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

1. ACTINIDIA

LINDL. Nat. Syst. ed. 2 (1836) 439; B. & H. Gen. Pl. 1 (1862) 177; BENTH. Fl. Hongk. (1861) 26; KING, Ann. R. Bot. Gard. Calc. 5, 2 (1896) 145, t. 176; E. & P. ed. 2, 21 (1925) 36.

Trailing *shrubs or lianas* without special organs for climbing, branches rarely flexuose; stem with wide vessels, raphides in the flowering parts; bark often with short linear lengthwise lenticels. Growth in flushes from terminal and axillary buds. Indumentum of stellate or simple hairs. Stipules minute, obsolete, or absent. *Leaves* simple, scattered, petiolate, serrate or callous-dentate, penninervous, midrib sulcate, veins in cross-bars, veinlets reticulate. Inflor. lateral, often on a common peduncle forked at the apex, cymose, often pseudo-umbellate; bracts 2, at the apex of the peduncle. *Flowers* mostly white, dioecious (or polygamous), 5(–4)-merous. Sepals distinctly imbricate (rarely valvate), free or subconnate at the base, persistent. Stamens (10–)∞, in ♀ fls with short filaments and small sterile anthers; filaments thin, anthers versatile, base divaricate, attached in the middle, reflexed in bud, dehiscing lengthwise. Disc absent. Ovary free, superior, tomentose (or glabrous), (5–)∞-celled; ovules attached on the central axis. Styles free, (5–)∞, persistent, elongating after flowering in ♀, ±clavate, spreading, in ♂ ovary small, with minute styles. *Berry* glabrous (or hairy), often spotted by lenticels, oblong. Seeds ∞, small, biconvex, oblong, immersed in pulp; testa cartilagineous, reticulate-pitted, dark when dry; albumen copious; integuments 1; embryo cylindrical straight, cotyledons short.

Distr. *Ca 30 spp.* from W. Malaysia & Himalaya to Sachalin, Japan and Formosa, centering in China and Japan.

Ecol. Forests and forest borders, in the montane zone mostly.

Notes. Both Malaysian species appear to be strictly dioecious; the number of ♂ and ♀ sheets in *A. callosa* is about equally large; on Mt Kinabalu only ♀ have been found of *A. latifolia*. The total number of specimens examined is inconsiderable; the species are either rare or little collected being inconspicuous. The genus *Actinidia* is often included in *Theaceae*, *Dilleniaceae*, or even *Ericaceae*, and it is closely related to *Saurauiaceae* from which it differs in its trailing or climbing habit, absence of scale-like emergences (except in *A. strigosa*), mostly dioecious fls, ebracteate pedicels, lengthwise dehiscing anthers, numerous styles, and a multilocular ovary. I wish to express my sincere thanks to Mr H. K. AIRY SHAW and to Mr M. R. HENDERSON for verifying the MS. of this contribution with the materials preserved at London and Singapore respectively.

KEY TO THE SPECIES

1. Leaves either glabrous or subglabrous, or provided with simple pluri-celled hairs. Petals glabrous. Inflorescences short . . . . . **1. A. callosa**
2. Leaves glabrous or subglabrous . . . . . *var.* **callosa**
2. Leaves rather distinctly subtomentose beneath . . . . . *var.* **pubescens**
1. Leaves stellate-tomentose beneath. Petals pubescent on the back. Inflorescences often well-developed. Peduncle 1½–8 cm . . . . . **2. A. latifolia**

1. Actinidia callosa LINDL. Nat. Syst. ed. 2 (1835) 439, *s.l.*; K. & V. Bijdr. 3 (1896) 280; BACKER, Schoolfl. (1911) 102; DUNN, J. Linn. Soc. 39 (1911) 405; KOORD. Exk. Fl. 2 (1912) 602; Fl. Tjib. 2 (1923) 179; BAKER, J. Bot. (1924) Suppl. 9; STEEN. Bull. J.B.B. III, 13 (1934) 174.—See further under *var. pubescens*.

