Tropics of the world, probably of Asiatic origin. Throughout the Philippines, cultivated and wild.

Com. name – Ampalaya (Tag.); Bitter gourd (Engl.).
Exsicc. – Albino CA 2646, 2647; Estioko, Jr. CA 2648* (CAHP).


Vines dioecious, coarse, up to 12 m or more long, slightly pubescent or nearly glabrous; petioles, bracteoles and sometimes leaf margins with few, large glands. Leaves broadly ovate, 8-18 cm long, deeply palmately 3-lobed or sometimes entire, acuminate. Staminate flowers axillary, solitary, pedicelled, buds enclosed by a large, green, inflated bracteole inhabited by ants, opening at anthesis, turning yellowish; calyx nearly black, with 5 acuminate lobes, 2 cm in diameter; petals pale-yellow, oblong or oblong-ovate, 3.5-4 cm long, three with large dark-colored blotch at base. Fruits large, ovoid or subglobose, 8-12 cm in diameter, yellow, roughened with scattered, tubercle-like spines. Seeds large, flattened, circular.

India to China, and Taiwan through Malaysia to the Moluccas. Widely distributed in the Philippines, in thickets and secondary forests at low and medium altitudes.

Com. name – Buyok-buyok (Tag.).
Exsicc. – Gates CA 2649, 2650; Lugod CA 8228, 8229 (CAHP); BF 23798, 1376089 (US).

**111. LYTHRACEAE**

Herbs, shrubs or trees. Branches often 4-angled. Leaves opposite, seldom alternate, occasionally whorled, simple, entire; stipules usually subulate. Inflorescences axillary or terminal, mostly in dichasia, racemes or heads, solitary or in panicles; flowers bisexual, regular or irregular; calyx tube free, persistent, 3- to 6-lobed, valvate lobes often appendiculate; petals as many as calyx lobes or absent, valvate or corrugate in bud; stamens few or many, usually twice as many as calyx segments, inserted upon calyx tube; ovaries superior, free and at bottom of tubular calyx, 2- to 6-celled or by abortion or partition, 1-celled; styles long; stigmas capitulate or rarely bilobed; ovules numerous along placenta which is usually axial. Fruits dehiscent or indehiscent; seeds many, rounded, angular or winged.

Genera 22, species 450; in the tropics especially America, few in temperate countries; 6 genera and 15 species in the Philippines.
111. Lythraceae

1. Trees or shrubs
   2. Flowers small, 4-merous; stamens usually 8, rarely 4-9 or 13 ........ ........... 1. Lawsonia
   2. Flowers large, 6-merous; stamens 15 or more, often unequal .............. 2. Lagerstroemia

1. Low annual or suffrutescent herbs
   3. Annual, low herbs; flowers absent or small; lowland weeds
      4. Walls of capsule with dense and horizontally minute striations under a lens .......... 3. Rotala
      4. Walls of capsule without striations ................. 4. Ammannia
   3. Annual or perennial, suffrutescent herbs; flowers large, pale purple or white (in ours); cultivated ornamentals ......................... 5. Cuphea

1. LAWSONIA Linnaeus

Shrubs erect or trees small, often with reduced, thorny branchlets. Leaves glabrous, shiny on upper side, obscurely punctate beneath, obovately elliptic, up to 3 cm long and one half as wide as its length, obtuse, minutely pointed, base sub-attenuate appearing short-petioled, midrib evident, nerves faint, coriaceous. Panicles terminal, glabrous, erect or nearly so, lower branches subtended by reduced bracts; buds numerously bract-subtended; flowers moderately small, numerous, yellow or yellowish white to brick red; pedicels slender; calyx tube campanulate, 4 lobes ovate; petals obovate, exceeding calyx segments in length; stamens usually 8, mostly inserted in pairs between petals, sometimes fewer; ovaries sessile, 2- to 4-celled with long styles. Capsules coriaceous, smooth, globose, irregularly breaking up; seeds angular, smooth.

Monotypic. Tropics of both hemispheres.


Characteristics. (Refer to genus description).

Cultivated as an ornamental tree in most gardens in the Philippines, but scarcely naturalized.

