



Organic Agriculture



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Kent Maps Symposium
5 May 2021
Canterbury Christ Church University
#KentMaps



1

Organic Agriculture - Invented in Kent
- can that be true?
We will explore the proposition.
We will aim to satisfy ourselves about
when, why & how that came about,
& also consider the who what &
where. I thank Diana Hirst who
suggested this presentation.



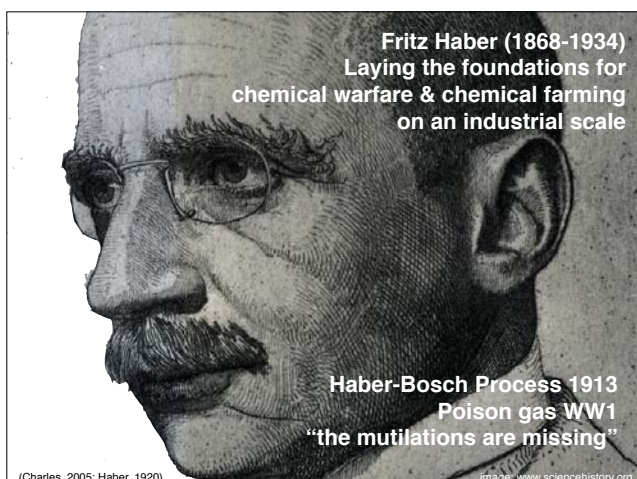
2

If you are in Kent, you may recognise
this sign. We will get to Lord
Northbourne and how, when & why
he came to coin the term 'organic
farming' & write a manifesto of
organic agriculture. But 1st let's
consider some context.




3

The roots of organic agriculture go
back to WW1 & a tad before that.
The war brought chemical warfare
on an industrial scale. This laid the
foundation for chemical agriculture
on an industrial scale, post war.



4

Fritz Haber played a key role in laying
the foundations for chemical warfare
& chemical farming on an industrial
scale. He was a brilliant chemist - a
Nobel Prize winner. He developed the
Haber-Bosch process (1913) which
enabled cheap & abundant
explosives & then cheap & abundant
fertiliser. Haber was a German Jew
so later he fared poorly.



WW1 Germany - food
Civilian witness (Leipzig)

"... living ... gets more and more complicated every week..."

... one has to manage somehow

... There are substitutes for everything - artificial honey, jam, meat - everything you can think of"

Ethel Cooper (1871-1961)
letter from Leipzig 16/4/1916

(Cooper, 1982; Paull, 2020b)

5

Staying with WW1, in Germany the British blockade made civilian life challenging. An Australian spy, Ethel Cooper, spent WW1 in Leipzig. Real food was scarce - civilians struggled - making do with ersatz food & fake food.



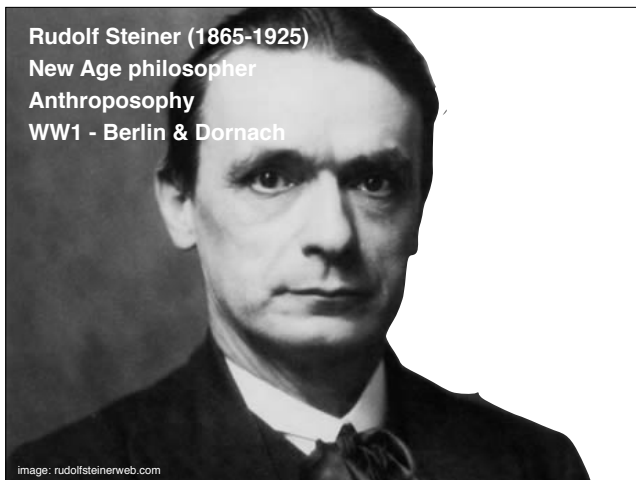
Out of the "hell"?

Fund raising postcard
By Ernesto Genoni
AIF stretcher bearer
The Somme 1916

(Paull, 2014a, 2018)

6

Just staying alive in WW1 was a preoccupation. Ernesto Genoni was an Australian volunteer, pacifist and a stretcher bearer at the Battle of the Somme. He described it as "hell". He wondered, can something beautiful emerge from this hell? Can we build back better? He painted this artwork. It was reproduced as as a postcard to raise funds for displaced persons.



Rudolf Steiner (1865-1925)
New Age philosopher
Anthroposophy
WW1 - Berlin & Dornach

image: rudolfsteinerweb.com

7

Rudolf Steiner, Austrian New Age philosopher, also wondered can we build back better after the war? Steiner had many irons in that fire. Agriculture was his final iron in the fire.



Koberwitz
Kobierzyce, Poland
The Agriculture Course
7-16 June 1924

image: J. Paull (Paull, 2011a)

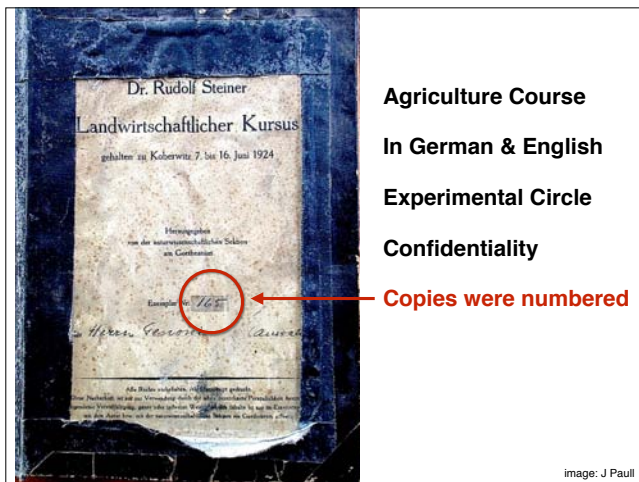
8

You will notice that Poland plays a key role in our story of the road to organic agriculture - twice. First, in the summer of 1924, Rudolf Steiner delivered 8 lectures on agriculture - what Anthroposophy has to say on agriculture. Koberwitz - Kobierzyce - was in Germany at that time.



