. See Sonin, “Soveshchanie, Kotoroe Ne Sostoialos”; Gorelik, “Fizika Universitetskaia i Akademicheskaiia”; Holloway, *Stalin and the Bomb*, pp. 207–213; and A. S. Sonin, “*Fizicheskii Idealizm.*” *Istoriia Odnoi Ideologicheskoi Kampanii* (Moscow: Fiziko-Matematicheskaiia Literatura, 1994).

96. My account of the events in Soviet physics relies heavily on the research of Gennadii Gorelik. Although we disagree on a number of issues, our numerous discussions proved very important in my own understanding of these events, and I am profoundly grateful to Gorelik for his help.

97. For a detailed account of the early development of Soviet physics, see Josephson, *Physics and Politics in Revolutionary Russia*. The recently published memoirs of a Leningrad physicist, Sergei Frish, present a very illuminating (although inevitably personal) account of more than fifty years in Soviet physics. See Frish, *Skvoz’ Prizmu Vremeni*.

98. Kapitsa’s correspondence with Stalin, Molotov, and other officials of the Central Committee is very illuminating in this respect. See Kapitsa, *Pis’ma o Nauke*.

99. See, for example, the collection of articles *Teoriia Otnositel’nosti i Materializm*.

100. See, for instance, physicists' articles in the infamous collection *To the Memory of V. I. Lenin (Pamiati V. I. Lenina)*: G. E. Garig, "Lenin i Sovremennaia Fizika," pp. 365–448; A. F. Ioffe, "Razvitie Atomisticheskikh Vozzrenii v XX Veke," pp. 449–468; and S. I. Vavilov, "Dialektika Svetovykh Iavlennii," pp. 469–484.

101. See, for example, Josephson, "The Great Terror and the Assault on the Lenin-grad Physics Community," chapter 9 of *Physics and Politics in Revolutionary Russia*, pp. 276–317; also G. E. Gorelik, "Moskva, Fizika, 1937 God," *VIET*, 1992, no. 1, pp. 15–32.

102. For an early account focusing on the intellectual content of discussions in Soviet physics and its relation to Marxism, see Graham, *Science and Philosophy in the Soviet Union*, pp. 69–138. For more recent studies, illuminating certain institutional aspects of the discussions, see V. P. Vizgin, "Martovskaia (1936 g.) Sessii AN SSSR: Sovetskaia Fizika v Fokuse," *VIET*, 1990, no. 1, pp. 63–84; G. E. Gorelik, "Obsuzhdenie 'Naturfilosofskikh Ustanovok Sovremennoi Fiziki' v Akademii Nauk SSSR v 1937–1938 Godakh," *VIET*, 1990, no. 4, pp. 17–31; and Josephson, *Physics and Politics in Revolutionary Russia*, pp. 247–275, 295–305.

103. For a detailed account of the Soviet atomic project, see Holloway, *Stalin and the Bomb*; also Goleusova, "'Arzamas-16'."

104. See, for example, numerous letters addressed to the party secretaries Aleksei Kuznetsov and Andrei Zhdanov in RTsKhIDNI, f. 17, op. 125, d. 618, ll. 1–157; d. 989, ll. 1–87.

105. See Surkov, Tvardovskii, and Fish, "Na Sud Obshchestvennosti."

106. According to Josephson, by 1940 there were more than a thousand Soviet physicists. See *Physics and Politics in Revolutionary Russia*, p. 4. Vizgin states that by 1936 the number of Soviet physicists had already exceeded two thousand. See "Martovskaia (1936 g.) Sessii AN SSSR," p. 68.

107. One of the reasons for such migration was clearly the university's lack of necessary research facilities. Unlike Narkomtiazhprom or the Academy of Sciences, the Committee for Higher Education, which in the 1930s assigned the university budget, simply could not afford the expensive equipment and machinery required for research at the cutting edge of physics.

