

Plants

**of the
Modern English School Cairo
Egypt**



Biology & Environmental Science Classes

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Acokanthera oppositifolia

Bushman's plant or wintersweet has many special characteristics. The scientific name is *Acokanthera oppositifolia* and its family is Apocynaceae. Wintersweet is found in southern and eastern Africa. This plant's appearance is actually really weird. It has stiff, opposite leaves and white-pinkish flowers which have five petals. The flowers bloom in March and April, which is why it's called wintersweet. The fruit looks like a large plum, and birds feed on it. Even though this plant is quite beautiful, it is dangerous. It is a poisonous shrub that has been used in many different ways. Do you know why this plant is called bushman's plant? Well, it's because bushmen use the poisonous latex to make poison arrows. Even though it's a very poisonous plant, the roots, shoots, and fruits are used as a cure for snake and spider bites. Just like it has its advantages, the plant has its disadvantages. One of the disadvantages is that when used inappropriately, it can cause death. So whenever you see this wondrous plant, make sure you don't poison yourself, because unfortunately you might die. Always be careful and use caution while handling such a strange plant.



Bougainvillea spectabilis



Bougainvillea spectabilis, or paper flower, is a spectacular plant. A member of the Nyctaginaceae, it has thorny, wood vines. The paper flower scrambles over other plants with its thorns. On the tip of the thorns, there is a black, waxy substance. The leaves of *Bougainvillea spectabilis* are alternate. The flowers of the plant are small and the flower's color is white. Each group of three flowers is surrounded by three leaves. Those leaves are usually beautifully colored. The most common colors of the leaves surrounding the flowers are either bright red, pink or white. The plant gets its name 'paper flower' due to the thin papery leaves surrounding a group of flowers.

Bougainvillea spectabilis can sometimes suffer from worms, also some insects feed on the plant. The sap of *Bougainvillea spectabilis* can cause skin rashes. The most interesting story is about its discovery, and how it was seen for the first time by European explorers. Some explorers in the French Navy went on a voyage to South America in 1789. The expedition botanist secretly had his lover, Jeanne Bare, come along disguised as a man. Women were not allowed on French Navy ships during the time. When they arrived at Rio de Janeiro, Brazil, Jeanne Bare discovered *Bougainvillea spectabilis*. She was the first European to see it. After that the botanist studied it, and named it after the captain of the fleet, Louis Antoine de Bougainville.



Bougainvillea fruit

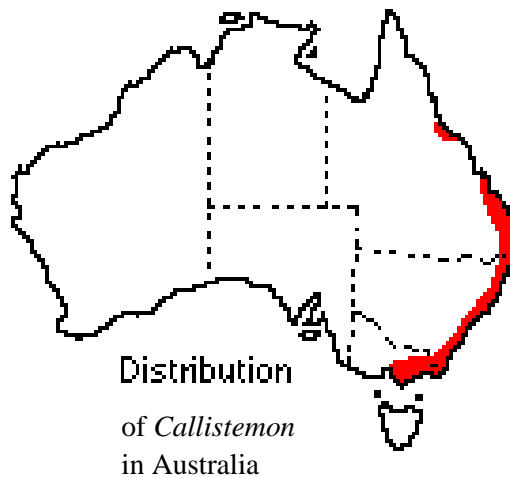


Bougainvillea spectabilis
Geographic Range:

Callistemon citrinus

Crimson bottle brush

Callistemon citrinus generally grows outdoors in a warm dry climate with a minimum temperature of 7 degrees Celsius. It can grow to 3 meters in height. Its leaves are 3 to 7 cm long and 5 to 8 mm wide. The leaves are flat and stiff. *Callistemon* is native in Australia, but is cultivated in many other places where the climate is mild. In Australia bottle brush grows in Victoria, New South Wales and Queensland. Its stamens are bright red tipped with dark anthers. Birds often use this plant as a food source and are often been seen pollinating bottle brush.



Fruit of *Callistemon*



Tree of *Callistemon*



Flowers of *Callistemon*

Cassia javanica

Cassia javanica, is native to Southeast Asia and Indonesia. Its flowering time is April to September. It has a fast growing rate. People love this tree, as they use it in gardens, parks, and also for shade. The flower that grows on *Cassia javanica* is very popular in Thailand; it is the regional flower of Chaniat province. The most beautiful flowers grow on *Cassia javanica*. The tree itself grows up to 25 meters in height.

