

cinctly defined in context. Readers familiar with recent scholarship will note that Josephson draws upon it heavily but keeps it firmly in the background. Anyone teaching an undergraduate course dealing with twentieth-century science, the Soviet Union, Nazi Germany, the environment, science and politics, bioethics, or science and society generally will want to consider assigning this short, accessible study. Kudos to the author, the publisher, and the series.

MARK B. ADAMS

Vitalii I. Gol'danskii. *Essays of a Soviet Scientist: A Revealing Portrait of a Life in Science and Politics.* (Masters of Modern Physics.) xvi + 303 pp., figs., index. Woodbury, N.Y.: American Institute of Physics, 1997. \$39.95.

The Soviet Academy of Sciences did not publish biographical memoirs of its deceased members. Some, however, were honored with volumes of recollections by colleagues and pupils. Although this genre has occasionally been criticized for being more hagiographic than historiographic, these publications can serve as sources of historical information for the attentive reader.

Over the years, Vitalii Gol'danskii, himself a distinguished chemist and physicist, published recollections of Lev Landau, Andrei Sakharov, Nikolai Semenov, Yakov Zel'dovich, and several of his other famous colleagues. Collected under one cover, these recollections also constitute a biography of their author, justifying the book's subtitle: *A Revealing Portrait of a Life in Science and Politics*. Toward the end of World War II, Gol'danskii entered the Institute for Chemical Physics in Moscow as a graduate student. The discrimination against Jews, which was then starting in Soviet academia, did not promise him an easy career. From one remark of Landau's in 1946, he drew the conclusion that without a "godfather" Academician who could push him through, a scholar was like "a railroad car without an engine" (p. 65). The following year Gol'danskii completed his thesis, was put to work on classified nuclear topics, and married the daughter of the institute's director, Semenov, despite her parents' worries that he would not be able to provide her with the privileged life to which she was accustomed.

Life in Stalin's time was difficult. Semenov had to defend the leading position of his group from political attacks by rivals at Moscow University. He also had to break off contact with Piotr Kapitza, once his closest friend, because Kapitza fell into political disfavor in 1946. But,

according to Gol'danskii, Semenov's deepest humiliation was not being invited to the first Soviet nuclear test, for this omission indicated possible distrust by the authorities. Gol'danskii, too, experienced troubles: in 1952, as a result of the party campaign to "fight nepotism," he had to be transferred to a neighboring physical institute.

After Stalin's death, and especially after receiving the Nobel Prize for his work on chain reactions, in 1956, Semenov became the unchallenged "ideological leader and administrative head of Soviet chemistry" (p. 56). Gol'danskii returned to the institute directed by his father-in-law, initiated work on the Mössbauer effect, rose through the ranks from correspondent Academy member in 1962 to full member in 1981, and participated in academic politics. Late Soviet culture developed a particularly strong obsession with awards and celebrations. The Academy was not exempt: elections, distribution of honors, and jubilees were matters of its most serious concern. Once a senior chemist was called to the Presidium on the day of his jubilee: "Entering . . . with his words of thanks for the congratulations already prepared, Aleksandr Naumovich learned that there was a completely different reason for his invitation: he was asked to sign a routine counter-Sakharov joint letter of Academicians to a newspaper" (p. 17). Gol'danskii praises his colleagues' sense of humor: they laughed at the foolish bureaucrats who failed to understand that the important thing was the jubilee. Gol'danskii does not mention if anyone had moral reservations about signing the letter.

No, not all Soviet science was like this. Dissident Sakharov was not the only one who placed morality above career: there were also the childishly sincere Aleksandr Shal'nikov, the arrogant and courageous Kapitza, the responsible and self-sacrificing Sergei Vavilov, and other leading, as well as rank-and-file, idealists. But Gol'danskii's description reveals some important characteristics of the late Soviet Academy's *modus vivendi*. One of its persistent problems was succession. Trying to rejuvenate the Academy, Semenov forced several institute directors to resign in favor of younger colleagues. But he was unable to find a proper replacement for himself. Following Semenov's death in 1986 at the age of ninety, Gol'danskii inherited the directorship of the Institute for Chemical Physics.

