A watercolor illustration featuring a vertical stem of a plant with small, clustered purple flowers and green leaves on the left side. The background is composed of large, soft washes of color: a bright yellow on the left and a large, dark green on the right, both with visible brushstrokes and blending into each other and the white background.

Small Miracles

A living growing pharmacy

Mary Waltham

Small Miracles

Small Miracles is a body of work produced in response to spring and summer in lockdown in Princeton, New Jersey during the 2020 Covid 19 pandemic.

Every day I walked in the woods and fields around me.

These works focus on the form and color of wild plants in a series of paintings using water based media. The intention is not to mimic botanical illustrations but rather to capture the small miracles emerging each week, as the world swirled in chaos.

I felt like an 18th or 19th century botanist. Searching and identifying were key and I had not previously taken the time to find out the names and previous uses of these quite common local plants, some native some introduced. Many were utterly new to me.

Included here alongside the Small Miracles collection is brief mention of some of the former medicinal uses of each plant as a reference and reminder of the global search for therapeutics to treat Covid 19 patients.

While the news of cases and deaths was grim, the cycle of plant seasons continued giving joyous hope.

* All paintings are on hot pressed watercolor paper 10" x14" (25 x 35cm)

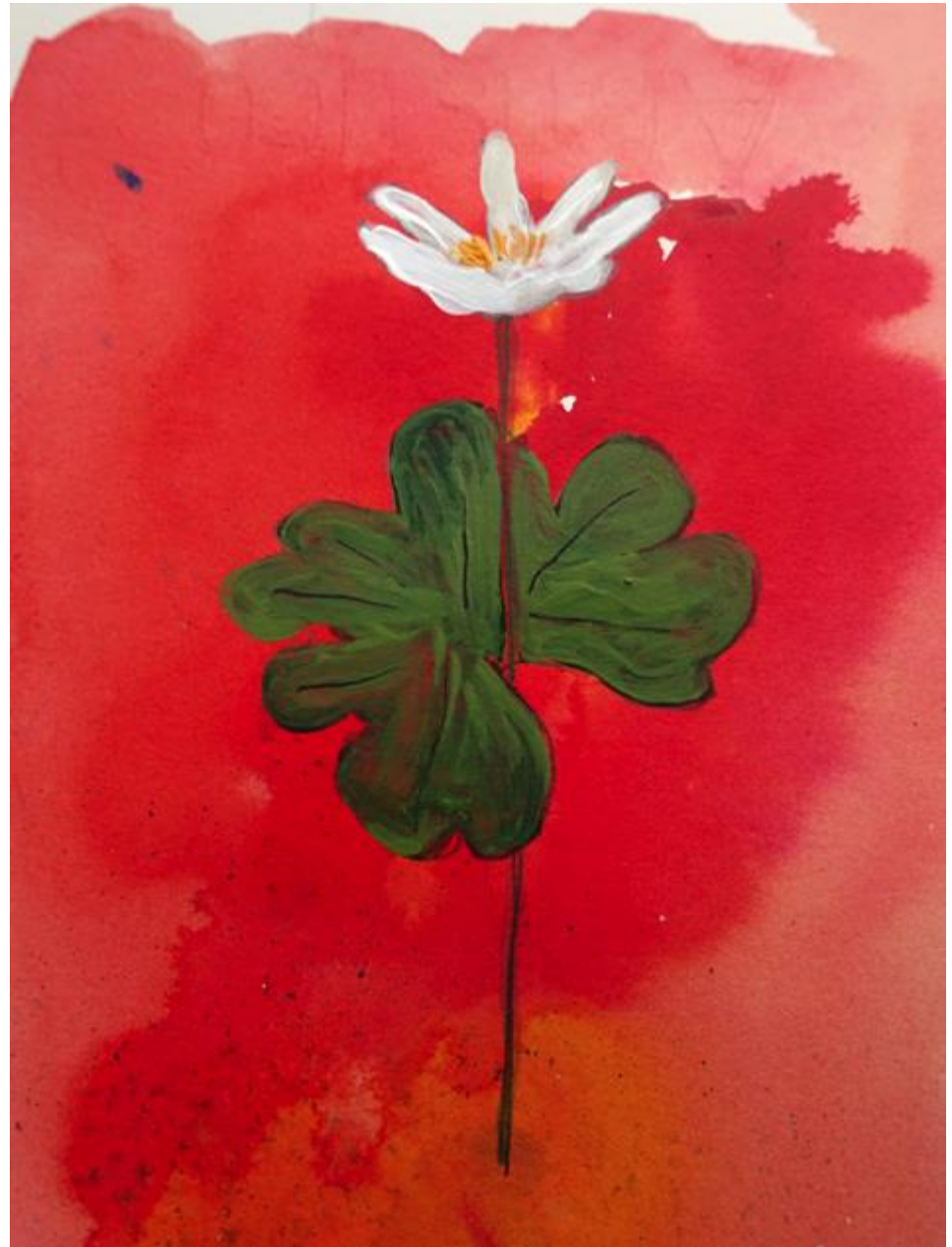


Dandelion (*Taraxacum officinale*)

Remedy for fever, boils, eye problems, diabetes, and diarrhoea.

Blood Root (*Sanguinaria canadensis*)

Rhizome used in traditional medicine by Native Americans to treat a diverse range of clinical conditions. Alkaloids from the rhizome individually target multiple molecular processes.





Spring beauty (*Claytonia virginica*)

This plant has been used medicinally by the Iroquois, who would give a cold infusion of the powdered roots to children suffering from convulsions.



Botanizing

The verb botanizing was first used around 1750 to describe collecting or investigating or studying plants in their natural habitat. I had never heard the word until 2020 when the *Small Miracles* project – exploring local plant species and their pharmacological uses - was underway.

