

SEED MATTER

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[2010-2013]

Introduction

The Seed Matter project began in 2010 and exists as a series of research-based exhibitions that include: 'Other Stories' at The Butler Gallery, Kilkenny, (2011); 'Living Fields' at the Leitrim Sculpture Centre, (2012), and 'Seed Matter' at The Limerick City Gallery of Art (2013), where this pamphlet was launched. I have utilized the 'historical pamphlet' as the basis for the design and content of this work because of its association with 'rogue literature' that created an alternative space for public debate. Such a space, Bruno Latour has variously described as 'voices of the collective' or the 'alting' of universal citizens. This temporary space and/or event can potentially host 'matters of concern' which Latour discusses in his article titled 'From Realpolitik to Dingpolitik' [Bruno Latour & Peter Weibel 'Things Public Atmospheres of Democracy', 2004]. In taking up Latours' ideas, I am interested in how artists can develop work in a collaborative context, transcending notions of representation for the production of a series of possible events or gatherings in various forms such as this pamphlet and exhibition. Within the work the notion of 'connection' is very much tied into the process of 'making' whereby the artist is not just connecting things (materials, ideas or both) as an individual but making things as a collective practice. The 'thing' implies not just the materiality of a site or its 'thingness' but also relates to a gathering process whereby, people can meet, talk, make and share. In using the event as a connective process, the pamphlet and exhibition work together in assembling a wide range of responses from people concerned with current debates on food sovereignty, seed culture, land use and community gardening. The following is a record of these exchanges in an attempt to connect common 'matters of concern' across diverse experiences of bio-culture.

Christine Mackey, 2013

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Roland von Bothmer

In 2010, I visited the Svaldbard Global Seed Vault - located 78 degrees North on the Norwegian island of Spitsbergen near the town of Longyearbyen in the remote Arctic Svaldbard archipelago. The Svaldbard Global Seed Vault was started by Cary Fowler in conjunction with the Consultative Group on International Agricultural Research (CGIAR). The facility preserves a wide variety of plant seeds in an underground cavern, which are duplicate samples, or spare copies, of seeds held in gene banks worldwide. I secured visiting rights through Professor Roland von Bothmer who works as public relations officer for NordGen. Roland oversees the management of international visits to the Seed Vault.



CM How does a country develop a seed collection?

RVB The history of a seed bank is essential the history of a country. What I mean by that is a country's collection evolves quite differently and this may have happened because of individual researchers or farmers, seed companies and plant breeders including university departments who are all engaged with biological material. Material is extracted from various sources and in the beginning there were a lot of collecting missions established through out the world. For example, the oldest seed bank in the world is in Russia, set up by Nikolai Vavilov - one of the most important scientific key figures in terms of agriculture.

CM When were they set up?

RVB It depends on the country. Each country has its own specific historical lineage of when and how seed banks were established and how raw material was collected through various research programmes. There are still ongoing collecting missions and I think that is very important to maintain.

CM Where or from whom are seeds collected?

RVB Anywhere, for example there is a lot of valuable material coming out of seed companies. It has being going on for at least 150 years. They work in terms of making new gene combinations, developing new varieties of plants and resistance seeds, you name it - the seed companies are doing fantastic work over the years.

CM How do you manage to conserve plants that do not produce seed?

RVB For those plants, you need to keep them alive. You have all sorts of fruits and berries, root crops and others that do not produce seeds that need to be cared for and maintained.

CM Is the role of the seed vault to collect diverse material world-wide?

RVB Biodiversity is an important aspect of the gene-bank and it is not just about the preservation of material but also the utilization of this material by the global community. The vault is not just a space for the conservation of seeds. Its aim is the preservation of live material so that the more you know about the material, the more you can utilize the material. New knowledge is generated and developed for future use. We regard the material as an active collection.

CM I was struck by the range of international visitors visiting the vault and wondered afterwards if the seed vault engages with politicians and in particular policy makers in relation to the cultural value of living material?

RVB This is a really important aspect of my work for the seed bank and it is the mission of the Global Crop Diversity Trust to tell the whole story about seeds and their value to society as a whole. The vault as a physical entity is 'of course' of interest to people. There is no doubt - it was a huge engineering project to undertake in Svalbard which attracts many people to visit the site. However, this is not just a stamp collection - it is a living collection utilized by the scientific community, including breeders and seed companies. Therefore, it is important that there is no contradiction between conservation and preservation. Policy makers need to be knowledgeable and informed because they are the ones who ultimately change policy and guide the politician.

CM Are we at a pivotal change in terms of food production and agricultural practices?

RVB For sure, we must go in another direction and work harder for sustainability. If the population keeps increasing we need new methods of farming and this has to include large scale industrial farmers.

This does not mean that the small farmer has no role to play, they are equally important, its just we cannot depend on them to meet the challenge of feeding the world – we need both.

CM Is it about long-term sustainable practices regardless of what the specialization is that should be the goal?

RVB Yes and what I do not understand about politicians is why they cannot come up with a real mission for world politics. What we need is a real visionary willing to take risks, acknowledge the problems and do something about it.

CM An obvious concern is that multi-nationals have taken over the business of agricultural practice?

RVB I don't agree, multi-nationals play a role. They are involved with both industrial countries and developing countries.

CM Is there a difference between a political and eco-system and if so how can we reconcile and bring these systems together to work more efficiently?

RVB There is an awareness of ecology and yes it has been integrated into the political system. But it is difficult to handle because in some ways, it is an abstract concept.

CM Sustainability is a difficult and somewhat over-used concept to grasp - what do you mean by it?

RVB This is a system that does not erode its natural resources but it is so complicated not to do but we can achieve it long term - if we integrate and use a variety of methods from the small-scale farmer right up to industrial farming practices, including technology and GMO. Lets be clear - GMO is not solving problems no way but it is one technology of many others 'if used with caution' should be operational.

CM You mentioned in previous conversations about plants having a soul - could you elaborate on this idea?

RvB I think plants have a soul 'man of course' can certainly not understand it. We are all part of the one biological system and the plants, although constructed if I may say so, evolve quite different from other biological systems and basically I think that is why we have difficulty understanding what is going on in the plants.

CM Is a question then on how we define a living system?

RvB Now we are talking like we are God! We are in a situation now where we cannot simply understand what is going on in the planet. We are really at the early stages of research, therefore how can we possibly understand everything that is going on in the world. I am not saying it is impossible.

CM Can you assign equal rights to animals and plants?

RvB It depends on how you can communicate with them. With animal's you can communicate with them on various levels through touch for example and there reaction is immediate - but with plants, you do not know how they communicate or what constitutes there physical reactions externally?

CM Do you think organic farming is a capitalist invention?

RvB There are different groups in different countries coming up with different concepts - you do it this or that way. For me, what is imperative is that you get the whole agricultural community working towards the same model of practice - sustainability and not categorizing something organic for example. We are 6 billion people today and 9 billion projected for the year 2050, we have to increase food production by 75%. The problem facing the agricultural business is - how do we do it?





The Seed Ambassadors Project

The Seed Ambassadors are Sarah Kleeger and Andrew Still, 'devoted seed labourers' who have travelled Europe and further afield visiting and making contact with a range of community based farming and seed saving organizations. In 2011, I made contact with them to ask about their journey to the Vavilov Institute (VIR), located in St. Petersburg, Russia. VIR operates 12 research stations around Russia, hosting one of the largest gene banks in the world and is widely known as the 'Centre of Plant Genetic Resources'. The following images and text 'furnished by' Sarah and Andrew documents their visit and the people they encountered.



photo credit: Sarah Kleegar & Andrew Still,
'Vavilov Institute' with Sergy Alexanian [above]
'political prisoner Nickolas Vavilov', [right] 'Pea
curator Vavilov Institute' [left].

Nikolai I. Vavilov [1887-1943] was a prominent Russian and Soviet botanist and geneticist best known for having identified the 'centres of origin' of cultivated plants. This is the idea that; "agriculture developed independently in different parts of the world, and that these agricultural civilizations could evolve only under conditions of considerable isolation from the rest of the world. Vavilov demonstrated that in each of the centres of origin, an agricultural

civilization developed on the basis of the plants native to the given area only, that is, they developed there independently and were not adopted from any other centre. This theory was discovered “at the tip of a pen” that is, purely theoretically. As a logical consequence, the scientist decided to send out expeditions to these centres in order to collect a large number of species and strains from them for replenishing his collection and to be able to prove his basic hypothesis. For this purpose he himself visited five continents.” [from the 1997 English edition of Five Continents, Vavilov’s journals of expeditions he made between 1916 and 1940]. Vavilov organized and participated in significant home and international scientific meetings and congresses on botany, genetics and plant breeding, agricultural economy, and the history of science. Vavilov, the symbol of glory of the national science, is at the same time the symbol of its tragedy. As early as in the beginning of the 1930s his scientific programs were being deprived of governmental support. In the stifling atmosphere of a totalitarian state, the institute headed by Vavilov turned into a resistance point to the pseudo-scientific concepts of Trofim D. Lysenko. As a result of this controversy, Vavilov was arrested in August 1940, and his closest associates were also sacked and imprisoned. He died of starvation in the Saratov prison on the 26 January 1943, buried in a common prison grave. Nevertheless, his followers have preserved the memory of Vavilov. During that tragic period they kept on gathering Vavilov’s manuscripts, documents and pictures. Since mid-50s, after the official rehabilitation of Vavilov, hundreds of books and articles devoted to his life and scientific accomplishments have been published.

credit source: <http://vir.nw.ru/history/vavilov.htm>
 & <http://seedambassadors.org>.

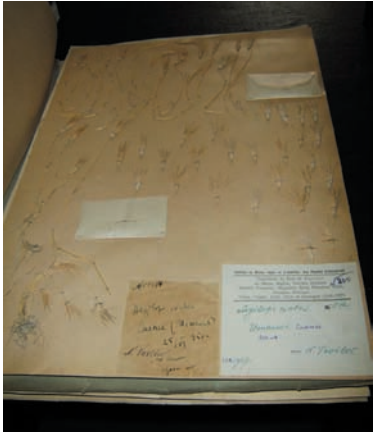
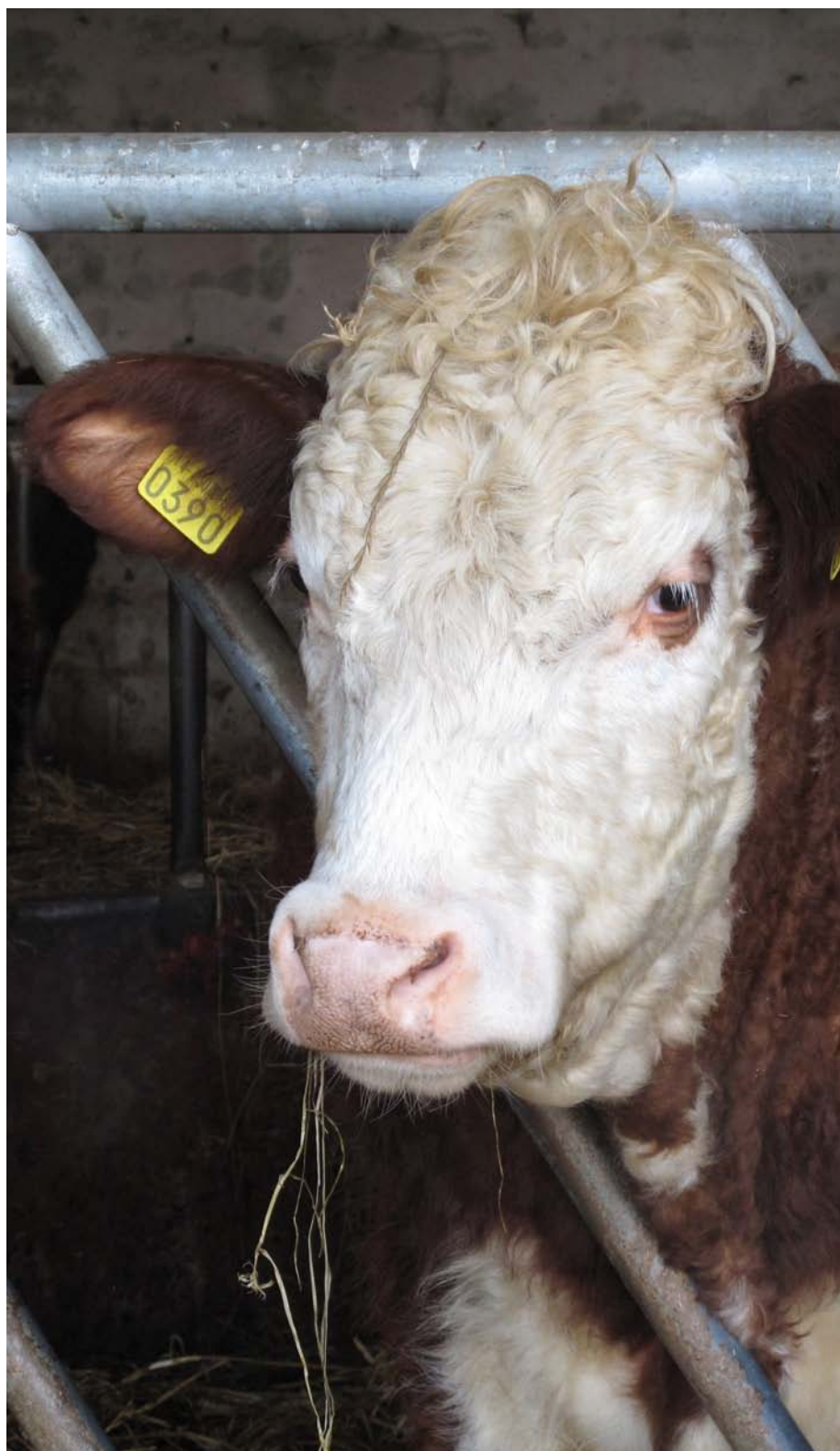




photo credit: Sarah Kleegar & Andrew Still
'Vavilov Institute' with Sergy Alexanian [above] Andrew Still, [below] standing outside the Vavilov Institute', Russia.

