A WORLD HISTORY OF RUBBER
EMPIRE, INDUSTRY, AND THE EVERYDAY

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WILEY Blackwell
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Global Rubber and Tire Companies

Map 1 World Map, c. 1914, created by Mary Lee Eggart.
Map 2 Southeast Asia in 1942, created by Mary Lee Eggart.
Map 3 World Map, 1942, created by Mary Lee Eggart.

Introduction

Figure 0.1 A Plantation Factory. From Firestone, *Rubber: Its History and Development* (Akron, OH: Firestone, 1922), p. 19.

Figure 0.2 Crude Rubber in Storage. From Firestone, *Rubber: Its History and Development* (Akron, OH: Firestone, 1922), p. 29. Well before the company acquired its first plantation, Firestone disseminated these images in a book designed to educate college students about the origins and importance of
rubber. What are the white men dressed in white doing while the laborers haul in the latex? Can you make out the individual crepe sheets that were bound together to create blocks of rubber sent to Europe and the United States?

Chapter 01

Figure 1.1 Tapping Rubber Trees. From Firestone, Rubber: Its History and Development (Akron, OH: Firestone, 1922), p. 15. Describe the arrangement of trees. How could symmetrically spaced trees (all planted at the same time and thus the same size) suggest order, efficiency, modernity, progress, and the “West” in an area that had been a “disorderly jungle”?

Figure 1.2 Boy on Plantation: “Native Rubber Collector.” Photograph (2073) dated July 24, 1915, Goodyear Collection.

Figure 1.3 Goodyear President Litchfield Tapping a Rubber Tree. Photograph (Dolok 905b) dated August 23, 1935, Goodyear Collection. What do these two photos tell us about hierarchies on plantations? Presumably the boy in the first image taps rubber trees, as the original caption refers to him as a “native rubber collector.” The second image shows CEO Paul W. Litchfield on a visit to one of the Goodyear plantations in Sumatra. Is it relevant that the boy’s name does not appear while Litchfield is identified? How would you compare their clothing and headwear? How would you describe Litchfield’s stance beside the tree? Does he appear to know how to tap a rubber tree?

Figure 1.4 Goodyear Whites on Wingfoot Plantation. Photograph (42 gc) dated January 15, 1935, Goodyear Collection.

Figure 1.5 “A Group of Newly Arrived Javanese Laborers.” Wingfoot Clan (March 8, 1919): 8, Goodyear Collection. What do these two photos tell us about those employed on Goodyear plantations? Which group was called “labor” and which “staff”? Which were “employees” as opposed to “laborers”? Is it significant that one group crouches while the other stands for a photograph? Can you imagine which received pensions when they retired? How was the hierarchy of the plantation easily visible to all who worked on one?

Figure 1.6 Plantation workers’ barracks at Goodyear Wingfoot Estates. Photograph (42dw) dated January 15, 1935, Goodyear Collection. Initially, plantations had rudimentary “coolie lines” or barracks, which improved in construction quality over time. This image shows Goodyear laborers’ barracks from the 1930s. Even then several had no rooms or partitions, serving instead as huge dormitories for male workers.

Figure 1.7 “Minstrel Show Practice Has Started.” Wingfoot Clan (January 13, 1917): 3, Goodyear Collection. How does this image reinforce the idea that there was a global racial hierarchy, at least in the eyes of Goodyear executives, who permitted this cartoon in the company newsletter and opened the Goodyear Theatre to minstrel shows?

Chapter 02
Figure 2.1 Woman Tapping Tree. Firestone, *Rubber: Its History and Development* (Akron, OH: Firestone, 1922), p. 17. Plantations rarely had what we would call daycare. Most large plantations held classes for at least partial days, but images reveal that children of all ages often accompanied their mothers, eventually learning to weed and to tap rubber trees at their mothers’ sides. In what ways were children’s futures determined by their parents’ employment on rubber plantations?

