Floating Island Garden

Alec Finlay

with
Linda France
Professor Flood
Phil Gates
Morven Gregor & Gerry Loose
Ed King
Ken Thompson
Susie White
Colin Will

Illustrated by Laurie Clark

Morning Star
Platform Projects
Science Learning Centre North East
Northumberland Coast Area of Outstanding Natural Beauty
2007

an anthological *flora botanica* of plant specimens native to the coast of Northumberland selected by writers, botanists, scientists, gardeners and other experts, for preservation on floating island gardens, a series of amphibious structures designed to anticipate the effects of climate change and raised sea levels.

List of Contents

Island Garden Conversation

The conversations of Professor Flood and engineer Ed King,
summer of 2015, as recorded by Alec Finlay

'Time turns metaphors into things'
– Robert Smithson

I had gone to the Northumbria to recover from a recurrence of malaria, a persistent fever that I couldn't seem to shake, probably brought on by a spell in Suffolk working as a clerk for the Dykes Commission. All that follows took place in the summer before the Great Wave. In those days the island was still connected to the mainland by a causeway and you could drive across, if the tides were right.

I first got to know the Professor because the boat-shed that he and Ed did most of their work in was on my regular walk. I would loop around the walls of the castle and stop off by the upturned boats for a chat. Later on they both got in the habit of joining me on an afternoon walk past Cadwallender's melon farm, round the beach and along the strand as far as the half buried log. The Professor used to say, *that's enough now Ed, down tools, let's walk us over to see the vale*.

I was still keeping a journal, an attempt to shuck off an unhappy affair and a record of the vivid malarial dreams which came every third or fourth night for the first month of my stay. Reading them over in bed one evening, I realised that much of what I had written down was my recollection of the conversations we had on our daily walks. As life away from the island receded and as the dreams lost their intensity, I made this my new task. Writing from memory was a way to use up some of the long hours before bed, as I tried to recall all that had been said that day. I don't remember if Ed and the Professor ever asked me directly about the journal, but somehow it became an unaknowledged fact. The walks themselves gradually took on the character of an informal ambulatory report on the progress of their research, and sometimes one of them would lay special emphasis on a particular discovery or speculation, making sure I grasped the finer points.

As I remember it the hut was always neat. They both had a jar of pens and sets of pencils – Professor Flood's all yellow, Ed's all green – sitting ready on their benches. The Professor liked to play madrigals and Dowland, that kind of thing; but sometimes in the afternoons he would put on a particular old field recording of the sea, one made with an underwater microphone, with air bubbles and swell, and the crackling of a million pistol shrimps, which the Professor said sounded *just like bacon cooking*. He was also fond of tum-tumming poetry to himself, especially some lines of Stevie Smith's:

Oh sweet it was to leave them,
And sweeter not to see,
And sweetest of all to walk alone
Beside the encroaching sea,
The sea that soon should drown them all,
That never yet drowned me

Then he would chuckle away to himself.

Ed and the Professor used to refer to the floating gardens as *our island*, or sometimes by the acronym F.I.G. When we were walking one of them would often stop and point something out; the way salt spray had burned a leaf or how the wrack hung around the tide line, and make some connection with their work.

Ed King: We need to raise the plants up, away from the salt water, make a higher structure, an enclosure around the plants; and cut down on wind damage. Something like a floating greenhouse?

Professor Flood: But this will increase the temperature –

EK: – Yes, good for some species, negative for others, so we create specific climactic conditions for different species.

PF: Our model is not tropical, but we will need several linked gardens, each island with it's own specific climate & soil type – mini versions of the old hot houses I remember at Kew.

The early European botanists sailed the world bringing back plants with them to the centre of the Empire for botanical gardens. The Professor said that we must set sail again, but this time on a voyage north to preserve our native flora. Their focus was the old Northumbrian plants which survived in the dunes and the few remaining salt marshes. As Climate Spiral increased the floating islands would sail north at a steady rate finding the correct climactic equilibrium. They were only seeking 'normality', to rediscover a familiar for flora in this time of rapid change – of *ca-ta-strophee*, as the Professor was always saying.

Ed experimented with different containers for the plants, to avoid cross contamination. Otherwise the stronger plants would end up taking over the whole island, leaving a mat of grasses, reeds and a few trees. The designs for the floating support structure – call it raft, boat, ship, or island, – each suggested different possibilities and led their research off in new directions. They sought solutions to the problems of water storage, piping, shelter, energy generation, filtration, and so on.

PF: The most important element is always water; gathering fresh water; pumping sea water; providing water to each plant at the correct rate.

EK: Should we use a closed system? One sealed, so that a fixed amount of water is recycled through the plants, condensing on the walls of a greenhouse bubble. And what will happen as the plants grow larger? Or should we use an open but protected system; with water from rain catchment? Or should we create a desalination system, with water drawn-up into evaporation containers, condensed, creating a water reservoir?

PF: All of which suggests that we will need a power source.

EK: A windmill perhaps? Small windmills have been in use on boats for some time. I've seen notes on a large windmill turbine that powers a catamaran. It seemed to permanently sail into the prevailing wind, as if it were on an endless zero-energy voyage? Possibly we can use water power, harnessing the flow of water through and over the structure. When the island is anchored the swell will flow through it, and if we add some small propellers this will generate current – a small scale wave power unit. Different generating systems will come into play in different conditions and each method can only produce a small amount of current, so a variety of sources will be needed. A windmill could give us mechanical power to pump the water into desalination containers, or from a reservoir up into the plant containers; or it could be used to generate electrical power, to aid the desalination process. Solar power would be ideal, generating low levels of power over a long period...

PF: If only there wasn't so much sun!

EK: But with a power source we can raise protective covers against the sun, or to shelter from a storm.

This was how their conversations would develop, with a natural pull towards complexity; a raft became a boat, a boat became a guidable vessel; a guidable vessel needed maintainance. The more like a boat the island became the more we were aware of the absence of a pilot or crew. Was this our *Marie Celeste?* We couldn't help casting a thought into the future, wondering if we wouldn't regret the absence of a safe bunk for a stowaway hidden amongst the plants.