Botanizing was very popular in the 19th century, and required a vessel for collecting plants to protect them from crushing. The vasculum was an indispensable part of the botanist's equipment.

Enter the vasculum defined as “*a covered metal case often cylindrical used by botanists to carry specimen plants*”. (The word vasculum derives from Latin for ‘little vessel’). All makes sense so far. During the summer of 2020 I wondered if I could find myself a vasculum even for purely ceremonial use i.e. I would carry it, look at it, but not jam it full of plants? E-Bay rarely disappoints and I found this beautiful specimen listed as a ‘19th century tole (meaning lacquered or painted) vasculum’.



Unfortunately, this vasculum was sold and nothing even half as handsome was available. But curiosity was now pulling me on. I started to look for documented use of a vasculum by 19th and 20th century botanists. I have included anecdotes that paint a picture of the adventures of a few working botanists. Some were sent half way round the world by boat to collect specimens for major Victorian museums and botanical gardens.

The London Magazine, Volume 5, Baldwin, Cradock and Joy (1826)

Excerpt from Journal of a Traveller on the Continent III

Here 'herborising' is used instead of botanizing and a vasculum is given its inventor's name.

The day was very hot, but less oppressive than yesterday: the evening showery. I paid another visit to the castle, and walked on the opposite bank of the Neckar, where I saw some fine blocks of granite, and found two men-sedulously herborising; one was armed with the **Vasculum Dillenianum**, as Linnæus calls the tin case, or box, so necessary to the botanist, in order to keep his specimens fresh and unfaded, from its inventor, Dillenius, whose botanical glory is great, having lent his name, not only to this vessel, but to a genus of plants, called after him Dillenia.



Bugle (*Ajuga reptans*)

“..it is so efficacious for all sorts of hurts in the body that none should be without it.” Formerly used for bruises and wounds.



May-Apple (*Podophyllum peltatum*)

Has been used as a laxative and tonic, to expel worms, and to treat warts and growths.