Figure 2.2 Photo, July 4, 1925, of Centennial parade in Akron. How do you explain the women’s auxiliary of the KKK at a time when white women had themselves just been given the right to vote in the United States? Is it surprising that one politically marginalized group was not standing in solidarity with another? Is it fair or appropriate to expect people of color, women, and the less fortunate always to be champions of other oppressed people?

Chapter 03

Figure 3.1 Goodrich girl. “Goodrich Automobile Tires, Adele,” Goodrich Collection. Like automakers, tire makers associated products purchased by men with women desired by men. “Adele” was one of fifteen “Goodrich girls” whose appeal was supposed to help sell tires. The “Goodrich girls” are tame compared to many later images of nude or nearly nude women on automotive calendars destined for mechanics’ workbenches. What does the image suggest that a man gets when he buys Goodrich tires?

Figure 3.2 “What a Blithering Idiot I Was.” Goodyear ad, page proof, August 1937, Goodyear Collection. This image appeared in the well-illustrated magazines of the interwar years. How does it reinforce a notion of men’s responsibility? What happens when a man makes a bad decision in not buying Goodyear tires? What is the construction of masculinity here?

Chapter 04

Figure 4.1 Firestone brochure for the Century of Progress International Exposition in Chicago, 1934. Century of Progress records, series 16, box 18, folder 267, Special Collections, University of Illinois at Chicago Library. Just as Briton Rudyard Kipling’s poem “The White Man’s Burden” was directed at American men to get them to realize their duty to “civilize” the “natives” of the Philippines, this image reveals American participation in global, imperial practices. Do you think most rubber gatherers were this large or well fed? If the Firestone factory represents American progress and modernity, what do barely dressed Liberian rubber gatherers symbolize? Like other Chicago World’s Fair exhibits and paraphernalia, this brochure initially ended up in the Chicago Museum of Science and Industry; can you make out the Library’s ink stamps on the image? What do they say about the importance of archives and libraries in preserving traces of our collective past?

Figure 4.2 Prewar US Rubber Supply. May 1942, Farm Security Administration/Office of War Information. How is an image such as this one worth a proverbial thousand words? How does the map itself (bereft of any
commentary) make an argument about the war, the importance of rubber conservation, or the need to defeat the Japanese?

Figure 4.3 Roosevelt in Liberia. Office of War Information. After the Casablanca meeting with British Prime Minister Winston Churchill in January 1943, President Roosevelt visited the Firestone plantation in Liberia. What does his visit say about the importance of natural rubber in fighting World War II? Are you surprised that a black employee was meeting the President, shaking his hand and wearing a colonial pith helmet? How might an image like this have been used in African-American communities during the war?
A World History of Rubber

Empire, Industry, and the Everyday

Stephen L. Harp
For my parents,
Sara and Larry Gotshall
Greg and Barb Harp
Ironically, it took me a long time to write this short book. Over many years, I have incurred considerable intellectual debts. I am very grateful to the following archives and libraries for their assistance: the Archives for Traditional Music and the Kinsey Institute at Indiana University, the Bibliothèque Nationale de France, the British Library, the British National Archives, the Centre des Archives d’Outre-Mer in Aix-en-Provence, the Guildhall Library of the City of London, the Hartman Center for Sales, Advertising, and Marketing History at Duke University, the Hoover Institution at Stanford University, the Herbert Hoover Presidential Library, the National Archives II in College Park, Maryland, the National Library of Vietnam in Hanoi, the New York Public Library, the Ohio Historical Society, the Smithsonian Institution Museum of American History, the University of Akron Archives, the University of Illinois at Chicago Library Special Collections Department, the Wellcome Library in London, and the Western Reserve Historical Society in Cleveland.

I am lucky to have received financial help from the following institutions to collect materials and to present ideas: the Ecole des Hautes Etudes en Sciences Sociales, the Hoover Presidential Library, the National Endowment for the Humanities, the Miller Humanities Center at the University of Akron, the University of Akron Faculty Research Committee, and the Watson Institute at Brown University.