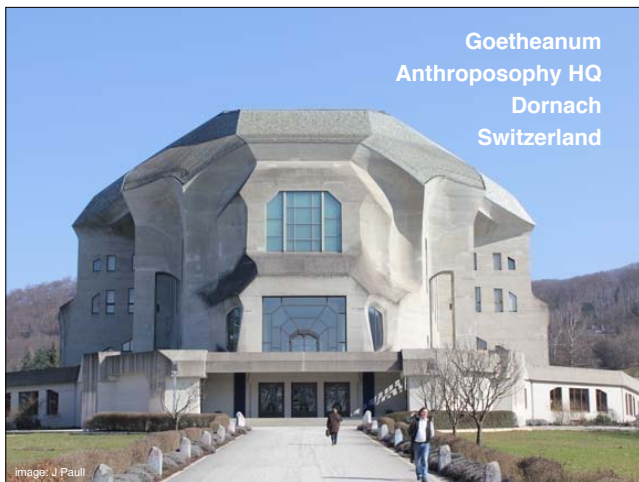
9

3 key ideas of Rudolf Steiner were presented at Koberwitz - the farm is an organism, natural not synthetic, and he called for an agriculture differentiated from the prevailing chemically-dependant agriculture - with its rapid uptake of synthetic fertiliser. 3 mths after Kobbewitz, Rudolf Steiner retired to his sickbed - 6 mths after that, he died.



10

This is the 1st Agriculture Course to reach Australia. It is in German - it's well worn & repaired. Copies were issued to members of Rudolf Steiner's Experimental Circle. Copies were numbered - and the contents confidential.



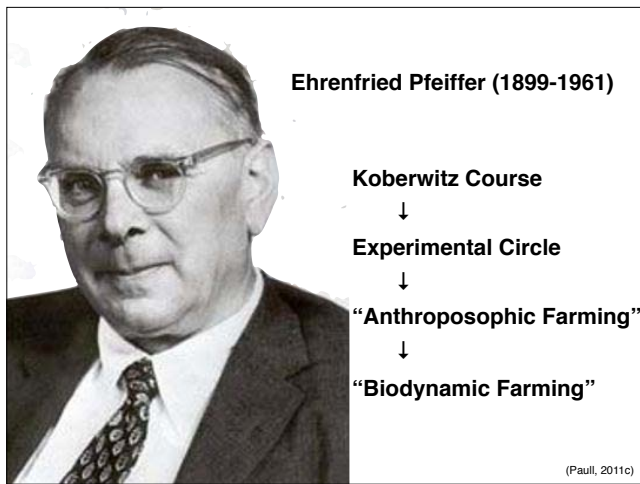
11

The task of progressing Rudolf Steiner's agriculture ideas fell to his Experimental Circle - farmers & gardeners round the world. They were tasked with testing Steiner's "hints" - to find out what worked. They could report back to Anthroposophy HQ @ Dornach, Switzerland.



12

The mission of the the Experimental Circle was coordinated by a young chemist, Ehrenfried Pfeiffer. His laboratory was in this building - the Glass House, behind the Goetheanum.



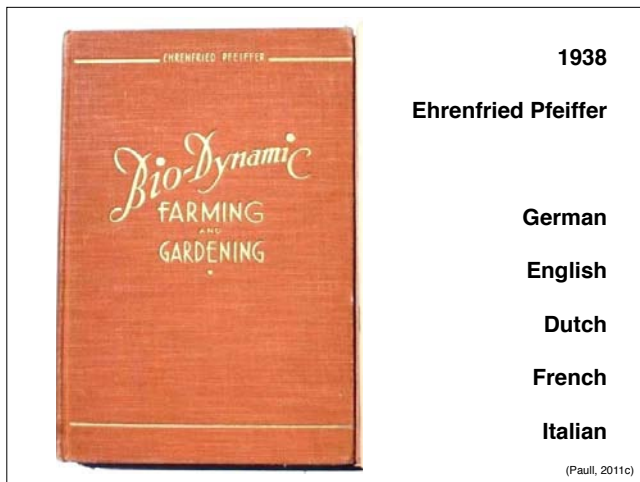
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In the 14 years following the Koberwitz course, the hints of Rudolf Steiner were tested & evolved to be called Biodynamic farming - overseen by Ehrenfried Pfeiffer.



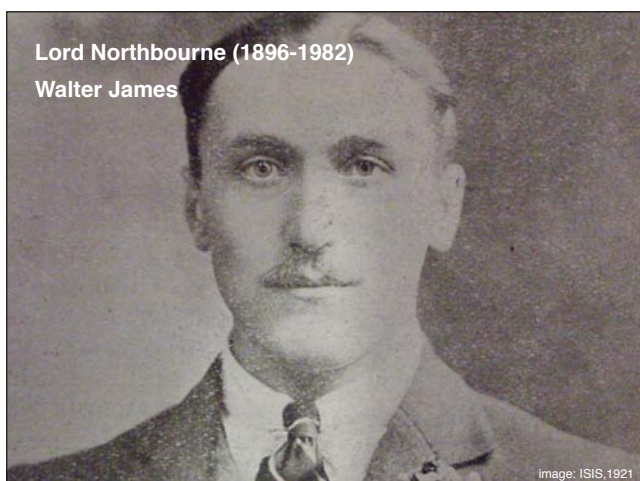
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In the meantime, along with the rise of the Nazis, all books by Rudolf Steiner were banned in Germany. Remember however, that Anthroposophy HQ were in Switzerland - so the work continued.



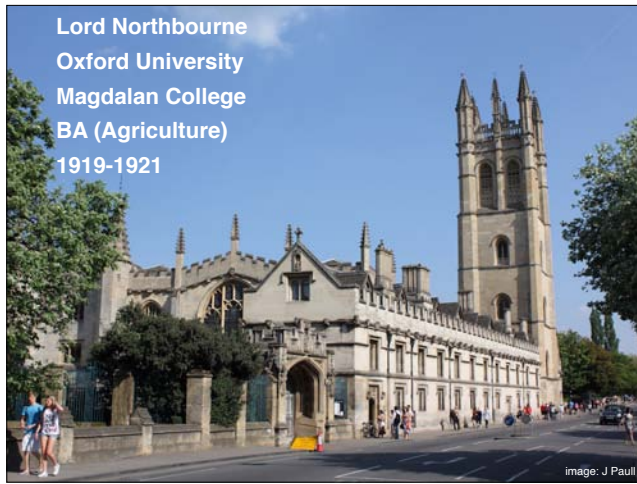
15

This was the public coming out of biodynamics - the publication of Ehrenfried Pfeiffer's 'Biodynamic Farming and Gardening' book in 1938. It was written in German - and published simultaneously in 5 languages.



