Front Porch

Into our kitchen came great wheels of cheese. Bulging sacks of grain. Jars of natural juices the color of jewels. It was our month to host the food buying club.

The source of these foods was Blooming Prairie Warehouse, in Iowa City—and the subject of this month’s “One in a Million,” on the inside back cover. In the 1970s, I wanted a closer connection to food than what I was getting at the grocery store, and so our family joined a food buying club. Buying natural foods in bulk saved us money, and it saved our planet from excess fertilizers and pesticides and packaging.

It worked like this. A number of us (in our case, probably about six families) organized ourselves into a buying club. Once a month each household filled out an order form for varying quantities of organic and natural foodstuffs sold by Blooming Prairie. Then, someone in our club volunteered to combine and place the orders. The object was to have the individual orders total up to the bulk units sold by Blooming Prairie. In the case of wheat bran, for example, that meant a 25-pound bag. That’s a lot of wheat bran—but ah! we were an ambitious, idealistic group.

A week or so later, on a Saturday morning, a few members picked up our club’s orders at Blooming Prairie and delivered it to one of the houses. Members arrived, bringing bags and jars and children (and probably a few dogs). As the children played, we adults divvied up the foods into the quantities we each had ordered. One of us plunged a knife into the huge wheels of cheese and then cut, weighed, and wrapped smaller chunks. Another pushed a scoop deep into a 50-pound sack of short grain brown rice. Nuts rattled on a cold winter day. The air was rich with the fragrances of earthy grains and pungent spices. With conversation and laughter and shared work, we were building a community.

Our buying club quickly grew in size, for two reasons. First, it was a good idea—borne out by the increasing number of buying clubs across the nation. Second, our own club needed more member households so that our individual orders would always add up to the amounts required to order in bulk. Sometimes this was hard, particularly with the specialty items. Not every household liked carob chips, for example, so for our club to order a 25-pound bag we had to find more carob-loving families. Likewise with alfalfa needed more member households so that our individual orders would always add up to the amounts required to order in bulk. Sometimes this was hard, particularly with the specialty items. Not every household liked carob chips, for example, so for our club to order a 25-pound bag we had to find more carob-loving families. Likewise with alfalfa seeds (for sprouts) or blackstrap molasses. We swapped favors like seasoned senators. I’ll sign on for carob this month, one member would say, if you order buckwheat.

But as our club grew in size and buying power, we no longer fit easily into one house. We tried different arrangements: a few would portion out the food on Saturday morning, and the rest would stop by throughout the weekend to pick up their allotments. We tried splitting into two smaller groups for food division and pick-up. Over time, our little family dropped out. My husband, daughter, and I just didn’t consume as much as we first thought we would. More critical to me, as our club expanded beyond the gathering of everyone in one house on one Saturday morning, the sense of community dissipated. What had most appealed to me was not the bulk prices. It was the coming together of people—like a barnraising or a quilting bee—and the celebration of simple, authentic, healthy food.

This issue is all about Iowans and food production and distribution. There are many actors in this story—from world-famous scientists and statesmen, to farm women and children raising chickens, to transient farm laborers, to grassroots organic food distributors. In fields and factories and laboratories, in local communities and on distant continents, Iowans have worked long and hard to abate that insidious enemy of humankind—hunger. Inside are the stories of some of those great efforts.

Ginalie Swaim, editor
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Over

Don Ultang, photojournalist, captured patterns of Iowa's agricultural abundance. One of his most award-winning works appeared in the Des Moines Register and national magazines in the mid-20th century. In 2002 he donated several images to the State Historical Society of Iowa.
Four Iowans Who Fed the World
by Matthew Schaefer

George Washington Carver: Holistic Scientist for the American South
by Harold S. McNabb, Jr.

Herbert Hoover: Humanitarian in Europe
by George H. Nash

Saying ‘Thank You’: The Story of the Flour Sacks
by the staff of the Herbert Hoover Presidential Library-Museum

Henry A. Wallace: Agriculturist for the Common Man
by John Hyde

Intersections
by John Hyde

Norman Borlaug: Geneticist of the Green Revolution
by R. Douglas Hurt

The World Food Prize
by Ginalie Swaim

Laboring for Food
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Chasing Chickens
by Mary Wear Briggs

Farm Women & Egg Money
by Marvin Bergman

Reading the Past: Hobo Workers
by Marvin Bergman

On the Cover
While piloting a plane, photojournalist Don Ultang captured the colors and patterns of Iowa’s agricultural abundance. Another Ultang photo (above) focuses up close on a corn-husker. His award-winning work appeared in the Des Moines Register and national magazines in the mid-20th century and won him a Pulitzer in 1952. In 2002 he donated thousands of images to the State Historical Society of Iowa.
The American Relief Administration's efforts in 1919 fed these Polish children. The work was overseen by Herbert Hoover. Iowa has played a major role in combating world hunger, through wartime relief, scientific advancements, and farm production.
Iowa has a well-earned reputation as the world's foremost producer of food. The state's soil and climate and the industry of its farmers have won Iowa the enviable title of the world's breadbasket. Less well known, however, is the role played by individual Iowans in sustaining the rest of the world. George Washington Carver, Herbert Hoover, Henry A. Wallace, and Norman Borlaug all made significant contributions to improving food production and distribution in the 20th century.

Food is among the most compelling of human needs, yet it has always been a struggle to feed the world. We have developed high-yield grains and worldwide distribution networks, yet one billion of the world's population of six billion still suffer from chronic malnutrition. With global population increasing by 100 million each year, ensuring adequate food for all people will be a continuing challenge.

Wars, revolutions, and climatic changes have often disrupted networks of food production and distribution. Throughout the 20th century, famines have developed in times of crisis. In these crises, Iowans have stepped up to meet the challenge of feeding the world.

George Washington Carver's work enabled southern farmers to shift from single-crop farming to diversified agriculture. Herbert Hoover led relief efforts that fed one billion people during and after two world wars. Henry A. Wallace developed hybrid seeds and worked to make them available to all. Norman Borlaug devoted his professional life to creating high-yield, disease-resistant grains. These four men epitomize what Iowa has done for the world.

The following four essays relate the contributions of these four Iowans in their historic contexts. But this is more than a look back at past achievements. It is also a clarion call to the next generation of Iowans and Americans to step up and relieve world hunger. It is our duty to act on the legacy we have inherited from Carver, Hoover, Wallace, and Borlaug, and to do what we can to ensure the equitable distribution of food throughout the world.

—by Matthew Schaefer

Matthew Schaefer is an archivist at the Herbert Hoover Presidential Library-Museum in West Branch, Iowa. Our thanks to the Hoover Library-Museum for permission to publish the following four essays, first presented at its October 2002 symposium, "Four Iowans Who Fed the World." (Copyright held by the Hoover Library-Museum.)

—The Editor
George Washington Carver
Holistic Scientist for the American South

by Harold S. McNabb, Jr.

In October 1896, after finishing work on a master’s of science degree in agriculture at Iowa State College of Agriculture and Mechanic Arts in Ames, Iowa, a slightly built, 32-year-old African American man boarded a train for Tuskegee, Alabama, where he had accepted an offer from Booker T. Washington to join the Tuskegee Institute. Iowa’s adopted son, George Washington Carver, was carrying a suitcase, a few amaryllis bulbs, and a wooden box containing a microscope, a gift from those he was leaving behind: the townspeople of Ames and the faculty and students of the college.

Those friends and admirers could not understand why he was leaving this mecca of agricultural teaching, research, and extension. What did the 14-year-old Tuskegee Institute offer this bright, young scholar? Who was this Booker T. Washington, who could entice this popular student and now teacher away from their campus?

Little did they know of the inspirational challenge that a devout, motherly woman had given the 12-year-old boy, called Carver’s George, some 20 years earlier. He had to walk eight miles to Neosho, Missouri, to attend Lincoln School, the closest African American school to his original home in Diamond Grove, and so Mariah Watkins and her husband, Andrew, took him in. Born near the end of the Civil War in southwestern Missouri, he had been raised since he was a baby by Susan and Moses Carver, who had owned his mother and her children as slaves. “Aunt” Mariah told the boy that he was now free, and therefore should call himself George Carver. (Later, he acquired the middle initial W, when his mail was confused with another George Carver; and later still, the W became Washington when he was asked what the letter represented.) At the African American school at Neosho and under the care of African American “parents,” as Carver for the first time was immersed in African American culture, he awakened to the needs of his people. Mariah Watkins challenged him always to search for knowledge but to take that knowledge to serve others, especially those of his race who were suffering as an outcome of the Civil War.

Reaching the point where his knowledge matched the teacher’s in Neosho, Carver left for Kansas in the late 1870s with a family traveling to Fort Scott. After witnessing a brutal lynching of a member of his race, he immediately left for Olathe. There and later in Minneapolis, Kansas, he finished the equivalent of high school. Although he was admitted into the Presbyterian church in Minneapolis, he was turned away from the small Presbyterian college in Highland. He had been accepted by mail, but when he arrived at the school, the president informed him that they did not admit African Americans.

Discouraged, Carver traveled west, taking over a homestead in western Kansas. But the quest for further learning set him wandering again. Eventually he ended up in Winterset, Iowa, where he found true friends who recognized his artistic abilities. Ever since he was a child in southwestern Missouri he had made nature drawings, and he had learned to paint from a fellow homesteader in western Kansas. A Winterset family, the Milhollands, recognized his talent and encouraged him to enroll in Simpson College in nearby Indianola. His art instructor there, Etta Budd, considered Carver a natural artist, but she questioned whether a black man could make a living in the arts. Since she had also seen evidence of his “way with plants”—he sometimes brought her plants that he had cross-fertilized or grafted—she recommended that he transfer to Iowa State College, where her father was professor of horticulture, to study agriculture.

So, in April 1891, George Washington Carver arrived in Ames. Iowa State College was a leader in agricultural education and research. The college was the first one established as a result of the Morrill Act of 1862.
Carver's love of nature was reflected in his artistic talents as well as in his scientific research.

And thanks to that act and its successors—the Hatch Act of 1887, which provided funds for agricultural experiment stations, and the Morrill Act of 1890, which expanded land-grant appropriations—the study of agriculture had become a recognized scientific discipline.

From 1891 through 1896, Carver was mentored by some of the agricultural greats of the day: “Tama Jim” Wilson, Henry C. Wallace (both future U.S. secretaries of agriculture), J. L. Budd, and, above all, Louis Pammel, professor of botany, whom Carver termed “his great mentor and friend.” As the only African American on campus, life was not easy for Carver. At first, the dining room manager made him eat in the basement, and living arrangements were embarrassing until some faculty offered him a room in an old office. And he had to work at menial tasks to earn money for his expenses. Eventually, however, Carver’s wide-ranging abilities and activities and his warm personality won students over, and many made special efforts to include him in their activities. Moreover, his ability to raise, cross-fertilize, and graft plants won him the respect of the faculty. He graduated in 1894 with a thesis titled “Plants as Modified by Man.” The faculty then persuaded him to pursue postgraduate work. He received a teaching appointment and was put in charge of the campus greenhouse, freeing him from the menial jobs he had pursued as an undergraduate to make ends meet.

He also earned the admiration of another future U.S. secretary of agriculture: “little Hank” (Henry A.) Wallace, who was just eight years old when Carver left Ames. Hank’s father, Henry C., was the dairy professor on campus. Carver and the boy, Henry, hiked the bogs and fields around Ames together, collecting plant disease fungi (one of Carver’s research specialties) and plant specimens. In the greenhouse, Carver taught young Henry how to breed plants. Although, with the Wallace family background, Henry was destined to become an agricultural pioneer, Carver’s mentoring was certainly a catalyst for the boy’s future.