Nineteen eighty-six was the year Sakharov was allowed to return from exile. But even during perestroika a nonconformist could not be admitted to the political establishment. Unlike the Academy's conservative leadership, Gol'danskii

fully supported Gorbachev's reformist middle way and became his scientific spokesman on nuclear weapons control. The book includes Gol'danskii's interviews and articles from that period. Assisting the Soviet leadership in its search for ways out of the Cold War, he argued for the comprehensive test ban and eventual complete nuclear disarmament, an idealistic program that, however, did not correspond to the realpolitik of the United States at that time.

ALEXEI KOJEVNIKOV

Uwe Höbfeld. *Gerhard Heberer (1901–1973): Sein Beitrag zur Biologie im 20. Jahrhundert.* (Jahrbuch für Geschichte und Theorie der Biologie, Supplement-Volume 1/1997.) 209 pp., frontis., illus., app., bibl. Berlin: VWB-Verlag für Wissenschaft und Bildung, 1997. (Paper.)

Uwe Höbfeld's biography of Gerhard Heberer is a very good, solid, and insightful study of an interesting and important scientist. Although Heberer's relationship with National Socialism is arguably the most interesting and significant part of his biography, Höbfeld carefully surveys his entire education and career and provides a balanced and critical account of this scientist's life and work. Heberer's scientific research has hardly been noticed by the Anglo-Saxon world, and Höbfeld offers several reasons for this neglect: resentment toward the Germans during the Third Reich; an interruption of the usual international scientific exchange during and after World War II; the stifled intellectual and political atmosphere of the postwar West German universities.

Although Heberer was always interested in anthropology and human evolution, at first his primary work was in zoology. In 1927 he followed in the footsteps of Alfred Russel Wallace and Ernst Haeckel as part of an Indonesian expedition researching the "Wallace Line" delineating the Asian and Australian flora and fauna. But even while working on this project he participated in gathering anthropological data and contributed to subsequent predictions that the indigenous people would perish because they and their stone-age technology could not compete with the newcomers.

Höbfeld argues that Heberer's racial science was informed by three ideologically motivated axioms: world history was determined by the development of races; one race, the Indogermanic, was predestined to dominate; biological and anthropological investigations could help breed this pure race. But Heberer was also an advocate

of the "second Darwinian revolution," what eventually would become the modern synthesis of genetics and Darwinism. Heberer's adherence to such tenets is perhaps the most important reason his work was not recognized by the scientific world outside of Germany.

By the middle of the 1930s, Heberer was being promoted by the SS and other influential National Socialists as a promising advocate of an "Aryan Biology" (*Deutsche Biologie*). Heberer fit well into the National Socialist program of racial science and propaganda both because of his personal beliefs and because of the research he had begun in 1936 on the Indogermans as ancestors of the Aryans. But despite this backing, he was turned down for a job at the University of Frankfurt. Heberer ascribed this setback to Catholic influence at the university. Interestingly, Heberer's appointment was opposed not because of his National Socialism but because of his Darwinism. After Heberer was rejected by Frankfurt, Heinrich Himmler personally intervened on his behalf. Heberer was eventually called to the University of Jena, which some National Socialists were trying to develop into an "SS-University" and in any case had many outspoken Nazi professors among its faculty.

As Höbfeld is the first to admit, Heberer's turn toward Indogermanic research is still a little mysterious. First of all, he had attracted both the attention and the support of the SS and other leading National Socialists before embarking on this research. Second, he never directed a Ph.D. thesis in this area at Jena. Thus the spur for his work on the Indogermans seems to have been a combination of scientific conviction and political opportunism: he did believe in the superiority of the Aryan race and was willing to investigate the Indogermans as Aryan ancestors, but this subject was not, apparently, his main scientific interest.

How should Heberer's commitment to National Socialism be judged? Heberer's denazification commission concluded that the scientist had consciously kept his distance from National Socialist phraseology in his publications, noted that he had joined the party relatively late, and took the fact that he did not get the job in Frankfurt as evidence in his favor. When Höbfeld judges Heberer's honorary membership in the SS, he points out Himmler's desire to bind scientists to him and his organization and argues that Heberer was probably motivated mainly by careerist opportunism and a desire to be spared frontline military service.

Both Heberer the scientist and his field of paleoanthropology represent promising areas for