

Sefton Park Palm House Roots for Learning Toolkit

GLOSSARY

Here are some words that you might come across as you explore the Palm House, its history and learn about the plants that grow here. You will find the words grouped into three sections:

- Words for plants and their parts
- Palm House past & people
- Palm House architecture

WORDS FOR PLANTS AND THEIR PARTS

Scientific plant name - also known as binomial nomenclature, scientific plant names are in Latin and *italicised*. The first word is the genus, or plant family, and is capitalised. The second word is the species, which identifies a specific plant, is lowercase. This system was invented by Carl Linnaeus, a Swedish biologist. *Phoenix* (genus) *theophrasti* (species) is the scientific name for the Cretan Date Palm. You can find a statue of him outside at the Palm House.

Common plant name - the name that we usually call a plant. Cretan Date Palm is the common name for *Phoenix theophrasti*.

Genus - the family that a species is part of.

Species - the unique name for a plant.

Angiosperms - flowering plants. Flowering plants need pollination to create seeds to reproduce. Most palms are angiosperms. Some can reproduce by making their own offshoots.

Germination - this is when a new plant grows out from a seed. A palm seed can take 2-12 weeks to germinate. It likes to be warm to do so - around 20 °C - 30 °C. It also needs moisture from the soil.

Cotyledon - the first seed leaf that emerges from a seed. It appears when a seed germinates. They often don't look like the fully grown leaves of the plant. A **monocot** is a cotyledon with one leaf (a palm plant). A **dicot** is a cotyledon with two leaves (like a bean plant).

Frond - the large leaves found on palm trees. They are pinnate which means that each big palm leaf is made from lots of small leaflets.

Blades - the leaves that grow off of the mid-rib of a frond. There are two types of blades - pinnate and bipinnate.

Pinnate - a plant that has blades growing along both sides of the frond.

Bipinnate - the fishtail palm is bipinnate which means that each blade growing off of the mid-rib of the frond is further subdivided into leaflets.

Leaflets - the small individual leaves on a large palm frond. They make up a larger complex leaf.

Leaf - A plant part arising from a stem, which has a stalk (petiole) and a flat, expanded, green, photosynthetic area (blade).

Crown - the section at the top of a palm tree's trunk where a group of fronds grow from. Some palms can have around 100 fronds!

Stem - the part of the plant that is above ground and connected to the roots. It moves nutrients from the roots up into the plant. It also keeps the plant standing upright. The leaves and flowers grow from the stem.

Trunk - the unbranched stem of a palm tree. It is a hard, woody stem.

Flower - the reproductive part of the tree that often blossoms in the spring. Once pollinated, they become fruit which ripen in the autumn. Flowers have bright colours, smells and nectar to encourage pollinators to pay them a visit. The flowers contain male parts called **stamens** and female parts called **pistils**. The **anther** is the pollen-producing part of the stamen. The pistils have three parts. The **stigma** is at the top of the pistil and it is where the pollen lands. The **style** is the stalk that connects the stigma to the **ovary** which is at the bottom of the pistil. This is where the fruit and seeds develop after pollination.

Inflorescence - a flower stalk on a palm tree with clusters of many small flowers which will turn into the stalk that holds the fruit.

Pollination - palm flowers are usually pollinated by insects and sometimes wind. Once the flowers are pollinated they turn into fruit. Insects help to pollinate most of the world's plants! Pollination is when pollen grains from the male anther of a flower are transferred to the female stigma of a flower.

Fruit - after the flower is pollinated, the fertilised ovary in the flower turns into a fruit. In palms they are date-like in appearance and called drupes. Some palms have fruit that are tasty but many are not edible. The dates we eat come from the *Phoenix dactylifera*, the edible date tree. The Cretan and Canary Island Date Palm fruit is not very tasty!

Seed - found within the plant's fruit. It has everything that a plant needs to begin growing.

Epiphyte - a plant or plant-like organism that grows on the surface of another plant and takes moisture and nutrients from the air, rain and water (marine environments) or debris surrounding it. These plants photosynthesise their own energy from the sun, so they are not parasites. They don't require soil to grow. Spanish moss is an epiphyte.

Phorophytes - the plants on which epiphytes grow.

Rhizome - a large underground stem that grows horizontally underground which a plant grows from. They are bulb-like power packs that grow along and underneath the surface of the soil. Growth buds form on the rhizome for next year's leaves and flowers. This is how some plants reproduce, like bananas and ginger.

Root - the underground fibres of a plant that collect nutrients and water from the soil. They also help to anchor the plant and keep it sturdy.

Soil - a mixture of tiny particles of rock, dead plants and animals, air and water. Soil holds the nutrients that help plants to grow.