The Iowa State period in Carver’s life shaped his future. His studies exposed him to the organization found in the natural and physical sciences, and to the “hands-on” method of teaching students and farmers, and awakened him to the potential he possessed for serving his fellow humans. Above all, he reaffirmed the holistic approach to problem solving that he had been developing since his boyhood days exploring the fields and stream banks in southwestern Missouri. Thus, when he had a chance to serve humankind, and especially his race in “Black Belt Alabama” at a school led by a person who had the same philosophy and goals as his, he decided to bring the new “scientific agriculture” to Tuskegee.

Plant breeding and mycology (the study of plant fungi and disease) were undeveloped, experimental branches of the relatively new discipline of the scientific study of agriculture in the 1890s. Carver’s studies at Iowa State, complemented by his own innate abilities and interests, prepared him well to engage in the kind of scientific experimentation in these embryonic fields that characterized scientific agriculture. In the Tuskegee Institute’s laboratories and in the fields of its experiment station, he conducted countless demonstrations and experiments that would enable him to make significant contributions to this new field of study. But his education and life experience at a white institution of higher education in Iowa did little to prepare him for the real-life challenges he would face at an ill-funded African American institution of higher learning in the midst of Alabama’s Black Belt.

He never conceived how poor the conditions would be in that vicinity. After his first trip into the countryside around Tuskegee, he came back to Booker T. Washington and described what he had seen and heard as the “lowlands of sorrow.” He began to think that the
Soil worn out from cotton and farmers worn out by economic servitude disheartened Carver when he came to Alabama. In simple, nontechnical words, he taught farmers how to apply scientific ideas, so “the man fartherest down can get hold of it.”

challenges that Mariah Watkins had given him 22 years earlier might be too hard to meet. But he did meet them. Over the next four decades, he led the revolution in southern agriculture from the “lowlands of sorrow” to the highlands of pride and joy.

George Washington Carver’s work during those years is often reduced to accommodate his identification throughout the world as the “peanut man.” But there is much, much more to this great scientist and humanitarian than his work with the peanut: his faith, his mysticism, his service to others, his love of plants, his love of the natural world, his lack of materialism, his belief that there is “no such thing as waste,” and his non-violent attitude. In fact, his holistic integration of science, mystical love of nature, religion, and humanitarianism are what make it worth the effort to understand him.

What Carver saw in the “lowlands of sorrow” was an agricultural way of life that depended on one non-food crop, cotton; a very non-sustainable agricultural land system; terrible human nutrition; and a serf-like economic system—all of these robbing people of pride and hope. The results of the Civil War had produced another form of slavery, economic slavery. Therefore, both Carver’s teaching at the institute and his outreach to farms around Tuskegee had to bring the new scientific agricultural principles that were being employed at agricultural experiment stations at Tuskegee and across the country into a holistic approach to farm life.

The southern rural social structure was built around the church. This Carver understood and used as he began to work with farmers around Tuskegee. He began attending church with them, going to their homes after church to expound his scientific agriculture ideas, such as crop rotation (using plants that returned nitrogen to the soil instead of cotton that “wore out” the land). Instead of buying fertilizer in town, farmers, he urged, should use compost from the farm. He believed that waste did not exist in nature.

Carver suggested that families could grow some of their own food in kitchen gardens around the home instead of buying all their food in town using their meager profits from cotton. He showed them how to preserve foods for use during winter months. He produced recipes for both old and new field and garden crops. These actions brought a balanced diet to the rural poor.

At the same time, his students were developing experimental plots that showed yield increases with crop
Working with native clays, Carver developed low-cost house paints for rural southerners. Calling himself a "trailblazer" but not a "finisher," he worked on hundreds of agricultural ideas. To Carver the mystic, they were all connected.

rotation, new crops, and genetically improved crop varieties. Carver continued the field days at Tuskegee that Booker T. Washington had started, exhibiting the results of his students' experiments. By introducing peanuts, cowpeas, soybeans, and sweet potatoes (previously thought to be fit only for hogs) as possible additional field crops, and tomatoes (previously thought to be poisonous) and other vegetables for the kitchen garden, Carver promoted diversification. But with new crops, new markets had to be developed. Carver not only developed new food products from peanuts and sweet potatoes, but began his research in chemurgy, the industrial use of agricultural crops. Carver gained international recognition as the father of chemurgy by developing more than 300 products from peanuts and more than 100 from sweet potatoes. But this was only part of his holistic approach to the dismal condition of southern agriculture.

As Carver saw rural conditions slowly improve, he also saw the need for more joy and pride among rural people. Therefore, he suggested that they add color to their lives by planting flower beds around their homes and painting their homes bright colors with colorful paints that he developed from the Alabama clays and had produced locally.

Although Carver's work on the peanut represented only a small part of his contribution to southern rural life, it is an important symbol of the developments in scientific agriculture at the time. Carver took full advantage of his successes in his research on the uses of the peanut. His name became a byword after his famous testimony before the U.S. House of Representatives Ways and Means Committee in 1921, where he was an advocate for a protective tariff on peanut imports. At the end of his testimony, after he had pulled countless samples of products made from peanuts from his "Pandora's Box" and wittily exhibited their uses, this usually staid audience burst into applause. Texas Representative John N. Garner later recalled the presentation as "one of the most interesting talks I had ever heard before the committee and one of the most effective." Carver's creative testimony humanized scientific agriculture and thus is one of the best examples of the practical role of a scientist in our society. In other words, it is an excellent example of the land-grant university tradition, a tradition Carver experienced both at Iowa State College, founded in response to the original Land-Grant Act in 1862, and at Tuskegee Institute, which began receiving federal funds after the 1890 Morrill Act expanded funding for agricultural research and teaching in predominately African American institutions.

Carver became the spokesperson for the peanut industry, exhibiting products and speaking about the nutritional values embodied in peanuts and sweet potatoes. He also continued to speak before gatherings of young people of the YMCA and the Commission on Interracial Cooperation (CIC). (During his period in Ames, he had participated in YMCA activities, often leading the group.) During the last decade of his life, much of his time was spent traveling and lecturing throughout the eastern and southern states. Carver had a high-pitched, raspy voice, probably from an early bout with whooping cough when he was a baby. Still, he was considered an excellent and personable speaker who used word pictures and "hands-on" examples to mesmerize his audience. He was also a gifted, inspiring teacher and mentor. His YMCA and CIC presentations to young people in the 1930s began to bring racial understanding to youth in a troubled southern society. One former student wrote to him: "You have shown me the one race, the human race. Color of skin, or form of hair
Iowa State botany professor Louis H. Pammel (in hat) was Carver’s friend and mentor long after Carver left Iowa. Carver (right) and Tuskegee president Robert Russa Moton pose here with Pammel and his wife, Augusta, on a visit to Tuskegee in 1928.

mean nothing to me now, but length, and width and breadth of soul and loving kindness mean everything.”

One cannot understand Carver fully without understanding his faith in God. From boyhood, he heard God speaking to him through nature. During most of his life, he spent early mornings in the woods and fields listening to God’s words. Because he affirmed that God directed all of his research, many have described him as a mystic. Some have wondered how a scientist could attribute his research to guidance by God. In any case, Carver never separated religion and science as many scientists did then and do now. He is often quoted as saying, “How my very soul goes out to people who have not found the first principle of true happiness and Divine love, which must rule the world.”

The era in which George Washington Carver lived and worked was a period of great change. Science was changing from being descriptive to experimental. Teaching was becoming hands-on, as laboratories and field trips supplemented lectures. Extension programs were developing for rural areas. Science and religion grew apart as scientific discoveries greatly improved daily life. Carver actively participated in all of these changes except the separation of science and religion, which he fervently endeavored to hold together.

That holistic approach to the rural agricultural crisis in the South of his day was, I believe, his greatest accomplishment. But a footnote should be added to that claim. Carver often said, “I am no great person. I am no great scientist. I have only been able to point the way in a few things. After me will come those who read and interpret the signs, the great of the world. I am only the trailblazer.” Carver directly mentored Henry A. Wallace, who helped found the company that started the hybrid corn revolution. He mentored many more students at the Tuskegee Institute. Indirectly, he has mentored countless others who, like me, have been inspired by the way he integrated his teaching, his research, his faith, and his commitment to service. And many of those, like me, have sought to mentor yet others who will exemplify the true meaning of Carver’s most famous quotation: “It is simply service that measures success.”

Harold S. McNabb, Jr., is University Professor Emeritus of plant pathology, and natural resource ecology and management at Iowa State University. He has received numerous honors for his teaching and research. For more than six decades, he has been interested in George Washington Carver, his role model throughout his professional career.

From the author:
As I was first preparing this tribute to George Washington Carver in July of 2002, a plane crash over southern Germany took the lives of 45 gifted students from the city of Ufa, in the Russian republic of Bashkortostan. Among the students was 15-year-old Lenara Khismatullin, a true lover of plants, the world’s primary source of food. As a mentor and teacher of young people for all my professional years, I was devastated by the news, yet touched by the act of her father, who took plants that she had planted at their Russian home and planted them at the crash site in southern Germany. I dedicate this essay to the memory of Lenara and her fellow students.

—Harold S. McNabb, Jr.
On March 29, 1914, Lou Henry Hoover turned 40 years old. A few months later her husband, Herbert, did likewise. Living in London with their sons Herbert (11) and Allan (7), these two native Iowans were yearning for the day when they could uproot themselves from the Old World and return permanently to the New. For years, Hoover—a highly successful, peripatetic mining engineer with enterprises that girdled the globe—had been planning to come home to America and enter what he called the “big game” of public service. Having achieved his ambition of becoming a millionaire by the age of 40, he frankly felt that “just making money isn’t enough.” He wanted to do something more.

The events of August 1914 gave him his opportunity, on a stage and scale that he could never have imagined. August 10, 1914, was his 40th birthday, but it is doubtful that he and Lou did much celebrating. As leading American residents of London, they were already immersed in coordinating relief assistance for panic-stricken American travelers fleeing the outbreak of war on the European continent. Just six days before Hoover’s birthday, Great Britain had declared war on imperial Germany—the final salvo in a six-week chain reaction that had turned a crisis in the Balkans into a global catastrophe. In London, on August 4, the banks were closed, Hoover’s mining business was paralyzed, and American tourists by the thousands were vainly searching for passage home. Writing to a friend on that fateful August day, Hoover remarked: “If my judgment of the situation is right, we are on the verge of seven years of considerable privation.”

The American engineer’s prescience was remarkable. For the next seven years, privation did indeed engulf much of the world, and the struggle against it became the overarching theme of Hoover’s life during that period. Not personal privation, of course: Hoover himself remained financially independent. Nor was the
As chair of the European Relief Council, Herbert Hoover inspects supplies headed to Europe from a Brooklyn pier, January 1921. Kitty Dalton, representing the Knights of Columbus, assists. During and after World War I, Hoover oversaw massive relief efforts to aid war-torn Europe.

Consider briefly the scale of the responsibilities that Hoover accepted during and after the Great War. While European armies bogged down in the trenches in 1914 and succeeding years, Hoover—working without pay—founded and administered the Commission for Relief in Belgium (CRB). This neutral, benevolent organization acquired, transported, and delivered nearly 5 million metric tons of food to more than 9 million civilian inhabitants of Belgium and northern France who were caught between a hostile German army of occupation and a British naval blockade. What began as an emergency relief effort directed by a London-based, American mining engineer evolved into a colossal humanitarian undertaking without precedent in world history.

