

Science, organic husbandry and the work of Dr David Hodges*

by Philip Conford

Abstract

The organic agriculture movement has often been criticized for its supposedly anti-scientific perspective. This article argues that it has always demonstrated an interest in the scientific exploration of organic methods and that a significant number of scientists have supported the case for farming organically. It surveys the work of various British scientists active in the movement from the 1950s to the 1990s and then focuses on the work of Dr David Hodges of Wye College. Drawing on Dr Hodges' papers, it examines his work for the International Institute of Biological Husbandry and as editor of the journal *Biological Agriculture and Horticulture*.

That the organic movement is 'anti-science' has been a criticism levelled by its opponents since its earliest days. 'Muck and magic' (or 'mystery' or 'mysticism') is the most familiar of the phrases which proponents of 'progressive', 'efficient' industrial agriculture have used to dismiss organic husbandry's claim to any serious consideration. Indeed, one could argue that in a sense the organic movement was deemed unscientific before it even existed, the use of artificial fertilizers being intimately identified with scientific progress. In his noted Presidential Address to the British Association given in September 1898, Sir William Crookes (1832–1919) stated his belief that the progress of civilization depended on the ability to fix nitrogen from the atmosphere in order to guarantee continued and increased wheat production. 'It is through the laboratory', he declared, 'that starvation may ultimately be turned into plenty'. This was the antithesis of the view later held by the agricultural botanist and organic pioneer Sir Albert Howard (1873–1947), who wrote scathingly of 'laboratory hermits' and believed that the key to plenty lay in creating a humus-rich, fertile soil.¹

By the 1920s, the fixation of atmospheric nitrogen through the Haber-Bosch process was

* The author is most grateful to Dr David Hodges for entrusting him with his archive (hereafter cited as HP), which in due course will be lodged with the Museum of English Rural Life at the University of Reading.

¹ *The Times*, 8 Sept. 1898, p. 5. Howard referred to himself as having been 'a laboratory hermit' when working as a mycologist in Barbados from 1899 to 1902 (*Farming and Gardening for Health or Disease* [1945], p. 15). He came to believe that agricultural science must be based on the study of the actual conditions in which cultivators grew their crops. Howard was Imperial economic botanist to the Government of India from 1905 to 1931, ran research stations at Pusa and Quetta and in the state of Indore, and claimed that he had learned most from the peasant farmers with whom he worked and whose methods he (not uncritically) admired. See A. Howard, *An agricultural testament* (1940) and his entry in the *Oxford Dictionary of National Biography*.

fulfilling Crookes's hopes and the fertilizer industry was keen to present itself as an outstanding example of the application of science. The development of artificial fertilizers and their use 'on scientific lines' would ensure that Britain could grow more of its own food and rely less on imports. One can faintly discern in such writings the implication that to oppose the use of artificial fertilizers would be both unpatriotic and morally callous; 20 years later, during and shortly after the Second World War, this implication became more explicit. In the intervening period, the organic movement, inspired by Howard's writings and his work in India, had begun to coalesce and to articulate opposition to the rapidly increasing and near-universal use of artificials in British agriculture, which was enforced by government policy through the County War Agricultural Executive Committees. In response to the organicist criticisms, Fisons and ICI launched advertising campaigns in the farming press, identifying their products with the onward march of science and presenting their opponents as advocates of the most primitive and superstitious farming techniques. Such backward attitudes potentially endangered the nation's security in wartime, and would, if accepted, hamper post-war attempts to overcome severe food shortages. The fertilizer companies were therefore able not merely to represent themselves as scientifically vibrant, but as securely occupying the moral high ground.²

This emphasis on agricultural progress through the application of industrial technology intensified after the war. The threat of world food shortages, and Britain's economic problems, meant that home production had to be increased and made more efficient, the criterion of efficiency being output per worker. In 1947, the government announced a plan for raising the UK's agricultural output by a further 20 per cent over the next five years. In such daunting circumstances, it seemed clear that traditional methods were inadequate or irrelevant. According to an advertisement for the Westminster Bank Ltd, 'The Farm of the Future!' would dispense with much of the nation's agricultural inheritance, which was 'more picturesque than effective', and replace it with 'modern structures designed to fit a purpose'. An advertisement for the Pegson-Marlow Pump showed a farmer looking out over prairie-like fields and fiddling with a knob on a long panel of dials and gauges. 'Farming from a control tower' was on the way, with the Pegson-Marlow Pump a staging post for it. Since the organic movement was interested in the potential of traditional agricultural systems, it was easy to misrepresent it as opposed to science and progress. In fact, the organic movement's attitude to scientific research was more sympathetic than its opponents were willing to admit.³

A similar situation applies today, *mutatis mutandis*, with regard to the organic movement's opposition to genetically modified (GM) crops. Lord Taverne, a prominent supporter of biotechnology and spokesman for the organization Sense About Science, which promotes an evidence-based approach to scientific issues, has criticized the organic movement in the

² *The Fertiliser and Feeding-Stuffs J.*, 28 Mar. 1923, p. 319. On the wartime advertising campaigns by fertilizer companies, see P. Conford, 'The myth of neglect: Responses to the early organic movement, 1930–1950', *AgHR* 50 (2002), pp. 89–106.

³ For the Westminster Bank and Pegson-Marlow Pump advertisements, see R. George Stapledon (ed.), *Farming and mechanised agriculture, 1946* (1946), pp. 36,

26. This volume provides a good picture of the dominant agricultural approach in the immediate post-war years. On the Soil Association's complex and ambivalent relationship to scientific research, particularly in its early years, see the judicious account by Erin Gill in her unpublished doctoral thesis 'Lady Eve Balfour and the British organic food and farming movement' (Aberystwyth University, 2011), pp. 215–31.

following terms: '[It] has murky origins; its basic principle is founded on a scientific howler ... it is steeped in mysticism and pseudo-science; and, whenever it seeks to make a scientific case for itself, the science is shown to be flawed'.⁴

Criticism of the organic movement's supposedly anti-scientific stance is not confined to its enemies, however. In a complex attack on aspects of the North American organic industry, Mischa Popoff, an organic farmer and farms inspector, has condemned the transatlantic organic movement for its neglect of Sir Albert Howard's ideas in favour of those of Rudolf Steiner: that is, its predilection for the mystical and esoteric, rather than for the empirical scientific approach which Howard's work demonstrated. Popoff sarcastically heads one section of his book *'Organics plus Science (yes, it once existed)'*.⁵ Popoff's criticism of the organic movement for supposedly ignoring Howard is also, though, by implication, a reproach to those who claim that the organic movement is anti-scientific. Given Howard's central importance as the movement's begetter in the English-speaking world, it is surely significant that an outstanding agricultural scientist played such a role.

A study of the relationship between the organic movement and science is worthy subject matter for an entire book, requiring not only historical analysis, but also discussion of more theoretical issues. How should 'science' be defined: as an approach to phenomena, or a body of knowledge, or a world view? To what extent can we distinguish between 'pure' science, technology, and profit-driven application of scientific discoveries? What are the merits and limitations of the 'reductionist' approach, which organicist writers have so persistently criticized from their own 'holistic' standpoint? Is there any reason – theoretical or practical – why the techniques of organic farming should not be scientifically analysed and developed? If not, then why have so many resources been committed to technological agriculture and so few to organic systems? The answers to these last questions may prove to lie more in the realms of politics and economics than in those of pure, detached scientific enquiry. The aim of this article is inevitably far more modest than an attempt to deal with such issues. It seeks to demonstrate that, in Britain, in the half-century between 1945 and 1995, there was a markedly pro-scientific strain to be found in the organic movement. This is not to deny that there was also a markedly 'mystical' or esoteric strain as well, nor that associated with the movement could be found an outlook strongly opposed to Enlightenment values and to faith in technological solutions to social and environmental problems. But the interest in science was considerably more prominent than either its adherents or its opponents might now be aware.

