BOOK REVIEWS/КНИЖНЫЕ РЕЦЕНЗИИ

Nikolai Krementsov. *A Martian Stranded on Earth: Alexander Bogdanov, Blood Transfusions, and Proletarian Science.* Chicago: University of Chicago Press, 2011. 192 pp. $35.00 (cloth). ISBN-13: 978-0-22645-412-2.

Nikolai Krementsov, Associate Professor in the Institute for the History and Philosophy of Science and Technology at the University of Toronto, has written a highly readable book about one of the least known episodes in Aleksandr Bogdanov's life – his leadership of the Institute of Blood Transfusion created under the auspices of the Peoples' Commissariat of Health Protection (Narkomzdrav) in 1926 and his death after an experimental exchange of blood with another person. Krementsov's account is absorbing and full of fascinating detail.

Krementsov uses Bogdanov's involvement in the Institute of Blood Transfusion to make "some general observations on the interplay among the three revolutions: the Bolshevik Revolution, the 'big science' revolution, and the experimental revolution in the life sciences," (p. 114) and he asserts that this study of Bogdanov "presents an unparalleled opportunity to explore interactions between science and society, ideology and institutional development, scientific ideas and societal values, in revolutionary Russia." (p. 5) As a study of one particular scientific institute, Krementsov's work does indeed shed light on the interplay between the Communist Party and the Russian scientific community, but it would appear that Bogdanov's institute was exceptional rather than typical. Moreover, Krementsov's overall conclusions regarding Bogdanov's influence on Soviet science are speculative and unsubstantiated. To hold Bogdanov responsible for Trofim Lysenko, the Stalin revolution, or Soviet "instrumentalism" in science is to venture far beyond the evidence that Krementsov presents.

Krementsov begins with an account of the history of blood transfusion in Russia through the Civil War era, which serves two implicit purposes: to show that blood transfusion was not – contrary to Bogdanov's later claim – virtually unknown in Russia before the creation of the Institute of Blood Transfusion and to show that this institute was not – as some scholars have asserted – created at Bogdanov's behest but was a historical accident. Krementsov asserts that "during the early 1920s, a number of individual practitioners and several research groups were actively engaged in blood transfusions in Russia." (p. 31) Nevertheless, skepticism regarding the procedure continued to dominate the medical profession

and when Narkomzdrav began to found research institutes in 1921, its Scientific Medical Council rejected several requests from the Soviet tranfusiologist community to establish an institute for blood transfusion. "The establishment of such an institute obviously required a powerful patron able to overrule the Scientific Medical Council's opposition and a skillful client able to find and court such a patron. Aleksandr Bogdanov and Joseph Stalin formed a successful, if somewhat reluctant, duo." (p. 32) (Who was "reluctant," incidentally, the reader never discovers.)

Next, Krementsov surveys the intellectual career of Alexander Bogdanov, providing evidence for his introductory assertion that the key principle "that informed and shaped Bogdanov's varied activities was his concept of proletarian science: what science is and what it is supposed to be in a socialist society." (p. 5) Krementsov represents Bogdanov as a not very original synthesizer of Herbert Spencer's positivism, Ernst Haeckel's monism, and Darwinism, his "forays" into which "were far from unique." (p. 35) What made Bogdanov unique, Krementsov asserts, was including Marx's historical materialism in the synthesis. By implication, Bogdanov was not influenced by science, per se, but by popular systems-builders. Krementsov pays scant attention to the influence on Bogdanov of the scientist Ernst Mach and the philosopher of science Richard Avenarius, who are brought into the story only when it is necessary to explain Lenin's hostility to Bogdanov's philosophy of empiriomonism, based on Mach's and Avenarius's "empiriocriticism" and against which Lenin wrote *Materialism and Empiriocriticism*. Furthermore, Krementsov pays particular attention to Bogdanov's fictional works – *Red Star* and *Engineer Menni*. In *Red Star* there is an episode in a hospital in which the character Netti recounts to the narrator how Martians practice "renewal of life" by exchange of blood with one another. Krementsov points out that Bogdanov had no clinical or experimental experience in blood transfusion and it is evident that his knowledge of the subject came from popular accounts of experimental medicine and biology. He asserts that the major theme of *Engineer Menni* is a reiteration of Bogdanov's Marxist critique of science as a tool of the bourgeoisie and hence of the need to create a proletarian science and a "Workers' Encyclopedia."

