

# **Green Revolutions: Rockefeller Agronomy from the American South to Mexico**

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In March of 1968, United States Agency for International Development director William S. Gaud forged an enduring myth in the imaginary of Third World development. Just a month after the Tet Offensive had threatened America's narrative of military progress in South Vietnam, Gaud announced that the road to victory in Southeast Asia was paved not with guns or grenades, but rice seed. Celebrating the efforts of the Ford and Rockefeller Foundations in reforming Indian, Filipino, and Vietnamese agriculture through the introduction of fertilizer, pesticides, and improved seed, Gaud coined a term that would long outlive him:

Throughout much [of] the developing world - and particularly in Asia - we are on the verge of an agricultural revolution... It is not a violent Red Revolution like that of the Soviets, nor is it a White revolution like that of the Shah of Iran. I call it the Green Revolution.<sup>1</sup>

It was thus in the context of the Cold War at its hottest that Gaud's Green Revolution was born, and its mythological career fared somewhat like that of the Vietnamese war that it was meant to support.

Its early proponents saw the extension of American agricultural technology into the Third World as an altruistic crusade external to the politics of left and right, a way to end hunger in suffering societies, and most importantly, a path toward defusing Communist rhetoric that blamed such hunger and poverty on American capitalism. The project commanded nearly global faith in the years after Gaud's pronouncement, reaching its apex with Rockefeller plant

pathologist Norman Borlaug's receipt of the Nobel Peace Prize in 1970. However, just as the Vietnam War lost its ideological luster in the 1970s and beyond, the Green Revolution too came under bitter critique. Environmentalists blamed American scientists and corporations for soaking the Third World in toxic chemicals, social critics argued that the high price of new technologies resulted in the eviction of millions of poor farmers, and other observers found hollow the rhetoric of a "war on hunger" because poverty and starvation in the Global South persisted or even increased in the face of rising crop yields.<sup>2</sup>

Yet like its supporters, critics of the Green Revolution have tended to see that project as monolithic, unable to divorce its complex past or evolving future from the context wherein it was given its name: the Cold War of 1968. While William Gaud's Green Revolution may have been a coherent and decidedly geopolitical project designed to shock "traditional" rural societies into urbanization and industrialization, as Nick Cullather, John Perkins, and other scholars have convincingly argued, to read that coherence into the past or the future is highly problematic.<sup>3</sup> For those of us who seek to understand the origins and evolution of the Green Revolution before it was named as such, we find ourselves in an especially difficult situation, as our very choice of vocabulary renders us guilty of anachronism. How can we realistically discuss a "Green Revolution" in 1940s and 1950s Mexico, Colombia, or India, or even twenty-first century Africa, when the project that name was meant to describe was so embedded in a particular Cold War context? Rather than a mere question of semantics, this dilemma points to a crucial flaw in how scholars have conceived of the periodization and definition of the Green Revolution. If we are to retain the term as a viable historical container outside of the context in which Gaud coined it, perhaps it makes more sense for us to discuss "Green Revolutions" in plural form, as a series of broad campaigns loosely defined by agricultural technology transfer. However, rather than

simply a phenomenon of the Global South, we might find that that project has roots much closer to home.

In hopes of exploring the multiple visions that made up the many Green Revolutions, I am writing my dissertation on two twentieth-century agricultural reform campaigns waged by the Rockefeller philanthropies. One is rather expected—that of the Rockefeller Foundation (RF) in Mexico during the 1940s and 1950s—while the other, waged in the American South during the Progressive era and New Deal years by the General Education Board (GEB), has rarely been linked to the later Cold War campaigns. Although, long before Rockefeller-funded agronomists fanned out into the countryside of the Global South, they cut their teeth in the American South, a region that long served as a domestic laboratory for development projects. The RF's global campaigns in education, public health, and particularly agriculture, each had roots in the early twentieth-century U.S. South, though scholars are only now beginning to consider the ways in which domestic underdevelopment shaped American programs of assistance abroad.<sup>4</sup>

When RF administrators began planning their soon-to-be-famous Mexican agricultural project in 1941, field agents on both sides of the border again and again referred back to the lessons and history of the American South, and while often guilty of oversimplification, perhaps they were on to something: both regions were born of the extractive colonial economies so common to the Caribbean basin. For much of their history, Mexico and the U.S. South relied upon forced labor regimes that were founded upon racial difference and reinforced by either legal—or debt-enforced slavery. In 1900, the land tenure systems of each region mirrored each other in their asymmetry, with landless majorities bound to vast estates as tenants, croppers, or wage laborers. To the Alabama cotton planter of the early twentieth century, the henequen plantations of the Yucatán or the sugarcane *haciendas* of Morelos would each seem familiar.

