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Susanne Heim. *Kalorien, Kautschuk, Karrieren: PflanzenzÖ¼chtung und landwirtschaftliche Forschung in Kaiser-Wilhelm-Instituten 1933-1945.* GÖ¶ttingen: Wallstein Verlag, 2003. 280 pp. EUR 24.00 (paper), ISBN 978-3-89244-696-5.

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Yet Another Tool of Dictatorship: The Agricultural Sciences under NationalSocialism

It is uncommon for a history of the agricultural sciences to stir up issues in several branches of German historiography. Susanne Heim's *Kalorien, Kautschuk, Karrieren* is an exception to this pattern, for the work offers an important analysis of scientific practice under National Socialism, Nazi agricultural policy, Nazi autarkic strategies, and the regime's expansionist initiatives into the occupied territories of eastern Europe. This well-researched and convincingly argued book emerged from a project that is tracing the history of the Kaiser Wilhelm Gesellschaft (KWG), a leading center of German scientific research, during the era of National Socialism. The result is far more than an institutional history, however, for Heim offers an impressive addition to an understanding of the interplay of science and politics during the Nazi era.

The work is divided into three distinct sections. In the first, Heim focuses on KWG's research on plant breeding, nutrition, and other strategies to rationalize agricultural production. In the 1920s, these studies sought to improve agricultural productivity and reduce agitation in rural areas. After 1933, when Herbert Backe became state secretary in the Reich Ministry for Nutrition and Agriculture, this agenda evolved seamlessly into service for the Nazi state. Among other priorities, Backe hoped to develop and improve domestic plant varieties that could close the "gap" between Germany's production of and its demand for fats and proteins. Under the Four-Year Plan, Backe further mobilized KWG scientists and encouraged their research in the service of the National Socialists' autarkic strategy. Heim outlines a comprehensive nutritional and agricultural research program that prepared the nation for war in several ways: animal physiologists studied fodder crops that could improve the efficiency of livestock production; animal breeders mastered techniques of artificial insemination; experts in ecology sought new sources of protein from the fish in German lakes and rivers; and others investigated the European fiber crops that could reduce the regime's dependence upon imported jute, sisal, and other plants. As war approached, the KWG's agricultural scientists conducted their work with greater haste and intensity.

German victories on the eastern front in 1941 and 1942 brought new opportunities for this research agenda.

Backe, who had been raised in the Black Sea city of Batumi, readily conceived of a Greater Germany that extended deep into the Soviet Union, and he used his position to transform the occupied East into a new laboratory for KWG scientists. Plant explorers went on expeditions into Poland, the Balkans, and the occupied Soviet Union in search of plants with useful characteristics. Breeders hoped to develop plant varieties that could adapt to the shorter growing seasons of Russia and the Baltic States. Nutrition experts carefully calculated the food requirements for the typical German worker, as well the minimal requirements of the increasingly large cadre of forced laborers. The scientists and bureaucrats who led the KWG readily and eagerly expanded their operations into the occupied East; in the wake of advancing German armies, the KWG quickly built or funded research facilities in Bulgaria, Hungary, Greece, and other areas newly under German control. In all, these projects comprised a systematic effort to rationally utilize human and agricultural resources of the East. If autarky was unrealistic within the 1933 borders of the Third Reich, it was becoming more feasible as the Nazis began to reshape the economic landscape of eastern and southeastern Europe.

In the second section, Heim focuses on the regime's increasingly desperate search for a natural rubber plant that could grow in continental Europe. Despite the attention awarded to "Buna" and other synthetic rubbers, natural rubber remained a wartime imperative. In the 1930s, Soviet scientists had achieved modest success in efforts to develop kok-sagyz, a plant related to the dandelion, as a potential rubber crop. As Soviet rubber research facilities fell into German hands in 1941 and 1942, Nazi leaders Albert Speer, Oswald Pohl, Heinrich Himmler, and Adolf Hitler himself all pushed for the rapid development of kok-sagyz.

Heim convincingly demonstrates that in this milieu, the scientific work of the KWG and the political aims of the SS became increasingly interconnected. Scientists tested kok-sagyz at experiment stations in Ukraine and Belarus, geneticists bred varieties at the KWG's institute in Brandenburg, and plant physiologists and forced laborers tended to the young plants that grew at nurseries at Auschwitz and other camps. Although the kok-sagyz project failed to produce rubber in any significant amounts, Heim does not attribute its failures to bureaucratic rivalries, anti-modern ideology, or any of the other flaws of the Nazi state. Instead, she convincingly portrays the project as a well-funded and systematic effort to coordinate the scientific agenda of the KWG with the political agenda of the Nazi regime.

In the third section, Heim surveys the long careers of two KWG scientists, Hans Stubbe and Klaus von Rosenstiel. Although this topic detours somewhat from the book's Nazi-era themes, Heim uses their careers to demonstrate the opportunities that Nazi expansionist policies presented for scientific research. For von Rosenstiel, an enthusiastic Nazi supporter, the regime brought him the chance to support and manage the Nazi scientific policies, particularly in the occupied East. After the war, however, von Rosenstiel remained on the fringes of his profession in the Federal Republic; he died in 1973, somewhat mysteriously, in an automobile accident soon after his first return to the USSR since the end of the war. Stubbe, in contrast, struggled to find a niche, during the Third Reich, in which he could pursue his research despite his reluctance to support the Nazi regime. After the war, however, Stubbe's career blossomed as one of the most acclaimed biologists of the German Democratic Republic. As with the other scientists that Heim has studied, these scientists managed to work under National Socialism, guided either by political convictions to advance the Nazi cause, by pragmatic goals to advance their careers, or by an assumption that important science could continue to advance despite the dominant political pressures.

Heim's seemingly narrow study of Nazi agricultural and nutritional science offers several contributions to the historiography. First, it should dismiss any lingering assumptions about Richard Walter Darre's leadership of a Nazi agricultural ideology based upon a romantic ideology of "Blood and Soil." Instead, Heim's study presents the KWG's agricultural scientific enterprise as one thoroughly committed to its version of modernity. Second, it challenges an older historiography of German science that focused on the mistakes of "Aryan physics" and other dead-ends. Heim offers a harsh indictment of the scientists' crimes against scientific integrity: they violated the human rights of forced laborers; they abused property and cultural resources in the occupied lands; they stole scientific results from others in order to advance their own careers. Yet the KWG's projects also demonstrate the Nazis' chilling ability to find congruence between science and power. Third, the book adds another layer to an understanding of the regime's plans for the occupied East. With the KWG's agricultural and nutritional experts as willing accomplices, the Nazis nearly reshaped the demographic and economic landscape of Eastern Europe even more than they did.

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