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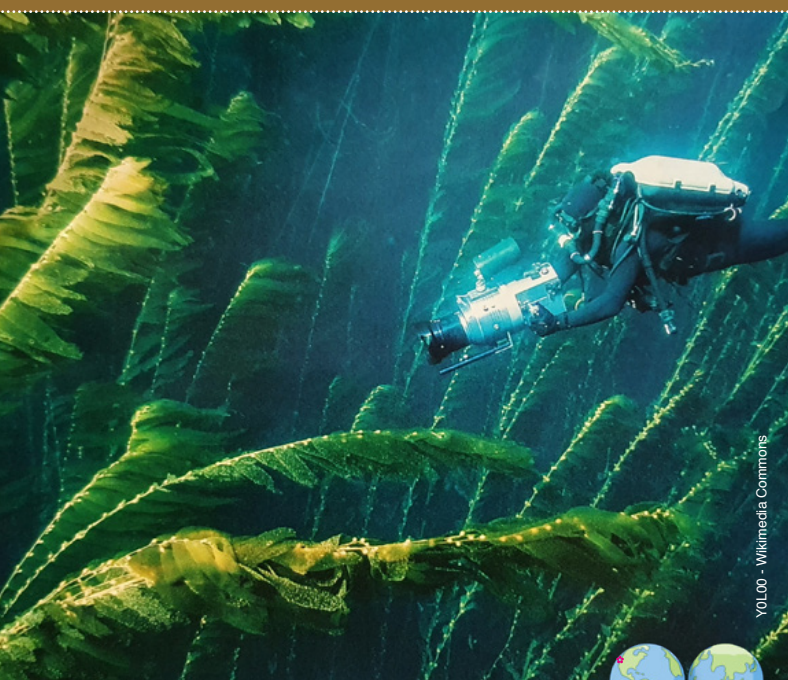
● BLEEDING HEARTS ●



Bernhard Gagner - Wikimedia Commons



● BAOBABS ●



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● KELP FORESTS ●



Luis Fernández García - Wikimedia Commons



● LITHOPS ●



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● SOCOTRA DRAGON TREE ●



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● BAMBOOS ●



BUDDING BOTANIST

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SO MUCH DIVERSITY...

Baobabs are large trees that live in tropical climates with two notable seasons: one very rainy, the other very dry.

They store enormous amounts of water in their trunks during the rainy season and shed their leaves in the dry season to limit evaporation. The island of Madagascar is home to six endemic species (ones you'll only find living there naturally) of baobabs, while just one species can be found on the entire African continent, plus another in Australia. The spongy wood found in baobabs can't be used for making furniture or in construction, so they're somewhat less threatened than other trees typically exploited for their valuable timber.

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Bleeding hearts (*Dicentra spectabilis*) are a bulbous plant native to Asia. They thrive in cool places and hate drought.

The beauty of their heart-shaped flowers and finely-cut foliage have made them popular garden plants in temperate parts of the world. There are many different cultivars (varieties produced through selective breeding). But even plants appreciated for their beauty can sometimes be toxic... that's why you must never put one in your mouth and should even avoid contact with the skin!

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Lithops, often known as pebble plants or living stones, have adapted to the poor and arid soils of South Africa and Namibia. These tiny succulents (fleshy plants, bursting with juice) have large roots to help them trap moisture from deep down in the soil. On the surface, they only have two small but very chunky leaves, designed to reduce evaporation.

They grow among the pebbles without much shape or colour, making them almost invisible outside the flowering period.

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Kelp forests are formed by several species of giant algae in Earth's temperate and cold oceanic regions. These algae attach themselves to the seabed and grow up to the surface. Some can reach up to 60 metres in height. They grow around 20 centimetres per day. Kelp forests are home to many different species of sea creatures (including fish, sea urchins, crustaceans, sea otters...).

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Bamboos include many species and are part of the Poaceae family (grasses). They're loved by humans for use in manufacturing, for eating, growing in our gardens... Bamboos reproduce at intervals of several decades, and all the individuals of the same species will often die at the same time, after producing seeds. In central China, when this phenomenon occurs, it poses a real problem for the survival of bamboo's biggest fan, the Giant Panda, which sees its main source of food disappear while the seeds germinate and produce new shoots.

