

SAURURACEAE (C. G. G. J. van Steenis, Buitenzorg)

Rhizomatose, aromatic or pungent, perennial, often stoloniferous herbs. Stem articulated. *Leaves* simple, entire, scattered (not alternate), often oblique; leaf base mostly reniform-cordate, nervation mostly palmate. Petiole sheathing or an intrapetiolar stipule. *Flowers* bisexual, actinomorphic, small, in terminal spikes or racemes or opposite the leaves (sympodial), each in the axil of a bract, bract sometimes connate with the pedicel; lowest bracts sometimes petaloid. Perianth absent. Stamens 3, 4, 6 or 8, sometimes partly abortive, free or adnate to the basal part of the ovary or epigynous. Anthers 2-celled, splitting lengthwise laterally or extrorse. Ovary composed of 3-4 connate carpels, or 1-celled with 4-3 parietal placentas. Styles free or connate at the base, often recurved, stigmatose on the inner surface. *Fruit* capsular opening at the top, or consisting of tubercled indehiscent 1-seeded cocci.

Distr. 4 genera, 2 in E. Asia, 1 in California, and 1 both in Asia and Atlantic N. America; the latter with 2 species, the others monotypic.

Ecol. Mostly in marshy places.

Uses. In China and N. America medicinal with acrid and adstringent properties.

Notes. Formerly sometimes included in *Piperaceae*. A key to the genera is given in *Blumea* 6 (1948) 244-245.

KEY TO THE GENERA

1. Short spike of sessile flowers subtended by 4 petaloid bracts. Intrapetiolar stipule distinct
1. *Houttuynia*
1. Elongating raceme. No petaloid bracts at the base of the raceme. Petiole sheathing
2. *Saururus*

1. HOUTTUYNIA

(*non* HOUTT. 1780) THUNB. Fl. Jap. (1784) 12, *nom. gen. conserv. prop.*; E. & P. 3, 1 (1889) 3, *excl. syn. Gymnotheca* DECNE, *Anemopsis* HOOK. & ARN.

Stoloniferous. *Leaves* palminervous. Spikes peduncled. Stamens 3, filaments adnate to the base of the ovary. Ovary 1-locular, consisting of 3 partially connate carpels; placentas parietal. *Fruit* subglobose, opening at the apex. Seeds globose.

Distr. Monotypic, from India & Indo-China to Japan and Formosa, in *Malaysia* doubtfully native.

Notes. The generic name *Houttuynia* THUNB. should be preserved against the older *Houttuynia* HOUTT. and was proposed for the list of *Nomina generica conservanda* (Fl. Mal. Bull. 3 (1948) 73).

1. *Houttuynia cordata* THUNB. Fl. Jap. (1748) 234, t. 26; MIQ. Fl. Ind. Bat. 1, 2 (1859) 457; T. & B. Cat. Hort. Bog. (1866) 72; MERR. Comm. Lour. (1935) 126; STEEN. Trop. Nat. 26 (1937) 147; *Blumea* Suppl. 1 (1937) 137.—*Polypara cochinchinensis* LOUR. Fl. Coch. (1790) 61.—*P. cordata* O.K. Rev. Gen. (1891) 565.—Fig. 1.

Root-stock copiously branching, up to more than 1 m long. Stems erect or ascending, up to 50 cm long. *Leaves* broad-ovate, base reniform-cordate, apex acuminate, 3-8½ by 2½-6½ cm; petiole 1-4 cm. Petaloid bracts white, oblong, ± 1-1½ cm long. Spike 1-2 cm long. Seeds ½-2/3 mm long, ellipsoid, testa of dry seed reticulate.

Distr. Under temperate conditions from the Himalaya to E. Asia, also in Formosa, in *Malaysia*:

only once found in W. Java, ca 1250 m alt., questionably native. Might be expected to occur in Luzon or Mindoro.

Ecol. A tenacious and obnoxious weed; crushed leaves with a fishy or fleshy smell, in W. Java found in a tea-plantation and a neighbouring bamboo grove.

Uses. A Chinese drug plant and vegetable.

Vern. *djukut hanjir*, Sd, after the peculiar smell which much intrigued the Sundanese workers in the plantation and gave rise to a legend that the plant proceeded from the flesh and blood of a man who was killed by a tiger in the same spot. On account of the smell there was even trouble with Javanese weeders.

2. SAURURUS

LINNÉ, Sp.Pl. (1753) 341.—*Spathium* LOUR. Fl. Coch. (1790) 217.—*Mattuschkia* GMEL. Syst. 2 (1791) 589, *non al.*—*Saururopsis* TURCZ. Bull. Soc. Nat. Mosc. 21 (1848) I, 589; BAILL. Adans. 10 (1871) 69.—*Saururotus* ENGL. E. & P. 3, 1 (1887)

2.—*Neobiondia* PAMP. Nuov. Giorn. Bot. Ital. 17 (1910) 263; GAGNEP. Not. Syst. 2 (1911) 283.

