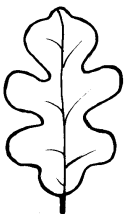


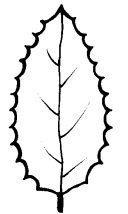
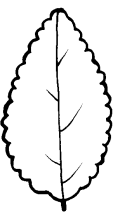



## KEY TO GROUP 7

Herbs or subshrubs **usually** less than 1 m tall, leaves alternate.

					
A. leaf lobed	B. leaf dissected	C. margins serrate	D. margins dentate	E. margins crenate	F. leaf linear-lanceolate

- |    |   |                        |
|----|---|------------------------|
| 1  | Flowers yellow  | go to <b>Group 7.A</b> |
| 1* | Flowers variously coloured but not yellow   | go to 2                |
| 2  | Leaves lobed (see sketch A) or deeply dissected (B)                                     | go to <b>Group 7.B</b> |
| 2* | Leaves not lobed or deeply dissected  | go to 3                |
| 3  | Leaf margins serrate (C), dentate (D), or crenate (E)                                   | go to <b>Group 7.C</b> |
| 3* | Leaf margins smooth   | go to 4                |
| 4  | Leaves linear to linear-lanceolate (F), less than 4 cm long                             | go to <b>Group 7.D</b> |
| 4* | Leaves not linear, broad or variously shaped, <b>if</b> narrow then more than 4 cm long | go to <b>Group 7.E</b> |



*Tacca leontopetaloides*  
Polynesian arrowroot

**GROUP 7.A      Flowers yellow.**

***Ludwigia octovalvis*** (Willow Primrose – Onagraceae)

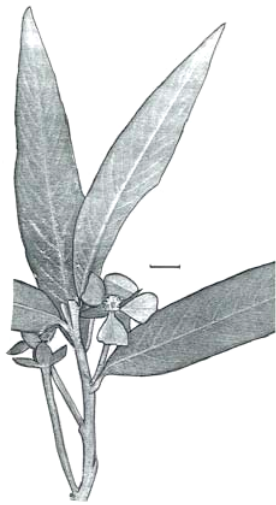
*Ludwigia*, C.G. Ludwig was a German botanist and physician, 1709-1773.

An erect, much branched plant usually found in moist habitats. Petals 4, **yellow**, stamens 8; capsules narrow to 4.5 cm long.

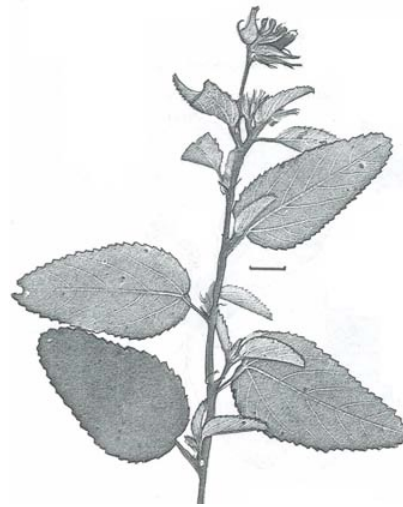
***Melhania oblongifolia*** (Velvet Hibiscus – Pentapetaceae formerly part of Sterculiaceae)

*Melhania*, named after Mt Melhan in Yemen where the type of the genus was collected.

A subshrub covered with stellate or star-shaped hairs. Petals **yellow**, to 3 cm diameter, withering to form a column; the 5 stamens alternate with 5 sterile stamens or staminodes; fruit a capsule.



*L. octovalvis*



*M. oblongifolia*

***Corchorus hygrophilus*** (Sparrmanniaceae formerly part of Tiliaceae)

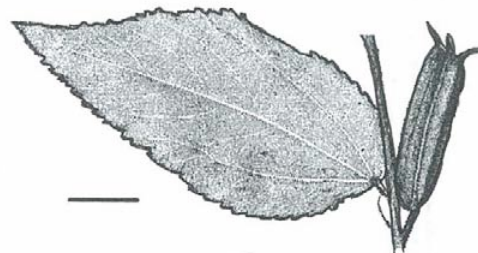
*Corchorus*, from the Greek *korchorus*, meaning obscure also suggested from Greek *coreo* – to purge, because of the laxative properties associated with some species.

