

[Click here to view  
current issues](#)  
on the Chicago Journals website.

---

Review

Reviewed Work(s): Osnovanie Peterburgskoi akademii nauk (The Formation of the Petersburg Academy of Sciences) by Iu. Kh. Kopelevich

Review by: Nathan M. Brooks

Source: *Isis*, Vol. 72, No. 1 (Mar., 1981), pp. 107-108

Published by: The University of Chicago Press on behalf of The History of Science Society

Stable URL: <https://www.jstor.org/stable/231192>

Accessed: 12-04-2021 20:23 UTC

---

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



JSTOR

*The History of Science Society, The University of Chicago Press* are collaborating with JSTOR to digitize, preserve and extend access to *Isis*

and "The Relation Between Philosophy of Science and History of Science," both of which have previously appeared in the Boston Studies series in Volumes 3 and 39 respectively.

One overall shortcoming of *Models* is its lack of a unifying theme. As the author admits in his introduction, these essays were written as separate self-contained papers with no conscious attempt to elaborate or defend a deep underlying project. Wartofsky does, however, suggest that many of his occasional pieces can be seen as "a kind of bumbling prolegomenon to a more systematic project" (p. xiv), namely, the project he calls "historical epistemology." Historical epistemology is characterized as the study of how what we take to be knowledge changes where knowledge is conceived as the conscious, self-creative *activity* of representing reality by means of models. These models constitute the a priori, but historically mutable, forms of human perception and cognition. Our representations change the way we understand and see the world and themselves evolve in response to the social and cultural practice of representing what we know and perceive. The elucidation of this thesis in connection with perception provides some of the best material in Wartofsky's book. Science, in this view, is the *theoretical* mode of cognitive human praxis and as such is intended to serve social human needs through the acquisition of knowledge. Whether this historical-materialist conception of science has any real ability to explain the genesis of science and the rationality of its evolution must await the detailed development of the thesis and the provision of case studies. The present collection of essays affords only fragmentary glimpses of this ambitious project.

MARTIN V. CURD

## ■ Scientific Institutions

**Iu. Kh. Kopelevich.** *Osnovanie Peterburgskoi akademii nauk* (The formation of the Petersburg Academy of Sciences). 212 pp., illus., bibl., index. Leningrad: Nauka, 1977.

Iu. Kh. Kopelevich has written an excellent institutional history of the early years

of the Imperial Academy of Sciences in St. Petersburg, founded in 1725. The first half of the book traces the conception, planning, and eventual establishment of an advanced scientific institution in the scientifically backward Russian Empire of the early eighteenth century. Throughout Kopelevich taps the rich archival collections of the Academy of Sciences, here citing passages from official and personal correspondence to illustrate the efforts made to attract eminent European scientists to St. Petersburg and the scientists' response.

In the second half of the book Kopelevich examines the organizational evolution of the Academy, the conflicts over its purposes and goals, the relationship of the Academy to the government, the establishment of international scientific contacts, and other similar matters. This section carries the history of the Academy up to the confirmation of its first official statutes in 1747.

This study is particularly valuable because, despite the existence of many other treatments of the Academy, it is the first investigation focusing primarily on the Academy's institutional aspects. Previous histories of the Academy have dealt with the academicians' scientific research to the near exclusion of information about the institutional contexts in which the research was performed. Moreover, Kopelevich does not fall prey to the common tendency of Soviet scholars to write "institutional" histories consisting of exhaustive but narrowly focused chronologies lacking analytical frameworks and comparative analyses. The author of a previous book on the early history of European scientific academies and societies, Kopelevich includes in the present work extended discussions of these institutions in order to point out the unique features of the Russian Academy. His skillful use of both archival and published materials and frequent summaries of the discussion help the reader understand more clearly the historical context in which the Academy operated.

Despite the general excellence of this study, it is disappointing that Kopelevich chose not to include discussions of institutions and individuals affiliated with the Academy but not directly associated with the academicians—the scientific core of the Academy. Unlike other European scientific academies, the Russian Academy included a publishing house, a large li-

brary, a natural history museum, skilled instrument makers, craftsmen, artists, and translators. The Academy became not only the scientific center of Russia but its cultural center as well, serving as one of the prime routes for Westernization during the eighteenth century. Because the present work offers no more than passing references to these aspects of the Academy, the reader is left unaware of the multifarious activities of the Academy's different parts and their mutual relations.

However, this criticism does not diminish my high regard for *The Founding of the Petersburg Academy of Sciences*. I hope that Kopelevich continues this valuable study by giving us a volume on the history of the Academy during the second half of the eighteenth century.

NATHAN M. BROOKS

## ■ Social Relations of Science

**Robert Lewis.** *Science and Industrialization in the USSR*. (Studies in Soviet History and Society.) xiv + 211 pp., tables, index. New York: Holmes and Meier, 1979. \$30.

This essay is not the comprehensive study of science and Soviet industrialization that its title suggests, but it does contain much new information and some useful insights. Robert Lewis deals primarily with the period between 1917 and 1940. After a brief overview of the Tsarist legacy as well as the organization and resources allocated to the scientific research effort of the USSR between the world wars, he focuses primarily on research efforts devoted to industry. His conclusion is that the USSR, despite its poverty and relative isolation from the more developed economies of the world in terms of trade and capital investment, devoted a larger proportion of its GNP to scientific research, especially industrial research, than Western nations during much of the interwar period. Beyond monetary support the Soviets also gave a good deal more attention to the planning and organization of scientific research. "Against the background of poorly developed 'science policy' in the West, the attention given to industrial R & D and science in general in the Soviet Union is impressive."

This is an important point, but what the author fails to suggest is what this commitment to science in both investment and rhetoric may reflect about the Soviet political system and the "scientism" of official Soviet culture, the need to prove the "scientific" basis of the regime through an emphasis on the development of an extensive research network. Unfortunately, the productive results of Soviet research may have been inversely proportional to the attention given it, and the real problem is to explain why.

Lewis recognizes that the results in terms of successful innovations were disappointing. He provides a good deal of evidence that the Soviets themselves were very concerned about their inability to obtain a greater return from their growing investment in science. Lewis discusses a number of barriers to the successful application of research results to industry, but unfortunately his discussion does not probe beyond those reasons that were discussed in the Soviet press at the time: the inadequate structure of the R & D system, level of provision of necessary facilities for development work and testing, attitudes of the organizations involved, and so on. His analysis fails to list these factors in any order of relative importance, or to probe deeper into the systemic causes that would have been too sensitive for Soviet sources at the time to discuss: priorities of the regime that hindered indigenous innovation, flaws in the planning system, inadequate incentives, and lack of market competition or an adequate substitute for competition to stimulate widespread innovation. Unable to experiment with more basic systemic changes, the Soviet solution to problems in the innovation process, then as now, involved constant reorganization of the research structures. The author describes these very clearly and at length.

Lewis also discusses the extent to which Soviet industrial research in the prewar period was concerned with the application of foreign technological experience to Soviet conditions. He believes that Soviet results in this area were more innovative than other scholars, such as Anthony Sutton, have concluded. Lewis draws a useful distinction between the adaptation of foreign technology, which involves minor changes, and the modification of such technology, which involves more creative changes and design work. However, to