Nevertheless, if the protagonists of this dissertation commonly employed comparison in their thought and action, I do not plan to write a comparative history, but rather a transnational one. Following the work of Micol Seigel, I believe that historical comparisons which treat its subjects as discrete, bounded entities that can be observed on their own terms—as so many earlier comparative studies have—make no room for that which crossed in between, whether it was people, ideas, capital, or commodities.<sup>5</sup> In this case, the histories of twentieth-century rural Mexico and the U.S. South were forged in a common crucible, rather than on separate planes.

In May 2011, I visited the Rockefeller Archive Center (RAC) for three weeks, generously supported by a Grant-in-Aid from the RAC. As it was my first visit to the archive, my time in May was spent exploring the records of several Rockefeller-funded institutions in order to hash out a rough outline of the narrative that I will expand upon in the dissertation. For the sake of chronological continuity, I began my digging around the turn of the twentieth century, in the personal papers of the Rockefeller family, Frederick Gates, Wallace Buttrick, and in the early records of the GEB.

The story that emerged was fascinating. In the spring of 1901, the first “Millionaire’s Special” chugged down the Atlantic coastline from New York into the U.S. South. Given its name by skeptical southern newspapermen, the “Special” was a train excursion attended by the leading lights in northern philanthropy, chartered by the wealthy New York merchant Robert C. Ogden to inspire interest in the American South among a new generation of industrialist donors. As the train chugged southward and stopped for tours of major black and white educational institutions from the Hampton Institute in Virginia to the Tuskegee Institute in Alabama, its occupants both marveled and recoiled at the world before their eyes. One such traveler was the twenty-seven year old John D. Rockefeller, Jr., pampered son of the Standard Oil magnate.

What Junior witnessed—endless cotton fields, dilapidated schoolhouses, and sharecroppers both black and white—would guide his career in the years to come; he later recalled the trip to be “one of the outstanding events of my life.”<sup>6</sup>

Though historians have recently argued that the *fin-de-siècle* years brought a final reconciliation between northern and southern whites as they united in a commitment to white male supremacy and empire, the Progressive years also pushed North and South farther apart, as a new generation of rationalizing urban experts began to define and diagnose poverty. When they looked south, reformers and philanthropists in the first decade of the century saw a society emaciated by cotton monoculture, starved of capital, credit, education, and good health, a tropical land that seemed more like the “banana republics” of Central America than the urban, industrial America they imagined. It was precisely within this context that John D. Rockefeller, Sr., spurred by his son’s engagement with southern reformers both black and white, founded the GEB in 1903, endowed it with one million dollars, and granted Junior leadership of the institution. While Junior provided the public face of the GEB, its intellectual engine lay in Frederick Gates, Senior’s long-time business manager and a former Baptist preacher. Far more so than Junior, Gates believed the ills of the South lay in the region’s soil and its poor cultivation, as I am beginning to discover from his personal correspondence, contained in Rockefeller Senior’s letterbooks. Before any progress could be made toward educational reform, Gates believed, the GEB must focus its efforts on transforming southern agriculture.

After months of searching for a blueprint for agricultural modernization, the GEB partnered with the U.S. Department of Agriculture (USDA) and its agent Seaman A. Knapp. Knapp is a key transitional figure in U.S. agriculture, uncomfortably straddling the divide between nineteenth century yeoman agrarianism and the emerging government-industrial-

research trinity of the twentieth. Before his work with the GEB, Knapp had been the president of Iowa State Agricultural College, a land speculator in Louisiana, and a USDA bio-prospector in Asia and the Caribbean, where he had sought improved varieties of rice to transplant within the American South. Throughout his career, Knapp had championed farm demonstrations as the most efficient way to teach scientific methods to American farmers, whom he saw as inherently resistant to change. Yet unlike professors in the emerging land-grant college complex, whom he had little regard for, Knapp believed that farmers would never listen to outsiders, no matter what their academic credentials. However, if a trusted neighbor could demonstrate physical results and distill scientific method into familiar vocabulary, Knapp believed that farmers would be eager to adopt more productive practices.<sup>7</sup>

In 1903, when the federal government haltingly began moving to prevent the spread of the cotton boll weevil as it cut a broad swath from Mexico toward Texas and into the southeast, Knapp, at the ripe age of 70, proclaimed that he had discovered a solution to the biological crisis which seemed to threaten American cotton culture. On a demonstration farm in Terrell, Texas, Knapp boasted of having beaten the weevil through early planting, regular cultivation, and burning cotton stalks post-harvest, and soon found himself as the head of the USDA's effort to control the weevil's spread. However, in an era when the USDA and the federal government were only shadows of the juggernauts they would later become, Knapp's affiliation with Washington brought him little backing to wage a vast campaign. Interstate commerce laws restricted the government's intervention only to states currently infested with the weevil, which meant that any reform east of the Mississippi River would have to wait. It was at this moment that Gates and the GEB initiated contact with Knapp, pledging their aid in states that had not yet received USDA funding. Beginning in 1906, GEB money sent Knapp's agents into Mississippi,

then to Alabama, Georgia, the Carolinas, and Virginia in the year that followed, hiring and teaching local farmers to serve as demonstrators of the “Knapp method.”

