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New *Phytopathology* Journal Article Chronicles "Big Rust's" Impact on Coffee Disease Management
Describes impact on scientists, farmers, and consumers.

Coffee rust has made significant headlines in recent years for its devastating effect on coffee crops. According to the United States Agency for International Development (USAID), losses in Latin America and the Caribbean alone have totaled well over $1 billion, causing hardship to coffee plantations, their laborers, coffee retailers, and the consumers who pay more for morning coffee.

But this fungal disease, also known as "the Big Rust," has a much longer and more encompassing history that goes all the way back to its discovery in 1869.

This history is reviewed in detail through a new *Phytopathology* journal article titled, "The Big Rust and the Red Queen: Long-Term Perspectives on Coffee Rust Research" written by Dr. Stuart McCook, historian at the University of Guelph in Ontario, Canada, and John Vandermeer, Professor of Ecology and Evolutionary Biology at University of Michigan.

In this essay, the authors discuss the Big Rust in a broader historical context, chronicling coffee rust epidemics, the social and ecological conditions that produced them, and the evolving scientific responses to this threat.

The article highlights the many innovations used to combat coffee disease outbreaks, such as the efforts to develop disease-resistant plants, chemical and agroecological control, and even a network of international coffee research institutes. It also incorporates the broader social and economic histories of coffee production into particular stories of rust epidemics and rust research.

"It is important to take a longer and broader perspective on crop diseases and on research," said Dr. McCook. "This can help highlight what aspects of current outbreaks are truly new and different, and which ones are part of much longer patterns and dynamics."

The article also points out examples of the current research and disease mitigation challenges in developing nations versus affluent parts of the world.

"Scientific institutions in places like Brazil, Colombia, and Costa Rica have done superb work in coffee rust research," said McCook. "But in those countries and elsewhere, one of the big challenges is in helping farmers—who often lack access to capital or credit—to get access to vital innovations and tools necessary to fight crop diseases."

By taking this broad perspective, the authors suggest we are entering a new phase in the global history of the coffee rust.

“Up until the mid-1980s, the story of the coffee rust was largely the story of invasions, as the disease spread into regions where it was not previously present,” McCook said. “By the mid-1980s, however, the disease had reached almost every coffee-producing region in the world.”

“For a brief while, in the 1980s and 1990s, it looked as if coffee farmers—with the help of scientists—had adapted to the disease, making it ‘just another disease’ on the farm. But we suggest that this fragile equilibrium has begun to break down, both because of broader ecological changes that we are only beginning to understand, and also because of increasing volatility in the global coffee economy,” he said.

This article will be freely available for viewing through October 15, 2015.

About Phytopathology

For nearly 100 years, *Phytopathology* has been considered the premier international archival journal for publication of articles on fundamental research that advances understanding of the nature of plant diseases, the agents that cause them, their spread, the losses they cause, and measures that can be used to control them. It is a member journal of The American Phytopathological Society. To learn more about subscribing or authoring to *Phytopathology* and other APS journals, visit apsjournals.apsnet.org.