Plant to 50 cm tall, leaves 8-12 cm long, margin serrate; petals 4 **yellow**; fruit broadly ellipsoidal, 7-12 mm long, with 3-4 ribs. Rare.

*Corchorus aestuans* is often procumbent but sometimes forms an erect plant to 1 m tall; leaves to 9 x 4 cm, margins serrate, 2 tails formed from extensions of 2 serrations often present near the base; petals 5, **yellow**; fruit 13-30 mm long, with 3-4 prominent long wings.



*C. hygrophilus*



*C. aestuans*

***Triumfetta rhomboidea*** (Chinese Burr, Triumfetta Burr – Sparrmanniaceae formerly part Tiliaceae)\*

***Triumfetta***, named after Giovanni Triumfetti (1658-1707) A Professor of Botany in Rome. Shrubby plant to 1.5 m tall, leaves usually 3-lobed, 3-veined at base. Flowers **yellow** in clusters, stamens 10-15 per flower; capsule to 9 mm long, to 8 mm diameter, covered in prickles. It is a common weed. A similar species occurring in the Townsville area is ***Triumfetta pentandra***, it may be distinguished by the flower only have 5 stamens and the fruit is densely hairy on one side only.

***Triumfetta repens*** is a low spreading shrub, stamens 30-40 per flower, fruits from 17-22 mm long and 15-20 mm diameter, covered with firm prickles. Leaf shape variable in shape and size in both species.



*T. rhomboidea* (left), *T. pentandra* (right)

*T. repens*

***Sida* spp.** (Malvaceae)

***Sida*** is the Greek name for a water plant, as one of the first species described grew in a moist habitat.

These subshrubs frequently have leaves covered with stellate or star-shaped hairs and the leaf margins are often indented. Flowers **yellow to orange**, staminal filaments fused for most of their length to form a column. Styler branches 5, fruit a capsule, the valves of the fruiting sections are referred to as mericarps, the hard sides of each are often rough. Most are weedy. Some common ones are:

***Sida atherophora***, stems with stalked stellate hairs, calyx 10-ribbed at base, mericarps 6-9;

***Sida cordifolia*** (Flannel Weed), plant densely softly hairy, hairs not stalked, leaves softly hairy almost velvety to feel, often appearing yellowish-green, calyx 10-ribbed at base, mericarps 10-11; which each bear 2 bristles about 3 mm long;

***Sida rhombifolia*** (Common Sida, Paddy's Lucerne)\*, the hairs are minute, not stalked, mericarps 9-10, each with 2 ribs on the back and 2 apical spines are present;



*S. atherophora*

*S. cordifolia*

*S. rhombifolia*

*Sida hackettiana* (Spiked Sida, formerly *Sida subspicata*), shrub to 1.5 m tall, leaves hairy to about 7 cm long. Flowers are sessile and often clustered to form dense groups, petals dry rusty-coloured, mericarps 4-6, stamens are fused to one another to form a column. This plant is often confused with *Waltheria indica*.

*Waltheria indica* (Byttneriaceae – formerly part of Sterculiaceae)

*Waltheria* named after Augustin Friedrich Walther (d. 1746) a German physician and botanist.

An erect, softly pubescent plant to about 1 m tall, leaves oblong 2-5 cm long, to 3.5 cm wide, veins prominent on lower surface of leaves, margins toothed.

Flowers **yellow to orange** in dense clusters, 5 stamens free from one another.

