Biodynamics



FLOW & REFLECTIONS

SNAPSHOTS OF THE EVOLUTION OF THE BIODYNAMIC COMMUNITY



Biodynamic Demeter Alliance

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FLOW & REFLECTIONS

"A healthy social life is found only when, in the mirror of each soul, the whole community finds its reflection, and when, in the whole community, the virtue of each one is living."

— Rudolf Steiner¹

As we approach the 100-year anniversary of Rudolf Steiner's series of Agriculture Lectures, it's a meaningful time for the biodynamic community both in the U.S. and abroad to contemplate our history, where we are, and where we're going. This issue of *Biodynamics* looks at a few snapshots of our past and present. Through these stories, we can see some of the flow of the biodynamic movement over time, but we also see that it's not linear.

As we developed the issue, images of water kept coming to mind. We see a stream of biodynamics—or even a complex watershed with headwaters, springs, creeks, rivers, lakes, and eventual passage to the sea. People enter into it in various ways, bringing their own stories and insights, their diverse voices, and their strengths and challenges. The Flowform on the cover provides yet another water metaphor, as the individual voices and perspectives flow together to create diversity

and vitality. The movement and flow become much more than the sum of its parts.

We were also struck by how the authors in this issue were influenced by so many teachers and colleagues in the biodynamic community—and how they in turn influenced others. This thread of mentorship, of giving and receiving, is woven throughout the issue. So is appreciation. There is deep gratitude for those who have gone before us or who have touched our lives, whether directly or indirectly. Who has helped to define your path and understanding? Who have you influenced, perhaps even without your knowledge?

We hold heartfelt appreciation for you, our members, for all you do, have done, and will do to heal people and the planet. There is such deep and incredible wisdom in this community.

Notes

I. This verse was a personal gift from Rudolf Steiner to his close friend Edith Maryon on November 5, I920, in the book *Renewal of the Social Organism*. This book was most recently translated by E. Bowen Wedgewood and published by the Anthroposophic Press in I985. Many thanks to Claus Sproll for making this information available to the anthroposophical community.



Rebecca Briggs served as the Communications Lead for the Biodynamic Association for many years, after starting as Journal Editor in 2007. Most recently she held the role of Director of Programs & Community Development for the Biodynamic Demeter Alliance. As her connections to the organization change and evolve, she returned to the role of Editor with this issue and was grateful to collaborate with former Editor, and now Editorial Consultant, Karen Davis-Brown.

WHAT HAS HAPPENED SINCE 1924?

AN INTERNATIONAL LOOK BACK AT THE HISTORY OF BIODYNAMICS



BY THE SCHOOL OF SPIRITUAL SCIENCE - SECTION FOR AGRICULTURE

Originally published in "Reflections on Agriculture as a Cultural Impulse: Towards the IOOth Anniversary of Biodynamics," the 2023 Report of the International Biodynamic Agriculture Conference by the School of Spiritual Science – Section for Agriculture at the Goetheanum in Switzerland (www.sektion-landwirtschaft.org /en).

FARMS

By Ueli Hurter, Co-Leader of the Section for Agriculture at the Goetheanum, Executive Council Member for the General Anthroposophical Society, Supervisory Board Member of the Biodynamic Federation Demeter International (BFDI), and Farmer at Ferme-Fromagerie de L'Aubier

The Agriculture Course took place on a farm, the Koberwitz estate. Farms are the origin and bearer of the cultural impulse of agriculture. The early farms were large estates, managed in the style of a medieval manorial economy. After the Second World War, biodynamic farms were primarily family enterprises. Before they knew about biodynamics, farmers found themselves between the disapproval of the village vicar on the one hand and the offers of the chemical spray suppliers on the other. In the 1970s and 1980s, when many people were looking for new social forms, "alternative" farms were set up. The 1990s were a time when farms specializing in particular crops (fruit, tropical fruits, etc.) were established, followed by vineyards, which have now been booming for twenty-five years. Farms exporting colonial products

(coffee, spices, cotton) have been in existence now for decades. In the growing countries, initiatives were started with hundreds or thousands of micro farmers for whom biodynamics brought an improvement to the living conditions of the whole family. Lastly there are the market gardeners, particularly landscaped gardens such as the Goetheanum garden park. So we can see that biodynamics includes many different types of farms.

RESEARCH

By Christopher Brock, Researcher at Forschungsring e.V.

One hundred years ago, an Agriculture Seminar took place with Rudolf Steiner. The participants learned to fill horns with manure, bury them, and later stir the contents and spray this on the land. This novelty was developed from spiritual science and Rudolf Steiner asked that this should be tested with experiments. The research group was born. The biodynamic farming method was studied and developed further over decades of research. This raises the question of whether it is possible to record and prove the findings of spiritual science by means of natural science? Because everything that cannot be understood scientifically is rejected and not acknowledged. But this demand is a legitimate one. Natural science and spiritual science are two approaches that will be reconciled in the long term, according to Rudolf Steiner. Currently, scientific proof of the efficacy of the preparations is on the horizon. The high sustainability potential of biodynamic farms can also be demonstrated, something which is of public interest. Scientific research is not the basis of agriculture: this is provided by the intuitive relationship of the farmer to their area of activity—and research can support this.

NUTRITION

By Jasmin Peschke, Head of the Nutrition Department at the Section for Agriculture at the Goetheanum

Nutrition, farming, and medicine belong together: they are all healing and all work for the health of human beings and the Earth. Nutrition has a preventative role. As a doctor, Ita Wegman paid great attention to good nutrition and acquired the Sonnenhof for growing food for the clinic kitchen. Rudolf Steiner asked Ita Wegman whether she wanted to set up a section for medicine, nutrition, and farming. She declined, as she was already overstretched. So in 1963 Gerhard Schmidt established the Section for Food and Farming. This only lasted for a couple of years. After this, the Nutrition Section was created. In 2015 the Coordination Center for Nutrition

was established in the Section for Agriculture and headed by Jasmin Peschke. Our view needs to broaden from the field to the plate. Many disciplines should and can combine for the healthy development of the human being and the earth. Nutrition is also a social issue: there are many people who are overweight and many who are hungry. We need a culture of sharing.

BRAND AND MARKET

By Michael Olbrich-Majer, Author and Editor-in-Chief of the journal Lebendige Erde

As a student I saw pioneering set-ups in backyards for supplying the ingredients for muesli or flour for bread—there were no organic shops, no markets. There was still no sign of Demeter. Then I remember the light blue Demeter oat flakes in the first co-operative shops. Where does the brand come from? There is no mention in the Agriculture Course of biodynamics or Demeter. The designation "biodynamic" arose in 1927: Demeter was launched with the Demeter standard specification and a trademark with a round flower. In 1929 a Demeter consumer group was formed in Breslau and in 1932 the brand was registered. Looking back we can see that the new agricultural system linked to a brand was the invention of organic farming. In Germany a "threefolding" developed: the research group for research and guidelines, the "Demeter Bund" for certification, and a cooperative for marketing. Next the Demeter logo was added. In 1997 Demeter International was founded. The Demeter co-marketing strategy was agreed and introduced. Demeter values gained in importance. In 2016 the Demeter marketing policies for trade were introduced, enabling Demeter to become part of the retail food trade. Demeter is now well known and considered sustainable. There are trademark applications in seventy-five countries. The model of combining biodynamic agriculture with a trademark (i.e. with guidelines and values) was and is successful.