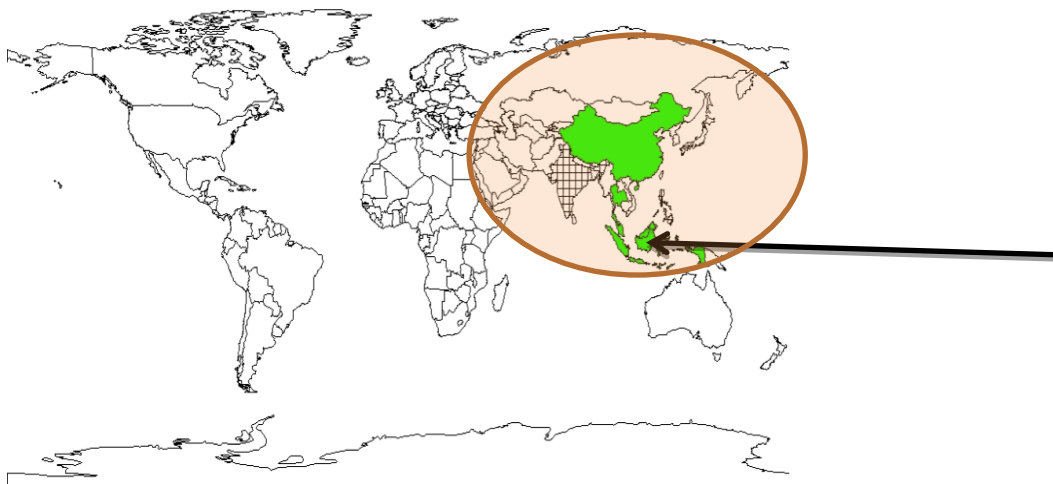


Habit

Flowers of *Cassia javanica*

Cassia javanica blooms in summer and fall. The petals are pale red at the beginning, then change to dark red, and to pale pink. There are three different kinds of stamens in each flower! Three stamens have a bulb on the filament; five have anthers on a rocker arm; and three are small and sterile!

Indonesia
and
Southeast
Asia, where
*Cassia
javancia* is
native



Caesalpinia gilliesii

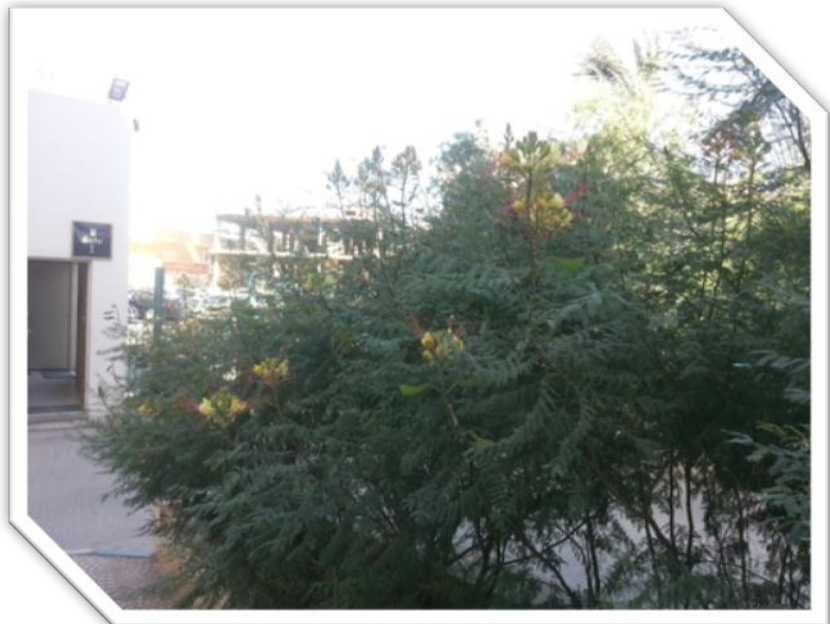
Caesalpinia gilliesii is a shrub in the legume family, Fabaceae. It is commonly known as bird of paradise or barba de chivo, but it is not related to the bird of paradise genus *Strelitzia*. It grows to 4 meters tall, depending on rainfall. The leaves are bipinnate (twice divided), to 15 cm long, bearing 3-10 pairs of pinnae. Each pinna has 6-10 pairs of leaflets 5–6 mm long and 2–4 mm broad. The flowers are borne in racemes up to 20 cm long. Each flower has five yellow petals with 10 long conspicuous red stamens. The pods are densely covered in short, red glandular hairs.