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The **Socotra dragon tree** is endemic (meaning it only grows there) to the mountains of Socotra Island just off the coast of Yemen. Its name comes from its red sap, which people compared to the blood of dragons. In this arid region, rain is a rarity, but these trees know just how to take advantage of the frequent fog at higher altitudes thanks to their particular shape – micro-droplets of water in the foggy air are captured by the foliage, forming droplets, which trickle down the branches and trunk onto the ground. This way, the Socotra dragon tree can enjoy wet soil even without any rainfall at all!

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● MANGROVES ●



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● RAINBOW EUCALYPTUS ●



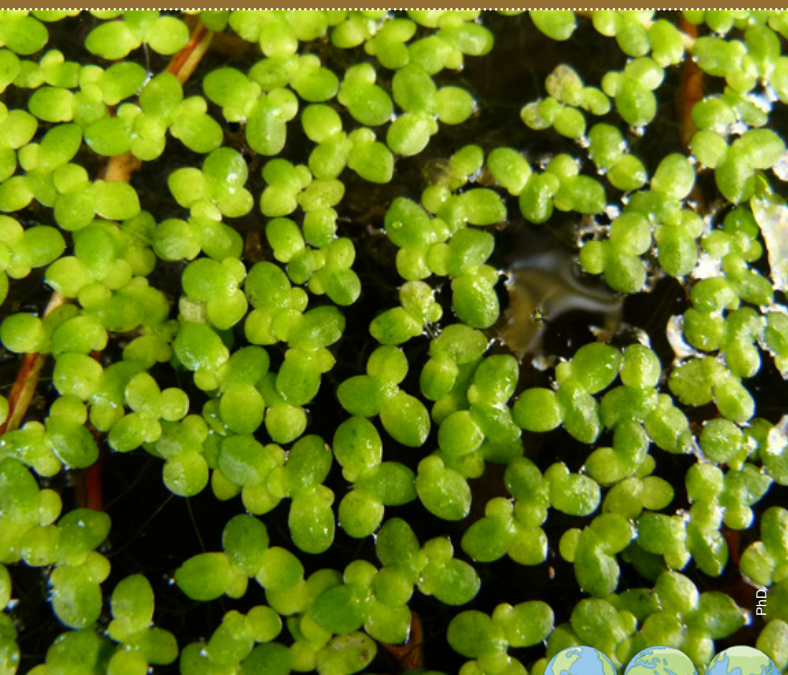
Menecke bloom - Wikimedia Commons

● BLACK BAT FLOWER ●



PhD

● MONK'S HOOD ●

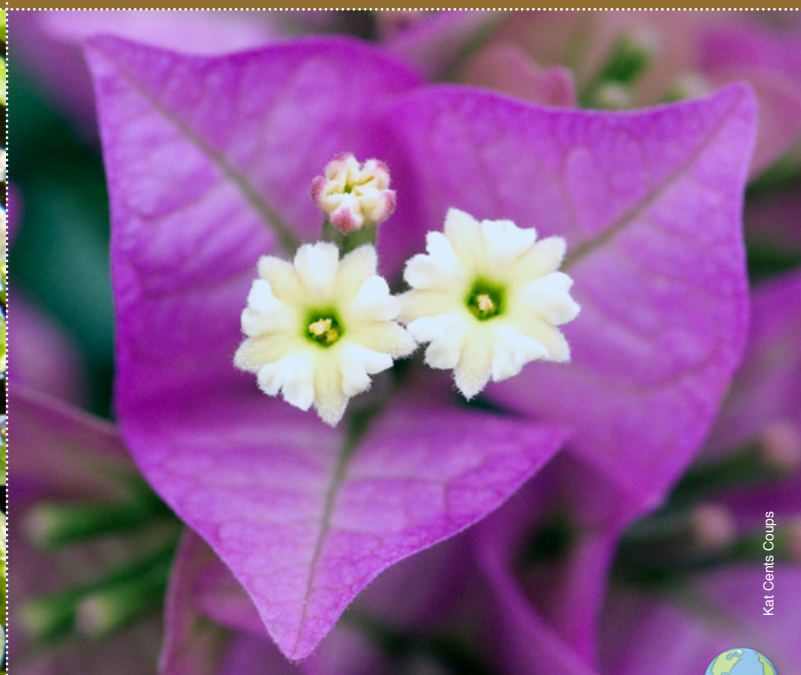


PhD

● DUCKWEEDS ●



Présentes sur tous les continents



Kat Cenis Coups

● BOUGAINVILLEA ●






BUDDING BOTANIST

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SO MUCH DIVERSITY...