When the United States entered the war in 1917, Hoover returned home. Soon he became head of the U.S. Food Administration, an agency created at the request of President Woodrow Wilson. Hoover’s challenge was formidable: he must—by suasion, if possible; by coercion, if necessary—stimulate American food production, reduce American food consumption, curb inflation of food prices, and create a substantial food surplus for export to America’s needy allies. “Food Will Win the War” was his slogan—an exaggeration, perhaps, but not if stated negatively; a dearth of food would surely lose the conflict. By the autumn of 1918, America, with Hoover’s guidance, had become a reliable source of food for its beleaguered British, French, and Italian allies.

On November 16, 1918—just five days after the Armistice—Hoover set sail for Europe to organize food distribution to a continent careening towards disaster. In the months following the end of World War I, across vast stretches of Europe, famine, disease, and bloody revolution threatened a civilization already traumatized by “the war to end war.” While Allied leaders struggled to draft a peace treaty at Versailles, Hoover, as the larger struggle one that he had been obligated to confront. No, he could have avoided it if he had wanted to and—by virtue of his strategic place in international mining ventures—could have profited immensely from a warring world’s misfortune. Instead, by a combination of duty, desire to serve, and (one suspects) sheer love of accomplishment, Hoover, with his wife’s assent and assistance, consecrated himself to a mission to relieve the suffering of those whose lives were shattered by war. From 1914 to 1921—and even, to some extent, beyond—war, revolution, and peacemaking were to absorb the energies and suffuse the consciousness of them both.
Humanitarian in Europe

Herbert Hoover

Drew at the European Humanitarian Council.
Des Moines Register cartoonist J. N. "Ding" Darling depicted Uncle Sam with gifts labeled "Merry Christmas to Ourselves," while Hoover stands over an empty kettle. The cartoon, published in December 1920, accompanied an appeal from Hoover to American charity for central and eastern Europe.

Director-General of Relief for the Allied and Associated Powers and chairman of the American Relief Administration (ARA), organized the delivery of food to millions of desperate people.

The task that Hoover and his associates performed was no routine process of sending food to the needy; it was a herculean undertaking of immense complexity. Millions of tons of supplies had to be purchased from all over the world, shipped to Europe, and distributed in more than 20 nations. Many of these countries had only rudimentary governmental machinery; in some, communication had broken down and transportation services were chaotic. Every frontier was a barrier of suspicion; ethnic tensions and separatist impulses abounded. Yet from November 1918 to September 1919, Hoover and his ARA colleagues coordinated the delivery of more than 4 million metric tons of food and other supplies. The infant republic of Austria, for instance, perhaps the most desperately afflicted of any country in all Europe, received more than a half-million metric tons of supplies at a time when its own food sources were severely depleted and its financial plight seemed nearly insuperable.

But the American-led relief program entailed much more than simply supplying food to starving populations. Economic rehabilitation and increased productivity were also critical for Europe’s recovery. Many of Hoover’s initiatives in 1919 were designed to achieve that objective. He arranged for hundreds of American engineers and other experts to become technical advisers to the governments of Austria, Poland, Czechoslovakia, and Yugoslavia. These advisers, some of whom stayed for three years, helped to reorganize railways, create efficient transportation networks, reform currencies, and modernize agriculture. Hoover also helped to establish the Inter-Allied Danube River Commission, which labored to clear that vital riverway for commercial traffic. And, with the approval of the Allied governments, he dispatched American agents to Silesia and other European mining regions, where they helped to settle strikes and increase urgently needed coal production. Along with the food relief, these efforts undoubtedly helped to stem the advance of Bolshevik revolution from the east.

With the signing of the peace treaties in the summer of 1919, Hoover’s relief and reconstruction efforts entered a new phase under nongovernmental auspices. For the next four years he concentrated on providing assistance in the form of daily meals to the children of eastern and central Europe as well as to certain particularly distressed sectors of the population.

Conditions were appalling. Medical examinations in 1919 disclosed that 96 percent of the children of Vienna under the age of 15 (to take but one example) were undernourished. With the cooperation of dedicated volunteers from many countries, and with the support of their governments, the American Relief Administration’s European Children’s Fund eventually provided daily food for an estimated 3 million European children at thousands of separate relief stations.

One of Hoover’s innovations that helped to address this crisis was the creation of a form of remittance known as food drafts, by which American citizens could send aid to their kinfolk in Europe. Americans could purchase

Right: Through U.S. Food Administration posters like this one, Hoover kept his “Invisible Guest” theme before the American public, as a reminder of the destruction and starvation in war-ravaged Europe while America enjoyed abundance.
3,500,000
Starving
Children

In
Central
Europe

"WELCOME
INVISIBLE GUEST!"
Keep alive at least one European Child
until the next harvest, $10.00 will do it

European Relief Council

BUY INVISIBLE GUEST CERTIFICATE NOW
"National Collection" For the Suffering Children of Central and Eastern Europe
such drafts at banks in the United States and mail them to their relatives in Europe. The Europeans could then present the drafts at American relief warehouses established in their own country and receive in exchange standardized packages of food worth the amount stated on the draft. It was an ingenious device that allowed individual Americans to relieve the suffering of starving Europeans without sending food packets that might be lost or stolen en route. To provide these food allotments, Hoover’s organization set up more than 60 warehouses in five European countries. In all, more than 400,000 food drafts were sold and delivered, and more than 14,000 metric tons of food were thereby distributed.

No wonder, then, that President Wilson labeled the ARA the “Second American Expeditionary Force to Save Europe.” In 1919 and later, Hoover’s far-flung apparatus seemed truly on the march. In Estonia, for instance, at one time nearly one child in four received regular meals from Hoover-led agencies. In Poland, as many as 1.3 million children per day received ARA-supplied food at the peak of the organization’s efforts. Undoubtedly the most extraordinary ARA undertaking occurred more than two years after the war ended, in Soviet Russia. There, from 1921 to 1923, at the request of Communist authorities, Hoover’s agency administered a vast relief program to combat a devastating famine in the Volga River region. At its peak the organization fed upwards of 10 million people per day. Between 1919 and 1923 Hoover and his associates delivered more than 768,000 metric tons of supplies to more than 20 million people in Russia and other Soviet-held territory. So great was this assistance that some historians believe it indirectly stabilized Lenin’s Bolshevist regime. Whatever the merits of that contention, for ordinary Russians the immediate gain was palpable.

In short, between 1914 and 1923 Herbert Hoover directed, financed, or assisted a multitude of international humanitarian relief efforts without parallel in history. During that nearly ten-year period, the Commission for Relief in Belgium, the U.S. Food Administration, the American Relief Administration, and various other institutions and governments delivered nearly 34 million metric tons of food to the lands and people imperiled by World War I and its aftermath. The monetary value of that sustenance exceeded $5 billion, a figure that, in today’s currency, would approach $50 billion.

For most of this astonishing undertaking, Herbert Hoover had high administrative responsibility. Thus Hoover as “food regulator for the world” (as General
such drafts at banks in the United States and mail them to their relatives in Europe. The Europeans could then present the drafts at American relief warehouses established in their own country and receive in exchange stan-
Hunger and malnutrition stalked European children even after war ended in 1918. Hoover turned his focus to providing daily meals for them at thousands of feeding stations.

Pershing called him) earned the epithet “the Great Humanitarian.” How many people owed their lives to his endeavors? Precise statistics were never compiled in many instances, but one Hoover scholar, after carefully studying the relevant data, concluded that between 1914 and 1923 more than 83 million men, women, and children in more than 20 nations received food allotments for which Hoover and his associates were at least partly responsible. This figure does not include the 120 million people in Great Britain, France, and Italy (America’s wartime allies) who received critically needed foodstuffs from the United States in 1917–1918—a form of “foreign aid” that cannot be considered humanitarian assistance in the ordinary sense of the term.

Eighty-three million people: it is a staggering figure. But whether this estimate is high or low, the bottom line is irrefutable: as someone remarked a number of years ago, Herbert Hoover was responsible for saving more lives than any other person in history.

Calamities of this magnitude could not fail to transform the human beings caught up in them, and such was the case with Herbert Hoover. In ways both obvious and subtle, the First World War and its aftermath remolded his life, even as he changed the lives of others.

For Hoover, the emotional strain of the war manifested itself not in his oft-interrupted family life but in what he experienced on and near the European battlefields. On December 1, 1914, for instance, he visited a canteen in Brussels where some of the city’s destitute queued up for their daily ration. As Hoover and the American minister to Belgium watched, hundreds of the poor stood uncomplainingly in the rain, shivering, grasping bowls and pitchers and the precious little cards that would guarantee them a meal. Upon receiving his or her allotment, each would pause, bow, and utter the single word: “Merci.” Tears welling in his eyes, the American minister had to look away. Hoover, too, averted his gaze and silently stared into the distance. After that traumatic experience, Hoover rarely ventured near a Belgian bread line again. According to Lou, her husband would not visit one “unless literally compelled
to" and would have "his eyes near full of tears before he leaves." The "pathos" (as he put it) of "the long line of expectant, chattering mites" (Belgian children)— "each with a ticket of authority pinned to its chest or held in its grimy fist"—was for this orphaned Iowan too much to bear.

Nor could Hoover forget the glimpses he saw of the Battle of the Somme from behind German lines in northeastern France in the summer of 1916. It was a scene that haunted his memory for years: "In the distant view lay the unending blur of trenches, of volcanic explosions of dust, which filled the air where over a length of sixty miles a million and a half men were fighting and dying. Once in a while, like ants, the lines of men seemed to show through the clouds of dust. Here under the thunder and belching volcanoes of 10,000 guns, over the months of this battle, the lives of Germans and Englishmen were thrown away.... Down the left side came the unending lines of wounded men, the 'walking cases' staggering among cavalcades of ambulances. A quarter of a million men died and it was but one battle in that war."

Above all, perhaps, Hoover could never forget what he witnessed in Warsaw in August 1919. Shortly before his planned return to the United States from Paris, the head of the American Relief Administration decided to visit several central European countries that had benefited prodigiously from his humanitarian aid. When the Polish government learned of his intentions, it prepared to honor him with a "children's festival" on August 14. Tens of thousands of Polish children paraded in Hoover's honor that afternoon. At one point a group of them captured a startled rabbit on the racecourse grounds and bore it triumphantly to their benefactor in the reviewing stand. Hoover wept unabashedly. With moments like these to sear one's soul, the personal sacrifices of the past five years probably seemed minuscule by comparison. How many of those Polish children that summer day would have been alive if Hoover had done nothing to feed them?

The unceasing weight of responsibility that Hoover carried during these "seven years of privation" appeared to take a psychic toll. Some years later Lou Henry Hoover confided to her children: "A certain definite, and very original, kind of joy of life was stamped out of him by those war years. Can you remember that as a fun-making, fun-enjoying person he completely changed? Not that he became altogether solemn and serious, not that a quaint whimsicality does not persist and is highly entertaining, but the old sparkling spontaneity is now only occasionally glimpsed far below the surface."

The effect of the war and peacemaking on Hoover was not only psychological but also intellectual. When the humanitarian hero returned at last to America's shores on September 13, 1919, he was not a contented man. For several months he had pleaded with the Allied leaders at Versailles to lift their blockade of Germany and allow the healing currents of peaceful exchange to flow. Only after a long, wearisome struggle did he attain his objective. Every day at the peace conference he had witnessed a dispiriting display of national rivalry, greed, myopia, and vengefulness. He had seen, too, the sometimes violent attempts of reformers and radicals to construct a new social order on the principles of Marxist socialism. It was a time, he observed, of "stupendous social ferment and revolution."