We shall first consider, necessarily briefly, the role of scientists during the movement's formative years, and the attention the Soil Association paid to scientific issues. The article will then consider five scientists who were prominent in the organic movement during the period from the 1950s to the 1980s, before concentrating on the work of Dr R. D. (David) Hodges (b. 1934). Hodges was for many years simultaneously a lecturer at the University of London's agricultural college at Wye, near Ashford in Kent, and a central figure in the organic movement. He ceased being actively involved in the mid-1990s, but during his retirement has collected and organized his historically valuable archival papers, on which this article draws substantially. His work for the organic cause was based on a firm belief that a respectable

⁴ Dick Taverne, *The march of unreason* (2005), p. 62.

⁵ Mischa Popoff, *Is it organic?* (2010), pp. 122–4.

scientific case could be made for organic cultivation, and his position at the heart of the movement during the 1980s in particular indicates that the movement had plenty of room for a pro-scientific approach.⁶

I

This article takes for granted the central importance for the organic movement in the English-speaking world of Sir Albert Howard. Although the case cannot be argued here, in the present author's view the movement would not have existed without Howard's influence. Despite the fact that the Steiner-inspired Biodynamic Agricultural Association was founded in Britain in 1928, eighteen years before the Soil Association, and despite the active involvement of biodynamic farmers and gardeners in the latter organization, the esoteric nature of Steiner's philosophy – about which Howard himself was robustly sceptical – ensured that biodynamic cultivation could never have enjoyed the public profile which the wider organic movement did during the 1940s.⁷ Conversely, there seems good reason to suppose that the wider movement would have flourished without the presence in it of the biodynamic strain: indeed, the absence of this more 'mystical' element might well have proved advantageous.

The organic movement in the English-speaking world therefore had as its founding father an outstanding agricultural scientist. We should also note the sympathetic, albeit slightly more detached, support of Sir George Stapledon (1882–1960), another agricultural scientist of international renown as plant breeder, ecologist and authority on grassland; and of Viscount Bledisloe (1867–1958), one of the outstanding agriculturalists of his time and President of the Royal Agricultural Society of England in 1946. The movement soon won the enthusiastic support of Professor R. Lindsay Robb (1885–1972), who had worked overseas as ICI's expert on grassland and during the Second World War had been the Director of Agriculture for the British military in North Africa.⁸

Some eminent medical scientists played key roles in helping establish the organic movement, chief among them being the nutritionist Sir Robert McCarrison (1878–1960). The dental scientist Sir Norman Bennett (1870–1947) was an important supporter during the movement's formative years, as was Sir Cedric Stanton Hicks (1892–1976), who remained active in its cause

⁶ In the light of my interviews with Prof. A. J. Biddlestone, Dr N. P. Burman, Dr A. Deavin, Dr K. R. Gray, Dr R. D. Hodges and Dr V. I. Stewart, I mean by the phrase 'a respectable scientific case could be made for organic cultivation' that these scientists believed that, given adequate funding for long-term experiments, it should be possible to establish that organic methods of cultivation could stabilize and enrich the soil; that as soil fertility increased, so would the production of disease-resistant crops; and that wider environmental benefits would accrue from the application of methods which paid attention to ecological systems. They saw no reason why scientific techniques involving systems approaches should not be developed and refined in

order to test these hypotheses, though they were of course aware of the complexities involved. Professor Colin Spedding of the University of Reading, although not a supporter of the organic movement, has encouraged the study of agricultural systems, among which organic farming takes an important place. See Colin R. W. Spedding, *Agriculture and the citizen* (1996), p. 240.

⁷ Howard, *An agricultural testament*, p. ix.

⁸ On Stapledon, see R. Waller, *Prophet of the new age* (1962). On Robb, see the October 1972 issue of the *Journal of the Soil Association*, a memorial number celebrating Robb's life and achievements.

until his death. Hicks held the post of Professor of Human Physiology and Pharmacology at the University of Adelaide from 1926 to 1958; from 1942 to 1952 he was Director of Army Catering for the Allied Land Forces, and from 1952 to 1973 served as Scientific Food Consultant to the Australian Army. Whereas today the organic movement might be associated with various 'alternative' or complementary forms of treatment, in its earlier decades it attracted many conventionally trained medical doctors. One of the Soil Association's three founders was the doctor George Scott Williamson (1884–1953) and, while his approach to studying health was unconventional, his background was in orthodox medicine, in which he had excelled.⁹

It is also important to bear in mind that the Soil Association itself grew out of Eve Balfour's desire to investigate what was essentially a scientific question: to what extent was the health of plants, animals and human beings affected by the nature of the soil in which the plants grew? Her exposure to the ideas of Howard and McCarrison in the late 1930s inspired her to establish what became known as the Haughley Experiment at her Suffolk farm. This was a complex long-term project whose aim was to study the effects on crop growth and animal health of different types of soil treatment. The Experiment proved cripplingly expensive and its data were very difficult to interpret; when it was wound up at the end of the 1960s it had produced little in the way of clear conclusions. The point to be noted, though, is that it was a scientific project based on the study of empirical data, and that the leading scientific journal *Nature* considered it an important venture worthy of support.¹⁰ Similarly, the agricultural scientist and critic of the organic movement, D. P. Hopkins, thought Haughley significant and urged an expansion of the sort of work taking place there.¹¹

The Soil Association was essentially a body with a scientific purpose, a statement that may well surprise both its contemporary supporters and its opponents. Its objects said nothing about the 'organic': they were, 'To bring together all those working for a fuller understanding of the vital relationships between soil, plant, animal and man[; t]o initiate, co-ordinate and assist research in this field [and to] collect and distribute the knowledge gained so as to create a body of informed public opinion'.¹² The title of the Association's journal, *Mother Earth*, was suggested by Scott Williamson, who considered it to express a literal truth; but plenty of Association members were unhappy about its sentimental overtones. In the mid-1950s there was an unsuccessful attempt to rename it.¹³

Regardless of the journal's title, though, its content was strongly scientific. In its first five years, from 1946 to 1951, it published articles on ammonia, antibiotics, bacteria, calcium, carbon dioxide, composting, insecticides, isotopes, lime (application of), mycorrhiza, nitrogen, potash, proteins, rotations in farming, soil structure, sulphuric acid, trace elements, viruses and vitamins. During the 1960s, subjects discussed included the Advisory Council on Scientific Policy, algae, blister blight, cancer, codling moths, entomology, hydroponics, Lysenko's genetic theory, nitrogen, organo-phosphorous sprays, pollination, the rumen, soil fungi,

⁹ The other founders of the Soil Association were the farmers Eve Balfour (1898–1990) and Friend Sykes (1888–1965).

¹⁰ *Mother Earth*, Oct. 1957, p. 1001.

¹¹ On Haughley, see Lawrence Woodward's introduction to the Soil Association's 'Organic Classics'

reprint of Eve Balfour's *The living soil* (2006). *Mother Earth*, Oct. 1957, p. 1001; Apr. 1957, pp. 830–1. See also D. P. Hopkins, *Chemicals, humus, and the soil* (1945).