Com. name – Henna (Engl.).
Exsicc – Foxworthy CA 1948; Pinga CA 1949; Halos CA 1950 (CAHP).
2. LAGERSTROEMIA Linnaeus

Shrubs or trees, rarely scandent. Leaves opposite or upper ones alternate. Panicles usually trichotomous, sometimes dense; peduncles and pedicels bracteate at their ends; flowers often large, showy, regular; calyx tube funnel-shaped, thick, smooth, grooved, angular or narrowly winged, lobes usually 6, ovate and subacute, petals 6, sometimes 7-9, clawed, thin, wrinkled, margins crispily erose or fimбриate, stamens indefinite; filaments long-exserted; ovaries sessile, 3- to 6-celled; styles long, bent; stigmas capitate. Capsules partly adnate to calyx, coriaceous, smooth, 3- to 6-valved; seeds flat, elongated, winged at summit.

Species 30; chiefly Indo-Malaysian, few in China and Australia; 4 in the Philippines.

1. Trees; panicles rigid, central stalk becoming woody; flowers lilac to purple; capsules 2-3.5 cm long


Trees medium-sized. Leaves oblong or ovately elliptic, 18 x 6 cm, midrib ridged beneath with 7-12 pairs of ascending nerves, obtuse and short-pointed, base obtuse or rounded; petioles 1 cm long, canaliculate. Panicles terminal, elongate, rigid, central stalk becoming woody in fruiting state; branchlets short, scurfy-brown; flowers 6-merous; calyx grooved, densely yellowish brown, scurfily stipitate, lobes divergent or reflexed, persistent in fruit; petals lilac to purple, obovate, 3.25 cm long, spreading. Capsules ligneous, ellipsoid or obovate, 2-3.5 cm long, subtended by or adnate to thickened, flat calyx cup, opening from apex to base.

India to southern China through Malesia to tropical Australia. In the Philippines, widely distributed in dry woods or among shrubberies; here and there utilized as an ornamental tree in parks and gardens.

Com. name -- Banaba (Tag.).

Exsicc. – Champhaka CA 8084, Gates CA 1945, 1946, 1947; Espiritu CA 8207 (CAHP), Sulit & Columbres s.n. (A); Sulit 1 (A), 8170, Lagrimas 479 (PNH).

Shrubs erect. Leaves obovately elliptic, 5 x 2 cm, midrib with 5-8 ascending nerves, much paler green beneath, obtusely rounded, base broadly obtuse, subsessile. Panicles terminal, freely rebranched, glabrous; flowers less than 4 cm across; calyx green, smooth, subcoriaceous; petals pink to whitish, outer ones orbicular or reniform, lobed, strongly crisped; stamens interlaced. Capsules ovately globose, 1-1.25 cm long, calyx teeth triangularly elongated, distant. Himalayan regions, China, Indochina, Japan and other parts of the world where it is cultivated. In the Philippines, cultivated in most towns for its exceedingly handsome flowers.

Com. name – *Milendres* (Sp.).

Exsicc. – Orilido CA 10311; Llena CA 2782; Palacpac CA 4571; Beltran CA 2879; Capinpin CA 2669; Quisumbing CA 633 (CAHP), 90374 (US).

3. **ROTA* LA Linnaeus**

Annual herbs erect, low, simple or branched, glabrous, in wet places. Leaves decussate or verticillate, rarely alternate, sessile or subsessile. Flowers 3- to 6-merous, small, mostly sessile, axillary, solitary or axillary spikes or racemes, usually 2-bracteolate; calyx campanulate to hemispheric. 3- to 6-lobed, lobes usually with a setiform appendage; petals small or wanting; stamens 1-6; ovaries sessile or subsessile; styles short or elongated. Capsules septicidally 2- to 5-valved, cartilaginous, walls densely and minutely horizontally striate under a lens.

Species 20, chiefly in tropical Asia and Africa, a few in Australia, Europe and America, 4 in the Philippines.

1. Leaves at least partly in whorls of 3; stamens 2-4, inserted at base of calyx tube; styles absent. ......................................................... 1. *R. mexicana*

1. Leaves decussate; stamens 4 or 5, inserted at least halfway calyx tube; styles present

2. Calyx with distinct interlobal appendages ............... 2. *R. catholica*

2. Calyx without interlobal appendages ................................ 3. *R. indica*


Herbs small, glabrous, erect, usually less than 3-4 cm in height, generally branched from base. Leaves linear-oblong, in three's or four's, somewhat close, 5 mm long or less, obtuse, truncate or 2-pointed. Flowers axillary, solitary,
less than 1 mm long, 4- or 5-merous, calyx teeth triangular; petals none; stamens 2 or 3, rarely 4. Capsules subglobose, 1 mm in diameter.

Pantropic. In the Philippines, a common weed in old rice paddies.

