

AQUATIC ORNAMENTAL PLANTS OF SRI LANKA

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There are many different species of aquatic plants that are used to decorate aquaria, in-door and out-door ponds over the world. Most of these originate in the tropics and for that matter Sri Lanka is not an exception. The topography and numerous habitats of the country provide necessary environmental requirements for these plants.

Present paper is an attempt to review some of the commonly used ornamental water plants found in Sri Lanka and their distribution. Notes are also given on propagation and cultivation of the plants.

1. Genus : *Aponogeton* (Figure 1) (Common name : English- Ruffled Sword plant, Sinhalese- Keketiya)
(Family : Aponogetonaceae)

Habitat: Pools, ponds, lakes, seasonal tanks and slow-flowing waterways both in shade and in the sun.

Five species, namely, *A. crispus* (Distribution: Central Western and Southern provinces), *A. rigidifolius* (Distribution: Southern and Central provinces), *A. undulatus* (Distribution: in all areas except the Eastern, Northern and Central provinces), *A. echinatus* (Distribution: Southern province), *A. natans* (Synonym: *A. monostachyus* (Distribution: Western province and North Central province) are ideal for deep, large aquarium tanks or garden ponds. All but *A. Crispus* are very easy to grow. They are very tolerant of the variable composition of soil and water and does not need a lot of light. Propagation is from the young plants produced on runners. *A. crispus* has a few special requirements and may stop growing from time to time, but will recommence of its own accord.

2. Genus: *Bacopa* (Figure 2) (Common name : English- Baby's tears, Sinhalese- Heen lunuwila)
(Family: Scrophulariaceae)

Habitat: In marshy areas

Species *B. monnieri* (Synonyms: *Herpestes monnieri*, *Lysimachia monnieri*) (Distribution: all provinces except the Northern province) can be used in aquaria and garden ponds of any type. Plant does not need special requirements to grow but too strong light induce growth of algae which may cover the plant. Propagation is by cuttings.

3. Genus: *Cabomba* (Figure 3) (Common name : English Fanwort, Sinhalese- Budu Ras pasi)
(Family: Nymphaeaceae)

Habitat: In ponds, lakes, ditches, ponds and water-holes

This genus has two species suitable for aquaria. *C. aquatica* (Synonym: *Nectris aquatica*, *Villarsia aquatica*) (Distribution: North Western, Western, and Southern Provinces) and *C. caroliniana* (Synonym: *C. peltata*, *C. pinnata*, *Nectris peltata*) (Distribution: Central and Western provinces) are good for any type of aquaria or garden ponds. *C. aquatica* is difficult to cultivate as it requires soft water. It also needs high temperatures and sunlight. Latter one is easy to grow and it only needs good light. Propagation is by cuttings.

4. Genus: *Cardamine* (Figure 4) (Common name: English-Chinese Ivy, Sinhalese-Diya Bo)
(Family: Brassicaceae or Cruciferae?)

Habitat: In lakes, ponds and sometimes in slow-flowing streams and in ditches

Species *C. hirsuta* (Distribution : Central and Western provinces) is suitable for all types of garden ponds and aquarium tanks. Plant requires a lot of light and develop well in rich soils. Propagation is easy by top cuttings.

5. Genus: *Ceratophyllum* (Figure 5)(Common name: English - Hornwort, Sinhalese - Diya hawari)
(Family: Ceratophyllaceae)

Habitat: In ditches, rivers, canals and pools

Species *C. demersum* (Synonyms: *C. aspersum*, *C. cornutum*, *C. cristatum*) (Distribution: Western central and southern provinces) that is also found in brackishwater is more suitable for large garden ponds or aquarium tanks. However, the plant grows in good light and needs nutritious water, It has water purifying properties. Plant can be propagated from pieces of plants and each piece will develop into a new plant.

6. Genus: *Ceratopteris* (Figure 6) (Common name: English - Water Sprite, Indianfern, Sinhalese - Kukul Andu)
(Family: Parkeriaceae)

Habitat: In rice fields, ditches and water logged meadows

Species *C. thalictroides* (Distribution: Central, Western and Southern provinces) is not difficult to grow but does require good light and warm temperatures. It is good for both aquaria and garden ponds. Propagation by young plants growing at lobes.

7. Genus: *Cryptocoryne* (Figure 7) (Common name: Sinhalese- Attudiyana)
(Family: Araceae)

Habitat: In rivers, streams and springs

There are about thirteen species belonging to this genus which are ideal for deep aquarium tanks or garden ponds, namely, *C. parva*, *C. beckettii*, *C. legroi*, *C. willisii*, *C. ciliata*, *C. walkerii*, *C. thwaitesii*, (Distribution: all in the Central province while *C. walkerii* also grows in the Eastern province and *C. thwaitesii* in the western province), *C. nevillei* (Distribution: mainly found in Mahaweli river and some of its tributaries), *C. petchii*, *C. lucens* (Distribution: Both in Central and Eastern provinces), *C. lutea*, *C. wendtii*, and *C. spiralis* (Distribution: all three species are mostly found in the Western Central province. The later one is also found in the Eastern and Western provinces together with *C. undulata* while *C. wendtii* also grow in the Central province).