¹² *Mother Earth*, Autumn 1947, p. i.

¹³ *Mother Earth*, Jan. 1957, pp. 737–8 and 742–4.

superphosphates, warble fly and water pollution. These are not topics one would expect to find in 'mystical' publications, and perusal of the book reviews provides plenty of additional evidence that *Mother Earth* took an interest in scientific developments. In 1964 two Australian readers objected to an article by Rolf Gardiner about the connection between agriculture and religion, on the grounds that *Mother Earth* was 'a basically scientific journal'.¹⁴

In its early years, the journal debated the philosophy of science, arguing, for instance, that the study of agricultural biology was no less a scientific task than the study of agricultural chemistry. The Soil Association's Editorial Secretary Jorian Jenks suggested that when 'knowledge crystallizes into set formulae and techniques ... it begins to lose some of that vital dynamism which is one of science's most cherished characteristics'. Within the scientific world a battle was proceeding between the dynamic and the statistical interpretation of natural processes: a battle evident at the annual meetings of the British Association for the Advancement of Science, whose proceedings *Mother Earth* monitored. Some of the scientists shared the Soil Association's general outlook in their concern about the possible harm which agricultural chemicals might inflict on the insect population, and in their insistence that much more biological experimentation was essential. Jenks pointed out that official agricultural scientists admitted to complete ignorance of the field of soil ecology, and he denied that the organic movement was rejecting scientific research: on the contrary, it was demanding more of it. The following year, the Association's Secretary C. D. Wilson, a former industrial chemist, wrote a lucid summary of its position vis-à-vis scientific research. He argued that the Association had every right to criticize an established hypothesis, patiently collecting facts that might point in another direction, just as defenders of that hypothesis had a right to criticize its potential successor.¹⁵

For Scott Williamson, the problem was how the concept of science should be defined. He had regarded his work at the Pioneer Health Centre as a scientific investigation into the nature of health, but the surgeon Sir Ernest Rock Carling had visited the Centre and declared that its methods did not represent science as he knew it. Scott Williamson addressed the issue in a review article on Anthony Standen's book *Science is a Sacred Cow*, drawing a distinction between the practice of science and the use to which technologists and commercial interests put its results.¹⁶ Following Scott Williamson's review, philosophical discussion of science disappeared from *Mother Earth* for many years, but coverage of scientific issues remained consistent. As we shall see, these continued to be a major concern of the organic movement over a long period.

¹⁴ *Mother Earth*, July 1964, p. 250.

¹⁵ *Mother Earth*, Autumn 1950, p. 1; Spring 1951, pp. 55-9.

¹⁶ Interview (2 Feb. 2007) with Joanna Ray, daughter of Dr K. E. Barlow. Her father worked at the Centre and was a close colleague of Scott Williamson. *Mother Earth*, Oct. 1952, pp. 39-44. Carling, a member of the Medical Research Council, believed that atomic radiation would prove valuable as a means of reducing human fertility levels (*Health and Life*, Sept.

1955, p. 325). Scott Williamson was more interested in encouraging life. It is worth noting that Sir William Crookes, who looked to the creation of a scientific means of fixing atmospheric nitrogen to use as a fertilizer, exemplified the blurring of scientific enquiry and commercial advantage. His entry in the *Oxford Dictionary of National Biography* states that science and business were integrated activities throughout his life, and that the possibility of commercial reward was a prime motivation for his research.

II

We shall now narrow our focus to examine the work of some scientists who believed that the case for organic methods at the very least merited scientific investigation and might well be strengthened through scientific research. This survey will show that the work of Dr David Hodges was no eccentric aberration, but took place within a well-established context of organicist scientific commitment. First, let us look at the career of Dr Norman Burman (b. 1915).

Burman entered employment as a hospital laboratory technician and was required to remain in that post during the Second World War. He then joined London's Metropolitan Water Board (MWB) as a bacteriologist, later being promoted to Senior Bacteriologist and then Scientific Assistant to the Director. When the MWB became the Thames Water Authority, Burman was appointed Manager of Scientific Services. He obtained his doctorate, on the survival of *E. coli*, in 1954. His interest in organic cultivation stemmed from his love of gardening: he read about the benefits of composting, and was led to the work of Howard and Balfour, attending the Soil Association's inaugural meeting in 1946. As a microbiologist, he was attracted to the 'living soil' approach to cultivation, though he appreciated that there was no scientific proof of the superiority of organic methods, and no properly conducted research into them: for this reason, the Haughley Experiment interested him. He did not believe that scientists would be convinced by the proposed model organic farms that Howard appeared to favour over the work at Haughley. Unlike some of his fellow scientists in the organic movement, Burman did not consider the Haughley Experiment misconceived, but he had no doubt that it needed to be long-term if its findings were to have any significance.¹⁷

Burman contributed regularly to *Mother Earth* during the 1950s and '60s, writing chiefly on the science of composting and reviewing a wide range of books on biology and ecology. He was at various times a member of the Soil Association's Advisory Panel, its Editorial Board, its Council and its Standards Committee. His colleagues at the MWB were sceptical, regarding the organic movement as unscientific, and he had to tread carefully in order to avoid harming his professional reputation. He never accepted his colleagues' view, regretting that so little research into the effects of organic methods was undertaken and that too much of the organic case had relied on hearsay evidence rather than recognized scientific procedures. He also regretted that the Soil Association, which had originally gathered evidence and sought out relevant research, turned increasingly to campaigning.

Burman was particularly interested in municipal composting, as were two scientists of a later generation, Dr Ken Gray and Dr, later Professor, A. J. (Joe) Biddlestone, both of the University of Birmingham. The use of wastes to create fertility is integral to the organic approach; but the problem was (and is) how to produce sufficient quantities of compost, given that Howard's example in India, where agriculture was the primary occupation and there was an extensive pool of cheap labour, could not be followed in Britain. The conversion of urban wastes and the use of sewage were investigated by some pro-organic municipal engineers, including J. C. Wylie in Dumfries and J. L. Beckett of Leicester.

¹⁷ Interview with Dr Burman, 26 June 2006.

From the mid-1960s onwards, Gray and Biddlestone undertook important work in Birmingham's Department of Chemical Engineering. Gray had trained at Esso's huge refinery on the Solent before taking up his academic post in 1963. Like Burman a keen gardener, he had been drawn to the organic philosophy by H. J. Massingham's book *This Plot of Earth* (1944), so the opportunity to develop a composting project at Birmingham was ideal for him and drew him into the orbit of the Soil Association, which invited him to initiate some research at Haughley into the effects of toxic metals. He had contacts with the Agricultural Development and Advisory Service (ADAS) and with some senior staff at Rothamsted Experimental Station, and got on well with both the organic and the orthodox camps, trying to act as a mediator between them. In the winter of 1969–70 the Agricultural Research Council awarded Gray a grant of £7,592 – a curious but substantial sum – to investigate farm waste disposal. It was around this time that Biddlestone joined him.