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All of the above people and institutions deserve preventive absolution for my many sins of omission in this book. As a short introduction to a huge topic, it is aimed at
general readers and students. The book is not comprehensive. As I hope to illustrate, the dynamics of this particular global commodity chain are far too diffuse for me or anyone else to “cover” everything thoroughly, at least not in a single volume that anyone would actually want to read. Instead, I want to show how we might use the history of one thing—in this case rubber—to think about the connected lives of the diverse people who produced, handled, sold, consumed, and profited from it.

Stephen L. Harp
Akron, Ohio
Timeline

Before 1493—Centuries before Europeans “discover” rubber, Native Americans collect latex and fashion into usable products.

1493–96—Columbus sees and describes rubber.

1839—American Charles Goodyear invents the process of vulcanization by heating and adding sulfur to the latex during production, rendering noticeably more stable manufactured rubber that neither melts on hot days nor cracks on cold ones.

1844—Goodyear patents vulcanization in the United States; and Thomas Hancock later does so in Britain.

1851—The Crystal Palace Exhibition (the first world’s fair) takes place in London. Goodyear and others regularly introduce manufactured rubber goods to visitors at world’s fairs as a form of advertising.

1861–65—The US Civil War creates a market for various rubber goods, notably those useful for protection against rain.

1870—Benjamin Franklin Goodrich founds B. F. Goodrich in Akron, Ohio.

1871—The Continental Caoutchouc und Gutta-Percha Compagnie trust is founded in Hanover, Germany.

1876—Briton Henry Wickham ships hevea seeds from Brazil to Kew Gardens in Britain. The resulting seedlings are then taken to botanical gardens, then plantations, in Southeast Asia.

1885—The Conference of Berlin recognizes the Congo Free State of King Leopold of Belgium, thus enabling the abusive exploitation of Congolese expected to collect ivory and rubber.

1888—John Dunlop invents the pneumatic tire for safety bicycles, increasing demand for rubber.

1889—Edouard and André Michelin found Michelin et Compagnie in Clermont-Ferrand, France.

Rudyard Kipling’s poem “The White Man’s Burden” appears; in it he appeals to white American men to fulfill their duty to build an empire in the Philippines and beyond.

Joseph Conrad’s Heart of Darkness published. Long part of the canon of British literature, the novella reveals how even critics of the exploitation of the Congo accepted widespread European notions of white superiority.

1892—Several small rubber companies combine to form US Rubber, a trust, in Naugatuck, Connecticut.

1895—Michelin introduces the pneumatic tire for automobiles, further increasing demand for rubber.
1898—F. A. Seiberling founds Goodyear Tire and Rubber Company in Akron, Ohio; by the 1910s it is the world’s largest tire producer.

1900—Harvey S. Firestone, Sr. founds Firestone Tire and Rubber Company in Akron, Ohio.

Michelin introduces the (red) tourist guide to hotels and garages, meant to encourage automobile travel.

1908—King Leopold II signs the Congo over to the Belgian Government after an international campaign exposes the abuses in ivory and rubber collection in the African colony.

Henry Ford produces the first Model T, which remains in production until 1927, exponentially stoking demand for rubber tires in the United States.

1910—Dunlop and US Rubber begin acquiring rubber plantations in Southeast Asia.

The British Empire replaces the use of contract labor from India on Southeast Asian plantations with the kangan system of recruitment.

1913—The first shipment of liquid latex makes its way from Southeast Asia to the United States. These shipments of liquid latex eventually enable the production of new latex rubber products, notably latex gloves, latex condoms, household goods, paint, and foam rubber, in the United States and Europe.

1914—World War I—the Great War—begins in Europe, ultimately revealing the use of a high number of rubber-tire-shod heavy trucks during war.

The French army requisitions Renault taxicabs from Paris in order to haul men to the Battle of the Marne, symbolically emphasizing the need for automobiles in wartime and thus for their tires.

1915—The Rubber Manufacturers’ Association, a trade association and lobbying group for the major tire and rubber producers, is founded in the United States.


Rubber-tire-clad trucks famously prove their mettle in the Battle of Verdun on the well-known “sacred way,” able to supply troops at Verdun when trains cannot do so.

1917—The United States enters World War I on the side of Britain and France.