Madeline McKeever

In February 2012, I visited Madeline McKeever on her farm in West Cork which she runs with her partner Mike Sweeney BROWN ENVELOPE SEEDS. This unique institution of combined farming practices with an emphasis on growing vegetables and herbs premised on the seasonal activity of harvesting, collecting and saving seeds - locally. Unlike mass-produced seed producers, these seeds are germinated and tested on-site, certified organic and open-pollinated. Most open-pollinated seeds are grown under natural conditions resulting in plants that are varied and adaptable to climatic and soil conditions. The following text is a condensed extract from our conversation.



CM How did you get involved with seed saving, and why did you start saving seeds - what were the motivations behind these practices for you?

MM It was a number of coincidences in a way. I went to America in the 1980's in the last recession – like most of the people of my age working as an apprentice for an organic farm in Maine. I met people who worked in Johnnies Seed Company; a relatively small seed company. I was taken on a tour of the seed company where they were harvesting seeds and I was blown away by their work. Having come from Ireland of the 1980's 'where a courgette was fairly exotic' to see the huge amount of diversity of crops that they were growing there especially all of the things that we didn't know about – winter squash, peppers, cucumbers etc. A salad in Ireland back then was a hardboiled egg, a lettuce, and a tomato, and maybe a tin of Russian salad which was very exotic then. There was such a massive diversity of vegetables that people were growing in there gardens and then to see the seed company, where they were also growing crops like quinone and amaranth and it kind of stayed with me. Although we came back to Ireland, where we were milking cows and being fairly ordinary farmers. However, it seemed like no matter what you did on the farm here you could not make money. You could make a little bit of money out of a few chickens or a few pigs but it really was not very economical, so you ended up in cattle and even that wasn't making much money. When I was on farm assistance, I got a chance to do a computer course on FAS while selling some vegetables on the country market. But generating a viable 'family' income became harder and harder as time went by.

CM So you had always been involved in farming and growing vegetables for yourselves as well as a business?

MM Yes, I have always grown vegetables since I was 10 in fact on the family farm.

CM Were you saving seeds at that stage?

MM No.

CM Was there anybody in Ireland?

MM Before the seed-savers in Clare, I don't know. I suppose there were some old fellas doing it. There is a guy in his 90's who lives near here and he comes down to our open day and to some events that we hold throughout the year on our farm he has always saved his own peas, turnip seeds and things like that. So there are old guys who never stop doing it, although sadly many of them are dying out.

CM Why were people saving seeds?

MM People did it because it was economical to save seeds. It would have been quite a big expense on a small farm to buy in seeds.

CM I grew up in a farming community and it never clicked with me where the seeds came from or even the idea of saving seeds back then.

MM Seed packets!

CM When did you officially begin the Seed Catalogue for Brown Envelope Seeds?

MM The first catalogue was produced by me in 2004 and contained 25 varieties. Since then, the number of varieties produced by Brown Envelope Seeds and the volume of seed has increased every year.

CM Is it a one-women system or is there other people involved?

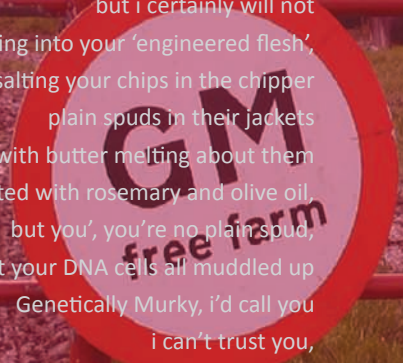
MM Mike Sweeney became part of the business in 2008. The seeds that we save on the farm are certified organic by the Organic Trust Ltd. www.brownenvelopeseeds.com

Kerr Pink

Kerr Pink is a member of 'Food for Thought', a developmental and educational group who organizes events that are primarily about highlighting different issues around the topic of food sovereignty and land use. 'Food for Thought' is informed by the concept of 'Food Sovereignty' introduced by 'Via Campesina'. This international movement defends small-scale sustainable agriculture as a way to promote social justice and dignity. It strongly opposes corporate driven agriculture and transnational companies that are destroying people and nature. In September of this year [2012], the Irish government sanctioned the agricultural development body 'Teagasc' to plant GM potato plants in Oak Park, Co. Carlow, amidst concerns that it would damage our national economy by destroying Ireland's status as a GMO-free crop zone. Kerr Pink has been actively writing poems in opposition to this and other issues related above.

GM SPUD i do not love you

GM SPUD i do not love you
i am so not in love with you
gm spud,
you break my heart
you rancorous tumescent tuber,
you might make some-one's tummy sick
but not mine,
oh i grind my teeth
when i think of you,
but i certainly will not
be biting into your 'engineered flesh',
or salting your chips in the chipper
plain spuds in their jackets
with butter melting about them
or plain spuds roasted with rosemary and olive oil,
but you', you're no plain spud,
you've got your DNA cells all muddled up
Genetically Murky, i'd call you
i can't trust you,
for i don't know who you are?
Still,
though i can't say you are upper class either
i shall just have to not associate with you
'you are not invited to dinner
'you can leave your jacket on
and i won't be taking you out
of the ground
except to kill you.



Betty Geelan

Maureen Harrison is an avid gardener in the County of Sligo with her husband Chris and son Joseph. In the past, Maureen had received 'heritage' seeds from Betty Geelan and knew I would be interested in hearing Betty's story about her seed saving activities. Maureen was aware that I was trying to record stories from people who saved their own seeds. The following letter from Betty describes her seed-saving work as passed down to her by her father and continued in the same vein by herself.

PURPLE CABBAGE

MAY HAVE ALSO
BEEN CALLED
'RAGGY JACK'

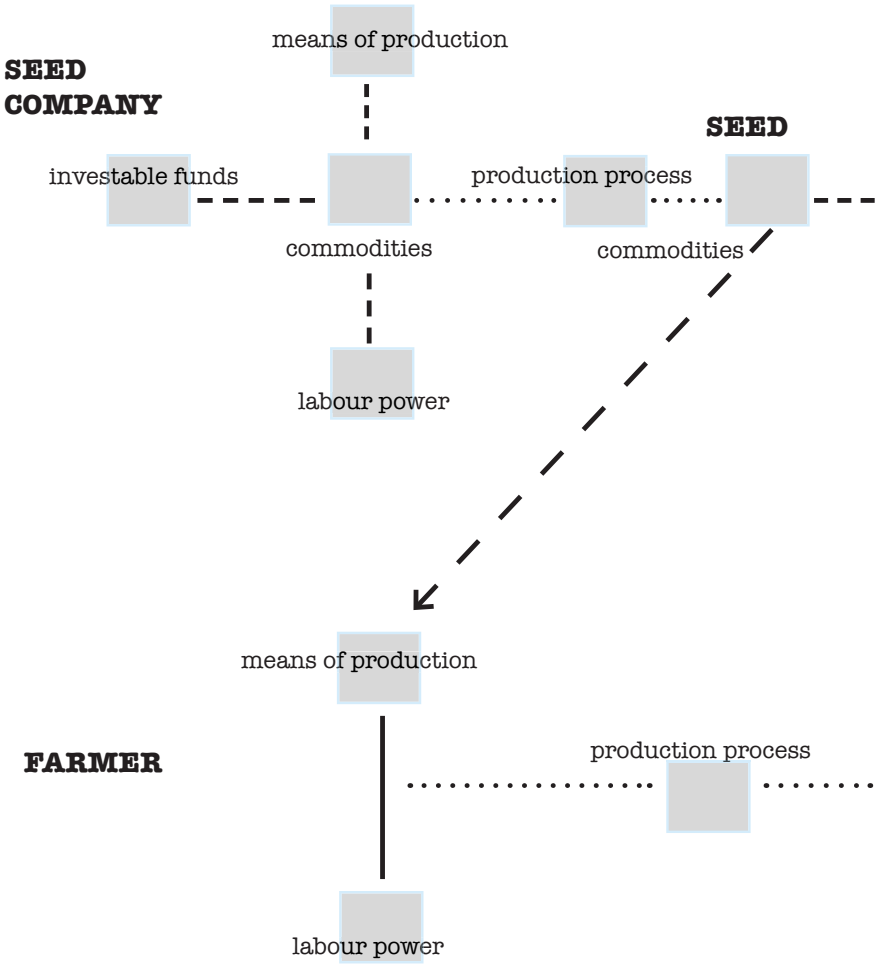
. ∞ .

This cabbage has been grown by my parents since the early 60's. I don't know if it was common to this area or if my father brought it from Offaly where we lived for a few years. It was grown by a few people there but was not very common as I contacted a family friend who verified this.

It is a delicious dark green cabbage which doesn't head. The stems are a purple colour hence its name. It will grow anywhere but, like most vegetables, when grown in good soil will provide a much better harvest. It cooks very quickly and the water which it is boiled in, preferably without salt, provides a nutritious drink when cold.

My parents used to sow the seeds in early summer and then transplant the young plants in early Autumn to harvest the following Spring. As a result, I always believed it was an early Spring cabbage but to my surprise last year seeds, that had been accidentally scattered in a field, provided a fine harvest over the Summer, Spring and up to the present time (early June) where it has gone to seed. Once the yellow flowers, which appear at the end of the growing period, begin to fade, the seed pods form. It was the careful collection of these seeds which enabled this cabbage to be preserved over the years.

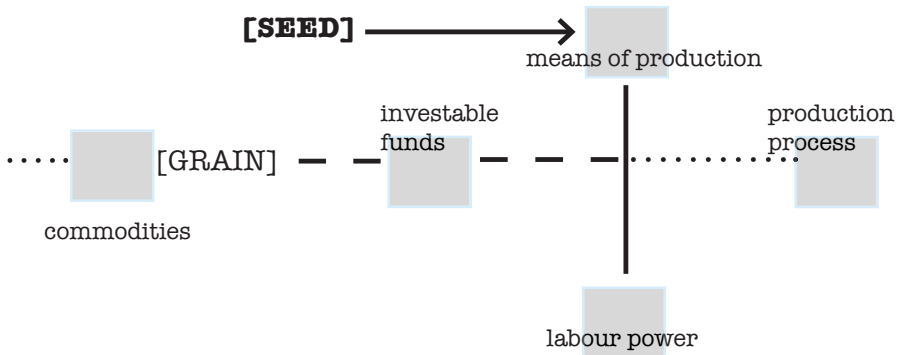
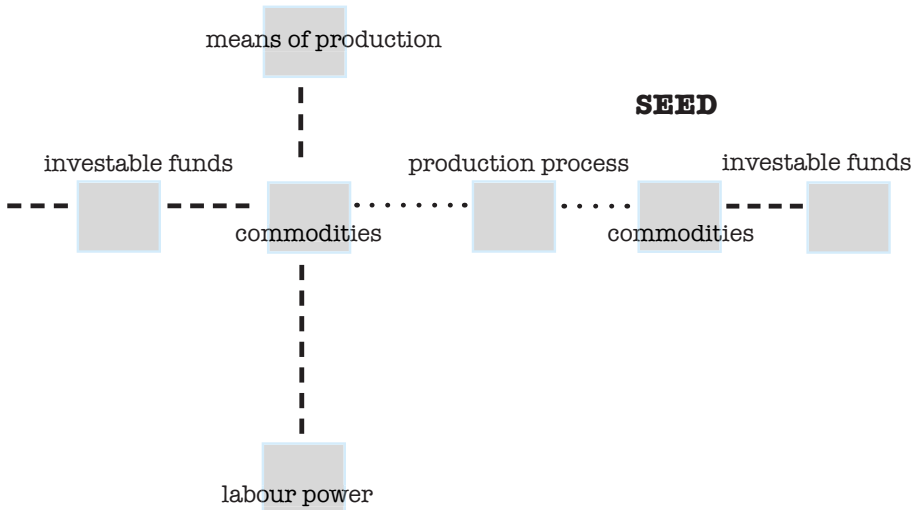
Seeds and Circuits of Capital: Model 1



— — = exchange relations

..... = production relations

[Defined not as a thing, but a set of social relations that, in their totality must be continually reproduced if capital is to survive and grow in a particular sector]



Traditionally, the seed was the beginning and end of crop production for the farmer - now in commodity form it has been taken control by capitalist agriculture, however, the main obstacle seed companies face is a biological fact - seed reproduces manifold; how to control this - GMO (patent crops) and the development of terminator seeds (sterile). Source: Re-drawn from Kloppenborg, (2004).

Sanaa Abdul Wahab Al Sheick

Since 2011, I have been in contact with Mrs. Sanaa Abdul Wahab Al Sheick who works as a plant biologist at the PGR Unit, Iraqi Seed Bank, in the Baghdad suburb of Abu Bhriab [now globally associated for its prison]. I had heard rumours of a precious collection of more than 1000 rare seed varieties - from ancient wheat's to chickpeas and lentils stored in cardboard boxes, buried underground, with some moved to Syria during the war. William Erskine of the International Centre for Agricultural Research [ICARDA] illustrates the value of the Iraqi seed collections as "the genetic time capsule containing Iraq's agricultural heritage." In 2002, the Food and Agricultural Organization [FAO] reported that 97% of Iraqi farmers were still using seeds saved from their own stock or brought from local markets.

Following the Iran-Iraq war, two Gulf wars and the brutal UN sanctions, including the legacy of Paul Bremer's 100 Orders and Order 81, the diversity of Iraq's agricultural heritage are increasingly at risk. Denis Halliday stated that the attacks on Iraq's sovereignty and ability to feed themselves "should constitute a war crime". Clare O'Grady Walsh writes in her publication *Seeds of Hope in a World of Security* [2012 AFRI]: "conflicts inevitably bring about the exile of scientists, the displacement of skilled farmers and the pollution of their lands". The following images and text are credited to Sanaa, communicated to me via email. This 'seed archive' is a testament to her fearless capacity to collect, save and care for Iraq's ancient seed culture [and future thereof even during times of conflict and war].