Tall erect herbs up to 1 m or more. *Leaf base* reniform-cordate. *Flowers* in the axils of bracts, or pedicels connate with the bracts. Stamens (8)–6, or by abortion only 4, sometimes opposite the carpels, sometimes lateral; filaments \pm free. Ovary composed of (3)–4 carpels connate at their base, each with 2(–4) ovules, only one developing. Styles free, recurving. *Fruit* depressed-globose, said to be subfleshy, parting into (3)–4 tubercled cocci. Testa of roundish seed reticulate.

Distr. 2 species, one in E. Asia, 1 in Atlantic N. America.

Notes. *Gymnotheca* DECNE (*S. cavaleriei* LÉV.) constitutes a distinct genus. The N. American *S. cernuus* L. is apparently distinct through a slightly different leaf-shape, very long filaments and nodding spikes. These differential characters ought to be further studied.

1. *Saururus chinensis* (LOUR.) BAILL. Adans. 10 (1871) 71; LOUD. Hort. Brit. (1830) 144, *nomen*;

LOUD. Encycl. Pl. (1866) 289; T. & B. Cat. Hort. Bog. *inedit.* (1854) 63, *nomen*; *ib.* (1866) 77 (*sinensis*); MERR. En. Philip. 2 (1923) 2; GROFF, Lingn. Sc. J. 11 (1932) 84; MERR. Comm. Lour. (1935) 126.—*Spathium chinense* LOUR. Fl. Coch. (1790) 217, *ed.* WILLD. (1793) 270.—*S. cernuus* (*non* L.) THUNB. Fl. Jap. (1784) 154.—*S. loureiri* DECNE, Ann. Sc. Nat. III, 3 (1845) 102; C.DC. Prod. 16, 1 (1869) 239; F.-VILL. Novis. App. (1880) 174; VIDAL, Phan. Cuming. (1885) 138; Rev. Pl. Vasc. Filip. (1886) 219.—*Saururopsis chinensis* TURCZ. Bull. Soc. Nat. Moscou 21, 1 (1848) 589.—*S. cumingii* C.DC. Prod. 16, 1 (1869) 239.

Glabrous, except for pedicels & rachis. Stem ribbed, pithy, lower part terete, upper part angular; lower leaves amplexicaulous, leaving annular scars, upper ones half-amplexicaulous, stem somewhat zigzag towards the apex, internodes 1–4 cm; lower petioles 6½, upper ones 3–1½ cm long. Leaf blade mostly oblique, base reniform-cordate-truncate, apex acute to slightly acuminate, palmatinervous with 5 larger and 2 feeble nerves, shape ovate-lanceate, 8½–12½ by 3½–6½ cm. Spikes straight, bracts in bud pine-like imbricating, 5–8 in fruit to 15 cm long; peduncle glabrous, 1–3 cm. Rachis and pedicels pubescent. *Flowers* white, fragrant. Bracts ovate to roundish, or broad-spathulate, their blade 1–2 by 1–2 mm, \pm ciliate, with brown dots (glands) in the parenchyma, connate with the 1½–3 mm long pedicels and winging these; rachis angular by the decurrent pedicels. Anthers 4 behind the carpels, or 6 (in twos lateral of the carpels), or 8. Filaments \pm ½–¾ (–¾) mm; anthers \pm convex, elliptic, \pm ¾–1 mm long, extrorse. *Cocci* 4, tubercled, 1½ mm long; style recurved ca ½ mm. Seed ovoid, fine-reticulate, ½–1 by ⅓–¼ mm.

Distr. Indo-China & Hainan to Central China, Japan, Riu Kiu and Formosa, in *Malaysia* only in Luzon (Ilocos Norte, Bontoc), in swampy places, muddy banks, rice-fields, 50–1100 m.

Notes. It should be studied whether there are several sexual forms showing floral dimorphy.

Uses. Used as a drug in China (GROFF *l.c.*).

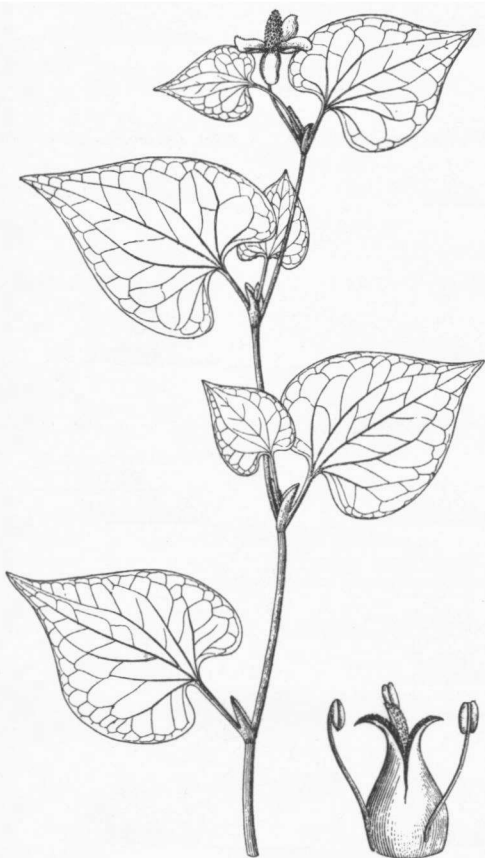


Fig. 1. *Houuttynia cordata* THUNB., habit \times 2/5, flower enlarged.