INNER WORK

By Albrecht Römer, Farmer and former person responsible for the area of agriculture at the Camphill Village Community in Lehenhof, Germany

"The farmer is a meditator" is a quotation from the Agriculture Course. A personal understanding of the Agriculture Course, intellectually and in meditation, is a help for practice. Independent thinking is right for the present day: we move along a developmental path

for which we are personally responsible. Meditation is a personal matter. When I worked as a farmer, I made the effort to think about and meditate on Steiner's weekly verses before the alarm in the morning and before falling asleep at night. I also learned to picture the context of time in my work, including that of the planetary constellations. Agriculture as an individuality links my practice in space and time to the biodynamic impulse. Anthroposophy can be fruitful for working with the Agriculture Course, which was first published as a volume in Rudolf Steiner's complete works in 1963. Prior to that it could only be obtained on special request. For many years participation at the Agriculture Conference was

society became keenly interested in environmental protection. There were major environmental disasters and, at the same time, a successful landing on the moon and the discovery of the double helix of DNA. Globalization spread, but the green revolution ended in disaster. In 1962 *Silent Spring* was published by Rachel Carson—a kind of initial spark for the environmental movement. The book described the dangers for life caused by the widespread spraying of the insecticide DDT. Rachel Carson was inspired by two biodynamic gardeners. The biodynamic movement started to have a global presence, with new initiatives everywhere. In the twenty-first century, one crisis followed another.

I have hope and trust in the possibility of cultivating life in such a way that we can become something that we are not yet.

also only by personal invitation, whereas today it is open to the public. Since 1970 the Section has been studying the Michael Letters. This has proved very helpful, as this work is inspiring for the worldwide biodynamic movement. In addition, the esoteric teachings of the First Class of Spiritual Science are of relevance as a course for all the sections and therefore also for agriculture. The inner work enables the concepts, pictures, and ideas to be grasped by the individual. Each generation acquires its own understanding. Meetings of all kinds encourage the exchange of views, providing a refreshing effect and a source of strength for working with the cultural impulse of agriculture.

SOCIAL EFFECT

By Nadia El-Hage Scialabba, former Food Ecologist with the Food and Agriculture Organization of the United Nations (FAO) and Senior Fellow at the Swette Center for Sustainable Food Systems at Arizona State University

The first twenty-five years of biodynamic agriculture were characterized by the debate about synthetic nitrogen fertilizer and the upheavals in farming that went with this. Does the spirit come from the laboratory and industry, or from the earth and the cosmos? In the book by Ehrenfried Pfeiffer published in 1937, biodynamics is described without any cosmic dimension: the preparations are an aid to fermentation. In 1939 important meetings took place in England with Sir Albert Howard, Lord Northborn, and Lady Balfour, and in the USA with the Rodale Institute. Biodynamics, represented by Pfeiffer, was the mother of "organic," known as "bio" in German. In the second half of the twentieth century,

Are these not symptoms of the separation of the human being from the earth, from nature? But mechanization continues: technology and artificial intelligence make their appearance in the farming and food industry. Free approaches such as biodynamics come under attack, as we have seen in recent months in Italy. Much has been achieved, but the struggle continues.

PREPARATIONS AND SOIL FERTILITY

By Bruno Follador, Researcher and former Director of the Living Soils Initiative at The Nature Institute in New York

Four days ago I was sitting on the tractor using the front loader to mix manure and other materials for a good compost. What for? What is the point of this? For a better harvest? For better broccoli? For a more resilient farm? What is my reason for doing all this? Ninety-nine years ago the young farmers Emmanuel Vögele and Helmuth Bartsch wrote a letter to Rudolf Steiner asking for a course. On January 27, 1924, the twenty-seven-year-old Vögele wrote a further letter to Steiner. This was about the fact that Vögele, through his agricultural work, had a purpose in life that allowed him to connect his humanity with the development of the earth. I feel akin to the young Vögele: thanks to Rudolf Steiner and anthroposophy I have the opportunity to connect my destiny with those of mankind and the earth, and therefore to actually live out my responsibility. Humus and humanity have the same root. The work with compost for new humus is complemented by the inner work for a new humanity. I have hope and trust in the possibility of cultivating life in such a way that we can become something that we are not vet.

INTERNATIONAL NETWORK

By Alysoun Bolger, Executive Board Member at Biodynamic Federation Demeter International (BFDI) and former Program Coordinator for the Biodynamic Agricultural College in the United Kingdom individualizing biodynamics for each specific place. At the recent members meeting of the BFDI (Biodynamic Federation Demeter International), we adopted the motto "unity in diversity." It is through diversity that we achieve resilience in the movement. For the time now at the start of February, many cultures have a celebration for the light, which is getting noticeably stronger again.

Are we strong enough for this? It is possible to swim against the tide of a powerful current with only a little exertion. Let us not doubt that a small group can put an important impulse into the world.

The Agriculture Course was the source of inspiration and incentive. What had been heard was put into practice. Lilli Kolikso wrote, "It was a course for all people and farmers, not for a small privileged group." From the start it was an international movement as the spark jumped over to England and the USA. Groups and organizations sprang up in different places. Nowadays there are biodynamic organizations in forty countries. And the principles need to be adapted everywhere to the climate, geography, and culture. It is always a case of

Tomorrow is Candlemas. Rudolf Steiner drew attention to the time from mid-January to mid-February. It is now time to start the year in order to shape it from inside. It is also a matter of transforming information from knowledge into wisdom—and the transformation of an impulse into the different cultures. Are we strong enough for this? It is possible to swim against the tide of a powerful current with only a little exertion. Let us not doubt that a small group can put an important impulse into the world.



MARJORIE SPOCK

AN UNSUNG HERO IN THE FIGHT AGAINST DDT AND IN THE RISE OF THE MODERN ENVIRONMENTAL MOVEMENT BY SANDRA POSTEL

Throughout the life of the biodynamic movement on this continent, strong and committed women have played a central role. Marjorie Spock—an anthroposophist and biodynamic pioneer on Long Island, New York—is chief among them. The *Biodynamics* journal published four articles by Spock between 1956 and 1972.

The following are excerpts from a longer article with the same title written by Sandra Postel and published originally in the *Nassau County [NY] Historical Society Journal*, Vol. 75: 2020, describing Marjorie Spock's personal efforts and collaboration with Rachel Carson to address the unbridled use of DDT in the l950s. The full article is available at https://rachelcarsoncouncil.org. (Search for "Marjorie Spock.")