17 November 2012 08:42

"I am at plant genetic resources Iraqi gene bank since 1988 at the time I were young. I worked at program breeding for wheat, with some materials from U.S.A was crossed with old wheat from Iraq (300 line). Iraqi Dr. had stolen this material.... I did so hard at Iraqi gene bank but previous regime not interested for this job.... IPA worked all activity of agriculture due to blockade or siege of Iraq after (1991 - 2003), IPA had power from high government the policy of Iraq that time with socialism and support the farmers and seeds also the state board for seed testing and certification and seeds company (al-nahreen company).

1. Iraqi gene abank was did in dark, at that time I am alone...
2. Iraqi gene bank all these period was did for conservation and regeneration, documentation, utilization activities. I have many documents till now, wild Triticum, Wild Hordeum Medicinal plants, Wild Forge vegetable, spices...
3. The seeds were lost some of materials, which were from USA, ICARDA, and vegetable seeds...
4. I had duplicate samples, before the war I made the hole in the office garden and had been put the accessions in it, but also transfer the other to my house...
5. I had been collected what was lost. I were Regenerated at field (place Abu-ghraib field) God help me and American Army allowed me passed, when I want they was very good with me...
6. The Iraqi farmers facing the war with warning unlike, not love USA
7. Very difficult reached my office, no car, I was walking on foot.
8. Job not difficult so, but need support and Iraqi people Iraqi Dr. Don't know what meaning plant genetic resources for food consumption food security, Iraq origin for wild wheat and others.
9. Hopeful for the future with, FAO or with trust diversity (office Dr. Luigi) to come to work in Iraq these people have huge conscience.
10. I make many trips to collect that what is important, I inform Dr. Luigi and Dr. Ahmad everything and sent photos for my trips.
11. I am miserable woman because I loved my job and do without corruption in clear line.









Kate Corder

Kate Corder is an artist currently studying for a practice based PhD in Art at the University of Reading. Her practice investigates allotments, plant and land cultivation in art. Allotment Plot is the title of an on-going blog that documents the development of two contrasting allotments: Allotment Plot at MERL situated in the garden of the Museum of English Rural Life, [University of Reading] and Allotment Plot 326 at Bulmershe Allotments, [Reading Borough Council]. The Allotment Plot focuses on the central narrative of a three-year study that follows the labour of gardening as done by the virtual character Ella Montt, who also interacts with ghost characters of significance. The Plot constructs a time-lapse visual archive that becomes part of allotment history, and a record of seeds planted and vegetables harvested. The narrative is mindful that vegetable production is affected by the elements of climate (change) and so the Plot becomes an eco-critical observation of life.

www.katecorder.net/blog/posts

www.cultivationfield.org

MERL Allotment and Plot 326

At the Allotment Plot on 27th August 2010, after a few days of consistent rain, Ella Montt observed that the Climbing Beans had not yet taken full advantage of the horizontal bamboo canes that were erected on a previous visit. The Beans continued to reach for the sky in the style of a Jack and [...]

Plot 326

Plot 326 tenancy started on 24th August 2010. The key to the plot arrived in the mail on 27th August and the first visit to the new Plot took place on the 28th August, subsequent visits to the Plot have taken place since then and will continue on a regular basis. The whole Allotment site [...]

Battle of the Rhizome at 326 (Part 1)

On the 13th of October at Allotment Plot 326 Battle of the Rhizome (Part 1) was concluded (temporarily) by earth being repositioned, two rows of Spinach Giant Winter seed and 500g of Onion Sets Swift being planted to over winter. The Battle of the Rhizome will be on going for an unidentified period of time, [...]

Potato Field

A potato is a tuber. Deleuze and Guattari define tubers as rhizomes. The Potato, *Solanum Tuberosum*, (as opposed to the Sweet Potato) is part of the Nightshades family. The potato as a plant has a long history. It originates from Peru. Humans discovered the potato and begun to cultivate it at least 7,000 years ago. [...]

Shed and Plot 326

A Shed had been acquired from a recycling web site; it sat for a while wrapped up at Plot 326. Concrete paving slabs were found through the same recycling source method. An area had been cleared at Plot 326 for the Shed near the Apple Tree. The concrete slabs [...]

Thorpe and the Shed

Ella Montt and Thorpe were discussing the Shed at Allotment Plot 326. Ella Montt was heard to say, "but my Shed is not in an advanced stage of dereliction*, it is recycled and according to your description of what a Shed's visual needs should be, it conforms in all aspects, because it is not made [...]"

Fruit Trees

At Allotment Plot 326 on January 14th 2011, Ella Montt planted some fruit bushes and trees. The temperature on that day was almost balmy. In the designated planting area the ground was dug to try to remove any bramble roots. Holes were then excavated and the roots of the trees and bushes were grounded and [...]

Digging

Allotment Plot 326 sits in the great field with many other allotment plots. It is part of a social system that gave humans a right to an allotment of land. Desire for an allotment plot can be a utopian dream. Reality of working an allotment or making the allotment succeed involves much hard effort. In [...]

Planting Harvesting Drought Rain

25th May 2011 – At Allotment Plot 326, the first Garlic harvest of the year (2011) happened, (more to follow). Garlic Harvest = 5 oz = 120g. Plants were transplanted from the fixed up greenhouse to Plot 326. Plants were: Tomato Gardeners Delight x 18; Courgette Patriot F1 x 2 and Cocozelle x 2; Beans (French [...])

Elements, Garlic Harvest, Bamboo

7th June 2011 – Allotment Plot 326. The Bean plants that had been planted a few days before looked like they had been through war, left to interact with the elements and wildlife. Ella Montt found it hard to know if the plants would recover from the havoc they had experienced. The weather was changeable [...]

326 Garlic and Onion Harvest

11th June 2011 – Allotment Plot 326 – It was necessary to harvest the Garlic, Onions, and the rest of the Broad Beans. Garlic and onions were dug out of the soil. The remainders of the over-wintered Spinach that had gone to seed were removed. Last night there had been a hail storm followed by [...]

Comfrey Soup June 20 2011 – 326

Ella Montt placed the netting (that she had removed from around the Peas at Allotment Plot at MERL), around the Climbing Beans. A fence around Plot 326 had still not been constructed. A crack had appeared in the Utopian dream. Ella Montt did not have the time [...]

Peas, Fence, Frame, Destruction

10th July 2011 – Allotment Plot 326 – Harvest: Peas Ezeta's Krombek Blauwschokker = 5oz = 150g, Oregon Sugar Pod II = 5.5oz = 160g, a mix of Kelvedon Wonder, Ambassador and Meteor = 1lb 3oz = 550g. 12th July 2011 – Allotment Plot 326 – R&P helped to erect some of the fence around [...]

Raindrops fell to Earth

20th July 2011 – Allotment Plot 326 – Harvest: 4 x Courgettes = 1lb 13oz = 640g; Shallots Red Sun = 1lb 7oz = 640g; Peas = Ezeta's Krombek Blauwschokker = 10.5oz = 290g, Ambassador and Meteor = 3oz = 80g. 21st [...]

Wild and Self-Seeded

3rd August 2011 – Allotment Plot 326 – Ella Montt almost randomly broadcasted a mix of seeds in the cleared area where the Peas had previously been. The area was still surrounded by shading netting. The mix of seeds consisted of Carrot Amsterdam Forcing, Calabrese Baumont F1, Cabbage Wintergreen, and Oriental Tai Sai. It was [...]

Mulberry and Potatoes

7 August 2011 – Allotment Plot 326 – Harvest: Tomato Gardener's Delight = 3oz = 80g; Beetroot Bolivar = 1lb 4oz = 580g; Potato Madeleine 12lb 15oz = 5.9kg. 8 August 2011 – Allotment Plot 326 – Harvest: Runner Bean Enorma = 2oz = 60g; Potato Madeline 4lb = 1.82kg; Beetroot Bolivar = 1lb 8oz [...]

Lawn Mower, Atlas, a Dead Bee, and Plant Regeneration

20th September 2011 – Allotment Plot 326 – Harvest: Oriental Greens Tai Sai = 2oz = 50g; 1 x Courgette Patriot F1 = 12oz = 350g; 1 x Squash Green Hokkaido = 6oz = 170g; 1 x Squash Green Hokkaido = 13oz = 370g; 1 x Squash Green Hokkaido = 1lb 2oz = 510g; 1 [...]

7000000000

1/11/11 – Allotment Plot 326- another perfect day to dig. All plant residues were removed from dug area to the compost pile. Darkness fell early and ended the activity. 03 November 2011 – At Allotment Plot at MERL, Ella Montt found the Squash plant that had tried so [...]

Slug Potato

On 20th November 2011, at Allotment Plot 326, it was a still day, perfect for digging, no other visible allotment worker around. At Plot 326, it was never possible for any tranquil sound of birds singing to exist, because of the continuous sound of human machine traffic that came from roadway beyond the [...]

Field Mouse, Potato

26th March 2012 – At Allotment Plot 326, Ella Montt removed items that were cluttering up the shed and in doing so disturbed a Field Mouse habitat. A Mouse exited the shed in the bottom of a big tub that had drainage holes around its base, after a few moments hesitation the Mouse escaped from [...]

Seeds and Circuits of Capital: Model 2



[Self-sufficient model based on part-collection of seeds from previous crops]

Dr. Vandana Shiva NAVDANYA

Navdanya means “nine seeds” (symbolizing protection of biological and cultural diversity) and also the “new gift” (for seed as commons, based on the right to save and share seeds). In today’s context of biological and ecological destruction, seed savers are the true givers of seed. This gift or “dana” of Navadhanyas (nine seeds) is the ultimate gift – it is a gift of life, of heritage and continuity. Conserving seed is conserving biodiversity, conserving knowledge of the seed and its utilization, conserving culture, conserving sustainability.

Navdanya is a network of seed keepers and organic producers spread across 17 states in India.

Navdanya has helped set up 111 community seed banks across the country, trained over 5,00,000 farmers in seed sovereignty, food sovereignty and sustainable agriculture over the past two decades, and helped setup the largest direct marketing, fair trade organic network in the country.

Navdanya has also set up a learning center, Bija Vidyapeeth (School of the Seed / Earth University) on its biodiversity conservation and organic farm in Doon Valley, Uttarakhand, North India.

Navdanya is actively involved in the rejuvenation of indigenous knowledge and culture. It has created awareness on the hazards of genetic engineering, defended people’s knowledge from biopiracy and food rights in the face of globalisation and climate change.

Navdanya is a women centred movement for the protection of biological and cultural diversity.

<http://www.navdanya.org/>

Declaration on Seed Freedom

Declaration on Seed Freedom

by Dr. Vandana Shiva

Seed is the source of life, it is the self urge of life to express itself, to renew itself, to multiply, to evolve in perpetuity in freedom.

Seed is the embodiment of bio cultural diversity. It contains millions of years of biological and cultural evolution of the past, and the potential of millennia of a future unfolding.

Seed Freedom is the birth right of every form of life and is the basis for the protection of biodiversity.

Seed Freedom is the birth right of every farmer and food producer. Farmers rights to save, exchange, evolve, breed, sell seed is at the heart of Seed Freedom. When this freedom is taken away farmers get trapped in debt and in extreme cases commit suicide.

Seed Freedom is the basis of Food Freedom, since seed is the first link in the food chain.

Seed Freedom is threatened by patents on seed, which create seed monopolies and make it illegal for farmers to save and exchange seed. Patents on seed are ethically and ecologically unjustified because patents

are exclusive rights granted for an invention. Seed is not an invention. Life is not an invention.

Seed Freedom of diverse cultures is threatened by Biopiracy and the patenting of indigenous knowledge and biodiversity. Biopiracy is not innovation – it is theft.

Seed Freedom is threatened by Genetically engineered seeds, which are contaminating our farms, thus closing the option for GMO-free food for all. Seed Freedom of farmers is threatened when after contaminating our crops, corporations sue farmer for “stealing their property”.

Seed Freedom is threatened by the deliberate transformation of the seed from a renewable self generative resource to a non renewable patented commodity. The most extreme case of non renewable seed is the “Terminator Technology” developed with aim to create sterile seed.

We commit ourselves to defending seed freedom as the freedom of diverse species to evolve; as the freedom of human communities to reclaim open source seed as a commons.

To this end, we will save seed, we will create community seed banks and seed libraries, we will not recognize any law that illegitimately makes seed the private property of corporations. and we will stop the patents on seed.

**PLEASE SIGN UP TO THE:
THE DECLARATION ON SEED FREEDOM**

<http://seedfreedom.in/d-eclaration/>

Dr. Fidelma Mullane

Fidelma Mullane is a cultural geographer and specialist in vernacular building practices.

CM Fidelma, could you tell me about your work on the Aran Islands (Inis Mór, Inis Meáin and Inis Oírr)?

FM My main interests are the islands' historic farming and building practices, and the people who have knowledge of these important things. The cultivation of rye and potatoes, the rearing of cattle, and saving hay are particularly interesting. In relation to building, thatching continues to be important in island life though there has been a significant decline in the practice in the last fifty years. A small number of dwelling houses continue to be thatched. I am particularly interested in the small field buildings scattered throughout the islands' farmland. As these buildings were used to store hay for cattle, they are directly linked to stock-rearing practices. They are also connected to arable farming practices by virtue of the fact that they were all thatched. Most of these outbuildings are now roofless.

CM What is the main thatching material used on the Aran Islands?