16

Now let us step back from Pfeiffer, Switzerland and 1938 - to Lord Northbourne, Oxford and 1919. This is a portrait from Northbourne's time at Oxford University - & this is where Kent steps into the frame.



17

Magdalen College (pronounced 'maudlin') was Lord Northbourne's home away from his home in Kent, while he studied agriculture. He was at the time 'Walter James'.



18

Lord Northbourne was a lecturer in agriculture at Oxford University. So you see he is building up credentials for later commentating on agriculture.



19

Lord Northbourne was a Governor, for 40 years, of Wye Agricultural College, Kent. He was the Chairman of Governors for 1/2 that time. He was also a Governor & Chairman of Swanley Horticultural College, Kent.



20

This is an academic procession at Wye. Lord Northbourne is the tall bare-headed central figure beside the Queen mother.



21

So you see that, by the time Pfeiffer’s Biodynamics book appears in 1938, Lord Northbourne is well credentialed to consider it - with a degree in Ag, teaching experience in agriculture @ Oxford University, and as Governor of 2 agriculture colleges, along with practical farming experience.



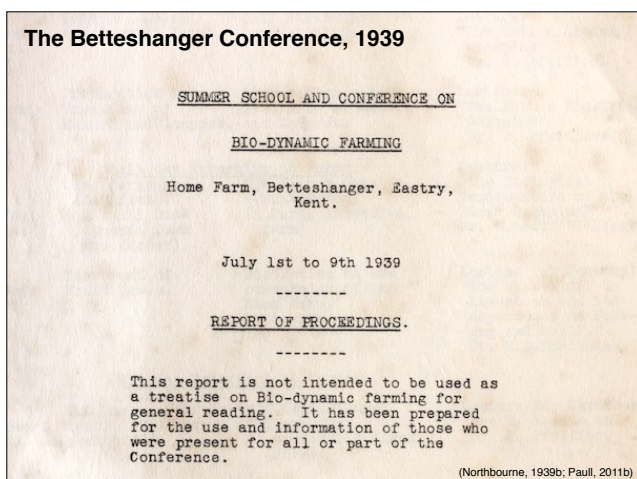
22

Lord Northbourne was impressed by Ehrenfried Pfeiffer and his new book. Northbourne travelled to Switzerland, in January 1939, to convince Pfeiffer to present a Biodynamics conference at Northbourne’s farm in Kent.



23

6 months later, Pfeiffer & colleagues travelled to that conference at Northbourne’s estate in Kent.



24

The Betteshanger Conference was 9 days in the summer of 1939. For this copy of the Proceedings, I thank Mark Moodie. He discovered this copy just a few months ago - thank you Mark.

The Betteshanger Conference, 1939

Saturday, July 1st, 7.30 p.m.

LECTURE BY DR. PFEIFFER
ESSENTIALS OF THE BIO-DYNAMIC METHOD

Summary.

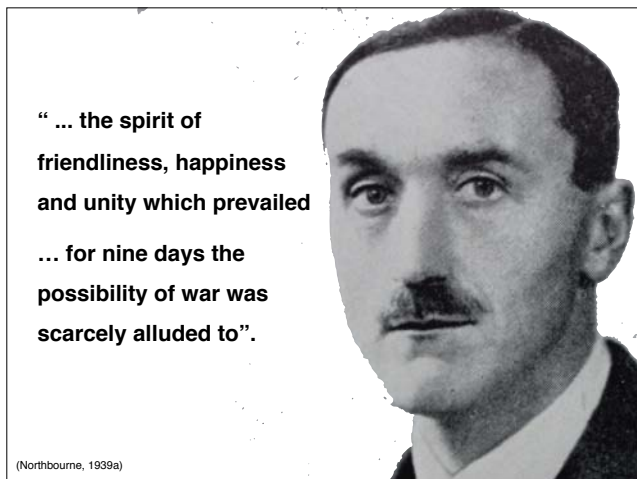
There are two basic questions to be considered. First the soil, its fertility and how it grows plants, second the feeding and health of plants, animals and men.

The soil is not simply mineral, but is a living organism in which there is a collaboration between mineral elements and plants and microscopic organisms. When conditions are favourable for this collaboration the soil is in a state of health.

There are many soil diseases. The final state of disease in a soil is represented by the new wall.

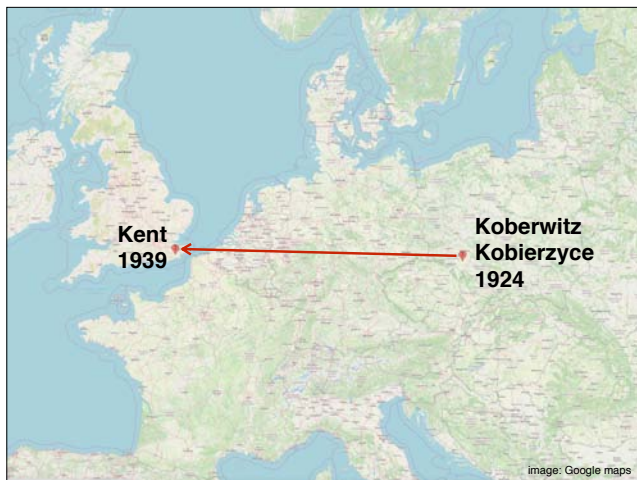
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Ehrenfried Pfeiffer was the star of Northbourne's Biodynamics conference at Betteshanger in the summer of 1939.



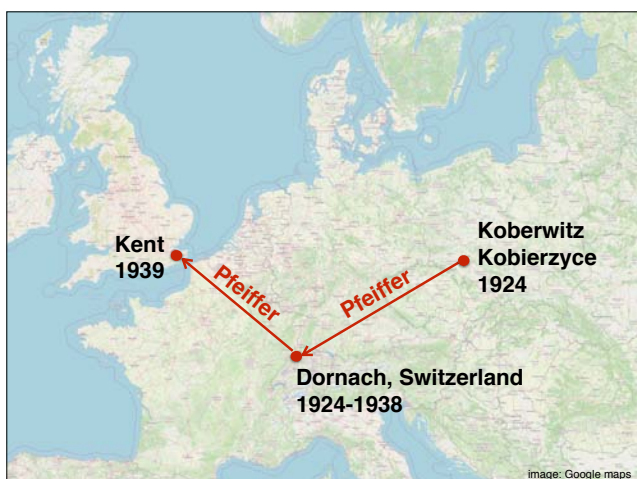
26

Northbourne was delighted with the conference. He wrote of “the spirit of friendliness, happiness and unity which prevailed ... for nine days the possibility of war was scarcely alluded to”.