It is a striking ornamental plant native to tropical America, mainly Argentina and Uruguay.



People of the Amazon Rainforest use this plant and the similar *Caesalpinia pulcherrima*, which they call ayoowiri, for curing fever, sores, and cough. Four grams of the root is said to induce abortion in the first trimester of pregnancy. The seeds and the green seed pods of this plant are toxic, causing severe vomiting and other abdominal symptoms.



Pollination of *Caesalpinia* is by butterflies, moths, and bees.



A close relative of *Caesalpinia gilliesii*, *Caesalpinia pulcherrima*, disperses its seeds through explosive dehiscence. *Caesalpinia gilliesii* seeds may be dispersed in the same way. Dehiscence is the splitting at maturity along a line of weakness in the fruit in order to release its contents. Explosive dehiscence is a ballistic form of dispersal that flings seeds far from the parent plant.

Cycas revoluta

Cycas revoluta is known as king sago or sago palm.

This plant is a kind of gymnosperm. It is in the family Cycadaceae. *Cycas revoluta* is native to southern Japan.



Male plant of *Cycas revoluta* with cone.

Cycas revoluta is very symmetrical and has shiny, dark green leaves on a thick trunk that is usually about 20 cm in diameter, sometimes wider. The trunk starts very low and hidden in young plants, but grows above the ground with age. It can grow up to 7 m tall. However, the plant grows very slowly and needs about 50-100 years to reach this height. The most interesting thing about this plant is that each individual is exclusively male or female.



Female plant of *Cycas revoluta* with seeds.

The male has a cone and the female has pink seeds. It grows best in sandy, well-drained soil, and likes full sun or outdoor shade, but needs bright light when grown indoors.



Cycas revoluta is native to Southern Japan

Royal Poinciana

The flame tree, flamboyant, or royal poinciana (*Delonix regia*) is a summer bloomer, flowering from May to July. Royal poinciana grew only in Madagascar before people started cultivating it all around the world. The tree is considered one of the five most beautiful flowering trees in the world. Its flowers range in color from red to orange, hence



the common name flame tree. Although it is common in cultivation in the wild this tree is endangered due to deforestation, the cutting down of forests. The tree was first introduced to western science by Phillipe de Longvilliers de Poincy, and was originally placed in the genus *Poinciana*, named after him.



The tree provides shade and its flowers make its ornamental value priceless. The flowers of the tree are vivid red, orange, and occasionally yellow, accompanied by bright green leaves making the tree a breath-taking sight. The flowers of the tree are large; they start



out with four red or orange petals, reaching up to 8 cm long. The fifth petal is upright; it is called the standard and is usually yellow, with white spots.

The seedpods are black and are 5 cm wide and 60 cm long. The seeds are 2-3 cm long. The leaves of the tree have a feather-like appearance and texture. They are bright green. Each leaf is 30-50 cm long and has 20 to 40 pairs of leaflets (pinnae). Each pinna has 10 to 20

secondary leaves called pinnules. The structures of the leaves help create a beautiful appearance for the tree, and provide great shade.

Although the tree can survive drought and salty conditions, it needs a tropical or near-tropical climate to grow.

As MES students we should be very proud and amazed at having such a beautiful tree at our school and in our country. We should learn to appreciate things like the different kinds of plants at our school and should be grateful for having an opportunity to be surrounded by all this beautiful life.



The tree at MES Cairo on May 30th



The tree at MES Cairo on June 10th



In Madagascar, where it is endangered due to habitat destruction, birds, which are typically most attracted to red and yellow flowers, pollinate the flamboyant tree.

Dragon Tree *Dracaena reflexa*

Dracaena reflexa is a plant with thick stems and long, smooth leaves. The flower is small and white. Its common name is pleomele, or the song of India. Its family name is Asparagaceae. It is a subtropical tree that is native to Madagascar, Mauritius and other islands of the Indian Ocean. It grows really slowly. It can grow to be 5 meters tall, while its leaves can be 30-90 cm long. It is used in parks and gardens for decoration. People grow it in their homes. This is because it requires minimal care for people that don't have time to water it often. Something unusual about *Dracaena reflexa* is that it is one of the plants used in the NASA Clean Air Study, which is a study that suggests indoor plants to remove toxic gasses. It is an effective air cleaner and is said to be among the best plants for removing xylene and trichloroethylene from indoor air.