Rye has been cultivated for centuries on the Aran Islands and has been used as the predominant material for thatching houses and outbuildings for at least a hundred years. The thatching style associated with the West of Ireland including the Aran Islands is one where súgáin - twisted straw or hay ropes - are used to hold the thatch on the roof. With the increase in the use of more permanent roofing materials on dwelling houses, such as slates and tiles, demand for straw thatch decreased. This in turn led to a decline in rye cultivation. As rye and potatoes were cultivated in rotation, the decrease in demand for rye straw and, significantly, for potatoes too, led to an overall decline in arable farming on all three islands.

CM Why is that?

FM The amount of potatoes consumed in Ireland has been generally decreasing.



photo credit: Fidelma Mullane 'Seán Ó Conghaile' with a bundle of rye straw harvested on Inis Meáin; Inis Meáin field building for storing hay, recently thatched by Seán Ó Domhnaill with rye straw produced on the island

The Aran Islands is no exception where ground preparation is done with the spade and so arable farming is labour intensive. Also, it is often cheaper to import food than to cultivate it locally. We are now at the stage where less than three acres of land is under rye cultivation on the islands, a dramatic change when you consider that in 1925, 143 acres of rye were cultivated on the islands.

CM That is certainly a dramatic decline in the cultivation of a specific crop as important as rye?

FM Yes, especially when one considers the ecology as a whole and integrated system. We are talking about cultivated crops such as rye and potatoes as well as the associated arable weed communities.

CM Did plant communities exist and thrive because of the rye?

FM The continued use of historic practices in the cultivation of rye and potatoes supports specific arable weed communities that are now rare and, in some instances unique to the Aran Islands, such as the cornflower (a cornfield- and root-crop weed), and darnel (a species of grass). Bristle oat survives on the islands as a relict of historic cultivation. As well as the decline in rye production, other farming practices have also changed. In former times, rye was planted in winter, usually during the month of November and harvested the following year, in August. Now, it is generally planted in springtime and harvested in August. Where rye and potato cultivation has decreased significantly or where they are no longer grown, the ecology of the islands as a complex integrated whole system is fragmenting.

CM How is rye harvested?

FM Rye is pulled from the ground or it is cut with a reaping hook. The method depends on the soil type and on the purpose to which the rye will be put.

After it is taken out of the ground, the rye is placed upright against the drystone walls of the cornfield to dry. When dry it is prepared for thatching. To remove the grain, the heads of bundles of rye are beaten against a hard object such as a wall or rock. The straw is cleaned by removing broken straw and weeds. The way rye straw is put on the roof is influenced by local conditions known well by the thatchers. There are areas on a thatch roof where it is better to have pulled rye. On other parts of the roof cut rye is more appropriate. All these details are worked according to a roof's position in relation to weather, the orientation of the slopes and the vulnerable points where the thatch meets the eaves, ridge, gable ends and chimney stacks.

CM That's clever.

FM We generally fail to recognize this kind of ingenuity because we judge such systems are either old-fashioned or we try to preserve them as a nostalgic thing. As far as I am concerned it is neither of these. Thatch is a cultural practice intimately connected with its ecological context. In the Aran Islands, this context is a system of plant cultivation that has created a particular ecology, once commonplace, but now unique through which we glimpse a lost world of wild and cultivated plants. We are witnessing a disappearing knowledge system. What is lost is not information for information sake but knowledge to inform us into the future on a wide range of challenges that will arise and indeed have already arisen in relation to such critical issues as farming practices, land cultivation, ecological systems, control of seeds, plant science, climate change, and food security. All these challenges will be best informed in the first instance by historical practices.

CM What is the profile of the farming community on the islands. I imagine farmers are elderly?

FM Many of the island farmers are elderly in the sense that they are the elders.

They have the knowledge and the experience that offers insight into the climate, soil and other characteristics of the islands' complex and bio-diverse ecosystem. Plant cultivation on the islands is an important knowledge system and it should be passed on for its own value. Historic knowledge is intuitive to those who have repeated the patterns of seasonal and annual work during a lifetime. It is a dynamic that constantly invades the imagination, propelling invention to underwrite the future.

CM Apart from the islands is rye grown on the mainland?

FM Rye for thatching is also grown in County Donegal.

CM Do farmers on the island save the seed?

FM Historically, the saving of seed from year to year was critically important as it was generally the only seed source for the next sowing season. The harvesting of grain and its storage until the annual planting and its adaptation to local cultural and natural conditions creates what we call a landrace. In Ireland, rye is one of the very few surviving cereal landraces. Landrace material is by nature local and by extension diverse. The gradual disappearance of landrace cereals, and indeed of many other plants, and the widespread use of selectively produced commercial seed has contributed to a dramatic decrease in biodiversity globally. Nowadays, the vast majority of seed planted in Ireland is bought in commercial outlets. It is only in a very few areas, such as Donegal and the Aran Islands, that farmers continue to save seed from year to year to be sown in the next growing season.

CM Did farmers ever use the rye for making flour or was it mainly used for thatching?

FM It seems likely that rye was used historically for making bread. However, we don't have a significant rye culture in Ireland now as they have, say in Germany, France, and parts of Eastern Europe.

CM why is rye a popular cereal?

FM Rye tends to respond better than other cereals to harsher climates and it doesn't need as much care as wheat. The main problem associated with rye is ergot disease. In every other way it is a relatively easy crop to cultivate and harvest, and excellent thatching material because its wiry and hardy.

CM Is wheat used at all for thatching.

FM Wheaten straw is a very good thatching material. However, from the 1960s onwards, as short-stemmed cereal varieties were grown primarily to provide grain, the straw was not sufficiently long for thatching. Flax was another thatching material once used throughout Ireland but its use is now mostly confined to County Donegal. Wheat, oat and flax were once cultivated on the Aran Islands.

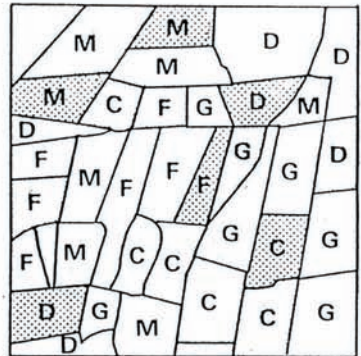
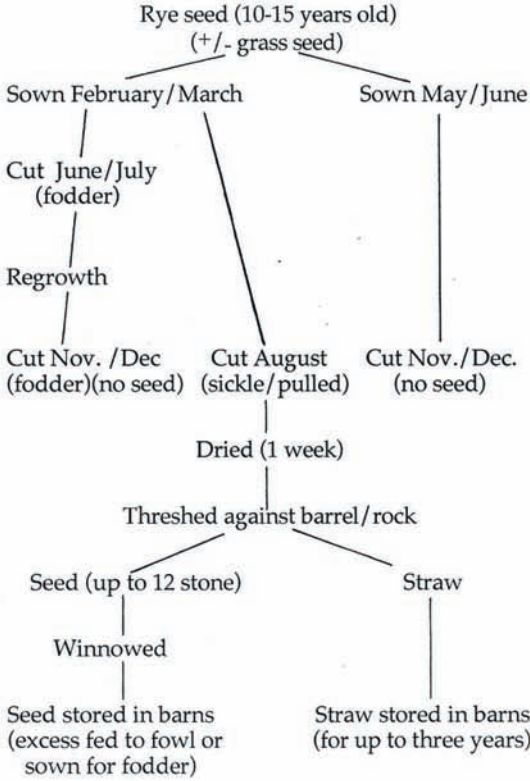
CM What do you think the future of plant cultivation for the Aran Islands?

FM It is difficult to say. What is important is an on-going interaction between farmers and their land. Farmers don't like the idea of nature reclaiming the land. That is against their nature. They like tending their crops and their flocks.

CM I would have thought that our whole relationship with the land is one based on interaction.

FM Yes, it is based on a seasonal inter-activity with the land and the surrounding environment – a metaphor for life itself - sowing and reaping, providing for one another, renewing life. Seed matters.

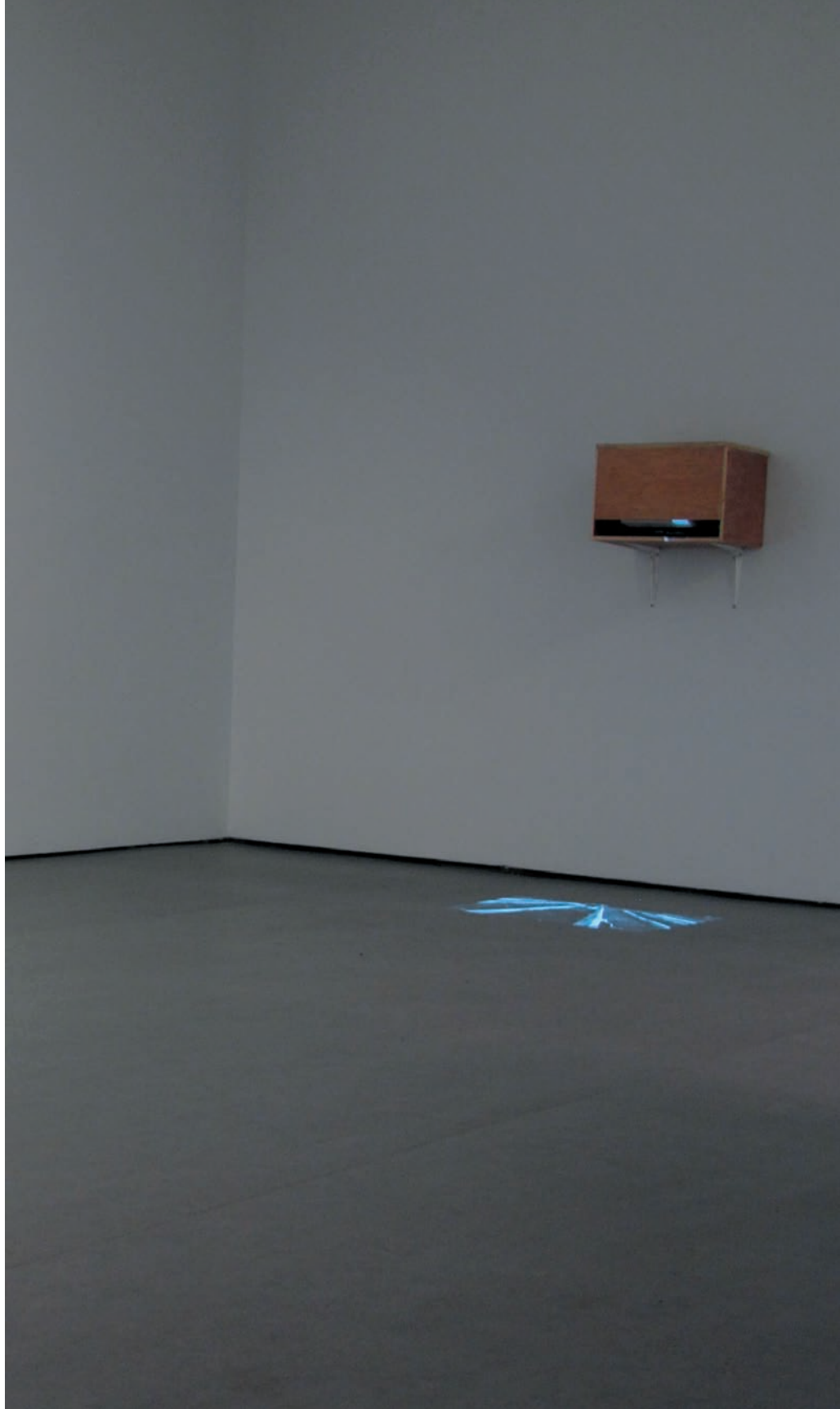
RYE CULTIVATION



Potatoes
 Rye

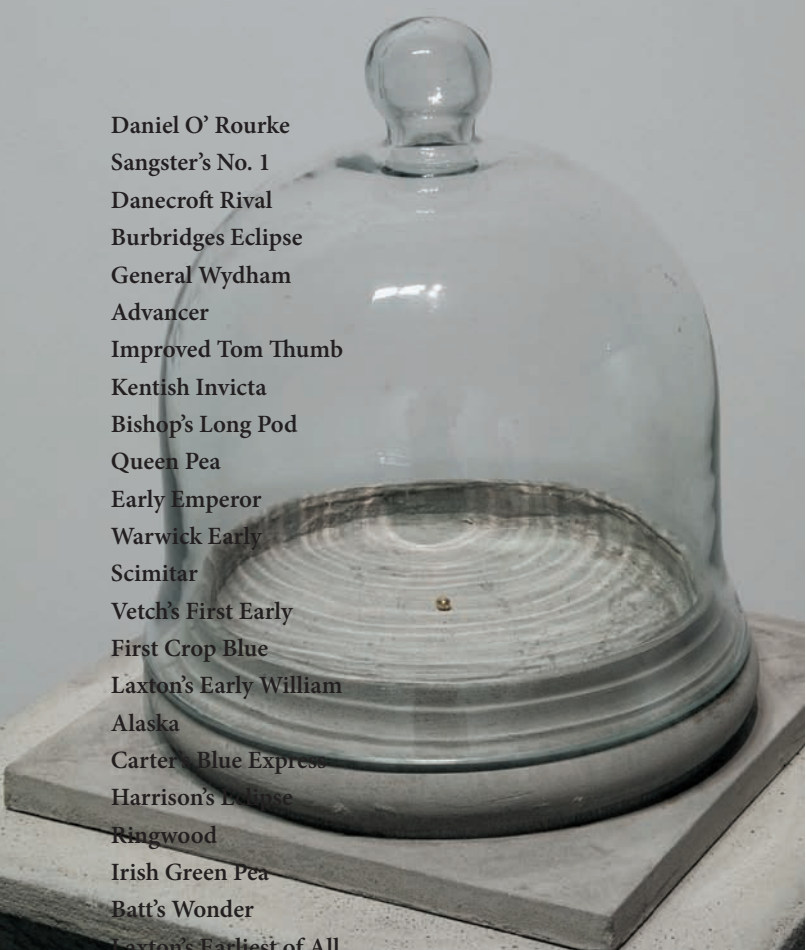
photo credit: Christine Mackey, 2011 'Anthony O' Flynn saving rye seeds' to plant for thatching
 diagram credit: Andrew Bleasdale, 1994 'Cultivation of rye & field systems' from The Arable Weed Flora of the Rye Crop on the Aran Islands, Co. Galway





The Pea Archive

The 'Pea archive' follows a complex trails of people and places; beginning in Kilkenny, back to Clare, over to Russia into England. With not much to go on - it remains an incomplete work.