27

To recap - it is 1939 - the ideas of Rudolf Steiner of 1924 @ Koberwitz have been transported to Kent.



28

In the intervening period, the ideas of Koberwitz were evolved & developed at Dornach, Switzerland, with Ehrenfried Pfeiffer as the custodian & the vector for carrying these biodynamic ideas to Kent in 1939.



29

Then what happened? Germany invaded Poland, 1 September, 1939. 2 days later Britain was at war. Northbourne now has a quandary - he has met this 'nice German bloke with great agriculture ideas' - well the market has just evaporated for telling stories about a 'nice German bloke'.



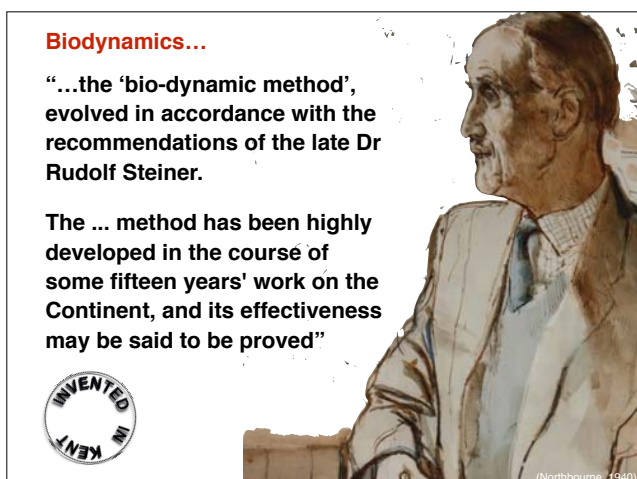
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Northbourne solved his quandary by writing his own book - 'Look to the Land' - published just 10 months after the Betteshanger Biodynamics Conference. It introduced the term 'organic farming' - it was a manifesto of organic farming.



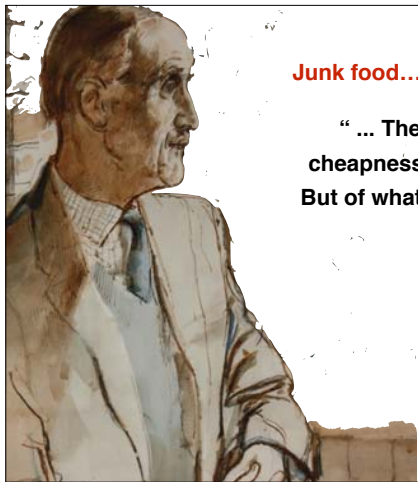
31

This is a self portrait of Northbourne. In his book, 'Look to the Land', Northbourne frames modern agriculture as a contest of ideas - organic farming versus chemical farming.



32

Northbourne pays tribute to Rudolf Steiner & biodynamics: "the 'bio-dynamic method', evolved in accordance with the recommendations of the late Dr Rudolf Steiner. The ... method has been highly developed in the course of some fifteen years' work on the Continent, and its effectiveness may be said to be proved".



Junk food...

“... The delusion is that cheapness leads to plenty. But of what use is plenty of junk food?”

INVENTED IN KENT

(Northbourne, 1940)

33

On junk food, Northbourne comments: “The delusion is that cheapness leads to plenty. But of what use is plenty of junk food?”.

Oneness...

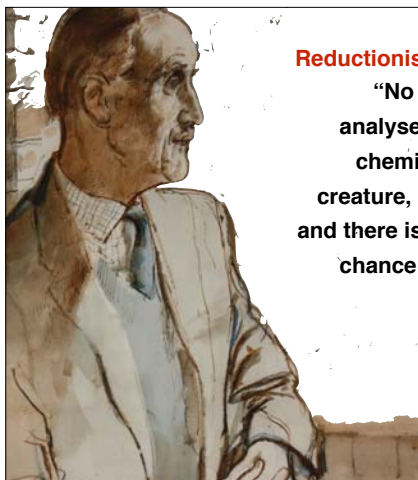
“The interdependence of living creatures ... there is a very real economic and biological linkage, comprehensive and of infinite complexity, between all living creatures in the world”

INVENTED IN KENT

(Northbourne, 1940)

34

On the oneness of life, Northbourne comments: “The interdependence of living creatures ... there is a very real economic and biological linkage, comprehensive and of infinite complexity, between all living creatures in the world”



Reductionism...

“No chemist has ever analysed or described in chemical terms a living creature, however humble; and there is not the slightest chance that he ever will”

INVENTED IN KENT

(Northbourne, 1940)

35

On the reductionism Northbourne comments: “No chemist has ever analysed or described in chemical terms a living creature, however humble; and there is not the slightest chance that he ever will”.

Push back...

“Farming cannot be treated as a mixture of chemistry and cost accountancy ...

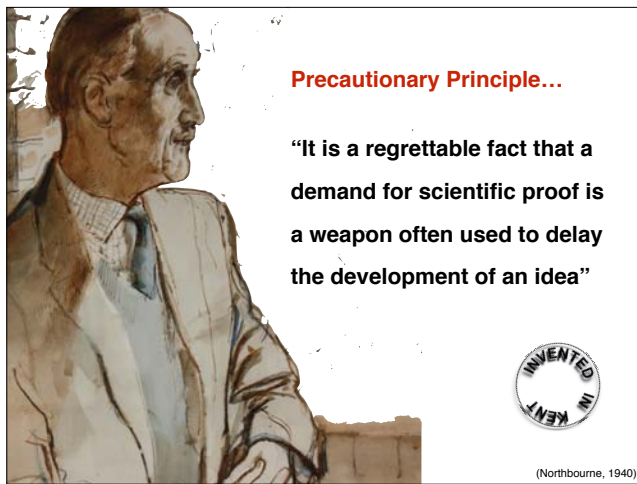
Nature will not be driven. If you try, she hits back slowly, but very hard”

INVENTED IN KENT

(Northbourne, 1940)

36

On chemistry, accounting, and Nature, Northbourne comments: “Farming cannot be treated as a mixture of chemistry and cost accountancy ... Nature will not be driven. If you try, she hits back slowly, but very hard”.