C. beckettii has few special requirements and grows well in clay mixed soils. Propagation of all species is possible from runners. *C. petchii* and *C. nevillei* need strong light. *C. parva* is almost impossible to grow underwater.

8. Genus: *Egeria* (Figure 8) (Common name : english;-Canadian Water weed, Sinhalese-Gona parandala)
(Family: Hydrocharitaceae)

Habitat: In rivers, lakes and ponds

Species *E. densa* (Synonym: *Elodea densa*, *Anacharis densa*) (Distribution: all area except the Northern province of Sri Lanka) requires a great deal of light to grow. Good for both aquarium tanks and garden ponds. Propagation is by pieces of plant and can be cultivated either in rooted or free floating form.

9. Genus: *Eichhornia* (Figure 9) (Common name: English- Water Hyacinth, Sinhalese- Japan Jabara)
(Family: Pontederiaceae)

Habitat: In tanks, slow flowing rivers and marshy areas

Species *E. crassipes* (Distribution: throughout the Island except in the Northern province) has become a notorious weed, but some aquarists regard its hanging roots as a useful cover for fry. Therefore more suitable for breeding aquarium tanks but also can be used in medium and large sized garden ponds and aquarium tanks. Plants need good light.

10. Genus: *Hydrilla* (Figure 10) (Common name: English-Water Serpent, Sinhalese- Diya Sarupa, Diya sarpa)
(Family: Hydrocharitaceae)

Habitat: In tanks and slow flowing rivers

Species *H. verticillata* (Distribution: throughout Sri Lanka) is suitable for large aquarium tanks or garden ponds. Easy to grow either in its rooted or free floating form, provided it is given a good deal of light. Planting calls for care, because the very fragile stalks must not be damaged.

11. Genus: *Hydrocotyle* (Figure 11) (Common name: English-Water pennywort, Sinhalese- Diya Gotukola)
(Family: Umbelliferae)

Habitat: In rice fields, damp places and slow flowing ditches

Species *H. sibthorpiodes* (Distribution: Central province) is suitable for deep aquarium tanks. Plant needs a great deal of light. Regular topping is needed to keep the plant submerged. Propagation by runners.

12. Genus: *Hygrophila* (Figure 12) (Common name: English-Water Wistaria, Indian water star, Sinhalese-Heen mukunuwenna)
(Family: Acanthaceae)

Habitat: In ditches, rice fields and slow-moving waterways (eg: Irrigation canals)

Two species, *H. differmis* (Synonym: *Synnema triflorum*) (Distribution: throughout Sri Lanka except in the Northern province) and *H. polysperma* (Synonym: *Hemiadelphis polysperma*, *Justica polysperma*) (Distribution: Central, Western and Southern provinces) are specially suitable for larger aquaria. Easy to grow but requires a lot of light. Plant can be propagated using cuttings. Even severed leaves will produce young plants where they have been cut. Runners are also produced at the root of the plant.

13. Genus: *Lagenandra* (Figure 13) (Common name: none)
(Family: Araceae)

Habitat: In marshy ground in low-lying tropical forests

Species *L. thwaitesii* is suitable for medium as well as big aquarium tanks and garden ponds. Though it can survive for long times underwater, it does not grow well nor propagate well underwater. It grows vigorously if grown emerged in a humid atmosphere, therefore ideal for a paludarium.

14. Genus: *Limnophila* (Figure 14) (Common name: English- ; Ambulia, Sinhalese - Kahata pasi, Rainda pasi)
(Family: Scrophulariaceae)

Habitat: Shallow still waters such as rice fields, shallow ponds and ditches, marshes, paddy fields

Species *L. indica* (Distribution: Eastern and Central provinces), *L. heterophylla* (Synonym: *L. reflexa*) (Distribution: Eastern, Central, Southern and Western province) and *L. sessiliflora* (Distribution: Eastern and Central provinces) need light and rich soil for cultivation. Plant is more suitable for open garden ponds. Propagation is by cuttings.

15. Genus: *Lobelia* (Figure 15) (Common name : English - Cardinalflower, Sinhalese - Mihindupada)
(Family: Lobeliaceae)

Habitat: In ditches and slow-flowing water courses

There are five species which can be used as ornamental plants. Species *L. zeylanica* (Distribution: Throughout the country), *L. trigona*, *L. affinis*, *L. excelsa* (Distribution: All three species in Central province and *L. affinis* also in the Western province) and *L. nicotianaefolia* (Distribution: Western province) are suitable for any type of aquarium or pond but lot of light and clean water is required. Propagation is by riped seeds.

16. Genus: *Ludwigia* (Figure 16) (Common name: English- False loose strife)
(Family: Onagraceae)

Habitat: Moist places, rice fields, dithches and marshy terrains

Species *L. Palustris* (Synonym: *L. mullerti*, *L. natans*, *L. repens*) (Distribution: Central and Western provinces) is easy to grow but needs good light, therefore more suitable for open aquarium tanks and garden ponds. Propagation is by cuttings which can be planted in groups.