Rainbow eucalyptus is native to an island in the Philippines but can now be found in lots of humid tropical regions. This big tree (which can grow up to 75 metres tall) is cultivated to produce pulp, but it's also appreciated for the beauty of its trunk, from which it takes its name. Its bark peels off in strips as the tree grows, with the young bark changing colour over time, from green to blue before changing to purple, orange and brown.


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On certain coastlines in tropical regions, different species of **mangrove trees** are capable of forming entire forests in salt water tidal areas, known simply as mangroves. Thanks in particular to their stilt root structures and tough leaves, they're the only trees on the planet capable of thriving in these salty environments. Mangroves are home to a wide variety of marine life that come here to reproduce in safety, and contribute to shoring up the silt and sand, limiting the erosion of our coasts over time.


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Monk's hood, or common aconite, grows in the mountains. Its flowers can look like they're wearing a helmet or hood. But its beauty mustn't obscure the fact that it's one of the most toxic plants in Europe, deadly poisonous to both humans and animals. It's even advised you avoid handling the plant with your bare hands altogether. These dangerous properties have been exploited by humans since ancient times for making poisons.

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In nature, the **black bat flower**, *Tacca chantrieri*, grows between Thailand, Myanmar and southwest China. Widely cultivated around the world for its original, dark, bat-like flowers in gardens in milder climates, it can also be grown in pots in cooler climates. It has large, distinctive oval leaves.


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Bougainvillea is a thorny climbing bush brought over to Europe from South America in the 18th century as part of an expedition led by explorer Louis Antoine de Bougainville. Today, it's very popular in the tropics around the world for its magnificent colours. Its white flowers are quite subtle, while its brightly coloured pink, red and purple 'petals' are actually a type of leaf known as bracts.


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Duckweeds are tiny floating aquatic plants. They belong to the Angiosperms group, which are flowering plants, and can therefore reproduce through seeds, but also multiply by division. Each duckweed produces a new leaf that breaks off and forms an entirely new plant genetically identical to its parent plant. This is an example of vegetative reproduction..

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Kat Cenis Coups



● HYDRANGEAS ●



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● JOVIBARBAS ●



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● FLAMBOYANT ●



Maizal Chaniago - Wikimedia Commons



● RAFFLESIA ARNOLDII ●



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● CAMELLIA ●



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● PHALAENOPSIS ORCHIDS ●

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Jovibarbas are easily recognisable thanks to their artichoke shape, often found growing in rock gardens and stone walls. Like nearly all succulents (which store lots of water), they're tolerant to drought and perfectly happy in poor soil as long as it's well drained.

In Europe, jovibarbas have been used as medicinal plants since ancient times.

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The genus **Hydrangea** incorporates over 70 species of shrubs and climbing plants mainly native to Asia and the Americas.

Some are very popular with gardeners because of their large, colourful inflorescences (clusters of flowers) found at the end of their stems. There are lots of different varieties, usually selected for their colours, that you'll see planted in gardens.

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Rafflesia arnoldii is a plant that lives in the humid forests of tropical Asia. Only its giant flower is visible; it doesn't have any leaves. Unable to produce its own sap, it plunges its roots into certain types of liana that it feeds from as a parasite. Its flower, thought to be the biggest flower in the world, gives off the scent of carrion, which attracts certain pollinating insects. It blooms for just one short week a year, after which the entire plant becomes invisible until next year's flowering.

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As the name might suggest, the **flamboyant**, *Delonix regia*, is a remarkable tree. Its red bloom has made it popular as an ornamental tree in all tropical and equatorial regions. Originally, it would only be found naturally in Madagascar. Its flowers secrete a nectar that bees love.



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SO MUCH DIVERSITY...

The genus **Phalaenopsis** includes the most commonly cultivated species of orchids in the world. Some spectacular cultivars have been created and grown on an industrial scale to be sold as houseplants. In their natural habitat, in very humid tropical parts of Asia, these orchids are epiphytes, meaning they grow by clinging to tree trunks and branches of other plants without becoming parasites. They're able to feed through aerial roots, capturing nutrient particles in run-off water. As you can imagine, in these conditions, they grow quite slowly.

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SO MUCH DIVERSITY...