Following his doctorate, Biddlestone had worked for ICI and then helped build and run a polymer plant for Dunlop. In 1965 he was invited back to Birmingham University, his alma mater, to lecture in his old department. He knew Gray and shared his interest in how wastes might be put to productive use. This was not through any background in farming, but because of a scientific interest in systems and processes, biological as well as chemical. The department at Birmingham favoured this sort of research and was enrolling an increasing number of environmentally aware postgraduate students, so Biddlestone was able to team up with Gray: the start of a long friendship and productive academic partnership. Unlike Gray, Biddlestone never joined the Soil Association. His training in orthodox science and industry, though, makes his interest in the Association's research all the more significant, and he remains convinced that it was a worthwhile area in which to experiment.¹⁸

Frequent contributors to the Soil Association's journal from 1970 onwards, Gray and Biddlestone provide further evidence of the Association's continued interest in scientific research and are also among the comparatively rare instances in the history of organics, of people who could mix comfortably in both organic and orthodox circles. They were involved in the design, construction and operation of various large-scale municipal composting plants in both Britain and overseas, in Teheran, Libya and Hong Kong. In the 1970s they built a composting unit that won first prize at Stoneleigh's Royal Agricultural Show. Another project on which they worked, during the 1980s, was for the agricultural machinery company, ARM Ltd. of Rugeley in Staffordshire, improving the design of elevators and spreading-machines. They also had links with India, and wrote the United Nations Food and Agriculture Organization's Soils Bulletin no. 56, *Soil management: Compost production and use in tropical and subtropical environments* (1987). The Bulletin's object was to promote the use of locally available organic wastes both as a source of plant nutrients and as a means of increasing humus content in order to combat soil

¹⁸ Interview with Dr Gray and Prof. Biddlestone, 21 Oct. 2008. For examples of their publications, see for instance K. R. Gray and A. J. Biddlestone, 'Composting – process parameters', *Chemical Engineer* Feb. 1973, pp. 71–6; K. R. Gray, A. J. Biddlestone and R. Clark, 'Review of composting, Part 3: Processes and products', *Process Biochemistry* 8 (10) (1973), pp. 11–15, 30; K. R. Gray and A. J. Biddlestone, 'Agricultural uses of composted town refuse' in *Inorganic pollution and agriculture*, MAFF Reference Book 326 (1980), pp. 279–305, and K. R. Gray and A. J. Biddlestone, 'The composting of agricultural wastes' in B. Stonehouse (ed.), *Biological husbandry* (1981), pp. 99–111.

erosion. It went out to more than 150 Ministries of Agriculture around the world. Like David Hodges, Gray and Biddlestone were also active in David Stickland's initiative, the International Institute of Biological Husbandry (IIBH), of which more below.

In Wales, the organic movement was responsible for another excursion into applied science, the Bryngwyn Project, which was under the direction of Dr Victor Stewart (b. 1924) of the University of Wales, Aberystwyth. Stewart, a soil scientist, had studied agricultural chemistry at Bangor under the tuition of the noted authority G. W. Robinson. He gained his doctorate for ecological research into the connection between soil development and types of tree, and came to share the organic movement's view of the importance of fungi, which linked trees and soil in an ecological community. His 1956 appointment as Aberystwyth's first lecturer in soil science rather than just soil chemistry enabled him to pursue further ecological research, looking at problems of hill farming and drainage, and at the role of earthworms in restoring soil fertility. This work led him to the Soil Association, and he spoke at the Association's conference weeks held at Ewell Technical College, Surrey, during the 1970s. He was also an authority on the quality of sports pitches, reporting on Test Match wickets for the MCC.¹⁹

The experiment at Bryngwyn in South Wales stemmed from conversations Stewart had with Eve Balfour, and from the fact that E. F. Schumacher (Soil Association President from 1971 until his death in 1977) had been Economic Adviser at the National Coal Board (NCB). In August 1977, the Soil Association entered into a five-year agreement with the NCB to restore 64 acres of land lying derelict on a farm near Llanelli after opencast mining. The experiment aimed to devise techniques of accelerating the rehabilitation process and monitoring the effects of organic cultivation on the soil. It was hoped that the work at Bryngwyn would provide 'visible evidence, backed by scientific observation, that organic farming methods [could] restore a filled-in open-cast site to grade one farming land much more quickly than orthodox methods that ha[d] so far been tried, and failed'.²⁰ In 1984, responsibility for the farming operation was transferred to the university at Aberystwyth, and a doctoral student, J. Scullion, offered various preliminary conclusions on its data. (The farm was eventually reinstated in 1995 and later won recognition as a showpiece of environmental enrichment.)

Stewart was also significant as a link between different generations of organic activists: Nic Lampkin, who produced the first academic textbook on organic agriculture, was one of his doctoral students.

The courses at Ewell Technical College, referred to above, were organized by another scientist active in the organic movement during the 1970s: this was Dr Anthony Deavin (b. 1936), a rather more complex figure than those already discussed. His scientific background, however, was impeccable: first-class honours in Chemistry at Queen Mary College, leading to a doctorate at King's College, London; research at Heidelberg and a lectureship in biochemistry at St. Thomas's Hospital Medical School. In tandem with this career, Deavin developed more esoteric interests, and, on first coming across *Mother Earth* in the 1960s, perceived in it the philosophy of a 'natural order' to be found in the land reform movement: the belief in a need to

¹⁹ Interview with Dr Stewart, 8 June 2005.

Report', marked 'Item 6c, 4/78', passed to the author by Dr Victor Stewart.

²⁰ This quotation comes from a typed paper headed 'The Soil Association. Project Bryngwyn – Progress

work in harmony with nature. Although Deavin believed natural law theory to be an attitude to life rather than a scientific hypothesis, he was struck by the thought that the data produced at Haughley might provide support for it.²¹

In 1969, Deavin was appointed Research Director in the Department of Biological Sciences at Ewell; he joined the Soil Association the same year. During the 1970s he concentrated on research into soil fertility, some of it in conjunction with Rothamsted Experimental Station. He described this work in scientific papers published in Germany. He also published several articles in the *Soil Association Quarterly Review*, on soil fertility, nitrogen fixation, plant growth and associated matters, though he became sceptical of the value and scientific rigour of what had been studied at Haughley. He was an Association Council member, an architect of organic standards, scientific advisor to the Henry Doubleday Research Association (HDRA), and, like Gray, Biddlestone and Hodges, was active in the IIBH. He was also interested in the work of the Biodynamic Agricultural Association, and undertook experiments in chromatography, exhibiting some of his results in an exhibition on soil fertility for the Scientific Section of the Chelsea Flower Show. From the mid-1980s onwards he moved increasingly towards alternative medicine, and trained in Polarity Therapy. Such a career would hardly recommend itself to Lord Taverne and his associates, but our purpose here is to demonstrate that the organic movement was capable of appealing to minds trained in the ways of orthodox science, and Deavin's work for it offers further evidence that this was so.

III

Having given an outline of the organic movement's interest in science, and identified some of the scientists who were sympathetic towards its ideas, we can now look in more detail at the work of David Hodges. Hodges sought to provide scientific respectability for the organic case, and was centrally involved in two initiatives to this end. His papers provide an insight both into his ideas and into the problems he faced.

