Agricultural opinions in the United States drastically changed following the economic collapse of farming in the late 1920s and the dust storms and the exodus of farmers due to the Dust Bowl in the 1930s. Many thought agriculture had failed and new methods of farming must be found. The most successful new system of agriculture was the establishment of the Soil Conservation Service (SCS), with Hugh H. Bennett as its chief. Bennett was a forceful, charismatic speaker who caught the imagination of the agricultural community and, especially, college students and young farmers. SCS had dramatic success on the highly erodible soils in the southern United States. Terracing, strip cropping, and rotations together with lime and superphosphate reclaimed abandoned farmland. A familiar “before and after” picture was a nondescript cow in a pasture with three hoof-soil contacts visible and a Hereford standing knee-deep in clover. Obviously, that could not happen in 1 year, but it actually did happen over several years. The Tennessee Valley Authority (TVA) pilot farms were important in promoting lime and superphosphate. The key to the success was preventing erosion and rotating crops with a legume. Raising the pH and supplying phosphorus ensured good stands of legumes.

One popular conclusion from the success of the SCS programs was that improving the soil not only increased the carrying capacity of the pastures but also improved the nutritive value of the forage. W.A. Albrecht, Head of Soils, Univ. of Missouri, was a leading voice in promoting the idea that improving the soil by fertilization and increasing the organic matter improved the nutritive value of forage. In fact, the conclusion that soil fertility was an important factor in the health of animals and humans was so widely accepted that the U.S. Plant, Soil, and Nutrition Laboratory was established in 1941 as a U.S. Dept. of Agriculture (USDA) Regional Laboratory at Ithaca, N.Y. The mission of the laboratory was to study the soil-plant-animals and humans.

Agricultural critics

E.H. Faulkner’s book Plowman’s Folly appeared in 1943, condemning the moldboard plow as the cause of all agricultural misfortunes. He argued that crop residues should not be buried but allowed to remain on top of the soil to prevent wind and water erosion. The claim was made that decreases in soil organic matter had led to increases in San Jose scale, Colorado potato beetle, and various new insect pests and plant diseases. The book was a national best-seller and received much publicity in the press.

Also in 1943, Louis Bromfield published Pleasant Valley, a somewhat romantic account of his 3-year farming experience in Ohio. He was a well-known novelist and essayist who returned from France in 1940 to his home state and bought three adjacent farms. Bromfield was an active promoter of SCS methods and embraced most of Sir Albert Howard’s ideas, as well as those of Faulkner. He rejected Howard’s composting system because of the labor involved. Bromfield drew much more attention when he published Malabar Farm in 1948. This book documents the experiences on the farm since Pleasant Valley. He stressed soil conservation, rotations, and tillage equipment as well as the importance of soil organic matter in the production of nutritious feed and food. Malabar Farm attracted many visitors and received national coverage in the newspapers and magazines.

The most influential person on agricultural systems turned out to be the most unlikely individual imaginable without any agricultural training or experience. J.I. Rodale (1898–1971), born in the lower east side of New York City as Jerome Irving Cohen, was known to friends and associates as J.I. (Fig. 1). Raised in the city, he was sickly as a youngster, had poor vision, and was non athletic. He studied and tried several body building systems, especially those of Bernarr McFadden, who also promoted a healthy diet and moderate exercise. Rodale went to night school to study accounting and became a federal income tax auditor. Later,
he and his brother began manufacturing electrical supplies, and during the Depression, they moved the plant to Emmaus, Pa. J.I. wanted to be a writer and started publishing magazines to carry his work but met with no success (Greene, 1971; Jackson, 1974).

Sir Albert Howard’s 1940 book *An Agricultural Testament* had little impact on the U.S. agricultural community, but Rodale became a zealous believer in Howard’s philosophy and farming system. He bought a farm to practice the system and started a magazine in 1942 entitled *Organic Farming and Gardening* with Howard as an associate editor. One-thousand copies of the first issue were mailed to farmers to solicit subscriptions, with only 10 takers, but Rodale persevered. He soon learned that gardeners were easier to influence than farmers, and the magazine’s name was changed to *Organic Gardening*. It became profitable after 16 years.

The agricultural academic community rejected the organic gardening concepts and vigorously discounted Rodale’s claims. The extreme polarization of the two groups slowly began to soften only after 25 years.

**Organic gardening**

Because J.I. was such a good promoter, public awareness of his ideas far exceeded that which would be expected based on the circulation of the magazine. Outrageous claims (at least to horticulturists) were made about human health and plant diseases and insect pests. For example, Rodale claimed that the increase in cancer deaths after 1945 was caused by an increase in fertilizer use, while ignoring the fact that life expectancy also increased during that time. He contended that organically grown vegetables had more vitamins than those grown with chemical fertilizer, in spite of scientific evidence to the contrary.

The U.S. Plant, Soil, and Nutrition Laboratory could have been an important ally for Rodale, since the mission of the laboratory was to study the soil-plant-animal relationship. An early study investigated W.A. Albrecht’s claim that lime and phosphate increased the nutritive value of forage. Unfortunately, this was not true, because the fertilization changed the botanical composition of the forage by promoting the growth of legumes. The nutritive value of the grass did not change with fertilization nor did the legume, just more legume was produced, and legumes are much more nutritious than grasses.