17. Genus: *Marsilea* (Figure 17) (Common name: English - Four - leaved water colve, clover-fern, Sinhalese-Diya ambiliya)
(Family: Marsileaceae)

Habitat: In ditches, ponds and water holes

Species *M. quadrifolia* (Distribution: in all areas except the Northern province) is not a good aquarium plant because the leafstalks tend to become disproportionately long and untidy. If given good deal of light it will tend to remain short, but, then, it will grow so abundantly that other plants may be choked.

18. Genus: *Myriophyllum* (Figure 18) (Common name: English - Water Milfoil, Sinhalese - Girapihatu)
(Family: Haloragidaceae or Halorrhagaceae or Haloragaceae)

Habitat: In Canals and sometimes in clear water lakes

Species *M. indicum* (Distribution: throughout Central, West Central and Southern provinces) is suitable for any type or aquarium tank or garden pond but generally needs a good deal of light and clear water. Easy to propagate by pieces of plant. Plant must be protected against attacks of algae, particularly, the thread algae.

19. Genus: *Naias* (Figure 19) (Common name : English: Flexible Naias, water nymph, Sinhalese: Heen parandal)
(Family: Naiadaceae)

Habitat: Both in fresh and brackishwater shalloe ponds and lakes

Species *N. minor* (Distribution: Central, Eastern and western provinces) needs good light and clear water. More suitable for open garden ponds and aquarium tanks. Propagation is by means of cuttings.

20. Genus: *Nechamandra* (Figure 20) (Common name: Sinhalese- Diya Pokuruwenna)
(Family: Hydrocharitaceae)

Habitat: In tanks, ponds and lakes

Species *N. alternifolia* (distribution: throughout the Central and Western province) is more suitable for

open garden ponds and tanks. propagation is by cuttings.

21. Genus: *Nelumbium* (Figure 21)(Common name: English - Lotus, Sacred lotus, Sinhalese - Nelum, Piyum)
(Family: Nelumbonaceae)

Habitat: In ponds and lakes

Species *N. nucifera* (Distribution: in all provinces except the Northern province) is more suitable for large garden ponds and needs mud substrate. Propagation from seeds or from young plants formed on the root stock.

22. Genus: *Nymphaea* (Figure 22) (Common name: English- Water Lily, Sinhalese- Manel)
(Family: Nymphaeaceae)

Habitat: In lakes and ponds

Species *N. pubescens* (Distribution: all areas except northern province) is ideal for large garden ponds and needs good light and space to grow. Propagation is by young plants formed on the root stock or on short runners.

23. Genus: *Nymphoides* (Figure 23) (Common name: English- Small-leaved water snow-flake, Sinhalese-Kuru sudu olu)
(Family: Gentianaceae)

Habitat: In pools, ponds and slow-flowing rivers

There are two species, namely *N. parvifolium* (Distribution: Eastern and Western provinces) and *N. indicum* (synonym: *Limnanthemum indicum*) (Distribution: Eastern and Western provinces) are ideal for open, large garden ponds. Propagation is by young plants emerging at nodes.

24. Genus: *Nymphoides* (Figure 24)(Common name : English - Golden floating heart, Sinhalese - Kuru kaha olu)
(Family: Menyanthaceae)

Habitat: In lakes, ponds and slow-flowing waters

Species *N. aurantiacum* (Distribution: Eastern and Western provinces) is ideal for open, large garden ponds. Propagation by young plants emerging at nodes.

25. Genus: *Ottelia* (Figure 25) (Common name : None)
(Family: Hydrocharitaceae)

Habitat: In rice fields, tanks, shallow clear water ponds and areas subject to regular flooding

Species *O. Alismoides* (Synonyms: *O. indica*, *Stratiotes alismoides*, *Damasonium indicum*) (Distribution: Central and eastern provinces) needs a lot of space, good light and warmth. Plant is more suitable for large garden ponds. Propagation is by seed.

26. Genus: *Pistia* (Figure 26) (Common name : English - Water Lettuce Sinhalese - Diya gowa)
(Family: Araceae)

Habitat: In lakes, ponds and still water pools

Species *P. stratiotes* (Distribution: Western and Southern province) is more suitable for open aquarium tanks. The plant needs a lot of light. Propagation is by underground stems.

27. Genus: *Potamogeton* (Figure 27)(Common name: English-Fine leaved pond weed, Sinhalese- Krail Diya pasi, Heen diya thana)
(Family: Potamogetonaceae)

Habitat: In ponds and slow flowing rivers, water pools and lakes

Three species, *P. crispus* (Distribution: Central and Western provinces), *P. pectinatus* (Distribution: throughout the island) and *P. roxburghianus* (Distribution: Western, Central and Southern

provinces) are good for large aquarium tanks and garden ponds.

Plant requires good light. Propagation is by cuttings but new branches sprout from runners at regular intervals. *P. pectinatus* favours brackishwater with plenty of calcium concentration.