Hodges was a zoologist gifted in anatomical work, who undertook his doctoral research at a specialist London hospital, St. Paul's, and worked at the Harwell Atomic Energy Establishment during his period of national service. There he tested the effect of radiation on goats: a 'ghastly' business which helped turn him into a pacifist and, later, a member of the Society of Friends. In 1962 he took up a lecturing post at Wye College, in the poultry research section, which led to him writing his *magnum opus*, *The histology of the fowl* (1974). He also worked on intensive poultry research; he did not entirely regret this, as it opened his eyes to what was happening in the world of industrial food production. This experience, plus reading Rachel Carson's *Silent Spring*, sparked an interest in the changes being brought about by intensification, and their detrimental effects on the environment and the animal kingdom. Hodges' response was both intuitive and intellectual: he was convinced that the industrial approach was morally wrong and that in practical terms it would generate more problems than it would solve. Although he did not join the Soil Association until 1973, he was sympathetic to its work from the mid-1960s onwards and was regarded as eccentric by his colleagues for being so. In his view, agricultural

²¹ Interview with Dr Deavin, 6 Apr. 2005.

chemistry and, especially, agricultural economics, were distorting the nature of farming. Together, these disciplines treated a complex biological system as a sort of factory floor from which products were turned out conveyor-belt fashion.²²

Hodges came to know Cdr. Noel Findlay, who since 1949 had farmed organically at Hastingleigh, near Wye. Findlay persuaded Hodges to support him in a televised debate on organic farming, which was followed by a debate between Hodges and an agricultural officer from ADAS. Hodges was also in demand with the Soil Association, being persuaded to stand for its Council, on which he served from 1976 to 1993. Following the inter-generational upheavals of the early 1980s, he became a member of the *Soil Association Quarterly Review's* editorial board and regularly contributed a column of technical abstracts summarizing relevant research, as well as writing book reviews and articles, these latter chiefly on soil.²³ With Charles Arden-Clarke, he produced a detailed review for the Soil Association titled *Soil Erosion in Britain* (1986). In addition to his full-time job and his Soil Association work, Hodges – a keen gardener – was a member of the HDRA Council from 1982 to 1994, and from 1975 until 1987 was prominent in the IIBH, working as a colleague of its founder David Stickland. It should be clear from these facts that Hodges was at the heart of the organic movement for a considerable period. Before we look at Hodges' contribution to the activities of the IIBH, a word about David Stickland is essential.

One of the most controversial figures in the history of the British organic movement, David Stickland (1930–2010) trained on a dairy farm in Oxfordshire, worked for Dunn's Farm Seeds and then gained further commercial experience with East Kent Packers, a large (non-organic) co-operative dealing in fruit. Wanting to farm again, he emigrated to New Zealand in 1961, taking up organic dairying and vegetable growing. His support for the organic approach was the result of reading the work of Frank Newman Turner (1913–1964), a Somerset farmer, journalist and pioneer of organic co-operatives. Stickland had a tough time in New Zealand and moved on to the Canadian province of British Columbia. He worked for farm co-operatives and established a journal, *Canadian Agriculture and Horticulture*, in the face of considerable hostility from the agricultural chemical companies. This editorial experience served him well when he returned to England in the early 1970s and made contact with the Soil Association, which was seeking a new editor for its journal. (Formerly *Mother Earth*, the journal had been re-named the *Journal of the Soil Association* in the late 1960s.) Stickland took over in the winter of 1972–73, re-designed the journal and made it more relevant to those in the business of producing and marketing organic goods. He was also strongly supportive of the

²² Interview with Dr Hodges, 17 June 2008.

²³ During the early 1980s, a younger generation of organic activists, impatient with what they saw as the cosy ineffectiveness of their elders in the Soil Association, staged what amounted to a coup, dominating the Association's Council and seizing control of the quarterly journal, which they made more visually striking, aggressively campaigning and generally informative. Prominent in this group were Francis Blake (West Country grower), Patrick Holden (West

Wales farmer and later the Association's Director), Ginny Mayall (grand-daughter of Shropshire farmer Sam Mayall), Peter Segger (West Wales grower and entrepreneur), Charles and Carolyn Wachter (West Wales growers), Lawrence Woodward (Director of the Elm Farm Research Centre in Berkshire) and Richard Young (Cotswold farmer). One of their chief concerns was the effective marketing of organic produce, but the quarterly journal also gave considerable coverage to environmental and scientific issues.

Association's co-operative marketing initiative Organic Farmers and Growers Ltd (OFG). There is much obscurity and debate about the exact nature of events, but by 1975 Stickland had left the Soil Association and was running OFG as his own enterprise, provoking a resentment that lasted for many years in certain quarters. During his time at the Soil Association, Stickland, an energetic and ambitious man, began to develop the idea of the IIBH.²⁴

Stickland preferred the term 'biological' to 'organic' because of the associations of crankiness he believed the latter term carried; but for our purposes here the two terms can be regarded as interchangeable. He had grown tired of being an object of mockery or hostility on account of his support for organic methods, and wanted to make a case for them as both scientifically respectable and practically efficacious. He approached David Hodges in June 1974, writing from Haughley to ask him help arrange a meeting with potential members of a Research Committee.²⁵ The Committee's first meeting was held on 24 September that year; in addition to Stickland and Hodges it was attended by Gray and Biddlestone, Deavin, Dr Bernard Stonehouse of Bradford University, and L. P. Brunt, an engineer who was an authority on municipal composting. It was agreed that the Committee would be 'under the auspices of the Biological Farmers and Growers Ltd. [sic]', so that it could be 'geared to practical farming'. 'It is quite obvious', the meeting's minutes declared, 'that there is a tremendous amount of work to do in practical and theoretical research', and that this should involve international co-operation. Stickland invited his colleagues to submit articles on the scientific aspects of biological husbandry for publication in the *Journal of the Soil Association*. Hodges was concerned – with reason – that the IIBH's establishment would cause friction, but believed that the risk must be taken.²⁶

Stickland was in any case soon to leave the Association and, during 1975, he was busy establishing OFG and the IIBH, though both bodies featured prominent Soil Association members on their boards. The latter's first management meeting was held in December 1975, with Stickland as Director. The founder members were Hodges, Deavin, Stonehouse, R. Chetwynd, J. Miller, George McRobie (a close associate of E. F. Schumacher) and Hugh Coates, a farmer and miller who played an important role in the Soil Association, OFG and other organic bodies. Hodges, Deavin and Stonehouse were asked to collaborate on preparing a journal to circulate amongst prospective scientific members; along with Ken Gray, they formed the editorial committee. It was to be some time before the journal materialized, and we shall look at Hodges' work on it later.

Hodges and Deavin drafted a statement of the Institute's aims, which was published in a brochure in 1976. The body's purpose was 'to bring together all scientists and others throughout the world who are interested in Biological Husbandry ... and by mutual discussion, study, communication and promotion of research, to raise the level of credibility of biological methods of farming to that of orthodox agriculture'. The particular objectives were to set up channels of communication and to act as a centre 'for the collection, classification, storage and

²⁴ Interview with David Stickland, 8 Nov. 2007.

²⁵ HP, Letter, Stickland to Hodges, 19 June 1974.