Daniel O' Rourke
Sangster's No. 1
Danecroft Rival
Burbridges Eclipse
General Wydham
Advancer
Improved Tom Thumb
Kentish Invicta
Bishop's Long Pod
Queen Pea
Early Emperor
Warwick Early
Scimitar
Vetch's First Early
First Crop Blue
Laxton's Early William
Alaska
Carter's Blue Express
Harrison's Eclipse
Ringwood
Irish Green Pea
Batt's Wonder
Laxton's Earliest of All
Carter's Lightning
Laxton's William I
Woodford Marrow
Berks Gem
Batt's Wonder
Ne Plus Ultra
Early Kenilworth
Vetch's Perfection
Thurston Reliance

Kevin Dudley



Photo credit: Christine Mackey (2011). Home Rule Club, John's Quay, Kilkenny. Meeting of GIY members organized by Ronan from Future Proof Kilkenny. Speaker: Kevin Dudley. It was at this meeting that I first heard about the repatriation of the Daniel O' Rourke pea by Seed Savers in Clare from Russia. Kevin had previously worked for Seed Savers but is now based at Rahine Biodynamic farm in Kilkenny working with Michael Miklis. Kevin distributed pea seeds to the audience, which I grew and subsequently saved for the following season.



Images of the Daniel O' Rourke growing on site at VIR Seed Station, Russia. Date source: Catalogue number VIR K - 48 Daniel O' Rourke. "He entered the Institute of Saratov via Kurbatsky, K - 359. Improved Daniel O' Rourke [obtained from Germany through the company Haaga & Schmidt], K - 1050 [obtained from New York via Y. M. Thorburn]. All samples arrived in Russia before 1921." Photo credit: Elena Semenova (2011).

Elena Semenova



Photo credit: Elena Semenova - Pea curator at The Vavilov Institute of Plant Industry, Russia [no details available for the lady standing next to Elena on her left]. I contacted Elena in late 2010 for additional information with regards to the Daniel O' Rourke pea. She subsequently furnished new data on the historical lineage of this pea at VIR with images of same and the numerous growing trials carried out at VIR on a seasonal basis.



Photo credit: Seed Ambassadors - Sarah Kleeger & Andrew Still.
Dr. Magarita Vishnyakova, Director of Legumes at The Vavilov Research Station, Russia.

Joseph Sangster



FIRM FAILS AFTER 119 YEARS

J. M. Thorburn & Co., Seedmen, Unable to Weather Price Drop.

After having been in business since 1802, J. M. Thorburn & Co., seed dealers, at 53 Barclay Street, filed a voluntary petition in bankruptcy yesterday in the Federal Court. Liabilities were placed at \$54,729 and assets at \$44,814.

The firm was started 119 years ago by Grant Thorburn in the Old I. Church in Nassau Street. Then it moved, successively, to 15 John Street, 36 Cortlandt Street and 53 Barclay Street.

The aftermath of the war, with speculators unloading and forcing prices down to ruinous levels, was the cause ascribed for the firm's difficulties.

The New York Times

Published: September 17, 1921

Copyright © The New York Times

Photo credit: <http://www.lissadellhouse.com/> Public access to Lissadell is currently in dispute and although I contacted owners of said house to visit the gardens, I was not given permission in respect of this project. The reason that I was interested in visiting Lissadell was in relation to Joseph Sangster who had been head gardener there for ten years, perhaps from 1903's onwards. He later worked in the seed firm of Thompson & Morgans in Ipswich, England and eventually took over as manager, becoming president of the Horticultural Trades Association in England. Described as a brilliant horticulturist, plant breeder and talented administrator, he was to add over 4,000 plant names to an already established 2,000 for the Thompson & Morgan Seed Catalogue. He may have sowed the Daniel O' Rourke pea at Lissadell bringing seed samples to T & M. This information is premised on the knowledge that Sangster had bred a pea called Sangster No. 1, which was a synonym of the Daniel O' Rourke pea. It was also through T & M that the Daniel O' Rourke pea found its way to America. I discovered the pea listed with J. M. Thorburn and Co. Seedmen Catalogue. There is a possibility that samples of the pea were deposited at VIR, Russia through Thorburn's arriving before 1921.

Seed Catalogue: Thorburn & Co. 1890

ESTABLISHED 1802.

**JAS. M. THORBURN
& CO'S**

ANNUAL 1890

Descriptive Catalogue

THE LARGEST COLLECTION OF IN THE WORLD.

SEEDS.

COPYRIGHTED 1889 BY JAS. M. THORBURN & CO.

FOR THE VEGETABLE GARDEN,
FOR THE FLOWER GARDEN,
FOR THE LAWN,
FOR THE FARM, FOR THE NURSERY.

15 John St. New York.

JAS. M. THORBURN & CO.
TS
SEEDS
NEW YORK

photo credit: Christine Mackey 'Purchase of an original seed-catalogue from e-bay', (2011)

The New York Times, 1881

with its dark-green, heavy, and self-supporting vine; for the "O'Rourke" requires no brush. Thousands of bushels are sold every Spring in England alone, and the agricultural journal which reverently records Mr. SANGSTER's death declares that he "has left behind him a most enduring monument." There are men, it must be owned, who leave behind them enduring monuments and still escape in their death the omniscient eye of the telegraph. But the telegraph is not severely to be blamed. As yet no one has made it a part of the telegraph's business to call out from obscurity the world's good men. Above all, the telegraph must take things as it finds them for the present. Probably it will be given unto few men hereafter to raise so good an early pea as the "Daniel O'Rourke;" but if one such should be raised again it is to be hoped that news of the raiser's taking off may not be a month in crossing the sea.

It is little that the world knows of its good men. When a Moldavian hospodar or a Roman quaestor dies, his taking off is sometimes duly forwarded by telegraph to a public which perhaps does not know that quaestors have survived the fall of ancient Rome, or that hospodars exist in Moldavia any more than they do in the land of Kafirs and Hottentots. It is otherwise with men who have done mankind some service in the peaceful art of gardening. No word whatever came to us from England a few weeks ago that a benefactor had died at Romford in the person of Mr. JOHN SANGSTER. Mr. SANGSTER's name should go down honorably to a distant time, and it will be the fault of posterity, and not of him or of the early pea that he raised, if it do not. This early pea, known originally as "Sangster's No. 1," but to the public in general as the "Daniel O'Rourke," was first raised a score and a half years ago, and has become a very household word on both shores of the Atlantic. It is odd that it and its popular name should have a close association with the Derby, but that it has is a fact. Mr. SANGSTER entered it for trial at Chiswick in 1852, and, since his success with it was contemporaneous with the victory of the famous horse *Daniel O'Rourke*, he deliberately, and with a self-sacrifice that he knew not of, dropped his own name in the following year and sent out his pea as the "Daniel O'Rourke." So well is it known in this country under the latter name that Mr. SANGSTER is, perhaps, altogether unknown to the thousands and thousands who have eaten his delicious pea and become familiar

The New York Times

Published: June 26, 1881

Copyright © The New York Times

Iraqi Gene Bank



Photo credit: Mrs. Sanaa Abdul Wahab Al Sheick (2011). Iraqi Seed Bank located in the Baghdad suburb of Abu Ghraib [now globally associated for its prison]. My initial interest was in the pea species grown there and whether they had information on planting Irish peas in particular the Daniel O' Rourke pea.



Gregor Mendel



Gregor Mendel, Austrian botanist and father of genetics, born July 20th 1822, carried out thousands of experiments with the hybridization of pea plants that lead him to discern patterns in the way *traits* were passed from generation to generation. He called these individual traits *elements*. Today, we call them *genes*. Mendel was the first to record how genes function; that they are received from each parent; that they are sometimes concealed but not lost and that each *unit* is passed independently from other *units*. He presented his findings in 1865 in a lecture series called *Experiments in Plant Hybrids*. Noted on the *Mendel Museum* web site: “the concepts he established in 1865 came to be known universally as Mendel’s Laws of Heredity, and the man himself came to be regarded as the *father of genetics*.”

Seed Bank Facility, Irish Seed Savers, Clare



Irish Seed Savers Association was founded by Anita Hayes in 1991 on a small farm in Co. Carlow before moving to Capparoo, Scarriff in 1996. Through the work of Dr. Keith Lamb who had conducted original research into native Irish apples in the 1940s and Dr. Michael Hennerty former head of the Department of Horticulture in UCD the Native Irish Apple collection was established. In 1996 Michael Miklis, began efforts to conserve Irish grain and in 1998 an Irish Brassica project was started in co-operation with the Wellesbourne Gene Bank in the U.K. Seed Savers in Clare are key players in re-establishing heritage plants in Ireland. In 2011, they opened a Seed Bank Facility. Pea 'Daniel O'Rourke' *Pisum sativum* - An Irish cultivar sourced from VIR, Russia re-cultivated at Seed Savers in Clare. Photo credit: Christine Mackey (2012) Woodfield House [ancestral home of Dr. Lamb], Clara, Co. Offaly.

Charles Darwin

The Variations of Animals and Plants under Domestication

by
Charles Darwin
In Two Volumes

VOL. 1
with Illustrations

New York
D. Appleton and Company

1898

Seed Bank, Clare



photo credit: Heidi Lammiman, 2012 'Seed Bank Clare'

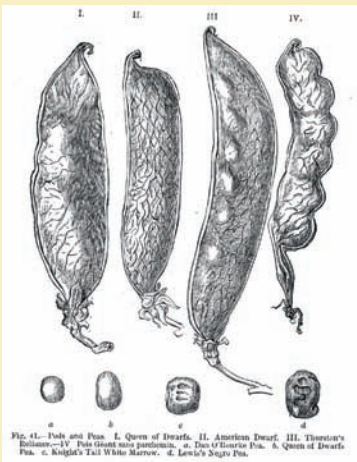


FIG. 61.—Peas and Peas. I. Queen of Swartz. II. American Dwarf. III. Throckmole's Bollmaker.—IV. Pea (great white) parviflora. a. Dan O'Rourke Pea. b. Queen of Swartz. Pea. c. Knight's Tail White Marrow. d. Lewis's Sugar Pea.

Illustration credit: Charles Darwin (1898). First known recorded drawing of the Daniel O' Rourke Pea (a).





Mitch Dunne

Mitch Dunne lives and works in Co. Leitrim. She was instrumental in setting up 'Manorhamilton Transition Town' and 'Cluainin Community Garden' - the first allotment scheme in the town with a collection of people from a wide variety of backgrounds who have come together to develop and promote actions that encourage local sustainability that includes issues such as 'edible forests', energy production based on local resources', creating 'diverse educational events' and generating 'communal gatherings' that are free for-all.

www.manorhamiltontransition.eu

CM Why did you become involved with the 'Transition Town Movement'?

MD Transition town came from sustainability within a community. Throughout those 'tiger years' people thought everything was available to them – money and the things that people wanted was everywhere to purchase in the shops and online. What happened to the everyday activities of normal life, where people met on a regular basis, for example the growing of your own vegetables and the social interaction of making things with people, where was all that gone, it seemed to have disappeared? It was clear to me that life during the 'Celtic tiger' wasn't going to last for ever. I was interested in how 'public spaces' in towns and villages and cities could be utilized. The transition town model can create social outlets for people to get together and do things. People were staying at home and generally 'I would say' quite isolated. One of the main questions for me was where has the social side of things gone to and how can we build new spaces for interaction amongst the public?

CM So was that where the impetus for setting up the community garden in Manorhamilton came from, to bring a group together and work on a project as a sustainable and social model of community practice?

MD For me the idea of organizing any kind of event around a community is that everyone can become involved in it if they choose to, it's a completely open platform. One of the things about the community garden is that it is not only a space to plant and grow but you can talk and meet with people. Its in this context that knowledge can be shared and ideas generated, thus creating a domino affect for other ideas and events. It's the feeling that you are not alone trying to do things. Things are hard to achieve by doing it your self. There are people out there who have the same sort of ideas, wants and aspirations, so it was basically to bring that platform back of engagement.

We began with the garden because it is a space familiar to everyone where people can learn, share, plant and swap ideas. It's a comfortable space to be in. This has now actually spread into the town, with a new garden set up by other people in a different part of town.

CM Where did the idea for the 'Apple Day' come from?

MD I had heard many people talk about it over the years and it made me want to do something about it because there are loads of apple trees around with apples that are not been used. Thus don't buy your apples, get your apples from someone who has them. We are also interested in setting up an edible forest at some stage and an orchard in the town 'shared food', everybody takes care of it and then of course there's the 'drink' aspect of the apples that interests people.

CM There used to be a long tradition of cider making in Ireland.

MD Through the apple day there's a combination of free food, juice and booze, whatever you want really. You're getting together as a community and it is a simple thing to organize, even kids can do it, everyone is entertained. We are also holding monthly events at the garden.

CM What kind of events are you organizing?

MD We were interested in why there aren't events being held on a regular basis and not just during the summer. This month we are having a winter gathering of mulled wine and pies, music and food.

CM How do you inform people that these events are taking place – is it through the website or word of mouth?

MD Word of mouth, facebook and our websites.

CM Would you consider yourself a community activist?