EK: We're creating an organism. Perhaps it needs a brain, even a rudimentary one? Some form of 'consciousness' that can sense certain conditions – the moisture content of the soil around the plants; the temperature; the quality of the air – and then take appropriate action. A 'brain' is the only way to correct these extremities and keep a healthy balance in the plant environments; steer the right course along the coast and avoid reefs; maintain a suitable temperature equilibrium; take corrective action and pump water into the soil; sense that

the reservoir is getting low; trigger extra water collection from condensation; and raise the shades in high summer. These are all decisions that have to be taken in some way.

PF: Plants always move towards what they need in order to survive. They are like a compass. Sometimes, within the plant itself, bending in the direction of the light and water; or over generations – seeds being shed, floating on winds, carried by animals in their fur, secreted in their dung, carried by birds – moving towards ideal conditions. But after The Change they couldn't keep up. What we are trying to do is create something that replicates this ancient genetic program of adaptability and colonisation, but with a new temporal dynamic, an in-built flexibility to elude these catastrophes. We need in effect for flora to skip through time. We will use nature, use the senses of the the plants themselves to trigger a signal for when it is necessary to move – electronic receptors on the plants responding to warmer or cooler air from a certain direction, and can shift towards or away from a northward migration, one that is slow in our terms but incredibly rapid in terms of the plant.

In designing the model islands Ed turned to wooden ships as a practical aid, clinker-built, plank over plank, a reminder of the boats he used to see beached on the Suffolk coast, as it was then, on childhood holidays.

EK: Clinker is technically difficult and time consuming, but a fantastic solution to the problem of making a surface that curves in two dimensions. It allows more complex shapes; separate pieces of timber are placed horizontally, like barrels are vertically – picture the island as an enormous shallow barrel with a wide flat floor.

Ed went up the coast to an abandoned brewery near Dunbar to source used barrel staves, bringing back a set of dark stained old oak casks that would become holders for the island trees – *tree-sail*s as he called them. I liked the association with Jim Hawkins, hiding in the apple barrel in *Treasure Island.*

Plant-wise, one of the botanists the Professor had corresponded with a few years ago said that if he needed an apple tree then he had a few crab apple, a native. Another visitor, the old poet-gardener Gerry Loose, gave us a recipe for apple jelly.

In the evenings Ed used to sit in an old Orkney chair, like a hooded monk, surrounded by books on the boat-building traditions in different parts of the world. He had letters and rough pencil sketches with scribbled notes, sent by engineers and boat-builders who were working on similar structures. Ed's pet scheme was a Pacific outrigger. The wide area between the main hull and the outrigger was perfect for placing plants and catching rain water. His cabin was littered with samples of all kinds of natural materials, bark, willow, and reeds that could be

bound together like thatch – an old photo of *Ra*, the boat Thor Heyerdahl sailed across the Atlantic in, was pinned to a drawing board – and he had cut-out photos of coracles, with tar coated cloth over a bent wood frame.

In the end they decided that all of these sketch designs were too boat-like, with the emphasis on movement, the vessels mostly long and thin, shaped with a pointed end. The island garden was a slower structure and most of the time it would be anchored. Changes of location would be defined by the slow heating up of the earth.

The Professor's ideas drew round and round a smaller arc. He was more concerned to think with nature, adapting natural forms and slower processes. In a way I don't think that he ever gave up his dream of rechanelling the forces of nature herself and rediscovering the stability of an earlier time, returning to the clearly defined seasons of his youth.

PF: Ed, don't fight the water, allow the water to pass through the structure. The island will be at anchor; the anchors are like roots. It will need multiple anchors, small ones that can be easily lifted when it's time to move on to a new location. And as well as an anchor it needs a 'sail'.

EK: Even when it is stationary a mast is a good thing. We could think of it as a kind of floating birds nest, a hodge-podge of skew-whiff branches. I could build it out of a lot of small pieces of timber tied or linked together – use the buoyancy of the timber, or add small buoyancy tanks among the timbers. And I could take the timber as found branches cut from trees, not planed square section; or I can get hold of other materials – imagine thousands of plastic bottles netted together to form a mass. Filled with air they have very high buoyancy. Once I built a raft and walkway in Old Manhattan harbour that was supported on empty plastic turnip barrels.

Sailing ships have a nest, a crows nest, and we can have a flag too. And the sail can be a tree, or a spinney of small trees, willow or hazel; something with wide cast branches to catch the breeze but not blow over.

PF: The surface area of the leaves make a sail, but a real sail is restrained, angled in relation to the wind in order to catch it – that's how a ship can move against the wind. The tree could be useful, but it could only drift with a prevailing breeze, so we still need power for direction.

EK: But we could float out an anchor in the direction the island needs to travel in and then pull towards that.

One of the essays the Professor had collected from botanists was concerned with companion animal species, insects, birds, which could aid reproduction but added another component, one which may unbalance the fragile garden ecosystem, or even destroy it. Another essay that

I found in a tattered folder behind a bookshelf discussed Darwin's study of seeds and how they are cast on water or air. It all conjured up a wonderful image of the island bombarding species onto some northerly coast or cliff-top where they could flourish again.

In another file there were photocopies of letters from the Professor to the Environment Ministry with a proposal to rescue the few old oil platforms that hadn't been sunk, and convert them into gigantic floating island gardens.

EK: It makes me thinks of swords into ploughshares, after what the oil industry was responsible for. The rigs are great, large space available, and high above sea level, away from spray. They're too big to get close to the coastline but then, on the other hand, they're large enough to ensure plant survival far out in the sea, if the pollution scale keeps rising. Difficulties though – hard to move – and tug boats use more fuel than we could get rations for. They do move slowly and could drift northwards in time. They are also big enough to support large sails and windmills.

And tankers, another massive structure – they can't all be being used in the water trade? I envisage smaller modular islands as a self-supporting, uncrewed autonomous systems, but on a rig or a tanker repairs are needed, and a way to steer. In the next 5 or 10 years they will take be requisitioned for agriculture anyway, with trained aqua farmers sculling from pod to pod, or bicycling around a vessel with a watering can and secateurs.

