Biopiracy started with a bounce

The Thief at the End of the World: Rubber, Power, and the Seeds of Empire

by Joe Jackson

Viking: 2008. 432 pp. \$27.95

Michael A. Gollin

Some people call it the original act of 'biopiracy.' In 1876, Henry Wickham, a self-trained rubber tapper under contract to the Royal Botanic Gardens at Kew in London collected 70,000 highly perishable *Hevea* rubber seeds from Santarém in Brazil. Wickham rushed them on a steam ship to Kew, where the seeds were immediately germinated and sent to the British colonies in India. The resulting plantations broke the Amazon rubber monopoly and dominated the rapidly growing market until Japan seized the plantations in the Second World War, and synthetic rubber was invented.

The Thief at the End of the World chronicles the life of the audacious Wickham, who fled the London cholera epidemics to become a tropical adventurer and planter. Joe Jackson's strong investigative and story-telling skills conjure up the colour and characters of Wickham's meandering path through the British colonies and beyond. Wickham encountered natural threats — malaria, parasites, injuries and floods. And he faced human difficulties — slave traders, murderous jungle barons, cannibal tribes, financial ruin and the deaths of family members whom he convinced to join him in his quixotic quests. Somehow he bounced back every time to cultivate his public image until he was knighted soon before his death in 1928.

Kew's leaders pioneered public-private partnerships between collectors, government botanists and the colonial plantations. But they held Wickham, a freelancer, in contempt. They expected him to fail in his contract to deliver even 1,000 viable seeds for £10 (US\$20), and were shocked by his success, in view of numerous failures by established collectors. Wickham apparently succeeded because of his years working as a planter and rubber tapper alongside locals. Kew honoured its financial commitment to Wickham, yet denied him any recognition, and foolishly rejected his offer to help cultivate rubber in Asia, delaying the plantation

effort by two decades. This insider-outsider dichotomy echoes today in the broader politics and rivalries of scientific research and funding by governments, philanthropies and businesses.

Wickham's life spanned the Rubber Age. With Goodyear's invention of vulcanization as a way to make rubber harder and more durable, rubber became a billion-dollar product essential for the revolutionary innovations of the day: steam-engine gaskets in ships and trains, telegraph-wire insulators, bicycle and then automobile tyres, and military equipment including First World War gas masks. Fifty years after the adventurer left Santarém with rubber seeds, Henry Ford invested US\$20 million in a rubber plantation in the same region. Ford's colossal, well-intentioned failure underscores the enormous challenges that Wickham, Kew and the British

plantations overcame. Like oil today, and perhaps biofuels in the future, rubber called for risk and failure, led to boom-and-bust cycles, and had far-reaching impacts on technology, geopolitics and the environment.

In calling Wickham a "thief", Jackson oversimplifies a complex event at a transitional time in world history. Brazilian officials later vilified Wickham, but it seems he broke no laws. Wickham said he told Brazilian officials that what he was taking were "exceedingly delicate botanical specimens specially designated for delivery to Her Britannic Majesty's own Royal Gardens of Kew". Jackson describes this as bluff and aggressive, but not a lie. The rule of law was weak then: slavery was still legal in Brazil, brutality was widespread, and 'take what you can' was a guiding principle.

Today, Wickham's acts would be illegal.

Biodiversity prospectors must obtain informed consent before removing biological materials. Under the 1992 Convention on Biological Diversity, many countries have passed laws that require scientists to obtain collecting permits, and to share any resulting benefits with locals. Brazil put in place strict and cumbersome permitting laws, and even amended its patent law to require inventors to disclose any Brazilian genetic material used in making their inventions. In 2007, a Brazilian court jailed a Dutch biologist for keeping primates in a rehabilitation facility, stalling further research.

So modern collectors face strict scrutiny, but with perseverance they can reach sustainable collaborative arrangements such as those used to produce the malaria medicine artemisinin from Chinese wormwood using newer synthetic-biology techniques. Hopefully such collaboration will help biodiversity prospecting yield another bounty as great as Wickham's rubber seeds — this time with the benefits more broadly shared. ■ Michael Gollin is a patent attorney focused on intellectual property management in the life sciences at Venable LLP, 575 7th Street, NW, Washington, DC 2004, USA. He is author of *Driving Innovation: Intellectual Property Strategies for a Dynamic World*.

Rubber had far-reaching impacts on technology, geopolitics and the environment.

Many rubber trees derive from seeds Henry Wickham took from Brazil.