Com. name – Fire weed (Engl.).
Exsicc. – Pancho CA 20045, 20241 (CAHP).


Herbs erect, slender, simple or branched, glabrous, 8-25 cm high, stems somewhat 4-angled, usually purplish. Leaves oblanceolate to linear-lanceolate, 1.5-3 cm long, obtuse, base narrowed to short petiole. Flowers small, axillary, solitary, sessile, bracteoles as long as calyx, at time of flowering 2.5-3 mm long, appendages longer than lobes, spreading, lanceolate-acuminate, lobes triangular-ovate, acute or acuminate; petals elliptic or oblong-elliptic, pale pink, 1 mm long. Capsules ovoid, 3-4 mm long.

Native of North and South America. In the Philippines, widely distributed and thoroughly naturalized in rice fields.

Com. name – Fire weed (Engl.).
Exsicc. – Bardenas CA 10555, 10559; Guantes CA 10696; Lugod CA 5025 (CAHP).


Herbs erect, simple or branched, glabrous, 6-35 cm high; stems obscurely 4-angled. Leaves sessile or subsessile, oblong, elliptic or ovate, 8-15 mm long, acute or obtuse, mucronate, nerves prominent on lower surface, margins cartilaginous. Spikes axillary, solitary, numerous, 8-15 mm long, flowers subsessile, numerous axils of much-reduced leaves or sometimes spikes wanting and flowers strictly axillary in axils of normal leaves; petals absent; calyx 2-2.5 mm long, subcampanulate, green; lobes lanceolate, acuminate. Capsules ellipsoid, 1.6 mm long, 2-valved.

Caucasian regions through India, Sri Lanka to Japan, southward to Java. Throughout the Philippines, in open wet grasslands and wastelands; a common weed.
Figure 144. *Rotula catholica*: 1. habit; 2. portion of stem with flowers and leaf enlarged; 3. flower; 4. flower, vertical section; 5. stamen, 2 views; 6. ovary, cross section; 7. capsule; 8. seed, 2 views.
Figure 145. *Rotala indica*: 1. habit; 2. portion of stem with leaf and flowers; 3. flower; 4. ovary, vertical section; 5. ovary, cross section; 6. stamen; 7. capsule; 8. seed; 9. seedlings.
Com name – Fire weed (Engl.).
Exsicc. – Pancho CA 20147, 20349* (CAHP).

4 AMMANNIA Linnaeus

Annual herbs, slender, erect, branched, glabrous, in wet places. Leaves decussate, alternate, sessile. Flowers small, in dense axillary clusters, 4-merous; calyx campanulate or urn-shaped, after flowering becoming globose, 4-lobed, lobes usually not appendaged; petals absent or when present 4, small; stamens 2-8, inserted on calyx tube; ovaries sessile. Capsules globose or ellipsoid, thinly membranaceous, bursting irregularly, walls not horizontally striate.

Species 20; of wide distribution in the tropics, chiefly in Africa and Asia; 3 in the Philippines.


Herbs erect, branched, glabrous, slender, 10-50 cm high, usually more or less purplish; stems somewhat 4-angled. Leaves oblong, oblanceolate or narrowly elliptic, those of stems 3.5 cm long, those of branches very numerous, small, 1-1.5 cm long. Flowers in dense axillary clusters, pedicelled, 1.2 mm long, green or purplish, calyx lobes 4, triangular, acute, 0.6 mm long; petals none; stamens 4. Capsules depressed-globose, 1.2 mm in diameter, purple, irregularly circumsciss above middle.

Tropical Africa and Asia through Malaysia to Australia. Throughout the Philippines, a common weed in old rice fields.

Com. name – Apoy-apoyan (Pang., Tag.).
Exsicc. – Bardenas CA 10573, 10574, 10582; Gates CA 1942; Lugod CA 4698; Obligado CA 9797; Pedro CA 9174 (CAHP).

5. CUPHEA P. Browne

Herbs annual or perennial, rarely shrubs. Leaves opposite, rarely verticillate. Racemes often leafy, flowers zygomorphic, 6-parted, alternate or opposite; calyx tubular, often calcarate at base; petals 6 rarely 2, 4 or none; stamens 11, rarely 9 or 6; ovaries sessile, usually with basal, dorsal or rarely cupuliform disc or disc sometimes absent; ovules numerous or few, often 3, rarely 2. Capsules dehiscent by emergent, reflexed placentae; seeds lentiform narrowly winged.

Species 200, in tropical America; 2 in the Philippines.