28. Genus: *Rotala* (Figure 28)(Common name: English-tooth cup)
(Family: Lythraceae)

Habitat: In rice fields, irrigation channels and ditches

Species *R. indica* (Synonym: *Peplis indica*) (Distribution: Southern and Eastern provinces) needs ample space and sun light, therefore, more suitable for garden ponds. Water should be little alkaline. Plant is sensitive to sudden temperature changes. Propagation is by cuttings.

29. Genus: *Salvinia* (Figure 29) (Common name: English- *Salvinia* Sinhalese-Japan pasi, Barawa pasi)
(Family: Salviniaceae)

Habitat: In ponds, lakes, rivers and ditches

Species *S. cucullata* (Distribution: throughout the Island) is considered to be a pest and extremely difficult to eradicate it. However, it is considered to be ideal as cover for fry and easy to grow, therefore good for breeding aquarium tanks. Adequate light and nutritious water is needed. Propagation is by lateral branches that grow from the main plant.

30. Genus: *Trapa* (Figure 30) (Common name : English-Water chestnut, Water caltrop)
(Family: Trapaceae)

Habitat: In ponds, pools and slow flowing waterways

Species *T. bispinosa* (Distribution: Central province) is ideal for garden pools. Propagation is by runners.

31. Genus: *Vallisneria* (Figure 31)(Common name: English-Common eel grass)
(Family: Hydrocharitaceae)

Habitat: In rivers and lakes with clear water

Species *V. spiralis* (Distribution: throughout the country) is easy to grow but light is needed and the plant grows well in soils with lot of iron, therefore more suitable for garden ponds. Propagation is by runners.

32. Genus: *Vesicularia* (Figure 32)(Common name: English-Java moss)
(Family: Hypnaceae)

Habitat: In shallow, fast-flowing streams and water courses

Species: *V. dubyana* (Distribution: Central and Western provinces) is a very undemanding plant. Grows well either anchored to the bed or when floating free. Plant is suitable for aquaria and garden ponds. Propagation is by cuttings.