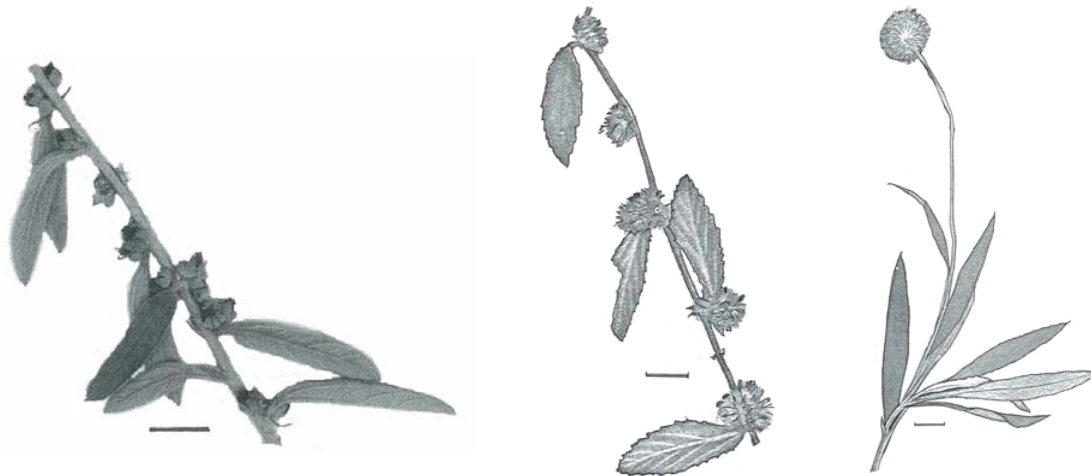
Fruit a hairy capsule with 1 seed. It is sometimes confused, with *Sida hackettiana* (Spiked Sida) which has flowers loosely arranged and the stamens are fused to each other to form a column.

*Coronidium flavum* formerly part of *Helichrysum rupicola* (Yellow Button – Asteraceae)

*Helichrysum* from the Greek *helios* – sun, and *chrysos* – golden, referring to the flower colour. Wilson (2008) formed the name *Coronidium* from the Greek word *korone* – crown and the diminutive *-idion* in reference to the short crown of pappus bristles remaining on top of the seed after most of the bristles have broken off.

Plant to about 50 cm tall, lower surface of the leaves covered with woolly hairs, margins weakly serrated. **Yellow** flowers in heads on a long stalk to 25 cm long.

The distinctive feature of this species is the yellow median involucrel bract.



*S. hackettiana*

*W. indica*

*H. rupicola*

*Crotalaria* spp. (Rattlepods, see **Group 6.A** for other species – Fabaceae)

*Crotalaria montana* is a small erect shrub with narrow leaves 2-10 cm long; flowers **yellow** with darker streaks, back petal or standard 4-7 mm long, apex emarginate.

*Crotalaria brevis* is a similar species, but leaves are smaller 0.5-2 cm long, standard 6-9 mm long, but apex not emarginate.

*Crotalaria mitchellii* (Yellow Rattlepod) often forms clumps, leaves broadest about the middle, not wedge-shaped; flowers in dense racemes, **yellow**, calyx 4-6 mm long, wing petals equal to or shorter than the keel; pods to 3 cm long, grey-brown at maturity.



*Crotalaria retusa* (Wedge-leaved Rattlepod)\* is much branched, leaves wedge-shaped, tip often slightly indented, stipules linear to narrow 1-2 mm long; flowers **yellow** sometimes streaked, calyx 8-20 mm long, wing petals longer than the keel; pods 3-5 cm long, much inflated, black.

*Crotalaria spectabilis* (Not illustrated)\* can be distinguished from the former by the ovate stipules 2.5-10 mm long.

**NOTE:** Small plants of *Tithonia* (Group 8.F); the yellow form of *Hybanthus enneaspermus* (Group 7.D); and the yellow variant of *Nymphoides indica* (Group 7.E) may key out here.