Given his lack of practical experience, and the existence in the Soviet Union of a thriving community of transfusiologists, one would hardly have expected that Bogdanov would be made the director of a research institute. Nor, Krementsov points out, did Bogdanov give any indication that he had any interest in actually putting "the comradely exchange of life" into practice. Krementsov presents the creation of an institute for blood transfusion as the product of a series of coincidences that began with Lenin's renewed campaign against Bogdanov in 1921. Perhaps hop-

ing to protect Bogdanov, his old friend Leonid Krasin, Commissar of Foreign Trade, invited him along on a trade mission to Great Britain. While in Britain, Bogdanov read a newly published book on blood transfusion that reawakened the interest he had revealed in *Red Star*. Upon returning to Russia, he formed what Krementsov calls a "secret" study group of close associates that met monthly to discuss – and experiment with – blood transfusion. In 1924 Bogdanov performed his first "blood exchange." Only a few people knew about it, but Krasin was one of them.

In the meantime, there was concern among Communist Party leaders about the health of the upper ranks of the Party. There had been an "epidemic of deaths" due to "revolutionary overexhaustion," and Krementsov mentions a series of organizations that were established to preserve the health of Kremlin officials. Krasin, one of those officials, suffered from acute anemia, for which Kremlin doctors advised treatment in Berlin. Instead, Krasin turned to Bogdanov for a blood transfusion, which dramatically improved his condition, and word spread among the Party's leadership. Krementsov takes great pains to suggest that Stalin played a central role in the creation of the institute, but the evidence is entirely circumstantial. Krasin's transfusion occurred in late November (the exact date is not given), word of his recovery "apparently" spread, and in late December Stalin called Bogdanov to the Kremlin for a meeting. Krementsov admits that "we can only speculate on the actual details of their conversation." Moreover, when he attempts to demonstrate Stalin's involvement in the creation of the Institute of Blood Exchange, Krementsov makes statements such as "it seems logical to suggest," "by a strange coincidence," "perhaps it was a simple coincidence" too often for his account to be really convincing. At any rate, whether Stalin played an important role or not, the party leadership did ultimately overcome the reluctance of Narkomzdrav, and in February 1926, it created the Institute of Blood Transfusion with Bogdanov as its director.

It was in the course of experiments with blood exchange that Bogdanov died. Believing that he, himself, was immune to tuberculosis, and convinced that the exchange of blood could cure the disease, Bogdanov performed a blood exchange with a young man who had an inactive form of tuberculosis. Despite the fact that they had the same blood types, both men reacted adversely to the exchange. The young man survived, but Bogdanov died two weeks later. (Incidentally, while it has been suggested that Bogdanov's death was suicide, or perhaps even murder, Krementsov dismisses the notion.) After his death, Bogdanov was treated as a hero and was given a state funeral at which the Soviet elite paid their respects. The institute was renamed the Aleksandr Bogdanov Institute of Blood Transfusion in his honor.

Under subsequent leadership, the Institute was a great success, taking the lead in making blood transfusion a standard medical procedure in the Soviet Union. By the mid-1930s, the Soviet Union had developed research institutes, factories producing equipment, cadres of donors, a statewide system of collecting and storing blood, and the world's first blood banks. In Krementsov's account, however, this was not because of Bogdanov's leadership, but in spite of it.

Krementsov is highly critical of Bogdanov's work in the institute. He argues that Bogdanov was less interested in blood transfusion than in blood exchange – a visionary notion of "physiological collectivism" based on a theory of senescence that he developed according to the principles of his universal organizational science (Tektology). Bogdanov staffed his institute not with experts from the Russian transfusiologist community but with members of his own amateur study-circle. Under Bogdanov's leadership the Institute did not work on developing techniques and equipment for blood transfusion or produce a manual for the use of professionals in the field – its explicit mission – but instead promoted Bogdanov's notion of blood exchanges and provided a forum for Bogdanov to publicize physiological collectivism.

In Krementsov's view, Bogdanov failed as a scientist. He "knew next to nothing about how exactly to design and conduct laboratory experiments and clinical investigations, how to create and maintain standard 'protocols' for his experiments and records of their results, or how to choose and/or construct special instruments and tools suitable for his research." (p. 118) Bogdanov did not use control experiments. Krementsov concludes that Bogdanov's "analysis focused almost exclusively on what could be called a theoretical – as opposed to investigative and social – practice in systematic, scientific pursuits of knowledge. . . . [He] treated science primarily as a system of knowledge and concentrated on analyzing its theoretical, epistemological side. … The questions of how actual scientific research is carried out and how the way one 'does' science affects its results never attracted his attention." (p. 117)

Krementsov also asserts that Bogdanov failed as a scientific writer. His final book, *The Struggle for Viability*, was not the comprehensive manual of blood transfusion that had been promised but was instead ideological, "an expanded and updated version of Bogdanov's 'tektological' theory of senescence." Moreover, Bogdanov did not conform to the established norms of scientific publication. By that time exact referencing of works published by other researchers had become standard, while *The Struggle for Viability* had no bibliography and did not contain a single reference to the many books that had appeared in Russian publications. "It seems that Bogdanov's main source of information on new advancements in experi-

mental biology and medicine were popular-science magazines, not professional periodicals or monographs." (p. 122)