Camellias are Asian evergreen shrubs renowned for their magnificent winter blooms that can be found in gardens in milder climates. Through careful selection, humans have created a wide variety of cultivars (varieties produced through selective breeding) in different colours, with both single and double flowers.

One species of camellia (*Camellia sinensis*) with a white flower and yellow stamen is used to make tea.

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PHD



● HEATHER ●



Kat Ceris Coups



● DANDELIONS ●



Freddy Weber



● LILWITSCHIA MIRABILIS ●



PHD



● SPURGES ●



Kat Ceris Coups



● PAPYRUS ●



PHD



● BUTTERCUPS ●



BUDDING BOTANIST

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SO MUCH DIVERSITY...

Dandelions are very common edible plants, easily recognised by their serrated leaves, yellow flowers and their seeds grouped together in a ball, which float away on the wind thanks to their pappi. There are many different species, which all look alike.

A dandelion's stem is resistant to extreme cold, so while its leaves disappear in winter, its deep roots remain sheltered from the frost.

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SO MUCH DIVERSITY...

There are around 800 species of **heather** around the world. They're found on moors, in the woods, in peat bogs... They're generally shrubs with a winding shape, very small leaves, and flowers in the shape of little bells.

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SO MUCH DIVERSITY...

Spurges are toxic plants that have a thick sap, which can sometimes be highly irritating, called latex. Spurges form a very diverse group of around 2,000 species that have adapted to various environments. Some are herbaceous, while others are shrubs or trees, such as Hevea, which produces the latex we use to make rubber. Those found living in arid regions can store lots of water in their leaves or stems, protecting themselves with thorns. They look a lot like cacti, particularly the Canary Island spurge, for example.

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SO MUCH DIVERSITY...

Welwitschia mirabilis lives in the Namib Desert in southwest Africa, a 55 million-year-old desert that borders the Atlantic Ocean. *Welwitschia mirabilis* is itself an extraordinary and very old species. In a region where only about 5 cm of water falls per year, the plant absorbs droplets left by overnight mist through its leaves. It can live for almost 2,000 years. It only has two leaves and these constantly grow as the ends dry out and decompose.

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SO MUCH DIVERSITY...

Several species of similar looking yellow-flowered Ranunculaceae are known as '**buttercups**'. They all have single, cup-shaped flowers, each with five bright petals. The buttercup is a plant you'll have seen lots of in your lifetime. Like many plants, buttercups need insects to pollinate.

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SO MUCH DIVERSITY...

The 400 or so known species of **papyrus** are aquatic plants that mainly grow in the tropics and equatorial regions. They like wetlands and marshland where they can grow 'with their feet in the water' and their 'heads in the sun'. Papyrus plants are popular with gardeners, particularly around the edge of ponds.

The Egyptians used papyrus to make sheets of writing paper.

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Kat Ceitis Coups



● BLACKBERRY ●



PhD



● WALL BARLEY ●

Présent sur tous les continents



Kat Ceitis Coups



● GREEN ALGAE ●

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PhD



● MAPLES ●



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● OPHRYS ORCHIDS ●



PhD



● WILD GARLIC ●

BUDDING BOTANIST

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SO MUCH DIVERSITY...

Wall barley (*Hordeum murinum*) has spikelets (the floral part) with long barbs (like long, pointed edges). When pointing in the same direction, these can penetrate animal coats and perforate the skin and eardrums. They present a significant risk to some animals.

Wall barley is a type of grass, a very large family (whose scientific name is Poaceae), which also includes wheat, oats, rice and papyrus.

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BUDDING BOTANIST

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SO MUCH DIVERSITY...

Blackberry is a small thorny shrub that emits long stems capable of forming thickets or undergrowth that are often hard to penetrate. Although forest plants, blackberries need sun, so they can often be found on the edge of forests, as hedges, along paths... Their edible fruits are called blackberries because of their colour. They are appreciated by walkers and hikers towards the end of summer and are often made into delicious jams.

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BUDDING BOTANIST

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SO MUCH DIVERSITY...

Maples are trees of varying sizes, depending on the species, grouped together as part of the Acer genus. They're found just about everywhere in the northern hemisphere. They generally have palmate leaves and are recognised by their winged seeds, grouped in pairs, which twirl in the wind on their way down to the ground. In North America, maple syrup is made from the sweet sap of certain species.



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BUDDING BOTANIST

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SO MUCH DIVERSITY...