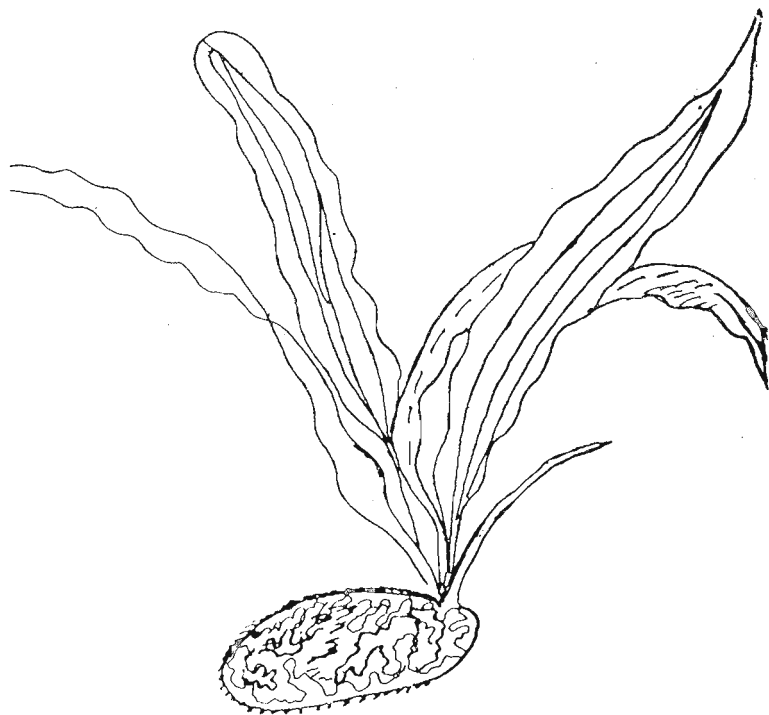


Figure 1 : Genus - APONOGETON



Figure 2 : Bacopa

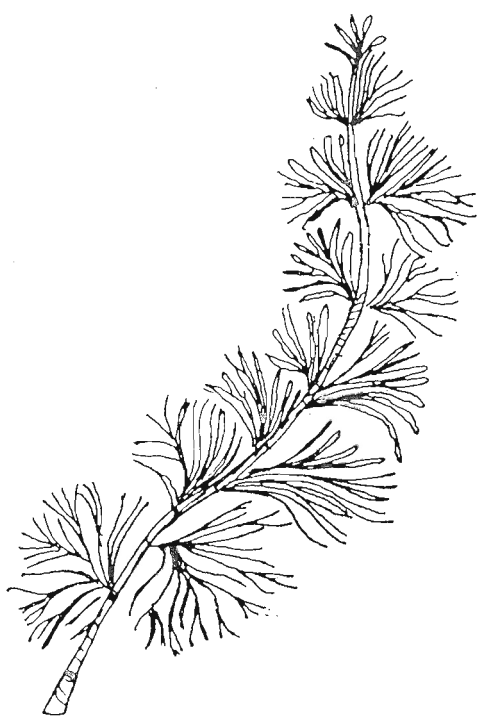


Figure 3 : Genus - CABOMBA



Figure 4 : Genus - CARDAMINE

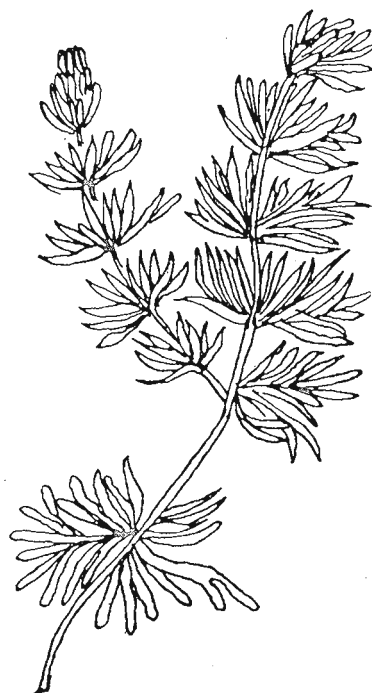


Figure 5 : Genus - CERATOPHY

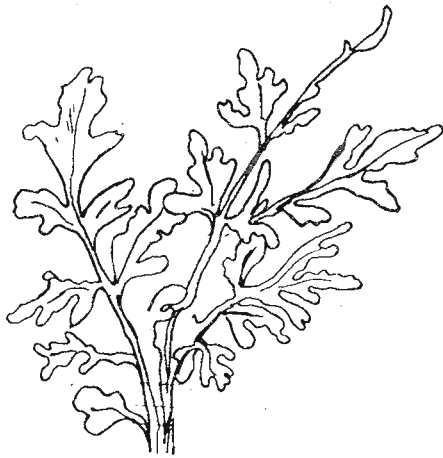


Figure 6 : CERATOPTERIS



Figure 7 : Genus - CRYPTOCORYNE

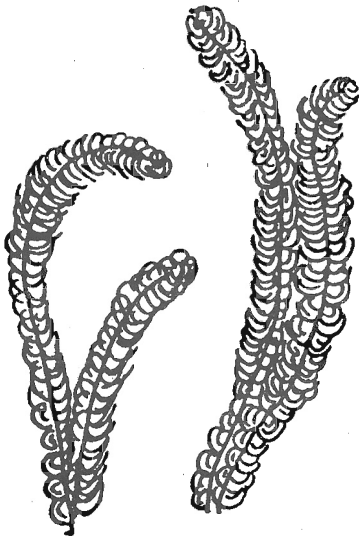


Figure 8 : EGERIA



Figure 9 : EICHHORNIA