*C. montana*



*C. mitchellii*



*C. retusa*

**GROUP 7.B Leaves lobed or deeply dissected.**

*Abelmoschus moschatus* subsp. *tuberosus* (Native Rosella, Musk Mallow – Malvaceae)

*Abelmoschus*, from the Arabic *Abu-l-misk*, referring to the musk-like smell of the seeds.

A small plant often trailing across the ground but may be somewhat erect, leaves to 10 cm long with 3-5 lobes, margins shallowly serrated. The large Hibiscus-type flowers have 5 attractive **white to red** petals with darker red centres. Fruit a capsule, hairy to 2.5 cm diameter.

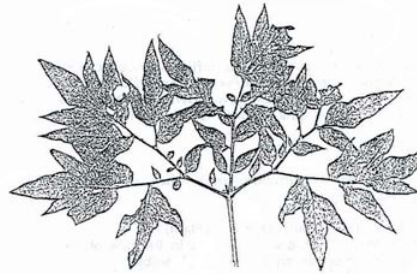
*Tacca leontopetaloides* (Polynesian Arrowroot – Taccaceae)

*Tacca*, appears to be a Latinized form of the Indonesian word *taka*.

These plants have deeply dissected leaves borne on very long petioles. The flowers are clustered on the end of a very long stalk; each **white to creamy-green** flower has a long 'string-like' appendage hanging down. Fruit a berry, green-yellow to 2-4 cm long. Also refer to page after key to **Group 7** for illustration.



*A. moschatus*



*T. leontopetaloides* x 1/3

*Coldenia procumbens* (Boraginaceae)

*Coldenia*, Cadwallader Colden, a Scottish physician was a correspondent of Linnaeus.

A prostrate, hairy plant with branches radiating from a central point, it occurs in moist places as in Horseshoe Bay. The leaves to 2.5 cm long, are wrinkled as though they have been folded. Flowers **white**; leaves and fruit glandular-hairy.

*Urena lobata* (Urena Burr, Pink Burr – Malvaceae)\*

*Urena* is a name from Malabar.

A wiry subshrub with broadly ovate to lanceolate leaves, to 5-10 cm long, 3-5 cm wide, a prominent gland (↑) at the base of the midrib on the lower surface of the leaf. Flowers with 5 **pink** petals to 2 cm long; fruit a capsule, about 1 cm diameter, covered with small hooked spines which catch on clothes etc. Weedy.



*C. procumbens*



*U. lobata*



**GROUP 7.C Leaf margins serrate, dentate or crenate, not also lobed.**

*Pterocaulon serrulatum* (Ragweed, Fruit-salad Bush – Asteraceae)

*Pterocaulon*, from the Greek *pteron* – wing, and *caulos* – stem, referring to the winged stem. Erect herb, leaves decurrent on the stem forming wings, margins serrate; flowers crowded into heads 2-4 cm long, **greenish to straw-coloured**.

*Pterocaulon sphacelatum* (Applebush), has weakly toothed or even entire leaf margins, leaves woolly; flower heads ovoid to 2 cm, flowers range in colour from **green to mauve to purple**. Both species have fragrant or aromatic foliage sometimes quite strong.

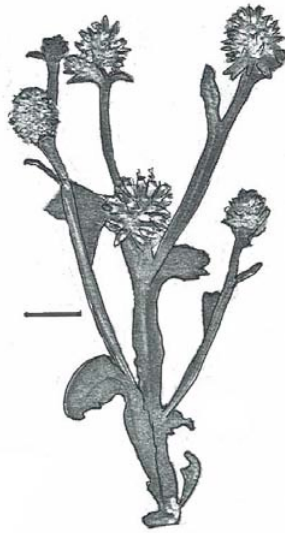
*Amaranthus viridis* (Green Amaranth – Amaranthaceae)\*

*Amaranthus*, from the Greek *a* – without, and *marain* – to wither, in some species the flowers appear to be everlasting.