Goodyear acquires its first plantation in the Dutch East Indies.

1918—World War I ends.

1919—A global economic recession begins shortly after the war, during demobilization, sending rubber prices plummeting.

1920—Tire workers go on strike in Clermont-Ferrand. Michelin blames the work stoppage on Kabyles (Algerian Berbers) and Spanish immigrants and fires them.

1921—Secretary Herbert Hoover’s Department of Commerce creates a Rubber Division charged with assisting American rubber manufacturers in world markets.

F. A. Seiberling loses Goodyear to his financiers and founds the Seiberling Rubber
Company in Akron, Ohio.

1922—Britain introduces the Stevenson Restriction Scheme in British colonies, thereby reducing rubber production and driving up the price of rubber.

1925—The IG Farben trust is created by combining Bayer and other companies in Frankfurt am Main, Germany. IG Farben undertakes the ultimately successful development of a viable synthetic rubber called Buna.

The price of rubber reaches $1.23 per pound as a result of the Stevenson Restriction Scheme.

1925–26—Michelin establishes Dậu Tiềng and Phú Riềng plantations in French Indochina in order to ensure its access to rubber as the price of rubber continues to climb.

1926—Firestone acquires 1 million acres of land for a plantation in Liberia in order to ensure access to rubber at favorable prices.

While working for B. F. Goodrich, Waldo Semon invents marketable plasticized polyvinyl chloride (PVC), a critical development in the evolution of plastics.

1927—With financial support from Harvey Firestone and Henry Ford, Thomas Edison founds the Edison Botanic Research Corporation in order to experiment with, and then to grow, natural rubber in the Americas.

1928—The Stevenson Restriction Scheme collapses as Dutch rubber producers, notably smallholders, ramp up production and manage to undercut British price controls.

Herbert Hoover is elected President of the United States, partly as a result of his success as Secretary of Commerce in the 1920s in helping American manufacturers, including tire producers.

1929—The Great Depression begins in the United States and soon rubber prices crash and plantations retrench.

1931—The International Colonial Exposition (world’s fair) takes place in Paris, where displays describe rubber plantations in French Indochina and point out their benefits for France.

Shojiro Ishibashi founds Bridgestone Tire Company in Kurume, Japan, a small company that would later rival the major tire producers.

1933—The Nazis seize power in Germany and begin organizing for war, including the production of synthetic (Buna) rubber.

The Rubbermaid brand appears in the United States and rubber products are on their way to becoming omnipresent in American kitchens and bathrooms.

1933–34—The World’s Fair takes place in Chicago. After deciding against a live exhibit of its Liberian workers, Firestone mounts a large display of its Liberian plantation. Goodyear opts to offer fairgoers blimp rides.

1934—in a second effort to stabilize rubber prices, Britain, France, and the
Netherlands agree to found the International Rubber Regulation Committee (IRRC), a successor to the Stevenson Restriction Scheme.

1936—Labor strikes, particularly at Goodyear, immobilize the US rubber industry and lead to the unionization of rubber workers.

1937—IG Farben’s synthetic Buna rubber wins a prize at the Paris World’s Fair.

The Japanese invade China, the massacre of Nanjing serving as a preview of World War II, both in terms of the brutality of the conflict and Japan’s military ambitions in Asia.

1939—World War II begins in Europe when Germany invades Poland.

1941—Germany invades the Soviet Union; both German and Soviet armies use synthetic rubber on what becomes Europe’s eastern front.

Construction begins on the Buna synthetic rubber plant at the Auschwitz-Monowitz concentration camp.

Japan attacks the US Pacific Fleet at Pearl Harbor in Hawaii; the United States declares war on Japan and Germany.

1942—Japan invades Southeast Asia and imposes the Greater East Asia Co-Prosperity Sphere.

1945—Germany and Japan surrender and World War II ends.

Vietnam and Indonesia declare independence as France and the Netherlands began efforts to rebuild after the destruction of the war at home and to reassert their authority in their colonies.