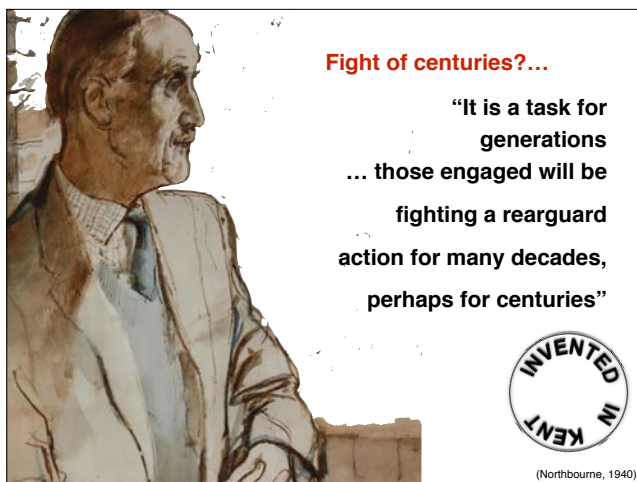
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On the Precautionary Principle, Northbourne comments: "It is a regrettable fact that a demand for scientific proof is a weapon often used to delay the development of an idea".



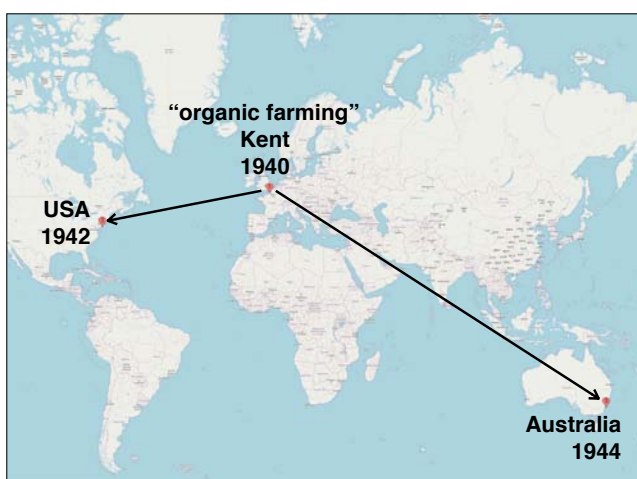
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On conquest & love, Northbourne comments: We have tried to conquer nature by force and by intellect. It now remains for us to try the way of love". It is a remarkable voice given that these words are written in the midst of the maelstrom of WW2.



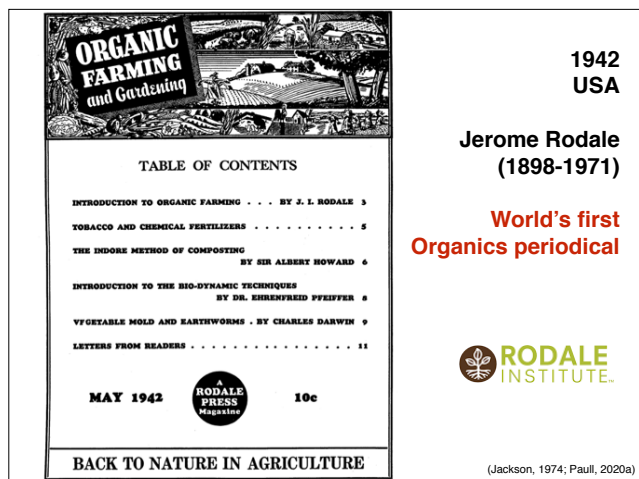
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On the task ahead, for the ascendance of organics, Northbourne comments: "It is a task for generations ... those engaged will be fighting a rearguard action for many decades, perhaps for centuries".



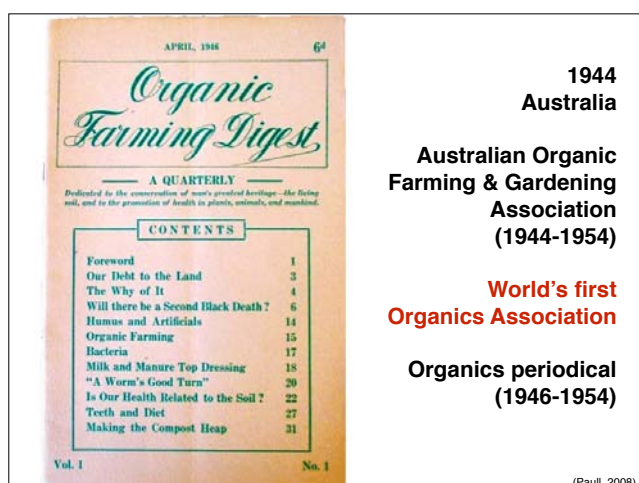
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Northbourne must have wondered about that maxim of Jesus Christ which states that "A prophet is without honour in his own country". Northbourne's ideas were adopted 1st in USA & 2nd in Australia, and only later in the UK.



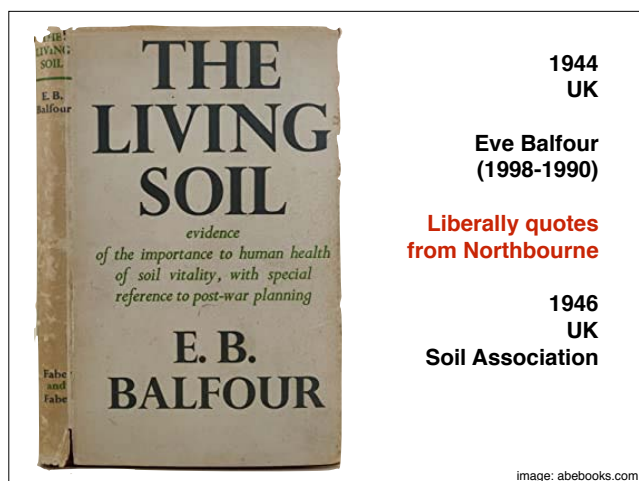
41

In USA, Jerome Rodale, in May 1942, published his periodical 'Organic farming and Gardening'. Rodale was an entrepreneur, a publisher, and a fast adopter of the ideas of others. The Rodale Press continues to the present, as a leading advocate & publisher of Organics.