Erect herb to about 40 cm tall with soft leaves to about 15 cm long when well developed. These leaves can be boiled and eaten; flowers **greenish**, in dense clusters, perianth segments 3, stamens 3. Seed black about 1-1.5 mm diameter



*P. serrulatum*



*P. sphacelatum*



*A. viridis*

*Nymphaea gigantea* (Native or Blue Waterlily – Nymphaeaceae)

*Nymphaea*, from the Greek *nymphē* – a water nymph, referring to the habitat.

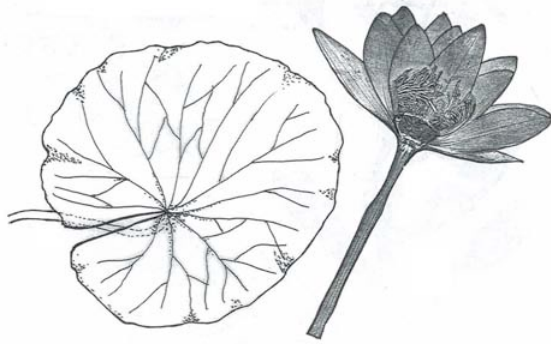
An aquatic plant with tubers growing in mud in lagoons and quiet waters, it has large, prominently veined leaves 20-60 cm diameter, margins dentate and base cordate. Flowers to 30 cm diameter, extend above the water on a long peduncle, petals **blue to white**, petals and stamens numerous. Seeds red.

*Helicteres semiglabra* (Helicteraceae formerly part of Sterculiaceae)

*Helicteres*, from the Greek *helikter* – a twisted bracelet, an allusion to the twisted carpels found in some species.

An erect herb with stellate hairs, these are particularly noticeable on the grey capsule, which opens into 5 segments (carpels). Flowers small, **blue to mauve**.





*N. gigantea* x 1/5



*H. semiglabra*

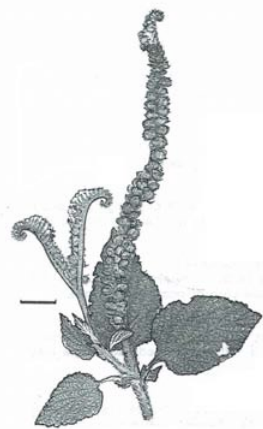
***Heliotropium indicum*** (Heliotrope - Boraginaceae)

*Heliotropium*, from the Greek *helios* – sun, and *trope* – turning, the inflorescence was once thought to turn with the sun.

This herb has pubescent leaves with serrate margins. The inflorescence is 'boragoid' that is the flowers are borne on one side of a curved spike as in a 'forget-me-not'; flowers **pale blue or white** with a yellow throat.

*Heliotropium pauciflorum* has a similar inflorescence but it is often hard to recognize because there are only a few flowers, leaf margins are smooth. Flowers **white**.

*Heliotropium peninsulare* has been collected behind Horseshoe Bay. It differs from *Heliotropium pauciflorum* by the calyx having coarse hairs, rather than fine hairs, and the outer lobe is much broader.



*H. indicum*



*H. pauciflorum*



*H. peninsulare*

***Grewia* spp.** (Sparrmanniaceae formerly part of Tiliaceae)

*Grewia*, named after Nehemiah Grew (1641-1712), a physician and plant anatomist. Shrubs with leaves borne in 2 rows in the one plane, stellate or star-shaped hairs dense, particularly on the lower surface, usually 3-veined at the base. Flowers usually **white to greenish-yellow**. A number of species occur on the island.

*Grewia retusifolia* (Emu Berry, Dysentery Plant, Dog's Balls). Plant varies in height, rarely more than 1 m tall, leaves whitish pubescent on lower surface. Flowers with about 20 stamens per flower; fruit brownish, lobes lack hairs, 2-4-lobed drupe, edible.