Few would question that Rachel Carson's lyrical bestseller *Silent Spring* changed the course of human engagement with the natural world. It woke communities up to the dangers of backyard pesticides, and, in 1972, just a decade after the book's publication, motivated the US government to ban most uses of DDT. During the sixties and early seventies, it helped spawn the passage of a slew of environmental laws—from the Clean Air Act and the Clean Water Act to the Wilderness Act, the National Environmental Policy Act, and the Endangered Species Act. It helped motivate the formation, in 1970, of the US Environmental Protection Agency to safeguard the country's air, land, and water. For this public awakening and civil action, Rachel Carson is justifiably credited with launching the modern environmental movement. ¹

But the passionate and committed work of another advocate for nature is often overlooked or underplayed in the story of DDT, the provenance of *Silent Spring*, and the rise of citizen-led environmentalism. Without the efforts of Marjorie Spock—who farmed organically in Nassau County, New York, in the late 1950s—to stop the spraying of DDT across Long Island, the outcomes of this critical period might have proven less momentous. Spock initiated legal proceedings against the federal government's actions and shared a voluminous quantity of trial documents and research materials about the harmful effects of DDT with Rachel Carson. Carson

biographer Linda Lear writes that "Marjorie Spock was a woman of enormous courage, integrity, and indefatigable spirit who soon became one of Carson's inner inner circle of friends and the central point of her original research network."²

Born on September 8, 1904, into a prominent family in New Haven, Connecticut, Marjorie Spock possessed diverse interests, many talents, and an erudite, fun-loving nature. At eighteen, she abandoned plans to study at Smith College and traveled to Dornach, Switzerland, to study with Rudolf Steiner, the founder of anthroposophy—the body of holistic teaching that underlies Waldorf education. She later received her BA and MA degrees from Columbia University, and taught in progressive schools in New York City, as well as the Waldorf Demonstration School of Adelphi College on Long Island, which later became the Waldorf School of Garden City. She translated many works of Steiner's from German into English, authored widely read books and pamphlets, and in her one-hundredth year produced and choreographed a video about Eurythmy, a philosophy of the art of movement espoused by Steiner that Spock practiced most of her life. She clearly ventured into territories unfamiliar to her corporate lawyer father, who served as general solicitor of the New York, New Haven, and Hartford Railroad, or her older brother Benjamin Spock, the renowned pediatrician and author.³

It was Spock's deep commitment to biodynamic farming—a holistic and deeply nature-focused approach to agriculture rooted in anthroposophy—that positioned her to lead the charge against the unprecedented, government-run aerial spraying of DDT across Long Island in the spring of 1957.⁴ Spock and her friend Mary

also began sending the summaries to Rachel Carson.⁸

Carson's interest in chemical poisons went back two decades and remained with her as she wrote three popular books on the sea. ⁹ It was the Long Island DDT spraying and lawsuit, along with the USDA's program to deploy pesticides against the fire ant in the South that

It was Spock's deep commitment to biodynamic farming—a holistic and deeply nature-focused approach to agriculture rooted in anthroposophy—that positioned her to lead the charge against the unprecedented, government-run aerial spraying of DDT across Long Island in the spring of 1957

T. (Polly) Richards owned a home and a two-acre organic farm on Whitney Lane and Norgate Road in the Nassau County village of Old Brookville. When DDT from the spray campaign misted down onto their organic fields fourteen times in a single day, the course not only of DDT but also of environmental history more broadly, shifted. Not only did Spock and Rachel Carson become allies in a cause at a critical moment, but the 1958 trial that Spock and Richards launched against the federal government broke new ground as apparently the first modern environmental case initiated by citizens. ⁵

"The human drama of the whole thing is something never to be found in the court record," Spock said, when queried decades after the spraying and the ensuing trials. "I'll never forget an instant of it."

SPOCK'S ROLE IN SILENT SPRING

Without question, Marjorie Spock and Polly Richards rank among the notable women conservationists who worked to preserve Long Island's natural environment. But the aftereffects of their efforts, and Spock's in particular, rippled out far from Long Island. By initiating a lawsuit against the government's aerial spraying of DDT, Spock not only assembled a mountain of information that would aid Rachel Carson's writing of *Silent Spring* and the movement to ban DDT, she began the march toward the rights of citizens to sue on behalf of the environment—a hallmark of environmental law.

Each day after attending the district court trial in the winter of 1958, Spock wrote a daily summary of the proceedings called "Today in Court." She made copies of those summaries on an early thermo-fax machine and sent them to a large list of people who she presumed would be interested. Among them were eminent naturalists who had formed a group called the Committee Against Mass Poisoning. A few days into the trial, Spock

brought the subject back to her, according to Carson's biographer Linda Lear. Carson's motivation grew upon learning of the wildlife damage from DDT sprayings in New Hampshire and the mass killing of songbirds following multiple sprayings at her friend Olga Huckins's property in Duxbury, Massachusetts.¹⁰

During the 1958 Long Island trial, Carson asked her literary agent Marie Rodell to write to Marjorie Spock to request some background material. Spock mailed a "stack of documents," and wrote Carson what proved to be, according to Lear, "a prophetic note" that included the following: "I think you know how grim this struggle with the U.S. government and the whole chemical industry is bound to be. We have marshalled some pretty solid scientific men and data, and are feeling confident." 11

Besides the inspiration and motivation Carson derived from Spock and the DDT trials, she received a voluminous amount of extremely useful material from Spock. At Carson's request, Spock and Richards supplied her with scientific documents and news items "that flowed to us in a never-ending stream because of our court action," and Carson would regularly ask "to be put in touch with this or that witness from our lawsuit." ¹²

It was through Spock that Carson became familiar with toxicologist Morton Biskind and hematologist Malcolm Hargraves, connections that led to numerous other contacts and sources of information. Spock sent to Carson many papers by wildlife biologist John George, who had documented DDT's killing of birds and fish during a 1946 spraying in upstate New York. She provided research by Michigan State University ornithologist George J. Wallace, who documented dead and dying birds after campus sprayings of DDT. Spock also sent Carson a seminal article on insect resistance by Dutch scientist C. J. Breijer, which Spock and Richards had translated from the original Dutch. During the 1958 trial, Carson wired Spock asking how she might obtain a copy of the court

proceedings; that June, Spock and Richards sent Carson a full set of all thirty volumes. Within several months of the trial, Spock had become "an invaluable source of names, citations, references, and opinion," writes biographer Lear, "and Carson had come to depend on her." ¹³

Spock's knowledge of organic agriculture also enabled her to provide contacts and resources to Carson that might otherwise have eluded her. ¹⁴ Indeed, after receiving from Spock a paper by Ehrenfried Pfeiffer, the expert in biodynamics who had advised Spock and Richards on their Long Island farm, Carson referred to it as "a gold mine of information." ¹⁵

Marjorie Spock and Rachel Carson became friends, as well as colleagues and allies in a cause. In August 1958, Spock, Richards, and Spock's elderly mother visited Carson and her mother in Southport, Maine, where Carson had a seaside summer cottage. "Spock and Carson had much in common, both sharing the care of elderly mothers and the love of the same part of Maine." Lear writes.