²⁶ HP, Minutes of meeting, 24 Sept. 1974. A letter to Hodges from A. W. Vickers, General Secretary of the

Soil Association, dated 28 Sept. 1976 (also in HP), says that the IIBH was set up 'surreptitiously' in circumstances 'offensive' to the Association.

dissemination of literature and information on all aspects of Biological Husbandry'. (These aims are in fact substantially the same as those of the Soil Association, given earlier.) Hodges and Deavin noted that biological husbandry had been unable to mount research projects 'to obtain information and to solve the problems which are constantly arising in any system of agriculture'. The Institute intended to liaise with government institutions, universities and private research organizations to develop integrated research programmes and would give 'considerable priority' to work in the Developing Countries.²⁷

In May 1976, the Board meeting could report that the Institute's preliminary advertising had aroused substantial interest and attracted various offers of support. In order that the Institute should be seen to be making a more public impact, it organized an inaugural lecture at Agriculture House, Knightsbridge in London, on 24 March 1977. This was given by Dr Tilo Ulbricht of the Agricultural Research Council on the topic: 'Western thought, farming systems and the world food problem'. The attendance was apparently somewhat disappointing, but the occasion gained sympathetic coverage from *Times* journalist Hugh Clayton, who believed that the ideas of organic farming were 'being taken more seriously', and pointed out that as the movement had little money, it 'had little opportunity to demonstrate its usefulness through research'. Another important event that month was the IIBH day conference that Ken Gray organized at Birmingham University, on the theme of 'A more biological approach to agriculture and horticulture in Europe'. Speakers included Charles Aubert of the French organicist organization, Nature et Progrès, and Dr Hartmut Vogtmann. In November 1977, Hodges addressed an international conference on 'Granular Fertilizers and Their Production', organized by the British Sulphur Corporation, and boldly asked delegates, 'Who needs inorganic fertilizers anyway?' He brought forward scientific evidence that biological agriculture was fully capable of competing with orthodox agriculture in productivity. Although Hodges felt like Daniel in the lions' den, his lecture was treated with respect, and the conference organizer Alexander More wrote to congratulate him on his 'admirable and most important contribution'.²⁸

By the early summer of 1977, the IIBH had forged links with the Centre for Agricultural Strategy at Reading University; with Dr Nigel Scopes, an authority on biological pest control at the Glasshouse Crops Research Institute in West Sussex; and, through Hodges, with the Department of Soil Science at Wye College. A draft report on the first AGM, held on 31 May 1977, recorded that the Board of Management was looking at 'the possibility of a scientific meeting of a higher calibre than normal in the organic movement to try and initiate research into solving some of the major problems of biological farmers'. At the same time that the Institute was making progress in attracting scientific support, though, there were appearing signs of the tensions which would, much later, lead to Hodges resigning from the Institute's work. Stickland was developing an 'alternative' organic standard for OFG, and thought that the Institute's proposed Scientific Committee might prove invaluable for recommending 'products that could be used for the alternative grade'.²⁹ It might also come up with ideas for projects that could be financed by, for instance, the Agricultural Research Council.

²⁷ HP, *The International Institute of Biological Husbandry* (1976), p. 7.

²⁸ HP, Alexander More to Hodges, 23 Nov. 1977.

²⁹ HP, Minutes of IIBH Board meeting, 13 Sept. 1977.

Hodges undertook to organize the formation of the Committee in the autumn of 1977. In a letter to Ken Gray, he wrote that he saw its remit as giving scientific advice to OFG; liaising with other scientific organizations; initiating and overseeing research projects, and publishing the results of the IIBH's work. Hodges invited various people to join the Committee, including Gray, Deavin and the horticulturalist Lawrence Hills (1911–90). In his correspondence with Hodges, Hills expressed his support for the Institute's approach and, like many of the movement's critics, deplored its 'semi-occult' elements, which in his view were 'increasing all the time'. He hoped that the Committee would secure some concrete achievements of value to organic farmers. There needed to be 'straight organic and inorganic experiments'. The work at Haughley, he believed, had ended up by becoming increasingly irrelevant as it drifted further and further from actual farm practice.³⁰

Hodges, too, was concerned by the Soil Association's 'cranky fringe'. In a letter to Mr. G. Williams, a Cornish farmer, he wrote that this fringe had led to the Association as a whole having 'a poor image in scientific circles'. The IIBH had therefore decided to take 'a truly scientific approach ... and to steer clear of any statements which [were] not ... scientifically verifiable'. Hodges considered this the only way to convince the opposition that the organic movement had a case, and he believed that the case had to be made by 'a truly scientific organization completely divorced from any taint of crankiness'. He wanted to fight vested interests on their own ground, 'that of logical, scientific proof'.³¹

The Institute continued to make slow but steady progress. Its second Annual Lecture was given on 25 May 1978 by Dr G. R. Potts, Director of Research at the Game Conservancy, who examined the effects of chemicals on ecosystems. This meeting was chaired by Sir Emrys Jones, Principal of the Royal Agricultural College – a fact that indicates that Stickland and Hodges were succeeding in forging links with establishment agriculturalists. By this time they also had the support of Dr Steve Lisansky, a research scientist with Tate and Lyle. Lisansky wanted to make the Scientific Committee 'a conduit of information and questions between the scientific community and organic farmers'. David Astor had joined the Institute's Advisory Council, which provided another link with the world of orthodoxy: his brother Jacob was Chairman of the ARC from 1968 until 1978. As always, Stickland had plenty of projects in mind, including a plan for a Compost Research Centre and the publication of a practical handbook on biological agriculture. The Institute was also attracting overseas members: one of them, the Australian K. A. Handreck, was Scientific Assistant to the Chief of the Soils Division at the Commonwealth Scientific and Industrial Research Organization.³²

Perhaps the high point of the Institute's fortunes was its August 1980 conference, 'An agriculture for the future', which was organized by David Hodges and held at Wye College. The promotional material proclaimed it 'the first of its kind in Britain', consisting of reviews 'by recognized authorities of many aspects of agriculture and horticulture in which scientific comparisons of conventional and biological methods will be made'. It was hoped that the conference would accelerate the process by which biological methods of husbandry would replace the more expensive and unsustainable techniques of intensive agriculture. Hodges

³⁰ HP, Hodges to Gray, 4 Nov. 1977, Hills to Hodges, 10 Nov. 1977, 17 Nov. 1977 and 13 Apr. 1978.

³¹ HP, Hodges to G. Williams, 18 July 1977.

³² HP, IIBH newsletter, Aug. 1978, p. 2; July 1979, p. 2.

pointed out that Wye College was a suitable venue for such an event, as Sir Albert Howard had once been a member of staff there, and the college was pursuing studies in compost science thanks to the support of Dr W. E. Shewell-Cooper, a Wye graduate and a leading exponent of organic horticulture. Wye was also involved in other projects relevant to the development of biological husbandry, including the investigation of biological pest control, examination of soil structures after the use of artificial fertilizers, and stimulation of legume root nodulation to reduce the use of nitrogen fertilizers. Hodges hoped that Wye College would play 'a major role in assessing in an objective and scientific manner the role of biological husbandry in tomorrow's agriculture'.³³

Hodges, who gave the keynote lecture at the conference, lined up an impressive array of speakers: among them were Stewart, Gray and Biddlestone, Deavin, Scopes, Lisansky, Ulbricht, the soil scientist Professor R. P. Moss, and Professor Colin Spedding of Reading University. Although not a supporter of the organic movement, Spedding was, like Biddlestone, particularly interested in how systems operated, and considered biological husbandry a worthwhile subject of study. The topics covered included soil-plant relationships, composting, biological pest control, a comparison of biological and orthodox growing under glass (by the leading tomato grower Douglas Blair), energy utilization, and Third World conditions. There was even a case made for the judicious use of agro-chemicals in biological husbandry.