Hoover returned to his native land (he soon
told friends) with "two convictions...dominant in my mind." The first was that the ideology of socialism, as tested before him in Europe, was a catastrophic failure. Socialism's fundamental premises, said Hoover, were false—the premises that the "impulse of altruism" could alone maintain productivity and that bureaucracy at the top could determine the most productive roles for each individual. Only the "primary school of competition," Hoover countered, could do that. Oblivious to that truth and to the fundamental human impulse of self-interest, socialism had "wrecked itself on the rock of production." It was unable to motivate men and women to produce sufficient goods for the needs of society. And without increased productivity, neither social harmony nor an improved standard of living for the masses would occur. To Hoover the economic demoralization of Europe in 1919, with its attendant shortages and suffering, was the direct result of the bankruptcy of socialism.

Hoover's second conviction was also firmly held. More than ever before he sensed the "enormous distance" that America had drifted from Europe in its 150 years of nationhood, a distance reflected, he said, in "our outlook on life, our relations toward our neighbors and our social and political ideals." Hoover implored his fellow citizens not to turn their country into "a laboratory for experiment in foreign social diseases." Instead, he said, "A definite American substitute is needed for these disintegrating theories of Europe"—a substitute grounded in "our national instincts" and "the normal development of our national institutions." In numerous speeches and articles in 1919–1920, Hoover began to define this American "substitute." The foundation of the distinctive American social philosophy, he asserted, was the principle of equality of opportunity: the idea that no one should be "handicapped in securing that particular niche in the community to which his abilities and character entitle him." Unlike Europe, where oppressive class barriers had generated misery and discontent, the American social system was based on "negation of class." A society, said Hoover, in which there is "a constant flux of individuals in the community, upon the basis of ability and character, is a moving virile mass." Such a society, Hoover fervently believed, was America.

In the months and years to come, Hoover attempted to distill from his experiences abroad a coherent understanding of the American experiment he so cherished. Repeatedly the questions of 1919 recurred: How could America avoid the follies and convulsions that he had seen in Europe? How could the American system be strengthened in an age of global revolution? Why was America so different? Why was America unique?

More than most American presidents and public figures, Hoover seemed driven to codify and systematize his political beliefs. One source of that compulsion was his raw, turbulent experience of war and hunger between 1914 and the early 1920s—an upheaval that disturbed not only his home life but also the furniture of his mind. One result of that compulsion was a little volume called American Individualism that he published in 1922. Another was a book of political philosophy titled The Challenge to Liberty, which appeared in 1934. In 1919 Hoover's estrangement from Europe was not so deep as to prevent him from advocating American involvement in its affairs. He was, in fact, an ardent advocate of American entrance into the League of Nations and of ratification of the flawed Treaty of Versailles (with or without reservations), in part to facilitate...
Europe’s postwar rehabilitation (a humanitarian objective) and in part out of American self-interest (a prosperous Europe was vital to America’s own welfare, he believed).

But as the years passed, Hoover’s antipathy toward Europe gradually intensified. To him it came to seem that not just fundamental differences but “irreconcilable conflicts” in ideals and experience separated the Old World from the New. The New World, he came to believe, was remote from the imperialism, fanatic ideologies, “age-old hates,” racial antipathies, dictatorships, power politics, and class stratification of Europe. What he had witnessed in 1919 at Versailles, he concluded, was something far more profound than “the intrigues of diplomacy or the foibles of European statesmen.” It was “the collision of civilizations that had grown three hundred years apart.”

These outspoken sentiments undergirded Hoover’s vehement opposition in 1939 to 1941 to American bellicosity in the war between Nazi Germany and its enemies. They also colored his attitude toward foreign aid to Europe in the late 1940s and to American strategy in the early years of the Cold War. They may also have indirectly affected—and here we speculate—his response to the organization of relief at home during the Great Depression. In contrast to much of Europe in 1919, where his American aid workers had imposed administrative control from above, the United States—he seemed to believe in 1930–1932—needed no such intervention. America, to Hoover, was different: in America the people at the grassroots had the resources, the skills, and the idealism to take care of themselves and their neighbors. For Hoover the unforgettable experiences of 1914–1921 cast a very long shadow indeed.

When Hoover, his wife, and son Allan disembarked in New York on September 13, 1919, Hoover bluntly told a reporter that he never cared to see Europe again. But he could not stay away. In 1938 he returned to Europe on a partly sentimental journey during which he met former relief associates, visited his old residence in London, and had an interview with Adolf Hitler. In 1946 and 1947, then in his 70s, he undertook strenuous global humanitarian missions at the request of President Truman. In the 1950s he twice visited Western Europe as a representative of the United States government. Even in old age, the affairs of the Old World were very much with him.

And none more than the travails of 1914 to 1921, which he, more than anyone else, had done so much to alleviate. In the final years of his life, Hoover’s thoughts turned increasingly to that tempestuous yet profoundly productive period in his long career. In 1958 he published The Ordeal of Woodrow Wilson—a remarkable account of President Wilson’s tragic struggles at Versailles that was also, in part, a narrative of Hoover’s concurrent battles as American relief administrator. Even more remarkably, between 1959 and 1964 (that is, between the ages of 85 and 90), he wrote and published a massive, four-volume history of the American-led “enterprises in compassion” that had brought food relief to scores of millions of people after World Wars I and II. He called his story An American Epic. And although he gave due credit to the many agencies and individuals who contributed to that unprecedented saga of benevolence, in large measure the story that he told was inevitably autobiographical.

A number of years ago a British politician wrote an autobiography titled Old Men Forget. By contrast, Herbert Hoover remembered. To his dying day he remembered the stormy years when, with his wife’s untiring support, he had appeared on the world’s stage as—in one admirer’s words—the “Napoleon of Mercy.” To his dying day he interpreted his “epic” within the framework of a philosophy of American exceptionalism forged by the bittersweet memories of those years. He was entitled to remember, and so should we, for Herbert Hoover was responsible for saving more lives than any other person in history.

George H. Nash is a historian, independent scholar, and lecturer living in South Hadley, Massachusetts. He has written a three-volume biography of Herbert Hoover and is working on a book about the personal and political relationship between Hoover and Franklin D. Roosevelt.
Saying ‘Thank You’
The Story of the Belgian Flour Sacks

During World War I and under the chairmanship of Herbert Hoover, the Commission for Relief in Belgium shipped 697,116,000 pounds of flour to Belgium, and evidence indicates that sugar and grains were also sent. The flour was packaged in cotton bags by American mills. The movement of these bags throughout Belgium was carefully controlled by the CRB since cotton was in great demand for the manufacture of German ammunition and also because the CRB feared that the flour sacks would be taken out of Belgium, refilled with inferior flour, and resold as relief flour. As a result, the empty flour sacks were carefully accounted for and distributed to professional schools, sewing workrooms, convents, and individual artists.

Separate from the trade schools of Belgium, the professional schools specializing in training girls to sew, embroider, and make lace, and the sewing workrooms were large centers established in the major Belgian cities during the war to provide work for the thousands of unemployed. Girls and women made famous Belgian lace, embroidered textiles, and repaired and remade clothing in these workrooms.

The flour sacks were used by
these various Belgian groups to make new clothing, accessories, pillows, bags, and other functional items. Many women chose to embroider over the mill logo and the brand name of flour, but entirely original designs were sometimes created on the sacks and then embroidered, painted, or stenciled on the fabric. Frequent additions to the flour sacks were Belgian messages of gratitude to the Americans; embellishments of lace; the Belgian and American flags; the Belgian lion; the Gallic cock; the American eagle; symbols of peace, strength, and courage; the Belgian colors of red, yellow, and black; and the American colors of red, white, and blue. Artists, in particular, used the flour sacks as the canvas background for creating original oil paintings.

The completed flour sacks were carefully controlled and distributed to shops and organizations in Belgium, England, and the United States for the purpose of raising funds for food relief and to aid prisoners of war. Many were also given as gifts to the members of the Commission for Relief in Belgium out of gratitude for the aid given to the Belgian people. Herbert Hoover was given several hundred of these flour sacks as gifts, and the Herbert Hoover Presidential Library-Museum has one of the largest collections of World War I flour sacks in the world.

—the Hoover Library-Museum Staff

The Herbert Hoover Presidential Library-Museum is located in West Branch, Iowa, Hoover’s hometown. In the exhibit galleries, visitors will see the many sides of Iowa’s only president: his childhood in West Branch, his years as a mining engineer, his humanitarian food relief effort during two world wars, and his public service as secretary of commerce and U.S. president.

The museum also features an ever-changing array of temporary exhibits on a wide range of topics. In recent years the museum has featured exhibits on the Revolutionary War, the Mississippi River, and western film stars, among other subjects.

The library-museum also contains Hoover’s personal papers and more than 150 other research collections, which have been used by more than 3,200 scholars since the library-museum opened in 1962. The collections include the papers of Laura Ingalls Wilder, Lou Henry Hoover, Bourke Hickelkoper, Lewis Strauss, Clark Mollenhoff, and others.

For more information, call 319-643-5301, or visit: www.hooverarchives.gov.
Upon the death of Henry A. Wallace in 1965, Secretary of Agriculture Orville Freeman remarked that "no single individual has contributed more to the abundance we enjoy today than Henry Wallace." Wallace's lifelong interest in food and agriculture was as much a part of his genetic makeup as his unruly auburn hair and big toothy grin. His beloved grandfather, a preacher and farm editor known to thousands of Iowa families as "Uncle Henry," was a passionate advocate of scientific farming and a vibrant agricultural civilization. His father—first as a professor at Iowa State College, then as an editor of the Iowa-based farm journal, Wallaces' Farmer, and eventually as secretary of agriculture—carried the cause to a national level. Finally, Henry A. Wallace made the family's mission truly international.

From an early age, Wallace was fascinated by plant life, and he displayed a level of intellectual curiosity and skepticism that remained his lifelong hallmark. As a boy still in his early teens, he challenged the scientific validity of the highly popular "corn shows"—based on the theory that the best-looking corn was also the best-producing corn—and all but destroyed them within two decades. As a young man just out of Iowa State College, he began the corn-breeding experiments that consumed much of his time and interest for almost 20 years. By 1920, having absorbed the scientific work of pioneering plant geneticists George Harrison Shull and Edward East, Wallace was one of a handful of people in the nation who understood the huge potential of hybridization.

After he took over from his father, Henry C., as editor of Wallaces' Farmer, Henry A. used his position as a bully pulpit from which he tirelessly preached the virtues of hybrid seed. "There's a revolution coming," he told his readers. Most farmers didn't know what Wallace was so excited about. And even if they did grasp the
importance of hybridization, there was no practical system to research, develop, and distribute hybrid seed. In short, farmers couldn’t buy hybrid seed even if they wanted to. Finally, in 1926, Wallace came up with a plan to make this miracle product available. He formed a company in Des Moines that came to be called Pioneer Hi-Bred International and set about to develop, grow, and sell hybrid corn seed. Most of the money to form the company came from the modest inheritance of his wife, Ilo Wallace; banks, doubtful that farmers would pay for something they could hand-select for free, refused to offer loans. It was the world’s first hybrid seed company, something “entirely new under the sun,” as Wallace put it.

This “entirely new” product was so promising that its sales increased even in the midst of an agricultural depression the likes of which the country had never seen. In 1933, the year of “penny auctions” and ten-cents-a-bushel corn, a fraction of 1 percent of all the farmland in Iowa was planted with hybrid seed; ten years later, the percentage was 99.5. Nationally, the yield of corn per acre in 1933 was 24.1 bushels per acre, about the same as it was during the Civil War. Ten years later it was 31 bushels per acre. By 1981, it was more than 109 bushels per acre. In 2001 in Iowa, one farmer—yes, using Pioneer Hi-Bred seed—produced more than 400 bushels per acre!

William Brown, a talented young Pioneer Hi-Bred geneticist who eventually became the company’s president, later referred to the dramatic growth in the use of hybrid seed as the world’s “first green revolution.” “The introduction of U.S. hybrid maize into Europe following World War II saved countless lives and transformed agriculture in that part of the world in an incredibly short period of time,” Brown wrote. “The methodology of hybrid development quickly spread from the United States throughout the developed world, and U.S. genetic materials, where adapted, greatly enhanced the rapid development of commercial hybrids. Many persons deserve credit for this revolution, among the foremost of whom is H. A. Wallace.”