Rambling or trailing shrub or liana up to 30 m, twig-lenticels distinct, wood and inner bark orange. Petiole red *s.v.*, 1–4 cm, *blade* rather variable in shape ovate-elliptic or obovate, acuminate, midrib red *s.v.*, 5–10½ by 2½–6 cm, sidenerves *ca* 5–6 pairs rather steeply ascending and substraight, insertion decurrent, margin distinctly serrate or dentate, teeth erect at the end of a vein, apex acuminate, base rounded to subcuneate. Indumentum meagre or absent, consisting of short often somewhat crisped pluri-celled simple hairs. Peduncle, pedicels and calyx thin-tomentose. Peduncle ¼–1½ cm, pedicels ½–1¼ cm, all thin. Dioecious, *flowers* white, anthers yellow. Sepals ovate-orbicular, *ca* 6 by 5 mm. Petals oblique-broad-spathulate, sub-

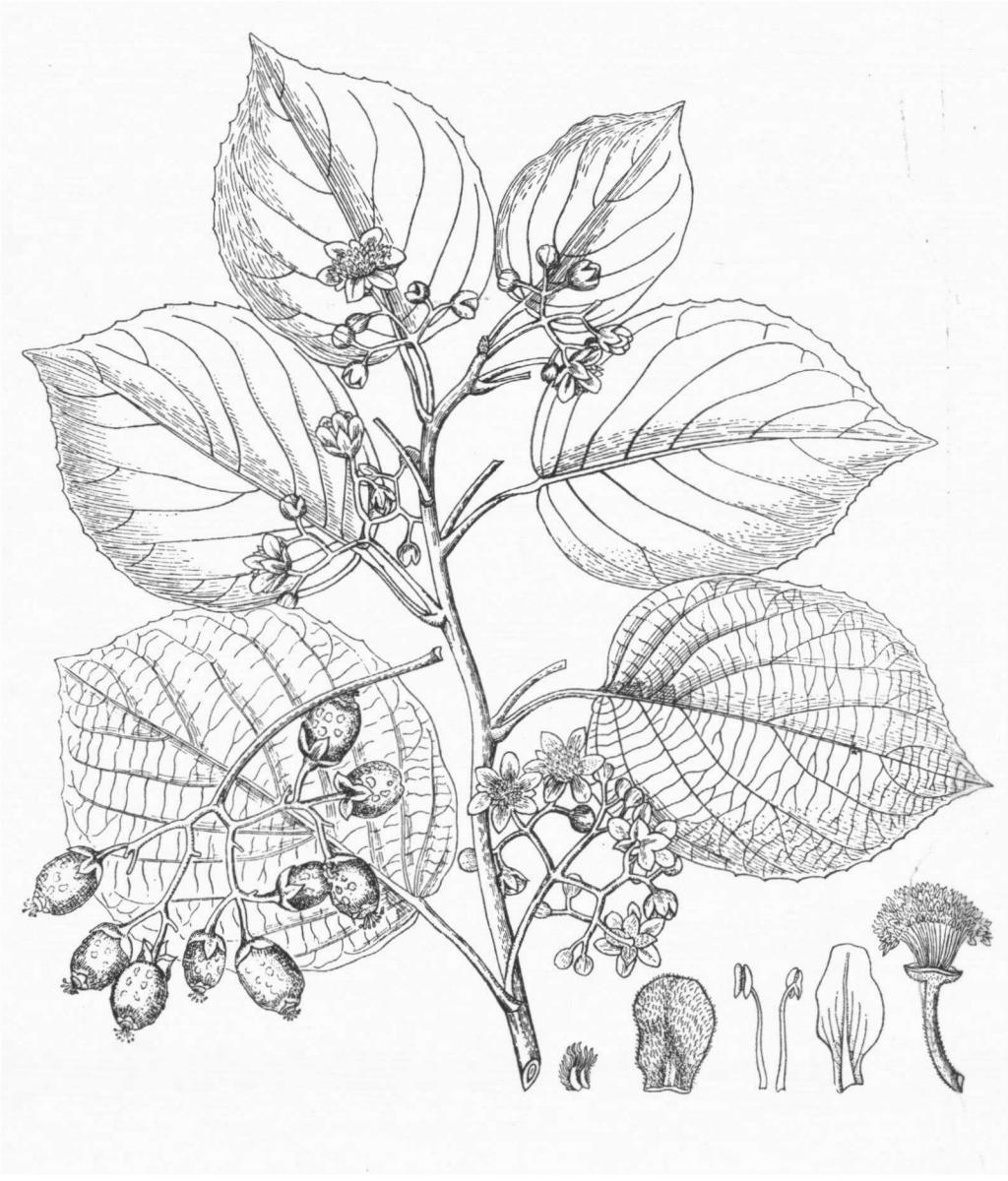

Fig. 1. *Actinidia latifolia* (GARDN. & CHAMP.) MERR., habit × 1/2 (after KING).