"Spock's broad intellect, her independence of life and spirit, and her high passion about the dangers of pesticides energized Carson." ¹⁶

Over several
years, Carson and Spock
corresponded through
dozens of letters. Spock
also wrote frequent and
very amusing letters to
Carson's grandnephew
Roger Christie, who was
in Carson's care and was
of great concern to her given
her workload and poor



Gravesite of Marjorie Spock in Sullivan, Maine.
Courtesy of Joyce Gaddis

health. After receiving one of Spock's thoughtful letters, mostly about young Roger, Carson wrote to Spock, "So few understand. I wish I had known you sooner." ¹⁷

AN IMPORTANT FIRST CASE FOR THE ENVIRONMENTAL MOVEMENT

Marjorie Spock's contribution to the emergence and shaping of environmental law and policy has remained even more in the shadows. Through the 1950s and into the 1960s, legislation concerning land, air, and water primarily aided extraction and exploitation, not protection and conservation. Spock's initiation of Murphy v. Benson set an important precedent. "Working in a legal system that was stacked against them, citizens and local governments had begun to file a small number

of adventurous cases—beginning with a challenge to the spraying of DDT for the gypsy moth on Long Island in the late 1950s," writes John E. Bonine, professor of law at the University of Oregon. This case, Bonine notes, may well have been "the first modern environmental case brought by citizens." ¹⁸

Long Island remained a battleground in the war against DDT well into the sixties. In 1966, a group of scientists and lawyers who would go on to create the Environmental Defense Fund (EDF) brought a case against the Suffolk County Mosquito Control Commission and won a temporary injunction against spraying. By the time their case was thrown out of court in 1967, the commission had moved on to a different pesticide—and DDT would never again be used on Long Island. 19

Through a strategic blend of scientific evidence and legal and administrative action, EDF brought the cause of curtailing DDT's use to Michigan, Wisconsin, and the halls of the federal government. The final battle was

aided greatly by President Richard M. Nixon's creation in 1970 of the **Environmental Protection** Agency (EPA). This action moved the regulation of pesticides from the USDA, which had largely remained aligned with agriculture and chemical interests, to the new agency charged with protecting the nation's air, land, and water. In 1972, EPA Administrator William Ruckelshaus concluded that the evidence "compellingly" demonstrated that DDT threatened fish and

wildlife and was a "potential carcinogen" in humans. He banned most uses of DDT in the United States. 20

Prior to *Silent Spring* and the EPA's DDT ban, government decisions regarding pesticides were based on evidence almost exclusively provided by the chemical manufacturers, notes environmental historian Mark Hamilton Lytle. "The public had no voice in those decisions." Going forward, citizens such as "Marjorie Spock from Long Island would have a role in regulating new chemicals that they believed threatened their health or their property." ²¹

While Marjorie Spock paved the way for citizens like herself to have a bigger influence in the future, she downplayed the significance of what she and her cohort had achieved. With nearly a half century's worth

of hindsight, she lamented that the most important lessons of the DDT experience had not yet been learned. She reflected back on Rachel Carson telling her about government studies documenting that DDT had contaminated the Arctic, yet this knowledge had not led to action to prevent other harmful chemicals from entering our bodies and spreading around the globe. ²²

"Today," Spock said in a 2006 interview, "poisoning is much more complete around the whole planet, and people don't connect that it's going to get worse and worse and worse." 23

SPOCK'S LATER YEARS

Soon after the DDT spraying on Long Island, Spock moved to a farm near Chester, in upstate Orange County, New York, where she worked closely with biodynamics expert Ehrenfried Pfeiffer. In 1965, she relocated to the town of Sullivan in coastal Maine, an area Spock had loved since childhood. She renovated a house and barn that she had admired while on a bicycle ride through the area in the 1940s. Spock spent the next forty-three years there teaching, writing, translating, farming, practicing eurythmy, and becoming a mentor to many. Visitors from all over the world, as well as neighbors, "were always heartily welcomed and experienced wide-ranging and deep conversations, wise counsel and humor," writes Jennifer Greene, a longtime friend of Spock's. ²⁴

For those last four decades, Spock hosted a weekly study group in her home. At the end of what turned out to be the last session, "she got up and shook our hands, and we all knew," Greene said. Marjorie Spock died the next week, on January 23, 2008, at the age of 103.²⁵

Notes:

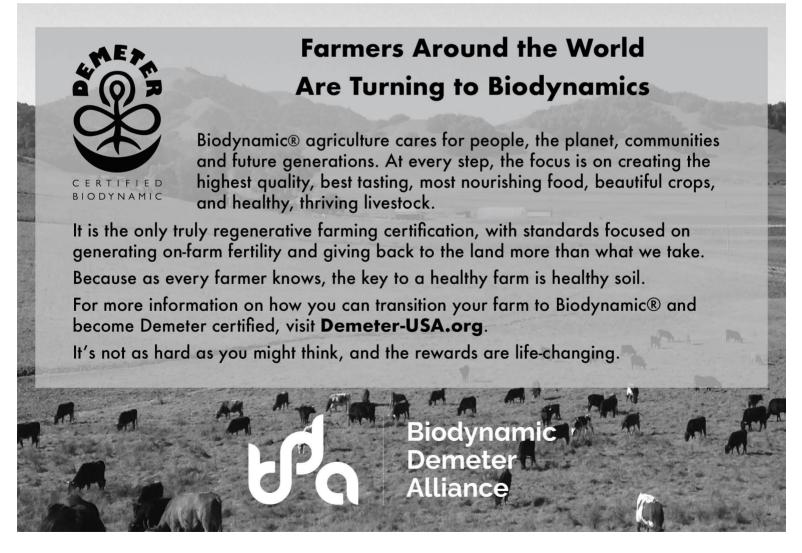
- I. Rachel Carson, *Silent Spring* (New York: Houghton Mifflin Company, 1962); see also Jill Lepore, "The Right Way to Remember Rachel Carson," *The New Yorker*, March 26, 2018; US Environmental Protection Agency, "DDT Regulatory History: A Brief Survey (to 1975)," https://archive.epa.gov/epa/aboutepa/ddt-regulatory-history-brief-survey-1975.html.
- 2. Linda Lear, Rachel Carson: Witness for Nature (New York: Henry Holt & Company, 1997), p. 318.
- 3. Jennifer Greene, Obituary for Marjorie Spock, *Portland Anthroposophic Times*, vol. 4, February 2008; Lear, Rachel Carson, pp. 318-19. Gravesite of Marjorie Spock in Sullivan, Maine. Courtesy of Joyce Gaddis. Marjorie Spock 17
- 4. See the Biodynamic Association website, https://www.biodynamics.com/biodynamic-principles-and-practices.
- 5. John E. Bonine, "William H. Rodgers, Jr. and Environmental Law: Never Give Up, Keep on Going," *Washington Law Review* 82 (2007): 459-92.
- 6. Author's interview with Marjorie Spock, Sullivan, Maine, July 6, 2006.
- 7. Natalie A. Naylor, "Long Island Women Preserving Nature and the Environment," Long Island History Journal 25, no. 2 (2016).
- 8. Lear, Rachel Carson, p. 320.
- 9. Carson's books on the sea were Under the Sea-Wind (1941), The Sea Around Us (1951), and The Edge of the Sea (1955).
- IO. Lear, Rachel Carson, pp. 312-14.
- II. Lear, p. 312; Letter from Marjorie Spock to Rachel Carson, February 5, 1958, courtesy the Lear/Carson Collection, Connecticut College.
- I2. Marjorie Spock with Mary Richards, "Rachel Carson: A Portrait," *Rachel Carson Council News*, no. 82, Rachel Carson Council, Inc., Chevy Chase, MD, March 1994. John Paull, in Paull "The Rachel Carson Letters and the Making of Silent Spring," posits that Carson did not acknowledge or mention Spock in *Silent Spring* so as to avoid any apparent affiliation with the organic agriculture movement, thereby depriving the government and chemical industry with an easy rationale for dismissing her arguments.
- I3. Lear, *Rachel Carson*, pp. 320, 326; Wallace research from William Souder, *On a Farther Shore: The Life and Legacy of Rachel Carson* (New York: Broadway Books, 2012), pp. 286-87; translation of Breijer's article appears in a footnote in Lear, Rachel Carson, p. 548; quote is from Lear, Rachel Carson, p. 33I.
- 14. Lear, Rachel Carson, p. 552, n. 76.
- 15. Paull, "The Rachel Carson Letters and the Making of Silent Spring."
- 16. Lear, Rachel Carson, p. 552 n. 75.
- 17. Letter from Rachel Carson to Marjorie Spock, December 4, 1958, courtesy the Lear/Carson Collection, Connecticut College.
- 18. John E. Bonine, "William H. Rodgers, Jr., and Environmental Law: Never Give Up, Keep on Going," Washington Law Review 82 (2007): 459-92. Bonine notes that this distinction typically gets attributed to a case initiated in the early sixties known as Storm King, brought by a citizens group to stop a hydropower project at Storm King Mountain on the west bank of the Hudson River (Scenic Hudson Preservation Conf. v. F.P.C, 354 F.2d 608 [2d Cir. 1965]).
- 19. Charles F. Wurster, *DDT Wars: Rescuing our National Bird, Preventing Cancer, and Creating the Environmental Defense Fund* (New York: Oxford University Press, 2015), pp. 21-22.
- 20. Wurster, DDT Wars, various chapters; Mark Hamilton Lytle, The Gentle Subversive: Rachel Carson, Silent Spring, and the Rise of the