The founding of Pioneer Hi-Bred and the popularization of hybrid corn was, of course, only a part of the mark Wallace left on food and agriculture. As an editor and author he wrote important works on agricultural practices and economics. One of his little-noticed achievements was his role in introducing statistics as an academic discipline at Iowa State College. He regarded statistics as an important tool in agricultural research and crop development. Through his efforts, including his influential book, Machine Correlation and Calculation, written with Professor George Snedecor, Iowa State became world-famous for its statistics program.

As secretary of agriculture during the New Deal, Wallace put in place a farm program described at the time as the most sweeping societal experiment ever attempted by the federal government. He greatly expanded the department’s research and conservation programs and ushered in innovative social policy initiatives such as the food stamp and school lunch programs. He devised farsighted programs such as the “Ever-Normal Granary,” whereby crops would be stored up in good years to be used up in lean years; that program, enacted into law in 1938, was the action Wallace was most proud of as secretary of agriculture and did much to enhance national food security during World War II.

Nor did Wallace’s influence on agriculture end when his days on the public stage were over. After his disastrous run for the presidency as the candidate of the left-wing Progressive Party in 1948, Wallace returned to his New York State farm and resumed his career as a...
geneticist and experimental farmer. He had a fondness for working with strawberries, gladioli, chickens, and, of course, corn. So successful was his chicken breeding that at one point, half of the egg-laying hens in the world were genetically related to Henry Wallace's chickens.

And he retained his keen interest in policies that would promote family agriculture, a strong rural economy, and sustainable farming practices. Even as he lay dying of Lou Gehrig's Disease in 1965, Wallace was busily engaged in correspondence with President Johnson, setting out a vision of improving rural life through a policy of industrial decentralization. "I shud-

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Reviewing Wallace's life and contributions to agricultural production, one can hardly help but wonder how he would have viewed this or that issue of our time—specifically what he would have thought about the dramatic developments now taking place in the area of biotechnology and genetically modified organisms. One must be careful when speculating about how he would respond, because Wallace is a particularly difficult person to predict. He was an unusual, sometimes eccentric, man. He was a fiercely independent thinker, entirely unimpressed by conventional wisdom, and he was insatiably curious about almost everything—from the flight of boomerangs to the rituals of Native Americans. He experimented with odd diets, dabbled in esoteric religions, taught himself Spanish, and toyed with astrology. He sought truth down any path, no matter how untraveled, and he was completely unafraid of taking a wrong turn. So, having issued fair warning that I'm on hazardous ground, here are some thoughts about Wallace and agriculture—present and future.

If we know anything for certain about Henry Wallace, it is that he believed that all men and women in every nation deserved to share in the earth's bounty. Near the end of the lengthy oral history that he gave to Columbia University, Wallace remarked: "If I were to draw conclusions from my life so far, I would say that the purpose of existence here on earth is to improve the quality and increase the abundance of joyous living. Jesus took on himself the highest of all missions when he said that he came to give a more abundant life to humanity. The improved quality and increased abundance of life is a progressive matter and has not only to do with human life but with all plants and animals as well."

With that as the bedrock of his phi-
On a goodwill tour to South America in 1943, Wallace inspects produce at a regional fair in Panama. His passionate interest in agriculture played out in a hands-on approach and curiosity well beyond that of most visiting dignitaries.
losophy, my guess is that Wallace would have been for those scientific advances that offer the hope of better lives—indeed, offer the prospect of life itself—to millions and millions of people around the world. I believe that Wallace would have agreed with Herbert Hoover that food should never be used as a weapon—in ideological arguments any more than in war. I believe that Wallace would have agreed with George Washington Carver that science should be the servant of humankind and not its master. And I believe he would have agreed with Norman Borlaug that biotechnology and genetic engineering, wisely used, offer a richer and more abundant life to millions of people.

Having said that, I think Wallace would have found many aspects of contemporary agriculture troubling. He would, in my view, be greatly alarmed by the increasing control large corporations have over the food supply, and in particular by the right of corporations to patent life forms. (In his own business life, Wallace never attempted to patent his work; he believed that the way to stay successful was to keep continually ahead of your competition, not to stifle it.) He would see the lack of regard for sound environmental practices by large-scale agribusinesses as foolhardy at best; Wallace was not a sentimental man, but the thought of half of Iowa’s topsoil being washed out to sea would have made him want to cry. He would have been appalled by government policies that encourage overproduction and ongoing concentration of wealth and property.

But Wallace was no Luddite. Faced with a problem created by science, he always saw the solution as more science, not less. He was a great respecter of fact. He would have wanted to know everything that could be known about the environmental and public health consequences of genetically modified food, and then he would want to address those consequences with scientific research. “I have no patience with those who claim that the present surplus of farm products means that
we should stop our efforts at improved agricultural efficiency,” he wrote in 1933 at the height of our country’s greatest economic crisis. “What we need is not less science in farming but more science in economics. We need economic machinery corresponding in its precision, its power and its delicacy of adjustment to our scientific machinery.”

A few months after the United States entered World War II, a war he vigorously supported in the hope that it would bring democracy to the entire world, Wallace delivered his most famous speech. It was titled “The Price of Free World Victory,” but is most often referred to as the “Century of the Common Man” speech after its most quoted phrase. Even now, some 60 years after its delivery, the following passage from that speech speaks to Wallace’s vision of peace and abundance: “Modern science, which is a by-product and an essential part of the people’s revolution, has made it technologically possible to see that all of the people of the world get enough to eat. Half in fun and half seriously, I said the other day to Madame Litvinov [wife of the Russian ambassador to the U.S.]: ‘The object of this war is to make sure that everybody in the world has the privilege of drinking a quart of milk a day.’ She replied: ‘Yes, even half a pint.’ The peace must mean a better standard of living for the common man, not merely in the United States and England, but also in India, Russia, China, and Latin America—not merely in the United Nations, but also in Germany and Italy and Japan.

(Some have spoken of the ‘American Century.’ I say that the century on which we are entering—the century which will come out of this war—can be and must be the century of the common man. Everywhere the common man must learn to build his own industries with his own hands in a practical fashion. Everywhere the common man must learn to increase his productivity so that he and his children can eventually pay to the world community all that they have received. . . . Modern science, when devoted wholeheartedly to the general welfare, has in it potentialities of which we do not yet dream.”

Few did more than Henry A. Wallace to use modern science to lay the foundations in agricultural practice and policy for such a century of the common man.

Efforts by Central American farmers like Ignacio Vuch still captured Wallace’s interest late in life. Visiting Guatemala in February 1964, Wallace took note of Vuch’s truck garden crops of beans, onions, strawberries, and corn, as well as his practice of saving beans for seeds and growing beans on poles.

John Hyde is executive director of the Fund for Investigative Journalism, a nonprofit organization that awards grants to freelance journalists and independent publications. Hyde is co-author, with John C. Culver, of American Dreamer: A Life of Henry A. Wallace.

NOTE ON SOURCES
The research sources for this article are the same as those used for the Benjamin F. Shambaugh Award–winning biography of Wallace, coauthored by John C. Culver and John Hyde: American Dreamer: A Life of Henry A. Wallace (New York: W. W. Norton & Co., 2000). The book is fully annotated and includes a comprehensive bibliography.

The editor thanks the Herbert Hoover Presidential Library-Museum, West Branch, Iowa, for permission to publish this essay, first presented at its October 2002 symposium, “Four Iowans Who Fed the World.” (Copyright held by the Hoover Library-Museum.)
Intersections

Henry A. Wallace not only shared with George Washington Carver, Norman Borlaug, and Herbert Hoover a strong and effective commitment to increasing the world's food supply, but his life also intersected with theirs in fascinating ways.

Wallace was a child not yet in elementary school when he met George Washington Carver. Wallace's father, Henry C. Wallace, an instructor at Iowa State College in Ames, occasionally invited the gentle, brilliant, somewhat lonely young African American student to his home to share food and companionship. There Carver formed a friendship with Henry A.—Young Henry, as he was called—that lasted a lifetime. Together they walked the meadows around Ames, and Carver schooled the boy in identifying the parts and species of plants. Young Henry thrived on both the information and the attention. But Carver's greatest gift to the boy was spiritual. Carver saw the Infinite—that is to say, God—in all living things. "His outstanding characteristic was a strong feeling for the immanence of God," Wallace later remarked. Much the same could be said of Wallace himself.

Wallace's link to Norman Borlaug began taking shape in late 1940, after Wallace had been elected vice president of the United States but before he had taken office. President Franklin Roosevelt asked the vice president-elect to attend the Mexican presidential inauguration as his personal representative. After the ceremonies, Wallace and his wife, Ilo, remained in Mexico for another six weeks, driving around in their Plymouth inspecting the dreadful—and deteriorating—condition of Mexican agriculture. Upon his return, Wallace urged the Rockefeller Foundation to establish an experiment station in Mexico devoted to improving the condition and productivity of Mexican farmers. An increase of only two bushels of corn per acre would make an enormous difference in Mexico's national life, he said. As a result of Wallace's initiative, the experiment station was established, Norman Borlaug was hired, and a great Green Revolution began its spread around the world.

Wallace's relationship with Herbert Hoover was not so positive. The enmity between Hoover and the Wallaces—father and son—long predated Hoover's presidency. It began during World War I, when the Wallaces fought for a plan to increase hog production; Hoover, then the national food czar, rejected the plan. It continued during the Harding and Coolidge presidencies, when Hoover, then secretary of commerce, and Henry C. Wallace, the secretary of agriculture, bitterly disagreed over proposals to assist the economically distressed farm sector. And it culminated in the 1928 and 1932 presidential elections, when Hoover's presidential candidacies led Henry A. Wallace to bolt the Republican Party and endorse the candidacies of New York Democrats Al Smith and Franklin D. Roosevelt. Even today, more than three decades after Wallace's death, personally autographed pictures of every president since Theodore Roosevelt line a wall in Wallace's farmhouse in Westchester County, New York. Every president, that is, except one. There is no picture of Herbert Hoover.

—by John Hyde
In 1970 Norman Borlaug won the Nobel Peace Prize for his work promoting the Green Revolution in Mexico, Pakistan, Africa, and throughout the developing world. But his roots were on a farm about a dozen miles southwest of Cresco in Howard County, Iowa, where he was born in 1914. The Norwegians who had settled in that area instilled the values of work, discipline, and integrity in their children as moral obligations. In addition to instilling those values in the young Borlaug, his parents encouraged his education, which began at New Oregon Township School No. 8. In 1928, after graduation from the eighth grade, he entered Cresco High School, where he excelled in sports, particularly wrestling. Upon graduation in 1932, his work ethic and skill in the gym resulted in his application for admittance to the University of Minnesota.

There Borlaug became a star wrestler, but he also discovered a compelling field of study; by January 1933, he had chosen forestry as his major. He paid for his education by working on farms in Iowa and Minnesota during the summers and by holding jobs with the National Youth Administration, a New Deal agency designed to provide employment for the nation’s youth during the Great Depression. Upon his graduation in 1937, budget cuts in the National Forest Service during the late 1930s and the lack of job prospects encouraged him to pursue graduate study. He received his master’s degree in 1939 and his Ph.D. in 1942 in plant pathology.