MD I certainly question the way certain things are done and how they are run. The political system on both a local and national level is a system, which is not working to everybody's advantage. People as a result complain, yet they don't really do any thing or know how to challenge things.

CM I guess some people are just not good organizers and need a figure head to get them motivated and maybe it is partly to do with the fact that we are used to somebody else being in control and that there is too much emphasis on an agreement of things rather than embracing differing opinions as a constructive platform?

MD Well at the end of the day its about generating ideas from individuals and making sure that they are been included.

CM And be acknowledged?

MD Yes if people are acknowledged they feel appreciated and have a voice, that's important in terms of keeping a group active.

CM Are you linked into other groups outside of Leitrim or are you mainly focused on what happens here? Do you look to our models of community practice or do you just work from the ground up and see what happens?

MD I think with any transition town group, each organization is different and it depends on the needs of the people within the area. I think workshops of all kinds are something that is lacking in this town, so having the community garden, as a base to facilitate a range of workshops is great. There are many Transition towns around Ireland where you find that gardening is their focus point or another issue would be transport.

CM Would you have a definition of transition town for people who may not be familiar with the organization?

MD I used to think it was all about sustainability but I think that is not the only thing – it's a social networking group because it involves all ages.

CM I think that's key, the open forum - not defined by its members but creating the means for people to get together.

MD Its an interactive group, anybody can put their ideas forward. Within this town you do have groups that do specific things such as the Men's group, Glen Centre, Leitrim Sculpture Centre, whereas transition town is a forum to connect places and people from different back grounds and experiences.

CM Do you have long term plans for the group?

MD There are things like the composting system that we are interested in setting up in the town, we hope to set this up in the next few months and link it in with the County Council waste management system. We are also going to try and connect with the Tidy Towns people to initiate some 'clean up' projects and there is the more serious project based on alternative energy systems.

CM So what are you looking at with regards to energy?

MD The hydro system, the river has been tested and it does have the grade high enough to set up a hydro-system. It will be community based, so that's where the sustainability comes in, if anything happens in the future in terms of energy supplies, well here is an alternative model independent of oil or gas.

CM Would you ever consider running as a local councillor?

MD No, I prefer to work out side the 'system' as an agitator!



**"I have come to view soil as a living organism
and see all of life as part of a soil community."**

Deborah Koons Garcia
Film director: 'Symphony of the
Soil' www.symphonyofthesoil.com/
[in conversation with Garcia via
email]

Dr. J.G. Lamb

Inspired by the 'Annual Apple Day' held at Cluainin Garden, I set out to explore the cultivation and history of Irish apples and orchards. Here, I discovered the work of pomologist Dr. J. G. Lamb who travelled Ireland on bicycle visiting orchards and collecting species specific to particular places. He completed his PhD in the 1940s on the 'History of the Apple in Ireland'. Visiting U.C.D to read Lamb's thesis, I not only discovered memorable names - like Honey Ball, Greasy Pippin, and Lady's Finger but also a collection of images that he procured of various species. Lamb's legacy continues in two orchards, where experts have managed to retrieve and cultivate some of the old varieties identified by Dr. Lamb: U.C.D Lamb Clark Historic Apple Collection and the Irish Seed Savers in Orchard founded by Anita Hayes in 1996. In 2012, I met Henry Lamb son of Dr. Lamb at their ancestral home in Offaly. In response to this visit and extensive research on the 'culture of apple species', I made a series of works that creatively explore Keith's archival material in a contemporary context. .







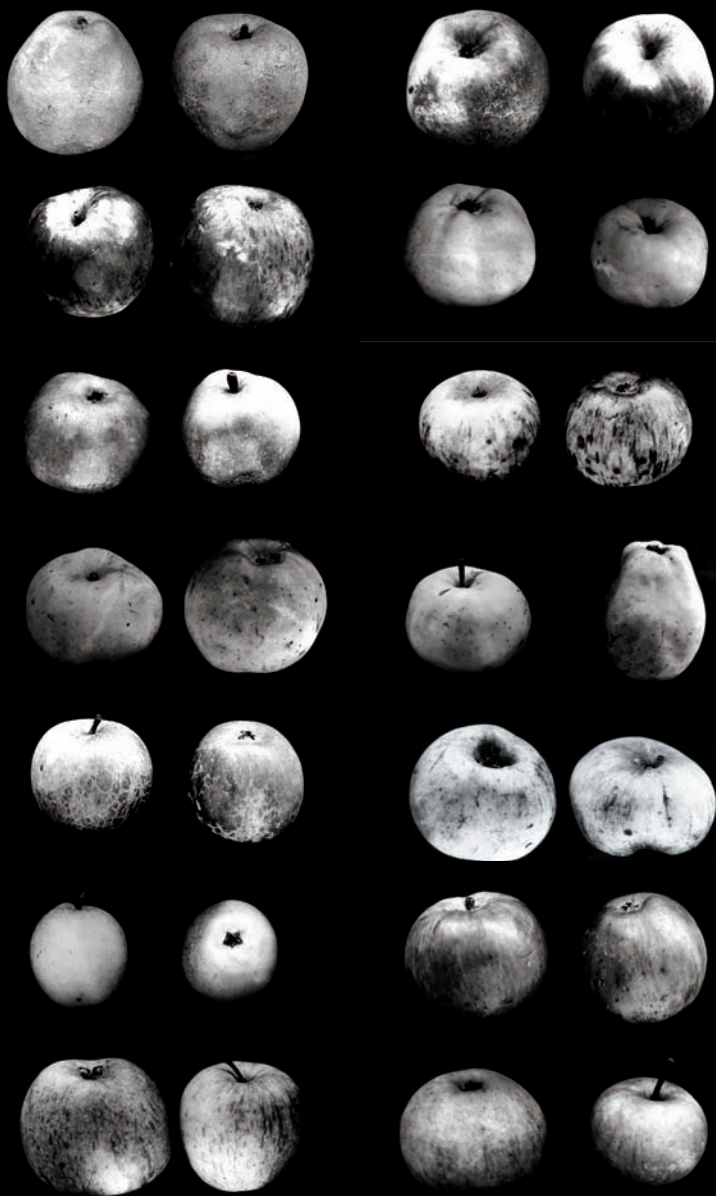


Fig. 1 Ard Cairn Russet

Origin: Found in a garden in the South of Ireland about 1890 by Baylor Hartland, listed in his catalogue (1907-8), with the following comment "... tastes like a banana, found in an out of the way orchard ..." In 1910, specimens sent to the Royal Horticultural Society (England), received society's Award of merit.

Fig. 3 Bloody Butcher

Origin: Recorded in the Midlands and Meath as B.B. Known as Bloodhound in Kilkenny and Offaly.

Fig. 5 Irish Peach

Origin: Mentioned by Dubordieu in his Survey of Antrim (1812) as being "Amongst the new kinds much esteemed for their beauty and flavour." Early Crofton is a possible synonym of Irish Peach and thus quite likely originated in Co. Sligo.

Fig. 7 Clear Heart

Origin: Predominated orchards at Piltown, Co. Kilkenny.

Fig. 9 Golden Royal

Origin: Frequently found growing in Co. Monaghan.

Fig. 11 Kerry Pippin

Origin: This particular variety was widely grown in Ireland from the beginning of the 19th century (Statistical Surveys of the counties Kilkenny (1802) and Antrim (1812) published by the Royal Dublin Society. Origin is unknown, however in 1819, John Robertson of Kilkenny was possibly the first to describe this variety in a letter to the Horticultural Society of London (1830).

Fig. 13 Reid's Seedling

Origin: Once raised by Mr. Reid of Drumart-Jones, Richill, Co. Armagh, whether it is still grown remains unknown.

Fig. 2 Ballinora Pippin

Origin: Variety sourced by Lamb originated from Ballinora, Carrigrohane, Co. Cork on a farm owned by Mr. C. R. Logan - dated 1892. Exhibited in 1898 at the Royal Horticultural Society, London receiving Award of Merit.

Fig. 4 Brown Crofton

Origin: Seen in counties Sligo, Offaly, Westmeath, Roscommon, Dublin and Wexford. Crofton may refer to the Crofton family who lived at Longford Demesne (destroyed in a fire in the early 19th century, c1816).

Fig. 6 George

Origin: Once well established in Co. Wexford, Offaly and probably elsewhere.

Fig. 8 Davy Apple

Origin: Found growing (once) in many old orchards in Co. Monaghan.

Fig. 10 Munster Tulip

Origin: Grown in the Midlands. Several trees were seen near Tullamore, Co. Offaly and near Horseleap just within the same county.

Fig. 12 Red Brandy

Origin: Common, once found in the orchards at Piltown, Co. Kilkenny.

Fig. 14 Ross Nonpareil

Origin: Long history of cultivation as shown by mention of in Thompson's Survey (1802) - where French Pippin is given as a synonym and in Duboedieu's Survey of Antrim (1812). In 1845 it was one of the varieties recommended for Ireland by the Irish Farmer's Journal. Outside of Ireland planted in America as early as (1908).

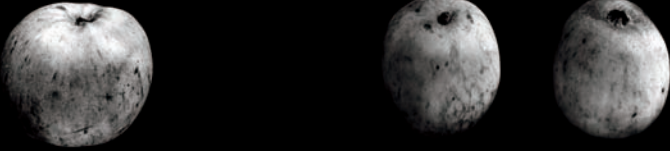
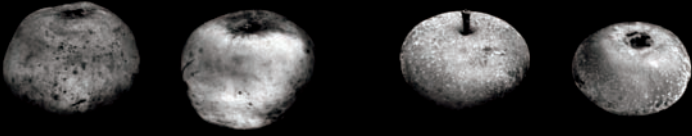


Fig. 15 Lady's Finger

Origin: (Of Co. Offaly and Monaghan). Name commonly applied to any long shaped apple. A distinct and curious apple but of no particular merit. Seen also in Co. Dublin.

Fig. 17 Scarlet Crofton

Origin: The Scarlet or Red Crofton is of ancient cultivation in Ireland. Sir Henry Crofton (Sligo) wrote in his memoirs that the apple was brought over to Ireland during the time of Queen Elizabeth (published 1911). At the beginning of the 19th century this variety was widely grown and many trees were known to exist. Fruits were exhibited before the Horticultural Society of London in 1818.

Fig. 19 Thompson's Apple or The Smeller

Origin: The name Smeller was current in Co. Tyrone; Thompson's apple is that once used in Co. Monaghan.

Fig. 21 White Russet

Origin: Variety recorded in 1802 growing in (London) Derry and in 1812 in Co. Antrim. Appeared in various gardening magazines both in London (1819) and in Dublin (1841); Hartland included it amongst his "Gathering of Native Irish apples" - (Catalogue for 1907-8). Not known if trees are still present in Counties Dublin, Kilkenny, and Offaly.

Fig. 23 Leixlip or Ray Farmer

Origin: Early references include: Irish Farmer's and Gardening Magazine, Vol III. 1836; Martin Doyle's Practical Gardening, 1841 and in the London Gardener's Magazine, 1831. Was known to have grown in Co. Kilkenny.

Fig. 25 Blood Of The Boyne

Origin: Once seen under the above name in the Midlands and was reported also from Meath. Other names encountered were Bloodhound (Kilkenny) and Winesap (Offaly).

Fig. 16 Sam Young or Irish Russet

Origin: Historical evidence (Irish Farmers Journal 1845) suggests that this was once a widely known variety. It was one of the few Irish apples listed by Niven as being grown at the Botanic Gardens in 1838. At the present day it is not known if trees currently exist in Counties Kilkenny, Offaly and Cavan where it was very prolific.

Fig. 18 Siberian Russet

Origin: An apple once found at Piltown, Co. Kilkenny and reported to have come from Co. Tipperary. It may be synonymous with Cornish Aromatic.

Fig. 20 White Crofton

Origin: Appears in John Rodgers 'Fruit Cultivator' (London 1834) common throughout Ireland. At present trees are not known to exist in Counties Sligo, Wexford, Westmeath and in several places in Offaly where it had thrived.

Fig. 22 Kill Apple or Eight Square

Origin: Recorded growing in Co. Monaghan.

Fig. 24 Gibby's Apple

Origin: An apple once seen in the orchards of Co. Armagh. Reported to have grown in Antrim.

Fig. 26 Buttermilk Russet

Origin: An apple once found in Co. Monaghan and in at least three gardens in Dublin. Reported sightings from Armagh and Fermanagh.



Seed Boards

The Seed Boards are an amalgamation of dried matter, seed bags, drawings, and digital imagery with each board uncovering a specific issue around the cultural, scientific and economic value of 'seeds'. Creating an open discursive framework to tease out a range of issues in relation to the control of seeds - these works also reflect on the wider geopolitical effects of international patency laws such as 'Order 81' [Iraq, 2004] and similar European directives [i.e. the DUS Law], which discourage farmers from saving and exchanging their indigenous seeds. Each board is narrated through a specific vegetable species.



Genus	Allium
Family	Alliaceae
Species	Schoenoprasum
Accession name	Chives OG
Date planted	16.3.2010
Status of sample	Seed Savers Exchange [U.S.A]
Collected sample	Organic seed
Seed saving	Perennial herbs (chives) are plants that come back year after year, flowering in their second second year of growth and are ready when the small purple flowers on the plant begin to feel like dried flowers. Plus, if you look really closely, you can see the black seeds being pushed out of the flower. Catch the falling seeds into a small airtight, store over winter. Sarah Kleeger & Andrew Still are behind 'The Seed Ambassadors Project' working as 'seed labourers' travelling the world collecting rare seeds, which they re-plant and distribute to seed-savers - locally and internationally.
Notes	The first recorded use of chives occurred in China in about 3000 BC. Some say that Marco Polo brought the idea to use chives back with him from the East. In any case there is no real evidence for their common use until about the 1500s when they found their way into both dishes and herb gardens. Like many of our words for herbs, "chive" comes to us from the Latin <i>cepa</i> (Latin) and <i>cive</i> (Old French). The first recorded use for the world in English was around 1400. The botanical name actually comes from the Greek meaning, "reed-like leek". A variety found in the Alps is the one nearest to what is generally cultivated today. Medieval gardeners often planted chives around the borders for both decoration and to ward off harmful insects. It was thought that hanging bunches of chives around a house could also ward off evil. Organic farming rejects many contemporary biotechnologies, notably agri-chemicals, and emphasizes an ecological view of the farm system. However, when a product of any kind is labelled as organic travels thousands of miles whether by plane, train and/or ship, should these transactions be constituted as organic? Should not the organic label embed not only farming without the use of chemicals but transportation and production use? Especially in light of the fact that many people argue that organic farming is also a social movement as much as a production regime. Image sourced from T.S.A.P archive. Site visit to Vavilov Institute of Plant Industry, Russia with Sergey Alexanian.