Hodges received warm congratulations for all his efforts from an unlikely source: this was G. W. Cooke of Rothamsted and the Agricultural Research Council, who was a long-term opponent of the organic movement. But he was impressed by what he experienced at the Wye College conference, and wrote to Hodges to tell him so. 'I found the whole of the meetings to be very useful indeed. The subject matter of many of the papers was new to me; others, on topics I am more familiar with, were excellent reviews. I was glad to meet so many who are concerned with agriculture's future, here and overseas'. Cooke displayed, in other words, the open-mindedness that should be a scientist's hallmark.³⁴

In September 1984, the IIBH held its second conference, also at Wye: this was on 'The role of micro-organisms in a sustainable agriculture'. Hodges organized the event with his colleagues Dr Joe Lopez-Real and Dr Tony Scofield, and drew speakers from the USA, Canada, Egypt, Russia, Brazil and Australia, among other countries. The conference started from the premise that developing nations, with limited access to high-energy inputs for producing food and fibre, needed to ensure that traditional biological methods of agriculture and horticulture were as effective as possible. The preliminary announcement for the conference stated that the IIBH was sponsoring the event because it recognized the central role of micro-organisms in non-chemical systems and wished 'to bring together research workers actively engaged in agricultural microbiology to discuss the future role that micro-organisms will play in a less energy-intensive and more sustainable agriculture and horticulture'. The papers presented dealt, for instance, with the microbiology of soil structure, the function of mycorrhiza, disease control through beneficial micro-organisms, and nitrogen fixation in sustainable agriculture.³⁵

³³ HP, IIBH leaflet, 'An Agriculture for the Future' (1980).

³⁴ HP, Cooke to Hodges, 1 Sept. 1980.

³⁵ HP, IIBH pamphlet listing papers for conference.

Three years later, Hodges was involved in arranging an even more ambitious conference, this time at the University of Reading; but it was never held, and the circumstances of its cancellation were one of the major factors in the collapse of the IIBH a few months later, in the spring of 1987. Hodges' papers throw considerable light on the various disagreements and tensions that brought about the Institute's demise, but these are not our concern here. The important point to note is the continued commitment of the Institute's Scientific Committee to making a reasoned case in favour of organic cultivation. In association with Reading's Centre for Agricultural Strategy, the IIBH announced an international conference on 'Effective farming systems': that is, systems which were effective biologically (maintaining soil fertility); economically (ensuring farmers reasonable prosperity); technically; with regard to energy (increasing yield on energy input); environmentally (enhancing the quality of the landscape); socially (with reference to human considerations in the rural sector), and in other respects. The conference would have included, for the first time in the UK, an exhibition of commercial products, equipment and services relevant to biological husbandry, the purpose of which was to emphasise that biological alternatives to chemical agriculture already represented a significant agricultural effort, and that they were supported by a growing range of technical inputs. Sessions on advances in relevant applied research were timetabled.

Hodges invited Dr G. F. Wilson to be the keynote speaker at the conference. Wilson, an agronomist at the International Institute of Tropical Agriculture in Nigeria, swiftly accepted the offer, promising to 'endeavour to maintain the high standards of the [IIBH]'.³⁶ Wilson's fellow speaker on the theme of biological effectiveness was to have been Sir Henry Plumb, former President of the National Farmers' Union; while Professor Colin Spedding was due to address the conference on energy effectiveness.

The surviving correspondence among Hodges' papers indicates that a failure in publicizing and promoting the conference resulted in a disappointing response; as a result, the conference had to be cancelled at short notice. This was a bitter disappointment to Hodges, who blamed Stickland for taking on too many projects and not giving them the attention they demanded. Stickland resigned as Chairman of the Institute, evidently piqued by various criticisms of his management, and the organization disintegrated amid a welter of recriminations and legal complexities.³⁷

Both Hodges and Dr Lisansky were dissatisfied on scientific grounds with Stickland's approach, having become increasingly unhappy about the extent to which the Scientific Committee was being used to work on the intermediate, or 'Conservation' grade of commercial grain which Stickland had developed for OFG. Hodges had resigned as Scientific Director of the Institute in the summer of 1985.³⁸ With twenty years' hindsight, he felt that Stickland had

³⁶ HP, Wilson to Hodges, 18 Feb. 1986.

³⁷ Hodges believes that Stickland was hard hit by the failure of the Reading conference, though at the time of the cancellation he did not, as Hodges recalls, communicate directly with Hodges and his fellow-organizers. 'Cracks had been appearing in the IIBH over the previous year or so and I feel that he had hoped that a successful conference would be a feather in his

cap ... Unfortunately the warnings that the conference organization was falling further and further behind as the deadline appeared fell on deaf ears, and the final outcome must have come as a considerable blow to him.' (E-mail from David Hodges to the author, 21 Aug. 2011.)

³⁸ A document among Hodges' papers on 'Responsibilities of Members of the Board of Management of the

simply over-reached himself. As late as March 1986, Stickland was proposing a large-scale organic farm research project (shades of the Haughley Experiment), drawing on a variety of scientific disciplines and involving the farms at Reading University and Wye College.³⁹ The aim would have been to examine ways of improving organic farming, both economically and in terms of crop yields. Nothing came of it, but the urge to lend scientific respectability to organic methods still persisted.

IV

One indirect offshoot of the IIBH long outlived the Institute itself: this was the journal *Biological Agriculture and Horticulture* (BAH), which has survived for nearly thirty years and which owed its establishment and early survival to David Hodges, its editor for thirteen years from its inception in 1982. David Stickland had intended from the beginning of the Institute's existence to establish a scientific journal, but it was not until 1980 that the idea began to take practical shape. Hodges had placed in *The Ecologist* an advertisement for the 1980 conference, which was seen by J. F. Burnett of A B Academic Publishers (ABA). Burnett already published the journal *Environmental Studies* and was interested in publishing the conference proceedings. He had recently discussed with Edward Goldsmith, editor of *The Ecologist*, ideas for an international journal in the field of agricultural education, with specific reference to biological agriculture. Hodges was already negotiating with the publishers Butterworth about the conference proceedings, but was interested in the journal proposal, and Burnett visited him at Wye College in February 1980. Burnett saw the need for 'a sound academic journal in the field of Biological Agriculture and Horticulture', and Hodges agreed that 'the scientific integrity of the journal must always be paramount over all other considerations', insisting that he would rather postpone an issue than include second-rate material.⁴⁰

The board of the IIBH was keen to be responsible for the project, with the journal's editorial staff drawn from the Institute's membership to ensure full editorial control. The publication would be called *Biological Agriculture and Horticulture: An International Journal. The Official Journal of the IIBH*. In the event, the connection with the IIBH soon became 'relatively tenuous', as all the work on the journal was undertaken at Wye College by Hodges and his deputy editors Tony Scofield and Joe Lopez-Real. Much the greatest burden fell on Hodges, who years later described the journal as a one-man band.⁴¹

Note 38 *continued*

IIBH', undated, but attached to minutes of the Board's meeting of 20 Sept. 1984, says that Dr Lisansky should be in charge of the Scientific Committee, and that anything the Institute did with the scientific side of pure Organic or Conservation Grade must be correctly carried out. Hodges' papers also include material on the Conservation Grade crops, including a letter from Hodges to Stickland (7 Feb. 1984), which is quite critical of Stickland's approach. The minutes of the Board of Management meeting on 20 June 1985 indicate Hodges' resignation as Scientific Director because he could not

reconcile having to support the Conservation Grade while supporting pure organic in other associations (i.e. the Soil Association and the Henry Doubleday Research Association).

³⁹ The minutes of the Board of Management meeting for 19 Mar. 1986 include discussion of David Stickland's proposal for this project.

⁴⁰ HP, J. F. Burnett to Hodges, 4 Feb. 1980, 15 Feb. 1980; Hodges to Burnett, 30 Apr. 1980.