In reconsidering the Knapp-GEB agricultural campaign as a forerunner to later Green Revolutions, I am asking the same questions of it that social scientists have asked of contemporary development projects in the Global South.<sup>8</sup> How did reformers invent a definition of “poverty” that fit with their goals for target societies? Did outside “experts” disguise the political intentions of their reform work in a neutral language of scientific efficiency? How responsive were these outsiders to local particularities and knowledge? Ultimately, I found the GEB’s agricultural work to be profoundly incoherent and torn by competing visions. One element of the campaign sought to raise more cotton in the face of weevil infestations, with little regard to soil fertility or economic justice.<sup>9</sup> On the other hand, Knapp’s GEB-funded agents also confronted structural and environmental issues, as embodied in their “Ten Commandments.” Among the Knapp Commandments were suggestions toward a more sustainable agriculture: planting “a winter cover crop,” “the judicious use of barnyard manure and legumes,” and the “systematic rotation of crops,” along with an emphasis on “home production of food required for the family and for the stock.”<sup>10</sup>

Unfortunately, the RAC’s records of the GEB agricultural work are incomplete. Missing is the bulk of correspondence between Knapp, GEB officers such as Gates and Buttrick, and the USDA’s Bureau of Plant Industry, which directed the administration of the rural farm agents. Because of the dearth of documents explaining the complex relationship between these three groups, many questions remain. Perhaps most importantly, how much power did the GEB have in shaping the demonstration program? Contemporary accounts wrote of the group as a “silent partner” contributing little more than money, but I imagine that much of the reluctance to boast

of Rockefeller influence was due to public distrust of the family. It seems instead that the GEB had considerable capacity to push Knapp and the USDA in unplanned directions, one of which regarded African-American farmers: because of the GEB's insistence on a biracial program and its alliance with Tuskegee Institute, the USDA did hire dozens of black agents to spread the gospel of diversification to African-American communities.<sup>11</sup> Of particular importance, because of its later Mexican legacy, did the GEB officers see their work as an opportunity to end rural poverty, or to simply raise cotton yields? This fall, when I investigate Knapp's personal papers in Lubbock, Texas, and Lake Charles, Louisiana, along with the USDA records in College Park, Maryland, I hope to find answers to these questions. While earlier historians dismissed Knapp and the GEB as myopic technocrats, I am interested to see whether they displayed more elasticity and adaptation than has been previously credited to them.<sup>12</sup>

However coherent or incoherent the goals of the farm demonstration program may have been, its enduring accomplishments lay not in diversification or the elimination of southern poverty. In May of 1914, the Smith-Lever Act created within the USDA the Cooperative Extension Service, essentially nationalizing the Knapp/GEB project and expanding its work into every state in the U.S. Over the course of the twentieth century, the Extension Service aggressively championed efficiency, mechanization, and an industrial ethos for farming that ultimately reaped similar demographic effects in the American countryside as later Green Revolutions would in the Third World.<sup>13</sup> However, in the American South, it would be many years before the federal government transformed agricultural practices. If the weevil or Knapp's agents had any success in dethroning King Cotton, the global surge in the price of the fiber during the Great War quickly eroded any gains of the diversification campaign.



Yet, if Smith-Lever canonized the life and work of Seaman Knapp, for the GEB it had a rather contrary impact. As the bill was being debated before Congress, the Rockefeller family found itself at the center of a firestorm of controversy, after labor unrest at the family-owned Colorado Fuel and Iron Company resulted in the deaths of nineteen people in Ludlow, Colorado. Public outrage toward the family spilled over into the Smith-Lever hearings, and after it was widely publicized that the Rockefeller-funded GEB had both influenced and financed the demonstration work, the group was barred from any future cooperation with USDA programs.

Despite this setback, in no way did the Smith-Lever uproar bring an end to the Rockefeller philanthropies' involvement within the U.S. South, which only increased in the years to come, though in public health work rather than agriculture. In 1909, JDR Senior founded the Rockefeller Sanitary Commission for the Eradication of Hookworm Disease. After moderate success in controlling this parasite in the U.S. South, the Sanitary Commission began work on malaria, yellow fever, and tuberculosis, and when the Rockefeller Foundation was chartered in 1913, that institution was explicitly designed with the intention of internationalizing the family's earlier work within the South. Just as they would later do in the field of agriculture, the RF's international public health campaigns in the 1910s and beyond, would employ the U.S. South as a laboratory for the Global South. If a parasite or insect could be diagnosed and controlled in Mississippi or Arkansas, it was assumed that those results could also be replicated in Nicaragua or the Philippines.<sup>14</sup>