Genus	Brassica
Family	Brassicaceae
Species	B. oleracea
Accession name	Gortahork Cabbage
Date planted	26.4.2011
Status of sample	Heirloom: Irish Seed Savers [Clare]
Collected sample	Cluainin Garden [Leitrim]
Seed saving	<p>Save two overwintered cabbage plants to replant in the spring. The plants are necessary because cabbage doesn't produce seeds until the second year. Replant the heads 18 inches apart and deep enough so the bottom of the head rests on the soil. Gather the seedpods when they begin turning from green to brown. Lay the seedpods on a sheet-covered tray and allow them to dry. When dry break open pods, the seeds will fall onto the sheet. Store the seeds in an envelope in a cool, dry location. They will keep for about five years.</p>
Notes	<p>Cabbage is from a group of plants known as the Cole crops. The word 'Cole' derives from the Middle English word 'col'. The Romans called these crops 'caulis', and the Greeks called them 'kaulion'. All these words mean 'stem'. The English name cabbage comes from the French caboche, meaning head, referring to its round form. There is historical and botanical evidence that cabbage has been cultivated for more than 4,000 years and domesticated for over 2,500 years. Before cole crops were domesticated they were collected from the wild and used primarily as medicinal herbs. The other forms were domesticated at later dates. Brussels sprouts are the most recent crop, having come into existence less than 500 years ago. Although cabbage is often connected to the Irish, the Celts brought cabbage to Europe from Asia around 600 BC. In the wild, cabbage species are native to the Mediterranean. Wild cole crops are found growing along the Mediterranean and Atlantic coasts of Europe. Cabbages and kale presumably originated in Western Europe; cauliflower and broccoli in the Mediterranean region. Cabbages were first grown by the Slavs in the 9th century. Greek and Roman colonists brought cabbages from the Black Sea region into Russia. It was probably the Celts who introduced cabbage to lands they invaded from the Mediterranean to the British Isles and Asia Minor. Since cabbage grows well in cool climates, yields large harvests, and stores well during winter, it soon became a major crop in Europe. Early cabbage was not the full-bodied head we take for granted today, but rather a more loose-leaf variety.</p>

Genus	Brassica
Family	Brassicaceae
Species	B. oleracea
Accession name	Rouge Tete Noir
Date planted	2.8.2011
Status of sample	Organic: Reel Seed Company [U.K]
Collected sample	Cluainin Garden [Leitrim]
Seed saving	<p>Save two overwintered cabbage plants to replant in the spring. The plants are necessary because cabbage doesn't produce seeds until the second year. Replant the heads 18 inches apart and deep enough so the bottom of the head rests on the soil. Gather the seedpods when they begin turning from green to brown. Lay the seedpods on a sheet-covered tray and allow them to dry. When dry break open pods, the seeds will fall onto the sheet. Store the seeds in an envelope in a cool, dry location. They will keep for about five years.</p>
Notes	<p>Egyptian pharaohs would eat large quantities of cabbage before a night of drinking as they believed that cabbage consumption would allow them to drink more alcoholic beverages and not feel the effects. This is perhaps why many still consider cabbage with vinegar as a good hangover remedy. Greeks and Romans placed great importance on the healing powers of cabbage. They held that the vegetable could cure just about any illness. Roman mythology holds that cabbages sprung from the tears of Lycurgus, King of the Edonians. Scrolls from 1000 BC uncovered in China mention white cabbage as a cure for baldness in men. The Romans cultivated it and some of them, like Cato, ate it before and after meals, a practice he advised to his countrymen as he assured them, "you can drink as much as you like." Captain Cook swore by the medicinal value of sauerkraut (cabbage preserved in brine) back in 1769. His ship doctor used it for compresses on soldiers who were wounded during a severe storm, to prevent gangrene. At the turn of the last century cabbage was considered to be the lowly vegetable of poor people. It is now highly regarded as one of the most nutritious vegetables available today, and is thought to have strong anti-aging and anti-cancer properties. and impacts. There are different kinds of movements going on between food, land and seeds and one of the most prominent issues to emerge is the issue of 'Land grabbing' which epitomizes an ongoing change in the meaning and use of the land and its associated resources (like water). Land grabbing seen in the context of the power of national and transnational capital and their desire for profit, which overrides existing meanings, uses and systems of management of the land that are rooted local communities.</p>

Genus	Brassica
Family	Brassicaceae
Species	B. oleracea
Accession name	Purple Sprouting Broccoli
Date planted	26.5.2011
Status of sample	Real Seed Company [U.K]
Collected sample	Organic seed
Seed saving	<p>Its best to cut entire plants once most of the pods begin to look dry, and then leave them to mature on a sheet indoors. Once thoroughly dry, the seeds will come out of the pods very easily. The simplest way is to trample the plants on top of a large sheet of paper - sieve out the debris. You should get lots of seed from even a few plants. The seed will keep well for up to five years stored in dry place.</p>
Notes	<p>Broccoli evolved from a wild cabbage plant on the continent of Europe. Indications point to the vegetable as being known 2,000 years ago. It was rumoured that the sculptor Peter Scheemaker (1829) took broccoli to England, where it was grown in his native country Antwerp. Food Sovereignty is the term adopted by Via Capseina - the world's smallest farmers movement to describe everyone's right to define and control their own food system - counteracting the demands or markets led by trans-national seed corporations. Food Sovereignty includes: prioritizing local agricultural practices, access to land, water, seeds and credit. The Plant Patent Act was passed in the United States in 1930, with similar legislation passed by European Laws by the 1940s, created a growing global commercial market-place for genetically modified plants. Prior to this 'act' plants and other genetic resources had been universally deemed "common property". This act permitted plant breeders and other interested parties to apply for patents for asexually reproduced plants. On 27 February 2012, Teagasc (The Irish Government Agriculture and Food Development Authority) made a formal notification to our Environmental Protection Agency (EPA) requesting consent for a 4-year field trial of GMO potatoes, (which was granted). Plant patents include: hybrid corn seed, alfalfa, soya bean, wheat, sunflower, cabbage string beans and broccoli.</p>





Genus	Borago
Family	Apiaceae
Species	B. officinalis
Accession name	Borage
Date planted	18.4.2011
Status of sample	Organic: The Organic Centre [Rossinver]
Collected sample	Cluainin Garden [Leitrim]
Seed saving	Let the flower heads dry and wait for them to turn brown. Pick the heads and place them in a small bag, shake well, sort out the seeds and store in a paper envelope.
Notes	<p>The native origin of borage is believed to be in areas lying in the present northwestern parts of Syria, however, the plant now grows wild and is cultivated in many different areas of Europe and the United States. As pollinating bees seem to love to hover and collect around the flowers of the borage, it has been nicknamed the 'bee's bread'. Honey bees are an essential component of modern agriculture as their pollination efforts are necessary for the production of crops world-wide. In Ireland, crops such as apples, strawberries, clover and oil seed rape all benefit from pollination and the value of this service to the economy has been estimated at €53 million per year. The worldwide estimated economic value of pollination is € 153.000.000.000. Exposure to pesticides has produced negative effects on individual bees and their colonies for nearly a century. Bee-keepers throughout Western Europe have reported experiencing 'Colony Collapse Disorder' (CCD) - a devastating phenomenon in which full strength honeybee colonies suddenly fail. Recent reports from France document mortality rates of up to 60%, while the U.K farming minister has warned that British bee colonies could vanish in under a decade. Ireland has 101 species of bee - 14 are well-known social species including the honeybee and 13 bumblebee species.</p>

Genus	Brassica
Family	Brassicaceae
Species	B. rapa
Accession name	Tipperary Turnip
Date planted	18.4.2011
Status of sample	Heirloom: Irish Seed Savers [Clare]
Collected sample	Cluainin Garden [Leitrim]
Seed saving	In spring, the plants will flower, and then form seedpods. The seed pods are green at first, but then gradually dry out and turn a pale tan colour. Once most of the pods are dry and brittle, cut the entire stalks of the plant, and lay out on a sheet somewhere undercover with a good airflow to finish drying off. Rub and crush the pods with your hands to release the seeds, and separate the seeds from the chaff with a coarse sieve.
Notes	<p>Jason Horner grew this variety as a seed guardian for Seed Savers in Clare. [Seed guardian: member of a heritage seed library who undertakes to grow a specific vegetable variety from the collection and return the seed, ensuring it is 'true-to-type' - when the offspring grown from seed have the same characteristics as the parent plant, which produced the seed]. A native cultivar [Land race - primitive cultivar selected by farmers and smallholders, that has not been subject to intensive plant breeding]. Noted in a seed catalogue in 1863 Suttons & Son's offered 17 varieties, whilst today, catalogues rarely offer more than two or three with some of the more recent introductions are F1 hybrids. Advances in seed production to-date include TERMINATOR technology - unofficially known as 'suicide seeds'. Seeds genetically modified to produce plants with seed that become sterile at harvest, making it impossible to save the seed for planting the following season. If it becomes the norm, every year, farmers would need to buy seeds from seed companies, without the possibility of re-planting. The technology would ensure reliance on the seed supplier - i.e. Monsanto, DuPont, Syngenta, Groupe Limagrain, Land O' Lakes, KWS AG, Bayer Crop Science, Sakata, DLF-Trifolium, Takti [whom collectively own 67% of the global seed market]. In Ireland, Turnips were hollowed out and a small ember put in them to ward off demons and devils. They were the first Jack O'Lanterns. Source: ETC group & GRAIN</p>

Genus	Raphanus
Family	Brassicaceae
Species	R. sativus
Accession name	Round Black Radish
Date planted	12.4.2011
Status of sample	Organic: Brown Envelope Seeds [Cork]
Collected sample	Cluainin Garden [Leitrim]
Seed saving	As radishes cannot self-pollinate, pollen must be carried by insects from plant to plant. Garden varieties of radish will cross with all wild varieties. Harvest 3' tall stalks containing seeds pods when pods have dried brown. Pull entire plant and hang in a cool and dry place if all pods are not dried at the end of the growing season. Open pods by hand for small amounts of seed. Pods that do not open when rubbed between hands can be pounded with hammer or mallet. Winnow to remove remaining chaff.
Notes	The descriptive Greek name of the genus Raphanus means 'quickly appearing' and refers to the rapid germination of these plants. The common name 'radish' is derived from Latin (Radix = root). Although the radish was a well-established crop in Hellenistic and Roman times. Wild forms of the radish and its relatives the mustards and turnip can be found over west Asia and Europe, suggesting that their domestication took place somewhere in that area. For over three decades what has been a unique institution on Main Street in Manorhamilton, the Co-op Shop, closed its doors on March 5th 2011. The Co-op Shop started life in 1979 as a stall outside the Market House on Main Street. The stall sold vegetables, locally grown on farms in Kiltyclogher, Rossinver, Drumkeerin and Kinlough by members of the North Leitrim Vegetable Growers Co-operative, and was staffed by volunteers. Each day the stall was put up and a weighing scale carried across the road from the back of McMorrow's Butchers. At the end of the day it was dismantled and put away. "The shop was truly a Co-op, staffed and managed for thirty-two years on a cooperative basis. It is and was a part of Manorhamilton's history. Not just somewhere to shop, the Co-op Shop was a place for great conversation, with many customers coming simply for the craic" - Co-operative member, Eibhlin Nic Eochaidh.