PF: The clean up that these would need to deal with the oil and other pollutants, that can all be helped by using the right plants. Somewhere I have some old case studies on groups that worked with mushroom compost, mosses, rag weed and ivy; 'phyto-remediation'.

Years before, the Professor had done some work with an aid project in Bangladesh on woven plant rafts (made from water hyacinth, with cow dung and soil), which had sustained people in the *monga*, the season of food shortages, before the great submergence of 2012. When he talked of this time we knew that he wasn't pretending – the island gardens would have to be a reality in the end. The improvisational nature of these food rafts was an inspiration. He wrote to botanical seed banks all over the world trying to discover a sea water species or floating sea weed, like the Sargasso, with which to construct an organic island garden.

EK: Even if the islands stray into unfriendly waters we can create hydrophonic capsules for seeds. The seed capsule will be marked in various languages with the climate conditions that a particular species requires. And with multiple islands it might be possible to send out small 'explorer' units in directions that are sensed by plants, wind temperature, etc., and if they report back good conditions, then the rest can slowly move up to new climatic areas.

These speculations occupied their long drawn out cups of tea. The day-to-day research was more mundane: the floatablility of the various prototype designs; buoyancy; stability in choppy water. The Professor was a climatologist not a carpenter, but he had Ed's pragmatic skills and, as he said, they didn't need to actually build a boat for they already knew what a boat could do. They were planning something more unusual, something that was between a barge and a floating birds nest.

For a time I became an accomplice myself, reading up on garden design. One evening I gave an image-show of the Asuka period in Japan, when a new style of pebble, gravel and rock gardens developed in imitation of the sea. They were called *suhama* (gravelled seashore), or *ariso* (rocky beaches), and eventually the word 'garden' itself became known as *shima*, which means 'island'.

A poet I knew sent me an article on an American artist who had made a drawn proposal for an island garden a few years before he died in a plane crash. It was very simple, an old rusty barge pulled by a tug that would sail slowly around Manhattan. The artist's notes specified flora native to the region, maple, beech, birch, bur oak, sycamore, dogwood, willow, hazel, chokeberry, sumac, hydrangea and blueberry, all planted in earth piled over bales of hay.

I also did some background research on gardening. The Professor was convinced that if we could grow seaweeds below the island these could be used as fertilisers. I tried to follow all of their ideas, studying botanical and engineering textbooks, old hard drives with histories of the Change era, but by the end of the summer I had retreated back to my volumes of Boswell, and Janouch's *Conversations with Kafka*, seeing myself of more use as a memorialist. Mostly I would just listen, learning how to follow the rhythms of speech, scribble the odd note unobtrusively. I leave these conversations now, a record of that time of the first island gardens.

A Planting for a Floating Island Garden

Phil Gates

A strip of cliff-top vegetation. Its days are numbered. Waves have undercut soft rock since Neolithic hunters stood here to watch sunrise. With each passing year, more flowery turf slithers into the sea. Teetering between precipice and wheat fields, the surviving strip narrows after every surging equinoctial spring tide. Within a lifetime, it will be gone.

A thought experiment. What if the turf should slide down the cliff into a lifeboat, drifting on currents to new landfall? Would these wild flower species, living together here in uneasy truce, survive the journey intact as they passed through unfamiliar climates? Ecologists worry about such things.

Like contestants in *Big Brother*, plants have personality traits – aggression, tolerance, treachery and unexpected resilience – that surface under stress. Which species would survive until landfall?

Sloe
Prunus spinosa
Prickly defences, spreads by suckers. A prolific fruiter if bee pollinators oblige, but sloes are so bitter that birds reject them, except as a last resort.

Harebell
Campanula rotundifolia
Far tougher than slender stemmed bells would suggest. Tolerates drought.

Red barista
Odontites verna
A pretty parasite, trapped in a culture of dependency: its roots fuse with those of grasses, to tap their mineral supply.

Creeping bent
Agrostis stolifera
Ubiquitous grass, unfussy about neighbours but an ambitious explorer of new territory. Its rhizomes creep relentlessly, unseen below the soil surface.

Bittersweet
Solanum dulcamara
Freeze tolerant. Poisonous to people. Leans on other species for support, to display its own flowers advantageously.

Bramble
Rubus fruticosus
Seedlings, from seeds that passed through a bird, send long arching stems that leapfrog neighbours, rooting at their tips and sprouting anew. A prickly, adaptable, aggressive coloniser.

Gorse
Ulex europaeus
Impenetrable thickets bear a few flowers all year-round, but are transformed into a mound of coconut scented golden blooms in spring. Nothing else flowers so prolifically, but waterlogged soil can be its downfall.

Dog violet
Viola riviniana
Bee-pollinated spring flowers, but secret bud-like blooms that never open surreptitiously produce seeds all through summer. Seeds will not germinate unless chilled by winter.

Cowslip
Primula veris
Rosettes of leaves, passed unnoticed all summer, produce spring blooms that set seed before they are submerged again by grasses. Seeds must have a winter chill to break dormancy.

Primrose
Primula vulgaris
Unlike cowslip likes shade. But these species are promiscuous and where they coincide illicit hybrids form that may be more adaptable than either parent.

Sea buckthorn
Hippophae rhamnoides
Aggressive, spiny coloniser that shrugs off salt spray. Separate male and female plants, so orange berries only when both sexes meet.

Marsh orchid
Dactylorhiza purpurella
Exotic flower spikes appear in unpromising boggy grassland. Seeds like dust, release by the million, and carried on air currents, must find a symbiotic soil fungus for germination.

Meadowsweet
Filipendula ulmaris
Likes dampness around its roots, which sprout antiseptic-scented foliage and frothy white flower heads. A prolific seeder.

Ragged robin
Lychnis flos-cuculi
A fragile beauty that shares meadowsweet's boggy habitat.