⁴¹ HP, Hodges to Ena Adam, 20 May 1983. Interview with David Hodges, 17 June 2008.

Hodges rapidly recruited members of an international advisory board, including scientists from the USA, New Zealand, Australia, Brazil, West Germany and Nigeria, and put out a leaflet calling for papers. *BAH*, said the leaflet, was 'the first scientific journal to focus on the development of biological husbandry as a viable form of agriculture'. It aimed to publish 'work of a sound scientific or economic nature in the form of original research reports, review papers, and reports of trials and experience' in both temperate and tropical conditions. The first issue of *BAH* was eventually published in December 1982, and in September 1984 the scientific journal *Nature* monitored the journal's early progress. In his review, Professor Leonard Broadbent reflected that *BAH*'s aim of raising the credibility of biological systems reflected sadly on the 'blinker outlook of so many "academic" scientists'. He also noted the tendency of supporters of eco-agriculture to 'peddle prejudice as solid scientific fact', and warned the editors of *BAH* against this danger; but he described the advisory board as 'prestigious' and saw ample opportunity for *BAH* to improve its standing among agronomists and other scientists.⁴²

Broadbent was more optimistic about the journal's prospects than Dr Tilo Ulbricht had originally been. In correspondence with Hodges during the autumn of 1980, Ulbricht expressed his view that the proposed journal would be a waste of time, because only the already converted would read it. Implicitly damning orthodox agricultural scientists for their narrow-mindedness, he said that they would 'quite unfairly doubt that the same standards of refereeing [would] be applied as in recognized scientific journals'. Ulbricht changed his mind about the journal's viability, but his employers proved his view of orthodox agricultural scientists correct by refusing to allow him to join the journal's editorial advisory board. Dr Ralph Riley, the ARC's Secretary, wrote in supercilious fashion to Hodges: 'I believe that Dr Ulbricht's relationships with the many people with whom the Agricultural Research Council has to deal would be best served were he not to be associated with your journal'.⁴³

Surviving correspondence about *BAH* among Hodges' papers reinforces the view that the organic movement contained a strongly pro-scientific tendency. We can take just two examples. First, Willie Lockeretz, an American agricultural scientist with a Harvard doctorate in physics, supported Hodges' rigorous approach to material submitted for *BAH*, writing of 'the problem of scientific acceptability' that had 'plagued' investigation of organic agriculture. Secondly, Dr James Coombs, an expert on biomass and biotechnology with wide experience of both the academic and the commercial world, had resigned from the IIBH in 1983 because he felt that David Stickland's claims for his intermediate grade of produce were not scientifically substantiated. Coombs wanted to see 'an active farm, run in a scientific way, carrying out objective trials, with results substantiated and then published in reliable journals such as *BAH*'.⁴⁴

On account of various legal niceties, *BAH*'s survival was unaffected by the collapse of the IIBH in 1987, and Hodges took advantage of the Institute's demise to make changes to the journal's editorial board, asking some members to stand down, and bringing in new figures like Dr Nic Lampkin of Aberystwyth, who had become prominent in the organic movement

⁴² *Nature*, 27 Sept. 1984, p. 317.

⁴⁴ HP, W. Lockeretz to Hodges, 2 May 1980;

⁴³ HP, Ulbricht to Hodges, 14 Nov. 1980; Riley to J. Coombs to Hodges, 30 Oct. 1983. Hodges, 23 Jan. 1981.

by the mid-1980s. The journal had gained an international reputation, and Hodges was able to create an editorial board that included agricultural scientists from Switzerland, France, Germany, India and Japan. From Pennsylvania State University, Patrick Madden, Professor of Agricultural Economics, wrote to Hodges praising the 'superb quality' of the journal. In addition to articles on agricultural science, *BAH* occasionally published pieces on the philosophy and history of biological agriculture and horticulture. Hodges was also open to articles critical of organic cultivation, provided that they were based on sound data, and he considered that there was much of value to be found in 'conventional' agricultural journals, which should be referred to and discussed in *BAH*.⁴⁵

Hodges' achievement in establishing the journal and keeping it afloat for thirteen years was remarkable, the effort involved being not just mental and physical, but emotional. Pursuing the cause of organic agriculture meant treading a lonely path, but Hodges proved himself resilient and also a shrewd academic politician, carrying out his work for the organic movement without jeopardising his post at Wye. He resigned as editor of *BAH* in 1995, and from all active involvement in the organic movement, having devoted more than twenty years to it.⁴⁶

V

To study the contribution David Hodges made to the organic movement from the mid-1970s to the mid-1990s is to realize that the movement's early interest in science did not evaporate with the passing of the pioneers. Plenty more evidence could be adduced from elsewhere: we have not touched here on another long-term and still-surviving initiative, the Elm Farm Research Centre (now the Organic Research Centre) at Hamstead Marshall in Berkshire, founded in 1980 with the support of David Astor and with Lawrence Woodward as Director. The Soil Association's quarterly journal was very different in the 1980s from its present-day consumerist incarnation; there were regular contributions from David Hodges and from Nigel Dudley, an ecologist and authority on pesticides. Hodges, Dr Ken Gray, Dr Norman Burman and Dr Victor Stewart have all expressed their disappointment at the way in which the scientific case for organic husbandry has been eclipsed by an emphasis on campaigning and marketing.

One also gains from Hodges' papers the sense that orthodox agricultural scientists may not always be as dispassionate as they like the public to imagine. It is not clear, otherwise, why Hodges and Scofield had to tread so carefully in their dealings with the Principal of Wye

⁴⁵ HP, P. Madden to Hodges, 12 June 1987; Hodges to D. Bourgeois, 7 Nov. 1980; Hodges and Tony Scofield to Prof. J. D. van Mansvelt, 16 Sept. 1983.

⁴⁶ Hodges resigned for two main reasons. Firstly, he believed that the organic movement needed a degree of evolution if it was not to stagnate. Younger blood and new ideas are essential for any movement to remain fresh, and older figures should make way. Secondly, he did not have a strong constitution and was feeling the strain of his many commitments: in the organic

movement alone, these included the Soil Association, the IIBH, *Biological Agriculture and Horticulture*, the Henry Doubleday Research Association and the British Organic Standards Committee. His intuition that he was overdoing things proved justified when he was diagnosed with heart disease. Hodges believes that the agricultural and environmental developments of the past 16 years make the need for an organic, sustainable approach to food production more urgent than ever. (E-mail from David Hodges to the author, 21 Aug. 2011.)

College, or Burman with his colleagues at the Metropolitan Water Board; or why the Secretary to the ARC felt he had the right to rebuke Hodges so loftily on the matter of Dr Ulbricht's possible involvement with *BAH*.

The fact is that the organic movement has never commanded the financial resources to undertake scientific experiments on anything remotely like the scale of conventional, technological, chemically reliant agriculture. In 1978 Hodges expressed the problem as follows:

[It was] essential that an objective examination of the merits and de-merits of both systems [i.e. biological and orthodox/chemical] should be made. Such a comparative examination could only be undertaken on the basis of an extensive programme of research, and so far no serious attempt has been made by official, semi-official or corporate bodies to consider a programme of this nature.

Hodges was left to wonder what progress organic agriculture would have made if only a fraction of agribusiness resources had been made available to it.⁴⁷ More than thirty years later, his call for thorough scientific investigation remains unanswered.

⁴⁷ R. D. Hodges, *Who needs inorganic fertilizers anyway?* (1978), unpaginated but p. 20 (copy in HP).