False Solomons Seal (*Maianthemum racemosum*)

The dried roots of false Solomon's seal were used to brew a tea to treat coughs and constipation. Chemicals in the roots act as expectorants and mucous softening agents. A leaf tea of the plant can be used topically for rashes and itching.



Gray's Sedge (*Carex grayi*) was named in honor of one of America's leading botanists of the 19th Century, Asa Gray (1810-1888), whose extraordinary botanical collection was the foundation of the Gray Herbarium at Harvard University.

Jack in the pulpit (*Arisaema triphyllum*)

The root is acrid, antiseptic, diaphoretic, expectorant, irritant and stimulant.





Solomons seal (*Polygonatum odoratum*)

Solomon's seal was used to treat lung disorders, reduce swelling (inflammation), and to dry out tissue and draw it together. It was applied directly to the skin to treat bruises or boils on the fingers, hemorrhoids, skin redness, and water retention.

Queen Anne's Lace (*Daucus carota*)

Used for urinary tract problems including kidney stones, bladder problems, water retention, and excess uric acid in the urine; and also for gout.





Jewelweed (*Impatiens capensis*) contains a compound called lawsone in its leaves proven to have anti-histamine and anti-inflammatory properties. A remedy for poison ivy.

Blazing star (*Liatris spicata*)

Used in homeopathic medicine for “Abdomen pain” thus as a remedy for indigestion and colic. Contains the chemical coumarin, which ‘might’ improve blood flow.





Wild Bergamot (*Monarda fistulosa*)

..An infusion is used internally in the treatment of colds, catarrh, headaches, gastric disorders, aching kidneys, to reduce low fevers and soothe sore throats.

Royal Botanic Gardens, Kew: Archives: Directors' Correspondence

Letter from George Wailes to Sir William Jackson Hooker; from Newcastle, [England]; 18 Sep 1841; four page letter comprising four images; folio 37

Wailes has sent this day by steamer the plants Mr Smith mentioned as likely to be acceptable to RBG Kew. In the hamper, Wailes packed a vasculum containing the flower stem of a new *Catesetum* which opened its flowers this morning. Wailes received the plant from Honduras last month. It smells like the pod of the common garden bean when fresh opened. He asks Hooker to identify it for him.



Flower of *Catesetum* sp.



Moneywort (*Lysimachia nummularia*) has a history of use in herbalism for healing wounds by bruising the leaves and applying them to the wounds. It is considered diuretic, astringent, and was used to treat diarrhoea and internal bleeding.

Blue Jacket (*Tradescantia ohioensis*)

The crushed leaves are purported to alleviate the sting of insect bites while a tea made out of boiled roots has use as a laxative.





Mountain laurel (*Kalmia latifolia*)

"Powdered leaves of Mountain laurel are used as a local remedy in some forms of skin diseases, and are a most efficient agent in syphilis, fevers, jaundice, neuralgia and inflammation, but great care should be exercised in their use. Whisky is the best antidote to poisoning from this plant."