It was the hookworm and yellow fever campaigns that first brought the RF to Mexico in 1920, as the most violent period of the Mexican Revolution was coming to an end and the long, divisive years of reconstruction were beginning. Despite the rampant anti-Americanism of the Revolutionary era, modernizing, nation-building elites like Álvaro Obregón and Plutarco Elías

Calles tolerated and even smiled upon the public health projects of the Rockefeller philanthropies, hoping that the RF campaigns might bolster their political legitimacy.<sup>15</sup> Yet if the GEB had been able to conduct a politically neutral agricultural campaign in the U.S. South—at least in terms of their rhetoric, if not action—such a feat would be impossible in 1920s Mexico, as every element of both agricultural science and agrarian politics had been sharpened and polarized by the Revolution. Land reform had been enshrined in Mexico's 1917 Constitution, and while Obregón and Calles did little to advance this popular cause during the 1920s and early 1930s, it had become political suicide to speak out against it. To RF agents in Mexico, who acknowledged popular resentment against U.S. dabbling in agrarian matters, it made a lot of sense to stay away from any sort of agricultural campaign, despite their nagging insistence to such a program's necessity throughout the 1930s.<sup>16</sup>

The impetus behind the RF's involvement in Mexican agriculture came from two unlikely figures, both North Carolinians and both linked to Rockefeller philanthropy in the South: Josephus Daniels and John A. Ferrell. Daniels was the U.S. ambassador to Mexico from 1933 to 1941; Ferrell was a physician, former hookworm agent, and top administrator in the RF's International Health Division from the mid-1920s to the early 1940s. Before his diplomatic appointment, Daniels had edited North Carolina's largest newspaper the *Raleigh News and Observer* since the 1890s, and as a spokesman for white rural North Carolinians in the Progressive era, Daniels was at first a critic and then an ardent supporter of the GEB and Rockefeller public health campaigns. When Daniels arrived to Mexico City in 1933 as ambassador, he immediately sympathized with the agrarian politics of the Revolution, interpreting the Mexican state's renewed commitment to land reform in the 1930s as a kindred project to New Deal land reform in the American South.<sup>17</sup> What Daniels saw as missing in

Mexico, however, was a concerted effort to extend scientific knowledge to common farmers. In March of 1935, Ambassador Daniels wrote his old friend and soon-to-be RF president Raymond Fosdick to ask for a “larger cooperative program in Mexico” along the lines of the GEB:

As you know, I have been greatly interested in these matters and was in at the beginning of the work in the South... [Mexico’s] problems are somewhat similar to those we had in the South for several decades following the Civil War...but some adaptation of the programs administered in the South by [Wallace] Buttrick, [Wickiffe] Rose, and others will, however, I think, make for real progress in Mexico...<sup>18</sup>

Daniels’ conviction that Mexico needed a Knapp-style program deepened after a number of conversations with Ferrell, who visited Mexico several times throughout the 1930s on public health business, staying each time as a guest of the Ambassador in Mexico City.

Like Daniels, Ferrell believed that the American South provided a model for how poor rural societies might work toward a more sustainable agriculture and egalitarian social structure, and began to press the RF leadership for investigating the possibilities of such a program. In late 1936, Ferrell sent copies of the GEB’s 1914 report on agriculture, along with pamphlets by North Carolina demonstration agent Jane McKimmon, to President Fosdick and other RF administrators, claiming that both “might have suggestive value to persons planning for Mexico’s economic development.” Providing technical assistance to farmers who were just then beginning to receive their own land, argued Ferrell, “is one of the most urgent needs of Mexico.”<sup>19</sup>

Yet despite Daniels’ and Ferrell’s continued requests, the RF moved slowly in organizing a rural demonstration program during the late 1930s. Their reluctance was likely due to the continued radicalization of Mexican agrarian politics and increased anti-Americanism under leftist president Lázaro Cárdenas (1934-1940). It would take two major shifts to bring the RF into Mexican agriculture: the looming World War and a political transition in Mexico. By 1940,

President Roosevelt was anticipating U.S. involvement in the World War, and wanted to shore up Latin American loyalty in the coming conflict. That same year, Cárdenas surprised the Mexican political establishment by selecting the moderate Manuel Avila Camacho as his successor, who questioned Cárdenas' agrarian program of redistribution and spoke out in favor of the embattled Catholic Church. Both the Mexican right and left challenged Avila Camacho's bid for office and U.S. observers fearfully predicted renewed violent revolution in Mexico.<sup>20</sup> In hopes of preventing such a disaster, Roosevelt sent his newly elected vice president Henry A. Wallace to appear alongside Avila Camacho at his Mexico City inauguration in December of 1940.