Agrimony
Agrimonia eupatorium
Late flower spikes, when most other species have already faded. Competitive in drier grassland. Hooked bell-shaped seeds are carried in animal fur.

Perennial sow thistle
Sonchus arvensis
Yellow late summer blooms on cliff tops, against a blue sea. Beautiful, but very assertive. Fast-spreading, white underground rhizomes are fragile – break them and every fragment becomes a new plant.

Mouse-ear
Cerastium fontanum
Ubiquitous, usually ignored but persistent. Tiny, exquisite, translucent seed capsules that would test a glass-blower's skills release seeds that persist in the soil. Wherever earth is disturbed, mouse-ear foliage appears.

Great horsetail
Equisetum telmateia
This genus, Equisetum, has the longest unbroken lineage of any: a living fossil. Impressions in coal are giant versions of today's survivors. No other plant genus has such a pedigree for persistence.

Hemp agrimony
Eupatorium cannibinum
Pink flower heads, on waist-high fibrous stems, produce tiny plumed seeds carried in the breeze. Clump forming, slowly spreading, long-lived.

Lesser celandine
Ranunculus ficaria
A blaze of yellow stars in early spring but vanishes by early summer. Dies back to produce bulbils – tiny buds that bide their time in the soil, until the flowers return every spring in even greater profusion.

A Planting for a Floating Island Garden

Ken Thompson

Our botanical lifeboat might one day make landfall, but even if it doesn't, all is not lost. Plants are obliged to spend their lives in one spot, but they have one chance – as a seed – to travel and see the world, and some have become very good at this indeed. In this case they have a choice of possible vectors – water, wind and passing birds – and we can expect them to make use of all three.

Since the sea inevitably delivers seeds to the shore, maritime plants are best at exploiting its dispersal possibilities. The sea pea *(Lathyrus japonicus)* is an exceptionally beautiful plant of shingle beaches. Its 'peas' can be eaten, fresh or cooked, but please don't – it's very rare. Its waterproof seeds can float in salt water for at least seven years, and still germinate. That's enough time to travel over 50,000 km.

The bindweed family shares the pea family's waterproof seeds and also contains some adept maritime floaters. Sea bindweed *(Calystegia soldanella)* is a sand dune plant, with striking striped pink and white flowers.

Commoner than either is sea rocket *(Cakile maritima)*, usually found growing at the strand-line on sandy beaches. Its flowers betray its status as a cabbage relative. As the name suggests it's edible, but bitter and not recommended.

Some seeds are so good at floating in sea water that they make their way to our shores from the tropics. Not surprisingly, these mysterious visitors have acquired a good deal of folklore down the years. The sea bean *(Entada gigas)* and nickar nut *(Caesalpinia bonduc)*, both tropical American legumes, are thought to bring good luck to anyone who finds them. But you will need to be very lucky in Northumberland – most are stranded on the west coast. They're often viable and will grow, given plenty of warmth, but beware! The sea bean plant is enormous.

Another good way to get around is by being airborne. Seeds can do this either by being very small, or by having some kind of wing or parachute. A big plant helps too, by releasing seeds into more turbulent air far above the ground. It also helps to produce lots of seeds, because most will miss their target and end up in the sea.

Kings of wind dispersal are the willows *Salix spp.* and their close cousins, the poplars *(Populus spp.)* They score on every count: tall plants with tiny seeds, each with a tuft of white hairs, produced in prodigious numbers – millions per tree every year. Dozens of willow seedlings turn up in my garden every year (who knows where from?) and they probably do in yours too.

Nearly up there with the willows are the (unrelated) willow-herbs, with equally numerous airborne seeds. Most are in the Epilobium genus, but best of all is rosebay willow-herb

(Chamerion angustifolium). This tall herb was a shy and rather retiring northern plant until it dramatically colonised London's bomb craters in the 1940s and 50s. Some claim the familiar weed is actually not the same plant as the original native, but no-one really knows. Certainly our commonest weedy willow-herb, *(Epilobium ciliatum)* is an American invader.

Beating the willow-herbs hands down for sheer diversity are the daisy family, many with elegant 'dandelion-clocks' of parachuted seeds. Oxford ragwort *(Senecio squalidus)* is a familiar city-dweller. A native of Sicily, it dwelt in quiet obscurity in Oxford Botanic Garden for many years until released by the railway network. It proved to be fond of railway ballast, and also found trains to be an effective means of travel. As one observer commented, 'I have seen them [ragwort seeds] enter a railway-carriage window near Oxford and remain suspended in the air in the compartment until they found an exit at Tilehurst'.

A whole army of thistles *(Cirsium spp.)* adopt the same strategy, giving rise to the phrase 'as light as thistledown'. In my experience, the thistle parachute shows a worrying tendency to become detached from the seeds and much floating thistledown turns out to be no more than that. Still, they seem to get around well enough.

Another tree that excels in the production of small, wind-dispersed seeds is birch *(Betula spp.)*, this time with winged seeds. Bigger and less air-worthy than willow seeds, they nevertheless manage to get nearly everywhere. They have other uses too – every winter flocks of goldfinches descend on the birches in my garden to gorge on the seeds. I never see this bird at any other time of the year.

Masters of the extremely small seed are the orchids, with helleborines *(Epipactis spp.)* among the smallest and lightest. So small are the seeds that they carry no food reserves with them at all, and must rely completely on a mycorrhizal fungus to support the young seedling. But this means that, even though rather small plants, they can produce seeds in awe-inspiring numbers.

Finally, the best strategy for escaping a floating island: most seeds entrusted to the wind or waves will never reach anywhere, but a seed in (or on) a bird is definitely going somewhere, if only to another island.

Seeds adapted to travel inside birds mostly belong to trees and shrubs, and three of the best live in my garden. Wild cherries *(Prunus avium)* are so tasty that blackbirds sit in my tree, waiting for them to ripen. So good are they at gathering this harvest that I rarely even see the ripe fruit, let alone have the chance to taste them. Later in the year, holly *Ilex aquifolium* provides another seasonal feast for the same blackbirds. Holly comes in two separate sexes,

so if your tree has no berries, maybe it's a male. Even later, when there's little else to eat, ivy *(Hedera helix)* is one of the most nutritious of berries.