Before he completed his degree, he accepted a position in late 1941 with the E. I. Du Pont Nemours & Company in Wilmington, Delaware, where he worked on developing chemical pesticides and herbicides. When the United States entered World War II after the Japanese attack on Pearl Harbor on December 7, 1941, the federal government classified Borlaug as an essential industrial worker and refused his attempt to enlist in the army. At about the same time, the Rockefeller Foundation contacted him about joining a project to improve cereal grain production in Mexico. Borlaug expressed interest, but his government wartime employment classification prevented him from leaving Du Pont. The Rockefeller Foundation began working to gain his release from Du Pont, but more than a year passed before he received permission to leave the company.
Borlaug’s contributions to the Green Revolution began in 1943 when the 29-year-old geneticist joined the staff of the Cooperative Mexican Agricultural Program as an employee of the Rockefeller Foundation. The program resulted from a trip to Mexico by Vice President Henry A. Wallace and a request from Mexico for technical assistance to improve its agricultural research. American involvement in World War II prevented support in the form of government agricultural experts and funds, so Wallace sought assistance from the Rockefeller Foundation, which had international experience in public health work. The Rockefeller Foundation studied Mexico’s agricultural problems and agreed to send a three-person scientific team to address them. As a member of that team, Borlaug was assigned to help Mexico improve its wheat production.

When Borlaug arrived in Mexico, its farmers raised less than half of the wheat necessary to meet the demands of the population. Rust, a serious disease caused by a parasitic fungus, perennially ruined or diminished the harvest. Borlaug, along with his team of agricultural scientists, emphasized an interdisciplinary approach to solving the wheat production problem by integrating the work of geneticists, agronomists, plant pathologists, entomologists, and chemists. They labored for 13 years before they developed a disease-resistant wheat.

Still, problems remained. Although the new wheat variety resisted rust, its stems, like those of other Mexican varieties, were not strong enough to hold heavy heads of grain, particularly when farmers fertilized their fields. The new varieties produced low yields and toppled over in wind and rain. To solve the problem, Borlaug turned to several Japanese dwarf strains, which he crossed with varieties raised in the hot, dry fields of northern Mexico as well as in the cool highlands near Mexico City. The result was a hard spring wheat that resisted rust, tolerated the climatic and soil variations across Mexico, and resisted toppling. It also produced large yields with the use of nitrogen fertilizer and irrigation.

By 1956, Mexico had achieved self-sufficiency in wheat production, and by 1963, Borlaug had succeeded in increasing the average wheat harvest from 11.5 to 30 bushels per acre. His work breeding wheat and train-
ing Mexican agricultural scientists to continue his applied genetic research led to the creation of the International Maize and Wheat Improvement Center (known by its Spanish acronym as CIMMYT). Borlaug directed the wheat program at CIMMYT until he retired in 1979. More important, he had sowed the seeds of the Green Revolution—applying new technologies to farming to increase crop yields and alleviate world hunger.

In Mexico, Borlaug’s team emphasized “production-oriented” research and restricted it to investigations that were “relevant to increasing wheat production.” He recalled that “researches in pursuit of irrelevant academic butterflies were discouraged . . . because of the need to have data and materials available as soon as possible for use in the production program.” As Borlaug’s experimental plots produced increased yields, his staff distributed the improved seeds among farmers to help them improve their production. “We never waited for perfection in varieties or methods,” he said, “but used the best available each year and modified them as further improvement came to hand.”

B orlaug later claimed that his success breeding wheat and increasing production in Mexico put him out of a job. In truth, his success increased and complicated his work. The Cooperative Mexican Agricultural Program became a model that other nations adopted to increase wheat, corn, bean, millet, and sorghum production. In many respects, however, his career as a plant breeder was over. He then became an international advocate for agricultural education and extension, applied agricultural science, and a consultant for the United Nations and a host of countries. That, Borlaug later lamented, “was a disaster as far as I’m concerned. You get pushed off into so many things. A lot of your energies are cut off from the things you know best. Some of them you have to do. Because you end up being the spokesman for science in general.”

In 1962, for example, the Rockefeller Foundation and the Food and Agriculture Organization of the United Nations sent him to North Africa and the Middle East to evaluate wheat production and determine whether his Mexican wheat research could help increase yields in those regions. In 1963 the governments of India and Pakistan also invited him to visit and evaluate their agricultural research programs and wheat production. Borlaug traveled to Pakistan to observe the progress of the wheat varieties that scientists who had trained under him had taken back from Mexico. Their work convinced Borlaug that his Mexican dwarf varieties could help increase wheat yields substantially in Pakistan and India. In 1968, as a result of Borlaug’s help, Pakistan became self-supporting in wheat, although political instability and rapid population growth continued to make the achievement tenuous. Four years later India also became self-sufficient in wheat production. India’s agricultural problem then became one of food distribution rather than production. At the same time, Chinese agricultural leaders also wanted to adopt the Mexican dwarf wheats and fertilization techniques that Borlaug had developed. By 1984, after Chinese farmers had adopted them, wheat production nearly doubled.

“The Green Revolution in India and Pakistan,” Borlaug wrote, was “neither a stroke of luck nor an accident of nature.” Its success was built on “sound research.” He added, “There are no miracles in agricultural production. Nor is there such a thing as a miracle variety of wheat, rice, or maize which can serve as an elixir to cure all ills of a stagnant, traditional agriculture.” Scientific advancement in agriculture took hard work and a team approach. It also required political savvy and diplomatic skills to convince both government leaders and farmers of the need for new seed varieties, fertilizers, insecticides, herbicides, and machinery.

Borlaug’s success breeding wheat and disseminating technical information to underdeveloped, poverty-stricken, hungry nations ensured him a place in history as a benefactor of humankind. Without question, he was a skillful geneticist and plant breeder whose work ethic and commitment to applied research helped prevent famine, eliminated hunger in many countries, and revolutionized world agriculture, all of which led to his receipt of the Nobel Peace Prize. Yet Borlaug should be remembered equally for advocating government attention on an international scale to a host of issues that related to agricultural and food problems.

He realized that increased wheat and rice production required an “integrated” technological or systems approach to fighting world hunger, that is, a technological package that included improved seed varieties, fertilizers, irrigation, and pest and weed control practices. He advocated improved transportation networks in the form of farm-to-market roads as well as rural education and state subsidies for small-scale farmers to acquire chemical fertilizers and irrigation systems. All of these issues required attentiveness to politics on a world scale, because politicians made decisions about prices, credit, markets, land use and reform, and a variety of issues related to agriculture. Indeed, without government aid, Borlaug argued, subsistence farmers in food-deficit nations could not improve their agricultural
In addition, Borlaug recognized the need to curb population growth. He never believed that the Green Revolution alone would solve the problem of world hunger. He consistently warned that, given genetic and environmental limitations, agricultural production was finite and that rapid population growth portended unprecedented food crises in the future. At some point, agricultural scientists and farmers would not be able to meet the food needs of the world’s people. Thus Borlaug believed that he had a moral obligation to warn political, educational, and religious leaders about the need “to face up to the population monster or lose the game by default.” “The tic-toc of the clock will continually grow louder and more menacing each decade.” Poignantly he wondered, “Where will it all end?”

In 1970, when Borlaug won the Nobel Peace Prize for his work fighting hunger, he reminded his audience that 50 percent of the world’s population remained undernourished and perhaps 65 percent were malnourished. He also warned that peace could not be maintained nor social justice secured as long as people went hungry. “If you desire peace, cultivate justice,” he said, “but at the same time cultivate the fields to produce more bread; otherwise there will be no peace.” Increased agricultural production was not only good for hungry people and national economies, but it also prevented political instability. Hunger fostered social disorder and violence. Hungry people cared only about survival—not about democracy.

He also told his audience that the Green Revolution did not apply to all crops, nor did it benefit all farmers equally. Rather, wheat, rice, and corn production had increased, but much work needed to be done to improve the yields of other cereal grains that farmers raised in drought-stricken countries on poor lands. Moreover, the greatest success in improving yields occurred on irrigated lands, and not all farmers could afford irrigation technology, particularly in Asia and Africa where subsistence farming prevailed. Borlaug later argued that “all who are born into the world have a moral right to the basic ingredients for a decent and humane life.” For him, access to adequate food that enables people to pursue a meaningful life was, in fact, a human right.
Despite Borlaug’s success in fighting hunger in food-deficit nations, by the early 1970s environmentalists and other critics began attacking him for advocating what they considered unwise, if not dangerous, agricultural practices. Environmentalists, some of whom were scientists, particularly criticized him for advocating the use of nitrogen fertilizer that polluted water supplies as well as for supporting the use of DDT to kill mosquitoes and fight malaria.

Borlaug, in his usual direct, self-confident manner, never doubted that his work benefited humankind, and he was proud of it. He consistently attacked the environmentalists who criticized the Green Revolution for harming small-scale farmers as well as the environment in underdeveloped countries. To Borlaug, environmentalists were “extremists,” largely from rich, well-fed nations, who sought to prevent the expansion of scientific knowledge and agricultural progress as measured by productivity alone. Those who would risk or support the continuation of hunger instead of full stomachs, he charged, were “fatbellied philosophers who have never been hungry”; in addition, they were members of “antiscience political movements” and “antibiototechnology zealots” who waged campaigns of “propaganda and vandalism.” No one could turn back the clock on agricultural science, he argued, though he worried that the environmentalists who opposed his work would gain sufficient influence in national governments to prohibit biotechnology research in food-deficit nations.

Other critics charged that improved agricultural technology was affordable only for the rich, who used it to displace subsistence farmers from the land, because the economy of scale permitted them to raise more grain on extensive acres than poor farmers could produce intensively on a few acres. Borlaug bristled at these charges, but he met them directly and forcefully. “The wheat plant is pretty apolitical,” he said. “It doesn’t care whether it is growing on a big farm or a small farm.”

Borlaug consistently argued that technology had to be used wisely and that governments were responsible for protecting the health and welfare of their people. But, he contended, “The haves are telling the have-nots in developed and impoverished countries that they should stay with their impoverished rural lifestyles, since greater material well-being leads to environmental destruction.” Yet people in well-fed nations lived longer and healthier lives than others in food-deficit nations, and he argued that his environmental critics were unwilling to trade places with people in developing countries where the life span was at least a third less than in the United States and where half of the children died before the age of ten. Put simply, Borlaug contended, “It is far better for mankind to be struggling with new problems caused by abundance rather than with the old problems of famine.” He had intended his work to fight hunger, he said, rather than to solve socioeconomic problems that had existed from time immemorial. “The Green Revolution,” he argued, “is a change in the right direction, but it has not transformed the world into a Utopia.”

Writing in 2000, Borlaug continued to defend his position that more food was better than less food even if heavy applications of chemical fertilizers and genetic engineering were required to ensure bountiful harvests. He also contended that it had taken 10,000 years to produce about 5 billion tons of food per year, and that production would need to be doubled by 2025 because of the population explosion. Borlaug, perhaps more than anyone, recognized that the Green Revolution was only a “temporary success in man’s war against hunger,” because of “mushrooming world population, changing demographics, and inadequate poverty-prevention programs.” His commitment never wavered. “The affluent nations can afford to adopt elitist positions and pay more for food produced by the so-called natural methods,” he wrote; “the one billion chronically poor and hungry people of this world cannot. The new technology will be their salvation.” Advances in biotechnology would soon benefit agriculture, particularly in transgenic or recombinant DNA research that would produce herbicide-resistant corn, cotton, wheat, and other crops. He worried, however, that privately conducted and controlled genetic research and the consolidation of agricultural bioengineering companies would prevent distribution of improved techniques to food-deficit nations on reasonable terms, if at all.