In Green Revolution mythology, it was Wallace's trip to Mexico that provided the spark for the RF's Mexican Agricultural Program.<sup>21</sup> Wallace, whose background as an Iowa corn breeder had inspired a lifelong interest and passion for all things Mexican, toured the countryside in the following weeks with his host, Ambassador Daniels. As they met with peasant farmers and inspected fields of maize, Wallace came to believe that low corn yields were the root cause of the nation's rural poverty. As a firm believer in Cárdenas's land reform program—the subdividing of privately held land into communally worked, inalienable public plots called *ejidos*—Wallace believed that improved varieties of corn could both feed a growing Mexico and bolster the *ejido* program to ensure rural peace. If Daniels had had little success in his earlier attempts to invite the RF into Mexican agriculture, in Wallace he gained an enthusiastic and well-placed ally, who would exploit his political connections to begin negotiations with the RF leadership. In February of 1941, the RF finally sent a team to Mexico to survey rural life and agriculture as a first step in initiating what became the Mexican Agricultural Program (MAP).

Except what sort of a program would the RF pursue in Mexico? During my three weeks of research in May, I only had time to dig briefly into the early years of the program's establishment and administration. Just from the 1941 and 1942 records alone, that I have investigated, it is clear that a number of competing visions fractured the early years of the MAP. For Josephus Daniels and John Ferrell, who served as crucial arbiters between the RF and the Mexican government in the early months of negotiation, the MAP ought to prioritize demonstration and extension over research, which they saw as the enduring legacy of the Knapp program in the U.S. South. To project planner Albert Mann, who was simultaneously leading a renewed GEB effort in stabilizing U.S. southern agriculture, as the region hemorrhaged farm population during the New Deal, the MAP must remain conscious of the social and demographic impacts of technological change,<sup>22</sup> but not all of the scientific team shared such views.

For George Harrar, the MAP's first director, immediate results to prove the efficacy of his controversial program outweighed long-term ruminations over the future of Mexican agriculture. To Marte Gómez, a career agronomist and the recently-appointed director of the Mexican department of agriculture, the greatest potential of the MAP lay not for the peasantry, but in the professionalization and legitimization of Mexican agronomy and its practitioners.<sup>23</sup> Lastly, for Avila Camacho and his increasingly conservative ruling party, any sort of rural development that the state would support had to focus on urbanization and industrial development. Rather than seeking to create a "plump and contented peasantry," the Mexican state believed that if the *campesino* were to be modernized, it would have to occur in the city, not the country.<sup>24</sup>

As these discordant voices sought to shape the MAP, no crop better symbolized the tension between peasant security and industrial development than maize. Few could deny the

centrality of the plant to the nation's diet or agriculture at midcentury: cultivated on more acres than all other crops combined, corn also provided the vast majority of calories consumed by both rural and urban dwellers.<sup>25</sup> Nevertheless, the revolutionary political elite, despite their rhetorical exaltation of pre-Columbian civilization, regarded corn with skepticism from both a cultural and agricultural standpoint. Modernizing leaders viewed Indian corn as a poor source of nutrition that produced backwards people, especially in contrast to European wheat. They also believed corn to be the root cause of rural conservatism and under-consumption, as peasants growing maize for subsistence had little incentive to participate in the expanding market economy.<sup>26</sup>

To nearly all the MAP scientists, however, any reform effort that did not acknowledge corn's centrality to Mexican agriculture was spurious. In the first few years of the program, the vast majority of funding went toward corn, reflecting the plant's dominant role in Mexican life. As scholars Karin Matchett and Jonathan Harwood have demonstrated, the MAP corn breeders did not simply transplant American hybrids into Mexican soil, but experimented with open-pollinated varieties that had been neglected by U.S. seed companies as they sought to commercialize seed distribution during the 1920s and 1930s. Especially for MAP corn breeder Paul Mangelsdorf, who had worked for years among poor farmers in East Texas, the gospel of hybrid corn made little sense to small-scale farmers, whether in the U.S. South or Mexico.<sup>27</sup>

In the decade after World War II's end, however, the MAP's early emphasis on corn breeding and appropriate technologies was gradually eroded from both within and without. After slow progress in improving corn yields on rain fed *ejido* plots, the MAP organized a team to research wheat production in the Mexican northwest. That project was led by Norman Borlaug, a former DuPont microbiologist, who would reap major yield increases with large commercial farmers in the states of Sonora and Sinaloa. Eager to boast of national technical progress, and

desperately seeking food security in the nascent Cold War, the Mexican state celebrated the MAP's northern work in wheat. As urban, middle-class Mexicans began to eat wheat bread in ever-increasing quantities, the ruling party hailed Borlaug's success as a core plank of the "Mexican Miracle"—the period of national growth between 1940 and the late 1960s.