Holly, ivy and cherry depend on being eaten and later excreted, but parasitic mistletoe *(Viscum album)* has a different strategy. Mistletoe berries are so gluey that thrushes wipe the sticky seeds off their beaks onto tree branches, which is exactly where they want to be. The mistle thrush is named after its fondness for our native mistletoe, which is just one of 1,400 species worldwide.

Meanwhile, other seeds travel on the outside of birds and other animals. I give these a 'sock rating', depending on how many I find attached to my socks after a country walk. Top of the socks is Galium aparine *(goosegrass, cleavers or – best of all – sticky willie)*, a scrambling annual whose seeds and indeed the entire plant are covered in small hooks. All its names refer to its ability to catch hold of other plants or passing animals; the Latin aparine is from the Greek aparo, to cling or to seize.

Close behind is wood avens *(Geum urbanum)*, whose seeds are not only superb at getting hold of socks, they are then almost impossible to remove. Wood avens is not unattractive, but its rarer and shyer cousin, water avens *(G. rivale)*, is delicately beautiful. As its name suggests, it's usually found by streams. Where the two grow together, hybrids are common.

The only reason burdock *(Arctium minus)* gets a lower sock rating is that its seeds are normally well above sock height. The seeds themselves aren't sticky, but the whole seed head has hooked bracts. Still the plant of choice for throwing at your companions on a country walk, the seed heads will stick firmly to anything remotely woolly or fibrous. Extract of burdock root is a renowned blood detoxifier and is still an ingredient of traditional dandelion and burdock.

Last but not least, wild oat *(Avena fatua)*, the largest of many grasses whose seeds have a twisted, 'hygroscopic' awn. The awn's function seems to be to screw the seed into the ground, but they're pretty good at attaching to socks as well. To see wild oat seeds in action, spread some dry seeds on a plate and sprinkle with water. Guaranteed to break the ice at parties.

The Edible Island

Morven Gregor & Gerry Loose

Cultivable land perhaps becoming scarcer, giving a greater emphasis on the edibility of wild plants, leads us to the following planting for an island; assuming the island may be anchored for periods allowing for a build up of muds, sands, silts and so on, and can be anchored next to rocks.

Our island, then, is zonal.

At and below tide line we would like to encourage laver, *Porphyra spp*, which the Japanese call nori. Dried in sheets this is the usual outside wrapping for sushi. The Welsh make it into laver bread.

Growing on the tidal mud flats is of course, samphire, *Salicorna europaea*, quite prolific and most delicious steamed and eaten with plenty of butter, it is like asparagus, but with the taste of the sea.

In the zone above high tide we would grow sea kale, *Crambe maritime*. No scurvy on our island.

On dry land, next will be a 'hedge' of plants we have seen growing happily on seacliffs and little lanes: bramble, *Rubus fruticosus* whose berries are irresistible to us and most children; raspberry, *Rubus idaeus*, perhaps even more delicious and the wild rose, *Rosa canina*, whose autumn hips are a rich source of vitamin C and make a fine wine, too. All three make good jams and jellies if you can bear not to eat all the raspberries and brambles straight from the bush. Desserts also suggest themselves – summer pudding, cranachan, clafoutis – the list could be endless.

The combined thorns of these three plants should also keep marauders at bay and provide some degree of shelter for the inland part of the island, where we would have a small open woodland.

Here we'd plant the tree species sloe, *Prunus spinosa*, which gives a black fruit fit only for the making of gin – but what gin! It brings a smile in the coldest winter. The apple also would grow well here – our true native crab apple, *Malus sylvestris*, which makes jellies & wines, or any apple pudding (with sufficient sugar).

Rowan, *Sorbus aucuparia*, would make a good addition to the apple produce and add a splendid scarlet tinge.

Hazel, *Corylus avellana*, on the island would allow us to store its harvest for our own use away from squirrels; possibly preserved in wild honey (nuts, not squirrels).

Gean, *Prunus avium*, the wild cherry: chocolate cherries!

The versatile and advantageous elder, *Sambucus nigra*, will grow happily among these and give us two harvests a year, the first for elderflower champagne and fritters, the second elderberry wine, as blood red as any port; and more jams and jellies. We'd also like to encourage judas ears, *Auricularia auricula-judae*, which grow well on elder.

Juniper, *Juniperus communis*, should also thrive on our island, and would add the juniper to our gin, as well as making a fine addition to gin liqueur.

Underplanting for our little edible woodland are plants of the woods – both open and fully shaded areas.

Sorrel, *Rumex acetosa*, for its early appearance to give us greens with a bittersweet tang; pignut, *Conopodium majus*, for its nutty sweet root, and poor, under-rated nettle, *Urtica dioica*:

Nettle tagliatelle (for 2 hungry people):
Cook half a bagful of nettles (fresh spring tops are best) in a little butter or oil and milk for 10mins.
Puree the mixture.
Measure 7oz (or 7 handfuls or 7 wooden spoonsful) of pasta or bread flour onto a work surface.
Add the nettle puree, 1 whole egg and 1 egg yolk. Knead it all together.
Put somewhere cool to chill for as long as you can bear it (max. 30min).
Push the dough through a pasta machine – folding as often as necessary to get pliable, but complete sheets. Finally, put sheets through the machine again with the ribbon cutter.
Boil briefly and eat with a tomato sauce, black pepper and plenty of parmesan.
A very tasty dish.

And last, the sweetest of all our native plants, the wild strawberry, *Fragaria vesca*, eaten from a pink-stained palm.

Full recipes (with many others & stories of how we came by them) in the forthcoming *Wild & Stolen: A Carbeth Cookbook.*

A Heaven in a Wildflower

Linda France

Naming a thing is giving birth to it, acknowledging its existence and loving it. The common names of wild flowers precede classification, the power that arises from a sense of possession. These names are fashioned out of love, a totally useless, though necessary impulse.