*Grewia australis* is similar to the former but is often over 1 m tall, leaves are not as white on the lower surface and in fact often appear to lack hairs, stamens more than 40 per flower and the fruit is globular and 2-lobed.

*Grewia scabrella* is a shrub in dry rainforest growing to 2.5 m tall, it has broadly ovate leaves, pubescent on lower surface, brownish, ovary pubescent.

*Grewia graniticola*, this rare species is a shrub to 2 m tall, fruit lobes stellate-pubescent on the outside; the lower surface of the leaves is densely, grayish-white stellate pubescent.

*Grewia latifolia* may occur, leaves are ovate usually less than 10 cm long, margins toothed, may be somewhat lobed, flowers yellow, fruit to 1 cm across. and may be somewhat lobed. This species may be confused with the weed *Grewia asiatica*, common around Townsville, which is taller and has much broader and longer leaves, usually more than 10 cm wide.



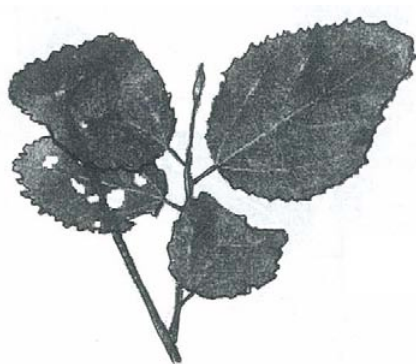
*G. retusifolia*



*G. graniticolas*



*G. latifolia*



*G. scabella*



*G. australis*



**NOTE:** See also *Cyantillium cinereum* (Group 7.E).

**GROUP 7.D Leaf margins smooth, leaves linear to linear-lanceolate, <4 cm long.**

***Portulaca pilosa*** (Portulacaceae)

*Portulaca*, from the Latin *portare* – to carry, and *lac* – milk, referring to the mucilaginous nature of the sap. A variant of this spelling was first used by Pliny.

A prostrate, succulent shrub usually found growing in sandy areas. Leaves narrow to 2 cm long, fleshy. Flowers **pink to purple**, clustered in leaf axils and surrounded by hairs, hence the specific epithet. *Portulaca oleracea* (Purslane) has broader leaves, lacks the hairs and the flowers are yellow.

***Leucopogon cuspidatus*** (Ericaceae formerly in Epacridaceae)

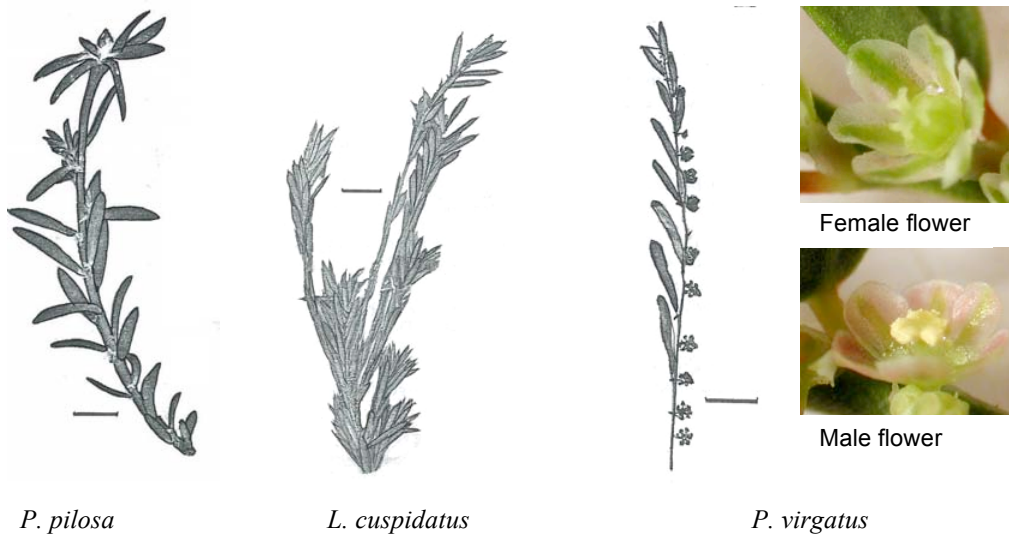
*Leucopogon*, from the Greek *leukos* – white, and *pogon* – beard, referring to the white hairs on the petals.