Dragon tree habit:



Dragon tree flowers:



Dragon tree fruits:



Ficus retusa The glossy-leaved fig

Ficus retusa is a rapidly growing plant of the fig family, Moraceae. *Ficus retusa* is a broad-headed, rounded, evergreen shrub or tree that can reach 15 meters or more. The light grey, smooth trunk can grow to 1 meter in diameter to support the canopy. It also has darkish green leaves. *Ficus retusa* is also called Taiwan fig.

This plant is native to Malaysia, Taiwan, and other southeast and East Asian countries.

Ficus retusa grows all around MES. Most of the hedges around the MES campus are grown from *Ficus retusa*.





Hedera Helix The English Ivy

Hedera helix is a fascinating plant, commonly known as English ivy. Ivy is in the family Araliaceae and is found in Europe and Western Asia. Ivy can be identified by its flamboyant leaves, being heart shaped and alternate. It's also characterized by its greenish-yellowish flowers that produce great amounts of nectar, providing food for insects and birds throughout the autumn season. The fruits are grape-like, dark berries. Another way to identify *Hedera helix* would be it's method of climbing trees, walls and other landscapes features using roots that come out of the stem. These "aerial roots" or "adventitious roots" attach to a wall or tree bark and allow ivy to climb many surfaces. *Hedera helix* has been labeled



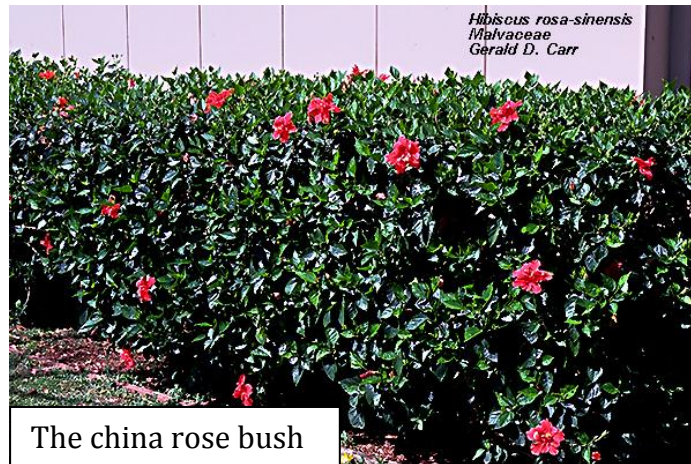
as an invasive plant in many parts of the world, including the United States of America and Australia. The berries have been discovered to spread diseases and harm humans. It has been banned in New Zealand and officially recognized as an "environmental weed." *Hedera helix* has had many uses, for example back in the 1600s, *Hedera helix* was believed to cure bronchitis and coughs. It has proved harmful instead in such situations. Now it's generally used ornamentally, or to decorate interiors, like our school! If you're interested in checking out *Hedera helix* for yourself, walk the secondary school stairways and notice the plants growing on the columns and palm trunks beside the stairs. That's *Hedera Helix*!



Hibiscus rosa-sinensis

China rose or rose mallow

Hibiscus rosa-sinensis or rose mallow is native to Eastern Asia (China and Malaysia). It belongs to the Malvaceae family. *Hibiscus rosa-sinensis* is a bushy green shrub that grows 5 meters tall. It has 5-petaled red flowers that appear in summer and winter. The flower comes in different colors: yellow,



white, blue and red. The flower is 10 cm in diameter.

Hibiscus rosa-sinensis is the national flower of Malaysia. The rose mallow is self-pollinated. That means that one flower can pollinate itself. The rose mallow has many relatives including a famous one called *Hibiscus sabdariffa* that is used in Egypt to make hibiscus tea (karkaday). It is also closely related to cotton.