Saying the names of wild flowers is also an act of love, admitting their essence into our bodies and giving it back, setting it free in the breath that forms the syllables of their names, the complex and utterly natural arrangement of lip and teeth and tongue, small buds on a stem of warm air.

A wild flower can never be tamed by naming it. Learning what a plant is called is a gesture of seeing and remembering, honouring each one in its season and its setting. Naming them is in itself an act of preservation, pressing them gently between the roof of the mouth and the mind.

Without knowing it I began a lifetime of discovering the names of hedgerow plants as a child when I collected the cards out of my mother's Brooke Bond tea packets and glued them carefully into their special album. The images were blurred, unremarkable splashes of colour but the names sang clear in my ears – primrose, campion, thrift – like secret friends. I knew this had something of the spell about it when later I came across Cicely Mary Barker's F*lower Fairies* in our local library. I admired all their pretty outfits, delicately stitched out of petal and leaf. Even some of the flowers' names seemed to catch a sense of needle and thread, silk against skin – ragged robin, cowslip, stitchwort, foxglove, cottongrass, skullcap.

Nearly twenty years later when I came to live in the Northumberland countryside after five years in cities, I found the tea-scented names still fresh in my mind, rooted in my imagination. I'd walk the lanes around our house, establishing the lie of the land, and gather them about me like a blessing – germander speedwell, dog's mercury, bird's-foot-trefoil.

I made small coloured drawings to record what grew nearby, to remind myself of their persistence and fragility, their beauty and variety as I carried and grew my own two sons. *The Reader's Digest Field Guide to British Wild Flowers* (1981) – a birthday gift that first year of living on the top of a hill with no road or electricity just acres of sky and wild flowers – was my favourite bedside reading. It taught me the origins of the names I felt so close to and collapsed the years between their naming and my learning them. I found out that chickweed was good for feeding to chickens, mullein, with its felty leaves, took its name from the Latin *mollis* meaning soft, the Old French *moleine*. It satisfied my hunger for language by listing alternatives. Wild garlic was also known as ransoms or bear's ears.

These nursery years sparked the connection in my mind between wild flowers and self-sufficiency, nourishment and healing. So many of the names are associated with mending and mothering. Another name for shepherd's purse is mother's hearts. Then there's feverfew, self-heal, fleabane, woundwort. Lady's mantle is explicitly dedicated to the Virgin Mary.

As my children grew up, so did I, and I came to understand the change inside every living thing in a deeper way. I saw the ineluctable wildness in the flowers and every year added new names to the list in my head from walking in a new place, finding a different species and looking it up or talking to a friend. I've enjoyed getting to know hay rattle, stinking hellebore, butterbur and, last year on the Northumbrian coast, restharrow. The names get wilder and wilder, like the creatures they are often named after – viper's bugloss, hogweed, yellow toadflax, bee orchis. This seems to let slip how irrepressible life is, the gentle flame of sexuality that lights up the darkness, the blossoming of the individual open to their own senses and other people's, the play of the elements.

The names of plants are unashamedly erotic, redolent of scent and texture and tender, secret places. In Sri Lanka, where they are less shy about these things, a man showing me round a Buddhist Temple drew my attention to a little blue pea-like flower. His finger probed the closed hood of its petals as he told me it was called the clitoris flower. We don't have these in Northumberland but names like honeysuckle and lady's bedstraw, nipplewort and navelwort reveal our own homespun sensuality. In the past lords and ladies were sometimes called sweethearts or silly lovers. There is some doubt if its other name, cuckoopint, arose from the supposedly strong sexual appetite of the male cuckoo or the old idea of the cuckold.

The erotic is just one aspect of the creative urge captured in the names of wild flowers. Some of the names sound like poems themselves – forget-me-not, meadowsweet, speedwell, traveller's joy, loosestrife, selfheal – small injunctions to live, to open, to be. Many of them are in the tradition of kennings, intense compounds of habit and habitat – snowdrop, frogbit, bindweed. Their tendrils curl through the leaves of literature, joining here to there in a way that confirms our sense of ourselves, helps us speed well, lose strife and heal ourselves. We have narcissus from the Greeks, the wild daffodil, that remembers death in its nodding golden trumpets; yarrow that lets us know that every Achilles has his heel; Shakespeare's Mustardseed and Peaseblossom, his rude mechanical flowers as well as the more aristocratic, though deranged, rosemary and rue. The names of the plants are as beautiful as they are themselves and bring all their fragrant and subtle associations whenever they are used.

On National Poetry Day 2006 Prince Charles read Robert Byron's *These I Have Learnt* on BBC Radio 4's *Today* programme. It is a poem that creates a map in the memory of the names of wild flowers to pass on to a child not yet born, knowing they need to be saved for everyone's sake.

If I have a son, he shall salute the lords and ladies who unfurl green hoods to the March rains, and shall know them afterwards by their scarlet fruit.

He shall know the celandine, and the frigid, sightless flowers of the woods, spurge and spurge laurel, dogs' mercury, wood-sorrel and queer four-leaved herb-paris fit to trim a bonnet with its purple dot.

He shall see the marshes gold with flags and kingcups and find shepherd's purse on a slag-heap.

He shall know the tree-flowers, scented lime-tassels, blood-pink larch-tufts, white strands of the Spanish chestnut and tattered oak-plumes.

He shall know orchids, mauve-winged bees and claret-coloured flies climbing up from mottled leaves.

He shall see June red and white with ragged robin and cow parsley and the two campions.

He shall tell a dandelion from sow thistle or goat's beard. He shall know the field flowers, lady's bedstraw and lady's slipper, purple mallow, blue chicory and the cranesbills – dusky, bloody, and blue as heaven.

In the cool summer wind he shall listen to the rattle of harebells against the whistle of a distant train, shall watch clover blush and scabious nod, pinch the ample vetches, and savour the virgin turf.

He shall know grasses, timothy and wag-wanton, and dust his finger-tips in Yorkshire fog.

By the river he shall know pink willow-herb and purple spikes of loosestrife, and the sweetshop smell of water-mint where the rat dives silently from its hole.