42

In Australia, in 1944, the Australian Organic Farming & Gardening Society was founded (in Sydney). It is the world's first Organics association. The Society published their Organics periodical 'Organic Farming Digest' (1946-1954).



43

Eve Balfour published 'The Living Soil' in 1944. 8 pages of her 1st chapter are a long long quote from Northbourne's book. Balfour missed the key point that Steiner & Pfeiffer & Northbourne called for a differentiated agriculture & that 'organic agriculture' was the framing and naming of that idea that would circle the world.



44

The terminology of Organics & the philosophy & practice of Organics is now an international phenomenon. Here we see Organics promoted in a supermarket in Shanghai, China.

Organic Agriculture

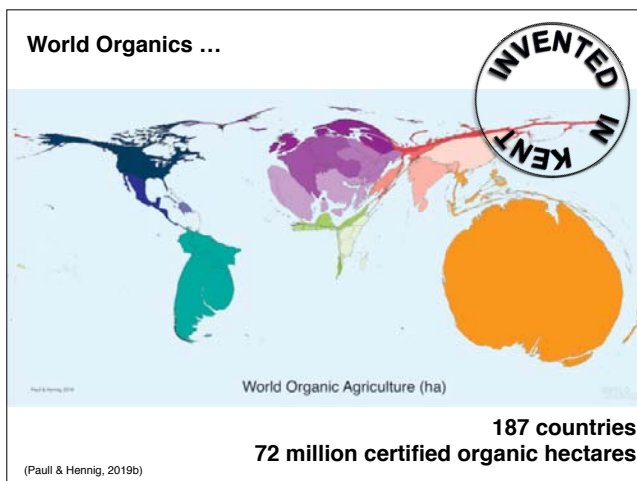
5 exclusions...

- synthetic fertilisers
- synthetic pesticides
- GMOs
- engineered nanoparticles
- irradiation

(Paull, 2020a)

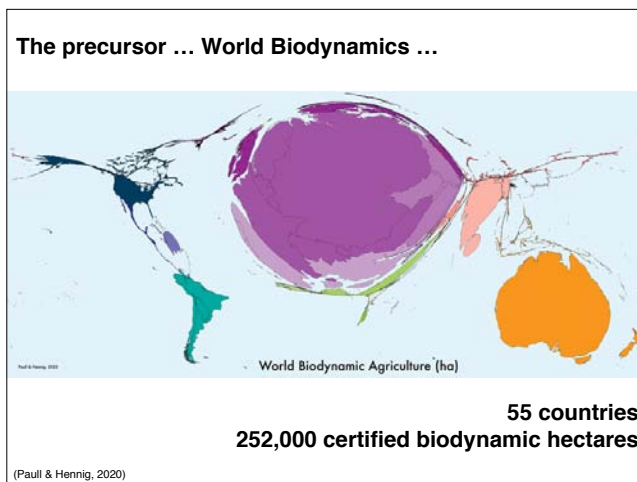
45

Organic agriculture has evolved with 5 exclusions: synthetic fertilisers; synthetic pesticides; GMOs; engineered nanoparticles; and irradiation.



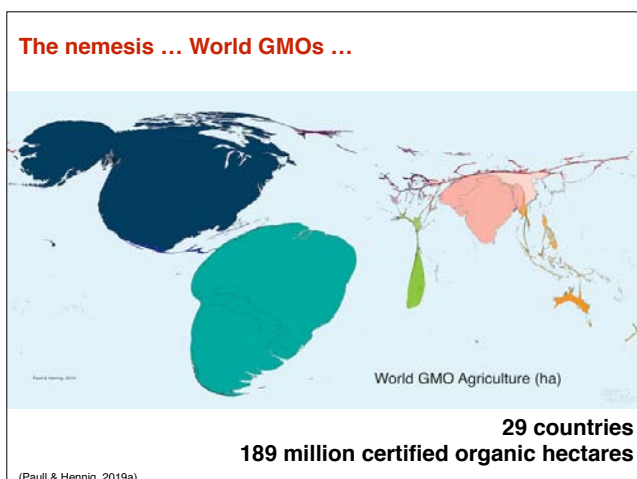
46

This is a density equalising map - a cartogram of the world of organic agriculture. We have resized countries according to how many certified organic hectares that they report. Where a country is bigger than you might expect, it means it is doing better than average. So you see that Australia is in a dominant position & UK is better than average.



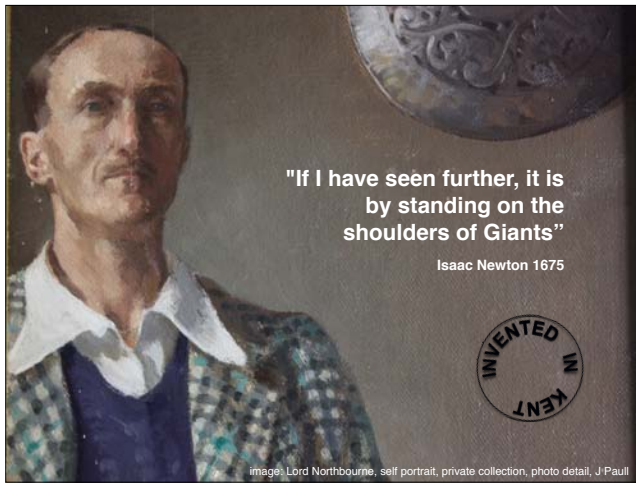
47

Here is a companion map for Biodynamics. You see that Germany is dominant, Australia & Britain are doing OK - above average.



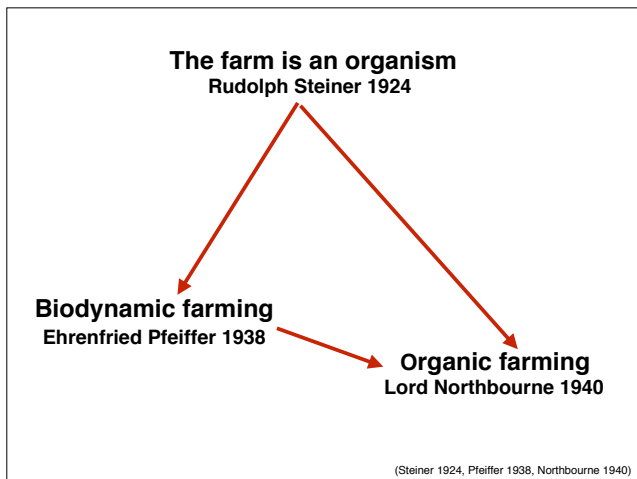
48

The nemesis of Organics is genetically modified organisms - GM farming. Here is the comparable map for GMOs. North & South America dominate the GMO world map, while Australia, Britain & Europe are under-represented - many consumers are happy about that.