Genus	Brassica
Family	Brassicaceae
Species	B. oleracea
Accession name	Brussels Sprouts
Date planted	16.3.2011
Status of sample	Organic: Brown Envelope Seeds [Cork]
Collected sample	Cluainin Garden [Leitrim]
Seed saving	<p>Brussels sprouts are mostly self-infertile, so seed should be taken from groupings of at least 10 or more plants. A few sprout heads can be left on each plant to over-winter and flower, so the same plants can produce both sprouts for eating and seeds. Like other members of the cabbage family, seed pods must mature and dry on the plant before harvesting. The pods open readily once they've dried. Seeds of brussels sprouts will keep for 4 years if properly stored.</p>
Notes	<p>The exact origins of Brussels sprouts are unknown, but history places the vegetable in Brussels, Belgium, sometime in the sixteenth century. Thomas Jefferson is credited with introducing Brussels sprouts to the United States. He brought the plant to Virginia from Paris in 1821. In 2010, I travelled to Svalbard, on a research visit to meet with Prof. Roland von Bothmer who administrates international visits to Svalbard Global Seed Vault, built on the island of Spitsbergen in the Barents Sea near the Arctic Ocean in the country of Norway. A group of wealthy corporations has invested millions of dollars in this project. The mission statement reads: "So that crop diversity can be conserved for the future". The seed vault has the capacity to house up to 4.5 million different varieties of seeds from all over the planet. It has been designed to run itself independent of human direction. Svalbard is managed and overseen by the Rome based Global Crop Diversity Trust. The question begs asking - why the need for this super fortress seed bank when adequate protective measures for the earth's seeds already exist around the world? Delving into the details of this project is an interesting undertaking. The group of investors includes: The Bill and Melinda Gates Foundation, The Rockefeller Foundation, Monsanto Corporation, Syngenta Foundation, and the Government of Norway. Both Monsanto Corporation (US based) and Syngenta Foundation (Swiss based) are leading agricultural companies active in the development of genetically modified (GMO) plant seeds and related agricultural chemicals.</p>

Genus	Eruca
Family	Brassicaceae
Species	E. sativa
Accession name	Rocket
Date planted	12.5.2011
Status of sample	Organic: Reel Seed Company [U.K]
Collected sample	Cluainin Garden [Leitrim]
Seed saving	Once the lettuces have flowered, seeds will ripen gradually, starting in about a fortnight. Put heads first into a bucket, shaking and rubbing to remove the seeds. If you leave the whole cut plant upside down in the bucket somewhere dry, slightly immature seeds will continue to ripen over the next few days. If seeds feel a little damp, dry it further on a plate before labelling and storing. Lettuce seed should keep for around 3 years, provided it is kept cool and dry.
Notes	<p>Plant geographers and historians hold that its precursors originated in the Mediterranean area, possibly Egypt, and that its seeds carried throughout the world by travellers, explorers and conquerors. Charlemagne's historians credit him with bringing lettuce into France in 780 AD. Lettuce seeds were apparently first brought to the New World by Columbus, for it is recorded as being cultivated at Isabela, his first stop, in 1494. Dutch and English settlers brought lettuce to the northern part of America and it came with the French explorers to Canada. By Colonial times lettuce was a common vegetable in the gardens of upper-class families. In 1806, a seedsman of the times, Mc-Mahon, listed 16 varieties of lettuce in his catalogue. Le Bon Jardinier of 1880 lists 40 varieties existing in France. A report of the New York Agricultural Experiment Station of 1885 describes 87 varieties with 585 names of synonyms. These seeds were collected from Cluainin gardens in Manorhamilton late last summer, where I have an allotment. This is the first allotment scheme held in the town and is part of a wider network of community gardens encouraged through the Transition Town Movement. The word "allotment" is defined under the ACQUISITION OF LAND (ALLOTMENTS) ACT, 1926 [Ireland] - "a piece of land containing not more than one-quarter of a statute acre let or intended to be let for cultivation by an individual for the production of vegetables mainly for consumption by himself and his family". Under this act local authorities by law are obliged to supply 'green spaces' for gardens and allotments.</p>

Genus	Brassica
Family	Brassicaceae [Cruciferae]
Species	B. oleracea
Accession name	Ragged Jack Kale
Date planted	16.5.2011
Status of sample	Heirloom: Maureen Harrison [Roscommon]
Collected sample	Cluainin Garden [Leitrim]
Seed saving	All of the brassicas throw up tall flower stalks covered in lots of small yellow flowers. These form slender seed pods. Once they start to dry, keep a close eye on them, as they tend to shatter and drop seed. Cut entire plants and then leave them to mature further on a sheet indoors. Once thoroughly dry, seeds will emerge from pods very easily. The seed will keep well for up to five years as long as it is stored somewhere cool and dry.
Notes	An ancient vegetable descended from the 'wild cabbage' native to the Mediterranean region. Russian kale was introduced into Canada (and then into the U.S) by traders in the 19th century. During World War 11, the cultivation of kale in the U.K was encouraged by 'Dig for Victory' campaign. We're now being encouraged to dig for a very different sort of victory - growing some of your own food reduces your environmental footprint and saves you money. Mrs. Sanaa Abdul Wahab Al-Sheikh joined the Iraqi National Gene Bank in Abu Ghraib [now globally associated for its prison] in 1988. Working in a fractured country she continues to scour farmer's fields around the country collecting hundreds of accessions to rebuild the collection. In 2003, the gene bank had been looted and destroyed. Since 2011, I have been in contact with Sanaa. I had heard rumours of a precious collection of more that 1000 rare seed varieties - from ancient wheats to chickpeas and lentils stored in cardboard boxes, buried underground and with some possibly moved to Syria during the war. William Erskine of the International Centre for Agricultural Research illustrates the value of the Iraqi seed collection as "the genetic time capsule containing Iraq's agricultural heritage." Following the Iran-Iraq war, two Gulf wars and the brutal UN sanctions, including the legacy of Paul Bremers 100 Orders and Order 81, the diversity of Iraq's agricultural heritage is increasingly at risk. Denis Halliday stated that the attacks on Iraq's sovereignty and ability to feed themselves "should constitute a war crime."





Genus	Beta
Family	Amaranthaceae
Species	B. vulgaris
Accession name	Rouge Crapaudine
Date planted	24.3.2010
Status of sample	Heirloom: Irish Seed Savers [Clare]
Collected sample	Cluainin Garden [Leitrim]
Seed saving	<p>Beetroot is a biennial, and flowers in second year of growth. The seed stalks form by growing up to four feet tall, at this point tie them together, supported by a stake. As they develop, cover the group of flower heads with either a shiny paper bag that will withstand rain, or a bag made out of agricultural fleece. Shake the bag from time to time to make sure that pollen is distributed within the bag. Harvest when seeds turn brown and dry out.</p>
Notes	<p>'Rouge Crapaudine' is the most ancient named beet variety on record and according to the botanical historian Andrew Dalby, a beet mentioned in a Greek document dating from 320 BC was most likely the precursor of the 'Rouge Crapaudine' familiar to French gardeners since the 1600s. 'Rouge Crapaudine' means 'red toad like one'. This beet is a far cry from the smooth-skinned, round red beets of today's supermarkets and, sad to say, gardens. It's a wild, savage vegetable that makes no apologies to civilization or to the modern demand for uniformity (Stephen Nothingham - French gardening). DUS Testing: DISTINCTNESS: New varieties should be clearly distinguishable from any other existing varieties; UNIFORMITY: Individual plants of new variety should be sufficiently uniform at the same propagation stages; STABILITY: Characteristics of new variety should be stable through repeated propagation. According to French farmer and activist Guy Kastler DUS Testing has led to a highly organized and controlled seed supply system to ensure "that only uniform seeds for industrial farming can be sold on the market, condemning farmers' seeds and traditional varieties to the black market if not complete illegality. Together with strong intellectual property rules and the production of hybrids and GMO crops, European seed laws lock farmers out of the seed system." This practice has led to the homogenization of lands, seeds and food and leads to a dependency on the use of pesticides and fertilisers, and often unlimited irrigation, with farming becoming more and more removed from its environment. Source: www.grain.org</p>

Genus	Secale
Family	Poaceae
Species	<i>S. cereale</i>
Accession name	Rye
Date planted	26.5.2011
Status of sample	Heirloom: Anthony O' Flynn [Local]
Collected sample	Cluainin Garden [Leitrim]
Seed saving	Gathering grain seed is a matter of cutting or pinching off the tops. Until 1997, Ireland was the only country in Europe without a collection of native Irish cereal varieties. Michael Miklis in Piltown, Kilkenny initiated the ISSA Grain Project. To date, 25 native Irish oats, and several wheat, barley and rye have been collected. These seeds were obtained from Anthony O' Flynn who is growing a regular crop with which to thatch his cottage. The diagram is re-drawn from Andrew Bleasdale's work on the Circulation of Rye Seed on the Aran Islands, Co. Galway (1994).
Notes	Rye - annual, cross-pollinated cereal, adapted to extreme climates. Main centre of wild races found in the plateaux and mountain ranges of central and eastern Turkey, north-western Iran and Transcaucasus. Origins of rye are speculative - it has been suggested that rye was an Iron Age or a Roman introduction to Britain. Carbonised grains have been found in Ireland, which predate the Roman conquest of Britain - [Carrowmore, Co. Sligo]. This find has been dated to 530 BC with similar findings throughout Europe (dating between 800 BC and 100 AD). The secondary crop origin of cultivated rye was first postulated by Nikolai Vavilov (1887-1943), Russian botanist and geneticist who devoted his life to the collection, study and improvement of many cereal crops. From 1924 to 1935 he was the director of the All-Union institute of Agricultural Sciences at Leningrad, which hosts the world's largest collection of plant seeds. This seed bank was preserved even though throughout the 28 month Siege of Leningrad, [it is rumoured that many of Nikolai's assistants starved to death whilst protecting the seeds as Hitler had plans to seize the seed bank]. Today, the N.I. Vavilov Institute of Plant Industry in St. Petersburg maintains the world's largest collection of plant genetic material, accessible to public and private seed guardians. Rye was once considered an important crop in the west of Ireland. It is no longer possible to obtain statistics on rye cultivation from the CEO office as rye is now placed in the category of "other cereals". It is reasonable to assume that rye cultivation has declined although a few small suppliers grow rye for thatching purposes - with most seed brought in from England and Scotland.

Dr. Ollie Moore

Dr. Oliver Moore [Ollie] is an author, academic, journalist, blogger and all-round organic expert. In this column, Dr. Ollie examines the differences between industrial and organic farming and their contrasting effects on our planet's natural cycles.

Life on spaceship earth is wondrous. There are some very specific and very special things which make the natural world function on this third rock from the sun. These fundamental laws of nature are as old as the planet itself and far older than our short civilization, which is a mere 10,000 years old.

We are all stardust - literally. Joni Mitchell sang so in her song Woodstock and, it turns out, she was right. Every element on earth, except for the lightest, was created in the centre of some massive star. Heavy elements are formed in the supernova explosions that occur when a star dies. These elements mix with other matter and form new stars, some with planets such as our own planet earth. So "the iron in our blood and the calcium in our bones were all forged in such stars. We are made of stardust", according to physicist Dr. Edward Zganjar and Joni Mitchell.

Most living things are mostly made of oxygen, carbon, hydrogen, nitrogen, with other elements occurring in smaller proportions. These are anomalies - we are carbon based and yet only 0.0355% of the atmosphere is carbon. 78% of this atmosphere is in fact nitrogen, yet plants have not evolved to use it. Life depends upon the elements on the planet functioning in a balanced way - it really is as simple as that. And as matter functions in a closed system (i.e. it all has to go somewhere) nutrients (the term used in agriculture for elements) need to be recycled in a harmonious process.

Impact of Food Production

However, industrial society, essentially the last 200 years of western civilization, has thrown some of these balances out of kilter. We don't circulate our nutrients in a way that is to be beneficial; so instead, we have issues with waste management and pollution rather than the constructive use of available fertility.

Take food production: industrial agri-food production goes through what is called the Haber-Bosch process to harness atmospheric nitrogen and make it available as a synthetic fertilizer for farming. This process involves making a “fertility furnace” of 500 degrees Centigrade, using enormous amounts of fossil fuels. This and its transportation and storage inevitably contributes to climate change whilst also using up eons of stored up carbon in the process.

Industrial farming depletes soil rather than builds quality because it has these synthetic fertilizers. We need a tiny layer of soil on the top of the earth’s crust for our food system to work, yet modern industrial farming methods shrink the size of the topsoil available to humanity, from which food production depends.

Organic farming methods, however, are more in kilter with the natural cycles of the planet. Because organic farmers cannot use synthetic fertilizer, due to the environmental damage it causes, they use natural methods and processes to create fertility. Clover is one of the few plants that can actually harness all that atmospheric nitrogen naturally - so organic farmers use that plant, along with rotating the farming practices from field to field each year, instead of synthetic fertilizer.

Magic Soil

Biodiversity under the ground is as important as that over the ground - indeed they depend upon each other.

A teaspoon of soil generally contains between 100 million and 1 billion bacteria - vital to the soil’s functioning. They are accompanied by the smallest virus, algae, fungi, and protozoa, higher up by, more complex nematodes and micro-arthropods and then the visible - earthworms, insects, small vertebrates and plants.

Simply put, these all interact with each other and carry out vital functions. Microbes decompose matter, fix nitrogen and make minerals available to plants; they also store and recycle nutrients, make soil more porous, build humus, increase all leads up the food chain, to the point that insects are eaten by birds.

So because they cannot use synthetic fertilizers, organic farmers encourage these natural soil building processes, as this also leads to healthy grass, healthy crops and healthy animals. Scientific studies back up this notion that organic farming is good for soil quality. Microbes are more abundant, nutrients become more available to plants and the soil becomes stronger. So the soil can better resist problems like physical/structural damage, erosion and compaction. What this means is that organic farms function better in both drought and flood situations. In fact, a study of flooding in Germany recently recommended using organic farms as buffer zones due to the improved soil structure they offer.

An Organic Future

With the erratic effects of climate change coming and intensifying as the years roll by, this ability to function in extreme weather will become more and more important. It will especially be more important in the places where food is, in an immediate way, a matter of life and death. All of this means that organic farms are resilient, or future-proofed. We take for granted so much of modernity and its affectations. And yet, so much of this is transient and based on the rapid and unsustainable use of fossil fuels. When we run out of these, which we will, we will have to farm organically - as we have done 9,800 of our 10,000 years as a settled civilization.

So here on spaceship earth, organic food is one way for the stardust to shine.

Re-visiting the archive: PIP

In 2007, I mapped an orchard in Sligo with the help of land surveyor Malcolm Gerry. We found over forty apple trees and a number of pear trees. In 2012, I returned to this site to find that the orchard had been eradicated and in its place a steel fence had been erected, which spanned the original site of the orchard. This space now operates as a storage depot. In response to this erasure, I organized a 'break in' with support from the Leitrim Sculpture Centre and artists Tracy Hanna and Sarah Quigley, to plant an apple tree 'Brown Crofton'. This event was documented in PIP.











SEED MATTER

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Background note

Christine Mackey is an artist and independent researcher who employs diverse disciplines, subject matter and tactics in devising works that can generate different kinds of knowledge of place - their hidden histories and ecological formations. Using diverse graphic sources and quasi-scientific methods, her work explores the interactive potential of art as a research tool and its capacity for social and environmental change

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