1947–49—Dutch “Police Actions” in Indonesia attempt to end nationalist and communist resistance to the re-establishment of Dutch rule as plantations become important symbols of imperialism.

1948–60—The British “Emergency” in Malaya against communist insurgents sees isolated rubber plantations serve frequently as important sites of conflict.

1949—Indonesia gains independence from the Netherlands.

1950–53—The Korean War extends the struggle against communism, directly involving US and allied forces, and quickly driving up rubber prices.

1954—North Vietnamese forces defeat the French at Dien Bien Phu, resulting in an increasingly direct American influence and presence in Vietnam.

1957—Malaya gains independence from Britain.

1963—Sabah and Sarawak join Malaya to create the combined new nation-state of Malaysia.

1964—The US Congress passes the Gulf of Tonkin Resolution, essentially authorizing US military participation in the Vietnam War.

1965—The Suharto coup in Indonesia displaces the leftist President Sukarno with a right-wing dictatorship generally more favorable to foreign plantation owners.

During the Yom Kippur War between Israel and Arab states, the latter stops oil shipments, leading to increases in the price of oil, and thus higher prices for synthetic rubber.

1975—North Vietnamese forces re-unify Vietnam and seize the foreign-owned rubber plantations.

1986—B. F. Goodrich and Uniroyal (the former US Rubber) tire divisions merge into Uniroyal Goodrich.

1987—Continental acquires General Tire and Rubber.

1988—Bridgestone acquires Firestone Tire and Rubber.

1990—Michelin acquires Uniroyal Goodrich, leaving Goodyear as the only US-based major tire manufacturer.

1992—Bridgestone’s Firestone subsidiary signs agreement with Liberian warlord Charles Taylor to pay taxes to the rebel leader, thereby assisting in the establishment of his dictatorship in that country.

2009—The US Congress passes and President Barack Obama signs the Lily Ledbetter Fair Pay Act, named for the former Goodyear manager who suffered decades of wage discrimination at Goodyear because she was a woman.

2014—Rapidly falling oil prices once again (as in the 1980s and after the economic crisis in 2008) make synthetic rubber more competitive and undermine the profitability of rubber plantations.
Global Rubber and Tire Companies

Major Companies

<table>
<thead>
<tr>
<th>Name</th>
<th>Date of Founding</th>
<th>Early Headquarters</th>
<th>Founder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridgestone Tire Company</td>
<td>1931</td>
<td>Kurume, then Tokyo, Japan</td>
<td>Shojiro Ishibashi</td>
</tr>
<tr>
<td>Continental Caoutchouc und Gutta-Percha Compagnie</td>
<td>1871</td>
<td>Hanover, Germany</td>
<td>As a trust</td>
</tr>
<tr>
<td>Dunlop Rubber</td>
<td>1889</td>
<td>Dublin, then Birmingham, UK</td>
<td>John Boyd Dunlop</td>
</tr>
<tr>
<td>Firestone Tire and Rubber</td>
<td>1900</td>
<td>Akron, Ohio, USA</td>
<td>Harvey S. Firestone, Sr.</td>
</tr>
<tr>
<td>General Tire and Rubber</td>
<td>1915</td>
<td>Akron, Ohio, USA</td>
<td>William F. O’Neil</td>
</tr>
<tr>
<td>B. F. Goodrich</td>
<td>1870</td>
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<td>1892</td>
<td>Naugatuck, Connecticut, USA</td>
<td>As a trust</td>
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</tbody>
</table>

Others

In addition to the largest concerns, hundreds of smaller rubber and tire companies existed from the nineteenth century onward and some are still in operation. As with the large companies, some of the smaller ones produced both tires and rubber goods, a few only tires, and others only rubber goods. Although economies of scale and marketing muscle favored the major producers in the tire industry, companies manufacturing various rubber goods had relatively low capital requirements, so many appeared and disappeared. Small rubber firms that combined as trusts, in the form of US Rubber in the United States and Continental in Germany, managed to achieve economies of scale that were difficult for smaller companies that remained independent.
Map 1 World Map, c. 1914, created by Mary Lee Eggart.