PALM HOUSE PAST, PEOPLE & ARTISTS

MacKenzie & Moncur Ltd - the Glasgow & Edinburgh-based firm that carried out the design and build of the Palm House in the late 1800s. They were the leading glasshouse suppliers of their time.

Henry Yates Thompson - funded the build of the Palm House. He donated £10,000 to create a 'great conservatory' as a centrepiece for Sefton Park, which opened in 1872. Henry was born into a wealthy Liverpool family and inherited money. His father was a banker who had involvement with a bank established by the Heywood family, who were involved in the transatlantic slave trade. His grandfather had also worked there and had worked his way up to become a partner. His mother was the daughter of Joseph Brooks Yates, a West India merchant who owned many plantations in Jamaica that used slave labour. Many Liverpool merchants were involved in the transatlantic slave trade and profited from it, as did the city itself and its economy. Joseph Brooks Yates received compensation in 1833 following the abolition of slavery. Henry's family wealth was generated predominantly through the transatlantic slave trade economy. He had a privileged upbringing and studied at Cambridge University. In addition to his inherited wealth, Henry was also given ownership of the Pall Mall Gazette from his father-in-law. After a few years he sold the newspaper to pursue his main interest, collecting manuscripts. Henry was opposed to slavery and supported abolition. He also paid to have statues created in bronze and marble by the French sculptor **Leon-Joseph Chavalliaud**. Henry selected historic figures for the statues because he thought were important people as botanists, scientists and explorers.

The statues made by Leon-Joseph Chavalliaud outside of the Palm House depict:

Carl Linnaeus - a Swedish botanist who invented the scientific naming system for plants.

Prince Henry the Navigator - a Portuguese prince born in 1394. He was involved in the early days of the Portuguese Empire and the beginnings of the Atlantic slave trade. He sponsored voyages of exploration and to establish Portuguese colonies. This included colonies in West Africa. His expeditions were initially focused on finding gold and establishing trade routes. They also led to the capture and enslavement of African people, marking the beginning of a system that would later evolve into the transatlantic slave trade.

Christopher Columbus - a navigator who explored the Americas under the flag of Spain. Some people think of him as the person who discovered what is now America, but this is not strictly true. His voyages across the Atlantic paved the way for European colonisation and exploitation of the Americas.

Captain James Cook - an English sailor and explorer born in Yorkshire in 1728. He is known for his remarkable journeys by sea, which led him further south than any other explorer of his day. As captain on three voyages of discovery in the late 18th century, he became the first European to define the outline of New Zealand.

Charles Darwin - an English scientist who studied nature. He is known for his theory of evolution by natural selection. According to this theory, all living things are struggling to survive. The living things that have the most helpful traits for their environment tend to survive.

Gerardus Mercator - a Flemish map-maker and geographer, born in what is now Belgium in 1512.

John Parkinson - an English herbalist and botanist born in 1567. He was the official apothecary to King James I.

André Le Nôtre - a French landscape architect who was a member of the court of King Louis XIV from 1635-1700. He played a large part in designing the grounds of Versailles.

Benjamin Edward Spence - a Liverpool-born sculptor who created the sculptures you can find inside the Palm House, *Highland Mary* and *The Angel's Whisper*.

Joseph Chavalliaud - the French sculptor who was commissioned by Henry Yates Thompson to make a series of sculptures in bronze and marble that are found outside of the Palm House depicting historic figures.

Giovita Lombardi - an Italian sculptor who made the *Goat and Kid* sculpture you can see in the Palm House.

Patric Park - a Scottish sculptor who made the *Mother and Child* sculpture in the Palm House.

Taya Hughes - a Zimbabwean-born fashion designer, artist, entrepreneur, and creative visionary based in the North West of England. For the *Statues Redressed Sky Arts* documentary, she dressed the statues of Christopher Columbus, Captain Cook and Henry The Navigator in elaborate Elizabethan-style ruffs made from fabrics associated with indigenous populations in Africa, New Zealand and Australia. The ruffs present a unique opportunity for us to redress and discuss these explorers, who claimed to 'discover' these parts of the world.

PALM HOUSE BUILDING & ARCHITECTURE

Porch - the four main entrances to the Palm House are through porches. Each porch faces a compass direction. The main entrance faces North. In architecture, a porch is a space or room that is located in front of an entrance.

Pane - the Palm House domes are made from 3,710 panes of glass, each one cut to size. The panes are flat but the curved design of the dome structures makes the surface appear rounded.

Pillar - the Palm House has 8 large iron pillars. These are sturdy vertical structures that help to bear weight. The Palm House pillars are hollow and used to be part of the water collection system that ran into collection tanks in the basement from the domes above.

Arch - an architectural structure that is curved on top and designed to distribute weight. The Palm House is supported by pillars and arches made from cast iron and steel.

Dome - the Palm House's rounded shape made from 3 tiered domes. A dome is an architectural element that looks like half of a sphere.