Low spreading shrub to 1 m tall. Leaves are linear-lanceolate with fine parallel veins and a sharp point (pungent) at the tip. Flowers **white**; petals 5, pubescent inside.

***Phyllanthus virgatus*** (Phyllanthaceae formerly part of Euphorbiaceae)

*Phyllanthus*, from the Greek *phyllon* – leaf, and *anthos* – flower, in some species the flowers appear to be borne on the edge of the leaves.

Small glabrous plants to about 50 cm tall, leaves to about 1.5 cm long. Separate male and female flowers, perianth **pale green**, capsule to 2.5 mm diameter.



***Evolvulus alsinoides*** (Tropical Speedwell – Convolvulaceae)

*Evolvulus*, from the Latin *evolvere* – to untwist, i.e., it does not have a climbing habit.

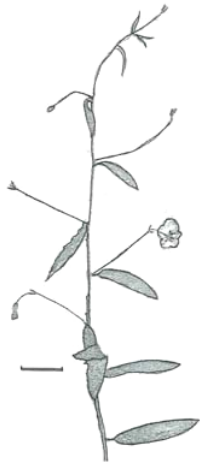
A prostrate or weakly ascending herb to 60 cm tall, it has bowl-like flowers. The petals are fused to each other, to 1 mm diameter when expanded, **blue to pale blue** or occasionally white. Fruit a globular capsule to 4 mm diameter

***Hybanthus enneaspermus*** (Spade Flower – Violaceae)

*Hybanthus*, from the Greek *hybos* – hump, and *anthos* – flower, since the sepals are not turned back as in another genus *Viola*.

This small herb has linear leaves, flowers solitary, **blue** and the lower petal is much longer than the other 4. Fruit a capsule 4-9 mm long.

*Hybanthus stellarioides* has **yellow-orange** flowers. Fruit a capsule 5.5-7.5 mm long.



*E. alsinoides*



*H. enneaspermus*



*H. stellarioides*

***Indigofera linifolia*** (Fabaceae)

Small herb to about 40 cm tall, leaves linear, pubescent, whitish. Flowers are pea-shaped, **reddish**, and are followed by small, globular, whitish pods.

***Striga curviflora*** (Witchweed – Scrophulariaceae)

*Striga*, from the Latin *striga*, meaning a furrow or rigid bristle.

Relatively unbranched herb, rough to the touch, leaves linear, lower opposite, upper ones alternate. Flowers usually **purplish**, 2-lipped, tube bent. This species may be distinguished from some plants with a similar appearance not recorded from the island, *Buchnera* spp., by calyx-tube being only slightly longer than the lobes and the corolla is distinctly bilabiate. Species of both genera are semi-parasitic on roots. Fruit a capsule.

***Wahlenbergia caryophylloides*** (Australian Bluebell – Campanulaceae)

*Wahlenbergia*, named for Georg Wahlenberg (1780-1851) of Uppsala, a botanist.

Small herb, flowers campanulate, corolla **blue** with 5 spreading lobes. Fruit a small capsule with calyx lobes projecting above. A least one other species of bluebell is recorded for the island.

**NOTE:** *Trichodesma zeylanicum* (Group 5.B) may also key out here as the upper leaves are alternate.



*I. linifolia*



*S. curviflora*



*W. caryophylloides*

**GROUP 7.E      Leaves various but if narrow then more than 4 cm long.**

***Persicaria attenuata*** (a Knotweed – Polygonaceae)

*Persicaria*, an ancient name, the leaves thought to show some similarities to those of a peach.