Underwriting this success, however, were the hundreds of millions of pesos that the state funneled into dams and irrigation projects for the coastal northwest, and in so doing, ensured the eclipse of the communally held, subsistence-oriented *ejidos* of the population-dense center by the northern model of private, commercial farms. Water and state capital were the keys to Mexico's Green Revolution, for without dams and irrigation ditches, the MAP's improved wheats performed little better than local varieties.<sup>28</sup>

Agricultural science, therefore, collided with political economy in the Mexican case to produce a rural world whose shape and form was never inevitable, but the result of human choices. Just as had been true in the early years of the twentieth century in the American South, science and "modernization" meant many things to many different people, and for us to assume that rural depopulation, consolidation, and the advent of agribusiness-style farming was an unavoidable endpoint, conceals a far more complex story of contingency and choice. As I continue to trace the early years of the project that later became known as the Green Revolution, from Mexico back into the American South, I hope to gain a clearer understanding of how the agricultural assistance programs of the Cold War came to exclude those earlier, more democratic visions of rural change.

My three-week visit to the RAC in May was both useful and enlightening, because it allowed me a first glimpse into the institutional world wherein the major decisions were made that propelled the Rockefeller philanthropies outward from the American South. However, in

that limited time period, I was only able to cover a portion of the material that I need to tell the longer story of the Green Revolution as it progressed in the 1950s and beyond. Thankfully, I will be returning to the RAC this winter for a seven-week stay, on an International Dissertation Research Fellowship from the Social Science Research Council. I very much look forward to my return.

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Rockefeller Archive Center Research Reports Online is a periodic publication of the Rockefeller Archive Center. Edited by Erwin Levold, Research Reports Online is intended to foster the network of scholarship in the history of philanthropy and to highlight the diverse range of materials and subjects covered in the collections at the Rockefeller Archive Center. The reports are drawn from essays submitted by researchers who have visited the Archive Center, many of whom have received grants from the Archive Center to support their research.

The ideas and opinions expressed in this report are those of the author and are not intended to represent the Rockefeller Archive Center.

## ENDNOTES:

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<sup>1</sup> Nick Cullather, *The Hungry World: America's Cold War Battle against Poverty in Asia*. Cambridge, Massachusetts, 2010, p. 233; text of Gaud's speech is from <http://www.agbioworld.org/biotech-info/topics/borlaug/borlaug-green.html>, last accessed July 21, 2011.

<sup>2</sup> Scathing critiques of the Green Revolution can be found in Andrew Pearse, *Seeds of Plenty, Seeds of Want: Social and Economic Implications of the Green Revolution*, Oxford, UK: Clarendon Press, 1980; and Vandana Shiva, *The Violence of the Green Revolution: Third World Agriculture, Ecology, and Politics*. London: Zed Books, 1991.

<sup>3</sup> See especially Cullather, *The Hungry World*, and John H. Perkins, *Geopolitics and the Green Revolution: Wheat, Genes, and the Cold War*. New York: Oxford University Press, 1997.

<sup>4</sup> The best examples are David Ekbladh, *The Great American Mission: Modernization and the Construction of an American World Order*. New Jersey: Princeton University Press, 2010; Sarah Phillips, *This Land, This Nation: Conservation, Rural America, and the New Deal*. New York: Cambridge University Press, 2007; Bethany Moreton, *To Serve God and Wal-Mart: The Making of Christian Free Enterprise*. Cambridge, Massachusetts: Harvard University Press, 2009; Andrew Zimmerman, *Alabama in Africa: Booker T. Washington, the German Empire, and the Globalization of the New South*. New Jersey: Princeton University Press, 2010, along with forthcoming monographs by Daniel Immerwahr, Natalie Ring, and Clifford Kuhn.

<sup>5</sup> See in particular Micol Seigel's essay "Beyond Compare: Comparative Method after the Transnational Turn." *Radical History Review* 91 (Winter 2005), pp. 62-90. For examples of influential comparative studies that I find guilty of such errors, see Frank Tannenbaum, *Slave and Citizen: The Classic Comparative Study of Race Relations in America*. New York: Alfred A. Knopf, 1947 or Carl Degler, *Neither Black nor White: Slavery and Race Relations in Brazil and the United States*. New York: The Macmillan Company, 1971.



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<sup>6</sup> Raymond B. Fosdick, *Adventures in Giving: The Story of the General Education Board*. New York: Harper and Row, 1962, p. 5.

<sup>7</sup> For older and rather uncritical works on Knapp see Joseph Cannon Bailey, *Seaman A. Knapp: Schoolmaster of American Agriculture (American Education: its men, ideas, and institutions)*. New York: Arno Press, 1971; and O.B. Martin, *The Demonstration Work: Dr. Seaman A. Knapp's Contribution to Civilization*. Boston, Massachusetts: The Stratford Company, 1926. Recent studies have exposed Knapp as a more talented mythmaker than a farm demonstrator, along with finding his legacy deeply undermined by racism. See Pete Daniel, *Breaking the Land: The Transformation of Cotton, Tobacco, and Rice Cultures since 1880*. Champaign: University of Illinois Press, 1986; and James Giesen, *Boll Weevil Blues: Cotton, Myth, and Power in the American South*. Illinois: The University of Chicago Press, 2011.