Environmental Movement (New York: Oxford University Press, 2007), pp. 212-13. The Ruckelshaus decision permitted the use of DDT for public health purposes and for export to other countries, many of which relied on DDT to control malaria.

- 2l. Lytle, The Gentle Subversive, p. 217.
- 22. Author's interview with Marjorie Spock, Sullivan, Maine, July 6, 2006.
- 23. Ibid.
- 24. Greene, personal phone communication with author, October 30, 2020; Greene, "Obituary for Marjorie Spock."
- 25. Greene, personal phone communication with author, October 30, 2020.



Sandra Postel is director of the Global Water Policy Project and the 2021 Stockholm Water Prize Laureate. For six years, she served as Freshwater Fellow of the National Geographic Society, where she spearheaded an initiative that has restored billions of gallons of water to depleted rivers and wetlands across North America. Postel 's award-winning book Last Oasis appeared in eight languages and served as the basis for a public television documentary. She is the author most recently of Replenish: The Virtuous Cycle of Water and Prosperity. Postel has taught at the Fletcher School of Law and Diplomacy at Tufts University and at Mount Holyoke College, where she also directed the Center for the Environment. She studied geology and political science at Wittenberg University, received a Master's in Environmental Management at Duke University, and is the recipient of four honorary doctor of science degrees.



THE FINE ART OF BIODYNAMICS

AN EXCERPT FROM A TALK GIVEN BY ALAN CHADWICK IN SANTA BARBARA, CALIFORNIA, ON FEBRUARY 25, 1975

BY ALAN CHADWICK

Alan Chadwick was a true "renaissance man," and throughout his life he perceived and worked with the visible and invisible integration of language, art, science, and horticulture. English by birth, he emigrated to the United States in the 1960s and in 1967 established a garden at the University of California at Santa Cruz that changed the lives of his students and the biodynamic community in California forever. Alan and his students went on to establish gardens and communities in Saratoga, Covelo, Napa, and Green Gulch Zen Community in Marin County. Iconoclastic by nature, Alan Chadwick embraced biodynamics in a spiritual sense but combined its practices with other approaches such as French Intensive Horticulture. The following excerpt is one of many examples of how he inspired and continues to inspire succeeding generations of biodynamic practitioners.

We are grateful to the Alan Chadwick Archive (https://chadwickarchive.org/) for sharing photos and this transcript, which was transcribed by Linda Thranow.

Greetings.

"Biodynamics" is a word invented by Rudolf Steiner's student circle. It covers the whole focus of the science of living with the entirety of the laws of Nature. It would be impossible to lecture on such a subject; nobody ever has. But the application of biodynamics into the whole sphere of horticulture and agriculture is what we are going to touch on with pleasure tonight. That is, the Fine Art of agriculture. There is no difference between biodynamics and the Fine Art of agriculture whatsoever. There cannot be a difference. They are both concerned

For the law is situated there in the whole law of Nature: the whole revolution of the stars, the ordination of the planets, are the whole matter of life and death, of birth, and of the manipulation of the soil and all the plants, birds, insects, and the animals, all coordinated in an enormous mathematics, totally invisible, which is (is it not?) the law of God. By contrast, any *connivances* of man's *thinkings* are temporary. The laws of Nature are eternal.

In this, one points out from the biodynamic vision and approach, the aspect, enormity, and importance

...the gardener does not make a garden, nor does the farmer make a farm. Indeed, the garden makes gardeners and the farm makes farmers.

with all of the laws of Nature, which means the method of all things that grow.

A person who can manage perfectly to manipulate one acre (known as horticulture) may then venture into twenty or 100 or 1,000 acres (known as agriculture). But it is not good sense nor is it natural to attempt to manipulate 100 acres when you are not competent with handling one.

You will perceive from this that the gardener does not make a garden, nor does the farmer make a farm. Indeed, the garden makes gardeners and the farm makes farmers.

today, in particular, of the invisibles. The interplay of the intermediaries, the classical Four Elements, which are Earth, Fire, Air, and Water, to bring to life the invisible. But the whole enormous totality of eternity is, to us, invisible. And we are much inclined today to be entirely related to the visible only. The word is *utility*.

Horticulture and all agriculture are indeed crafts, and all craft is Art. And no horticulture and no agriculture have ever been an industry and never will be. It is a Magic. It is a Magic that contains eternal invisibility, and everyone who occupies it must remember his reverence

and his obedience.

We cannot dictate to the land and to Nature. The whole ordinance of which Copernicus spoke in his *Revolutionibus* describes how all the planets revolve. The implication of the whole and the living of the land lives by this implication of this *Revolutionibus*: of Saturn revolving, of Jupiter, of Mars, of Venus, of Mercury, of the Sun, of the Moon, and of the Earth.

How is it that somebody suddenly says, "Oh, last year was a wonderful year for tomatoes. The year before was very good for wheat, but last year was bad." What is this talk? There are no accidents in Nature. It's a huge, incomprehensible, mathematical law, indefatigable and discernible.

Those revolvements are the whole reason why forests come into being, sometimes only once in sixty years, sometimes only once in 200 years. For, as you know, the outer radiance of the stars, which is actually invisible, and of which there are a whole radius of stars

outside all the visible stars, are all revolving. They take thousands of years to make one revolution, but they are all revolving. This is all true and real.

And it is the whole essence of every single thing that lives. And not only every single thing that lives, but every single thing that we have in this world. The roof, the electric light, the clothes, the walls, the carpet. Everything is a gift from that incredible mathematics which governs everything. And there is no mathematics but that.

The bees have been building combs for over a million years in exactly the same way, on the same mathematics that she builds. (They are females, except for the drones.) And this has not changed; neither has any computer scientist, algebraist, geometrician, or mathematician found any mathematical connivance to equal it. Neither can we improve upon this math of the beehive.