108. For instance, despite his numerous attempts to attain the coveted rank, Predvoditelev, who had become a corresponding member of the academy in 1939, was never elevated to full membership because of the persistent efforts of his academy opponents. See Gorelik, "Fizika Universitetskaia i Akademicheskaja," pp. 38–39.

109. Kapitsa, *Pis'ma o Nauke*, fn. 11, p. 217.

110. *Ibid.*

111. *Ibid.*, pp. 216–217.

112. See Gorelik, "Fizika Universitetskaia i Akademicheskaja," p. 34.

113. In 1951 the faculty was reorganized into the Moscow Physico-Technical Institute.

114. See GARF, f. 9396, op. 1, d. 123, ll. 161–162.

115. See Sonin, "Soveshchanie, Kotoroe Ne Sostoialos"; Sonin, "*Fizicheskii Idealizm*"; and Gorelik, "Fizika Universitetskaia i Akademicheskaja." See also the recollections of a participant at the rehearsals: Frish, *Skvoz' Prizmu Vremeni*, pp. 347–370.

116. Vavilov's report was later published in a slightly edited and abridged form in the infamous collection entitled *Philosophic Issues of Modern Physics*. See S. I. Vavilov, "Filosofskie Problemy Sovremennoi Fiziki i Zadachi Sovetskikh Fizikov v

Bor'be za Peredovuiu Nauku," in *Filosofskie Voprosy Sovremennoi Fiziki* (Moscow: Izd. AN SSSR, 1952), pp. 5–30, cit. on p. 5.

117. The Secretariat had first scheduled the meeting to be held in Moscow from January 24 to January 30, 1949. Later it was rescheduled for February, then for March 21–26.

118. Cited in Gorelik, "Fizika Universitetskaia i Akademicheskaja," p. 45.

119. The only member of the university group who did have a connection to the project was Iakov Terletskii, who served as an expert to evaluate the information on American atomic research gathered by Soviet spies in the West. See Iu. Smirnov, "Dopros' Nil'sa Bora: Svidetel'stvo iz Arkhiva," *VIET*, 1994, no. 4, pp. 111–122. Even he, however, because of the nature of his work, did not know the scale of the research conducted and the personnel involved. Besides, Terletskii could not discuss his involvement in the top secret atomic project with his "comrades-in-arms."

120. See, for example, the recollections of a member of the academy group, A. P. Aleksandrov, "Kak Delali Bombu," *Izvestiia*, 22 July 1988, p. 3; also Josephson, *Physics and Politics in Revolutionary Russia*, pp. 322–323; Frish, *Skvoz' Prizmu Vremeni* pp. 347–370; and Sonin, "Fizicheskii Idealizm," pp. 160–161.

121. On the campaign in astronomy, see I. A. Prokof'eva, "Konferentsiia po Ideologicheskim Voprosam Astronomii, Sozvannaia Leningradskim Otdeleniem Vsesoiuznogo Astronomo-Geodezicheskogo Obshchestva," *Priroda*, 1949, no. 6, pp. 71–77; and "Soviet Astronomy," *New York Times*, 15 July 1949, p. 18. See also the recollections of the prominent Soviet astronomer Iosif Shklovskii, *Eshelon* (Moscow: Novosti, 1991), pp. 176–182. For a historical account of the events in Soviet astronomy, see Ronald E. Doel and Robert A. McCutchinson, eds., "Astronomy and the State: CIS Perspectives," a special issue of *Journal for the History of Astronomy*, 1995, no. 4.

122. For details about the campaign in linguistics, see Alpatov, *Istoriia Odnogo Mifa*.

123. See *Soveshchanie po Probleme Zhivogo Veshchestva i Razvitiia Kletok; Vnekletochnye Formy Zhizni: Sbornik Materialov* (Moscow: Izd. AMN SSSR, 1952); and G. K. Khrushchov, "K Itogam Konferentsii po Probleme Razvitiia Kletochnykh i Nekletochnykh Form Zhivogo Veshchestva," *VAN*, 1952, no. 9, pp. 92–95. For a discussion of events in cytology, see Aleksandrov, *Trudnye Gody Sovetskoi Biologii*.