<sup>8</sup> My thinking here is particularly influenced by Arturo Escobar, *Encountering Development: The Making and Unmaking of the Third World*. New Jersey: Princeton University Press, 1995; James Ferguson, *The Anti-Politics Machine: "Development," Depoliticization, and Bureaucratic Power in Lesotho*. New York: Cambridge University Press, 1990; and James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed (The Institution for Social and Policy Studies at Yale University)*. New Haven, Connecticut: Yale University Press, 1998.

<sup>9</sup> See, for example, W.B. Mercier and H.E. Savely, *The Knapp Method of Growing Cotton*. Garden City, New York: Doubleday, Page and Company, 1913.

<sup>10</sup> General Education Board, *The General Education Board: An Account of Its Activities, 1902-1914*. New York, General Education Board, 1915, p. 29.

<sup>11</sup> See Mark Hersey, "My Work is That of Conservation: The Environmental Vision of George Washington Carver," Ph.D. dissertation, University of Kansas, p. 343. Knapp himself, it is worth mentioning, seemed to have little interest in the plight of black farmers.

<sup>12</sup> The few studies written on the GEB have dismissed the group as seeking to depoliticize farmers and anchor them to an industrial production system that served the needs of urban rather than rural people. None of these have examined the on-the-ground work of the demonstration agents, analyzing rhetoric rather than results. See Theodore R. Mitchell and Robert Lowe, "To Sow Contentment: Philanthropy, Scientific Agriculture, and the Making of the New South, 1906 - 1920," *Social History* 24: 2 (Winter 1990), pp. 317-340; and Judith Sealander, "Foundations, the 'Rural Crisis,' and the Birth of Publicly Funded Vocational Education." In Judith Sealander, editor, *Private Wealth and Public Life: Foundation Philanthropy and the Reshaping of American Social Policy from the Progressive Era to the New Deal*. Baltimore, Maryland: Johns Hopkins University Press, 1997.

<sup>13</sup> See Jim Hightower, *Hard Tomatoes, Hard Times: A Report of the Agribusiness Accountability Project on the Failure of America's Land Grant College System*. Cambridge, Massachusetts: Schenkman Publishing Company, 1973; and Deborah Fitzgerald, *Every Farm a Factory: The Industrial Ideal in American Agriculture*. New Haven, Connecticut: Yale University Press, 2003.

<sup>14</sup> On the Rockefeller public health campaigns in the South, see John Ettl, *The Germ of Laziness: Rockefeller Philanthropy and Public Health in the New South*. Cambridge, Massachusetts: Harvard University Press, 1981; and John Farley, *To Cast out Disease: A History of the International Health Division of the Rockefeller Foundation, (1913- 1951)*. New York: Oxford University Press, 2004.

<sup>15</sup> For the best account of the Rockefeller Foundation's public health work in Mexico, see Anne-Emanuelle Birn, *Marriage of Convenience: Rockefeller International Health and Revolutionary Mexico (Rochester Studies in Medical History)*. New York: University of Rochester Press, 2006.

<sup>16</sup> In the 1920s and 1930s, the RF remained interested in agricultural demonstrations, though its work was restricted to Europe and a brief campaign in early 1930s China. While good work has been done on these projects—see particularly Randall E. Stross, *The Stubborn Earth: American Agriculturalists on Chinese Soil, 1898 - 1937*. Berkeley: University of California Press, 1986; and James C. Thomson, *While China Faced West: American Reformers in Nationalist China, 1928 - 1937*. Cambridge, Massachusetts: Harvard University Press, 1969—none of these resources have thoroughly investigated how the GEB shaped these campaigns abroad.

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<sup>17</sup> On Daniels' Jeffersonian sympathies toward the Mexican Revolution, see especially E. David Cronon, *Josephus Daniels in Mexico*. Madison: University of Wisconsin Press, 1960; and John J. Dwyer, *The Agrarian Dispute: The Expropriation of American-Owned Rural Land in Postrevolutionary Mexico*. Durham, North Carolina: Duke University Press, 2008.

<sup>18</sup> Josephus Daniels to Raymond Fosdick, March 5, 1935, Josephus Daniels Papers (Southern Historical Collection, Wilson Library, University of North Carolina at Chapel Hill), Box 6, Folder 40.

<sup>19</sup> John A. Ferrell memorandum to Raymond Fosdick, October 16, 1936, Rockefeller Foundation Archives, (RF), Rockefeller Archive Center, Sleepy Hollow, New York, Record Group (RG) 1.2, Series 323, Box 10, Folder 63.

<sup>20</sup> Stephen R. Niblo, *Mexico in the 1940s: Modernity, Politics, and Corruption*. Wilmington, Delaware: Rowman and Littlefield Publishers, 1999, pp. 79-81.