And this is implemented in the feathers of birds, the webs of spiders, and all the things that belong in Creation,

that are the manufacture of soil. All soil in the whole world is beautiful soil. It is not soil that grows plants, the word is *fertility*.

Fertility is a marriage of all the creative matters together, of moistures, of soils, of life into death, of decomposing things, of the wings of birds, the bones of students, of the shells of snails, and the tiny little molecules of ants and dust and flowers and pollen. They

are all part of soil.

Soil is a total living matter with a spirit, as every mountain is a family with children. And every bud on a tree is not a tree, for every bud that is on a tree is a whole family of children living in the skin of that total tree.

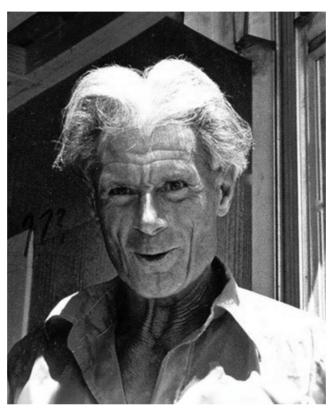
Just as our hair, eyeballs, and our lips are not really ours; we don't make them grow. And they are being replaced all the time, and we don't do it. You can have a tooth out, and you can still live and eat. And your hair falls out, and more hair grows.

And so, this whole matter that you discover by this *Revolutionibus* of the planets, that nothing, nothing whatsoever, is static.

The forests are changing, the animals change, and we change. And surely education is growing and changing. It must, for education belongs to the knowledge and the living and the experience of mankind.

Soil is, in our minds, a matter in which plants grow. Soil is the skin of the world. It is delicate. Most delicate. It is more easily bruised, more sensitive than the most sensitive plants. It should never be mistreated. If you walk upon it when it is wet, or even moist with dew, you will bruise it. You may damage your soil so that it may take you a year to restore that damage.

Likewise, by your observation and your sensitivity, you can manipulate it and magnify its performances. The word *fertility* is the matter that horticulturalists and agriculturalists are really seeking to deal with, how to bring about fertility. And the only way to understand and bring about fertility, by mankind, is through the "image," the inner conception of what this is.



BECOMING BIODYNAMIC:

ONE WOMAN'S JOURNEY

BY RONNI SANDS

At the age of eighteen while traveling through Europe, I was in Amsterdam and saw a sign in the window of a coffee house. The sign read: "Meet here on Saturday to visit a Biodynamic Farm." This meeting changed my life and linked me to my destiny.

I was always interested in agriculture, but what was biodynamics? At that farm visit, something awakened in me. I remember feeling like these farmers held a view of the world that made sense to me, a view that I had not

Hilmar, more phlegmatic, had the voice of a lullaby. chewing over all of his words and philosophies. Alan was tall and lean, Hilmar broad and full. In their presence, I often felt like I was living between two planets that were always in a beautiful conjunction, and it was a gift to witness the ways in which they complemented and worked so well with one another, harmonizing their differing styles, personalities, and temperaments.

During that time, the Waldorf Institute was given

Working and learning beside them was the next most significant, life-changing event that I'd had. It set me on a path that I am still on, forty-five years later.

heard anyone speak so profoundly before then. This was my humble beginning: a picture that included forces, the cosmos, preparations, and spirituality. I wanted books, contacts, and more information, so I bought a bicycle and traveled to England to visit Emerson College. There I saw a real community of learners and practitioners. I sat in on classes, met interesting people from all over the world, and was there to celebrate the fall Michaelmas festival. There was a vitality at Emerson; it was a hub of inner and

outer activity. The farm was right there on the campus, so there was always a practical component to ground the spiritual. (This was in 1974, when Adam Bittleston and John Davey were there.)

A few years after returning from Europe, I moved to Michigan to study at the Waldorf Institute of Mercy College of Detroit. I studied both Waldorf

education and biodynamic agriculture and, while there, I had the great opportunity to meet and work with many amazing teachers. The two that most inspired me in my farming education were Alan York and Hilmar Moore. Working and learning beside them was the next most significant, life-changing event that I'd had. It set me on a path that I am still on, forty-five years later.

Alan was a fire spirit who got things done fast.

two acres of lawn with the intent that it be transformed into a beautiful and vibrant biodynamic teaching garden. Through this garden, it was hoped that others would be led onto a path of self-discovery. This was a task starting from the ground up, and these two men had a vision and a plan. We worked with a crew of six people, and every bed of that two-acre plot was double dug by our team. It was the most tiring physical work I had ever done in my life, yet I felt more alive and satisfied each day. I woke

> every morning excited to continue the journey. All of the details from this time still live for me: how to cultivate, transplant, dress a bed, make a soil mix. They were the only skills I would ever need to grow food for the rest of my life.

There is something that allows for a unique

about the activity of working with others together with the land

linking in time and space. Our work together gave us an opportunity to become friends in unified service to the land. We were all equals in the endeavor, learning from and dependent on the deeds of each other.

The transformation that took place in the garden supported and was supported by the study of anthroposophy and Waldorf education. I read all of Rudolf Steiner's basic books and took a class on each to discuss

and deepen my understanding. I learned to spin wool and weave it into a pillow. I learned to paint and later wrote a children's story and painted the pictures to illustrate it. This in-depth study of Rudolf Steiner's teaching and philosophy came through the lens of a diverse, dedicated, and brilliant group of teachers from all over the world. The physical work in the garden helped me to integrate the complex and profound concepts I studied.

Hilmar taught a course on the development of human consciousness. This spiritual understanding of human history lived in Hilmar in a very deep way. He was a teacher in the classroom, but in the garden Hilmar was more of a philosopher. I remember the day when Hilmar and I were building a compost pile and he said to me, "Ron, when you work with the Earth, you work with the body of Christ. Christ was buried in the Earth, and his etheric energy

permeates every bit of soil." This statement lived in Hilmar to such an extent that it dropped into a very deep place in me and never left. I was jolted awake to a truth that I would spend my life exploring, as well as a comfort that will live in me forever. I feel myself reconnect with Hilmar every time I think about it. Knowing this, I feel my work with the land puts me in contact with ancient forces that never leave, but are there for an ongoing dialogue and relationship. Especially when using the biodynamic

just like soldiers. Don't let them fall over." Some of my greatest memories of my work with Alan and Hilmar are of mucking out horse stalls and building compost piles. To this day, I teach the same compost-building and shaping techniques that I learned from them. When I teach the students about a new tool or how to stand in relation to the garden bed, my imagination is acutely taken back to my time in Michigan and I feel that I am once again standing

in the fields with Alan and Hilmar, learning and practicing.

I have since passed these methods along to hundreds of students through my work at Summerfield Waldorf School and Farm outside Santa Rosa, California, where I have been the garden teacher for the past thirty years. I am blessed to teach at Summerfield, carrying on a long legacy of intention that is key to biodynamics.

At Summerfield, we have a thirty-two-acre campus with a

working farm that includes animals and student gardens and where we teach a developmentally appropriate farming and gardening curriculum. We have a farmer who lives on site, two interns, and two garden teachers. In this work, my greatest goal is to inspire them to love and care for the Earth and to feel her healing powers in this work. I feel a responsibility to the Earth, to the children, and to future generations. *Inwardly, I carry Hilmar's message*; *outwardly, I carry Alan's techniques*.

