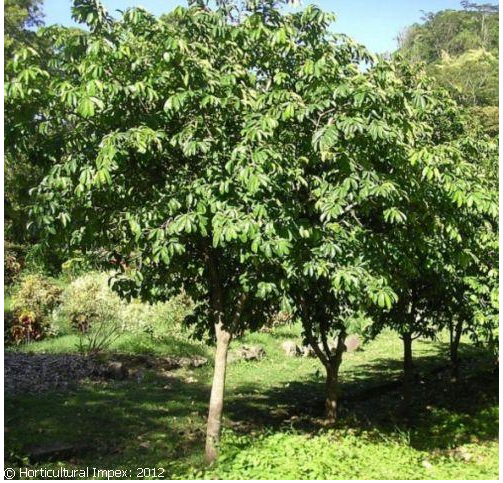
FAMILY ANNONACEAE- (custard apple family / /soursop family)

Systematic Position:
Class : Dicotyledons
Subclass: Polypetalae
Series: thalamiflorae
Order: Ranales
Representatives: 108 genera; 2400 species
Distribution: tropical in distribution; few temperate
Habitat: Mesophytic
Habit: Shrubs, trees
Trees- Polyalthia
Shrub – Annona squamosa
Hook climber – Artabotrys, uvaria
Anatomical: aromatic wood due to oil passages in stem in the parenchyma cells.
Growth: Monopodial – Polyalthia, Sympodial – Artabotrys

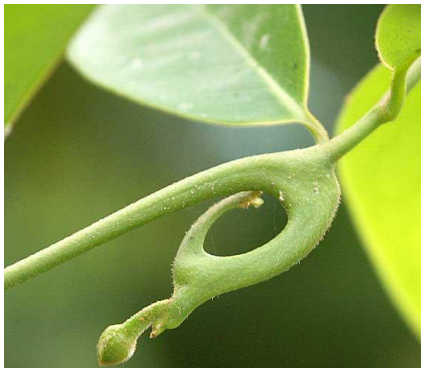


Leaves: simple, alternate exstipulate, petiolate with entire margin. Short petiole; bifarious/ distichous in arrangement.

Inflorescence: solitary/ fascicles.
Cauliflorous – Polyalthia
Peduncle modified to hook – Artabotrys

Flower: Greenish yellow- brown, pedicellate, Bisexual, actinomorphic, dichlamydeous, hemicyclic, hypogynous & trimerous.
Zygomorphic – Monodora (size of petals vary)

Calyx & corolla distinguished by size only. So Perianth.



Calyx: - Sepals 3, small, polysepalous with valvate aestivation. Sepals triangular in shape.

Corolla: - petals 3 or 6, polypetalous with valvate aestivation. Imbricate in some. Petals thick & fleshy.

Depression at base on inner side

6 in two whorls of 3 each – Polyalthia, Annona, Artabortys, Cananga

In Annona, the inner whorl very small

Shape of thalamus varies in annonaceae

Convex- Artabotrys, Conical –Anona, hemispherical/ flat – Uvaria

On the prolonged thalamus, stamens 7 pistils arranged spirally

Androecium:- Stamens numerous, free, spirally arranged, closely packed at basal part of thalamus
Filament short & thick, with adnate bithecous anther
Dehiscence longitudinal & extrorse
Connective is prolonged above the anthers to form an elongation called hood – so, hooded stamens.

Gynoecium:- Ovary superior, multicarpellary, apocarpous, spirally arranged on thalamus above the stamens.
Pistil with individual ovary, style, stigma inconspicuous.
Placentation basal in Annona; Marginal in cananga
Cananga- Carpels free, stigmatic heads fuse to form an irregular structure
Annona – carpels free, but after tertilisation, the carpels fuse laterally to form aggregate fruit.

Fruit: - Aggregate fruit; etaerio of berries.
Annona – Aggregate fruit
Etaerio of berries – Cananga, Polyalthia

Seed:- endospermous, hard testa,
tegmen produced to numerous infoldings into the endosperm – Ruminate endosperm
Embryo small.

Diagnostic features of the family:
Trees or shrubs
Leaf simple exstipulate, petiolate alternate bifarious or distichous with entire/ sinuate margins
Inflorescence in fascicles
Flower bisexual, actinomorphic, trimerous, hypogynous hemicyclic greenish yellow or brown dichlamydeous, complete
Presence of prominent thalamus
Polysepalous calyx three in number, small, greenish with valvate aestivation
Polypetalous corolla 3 or 6 in two whorls of 3 each, green or brown fleshy with valvate aestivation
Androecium with numerous stamens, spirally arranged with short filaments and hooded bithecous anthers
Gynoecium multicarpellary apocarpous unilocular superior with ovules on basal or marginal placentation. Style terminal & stigma inconspicuous
Fruit aggregate; Seeds endospermous with ruminate endosperm.

Economic importance:-
Annona squamosa (Custard Apple) –Edible fruit, insecticidal, an anti-tumor agent, anti-diabetic, anti-oxidant, anti-inflammatory agent

A.reticulata (bullock's heart)- Edible fruit, unripe fruit is used against diarrhea and dysentery, skin diseases, fever, malaria, peptic ulcers, colic and oedema. In addition, the peel from the immature fruits is specifically claimed to manage dyspepsia, diarrhea and chronic dysentery.

A.muricata (sour sop)- fruit edible, fever, pain, respiratory and skin illness, internal and external parasites, bacterial infections, hypertension,
inflammation, diabetes and cancer.

Polyalthia longifolia (Telegraph pole tree) – Ornamental, in traditional system of **medicine** for the treatment of fever, skin diseases, diabetes, hypertension and helminthiasis

Artabotrys hexapaetalus (tail grape) – flowers tonic and stimulant. fruits and bark treat fever, diarrhea, skin diseases, wounds, ulcers, inflammation, cough, asthma and bronchitis. The leaves extract has antibacterial, antifertility and antifungal activities.

Cananga odoarata (ylang-ylang)- treat malaria, stomach ailments, asthma, gout, and rheumatism. The essential oils or ylang-ylang oil is used in aromatherapy and is believed to be effective in treating depression, high blood pressure, and anxiety.

Monodora myristica(African nutmeg) - timber is hard , used for carpentry, house fittings.
In medicine, the bark is used in treatments of stomach-aches, eye diseases and haemorrhoids.

Uvaria narum - treating Jaundice, roots and leaves treat Chronic Fever, Rheumatism, Inflammation and Skin diseases.

Unona discolor/ Desmos chinensis (dwarf ylang-ylang **)**- The plant is used locally, for its essential oil, fibre, food and medicinal uses. It is also often grown in gardens as an ornamental.