<sup>21</sup> The Wallace-Daniels origins story is recounted in dozens of books, and probably has its roots in E.C. Stakman, Richard Bradfield, and Paul C. Manglesdorf, *Campaigns against Hunger*. Cambridge, Massachusetts: Belknap Press, 1967, the official "memoirs" of the program's three key scientists.

<sup>22</sup> After the long lull since Smith-Lever, the GEB once again entered into southern agricultural reform in the late 1930s. Mann, who was a former dean at Cornell University, spearheaded the GEB's rural southern program from 1937 until his death in 1947. In the early years of the Mexican program, he served as a key adviser.

<sup>23</sup> The best evidence for this is found in Joseph Cotter, *Troubled Harvest: Agronomy and Revolution in Mexico, 1880 – 2002*. Westport, Connecticut: Praeger Publishers, 2003.

<sup>24</sup> The phrase is from Jeff Pilcher's *Que Vivan Los Tamales! Food and the Making of Mexican Identity*. Albuquerque: University of New Mexico Press, 1998, p. 97.

<sup>25</sup> For statistical information on crops grown, see Paul Lamartine Yates, *Mexico's Agricultural Dilemma*. Tucson: University of Arizona Press, 1981, p. 51.

<sup>26</sup> The Mexican economic and cultural opposition to corn is best illustrated in Pilcher, *Que Vivan Los Tamales*, pp. 77-98.

<sup>27</sup> Karin E. Matchett, "At Odds over Inbreeding: An Abandoned Attempt at Mexico/United States Collaboration to 'Improve' Mexican Corn, 1940-1950." *Journal of the History of Biology* 39: 2 (2006), p. 352, and p. 362; Jonathan Harwood, "Peasant Friendly Plant Breeding and the Early Years of the Green Revolution in Mexico." *Agricultural History* 83: 3 (2009). On the American case see Deborah Fitzgerald, *The Business of Breeding: Hybrid Corn in Illinois, 1890 – 1940*. Ithaca, New York: Cornell University Press, 1990.

<sup>28</sup> See Enrique Ochoa, *Feeding Mexico: The Political Uses of Food since 1910*. Wilmington, Delaware: Rowman and Littlefield, 2000; and Steven E. Sanderson, *The Transformation of Mexican Agriculture: International Structure and the Politics of Rural Change*. New Jersey: Princeton University Press, 1986.

Supporters argue that the Green Revolution packages had been able to increase food supplies produced with the new practices, but critics argue that the new technologies are environmentally destructive, unsustainable, and socially inequitable. Bhineka AdiNugraha Thesis-Final. Thesis. Rockefeller Foundation Archives, RG 1.2, Series 323, Box 10, Folder 63, Rockefeller Archive Center. William C. Cobb, The his-torical backgrounds of the Mexican agricultural program (an-notated edition) Rockefeller Foundation Ar-chives. Nov 1936. J A Ferrell. In the latest of their distinguished contributions to South Asian studies, scholars Lloyd I. Rudolph and Susanne Hoeber Rudolph focus on this modern-day pursuit by offering a comprehensive analysis of India's political economy. Green Revolution refers to a series of research, development, and technology transfer initiatives, occurring between the 1940s and the late 1970s that increased agriculture production around the world beginning most markedly in the late 1960s. The agricultural development that began in Mexico by Norman Borlaug in 1943) had been judged as a success and the Rockefeller Foundation sought to spread it to other nations. The Office of Special Studies in Mexico became an informal international research institution in 1959, and in 1963 it formally became CIMMYT, The International Maize and Wheat Improvement Center. In 1961 India was on the brink of mass famine. Borlaug was invited to India by the adviser to the Indian minister of agriculture M. S. Swaminathan. The Green Revolution, or the Third Agricultural Revolution, is the set of research technology transfer initiatives occurring between 1950 and the late 1960s, that increased agricultural production worldwide, beginning most markedly in the late 1960s. The initiatives resulted in the adoption of new technologies, including High-Yielding Varieties (HYVs) of cereals, especially dwarf wheat and rice. It was associated with chemical fertilizers, agrochemicals, and controlled water-supply The Green Revolution usually refers to the transformation of agriculture that began in 1945. One significant factor came at the request of the Mexican government to establish an agricultural research station to develop more varieties of wheat that could be used to feed the rapidly growing population of the country. Philippines - In 1960, the Government of the Republic of the Philippines with Ford and Rockefeller Foundations established IRRI. A rice crossing between Dee-geo-woo-gen and Peta was done at IRRI in 1962. In 1966, one of the breeding lines became a new cultivar, IR8. IR8 required the use of fertilizers and pesticides, but produced substantially higher yields than the traditional cultivars. Annual rice production in the Philippines increased from 3.7 to 7.7 million tonnes in two decades.