Green algae are groups of chlorophyll species that produce oxygen through photosynthesis. They play an important role in our ecosystems. When we talk about green algae, we often refer to certain species that proliferate and settle in large groups, for example, on the beaches of Brittany in northern France, a sign of environmental degradation caused by humans. They develop excessively like this when they find large quantities of nutrients in the water (nitrogen, phosphorus, etc.) from livestock farming and fertiliser used on crops.

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BUDDING BOTANIST

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SO MUCH DIVERSITY...

Wild garlic is part of the *Allium* genus, which includes some 700 species, including some that have been used in cooking for thousands of years now for their marked flavour, such as garlic, onion, chives, leek...

There are some species of garlic that people plant in their gardens for the beauty of the flowers alone, usually purple in colour, including *Allium afghanense*, often known as ornamental onion.

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BUDDING BOTANIST

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SO MUCH DIVERSITY...

Terrestrial orchids from the *Ophrys* genus grow in Europe, North America and Asia Minor. They share a very elaborate strategy with other orchids for reproduction, attracting the males of certain species of insects (most often wild bees) by pretending to be a female. To do this, the flower imitates the body of a female insect, including her smell. The males, by attempting to mate with the flower, cover themselves in the plant's pollen, which they then deposit in the flowers of other *Ophrys*, fertilising them as they go.

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Kat Cantis Coups



CACTI



PhD



MOSSES

Présentes sur tous les continents



PhD



ERYNGOS



Kat Cantis Coups



CONIFERS

Présents sur tous les continents



PhD



FERNS

Présentes sur tous les continents



PhD



POPPIES

BUDDING BOTANIST

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SO MUCH DIVERSITY...

Mosses belong to a very distinct group of plants that grow on land, known as Bryophytes. They don't have any sap-conducting vessels or real roots to speak of. They grow by dividing from a single cell at their extremities.

Depending on the species, they can colonise rocks, soil, tree trunks, and branches...

They generally need moisture, but lots of them are highly resistant to long periods of both drought and heat.

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BUDDING BOTANIST

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SO MUCH DIVERSITY...

Conifers are trees or shrubs found almost everywhere around the world, the leaves of which are often needle shaped, and bear their seeds in a cone. Conifers are much older than flowering plants – in fact, they were already around 300 million years ago. Cypresses, pines, firs, junipers, larches... they're all conifers.

Some grow to be the tallest trees on Earth (one sequoia has grown to 115 metres in height) while others live the longest (the age of one spruce has been estimated at over 9,000 years).

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BUDDING BOTANIST

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SO MUCH DIVERSITY...

Poppies bring together various related species, including the opium poppy, as well as the corn poppy. They're herbaceous plants, with large, colourful flowers that stand alone at the end of a stem. Poppies emit lots of small seeds in a capsule.

Poppies produce white latex and are almost all poisonous.

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BUDDING BOTANIST

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SO MUCH DIVERSITY...

Cacti are a family of flowering, typically succulent plants (meaning they store large amounts of water to withstand long periods of drought). They're native to the dry regions of the Americas, but with human help many species have spread to other parts of the planet. As a result, you'll see them in Africa, around the Mediterranean... Not all succulents are cacti, even if some can look very similar indeed. Cacti can be distinguished by their areoles, small bumps of fine hairs and thorns that protect them from animals.

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There are 230 species of **eryngos** around the world, many of which you'll find in South Africa. Their foliage is often thorny, while their flowers are usually blue, white or green. Very young shoots can be eaten in salads before they become hard and prickly, and their roots can be cooked. But when we grow them today, it's mainly for their unique appearance and colours.