Knowing this, I feel my work with the land puts me in contact with ancient forces that never leave, but are there for an ongoing dialogue and relationship.

preparations, I feel open and connected to these forces.

Both Alan and Hilmar had studied with Alan Chadwick, a legendary gardening teacher at the University of California, Santa Cruz. The practices they taught were those they learned from Alan Chadwick. Alan York embraced all of the physicality of working with the land. Every technique, from double digging to transplanting to bed shaping to cultivating, had an intention that pulsed through his limbs. Along with the southern cadence in his voice, he moved in a pattern that was full of force. We all tried very hard to emulate his style. In Alan's voice I still hear: "When you double dig a bed, stand those clods up, shoulder to shoulder,

The curriculum is alive and changing every day. Many times the students have their own ideas, and learning becomes a conversation and a shared vision-building. I love the work, the plants, the beauty, and the order that we all create together. For instance, with high school students we look at ways to fight climate change and work with sustainable agriculture as the best solution. We look at all types: biodynamics, permaculture, regenerative agriculture, agroecology, organic, and even industrial agriculture. What model works best? How are we all learning to renew and redeem the Earth?

One of my favorite books, A Nation of Farmers, by Sharon Astyk and Aaron Newton¹, inspires me to hold

the vision that one day we will all be "freedom farmers," creating an opportunity for every person to have access to healthy food. If we could become a nation of freedom farmers, imagine the work we could get done and the changes we could make. This book has simple solutions to change the way we farm, the way we eat, and the way

have died in order to keep these seeds alive.

The roots of biodynamics contain all of the tools for transformation, no matter where on Earth we are. There are always teachers out there ready to share skills, inspiration, and information. When your soul feels a calling, step into the stream and see where it goes. As

When your soul feels a calling, step into the stream and see where it goes.

we think. In the book they say, "Growing our own food may be the single most important way that any of us can fight climate change." In my ongoing vision, I see that there will be enough food for all, the elemental beings will return, and the planet will be redeemed.

In order to share the curriculum that I have built through the years of teaching children, I co-wrote

the book, Growing
Sustainable Children:
A Garden Teacher's
Guide with Willow
Summer (available at
https://steinerbooks.
presswarehouse.
com/browse/
book/9781584209423/
Growing-SustainableChildren). Gene Gollogly
of SteinerBooks, who
was a big supporter of
biodynamics, helped
to make it happen.

I remember seeing him at biodynamic conferences, stepping into his field of warmth and humor. Connections with people like Gene are very important. They are like biodynamic preparations, giving us spiritual fertility and forces. We plant seeds with these relationships and then we reach across the threshold with our memories to those who

the Hopi prayer says, "Look who is in there with you and celebrate." *As I work with the land, the land works on me.* We have an ongoing dialogue. I hear what needs to be done, picked, composted, watered. To listen for these indicators, to tune in, is to be inwardly still and highly attentive. It takes time to learn to listen to cosmic murmurings and hear the guidance. In this way of

working, I can co-create with the elements, the plants, the soil. I can see the unity of the whole, read the messages in the details, and feel guided.

I picture all of us who have our hands in the soil and our feet on the Earth right now, using all that we know and have ever learned. We are holding on to all of the invisible threads that connect us to the cause,

to the work, to the redemption of a planet we love. We work, we tire, we sleep, and each day, we start anew. We never stop believing in the goodness of the preparations, our compost, our seedlings. And we continue to remember those who went before us.



Notes

I. Sharon Astyk and Aaron Newton. 2009. A Nation of Farmers. British Columbia: New Society Publishers.



Ronni Sands has been a garden teacher at Summerfield Waldorf School and Farm for thirty years. She has also been a Waldorf kindergarten teacher, a market gardener, and a house parent for a Camphill-inspired farm. Today she teaches seventh through twelfth graders gardening, cooking, basket weaving, herbal studies, sustainability, and watercolor painting. She has inspired a long list of graduates who take this work out into the world, many of whom have become garden teachers themselves. At the end of this year, Ronni is retiring from her job at Summerfield, but will continue to mentor and teach young farmers and garden teachers wherever she is needed.



BY FREDERICK SMITH

In honor of Women's History Month this March, we interviewed Sherry Wildfeuer, who has been a significant influence on the anthroposophic and biodynamic movements in the United States over the past sixty years. Sherry has been the editor of the *Stella Natura* biodynamic planting calendar since 1978 and a co-worker in Camphill Village Kimberton for fifty years. She is also an active member of the Anthroposophical Society and the North American Agriculture Section of the international School for Spiritual Science.

How did you first hear about anthroposophy and biodynamic agriculture?

I first heard about anthroposophy when I was a freshman in college. I learned about it from a senior named Joel Morrow (who became the editor of the *Biodynamics* Journal for several years much later), as he had just learned about it himself. It was life-changing. I had been looking for meaning in my life and wasn't finding it in anything I had met so far. But when I read Rudolf Steiner, I felt like, "Oh, this is it. This is what I've been looking for."

So then you pursued training in biodynamic agriculture?

No, I didn't know anything about biodynamics. I just knew about Rudolf Steiner and anthroposophy. I wanted to know what people did who thought like that. I heard that there was a Camphill School in Pennsylvania which was working out of anthroposophy, so I contacted them and asked if I could come as a co-worker. I interviewed there and they said I could come, and Joel came too. That's when I met biodynamics for the first time.

There was an old woman, and it was her last year of gardening. So in whatever free time I could find, I would help her. It's not that she talked about biodynamics. I had heard the word: I knew it was a biodynamic garden, but I was most impressed by her intimate, almost conversational relationship with the plants. For the first time in my life, I thought, well, maybe I could be a gardener. I left the Camphill school [in 1967] after a little over a year, but I decided to pursue my gardening training.

Where did you go after Campbill?

I worked in the garden in Spring Valley (which is now the Pfeiffer Center garden) for a summer to find out if I was capable of physical labor, which I had never done before (I was). Then I went back to college because I thought that was what I was supposed to do. But I left again, feeling I should get on with my gardening training. So I worked for a while and then went to California to work with a master gardener, Alan Chadwick, in Santa Cruz. While it was only five months, again, it was life-changing. Everything I did during those early years was significant for me, even if it was relatively short.

I needed more ideas on how to learn biodynamics, so I called the Goetheanum in Switzerland. They said, "Well, we don't have training here, but you could work in the garden." It was not a giant garden, but it was large-scale preparation making because they made it for many other people. I think we buried 3,000 horns. It was amazing. Then I moved to England to attend Emerson College, where Dr. Koepf was starting his first year there teaching biodynamics. By the end of that, I didn't know what else I was going to do.

What happened next?

Somebody came from the Sacramento Waldorf School to recruit a gardening teacher. I decided to try it, and it was a wonderful experience. I started the garden at the Sacramento Waldorf School, which is now absolutely thriving. I did that for a year and three quarters, but I was looking for more community. I had that first experience at Camphill, and it called me back. So I wrote to the

people in Camphill, and they said, "Well, actually, we're just starting a new adult village based on biodynamic agriculture. That seems like the right place for you to go." And so that's where I went, and that's where I still am [Camphill Kimberton].

