

Lindernia rotundifolia

Verification of Lindernia rotundifolia species in cultivation within New Zealand

Botanical name: *Lindernia rotundifolia*

Synonyms: *Bonnaya rotundifolia*, *Ilysanthes rotundifolia*, *Morgania rotundifolia*

Common name: Baby's Tears, Roundleaf Lindernia, Roundleaf False Pimpernel

In the aquarium plant trade in New Zealand *Lindernia rotundifolia* has been traded under various names eg. *Rotala indica*, *Bacopa monnieri* etc.

The plants of *L. rotundifolia* were obtained from a wholesale distributor and aquatic plant nursery in New Plymouth, New Zealand. This document provided a written description and images of *L. rotundifolia* to support positive identification of the plant.



Key to genera of family Linderniaceae (Relevant parts) :

1. Bracteoles present; perennial prostrate to ascending subshrubs; corolla white, palate on lower lip present; filaments twisted or curved; fruit reflexed; tropical africa Stemodiopsis
 – Bracteoles absent; corolla not as above 2
2. Plants minute, prostrate to ascending; upper lip of corolla absent or present, lobes of lower lip rounded, entire; calyx 4-lobed to middle, except for lower side, where cleft extends to base; or calyx 5-lobed; leaves orbicular; central america and ca ribbean Micranthemum
 – Plants not as above, usually more robust 3
3. seeds without alveolate endosperm, seed surface ± smooth or only weakly furrowed, endosperm weakly polygonal or undulate in transverse section 4
 – seeds with alveolate endosperm, seed surface with rounded pits (bothrospermous) or longitudinal furrows (aulacospermous), endosperm star-shaped in transverse section 5
4. aquatic plants with basal rosette, with 2-lobed complex leaves, originating by connation of two adjacent leaves of one whorl; cleistogamous flowers absent; namibia Chamaegigas
 – Plants of humid places or aquatic, if with basal rosette then leaves simple, not 2-lobed; cleistogamous flowers often present, prevailing in some species (e.g. *L. procumbens*, *L. benthamii*, *L. madagascariensis*) Lindernia

Key to the species, and varieties in Taiwan (Relevant parts)

1. Leaves palmately 3~5-nerved 2 (true)
1. Leaves pinnate nerved, serrate or crenate, or rarely entire 5
2. Stamens 4, all fertile. Upper leaves entire. *L. procumbens*
2. Stamens 2, staminodes 2. Leaves more or less with 3~5 pairs of serrate teeth 3 (true)
3. Staminodes without spur-like appendage. Seeds falcate-oblong. Corolla white or light-blue.
 *L. rotundifolia* (true)



Botanical description

- Annual trailing herb.
- Stems green, 2.5~18 cm long, rooting at lower, most, or all nodes, glabrous; branching from base of stem. (Figure 1)



Figure 1

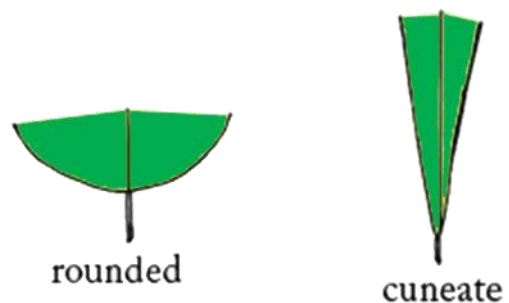
Botanical terms

- Herb: A plant which is non-woody or woody at the base only
- Glabrous: Without hairs
- Palmately: Having three or more veins radiating from one point
- Nerve (Vein): A strand of vascular tissue
- Sessile: Without a stalk
- Lamina: Leaf blade

- Leaves palmately 3~5-nerved, sessile (Figure 2), minutely glandular-punctate on both surfaces (Figure 3); lamina elliptic, ovate, obovate, or orbicular, 2~16 mm long, 1~12 mm wide; base cuneate to rounded; margin 2 or 3(4) pairs serrate or remotely toothed (Figure 4), occasionally entire; apex acute or obtuse.