In Krementsov's account, therefore, it is not surprising that Bogdanov's project ended in complete failure. Blood exchanges quickly disappeared from the institute's research agenda and from publications on blood transfusions. "By the end of the year, all that remained of Bogdanov's legacy in blood transfusion research and practice was his name attached to the institute he had built in Moscow." (p. 103)

In the end, however, despite his promise in the beginning, Krementsov fails to present Bogdanov's involvement with the Institute as anything but an exception to Soviet practice. Most scientific institutes were managed and staffed by experts in their fields. The Soviet Union was a leader in the institutionalization of "big science." Krementsov portrays Bogdanov's operation as amateur and short-lived. In fact, Krementsov even fails to prove that Stalin was a typical "powerful patron" or that Bogdanov was a "skillful client." In Krementsov's account, Stalin's involvement is inferred by circumstantial evidence and Bogdanov's involvement was coincidental.

Moreover, Krementsov's final conclusion, in a four-page section subtitled "Science and Marxism," is contradictory and unconvincing. On one hand, Krementsov asserts that Bogdanov took an "instrumentalist" view of science, holding that "science serves as 'an instrument of the organization of social labor'," (p. 123) while also arguing that Bogdanov failed in his work on blood exchange because he did not take an instrumentalist approach:

"Viewed from this instrumentalist perspective, Bogdanov's science of blood exchanges clearly failed to qualify as an exemplar of proletarian science. It did not address the problems of 'labor practice' or the 'needs of society' at all. . . . But Bogdanov did not address the burning issues of blood transfusion as a practical clinical procedure that could save countless lives, such as the availability of donors, conservation of blood, and development of blood substitutes, which occupied other transfusiologists and which became the major focus of the Bogdanov Institute after its founders' death." (124)

Yet, having argued that Bogdanov did *not* take an instrumentalist approach, Krementsov argues that this was precisely what Bogdanov bequeathed to Soviet science. First he asserts that, although Bogdanov's philosophical views were rejected in official discourse, his concept of proletarian science was ". . . actually incorporated into 'Marxism-Leninism-Stalinism.' Indeed, Bogdanov's ideas – albeit, of course, without ever mentioning their author – laid a foundation for much of Soviet official science policy in the 1930s and beyond." (p. 125) Krementsov

adds that "This was particularly true of his instrumentalist view of science." (p. 125)

Krementsov associates Bogdanov with Stalinism: "The very notion of 'mobilizing science to the needs of socialist construction,' which became a major slogan of the 'revolution from above' and a guiding principle of Soviet science policy for years to come, was but an extension and direct application of Bogdanov's ideas regarding what science is supposed to be in a socialist society." (p. 125) And he goes on to connect Bogdanov with the most notorious example of the ideological perversion of Soviet science – the geneticist Trofim Lysenko.

"'[P]racticality' paved the way for the success of Trofim Lysenko's – utterly practical as its very name made plain – 'agrobiology' in the Soviet corridors of power. . . . Moreover, Lysenko's favorite research institution . . . was an embodiment of Bogdanov's notion of 'simplified and generalized' proletarian science, easily accessible to anyone with (or even without) some 'basic' education." (p. 126) Krementsov concludes that "the basic elements of Bogdanov's concept of proletarian science – first enunciated in his SF novels – laid a foundation for much of Soviet science policy for years to come. . . ." (p. 127)

These conclusions are highly speculative and entirely unsubstantiated. In making such broad generalizations, Krementsov commits the same violation of scientific writing conventions that he accuses Bogdanov of. Providing no evidence connecting Lysenko and Bogdanov, he does not demonstrate how it was specifically Bogdanov's version of Marxism – and not Plekhanov's or Lenin's or Bukharin's or anyone else's – that conditioned Soviet science. Nor does he cite secondary literature to support his case.

As a factual account of Alexander Bogdanov's interest in blood exchanges and involvement in the Institute of Blood Transfusion and as an historical account of early Soviet hematology, Krementsov's book is of great value. It is detailed, well-researched, fascinating, and highly readable. As an interpretation of his thought, it is less satisfactory; Krementsov puts too much emphasis on Bogdanov's novels and too little on his philosophical works. As an evaluation of Bogdanov's impact on Soviet science, I am afraid that *A Martian Stranded on Earth* is quite unconvincing. There is indeed good reason to believe that Bogdanov had a great impact on Soviet thought, but much more work remains to be done.

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