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BUDDING BOTANIST

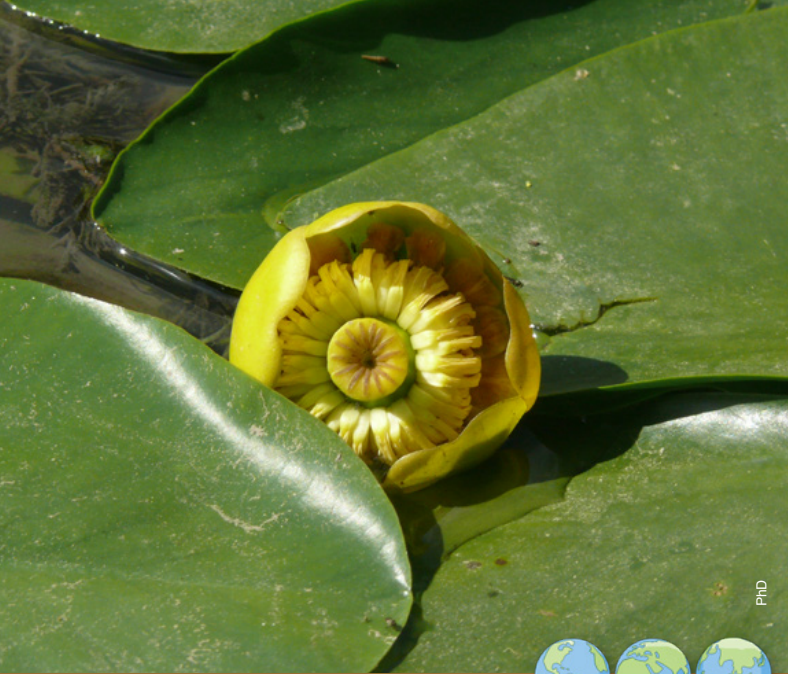
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Ferns don't produce seeds, instead, they reproduce using spores (plant cells that are fertilised outside the plant, unlike seeds). This type of reproduction requires plenty of water. That's why ferns are mainly found in humid places and are more common in tropical regions where they find both heat and humidity. In very humid regions, they're frequently epiphytes, which means they grow on the sides of tree trunks and branches, often in the company of other plants, like mosses and orchids.

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PHD

● WATER LILIES ●



Présents sur tous les continents



PHD

● STRAWBERRY TREE ●



Kat Cantis Coups

● CHILEAN PINE ●



PHD

● WILD TEASEL ●



PHD

● FIELD HORSETAILS ●



Présentes sur tous les continents



PHD

● COMMON POPPY ●



BUDDING BOTANIST

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SO MUCH DIVERSITY...

The **strawberry tree**, a small Mediterranean evergreen, often grows in the company of the cork oak. They like sunny exposure and aren't afraid of frequent fires in their surroundings. Their fruits, known as arbutus berries, don't have a great deal of flavour when eaten raw and can be toxic if you eat too many. However, they make excellent jams. The strawberry tree is part of the Ericaceae family, along with heather and blueberries.

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BUDDING BOTANIST

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SO MUCH DIVERSITY...

The term **water lilies** covers several aquatic plants whose large, rounded leaves float on the surface of the water when fully grown. Their flowers are solitary and different colours, depending on the species. Whether in temperate or tropical regions, every species of water lily puts their roots down in calm waters where the soil at the bottom is rich enough in organic matter to sustain them.

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SO MUCH DIVERSITY...

Wild teasel is a biennial plant, meaning its life cycle lasts two years. Often considered a thistle, they're easily recognised in fields and on wasteland, where they can grow up to 1.5 m tall. The plant's large leaves, welded in pairs to the stem, form a cavity that often fills up with rainwater, which is why some people call them 'the birdbath'. When they die, after two years of being alive, they can remain standing for a long time, dried out, but still recognisable by their inflorescences.

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BUDDING BOTANIST

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SO MUCH DIVERSITY...

The **Chilean pine**, sometimes called the 'monkey puzzle' tree in Europe, is a highly original species of conifer native to the Andes mountain range, Chile and Argentina. This mountain-dwelling tree has leaves in the form of large interlocking scales, which are hard and durable. When fully grown, the Chilean pine is highly resistant to fire. It's even thought forest fires that pass through the area actually encourage the germination of their seeds. To complete this portrait of the tough guy of the forest, some specimens found in the wild are estimated to be around 2,000 years old.

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BUDDING BOTANIST

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SO MUCH DIVERSITY...

The **common poppy** is instantly recognisable with its bright red flowers. It often benefits from cereal crops, which give it a favourable environment. Indeed, it likes ploughed soil and, as it grows rapidly, it has time to complete its annual cycle and produce its seeds before harvest time. It's a segetal plant. A common poppy plant can produce up to 50,000 seeds capable of remaining in the soil for several years, waiting for just the right conditions to germinate.

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BUDDING BOTANIST

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SO MUCH DIVERSITY...

Fossils show that **field horsetails** are very old plants indeed, first appearing around 350–400 million years ago, before seeding plants. Today, we only find herbaceous field horsetails. Those that grew to the size of trees have since disappeared. Like ferns, field horsetails don't flower or produce seeds.

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