By the late 20th century, Borlaug also became a strong advocate of genetically modified foods. “Genetic modification of crops is not some kind of witchcraft,” he contended, but the “progressive harnessing of the forces of nature to the benefit of feeding the human race.” For him, genetic engineering complemented rather than replaced traditional plant breeding. Without scientific evidence that genetically modified foods harmed human health or the environment, he saw no reason for consumers to reject them. “Biotechnology,” he wrote, “can improve crop productivity with reliable transgenic procedures; it can engineer plants with highly specific disease resistance; and it can help fulfill nutritional goals by adding vitamins, protein and vaccines.” Most important, developing nations could use this new biotechnology to ensure their food supply. He gave no quarter to those critics who feared biotechnological changes of food plants. He believed that popu-
lution explosion, not agricultural science, was the greatest threat to the environment.

For Borlaug, the choice was not between feast guaranteed by chemical technology and famine ordained by the environment. Rather, agricultural science could create the opportunities for farmers to produce a sustainable agriculture, which had to be "farm friendly—economically advantageous, drudgery-mitigating, and simple enough that poor farmers are able to adopt the new techniques." The more important matters of concern by civil societies should be equity issues related to genetic ownership and control as well as access to transgenetic agricultural products.

Borlaug achieved much of his success because he was a risk taker. "Plant breeding is like poker," he said. "If you've got a bad hand, throw it in. If you've got a good one, don't be afraid to bet." In 1970 he criticized scientists in the agricultural colleges for being afraid to risk their reputations by trying something new, something that might fail. Food-deficit nations needed "big, breakthroughs." "Farmers in under-developed countries," he wrote, "won't pay attention to a 15% gain in yield. You've got to give them 100%. Maybe 200%." More than 20 years later, he reflected an impatience that had become legendary when he chided a group of African agricultural leaders for being "ultraconservative," and urged them to keep their minds open to new ideas. Borlaug also succeeded because he was not only a skilled plant breeder and a hard worker, but he was also lucky. In India and Pakistan, for example, the British had built the railroad system into the countryside to facilitate the shipment of cotton and other agricultural products. As a result, wheat and rice farmers had the means to ship seed, fertilizer, and harvested crops.

Above all, Borlaug succeeded because he advocated change in an achievable, practical way. As a scientist, he was a pragmatist. That is, he believed in "applied" research, and he criticized academic scientists for being too concerned with publishing scholarly papers based on "pure" or "basic" research with little or no immediate practical significance. Put differently, they concerned themselves with publishing papers "for the self-advancement of the senior author, rather than for producing more food." In addition, one of his greatest disappointments was the propensity of foreign agricultural scientists who trained at U.S. universities to return home and devote their careers to pure rather than applied research. Always believing that agricultural science and common sense could improve the human condition, even under the most trying circumstances, Borlaug considered "team spirit" the most important tool in his fight against world hunger. "The defeatist spirit is the greatest enemy of progress, and it persists and is too widespread among scientists," he wrote. "If constructive change is to be provided there is no place for defeatism in the ranks of leadership or among the scientists charged with the responsibility."

Borlaug had good reasons to be both obstinate and optimistic: he had played a major role in helping farmers increase food production faster than the rate of population growth. The one major exception was sub-Saharan Africa. Thus, at the dawn of the 21st century, Borlaug led the Sasakawa-Global 2000 agricultural program, in conjunction with the Carter Center and the Sasakawa Africa Association, to improve the crop yields of more than 60,000 subsistence farmers in sub-Saharan African nations. He refused to concede defeat in the struggle to rescue this region from human suffering. He believed that sub-Saharan Africa could meet its food requirements if it had "reasonable social and political stability and economic policies to stimulate food production as well as expanded educational and health programs." But farmers and agricultural scientists, Borlaug warned, could not increase food production without peace, which would enable African governments to divert spending from armaments to agricultural science.

In retrospect, the Green Revolution in India and Pakistan gave Borlaug the greatest satisfaction of his scientific career. His achievements merit commendation, but his failure to end world hunger should surprise no one. Nor should anyone be amazed that he has had critics. People of vision, ability, and accomplishment usually confront others who disagree with their goals, methods, and achievements. Clearly, Borlaug made a difference in human history. That is rare, and that alone is a considerable accomplishment for an Iowa farm boy who went to the University of Minnesota to wrestle.


NOTE ON SOURCES

Among the most valuable sources on Norman Borlaug are Norman Borlaug, "Living History Interview," Transnational Law & Contemporary Problems 1 (Fall 1991): 53-54; Leonard Bickel, Facing Starvation: Norman Borlaug and the Fight Against Hunger (New York: Reader's Digest Press, 1974); and Don Paarlberg, "Norman Borlaug—Hunger Fighter," USDA Foreign Economic Development Service PA 969 (no date).

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THE WORLD FOOD PRIZE

Once a year, as Iowa's grains ripen into pure gold, the world turns its eyes toward our state—home of the World Food Prize.

Iowan Norman Borlaug, winner of the 1970 Nobel Peace Prize (and subject of the previous article), advocated for years that a "high-visibility" award be established for agricultural research. His vision took form when the World Food Prize was established in 1986. But after the prize lost its initial corporate backing, a new sponsor had to be found.

Since 1984, another Iowan—Des Moines businessman John Ruan—had also envisioned a food prize. William B. Friedricks, history professor at Simpson College, details the history of the World Food Prize in his biography In for the Long Haul: The Life of John Ruan (Iowa State Press, 2003).

Ruan knew how to make things happen. He had turned a Depression-era one-truck operation into the nationwide Ruan Transportation Management Systems, and amassed considerable wealth and power. In 1990 Ruan endowed the prize and—with the help of other Iowans—made Des Moines the prize headquarters and the site of the annual ceremony and symposium. Ruan chairs the World Food Prize Foundation.

"Iowa has always been the heart and soul of America," Ruan said in 1990. "Having the World Food Prize in Iowa allows us to focus the world's attention on improving the global food system and the important role that education plays in achieving that end."

The president of the World Food Prize Foundation is also an Iowan—Kenneth M. Quinn, former U.S. Ambassador to Cambodia. Raised in Dubuque, Quinn began his diplomatic career in the American Foreign Service as a rural development officer in Vietnam. Working with farmers there, he "introduced new technology that increased their crop yields and lifted many Vietnamese out of poverty," Friedricks writes. In 1978, he "returned to Iowa to join Governor Robert Ray's administration. Quinn played a major role in the governor's Indochinese refugee resettlement program and served as the executive director of Iowa SHARES, a humanitarian program that sent food as well as doctors, nurses, and medical supplies to Cambodia." He returned to U.S. State Department work until he retired and moved back to Iowa to head the World Food Prize Foundation.

As Friedricks points out, many Iowans besides Borlaug, Ruan, and Quinn worked hard in the early years to secure the prize and make Iowa its home. And the project keeps growing. Now, the World Food Prize Youth Institute and an internship program connect young Iowans with students from other nations, leading scholars, and World Food Prize laureates. In 2002 the Iowa legislature designated October 16 as "Norman Borlaug/World Food Prize Day in Iowa." That month, the Herbert Hoover Presidential Library and Museum hosted a symposium, "Four Iowans Who Fed the World" (the four papers presented there appear in this issue).

All across the state, Iowans are developing cultural, educational, and humanitarian events to tie in with the World Food Prize—events like food bank drives, Chinese and Jewish harvest festivals, community conversations focused on hunger in Iowa, a vintage auto tour on Iowa's farm-to-market roads, lecture series, and art exhibits inspired by grains and grasses and the Iowa landscape. The day is also closely tied with the United Nations' World Food Day.

Known informally as the "Nobel Prize for Food and Agriculture," the World Food Prize has been given to laureates from Bangladesh, China, Cuba, Denmark, India, Mexico, Switzerland, the United Kingdom, the United Nations, and the United States.

Fighting world hunger needs to be on our minds throughout the year. But as the Des Moines Register recently said, "There are times to relish Iowa and to nourish the sense of this being one of the Earth's favored places." The glorious autumn harvest season, when Iowa shows its food-producing might, and World Food Prize Day, when laureates are honored in Des Moines for their global work, are surely among those times.

—Gina Swaim, editor
LOOK AT ANY RECORD OF FOOD PRODUCTION and you’re sure to find that Iowa is a world leader, and has been throughout its century-and-a-half of statehood. But behind those rankings is something even more constant, and clearly evident in the following images of Iowans—the dignity of a hard day’s work, the satisfaction of producing food for your family, and the camaraderie of laboring together.

— Ginalie Swaim, editor
Meatpacking workers at Rath's Packing Company, Waterloo, November 1923. At the end of the decade, Iowa ranked third nationwide in total number of meatpacking workers.

(Left third of panoramic photo SHSI Iowa City.)
Pleased with his load of apples, this Iowan takes a moment to pose for the camera, about 1910. By that year, Iowa ranked sixth among U.S. states for apple production. Nearly three-quarters of all Iowa farms had home orchards.

Teacher Jessie Field works with her rural students in their garden at Goldenrod School, Page County, spring 1901. New to teaching that year, Field realized the importance of relating curriculum to students’ environments and likely future occupations. Her work with rural youth evolved into 4-H.
When I was young, in the 1920s, my mother, Nora Wear, raised chickens. She usually had a flock of more than a hundred layers, and she traded their eggs for our groceries in Willards Store in Persia, our hometown.

Chickens have proved to me to be the dumbest creatures in the barnyard. When God made chickens, he must have taken a look at his newest creative endeavor and, seeing the flat top on their heads, realized too late that he had forgotten to leave room for the brains. So he built a bright red comb over the flat top to cover up his mistake. Chickens only know three things well: to lay eggs, to "set," and to cackle or crow according to their gender.

My sister, Loyola, didn’t care for outdoor jobs, so I usually had the chore of gathering the eggs. One summer, when I was about seven or eight, my mother had the idea of giving me a penny for every two dozen eggs I gathered. (Peon wages!) In hot weather, hens sometimes quit laying and spent relaxing times dusting their feathers in powdery holes they scratched out in the shade of the grove, or they decided to set, and didn’t lay during this period.

Gathering eggs for money became diligent work.

I not only gathered them in the henhouse, I had to search for them...
in the barn, the crib, the hoghouse, the haystacks, or anywhere the chickens might decide to lay an egg. I collected them three times a day, so they wouldn’t be out in the heat too long. Sometimes I literally plucked the egg from the hen as she laid it.

I worked out a very simple accounting system. I drew the number of eggs I gathered in sets of two dozen. As I sometimes found only two or three in a gathering period, this alleviated constant adding and gave me a pictorial view of my growing riches. I did not have a regular allowance. My father gave us each 50 or 75 cents on the Fourth of July and on church picnic day, and that was all we had.

I knew just how to bring my hand in behind the hen’s wing near the tail and quickly grab the eggs before the hen could turn her head and peck my hand or arm. Even though I was cautious, some of the hens were vicious. I had many bruise blotches, where a hen had given me sharp, open pecks. The only way to retrieve the eggs when this happened was to take a stick and drive the hen from the nest. It was better not to do that, as she might then hide her eggs in the straw in the haymow, in the horses’ stalls, under the crib, or down in the tall grass along the road. Then my income was lost, while she happily set on sometimes sterile eggs, or a fox or snake would find the nest. In due time, the hen would reappear in the barnyard, proudly leading only two or three baby chicks from her clutch of 18 or more eggs.

Besides the cross setting hens, I also had to skirt the big Rhode Island Red rooster. He ruled the chicken yard, strutting as proudly as a Prussian general. When he puffed up his feathers, lowered his wings, and stuck his neck straight forward, I knew it was time to run. He would come at me like a bullet, peck my bare legs, or knock me down. Gathering eggs became a hazardous occupation!

An egg incubator stood in one of the seldom-used rooms in our house. In the spring, Mom gathered eggs that she hoped were fertile, placed them on a tray in the incubator, and lit the lamp for heat for the eggs. We helped mark each egg with an X, so we could tell that we had turned them over each day, as the hen would do on her nest. Mom sprinkled them faithfully to keep the inside membrane moist. She candled them by holding them up to a lantern. If a dark blob showed, the chick was beginning to develop. If the egg looked clear, we destroyed it.