Geographic range of the china rose

Morning Glory - *Ipomoea cairica*

The most famous common names for *Ipomoea cairica* are morning glory, Cairo morning glory, and Messina creeper. *Ipomoea cairica*'s family name is Convolvulaceae. *Ipomoea cairica* flowers have green sepals and violet petals. It has 5 to 7-lobed leaves. If you open the flower, you can see that the style, stigma, and the ovary are white. The anthers are also white but if you look closely you can see yellow spots on them. Its native range is north Africa and the Arabian Peninsula.

This plant is called morning glory because the flowers open in the morning and close at midday. The Aztecs believed that morning glory seeds were a means of connecting with the sun god. Morning glory held a particularly sacred place within Aztec culture and religion. The Aztecs used the seeds as a hallucinogen in religious ceremonies. The Chontal Indians were convinced not only that strong spiritual energy existed within this plant, but also that a highly evolved spirit, one that had the ability to connect them with the spiritual realm of the gods, inhabited the morning glory.



Lantana Camara Spanish Flag

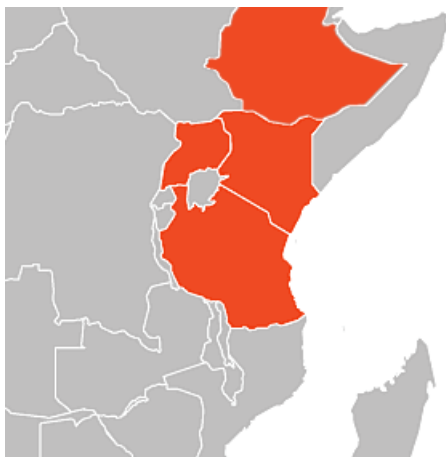
Lantana camara is from the Verbana family, Verbenaceae. It is native to the American tropics, but has been introduced into other parts of the world as an ornamental plant, and is considered an invasive species in many tropical and sub-tropical areas. Its stems and leaves are covered with rough hairs and emit an unpleasant smell when crushed. The small flowers are held in clusters called umbels. Flower color ranges from white to yellow, orange to red, and pink to rose in unlimited combinations. In addition, the flowers usually change color as they age. Lantana is very easy to grow and will adapt to most soil types. This plant likes to have a bit of everything but not too much. It likes sun, but also part shade. It likes water, but too much water and fertilizer will reduce bloom. It actually prefers well-drained soil because it is drought resistant. Cuttings taken in summer can be used to propagate Spanish flag.



Markhamia lutea

Yellow Trumpet Tree

Markhamia lutea is known as the yellow trumpet tree. It is native to east Africa, in Uganda, Tanzania, Ethiopia and Kenya. It belongs to the Bignoniaceae family. You can recognize it by its bright yellow flowers with orange lines going through them from the inside, and its long swirly brown fruits. It is a rather large tree and has opposite compound leaves. *Markhamia lutea* is known as the yellow trumpet tree because its flowers are yellow and resemble trumpets.



Range of *Markhamia lutea*



East Africa



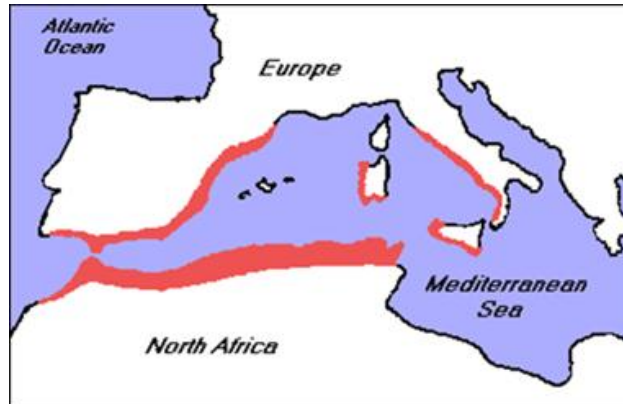
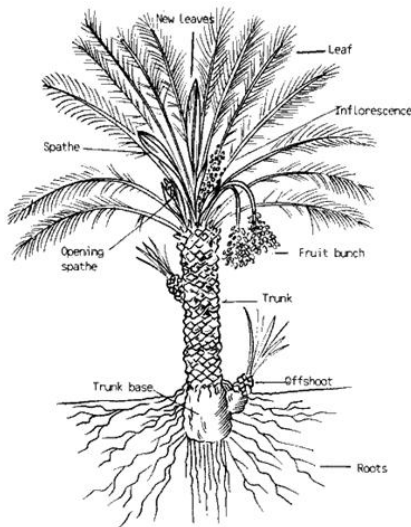
Markhamia lutea trees on a savannah in East Africa



Yellow trumpet
tree fruits are
about 1 meter
long and spirally
coiled.