That's a fantastic story. So you have been at Camphill for fifty years now? How has it changed?

Well, there are more people in this village, and the soil has gotten better. We've taken hold of the land, and many people carry responsibility. I remember in the first year, I had this rather foolish but sweet idea that I would write down every day everything that happened on the land. I got this big book, and I would go around and ask everyone, "What did you do?" And that soon became impossible. So it did change in that it just got too much for one person to keep track of. We now have a dairy farm, a CSA garden, an orchard, and an herb garden, which I started, but it's now run much more professionally and wonderfully than I did in the beginning. So all these things are carried by different people. We have a land group that meets regularly to bring the consciousness together for the whole. So instead of a book, we have a group of people that hold the self-awareness of the farm.

When you live so connected to other people, there are inevitable challenges, and we really work on remaining true to the ideals of anthroposophy in the community and finding ways to understand each other, educate each other, and accept each other. It's a maturing process. And it's also a thrilling process because even though I've stayed in the same place, hundreds of people have flowed through the community. I get to meet new young people all the time and maintain relationships even if they go, and see people being drawn to the impulse and making their lives here.

Am I correct that you brought the Agricultural Section to the United States?

That is true, together with Rod Shouldice. We were at a conference when people from the Goetheanum came, and they encouraged that Section work should start on this continent. Before that, we had always thought the Agriculture Section was at the Goetheanum. But they said, "No, do something here." So we just looked at each other and thought, "Okay, let's do it." The following year, we had the first meeting, and it's been going on since 1981. I co-lead that with Alex Tuchman now, and there's a very strong Section Council of wise and active colleagues.

Can you share more about the work of the Agricultural Section?

It's a section of the School for Spiritual Science, which has many, you could say, departments or sections: the Pedagogical Section, the Medical Section, the Performing Arts Section, Literary Arts, and many others; that's why it's called the "Section." My understanding from the start was that there was a call for research to deepen our relation to biodynamics and maintain its connection to its source in anthroposophy. It's very easy to reduce biodynamics to a method that people can follow or not, but if this happens, it can wander away from its original intentions.

The Agriculture Section is committed to maintaining that connection, not in a dogmatic way, but in a living way. We keep learning and working on themes together, making new breakthroughs, stimulating each other, and sharing our individual work. So it's a real colleagueship, but more on a spiritual than a practical level. However, we have inaugurated several practical endeavors over the years when we saw that they were necessary for the biodynamic movement.

So you have been editing the *Stella Natura* biodynamic agriculture calendar since 1978. Is that correct? What do people use this calendar for?

If you want to explore harmonizing your sowing, transplanting and cultivating with the rhythms of the moon, this gives ephemeris year by year, with suggestions of what part of the plant will be enhanced at certain times. For example, if you're interested in having the fruit of the tomato plant or the pepper plant rather than big leafy bushes, or you hope to have large radish roots, as opposed to the radish flowers, which you're not so happy to see. If you time your sowing according to where the moon is in the zodiac, you can support the particular aspect of the plant you're interested in. There are also times that are not so favorable for plant growth, and it's good to know these so you can avoid them for your seed sowing.

How does biodyamics compare to other forms of agriculture?

Most of the other approaches—regenerative, organic, etc.—have a kind of ideal of imitating nature. Like permaculture, they look to nature as their teacher and try to imitate nature, whereas biodynamics includes the human being as intrinsic to Earth's evolution and asks us to take responsibility for bringing healing to the Earth that, by itself, actually would not be better off than with us. That's not to deny all the destructive things that human beings have done to nature. That's clear. But we also have to take responsibility for its healing. So I see

the preparations, in a certain sense, as medicines for the Earth. They are not copies of something that exists already: they are human creations. They're no more weird than a fancy dish I make in the kitchen, where I bring this together with that and add a little of this and a little of that. That's much more complicated than the biodynamic preparations. We bring things from the plant kingdom and the animal kingdom together in meals all the time, but this is actually for the express purpose of connecting with the cosmos and bringing those healing forces—focusing them into the compost, for example—or with the field sprays onto the soil directly.

I've read a couple of quotes where you talk about growing vegetables for nutritional value and that there's also a life force component. Can you talk more about that?

There are many different ways you could enter into it. One is digestion. When we eat something, we destroy the form. It goes into our digestive process, breaking it down until it's purely mineralized. But in the process of breaking it down, we are releasing life forces that make the plants grow. Nature is full of life forces, but we can also see the vitality waning in nature. If it's conventionally grown food, it's been poisoned and processed, so there's not much life in it to be released once you digest it. Biodynamics, from that point of view of nourishment, enhances the vitality of the food you grow so that there's more for people when they eat it than just "stomach filler," as Rudolf Steiner calls it. [Conventionally grown food] doesn't look that pretty. It's pale and watery and swollen because there's no vitality. I'm hoping that people will develop more of a sense of the vitality in their food and actually notice that we can distinguish what's more alive and what's less.

Another way to think about vitality is that we know that the Earth would not be alive without the Sun. In addition to light and warmth, there are also life forces streaming to the Earth from the Sun. There are also influences from the moon. We know it's strong enough to pull the whole ocean in the tides, so it's got to have something powerful there. And the plants and we are all so much water, so there's this basic connection. Rudolf Steiner points out that it's not just the sun and the moon,

but the planets as well. He describes how those influences belong to the life forces we're discussing in the plants. In biodynamics, we learn to observe what he describes as a kind of polarity between the inner and outer planets in the tendency of plants just to reproduce quickly, kind of like weeds do. The slower development puts on more substance that can then be of nutritive value for animals and humans.

The more concepts we have for this ineffable realm of life forces, the more our eyes are opened to see what's all around us. We're not adding something, we're just cognizing it because we have concepts.

In contrast, the general level of science at this point is so limited to matter and to the mineral world; it doesn't touch life. It just reduces everything to substance. A tomato is so many grams of this or that, and you wouldn't know that one is a better tomato than the other. It's very limiting, and it is very destructive when it comes to the realm of life. You know, when you're constructing a machine, that's one thing, but when you are trying to work with living plants and animals, it's awful because it reduces them just to machine parts, input-output.

Do you have any hopes for biodynamic agriculture, looking fifty years into the future?

I hope that humanity will wake up to the realm of life, value it, treasure it, and adjust our lifestyles so we can better foster it. We can choose more holistic methods of relating both to each other and nature, rather than projecting a very limited mindset onto everything around us. For biodynamics, I hope it grows and more people become interested in and engage with it. There are a lot of myths about biodynamics that need to be dispelled. I've heard some outrageous, untrue things about biodynamics that people spread because it's sensational.

I think that the whole anthroposophical movement is trying to unify itself. So many organizations have grown up to do various aspects of anthroposophical work, including Waldorf schools, the Biodynamic Demeter Alliance, and others. I hope these organizations will coalesce so that people relate more to one another rather than just focusing on their specific tasks. Collaboration within the movement will have more of a positive impact on transforming civilization.

Frederick Smith is the Director of Economic Development for the Biodynamic Demeter Alliance. He brings over ten years of professional experience working, consulting, and volunteering with sustainable agriculture and local economic development organizations, including California Farmlink, MOFI, Slow Money, RSF Social Finance, and the Pacific Coast Farmers Market Association.