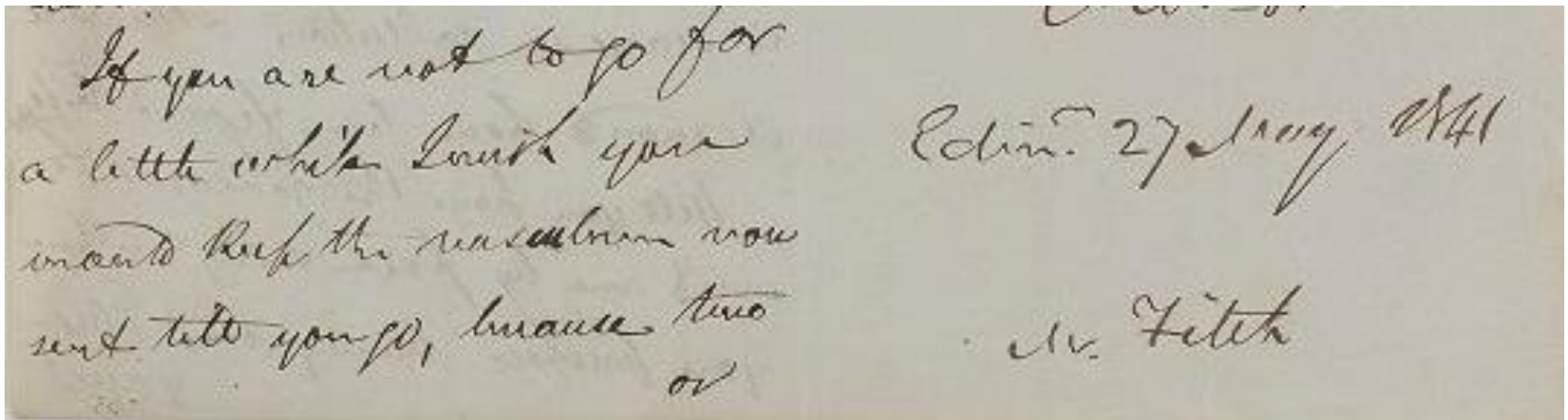
Cinquefoil (*Potentilla simplex*)

The plant is mildly astringent and antiseptic. A decoction is used as a gargle for loose teeth and spongy gums. An infusion of the roots has been used in the treatment of dysentery.

Royal Botanic Gardens, Kew: Archives: Directors' Correspondence

Letter from Robert Graham to Sir William Jackson Hooker; from Edinburgh, [Scotland]; 27 May 1841; three page letter comprising two images; folio 152

Graham sends a *Solanum* which he thinks worthy of a place in the [Botanical] Magazine, and a *Cytisus* which is scarce in collections, otherwise it would have been figured before.Graham asks him to keep the vasculum now sent, as two or more may be returned together on the same carriage.



If you are not to go for
a little while I wish you
would keep the vasculum now
sent till you go, because two
or

Edin. 27 May 1841

W. Fitch

Portion of Graham's letter

Pickerel weed (*Pontederia cordata*)

An infusion of the plant has been used as a contraceptive.





Tickweed (*Coreopsis lanceolata*)
A tea made from the roots is emetic and
is also used in the treatment of diarrhoea.

Moth mullein (*Verbascum blattari*)

Dried leaves were smoked to relieve lung congestion. A remedy for coughs, colds and pectoral complaints, including haemorrhages from the lungs, shortness of breath and pulmonary complaints.





Swamp Mallow (*Hibiscus moscheutos*)

Like many other plants in this Malvaceae family, they are demulcent and emollient and are used in the treatment of dysentery, lung ailments and urinary ailments. An infusion of the dried stalks has been used in the treatment of inflammation of the bladder.

Royal Botanic Gardens, Kew: Archives: Directors' Correspondence

Letter from H.A.[Sir Henry Alfred] Alford Nicholls to Daniel Morris; from Dominica, W.I.[West Indies]; 29 Mar 1888; four page letter comprising four images; folios 349 - 350

Nicholls reports that Ramage arrived on 15 Mar. Nicholls obtained a hut for him at Laudat (a small village in the interior of Dominica)... Ramage also has flowers of the Malvaceous tree Nicholls and Morris saw near the lake. Nicholls asks Morris to send a copy of Grisebach's flora, drying paper and a vasculum.

