The Natural News

Central North Field Naturalists Inc.

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The Story of Botanical Art and why it is still valuable for science, archaeology, history and human wellbeing

Text and illustrations ~ June Hilder

Botanical art today is broadly divided into three categories, botanical illustration, botanical art, and flower painting, with the differences relating to 'emphasis'.

The word 'botanical' is defined in the Oxford dictionary as 'relating to botany; the scientific study of plants' and the word 'illustration' as an image or picture. Botanical illustration combines science and art by placing great importance on accuracy and detail in order to enable identification of a plant. Illustrations portray all relevant aspects of the plant's life cycle including its outward form and colour, its reproductive parts both whole and dissected and its root system.

While botanical art retains a relationship with science, the word 'art' implies the making of images that are beautiful or that express feelings. It therefore places more emphasis on the aesthetic value of the plant or flower. The image continues to be botanically correct, but the work will not necessarily include all the information required by researchers and may also depict the plant growing in its natural environment.

Flower painting aims to deliver an artistically pleasing picture capturing the beauty and character of the plant. The word 'flower' suggests that the focus is on the seed-bearing part of the plant, in particular the brightly coloured corolla. The term 'painting' includes both natural and abstract art implying a large step away from scientific accuracy.

However, all 3 categories have contributed to the extension of knowledge about the natural world and human culture through the ages.

Since time immemorial, throughout the world, humans have included depictions of plants in their art. These provide insights into ancient customs and environments which can be of great value to researchers. For example, Aboriginal rock art found in caves in the Kimberley region of Australia includes images such as yams and other tubers, grasses and trees. The art is at least 17000 years old and indicates plants of importance, where they were growing and how they were used for food, housing, utensils, weapons and ceremonies.*

Cyathea delbata Silver fern

In other parts of the world images of plants thousands of years old have been found on ancient frescoes, pottery and the walls of temples.

Commencing in ancient Greece around 2000 years ago, increasingly structured and detailed recordings of the use and identity of

Acacia and butterflies

Dipodium roseum Hyacinth orchid

Carpobrotus rossii Pigface

Correa alba Coastal Pink;

Front Cover: *Asplenium bulbiferum* Pikopiko, Stewart Island, New Zealand.

plants for medicinal, economic and culinary purposes led to the creation of great herbal manuscripts. They contained many hundreds of illustrations. While emphasis was placed on correctness of representation, the illustrations remained somewhat primitive and their accuracy tended to become compromised over time as they were in use for several centuries and copied many times by hand.

It was during the 18th century that science and art met and botanical illustration was born. This was in part through the work of Carl Linnaeus known as the 'Father of Taxonomy' for his development of the binomial nomenclature system of naming living organisms. As part of his work as a botanist, Linnaeus created scientifically accurate drawings of plants complete with all their parts. The 'Linnaean style' grew in popularity with the mid 18th and 19th centuries eventually becoming the golden age for botanical art.

Over time, the definition of a 'plant' and which organisms should be included in the kingdom 'Plantae' has changed. Older classifications included algae, bacteria and fungi, organisms that today have been moved into other new kingdoms. In botanical art circles, discussion continues as to which organisms are permitted to be included as 'Botanical Art'.

Botanical art declined during the 20th century with advances in photography, but it did not disappear; the three categories continue to be relevant and popular today.

For instance, using careful observation, expert artists assist researchers by displaying all parts of the plant and its entire life cycle in meticulous detail on a single sheet of paper.

In addition, according to the Arts Council England, 'art that reflects nature can be good for us'. Artist Mark Ware has investigated this concept with neuroscientists and psychologists and his findings confirm that natural sights can improve people's wellbeing and reduce stress. Not only do those viewing nature art

Poa clivicola Fine-leaved Snow Grass

Diplarenna moraea White Flag Iris

Page 12: Tasmanian orchids and native plants tea towel project, NW Botanical Artists.

gain pleasure and relaxation from the works, the artists also derive great satisfaction from their creations.

Botanical art has also been drawn on to express the importance of plants to environmental health. A current digital exhibition 'Reflections' from the Shirley Sherwood Gallery at the Royal Botanic Gardens, Kew promotes a theme 'no plants - no planet'. The exhibition is focussed on one of the major themes of the Climate Change Conference, COP 26 in Glasgow; 'Nature: to safeguard and restore natural habitats and ecosystems to preserve the planet's biodiversity'. Artists from 18 countries have contributed 66 works, each with a message outlining the vulnerability of their plants to threats from climate change and habitat destruction. The exhibition is available for viewing online until March 2022.