Date Palm

Phoenix dactilifera



The date palm, a member of the Arecaceae, is an evergreen palm that can grow up to 30 meters tall. Its trunk is surrounded from the ground upward with patterns left by the base of fallen leaves (leaf scars). Leaf scars are marks on the tree where a leaf used to grow and now it's not there. The date palm has leaves that are up to 5 meters long, and have an end that's needle sharp. A date palm's trunk is usually single, or it can have more than one stem. Grown in a nearly rainless environment, date palm trees are native across northern Africa into the Middle East and far southern Europe. In order for the date palm to thrive it requires high temperatures and low humidity. The date palm has female and male individuals. Flowers are born in groups at the top of the tree among the leaves. Only the female trees produce fruits. The fruit of the date palm has one seed. The fruit can vary in size, shape, color and quality of flesh. Undeveloped young dates are green in color. When mature they turn yellow, then reddish-brown when fully developed. A single large bunch can contain more than a thousand dates. A mature and fully developed female tree can produce 150 pounds of fruit per year. Date palms begin to fruit at 3 to 5 years old, and are fully mature at 12 years. Every part of the tree has its uses. The wood and leaves provide timber and fabric for houses and fences. The leaves are used for making ropes, cord, baskets, crates and furniture. Leaf bases and fruit stalks are used as fuel.



Plumbago auriculata

Plumbago auriculata or Cape leadwort is one of the most resilient and beautiful of plants. *Plumbago* was discovered in the 18th century in South Africa by the Dutch East India Company. The plant is now cultivated all over the world, mainly in areas with Mediterranean climate. It is native to South Africa and the surrounding countries.



The flower colors include most shades of blue and white. The plant is evergreen, and flowers all year round. It is vulnerable to frost and snow, but will re-grow if damaged as soon as weather conditions improve. *Plumbago* grows as a bush, reaching a few feet high and wide.

Plumbago auriculata possesses a very interesting trait. It is a proto-carnivorous plant! That means it is able to trap and kill insects. Sticky glandular hairs on the sepals hold small insects tight. The dead victims fall to the soil and decompose. The plant benefits from the nutrients that were the insect.

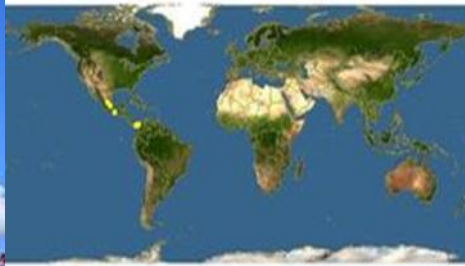


The sticky hairs on the sepals also help the plant in dispersal. *Plumbago auriculata*'s fruit is brown, hard, and about 1.5 cm long. The fruits enclosed in the sepals stick to the legs of birds, butterflies and small mammals.

Aside from its beauty, *Plumbago* also is important in certain medical practices. It has been used to treat warts, broken bones, and wounds. In some African tribes the plant is taken as snuff for headaches, and to dispel bad dreams.

Plumeria rubra

Plumeria rubra is a plant native in Central and South America from Mexico to Venezuela and Colombia. It has many common names that change depending on the country. In Mexico it is called Cacaloxochitl or suchit. In Australia and Italy it is called frangipani. In the USA it is called plumeria. As for a Hawaiian, he calls it a melia. Its most



widespread common name is red frangipani. It is a member of the dogbane family (Apocynaceae). How would you recognize *Plumeria rubra*? You would look for a tree that has a height of 2-8 meters. You can also look for bright pink flowers with large, waxy, tongue-shaped, simple, opposite leaves. One of the interesting facts about frangipani: It will only burn in extreme heat (500°). You will find this plant growing at MES right outside the front entrance to the school.



Senna surattensis



Senna is a genus of some 500 species, among which are a number of highly attractive flowering trees. *Senna surattensis* is a medium to large tree, as well as a fast grower. Its common name is scrambled egg plant and it is a member of the pea family (Fabaceae).