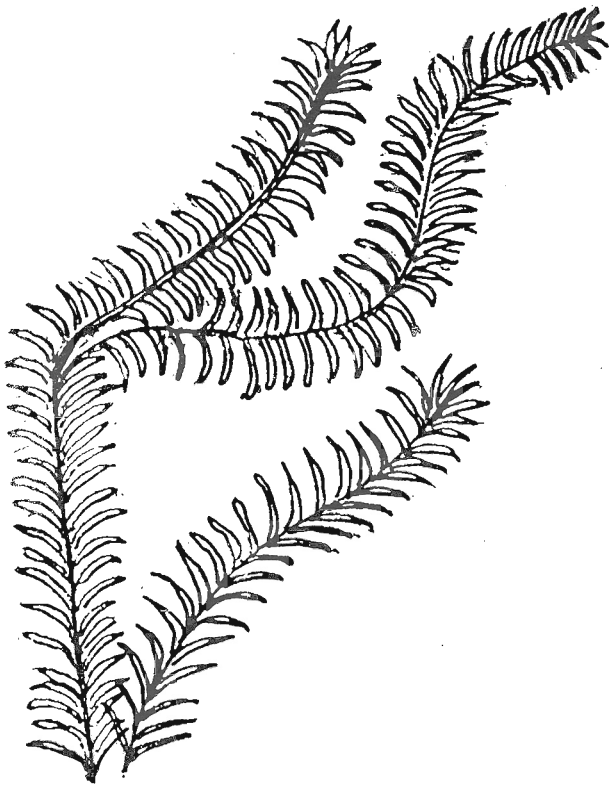


Figure 10 : Genus - Hydrilla

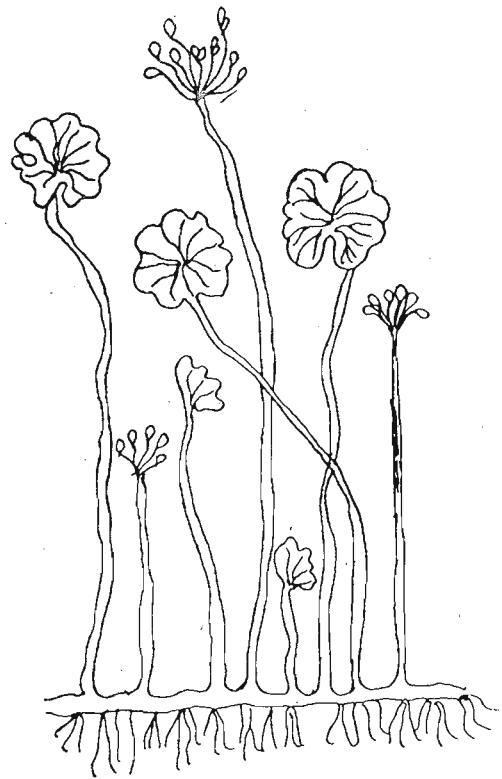


Figure 11 : HYDROCOTYLE



Figure 12 :: HYGROPHILA

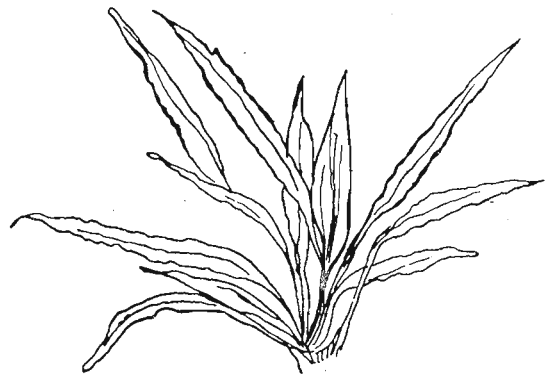


Figure 13 : LAGENANDRA

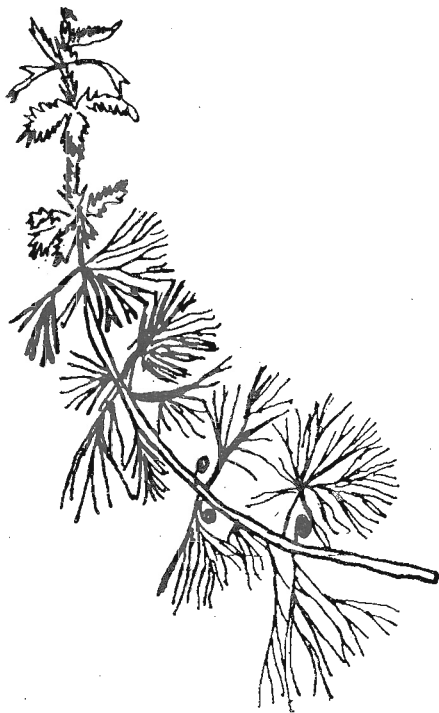


Figure 14 : Genus - LIMNOPHILA

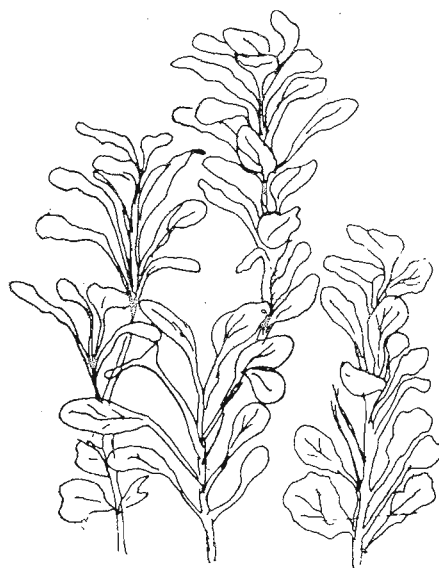


Figure 15 : Genus - LOBELIA



Figure 16 : Genus - LUDWIGIA

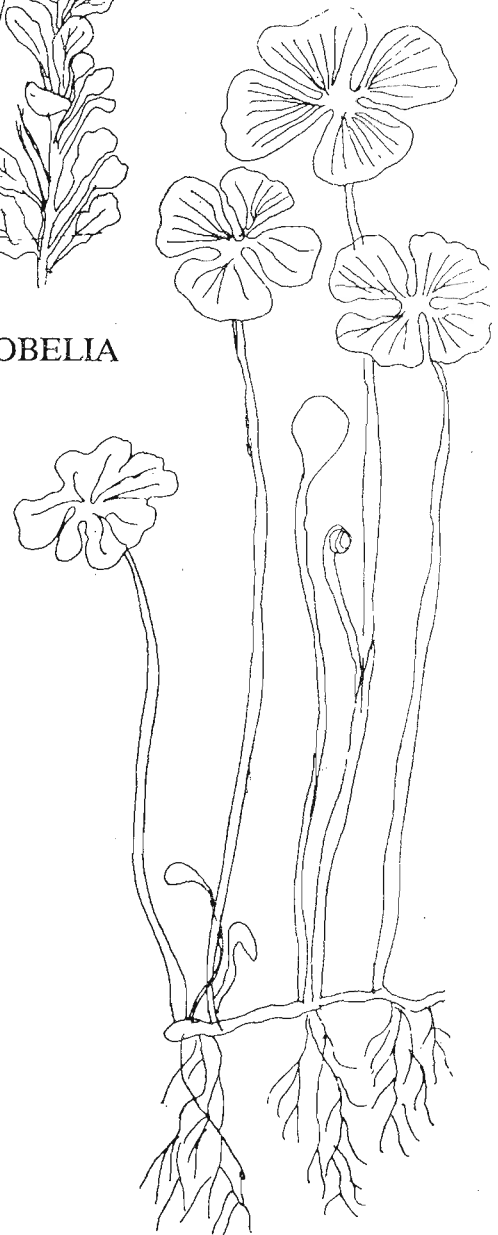


Figure 17 : MARSILEA