Other studies found that soil and mineral nutrition had little, if any, effect on the vitamin content of vegetables. The vitamin C content of fruit and leaves was influenced by the amount of light falling on the plant part. The age of the plant part, storage conditions after harvest, and sunlight were by far the most important factors affecting the vitamin content of plants. Studies that found a close relationship of soil and human health involved cobalt, iodine, and selenium—elements that are not essential for plant growth.

The agricultural community was proud of the large increase since 1945 in production per acre and per hour of labor made possible by fertilizers and pesticides. To reject all the advances in production and adopt a labor-intensive system such as organic gardening was unthinkable to farmers and agricultural scientists.

Rodale Press continued the magazine and published many books on organic gardening, including 2 encyclopedic treatises on organic gardening and composting. *Prevention*, a health related magazine, was started in 1950 to expound the organic philosophy. In 1960 both magazines had a circulation of 260,000; by 1980 *Organic Gardening* circulation had grown to 1,300,000 and *Prevention* to 2,400,000.

One cannot accurately explain all the factors involved in the increased popularity of Rodale Press publications. The exodus of the people from cities to the countryside was probably the major factor until the mid-1960s. Space was available for gardens, and home gardening became an important hobby. These new gardeners were suspicious of pesticides and used organic methods with enthusiasm. There is no doubt that the vegetables they grew were much better than those bought in the supermarket, but not necessarily as...
a result of their growing technique.

The great increase in subscriptions came after 1965 when young people started their antiestablishment social revolution. A pan of that revolt was a rejection of technology (at least some) and a return to the simpler life, including growing one’s own food. For those with a romanticized view of farming, growing food was a bitter disappointment. Most were unaware of the USDA Cooperative Extension Service, and those that contacted the extension service would reject it as being pan of “the establishment.” These “homesteaders” came to rural counties because of cheap land and were not welcomed by conservative farmers. Cooperative Extension personnel feared they would be overwhelmed by these new people and could not serve commercial farmers satisfactorily.

*Organic Gardening* magazine and Rodale Press books became the major source of information for this new group of gardeners. Horticulturists have a jargon that can be baffling to someone with no agricultural background. We believe that our home-garden bulletins are simple and easy to understand, but perhaps this is only true for someone who has gardened or has been around gardeners. Rodale Press publications are written by writers with no agricultural background. They write in a clear, easy-to-read, positive, and enthusiastic manner. ‘You can be successful” was the underlying theme in all of the publications. In contrast, horticulturists usually insist on warning readers about possible failures if directions are not followed exactly in the use of fertilizers and pesticides.

Rodale always stressed that organically grown food was healthy, and that idea reinforced another tenet of the subculture: the virtue of simple, unprocessed food. One cannot conclude that Rodale Press caused young people to reject the establishment, but Rodale Press certainly profited from the anti-establishment ethos.

**Horticulture and the environmental movement**

The changes wrought by the decade of the 1960s also had an impact on Colleges of Agriculture, especially in the plant sciences. We experienced an explosion in enrollment in horticulture courses during the 1970s, but these declined in the 1980s to previously normal enrollments by 1990. Over time, the polarization between land grant colleges and Rodale Press decreased to the extent that a few organic gardening courses began to appear about 1970, serving mostly students who were not in the applied agricultural departments. J.I.’s son Robert (Fig. 2) had been president of Rodale Press since 1954. He became the principal spokesperson for *Organic Gardening* in 1971 after his father died while being interviewed on the Dick Cavett television show. Since the organic philosophy was firmly established, Robert used reason rather than frontal attack to promote his ideas. Robert died tragically in 1990 in an automobile accident while touring the Soviet Union.

The circulation of *Organic Gardening* began to decline after 1980, partly because of fewer new gardeners. Young people were no longer interested in plants and gardening. Also, the format of Organic Gardening magazine was changed to attract a new audience. It began to emphasize landscaping and home beautification with less space devoted to traditional gardening. There was a precipitous drop in circulation among its traditional audiences and little increase in new readers. The magazine then was changed back to its original format, emphasizing growing fruit and vegetables the organic way. The circulation rebounded and reached 600,000 in 1991.

The organic movement in the United States, although pan of a long tradition, owes its impact on the American consciousness to the ebullient personality of A. Rodale, the “apostle of nonconformity.” His is a well-known American story of a man who broke the bonds of a traditional immigrant family to pursue an incredible career as tax expert, entrepreneur, publisher, farmer, editor, linguist, and playwright. He became
a scourge of the medical and agricultural establishment, taking on land-grant universities and experiment stations as well as the Federal Trade Commission and the American Medical Association, whom he fought successfully in legal battles. Although many of his ideas were outrageous, he became a “secular prophet” in his own time based on his prescient support of good nutrition as a source of health and well being, combined with hostility toward agricultural dependence on fertilizers and chemicals.

Horticulture always has been in a state of change and is usually in the forefront of adopting new technology. We must occasionally stop and consider where we are going. There is a segment of the population convinced that organic gardening is the only way. Rather than disenfranchise them again, we must provide them with educational services. After all, we do know plant science and can provide scientific information without confrontation. Organic methods are labor-intensive and very difficult for intensive vegetable culture, but that is the grower’s decision, no tours. We must learn from each other, Who knows what the future holds?

**Literature Cited**