124. "Formalism" was one of the numerous "isms" employed in the 1930s as a synonym to "idealism" and antonym to "materialism." This is why Lysenkoists labeled Mendelian genetics "formal genetics." In the 1940s, the term "formalism" was put back in circulation largely by the resolution of the Central Committee "On the Opera *Velikaia Druzhba*" (issued in February 1948), which condemned "formalistic" perversions in Soviet music. The word was widely deployed in the discussions in chemistry, physics, biology, and mathematics.

125. See E. I. Kolchinskii, "Vzgliad iz Rektorata na Biologiiu v Leningradskom Universitete: Interv'iu s Akademikom A. D. Aleksandrovym," in *Repressirovannaia Nauka*, vol. 2, pp. 169–175, cit. on p. 175.

126. See O. A. Reutov, "O Knige G. V. Chelintseva 'Ocherki po Teorii Organicheskoi Khimii,'" *Voprosy Filosofii*, 1949, no. 3, pp. 309–319; O. A. Reutov, "K Voprosu o Formalizme i Uproshchenchestve v Teorii Organicheskoi Khimii," *Voprosy Filosofii*, 1950, no. 2, pp. 181–194; "Soveshchanie po Teorii Khimicheskogo Stroeniia v Organicheskoi Khimii," *VAN*, 1951, no. 12, pp. 111–123; and *Sostoianie Teorii Khimicheskogo Stroeniia. Vsesoiuznoe Soveshchanie 11–14 Iunia 1951 g.*

Stenograficheskii Otechet (Moscow: Izd. AN SSSR, 1952). For a discussion of the events in chemistry, see Loren R. Graham, "Chemistry," chapter 9 of *Science, Philosophy, and Human Behavior in the Soviet Union* (New York: Columbia University Press, 1987), pp. 294–319. For a more recent analysis, see A. A. Pechenkin, "Antirezonansnaia Kampaniia 1949–1951 gg.," in *Metafizika i Ideologiia v Istorii Estestvoznaniia* (Moscow: Nauka, 1994), pp. 184–219.

127. See G. V. Chelintsev, "O Novoi Pozitsii Khimikov Makhistov," *Voprosy Filosofii*, 1950, no. 2, pp. 170–180. Ironically, in 1958, when the Academy of Sciences resumed the election of foreign members, Pauling was one of the two Americans elected that year.

128. See *Fiziologicheskie Nauki v SSSR*, pp. 405–406.

129. See Alpatov, *Istoriia Odnogo Mifa*.

130. Many historians, particularly in Russia, still do. See, for example, the recently published collection *Metafizika i Ideologiia v Istorii Estestvoznaniia*.

131. In a sense, a demonstration of an even more powerful bomb than the American one would be the best way to propagandize such a superiority in the Cold War context.

132. In 1948, neither geneticists nor their opponents even knew that Timofeeff-Ressovsky was in Russia. See Timofeev-Resovskii, "Lager' i 'Sharashka'."

133. See Joravsky, *The Lysenko Affair*, p. 307.

134. Topchiev was appointed to the post on March 17, four days before the meeting was to begin. (As had been the case with Nikolai Gorbunov in 1935, Topchiev was appointed before he became an academician; his "election" to the academy was staged on June 4, 1949.)

135. This quotation is from the report of a commission that prepared a discussion in chemistry. See D. N. Kursanov, M. G. Gonikberg, B. M. Dubinin, and others, "K Voprosu o Sovremennom Sostoianii Teorii Khimicheskogo Stroeniia," *Uspekhi Khimii*, 1950, vol. 19, no. 5, p. 529, cited in Pechenkin, "Antirezonansnaia Kampaniia 1949–1951 gg.," p. 188.

136. For instance, during the Michurinist campaign, a secretary of a regional party committee reported to the first secretary of the Moscow City Party Committee, Georgii Popov, on the "misconduct" of certain local party officials, who "supported" genetics. See RTsKhIDNI, f. 17, op. 121, d. 620, ll. 71–73.

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