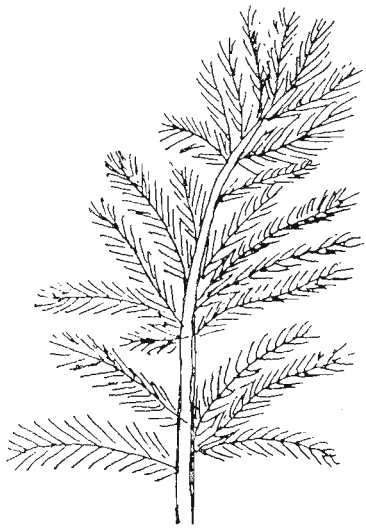


Figure 18 : MYRIOPHYLLUM

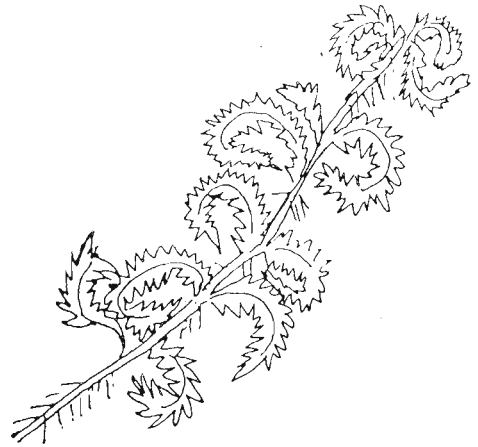


Figure 19 : Genus - NAIAS



Figure 20 : NECTAMANDRA



Figure 21 : NELUMBIUM

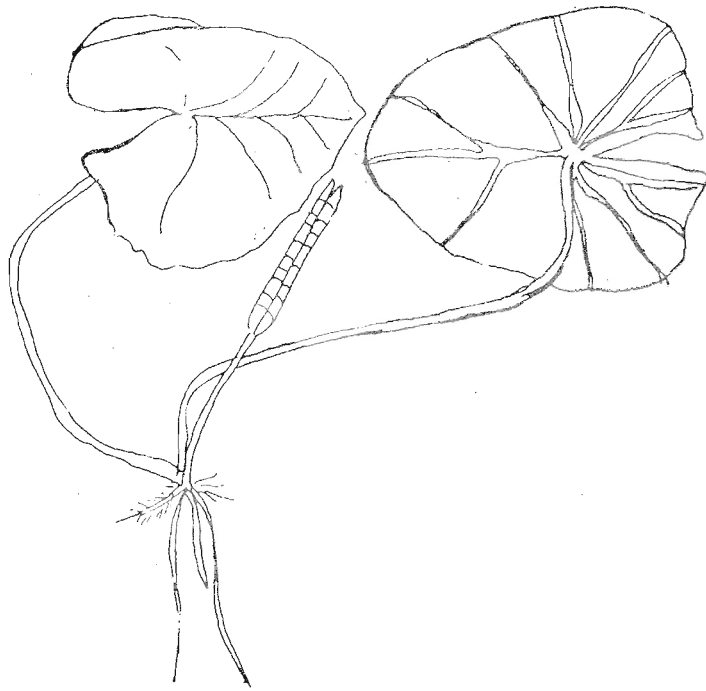


Figure 22 : Genus - NYMPHAEA



Figure 23 : Genus - NYMPHODES

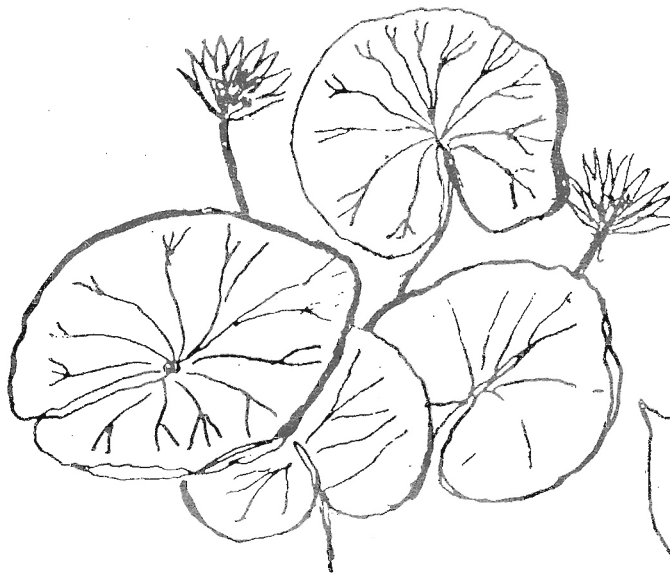


Figure 24 : Nymphoides



Figure 25 : OTTELIA

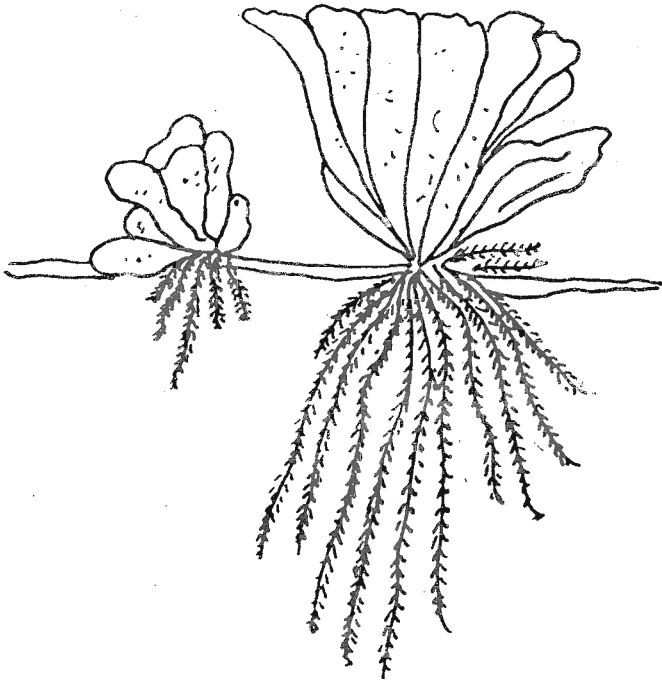


Figure 26 : PISTIA



Figure 27 : POTAMOGETON