An erect herb usually growing in moist areas; the pubescent leaves have a fringed (ciliate) pale-coloured sheath (ocrea) encircling the stem. Flowers **white**. Fruit a dark brown nut to 2.5 mm long.

***Cyanthillium cinereum*** (Vernonia – Asteraceae)

*Cyanthillium*, name refers to the colour of the flowers.

A common weed, leaves very variable in size and shape; flowers in terminal heads usually **purplish**. Fruit an achene with silky pappus to 5 mm long.

***Phyllanthus fuernrohrii*** (Phyllanthaceae formerly part of Euphorbiaceae)

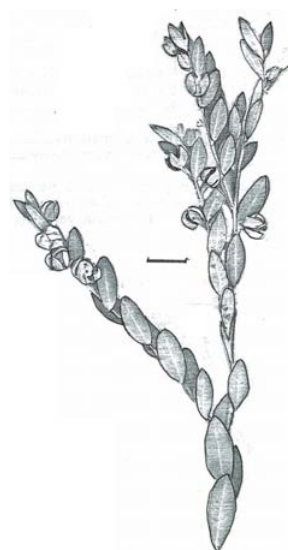
A greyish, pubescent plant to about 40 cm high. Separate male and female plants may be solitary or a few clustered together. Capsule pubescent, 3-4 mm diameter. Other species of this genus may be found, particularly in gardens, as weeds.



*P. attenuata*



*C. cinereum*



*P. fuernrohrii*

***Solanum ellipticum*** (Potato Bush – Solanaceae)

*Solanum*, from a Latin name for this plant used by Pliny, *solamen* – solace or comfort.

Plant to 1 m tall, leaves covered with stellate hairs, often tufted. Prickles present on stems, leaves and flowers. Flowers **purple**; berry globular, yellowish-green with a purplish tinge.

***Nymphoides indica*** (Water Snowflake, Star Fringe – Menyanthaceae)

*Nymphoides*, from the Greek *nymphaea* – waterlily, and *oides* – like, similar to the waterlilies.

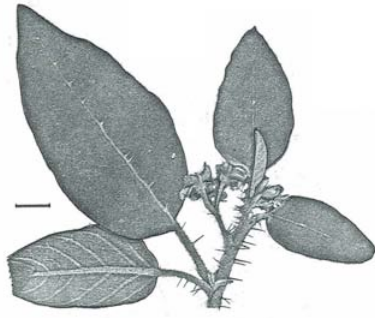
An aquatic plant rooting in the mud, with the leaves floating on the surface, leaves to about 30 cm long. Flowers usually in clusters, petals **white**, or white with a yellow centre to 5 cm diameter, margins strongly fringed. Fruit a capsule.

***Drosera spatulata*** (Sundew – Droseraceae)

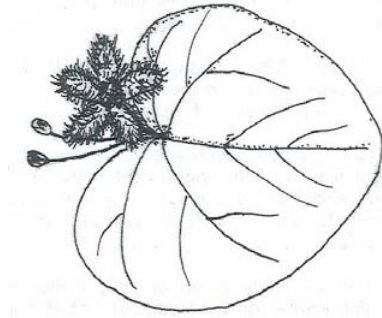
*Drosera*, from the Greek *droseros* – dewy, referring to the appearance of the glandular secretions on the leaves.



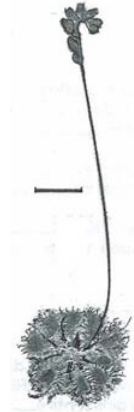
An insectivorous plant found in moist seepage areas. There is a rosette of leaves at the base, which may be green to reddish and covered with glandular hairs. Flowers **white to pink**, ovary with 3-4 styles. Fruit a small capsule with numerous seeds.



*S. ellipticum*



*N. indica*



*D. spatulata*