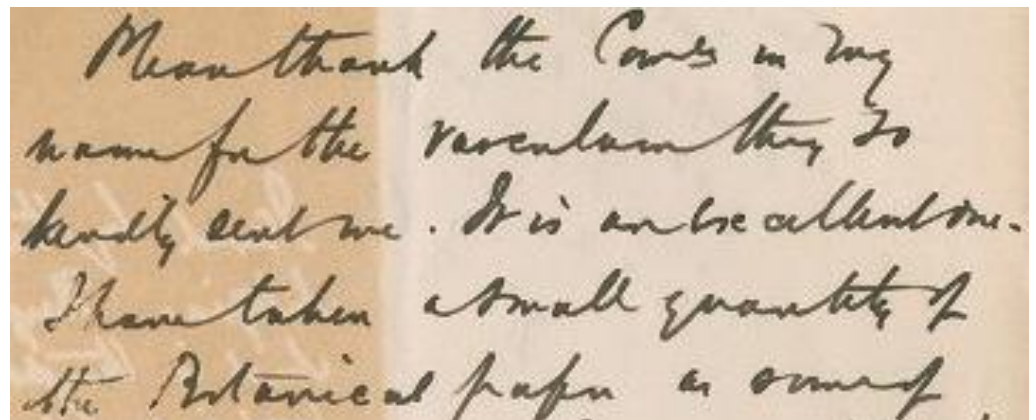
This was a long expedition...

Royal Botanic Gardens, Kew: Archives: Directors' Correspondence

Letter from H.A.[Sir Henry Alfred] Alford Nicholls to Daniel Morris; from Dominica; 23 June 1888; four page letter comprising two images; folio 35

By the steamer 'Cipero', which left Dominica on the 19 June, Nicholls has sent on the three boxes for Ramage. Two contain botanical specimens, the other contains zoological specimens. He hopes they arrive in good order and contain items new to science.

.....He asks Morris to thank the Committee for the vasculum and notes that he has taken a small amount of the Botanical paper, which he will use to carry on the work after Ramage has left.

A photograph of a handwritten portion of a letter on aged, yellowed paper. The handwriting is in cursive and reads: "Please thank the Comtee in my name for the vasculum they so kindly sent me. It is an excellent one. I have taken a small quantity of the Botanical paper as some of".

Please thank the Comtee in my
name for the vasculum they so
kindly sent me. It is an excellent one.
I have taken a small quantity of
the Botanical paper as some of

Portion of letter June 1888



Cardinal flower (*Lobelia cardinalis*)

The Iroquois used *Lobelia*, often in conjunction with other plants, to reduce pain and treat epilepsy. An infusion of the root has been used to treat digestive problems, typhoid, rheumatism, and worms. Lobinaline is associated with anti-inflammatory and neuroprotective properties.

Into the 20th century and England at war

Natural History Museum (BM)

From obituary for Douglas Kent 1920-1998

"From 1943 he started his own herbarium but had been hunting for plant varieties in the summers throughout the war. His ill health had ruled him out of military service, but he worked as an air raid warden nonetheless. On one of his excursions in the countryside Kent accidentally wandered into an army camp and was seized by a sentry. When forced to empty his vasculum the soldiers soon realised he was no threat to national security."

An American botanist described as a plant collector adds to the somewhat eccentric image of his profession

Natural History Museum (BM)

From obituary for Harry Ahles 1924-1981: Plant collector

"In the late 1960s he moved from North Carolina to the University of Massachusetts, claiming that he was unable to work in air-conditioned laboratories. At this time he finally learnt to drive and was therefore able to travel much further afield without having to rely on friends and family.".. Ahles was particularly interested in weeds; his first publication being on the weeds of New York City. Indeed, he would often collect in the Bronx and on one occasion, when out with his vasculum in tow, he was stopped by a group of police officers. Once he had explained that he was a botanist, out collecting plants, they asked if he could identify something for them. Riding in the squad car they came across a small marijuana plantation in an open lot and Ahles was able to confirm that these were not, in fact, tomato plants as the policemen had been led to believe."



Chicory (*Cichorium intybus*) is well known as a coffee substitute. Although this plant has a rich history of use in folklore, many of its constituents have not (yet) been explored for their pharmacological potential.



Pokeweed (*Phytolacca americana*)

All parts of Pokeweed are toxic. Some researchers believe Pokeweed has anticancer and anti-HIV potential as the plant contains an antiviral mitogen. Juice from Pokeweed may cause dermatitis.

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