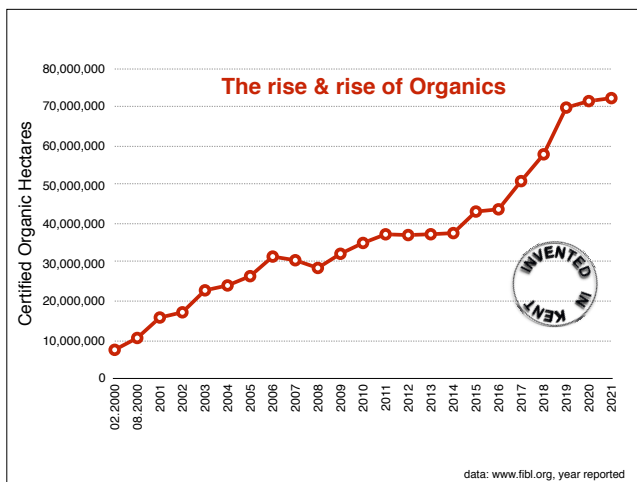
49

This is a self-portrait of Lord Northbourne. Isaac Newton wrote that "If I have seen further, it is by standing on the shoulders of Giants" The giant shoulders that Northbourne stood on were those of Rudolf Steiner & Ehrenfried Pfeiffer.



50

In summary, Rudolf Steiner proposed that 'the farm is an organism' at Koberwitz in 1924. Ehrenfried Pfeiffer developed Steiner's ideas and published his 'Biodynamic Farming' book in 1938 - and presented at the Betteshanger Conference in 1939 at Northbourne's estate in Kent. From this stream of ideas, Lord Northbourne evolved 'organic farming'.



51

Here is a timeline of the development of organic agriculture over the past 20 years - growing from an idea formulated by Lord Northbourne in Kent 80 years ago.



52

So, congratulations Lord Northbourne & congratulations Kent for hosting that crucial conference of 1939.

Questions...

Organic Agriculture



Dr John Paull
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Kent Maps Symposium
5-6 May 2021
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53

Thank you.
Questions are welcome

Abstract

Dr John Paull. "When Kent invented Organic Farming."

Kent was ground-zero for the concept of organic farming. Amidst the pandemonium of World War II, Kent farmer and estate owner, Lord Northbourne (Walter James) (1896-1982) published 'Look to the Land' (30 May, 1940). The book introduced to the world, the term 'organic farming' along with the philosophy and rationale of practice. Northbourne's terminology and philosophy were rapidly adopted and championed globally, notably in the USA by the publishing entrepreneur Jerome Rodale (1898-1971) and in Australia by the grazier Colonel Harold (Bill) White (1883-1971). Organic agriculture is now a worldwide phenomenon which is reported from 186 countries, and globally accounts for 71 million hectares of farmland and GBP86 billion of retail sales per annum. A multinational sequence of events led to Northbourne's 1940 manifesto of organic agriculture. In 1924 the Austrian New Age philosopher Rudolf Steiner (1861-1925) presented his Agriculture Course at Koberwitz (now Poland). In 1938 the German chemist and acolyte of Steiner, Ehrenfried Pfeiffer (1899-1961), working in Switzerland, published his 'Biodynamic Farming and Gardening'. Northbourne was keen to introduce these ideas to a British audience. He visited Pfeiffer in Switzerland in January 1939 to recruit him to present a conference on Biodynamics at Northbourne's farm in Kent. The outcome was the Betteshanger Biodynamics Conference (1-9 July, 1939), with lecturers from Switzerland and Holland, and attendees from Britain and New Zealand. Northbourne recalled "the spirit of friendliness, happiness and unity which prevailed ... for nine days the possibility of war was scarcely alluded to; things more real and more constructive absorbed attention". With the outbreak of war (1 September, 1939), the appetite of the British public for Germanic ideas was extinguished. Northbourne's response was to create his manifesto of organic agriculture where he pitted a contest between "organic and chemical farming". He stripped out the esoterica and arcane Anthroposophical language of Steiner and Pfeiffer's biodynamics and presented a compelling case for what he termed 'organic agriculture'. Northbourne was described by a colleague as "a man of great vision, decisiveness, quiet humour and kindly authority ... who brought to every facet of his widely ranging life a rare sense of harmony and balanced purpose ... he was a widely read man of very considerable scholarship with deep philosophical understanding". Northbourne's agricultural ideas have stood the test of time.