After the chickens were hatched in the incubator they were put out with setting hens interested in raising a family, usually 15 or 20 to each hen. Their protection was a small coop built of wood, set out in the north grove. Each hen had her own territory, but as the chicks grew, they were allowed to roam through the orchard gathering tidbits of bugs and worms.

Usually one or two of the weaker chicks hatched late with a crooked leg, forever bent upward, reaching for the sky. These I tried to raise. Their “night mother,” a box covered with an old cloth, I kept in the washhouse. Every summer I had one or two of these pets hopping around the front yard. I fed and watered them morning and night. They jumped on my shoulder and perched on one foot, swaying from left to right, as they took an easy ride around the yard. When we sat on the porch or steps in the evening, they sometimes jumped on my uncle’s shoulder. He would knock them off, calling them “damn fool chicken!” I could tell by his half smile that he was teasing me. I had to keep them in our fenced front yard or they would be killed by the hens and roosters, who seemed to believe strongly in the survival of the fittest. Usually by late fall the chicks’ poor development left them ill-suited for the cold chicken house. They weakened and died.

Chasing chickens was always a traumatic experience for me. We lived on top of a hill in southwest Iowa, with no trees to the west and south to blot out the storm clouds that rolled up. Unless we were outside playing, we didn’t notice the black clouds until they were almost upon us. At times the storms came up rapidly. Mom would call out, “Mary, Loyola, come help chase in the chickens.” As fast as we scurried, the storm would catch us.

Mom was of Irish stock. Her parents came over from Ireland and migrated to western Iowa to farm. They were deathly afraid of the storms and winds of the prairies. After I visited Ireland, with its mild temperatures and soft, misty rains, I came to realize why they were terrified of the heavy, boiling clouds with the sharp lightning and the loud claps of thunder. I probably acquired this panic in the face of storms from my mother, and chasing
The chicks were easier to get in out of the rain when they were smaller. My mom ran, waving her apron, yelling, “Shoo, shoo!” to the hens, desperately trying to save her only income. My sister and I followed along, gathering the little chicks in the carry-all we quickly made by holding up the front of our dresses. By then Mom would have the hen fastened inside the coop. We would place the chicks down by the coop. With a soft “cluck, cluck” from the mother hen, the chicks would scurry to the warmth under her wings.

With a storm moving in fast, sometimes the whole family would rush out to get in the chickens. We would run all over the orchard and grove and in the tall grass, finding them and trying to drive them back to the coop or brooder house. The dust swirled up from the barnyard, blinding my eyes. Thunder rumbled and cracked. The turbulent sky turned purple and black, leaving us in twilight gray. Many times hail pelted our heads, and lightning flashed and sizzled. Mom would call out, “Get to the house, quick!”

After the storm ended we would go out and pick up the wet, prostrate chickens, wrap them in towels, bring them in, and put them behind the warm, cob-burning stove. After they had warmed and dried off, some would stand up with a “wa-a-a-k.” Then we would carry them back to the brooder house. If the storm was especially intense and lasted too long, we would find them in the grass, stiff and dead. The shock of the cold and wet gave them a heart attack.

One evening, my brother, Francis, and I were home alone. We were in our early teens and fascinated by the mystery play on the family’s battery-powered radio. Mom had told us to check the brooder door before dark to be sure the wind had not blown it shut during the day. It was a very hot, sultry evening, and before Francis and I noticed, it was getting dark. We dashed out to the brooder house, but too late. The three-fourths grown fryers had crowded up to the closed doors, then piled up, one on top of another, and went to sleep. I remember our frantic effort to unstack them. Some woke up and staggered away, others were so near suffocation that they lay there for a while before trying to rise. Those on the bottom were stiff and dead. I felt badly about my carelessness, because my mom always worked so hard raising the fryers to sell and for us to eat, and of course the pullets would later become our laying hens.

In the fall, we went through something similar to “chasing the chickens.” After they became too large for the coops or brooder house, it was necessary to train them to go into the chicken house. They were like bewildered teenagers. They could no longer fit in the coops, but the chicken house was unfamiliar territory, ruled by the Rhode Island Red roosters and the domineering hens. So the young flock, true to their primitive instincts, took to the trees. They would have been perfectly happy to perch there all night. But with weasels, foxes, skunks, possums, coons, and coyotes always searching for food, it was our job to climb the trees, reach out quietly, and grab the chickens by their legs. Then we carried them by their legs, their heads hanging down, while they squawked loudly all the way to the henhouse. On quiet nights we could hear our neighbors catching theirs. Chicken squawks and protests chimed in with the night noises.

By late fall the tree-sitters became fewer and fewer until usually there were only two or three fully feathered roosters holding out for their ancestral rights. For their inherent stubbornness, those were eaten as fryers for Sunday dinner.

Mary Wear Briggs’s writings about her childhood in Harrison County, Iowa, are part of her memoir, “My Road from Leland Grove,” compiled in 1992 and donated to the State Historical Society of Iowa. Her essays “The Road by Home” and “Sunbonnets” appeared in earlier issues of this magazine. Briggs taught in Colorado and Iowa, before retiring in Missouri Valley, Iowa.
Farm Women & Egg Money

From the turn of the century through World War II, Iowa was the nation’s leading producer of eggs. Iowa’s egg production came mostly from small flocks like those that Mary Wear Briggs cared for as a child (see previous article). And, as in the Wear family, farm children often fed and watered the chickens. But farm women almost always managed the poultry operations. Women learned the trade first from their mothers, but gained additional information from extension programs and farm journals, such as Wallace’s Farmer. It was important to manage flocks effectively, because good management often meant the difference between profit and loss in the poultry operation.

Eggs and poultry were the most common sources of cash income for farm women in the first third of the 20th century. Usually, farm women took their eggs to town to trade them for groceries or other goods. Often, no money changed hands; merchants simply kept a running account that the women drew on for purchases.

It is easy to underestimate the economic contribution poultry operations made to farm families, particularly during the farm depressions of the 1920s and 1930s. Often, egg money was the only cash income available for purchasing essential household items as well as food and clothing. Manufacturers like Monarch advertised that women could use their poultry receipts to make monthly payments on appliances (see right). And occasionally, such income was used to maintain or expand the overall farm operation. Clearly, women and children made essential economic contributions to their families’ farm operations by managing their poultry operations.

—adapted by Marvin Bergman from Deborah Fink and Dorothy Schweider, “Iowa Farm Women in the 1930s: A Reassessment,” Annals of Iowa 49 (1989), 574-79.
This issue of *Iowa Heritage Illustrated* focuses on Iowa and the Midwest as the source of abundant food that its best citizens found ways to share with the rest of the world. Historically, however, we have not given sufficient credit to one segment of society that has been critical in the production of such abundance. Particularly in the years from the end of the Civil War to the end of World War I, much of the Midwest’s agricultural abundance relied on the labor of underpaid hired men and migrant, seasonal workers. In fact, as late as 1920, farm laborers “working out” for wages on nonfamily farms represented a larger portion of the American labor force than miners of all kinds. Yet those workers remain largely invisible in the historical record, mostly because their transient status meant that they have not been seen as integral parts of particular communities and because they left few records of their lives and work.

Two new books begin to correct that oversight: *Indispensable Outcasts: Hobo Workers and Community in the American Midwest, 1880–1930*, by Frank Tobias Higbie; and *Citizen Hobo: How a Century of Homelessness Shaped America*, by Todd DePastino. Perhaps the most striking thing about both books is how they take readers inside a very unfamiliar world, but also show us how much that world was an integral part of more familiar rural and urban experiences.

*Indispensable Outcasts* is grounded more in the lived experience of transient workers on farms and railroads throughout the Midwest and Great Plains and in the forests and Iron Range of northern Minnesota. Higbie focuses on those workers’ relationships to the communities and economic conditions within which they worked. Hobo workers, he shows us, were not aimless drifters. Instead, they were in rational pursuit of economic opportunity, and they served critical needs for seasonal labor in the communities through which they passed and in which they worked. Nor was the life of hobo workers characterized by some idealized form of freedom from all constraints and dependence on others. “The supposed independence of the road,” Higbie found, “turns out to have been structured by a distended network of advice, assistance, and care . . . predicated on a vague but real ethic of mutuality.”

Such understandings shatter stereotypes of hoboes that many of us have absorbed from popular culture. Higbie devotes some attention to how those stereotypes arose and what they say about the mostly middle-class commentators who spread them. But that myth making is more central to *Citizen Hobo*. Where Higbie’s work shatters the stereotypes, DePastino plays with them to help us understand hobo culture. Just as important, he shows how middle-class culture has been alternately threatened by and strangely attracted to a subculture that operates apart from traditional understandings of home and family. The second chapter in each book identifies the biases in accounts of tramping by Progressive Era social scientists, journalists, fiction writers, and other observers. DePastino continues throughout his book to analyze images of homeless people in vaudeville, novels, photographs, cartoons, music, and film.

Higbie tracks hobo workers across the rural areas and small towns of the Midwest; he includes a fascinating account of a free-speech campaign by members of the Industrial Workers of the World in Sioux City in 1915. For DePastino, “hobohemia” culture is found more in neighborhoods in cities such as Chicago, New York, Minneapolis, and Seattle filled with cheap lodging houses, employment agencies, restaurants, bars, pawn shops, and theaters catering to hoboes who were between jobs. In Minneapolis in 1922, for example, private and public employment agencies found work for 130,000 men.

Both books use many of the same sources, and there is considerable overlap, but the focus and goals are quite different. If *Indispensable Outcasts* seems more grounded in the actual experiences of hobo workers, *Citizen Hobo* is more attactive to change over time, and it brings the story of homelessness up to the present. Both shed new light on a much misunderstood part of our history.

Marvin Bergman is editor of the Annals of Iowa. His *column, “Reading the Past,” introduces selected books to our readers.*
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Among the millions of items in the collections of the State Historical Society of Iowa is this product catalog from Blooming Prairie Warehouse, Inc., one of the oldest and largest organic and natural food cooperatives in the United States. It was founded in 1974 in Iowa City.

Leafing through the catalog is like walking through an emporium of natural foods: Nuts and seeds. Beans and grains and dried fruits. Soy products and sea vegetables. For consumers new to the natural foods movement, the catalog provided enticing descriptions, nutritional information, and cooking tips. "Learning the many different ways in which you can prepare and serve natural and whole foods is an exciting experience," the catalog promised. "The textures and flavors these foods can provide are almost endless, limited only by your willingness to experiment."

Noting that "ten years ago, food processors and manufacturers rarely advertised their products as being 'natural,'" the catalog introduced Blooming Prairie in these words: "Our business is to provide natural foods. Our goal is to promote and develop a cooperative food distribution system that provides economical and efficient service for our customers while maintaining a commitment to ecological and social concerns."

This catalog is part of a larger collection of Blooming Prairie Warehouse records spanning the years 1972 to 2002. Besides business records and product information, the collection includes materials on how to organize and manage cooperatives for banking and housing as well as for food. Newsletters, brochures, and catalogs from alternative businesses and co-ops across the nation illustrate how networking and sharing ideas energized counter-culture grassroots movements in the early 1970s as they began to take root in the United States.

—The Editor
The golden glow of Iowa's capitol befits the international World Food Prize ceremony, held there each October to honor individuals for achievements in advancing human development by improving the quality, quantity, or availability of food in the world. This issue of Iowa Heritage Illustrated tells the stories of both extraordinary and ordinary Iowans who have labored to produce and distribute food—for their families and communities and for their world.