Botanical art groups are active around Tasmania. The 'North West Botanical Artists' group meets weekly to share expertise and ideas, participate in workshops, run exhibitions and undertake group projects which help keep the three categories of botanical art alive. The group's Constitution includes the Objective, 'To promote an awareness of Botany and all aspects of the plant world' and this has been put into practice with annual projects including a poster of 'Edible Coastal Plants of Tasmania', a tea towel of 'Tasmanian Alpine Plants and Orchids' and an 'Edible Botanicals Recipe Book'; all have been for sale to the public. In addition, biennial exhibitions have been held at the Forth Hall with the next one planned for late 2022. Several members of Central North Field Naturalists are also members of the North West Botanical Artists.

Many plants and their associated natural communities are becoming increasingly vulnerable to many human induced threats. It is hopeful that the ongoing efforts of botanical artists will help to generate a greater appreciation of the importance of plants within the wider public arena and galvanise a desire to protect them for future generations.

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* Editor's note:

I emailed Dr Sven Ouzman, archeologist and heritage specialist, to seek his permission to use his photographs of the rock art in the article 'Plants before farming". He wrote:

"Kimberley rock art is remarkable for its quantity and range of plant depictions. This provides good background support for current debates on whether people adopted agriculture or not, or, as we suggest, ecoscaped the land and plantscape extensively."

Intellectual property of the photos is leased from the Balanggarra Aboriginal Corporation. I am yet to get permission to use the photos, but I encourage readers to check out the many beautiful images on the internet.

A trip to Marrawah
Richard Ashby

Yesterday, 24 September 2021, still in the first month of Spring, gale force winds were forecast out of the southwest with the associated very boisterous wave action on the west coast, which is exposed to thousands of kilometres of open ocean.

A trip down to Marrawah was in order and I might be able to squeeze in a few heavily-compromised bird surveys between the blowing and squalling.

I was there in the early to mid-afternoon and, according to the Bureau of Meteorology website, the clean air station at Cape Grim, just up the coast, recorded winds of 32 knots gusting to 53, which is why my beanie kept blowing off and my telescope could not be left unattended. The wave gauge at Cape Sorell was registering average waves of 7m, and peaking at 13m or 43ft in the old measure.

Whenever the weather is cold, blowy and wet and going outside is not an attractive option, I think of sailors in the days of sail, up and down the ratlines, out on the yardarms, soaked to the skin, broken nails on frostbitten fingers, trying to take in great swathes of stiff, heavy, violently flapping canvas whilst not being flicked off their precarious perches to a violent death or into the sea when there was no chance of the vessel coming about to effect a rescue. Today, I scanned the great lumps of toppling water kilometres out to sea and was unable to picture a ship under sail surviving.

In the relatively sheltered corner of Greens Beach at Marrawah there was a tiny patch of sand above the storm surge and covered with washed-up bull kelp. Through binoculars I could see movement. There were Red-Capped and Hooded Plovers in there. I didn't want to frighten them by getting too close.

It started raining, so I ran back to the car to don overtrousers as well as a parka.

Hooded Plover Photo: Jill Colgrave

I snuck up to the beach again, this time from the scrub and, apart from a Skylark singing aloft, also found Ruddy Turnstones recently arrived from Siberia (or possibly non-breeders which had overwintered), White-Fronted Chats, Superb Fairy-Wrens, Welcome Swallows and a Striated Field-Wren. It was busy in there. Apart from the swallows flying low to the ground and coping well, the other birds seemed keen not to take to the air and I was keen not to force them.

On the little lagoon a short way inland — normally well-stocked with waterfowl—there were Black Swans grazing on the adjacent paddocks with chicks and Great Cormorants roosting. All the usual small grebes and ducks were hiding somewhere and even the ubiquitous Masked Lapwings were nowhere to be seen. I usually find Banded Lapwings here too but they were also keeping a low profile.

I tripped over a stick and dropped my telescope on rocks. This cost me over $1000 second hand twenty years ago and has survived a fair bit of abuse.

It's not the kind of day a sensible birder would be out and about but I hadn't been to Marrawah for a year and I'm glad I did.

