

**Kathryn Steen, *The American Synthetic Organic Chemicals Industry: War and Politics, 1910-1930*. Chapel Hill: The University of North Carolina Press, 2014. Notes, Bibliography, Index. 480pp. ISBN: 978-1-4696-1290-4 (Paperback). Price £34.95.**

This is an important book. While the logistics of battle have been studied extensively, too often military history ignores the sinew that supports the reality of how war material is produced. Kathy Steen's *The American Synthetic Organic Chemicals Industry: War and Politics, 1910-1930* is significant precisely because it poses a question that has become ever more prevalent in the modern world. What does a country do in time of war when it realises that many of its most important industries are dependent on supplies from enemy nations? Moreover it also poses a second question in terms of private property rights (German) versus national security. Before 1914, the German chemical industry dominated world production of synthetic dyes, fine chemicals and early pharmaceutical manufactures. The reasons for German dominance are complex, but chief among them were unrivalled chemical education, which produced some of the greatest chemists in the world and a business strategy that deliberately set out to strangle, or at least impede, the development of all commercial opposition. This strategy was built around patents; the Germans would take out patents for dyes that would prevent anybody else from producing a similar product. Dye manufacture was expensive and time consuming and most firms were unwilling or unable to develop the infrastructure to compete with the German companies. This strategy was successful, despite growing economic nationalism that obliged the German industry to build up property in the USA, in the shape of plant, patents and bonds, worth many millions of dollars. Given German technical expertise, there was no constituency that could effectively oppose the German firms and so make a case for tariffs to protect any nascent US dye industry. Moreover, giant industries like the textiles and paper manufacture supported the technological status quo because tariffs would mean higher prices. The First World War brought this vulnerability into sharp relief: the United States while not at war with the Central Powers was affected immediately through British blockade policy, which aimed to prevent German trade with the rest of the world. Blockade strained relations between Britain and the USA, which only relaxed in the face of unrestricted U Boat warfare. American entrepreneurs responded to dye shortages and high prices by trying to increase domestic chemical manufacture but with limited success.

Mindful of their British experience, where the UK had seized German patents and plant and consolidated them in to a single company, the British Dyestuffs Corporation, to provide khaki dye for army uniforms, the Germans unsuccessfully tried to Americanise or disguise ownership of their property. When America entered the war against Germany in 1917, President Wilson appointed an *Alien*

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*Property Custodian* to take over responsibility for an estimated \$500,000,000 in German property, including the chemical industry. This is the crux of Kathy Steen's argument; intense war-time anti-German sentiment helped to forge a concentrated effort among firms, the federal government and universities to make the United States independent of foreign chemicals. To this end the Alien Property Custodian sold off the seized plant to companies like Grasselli and Sterling Products, and created the Chemical Foundation, a new publically owned institution, to hold title to seized German patents. The aim was to sever American dependence on German chemistry but also to prevent an American chemical monopoly replacing a German one. Both these aims failed. American chemical firms soon discovered that they lacked the technical knowledge to operate the plant or work the patents and this gave the big German firms, Bayer, BASF and Hoechst a lever with which to return to the US market. Within a decade the Germans had recovered everything they had lost in 1918. However, the Americans were more successful in mobilizing chemical education. In the 1920s, Chemistry was a growth industry in American universities, which supplied the human capital that enabled companies like Du Pont to emerge as serious contenders to the German industry. Moreover, Kathy Steen also shows how chemistry was deeply entwined with politics and policy during the war and with subsequent US isolationism. This is an excellent book and essential reading for those interested in World War I and American political economy as well as anyone concerned with understanding the emergence of the modern American chemical industry.

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