The tree grows to about 6 meters and spreads to about 5 meters. The leaves are alternate and compound. Each leaf has 6 to

10 pairs of ovate leaflets, which are waxy white on the lower surface. The leaves contain antioxidants. For millennia, these trees have played a role in herbalism and folk medicine. Human interest in this tree includes the antidiabetic activity of leaf extracts.

When the leaflets drop in the dry season, masses of bright gold flower clusters appear. It requires a dry season to bloom abundantly. The flowers are five-parted, yellow with 10 stamens. Its seed pods contain 3 to 5



seeds.

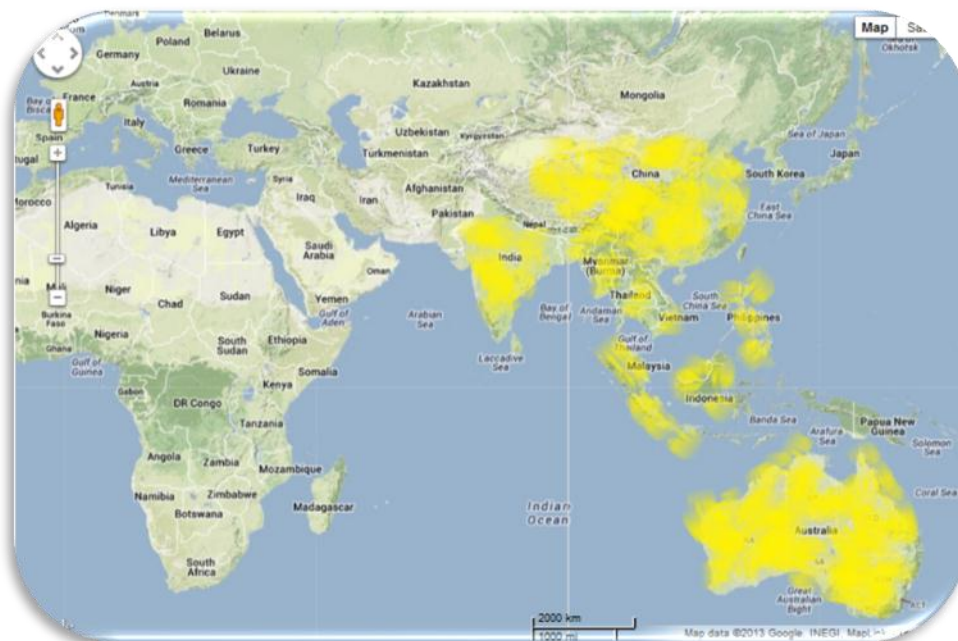
Senna surattensis has anthers adapted for buzz pollination. The anthers of buzz-pollinated plants are typically tubular with an opening at only one end. The



pollen is smooth-grained and firmly attached. During buzz pollination, a bee gets the pollen by vibrating the flower; the pollen is then shaken onto the body of the bee and sticks to it.

The scrambled egg plants' native range includes India, China, Laos, Myanmar, Thailand, Vietnam, Malaysia, Indonesia, the Philippines, and

Australia.



Coleus



Solenostemon scutellarioides is known as coleus or painted nettle, and is an outstanding plant. It is different from any plant I've seen before. It has incredible foliage with combinations of colors and shades: purple (lavender), orange, brown, green, yellow, bronze, red (burgundy), dark mahogany, blue, and white. Its habit is usually upright and it reaches roughly 1 meter tall.

What makes *Solenostemon scutellarioides* interesting? In Central America it attracts humming birds. The leaves and seeds are toxic. The symptom would be a red rash that might last a few days depending on someone's skin. It has been reported to have a very mild relaxing or hallucinogenic effects. Amazing, correct? It has been used as a hallucinogenic by the Mazatec Indians of Southern Mexico. This outstanding plant has been popular since Victorian times.



Solenostemon scutellarioides is originally from Southeast Asia and Malaysia.

Hard to imagine but it is still considered a mystery where this plant originated. Some scientists say that this plant

doesn't exist in the wild and on the contrary, it is likely the result of hybridization among



many *Solenostemon* species.

Why else is *Solenostemon scutellarioides* special? First off, the darker the color in the leaf, such as red or purple, the more sunlight the plant will be able to tolerate. Many *Coleus* varieties change pigmentation when exposed to high light intensity: they increase anthocyanin and decrease chlorophyll content. In other words, they turn darker in bright sunlight!