Banded Lapwing Photo: Sarah Lloyd

Masked Lapwing Photo: Sarah Lloyd

White-fronted Chat Photo: Jill Colgrave

Ruddy Turnstones Photo: Jill Colgrave

Skylark (not aloft!) Photo: Sarah Lloyd

Red-capped Plover Photo: Jill Colgrave

A new slime mould genus?

Sarah Lloyd

Lamproderma 'umbilicatum'—as I've been calling it for years—is one of the very first slime moulds I misidentified!

I first observed and photographed it in July 2010 on a small bryophyte-covered stump on one of my regular walking tracks called 'Big Tree Track'. The following month I saw it again on a bryophyte-covered log in the 'Thismia gully' downslope from the house.

It is distinctive in its early stages of development. The stalked fruiting bodies arise from a bright yellow plasmodium and the part that will eventually bear the spores is also bright yellow at first before gradually turning yellow orange and eventually copper bronze (see photos p.9). Because of its resemblance to a *Lamproderma*, I initially mistook it for *L. acyrionema*—the closest I could find in my various field guides. In January 2014 I sent a collection to *Lamproderma* expert in France, Marianne Meyer. However, as her work concentrates on the nivicolous (snowbank) slime moulds that appear at the edge of melting snow each spring in the European Alps, she was unfamiliar with the species and sent it to Professor Gabriel Moreno in Spain, who confirmed that it was not *L. acyrionema.*

Professor Moreno accessed a possible type specimen from the National Herbarium of Victoria (MEL) in Melbourne in 2016. However, the spores of the collection were not mature and another possible type specimen was collected on 4 July 2021, deposited at MEL and accessed by Professor Moreno. Coincidentally, on 30 June 2021 the same species was collected by Peta McDonald in Victoria and posted on iNaturalist. As the specimen did not conform to any known species, she also posted photographs of the fruiting bodies and micrographs on a Slime Mould Facebook page for help with identification. This piqued the interest of researcher Dr Dmitry Leontyev, who did not recognize the species and conjectured that it could be a new genus.

Dr Leontyev's interest meant a whole new approach to describing it. First of all, spores had to be sent to Ukraine for DNA analysis to try to figure out where this mystery species sits in the myxomycete scheme of things. This was not the simple process I was imagining. Firstly I had to find some very small (0.2 ml) eppendorf tubes, which were not available in Australia at the time; eventually I received some from Ukraine. Then I had to follow very explicit instructions described on a YouTube video on how to get spores into the tubes. Only several hundred spores were required—more can be problematic—a delicate operation only possibly to do with a microscope.

The spores reached their destination a month or so ago, and the next step was to fill in the most complicated excel data sheet I've ever seen—thanks for your assistance Phil!

Because the species can be easily identified from photographs by its conspicuous early stages, thirteen observations from southeastern Victoria and Tasmania have been noted on iNaturalist. The number of specimens observed and collected from different localities conforms to one of the prerequisites for describing a new species. This is important as presumed undescribed myxos can be 'aberrant' forms of already described species. Another prerequisite is to have Scanning Electron Micrographs (SEM) of spores; DNA analysis is also desirable, especially for a new genus.

The number of observations on iNaturalist means we can get an idea of the ecology of the species. All but one of the iNat observations are from rainforest. My study site is wet eucalypt forest rather than rainforest, but there are some rainforest plants including sassafras

Mystery slime mould developing in the field. Left:1 July 2010; middle 2 July 2010; right 4 July 2010.

The species sometime develops on leaf litter., e.g. on a gumnut or on moss (with water droplet).

The species has a unique combination of features including masses of capillitium (thread-like structures) firmly attached to the outer covering of the spore mass (peridium), and a stalk that is deeply inserted into the sporotheca.

(*Atherosperma moschatum*), heartberry (*Aristotelia peduncularis*) and Mountain Pepperberry (*Tasmannia lanceolata*) scattered through the wetter parts of the forest.

The species is closely associated with well decayed logs and stumps, although its vigorous plasmodium is often active on nearby leaf litter. So although its plasmodia probably 'live' within the old growth elements in the forest, the fruiting bodies are not restricted to the woody substrates. This contrasts with other *Lamproderma* species I find that are almost always restricted to the wood or closely associated bryophytes. Another characteristic of this unusual species is that it often turns up in the same places year after year, and during the wettest, rainiest time in winter; most other myxos I find aren't nearly that predictable!

The mystery slime mould has abundant threads (capillitium) within the spore mass.