He shall know the velvet leaves and yellow spike of the old dowager, mullein, recognise the whole company of thistles, and greet the relatives of the nettle, wound-wort and hore-hound, yellow rattle, betony, bugle and archangel. In autumn, he shall know the hedge lanterns, hips and haws and bryony.

At Christmas he shall climb an old apple-tree for mistletoe, and know whom to kiss and how…

He's passing on his love as well as the names of the flowers, a faith in continuity and growth, the rhythm of natural cycles and intimations of the sacred in the ordinary, Blake's *a heaven in a wild flower*. I always told my children the names of wild flowers when we stumbled across them on our walks but they never seemed very interested. They were interested in the elderflowers

we made into champagne every July, the wild garlic we chopped into pizzas and the nettles we cooked into a soup that didn't sting our lips. They made their own undrinkable concoctions out of pineapple weed, sorrel and dandelion. These are the ones that took root. Both my sons, now grown up, earn their living from cooking. The circle is turned and together they and the fruits and blossoms of the earth nourish me.

Time itself is marked in the names of the wild flowers – dandelion clocks, bellflowers, the Lent lily and Jack-go-to-bed-at-noon. We see the passing of our own lives in their mirror, reminding us who we are and what we need, how short a time we have. Each flower is a little book we can read, petal by petal, a small heaven we can lose ourselves in and find ourselves over and over again. What would happen if all these books were burned? What would we pass on to our children? How would we know ourselves and each other? The Floating Island Garden is a library for memory's sake and for the sake of those who'll come after.

A Planting for a Floating Island Garden

Colin Will

The Burnet rose
Rosa spinossissima
It's MacDiarmid's 'little white rose'.

The Hazel bush
Corylus avellana
Since it's been a provider of food and coppiced branches for wattle walls, screens, fish weirs and fences since the Mesolithic period.

Flag iris
Iris pseudacorus
It's a lovely waterside plant.

Tormentil
Potentilla erecta
This will be unseen from the bank, but I like the idea of hidden stars floating on the water. Its roots were used in the tanning industry.

Nettle
Urtica dioica
A spring vegetable and a tonic tea.

Dock
Rumex obtusifolius
Because where you have nettles you have to have the antidote. And the leaves are good for wrapping butter. The Scottish Dock – Rumex aquaticus – is scarce, and likes the waterside.

Cloudberry
Rubus chamaemorus
The seeds have been found in a Loch Tay crannog, so it should do well. It's scarce too.

Meadowsweet
Filipendula ulmaria
To sweeten mead and ale.

Bogbean
Menyanthes trifoliata
If it seeds near the bank it will grow in the shallow water. A much-used plant.

Sundew
Drosera rotundifolia
Another unseen plant, will digest some of the insects that land on the garden.

Marram grass
Ammophila arenaria
To hold back the water, and to weave chairs.

Teasels
Dipsacus fullonum
A sculptural plant, with fine heads to raise the nap on wool. Where it grows today, you can reckon a weaving shed stood nearby in the past.

Bog myrtle
Myrica gale
A sweet scented midge repellent.

The Melancholy Thistle
Cirsium heterophyyllum
For its name, and a flower head which is more delicate than the Spear Thistle of Scotland.

The Bog Asphodel
Narthecium ossifragum
A plant which graces the wetter slopes – yellow flower spikes which fade to an attractive brown. Bad for sheep.

The Rowan
Sorbus aucuparia
To ward off witches (although I quite like some of the witches I've met over the years) and to feed the birds.

Grass of Parnassus
Parnassia palustris
Another hidden gem, white cup-shaped flowers, green-veined.

The Hawthorn
Crataegus monogyna
For its flowers and its berries, its association with ritual and magic.

Wildflowers and Memories: a Planting for a Floating Island Garden

Susie White

Memory has shaped the plants I grow in the walled garden. A naturalistic style of planting evokes my experience of childhood. Rustling leaves tall above my head make me feel small again; scents take me directly back to a wild, orcharded garden, swaying with wildflowers. There are small places to discover, corners to turn, a strident wren or mottled newt to encounter, bees drugged by thyme and plants given to me by friends; memories become living things.

Nettles – falling into nettles at the age of two, my tearful introduction to the countryside; valued now for the food they give butterflies, the young tips I pick for my soup.

Snowdrops – I quickly knew where the tallest snowdrops always grew, stretched by the spinney's shade, looked for them each winter.

Ox-eye daisies – waving, happy moon daisies, gracing the long grass in the little orchard, under the numbered fruit trees where in autumn we feasted on ripe plums straight from the branch.

Blackthorn – Sunday walks with the dogs, my mother showed me the frost-softened sloes to pick and pickle in gin; now, as a gardener, I am cautious of a 'Blackthorn winter'.

I traveled north to large skies and a wider, wilder landscape of sheep cropped turf and deep shaded woods. I noticed different flowers and searched Keble Martin to learn the new names of a new place; Grass of Parnassus, beautiful St. John's Wort, Chickweed Wintergreen.

Cow-parsley – Queen Anne's Lace frothing the verges as I walked barefoot, new to Northumberland.

Wild thyme – scented thyme underfoot on the sweeps and curves of Hadrian's Wall.

Cowslip – self-seeding all around the walled garden; yet I still grieve for the field of cowslips by the Roman Wall, sprayed one year, all vanished by next spring.

Greater burnet – sensual claret flowers in the hidden dene where we watched badgers playing.

Wild garlic – unwise but lovely guest in my garden; crushed leaves as my children lay watching deer.

St John's Wort – yellow buds bruised between my fingers stain my prints purple, a party trick for garden visitors.

Yarrow – my daughter's favourite 'lallow', looked for on every walk, healing and soothing.

Greater bellflower – cool but joyful trumpets in the Howick woods, tracing the path from the Hall down to the sea.

In my garden I weave wild plants amongst the tame, memories amongst my words. Simple, country names infiltrate the Latin tongue twisters; awakening to possibilities, self seeding with abandon and giving unexpected delights.