Syagrus romanzoffiana

The queen palm (*Syagrus romanzoffiana*) is native to South America in Brazil and Argentina. A member of the palm family (Arecaceae) it grows to 50 feet tall. *Syagrus romanzoffiana* has huge leaves at the top of the tree. There are about seven leaves on each tree and each leaf is about 3 meters long. The leaf base is attached to the trunk. The leaf is compound, and is composed of hundreds of leaflets. The flowers are white and appear during spring and fall seasons. Its fruits turn from green to yellow to orange as they ripen,

Queen palm tree



and are edible. They are called jeriva fruits in Brazil and consist of a nut surrounded with a thin layer of flesh that is orange and sticky when ripe. The flavor is sweet and could be described as a mixture of plum and banana. The queen palm's scientific name comes from Syagrus, an ancient Greek poet who wrote about the Trojan War. The queen palm has been used

throughout history as a building material for tools, homes and boats. It is found near the front gate and in the atrium of the secondary building at M.E.S.



Fruits of queen palm



Flowers of queen palm



The queen palm grows in South America

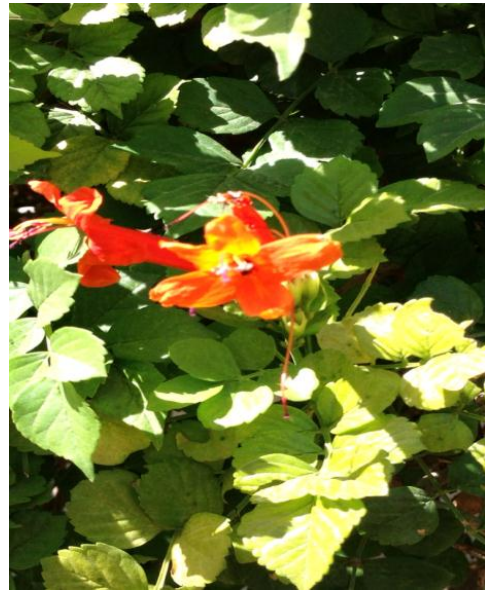
Tecoma capensis



leaflets. It has terminal clusters of trumpet-shaped orange or red-orange flowers. It's widely cultivated and very easy to propagate.

Tecoma capensis is a fast growing plant, reaching 3 meters high and wide. It's common name is Cape honeysuckle. *Tecoma capensis* is in the family Bignoniaceae.

Tecoma capensis is an evergreen bush or vine. Its leaves are pinnate, dark green and glossy, with pointed, serrate



The native range of *Tecoma capensis* is southern Africa

 **Native range**

Tecoma capensis is usually planted for decorative purposes, and to attract birds and butterflies. It attracts nectar-feeding birds, especially sunbirds. The sunbirds feed on the rich nectar in the plant's flowers, and pollinate the plant. *Tecoma capensis* is used as a medicine to treat fever, insomnia, bleeding gums, dysentery pain and chest ailments.

Tecoma stans Yellow Trumpet-flower

Tecoma stans, known as yellow-elder or yellow trumpet-flower, is a member of the Bignoniaceae native to tropical America from Florida, the southwestern United States, the Caribbean and Bahamas, through Central and South America. It has been introduced in South Africa, the Philippines, India, Hawaii and Australia.

The leaf is compound, while its leaves are arranged opposite one another. The flower is bright yellow, and that's why its common name is yellow-elder or yellow trumpet-flower. The sepals of the flower are joined at the bottom. Throughout the year the color of the leaves and flowers do not change. The fruit of *Tecoma stans* is brown, its texture is dry and hard, and its size is 6-12 inches. The tree is particularly small, and is considered a shrub.

The flower is known as the 'bell,' because it is shaped like one. It reaches its full bloom during the springtime. The flower has a nice fragrance.

The pollination of this flower happens when the male part and female part are mixed, using the help of bees who accomplish this process.



TECOMA STANS

Yellow-Elder, Yellow Trumpet-Flower



The flowers just starting to bloom.



The flowers fully open. They are bright yellow.



This is *Tecoma stans*. It is a relatively small tree.



The leaves are compound: they are divided into leaflets.



The seeds found inside the fruit 6-9 mm long. They blow far in the wind.



This is the long, brown fruit.