'Beneath the Surface' was advertised on Facebook, websites, & the Meander Valley Gazette with posters displayed in Westbury, Deloraine & Launceston.

From the editor:

Many thanks to CNFN members who helped set up, dismantle and assist at the National Threatened Species day ('Beneath the surface: fungi, slime moulds and the wood wide web') at the Westbury Function centre in September. It was a low key event, and we took the opportunity to sit in the warm sunshine to catch up with members and friends, some of whom we hadn't seen for quite a while.

Of the 150 people who attended, 90 were students from the Westbury Primary School. They viewed the display, looked at slime moulds through the microscope and participated in the 'Going going gone' workshops lead by local community artist, Sean Manners.

Philip Milner, Alison Parks and Tony Britz led a bird walk around the town. They listed House Sparrow (i), Sulphur-crested Cockatoo, Common Blackbird (i), Common Starling (i) Welcome Swallow, Domestic Chicken (i), Forest Raven, Galah, Brown Falcon, Masked Lapwing, Striated Pardalote, Superb Fairy-wren,

Grey Fantail and Little Wattlebird. Philip also supplied some of his beautiful photos for the panels and to adorn one of the walls.

National Threatened Species day has traditionally been commemorated by members of organisations dressing up as threatened animals to draw attention to their plight. I decided to take a different approach and compiled panels that depict a range of different groups (insects, spiders, mammals, birds, fungi, slime moulds etc) because in a sense, they're all threatened. Each panel has eight photographs with a page describing ecological roles. They are lightweight, portable, easy to erect and adaptable to use in other indoor locations as the photos illustrate. Please let me know if you would like to use them.

Thanks to members who have provided articles and photographs for The Natural News. Please keep them coming!

Best wishes to all members and friends for 2022.

Slime mould panel.

Panels (100x80 cm) of lightweight material can be displayed in various ways depending on the facilities. Photo below: Martha McQueen

Walks and other events

All walks are scheduled for the first Sunday of the month unless otherwise stated. Meeting time is usually 10am. There are more details in the e-news and on the website.

Bring food, water, clothes for all weather, hand lens, binoculars, note book & curiosity.

January 16th – *Note date change – Knole Plain, Waratah. Meet at 10 am in the parking area opposite Council buildings in Waratah. Leader: Ian Ferris (It is essential to contact Ian (0401434080) to confirm your attendance, as he will be checking the track before the day.)

February 6th – Old Lorinna Road. Leader: Basil Kleyhendorst (0400875717)

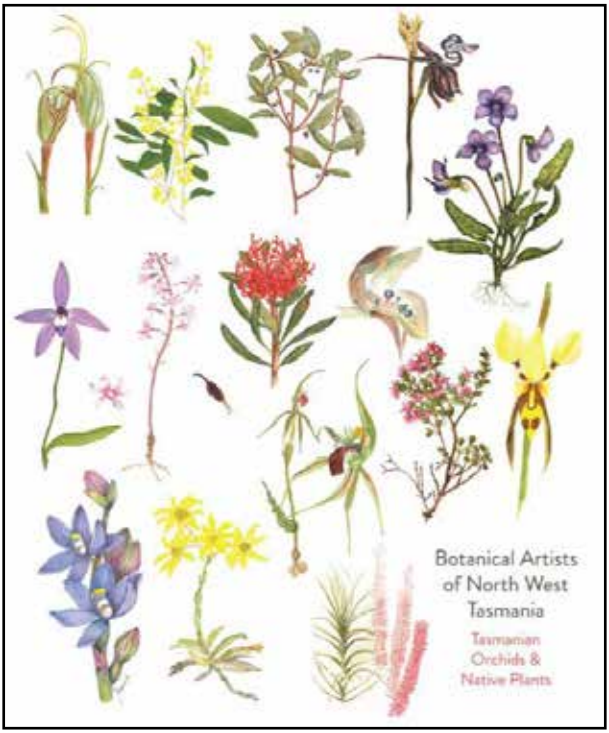
March 6th – Liffey Reserve; Oura Oura. Leader: Rod McQueen (6393 2121)

April 3rd – Loongana. Leaders: Alison Parks and Tony Britz (0429 642912)

May 1st – Stoodley Forest. Leader: Basil Kleyhendorst (0400875717)

June 5th – Balfour Track. Leader: Ian Ferris (0401434080)

July 3rd – Dial Range. Leader: Mary McConnell (0409900476)



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