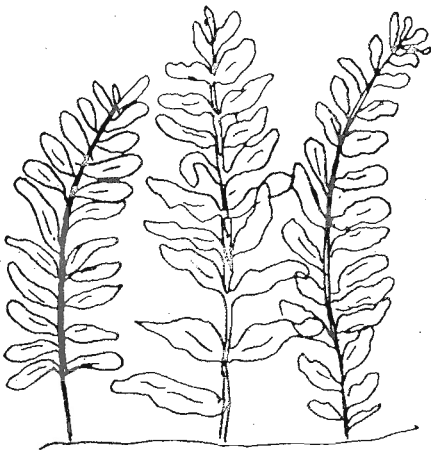


Figure 28 : Genus - Rotala



Figure 29 : SALVINIA



Figure 30 : TRAPA

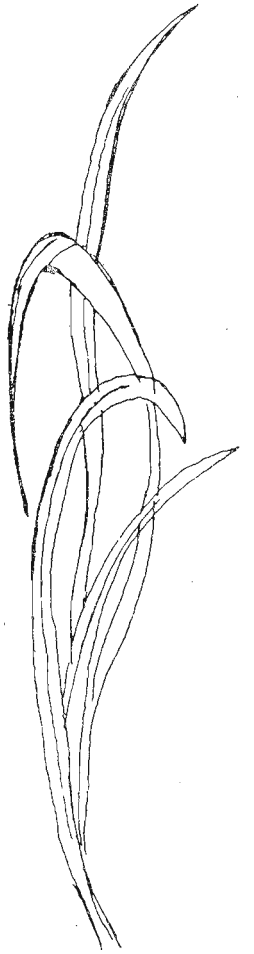


Figure 31 : VALLISNARIA

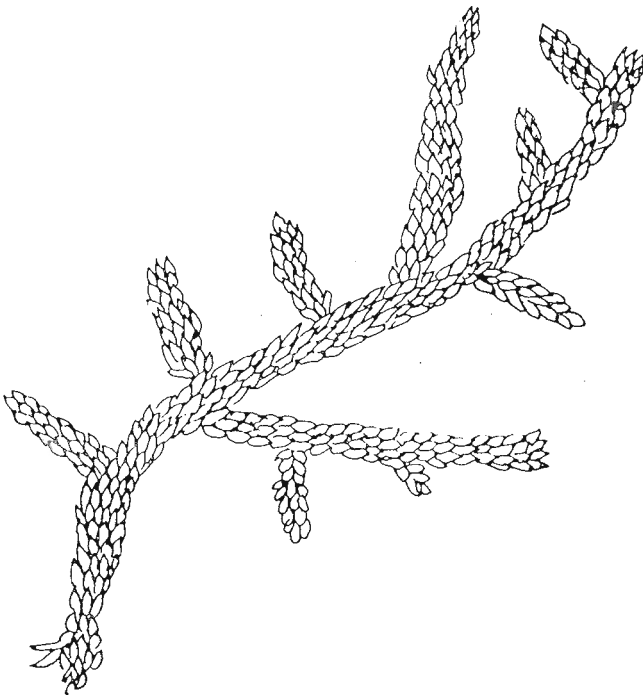


Figure 32 : VESICULARIA

Acknowledgements

I am thankful to Miss. Indunil Divigalpitiya of the Department of Zoology, University of Sri Jayewardenepura for drawing the figures.

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