Figure 2



Leaf base

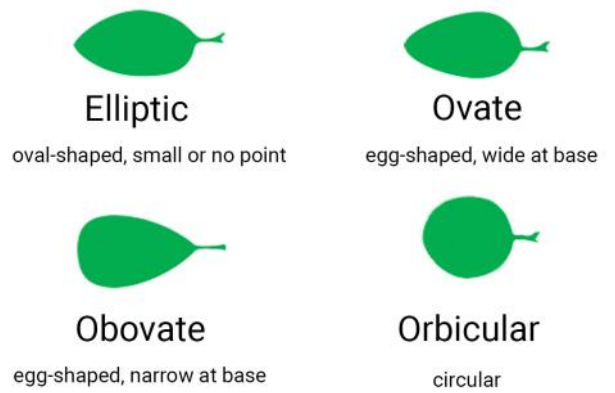




Figure 3

Botanical terms

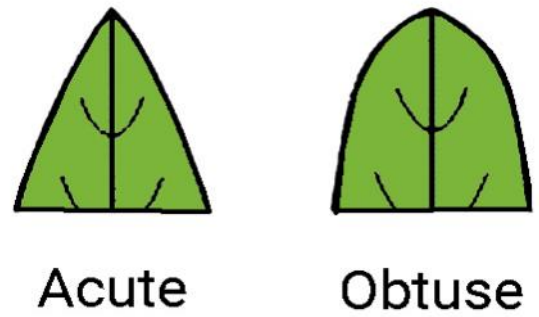
- Punctate: Marked with dots
- Gland: A secretory structure, adj. glandular



Leaf shape



Figure 4



Leaf apex



- Flowers solitary in axils; pedicels alternate or occasionally opposite, 2~18 mm long, about 1/2 length of subtending leaf (Figure 5), stipitate-glandular, especially near base of pedicel (Figure 6); erect to spreading, often reflexed in fruit.



Figure 5



Figure 6 - Detail of the stipitate glands

Calyx deeply 5-lobed, zygomorphic or irregular, occasionally nearly actinomorphic, 1.4~2.5 mm long, lanceolate, acuminate, glandular. Corolla white or lightblue with purple blotches on throat and purple spots on lower lobes, tufts of trichomes at base of anterior lobes; tube 9~12.2 mm long (Figure 7).



Figure 7

Botanical terms

- Stipe: A stalk that supports some other structure
- Calyx: The outermost floral whorl usually consisting of sepals or a calyx tube and calyx lobes.
- Zygomorphic: Symmetrical about one vertical plane only
- Actinomorphic: May be bisected into similar halves in at least two planes
- Corolla: The floral whorl inside the calyx, usually consisting of petals or a corolla tube and corolla



Androecium of 2 fertile stamens (figure 9) and 2 staminodes (Figure 8); free part of staminodial filament 2~3.2 mm long, staminodes slightly exerted from corolla tube, incurvate, with yellow glands; fertile anthers coherent, filaments 1.4~1.7 mm long, glabrous. Ovary ellipsoid, ca. 2 mm long; disk small, at ovary bottom, yellow; style 3~5.5 mm long, often persisting until capsule dehisces; stigma 2-parted.

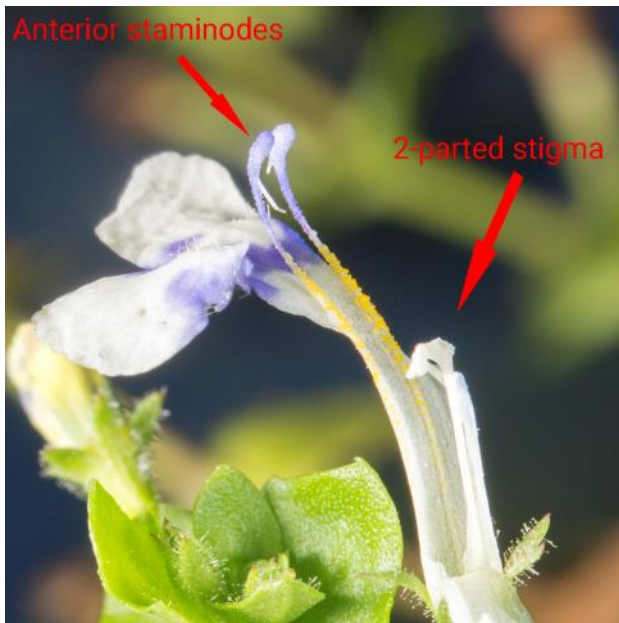


Figure 8 - Corolla opened to show stamens



Figure 9

Capsule 1.5~3 mm long, approximately equaling and infrequently exceeding length of calyx, ovate to ellipsoid, apex acute, glabrous. Seeds yellow, falcate-oblong, rugate, 0.34~0.36 mm long, 0.15~0.16 mm wide, L/W ratio ca. 2.3. (Figure 10).



Figure 10

Botanical terms

- Androecium: Male parts of flower; the stamens of a flower collectively
- Incurved: Bent or curved inwards
- Anther: Pollen-bearing part of the stamen