Mountain pansy – lying in sheep cropped grass by the swimming hole, languid with beer and loving.

Violet – elusive scent on a sun-warmed bank, hard to hold on to as the past always is.

Woodruff – brittle green frills up wiry stems in the woodland shade, hay-scented in my notebook.

Juniper – enduring juniper with its pungent berries, a survivor.

All is fragile; when I die, my memories die with me. If the plants and the places where they grow are lost, no future gardener can absorb them into her memories. If I left my walled garden, these are the plants I would take with me, alongside the rare and the cultivated.

Mesosticum paludorum

Alec Finlay

poems composed on the names of flora native to moor, bog, marsh and salt marsh suitable for planting on a floating island garden

Some
Edges
Do
Get
wEt

eVery
lIttle
flOwer
Loves
thE
lighT

glaucous sedge, *Carex flacca*

dog-violet, *Viola riviniana*

Marshes

conceAl

secRets

wIthin

boGs

fIOwers

gLint

golDen

marsh marigold, *Caltha palustris*

coMe

pAddle

youR

toeS

Here

coMe

bAthe

shaLlow

pooLs

cOol

Waters

marsh mallow, *Althaea officinalis*

you’Re
toUching
Shiny
Hairs

rush, *Juncus*

shaRpen
yoUr
Slender
reacH

hard rush, *Juncus inflexus*

Bent

sUn

wiLl

Ripple

yoUr

Stalky

straigHtness

bulrush, *Typha latifolia*

spAthes

pRick

Up

Meadows

arum, *Arum*

greyLy
It
Clings
Hold
thE
skyliNe

lichen

When
tHe
dIstances
shiNe

whin, *Genista anglica*

let’S
Point
spReading
oUr
branChes
widE

spruce, *Picea*

lisPing
wInds
whisperiNg
quiEtly

pine, *Pinus*

Brightness
allghts
wheRever
branChes
wisH

silver birch, *Betula pendula*

wintEr's
bLack
Mark

elm, *Ulmus procera*

beaChcombing
foR
hOney-
Scented
luStrous
floWers
alOng
Rushy
sTrands

crosswort, *Galium cruciata*

creaM
Is
Like
milK
With
hOney
stiRred
Thickly

milkwort, *Polygala vulgaris*

We
floAt
unTil
thE
afteRnoon –

fLowering
Is
aLways
timelY

Come
And
Make
sPring
wIld
fOr
piNk

water lily, *Nymphaea*

red campion, *Silene dioica*

Sented
sWeetness
hidEs
bEhind
Thorns –

Beauty's
Rare
wIld
And
chaRming

sweet briar, *Rosa rubiginosa*

Far
fiElds
Sway
Counting
nUmbers
Endlessly

tall fescue, *Festuca arundinacea*

Soor

pLooms

tOtally

wErsh

thornS

spiLl

Out

Everywhere

sloe, *Prunus spinosa*

collecTing

thE

rAin

inSide

hEr

holLows

This

purplE

nAp

makeS

mE

Laugh

teasel, *Dipsacus fullonum*

hearS

sOrrow

heaRs

heR

sadnEss

heaL

sorrel, *Rumex acestosa*

Paths

aRe

choIces

Made

befoRehand

fOretelling

conSequences

unsEen

primrose, *Primula vulgaris*

Briars
aRe
shArp
aMong
scramBling
paLe
rosEs

bramble, *Rubus fruticosus*

This
melancHoly
Is
Spineless
besT
Left
alonE

melancholy thistle, *Cirsium helenoides*

oVer
thE
paTch
sCrambles
vetcH

vetch, *Vicia sativa*

noW
I
gentLy
noD

nOw
heAds
Turn

wild oat, *Avena fatua*

The
Hours
pass-bY
Moments
sweEten

thyme, *Thymus vulgaris*

The
tHing
You
Measure
passEs

thyme, *Thymus vulgaris*

Watching
rIppled
Little
rilLs
fIOwing
aWay

What's
hIdden
beLow
Leaves
nOw
shoWs

aRound
Us
whiSpers
wHisper

dRy
yoUr
Seedy
Head

wheRever

thEre

arE

flooDs

eveRy

lonEly

notE

playeD

reed, *Phragmites communis*

My
sOft
Secret
waterS

moss, *Ptilium pulcherrimum*

My
Own
Secret
Self

moss, *Ptilium pulcherrimum*

Cleave
hoLd
hEre
And
neVer
lEt
youRself
unStick

cleavers, *Galium aparine*

luCky
Lobes
favOur
eVery
whitE
floweR

clover, *Trifolium*

Sea
blEached
And

Pink
I'm
iNto
sKinny-dipping

thrift, *Armeria maritima*

you'Re
A
raG-
baG
whEn
Damp

you'Re
fOrever
Beautiful
In
piNk

ragged robin, *Lychnis flos-cuculi*

tHe
blAckest
White
alighTs
wHere
snOw
coveRs
thorN

hawthorn, *Crataegus monogyna*

Golden
yellOw
floweRs
encloSe
spiculEs

gorse, *Ulex europaeus*

flowerS
glimPsed
whEre
thE
roaD
Winds
protEcting
alL
traveLers

germander speedwell, *Veronica chamaedrys*

Buds
Of
Gentle

Cloud
flOat
Their
silhouetTes
tOwards
suNset

bog cotton, *Eriophorum vaginatum*

Blue
Like
azUre
skiEs
Blue
likE
Lost
Love

bluebell, *Campanula rotundifolia*

unloCked
yOur
meadoW
keyS
falL
Into
Place

cowslip, *Primula veris*

Bees

arE

collectEd

pOllens

aRe

exChanged

witH

neIghbouring

orchiDs

bee orchid, *Ophrys apifera*

Let

yOur

emOtions

looSe

lEt's

Show

That

puRple

Is

For

lifE

loosestrife, *Lythrum salicaria*

Boatmen
fIOat
meAsuring
The
Meniscus
As
teNsion

water boatman, *Corixidae*

seCrets
Are
hiDden
insiDe
thIS
Secret

caddis fly, *Trichoptera*