54

References

- Charles, D. (2005). *Master Mind: The rise and fall of Fritz Haber, the Nobel laureate who launched the age of chemical warfare*. New York: Ecco, HarperCollins Publishers.
- Cooper, C. E. (1982). *Behind the Lines, One Woman's War 1914-18: The letters of Caroline Ethel Cooper*. (Editor: Decie Denholm). Sydney: Collins.
- Freemantle, M. (2015). *The Chemists' War 1914-1918*. Cambridge, UK: Royal Society of Chemistry.
- Haber, F. (1920). *The Synthesis of Ammonia from its Elements*. *Nobel Lectures, Chemistry 1901-1921* (1966 ed., pp. 326-340). Amsterdam, Netherlands: Elsevier Publishing.
- ISIS: (1921). ISIS list: W.E.C. James (Magdalen) (President, O.U.B.C., 1920-1921). *The Isis*(55), 3.
- Jackson, C. (1974). J. I. Rodale: Apostle of Nonconformity. New York: Pyramid Books.
- Northbourne, Lord. (1939a). The Betteshanger Summer School. *News Sheet of the Bio-Dynamic Method of Agriculture*, 9, 8-11.
- Northbourne, Lord. (1939b). Report of Proceedings - Summer School and Conference on Bio-Dynamic Farming: Home Farm, Betteshanger, Easby, Kent. Betteshanger: Summer School and Conference on Bio-Dynamic Farming.
- Northbourne, Lord. (1940). *Look to the Land*. London: Dent.
- Paull, J. (2008). The lost history of organic farming in Australia. *Journal of Organic Systems*, 3(2), 2-17.
- Paull, J. (2011a). Attending the first organic agriculture course: Rudolf Steiner's Agriculture Course at Koberwitz, 1924. *European Journal of Social Sciences*, 2(1), 64-70.
- Paull, J. (2011b). The Betteshanger Summer School: Missing link between biodynamic agriculture and organic farming. *Journal of Organic Systems*, 6(2), 13-26.
- Paull, J. (2011c). The secrets of Koberwitz: The diffusion of Rudolf Steiner's Agriculture Course and the founding of Biodynamic Agriculture. *Journal of Social Research & Policy*, 2(1), 19-29.
- Paull, J. (2014a). Ernesto Geronzi: Australia's pioneer of biodynamic agriculture. *Journal of Organics*, 1(1), 57-61.
- Paull, J. (2014b). Lord Northbourne, the man who invented organic farming, a biography. *Journal of Organic Systems*, 8(1), 31-53.
- Paull, J. (2018). Did art by Western Front soldier predict the Russian Revolution? The secret history of the 'Guerra Alla Guerra' peace postcards. *Journal of Fine Arts*, 1(4), 23-30.
- Paull, J. (2020a). Organic food and agriculture. In M. Gibson (Ed.), *Food and Society* (pp. 179-199). London: Academic Press.
- Paull, J. (2020b). Rudolf Steiner and Anthroposophy: Encounters of our Spy in Leipzig, Germany, during WWI. *Journal of Bio-Dynamics Tasmania*, 136, 34-41.
- Paull, J., & Hennig, B. (2019a). New world map of genetically modified organism (GMO) agriculture: North and South America is 85%. *Acres Australia*, 101, 59-60.
- Paull, J., & Hennig, B. (2019b). New world map of organic agriculture: Australia is 51%. *Acres Australia*, 101, 35-36.
- Paull, J., & Hennig, B. (2020). A World Map of Biodynamic Agriculture. *Agricultural and Biological Sciences Journal*, 6(2), 114-119.
- Pfeiffer, E. (1938). *Biodynamic Farming and Gardening: Soil Fertility Renewal and Preservation* (F. Heckel, Trans.). New York: Anthroposophic Press.
- Steiner, R. (1924). *Agriculture Course* (1929, first English language edition; trans George Kaufmann). Dornach, Switzerland: Goetheanum.

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References

- Charles, D. (2005). *Master Mind: The rise and fall of Fritz Haber, the Nobel laureate who launched the age of chemical warfare*. New York: Ecco, HarperCollins Publishers.
- Cooper, C. E. (1982). *Behind the Lines, One Woman's War 1914-18: The letters of Caroline Ethel Cooper*. (Editor: Decie Denholm). Sydney: Collins.
- Freemantle, M. (2015). *The Chemists' War 1914-1918*. Cambridge, UK: Royal Society of Chemistry.
- Haber, F. (1920). The Synthesis of Ammonia from its Elements *Nobel Lectures, Chemistry 1901-1921* (1966 ed., pp. 326-340). Amsterdam, Netherlands: Elsevier Publishing.
- ISIS. (1921). ISIS Idol: W.E.C. James (Magdalen) (President, O.U.B.C., 1920-1921). *The Isis*(556), 3.
- Jackson, C. (1974). J. I. Rodale: Apostle of Nonconformity. New York: Pyramid Books.
- Northbourne, Lord. (1939a). The Betteshanger Summer School. *News Sheet of the Bio-Dynamic Method of Agriculture*, 9, 8-11.
- Northbourne, Lord. (1939b). Report of Proceedings - Summer School and Conference on Bio-Dynamic Farming: Home Farm, Betteshanger, Eastry, Kent. Betteshanger: Summer School and Conference on Bio-Dynamic Farming.
- Northbourne, Lord. (1940). *Look to the Land*. London: Dent.
- Paull, J. (2008). The lost history of organic farming in Australia. *Journal of Organic Systems*, 3(2), 2-17.
- Paull, J. (2011a). Attending the first organic agriculture course: Rudolf Steiner's Agriculture Course at Koberwitz, 1924. *European Journal of Social Sciences*, 21(1), 64-70.
- Paull, J. (2011b). The Betteshanger Summer School: Missing link between biodynamic agriculture and organic farming. *Journal of Organic Systems*, 6(2), 13-26.
- Paull, J. (2011c). The secrets of Koberwitz: The diffusion of Rudolf Steiner's Agriculture Course and the founding of Biodynamic Agriculture. *Journal of Social Research & Policy*, 2(1), 19-29.
- Paull, J. (2014a). Ernesto Genoni: Australia's pioneer of biodynamic agriculture. *Journal of Organics*, 1(1), 57-81.
- Paull, J. (2014b). Lord Northbourne, the man who invented organic farming, a biography. *Journal of Organic Systems*, 9(1), 31-53.
- Paull, J. (2018). Did art by Western Front soldier predict the Russian Revolution? The secret history of the 'Guerra Alla Guerra' peace postcards. *Journal of Fine Arts*, 1(4), 23-30.
- Paull, J. (2020a). Organic food and agriculture. In M. Gibson (Ed.), *Food and Society* (pp. 179-199). London: Academic Press.
- Paull, J. (2020b). Rudolf Steiner and Anthroposophy: Encounters of our Spy in Leipzig, Germany, during WW1. *Journal of Bio-Dynamics Tasmania*, 136, 34-41.
- Paull, J., & Hennig, B. (2019a). New world map of genetically modified organism (GMO) agriculture: North and South America is 85%. *Acres Australia*, 101, 59-60.
- Paull, J., & Hennig, B. (2019b). New world map of organic agriculture: Australia is 51%. *Acres Australia*, 101, 35-36.
- Paull, J., & Hennig, B. (2020). A World Map of Biodynamic Agriculture. *Agricultural and Biological Sciences journal*, 6(2), 114-119.
- Pfeiffer, E. (1938). *Bio-Dynamic Farming and Gardening: Soil Fertility Renewal and Preservation* (F. Heckel, Trans.). New York: Anthroposophic Press.
- Steiner, R. (1924). *Agriculture Course*. (1929, first English language edition; trans George Kaufmann). Dornach, Switzerland: Goetheanum.