fleshy, margin ± irregular, *ca* 10 by 7 mm. Stamens ∞ in *ca* 2 rows, filaments subequal, *ca* 6 mm (in ♀ very short); anthers 1²/₃ by 1 mm, apex subapiculate (in ♀ sterile, hardly dehiscing); ♀ fls unknown to me. Ovary stout cylindric, styles *ca* 2 mm (in ♂ very small, reduced). *Berry* grey-green, spotted grey or brown, entirely syncarp, oboval to broad-elliptic, often oblique, apex often concave, 17–27 by 14–18 mm, base rounded, sepals recurved. Seeds elliptic, 3 by 1¹/₂ mm.

Distr. SE. Asia, China, Formosa, in *Malaysia:* Sumatra, Java.

Ecol. Mountain forests, forest borders, 1000–2040 m, rather rare.

Notes. Young shoots edible. Leaves sometimes with raspberry-coloured zoocecidia consisting of crowded-hairy portions. In Java a juvenile shoot was collected with subcordate subglabrous leaves resembling in shape those of *A. latifolia*. A rather variable species; some of the forms distinguished by DUNN are now taken up as species, wrongly it seems. *A. indochinensis* MERR. apparently belongs here.

var. **pubescens** DUNN, *l.c.* 406.—*Saurauia tomentosa* KORTH. *nomen ex* K. &. V. Bijdr. 3 (1896) 280.—*Actinidia pubescens* RIDL. J. Fed. Mal. Stat. Mus. 8, 4 (1917) 18.—Leaves 6¹/₂–11¹/₂ by 4¹/₂–6¹/₂ cm, thinly tomentose beneath.

Distr. Assam, in *Malaysia:* Malay Peninsula (HENDERSON 23436), Sumatra (KORTHALS, FORBES).

Notes. Apparently rare, may be confused with *A. latifolia*. The Sumatra specimen has glabrous twigs, the others hairy ones. The indumentum seems partly caducous. I assume KORTHALS's specimens came from Sumatra, not from Java.

2. Actinidia latifolia (GARDN. & CHAMP.) MERR. J. Str. Br. R. As. Soc. 86 (1922) 330.—*Heptaca latifolia* GARDN. & CHAMP. in HOOK. J. Bot. & Kew Gard. Misc. 1 (1849) 243.—*Kadsura pubescens* MIQ. Fl. Ind. Bat. Suppl. (1860) 620; KURZ, J. As. Soc. Beng. 45, II (1876) 119, *non A. pubescens* RIDL. 1917.—*A. championi* BENTH. Fl. Hongk. (1861) 26; FINET & GAGN. Fl. Gén. I. C. 1 (1907) 28; RIDL. Fl. Mal. Pen. 1 (1922) 206.—*A. miquelii* KING, J. As. Soc. Beng. 59, II (1890) 196, *nomen illeg.;* Ann. R. Bot. Gard. Calc. 5 (1896) 145, t. 176.—**Fig. 1.**

Rambling shrub or liana to 20 m long, twigs dark-coloured *s.s.*, innovations, inflor. and undersurface of the *leaves* thinly cinnamon- (*s.v.* rusty-red-)stellate-tomentose. Petiole 2–4 cm; blade broad-ovate, obovate to suborbicular, 5¹/₂–11 by 3-9 cm, base reniform-cordate to rounded or cuneate, apex acuminate, margin subentire with small callous teeth, veins rusty in distinct cross-bars, reticulations below hidden by a pale closed indumentum, upper surface puberulous. Peduncle rather stout, ± remote from the petiole, 1¹/₂–8 cm long, apex forked, ± pseudo-umbellate, rich-flowered, pedicels in fr. apparently enlarging. *Flowers* velvety, light-brown, yellow inside, stamens yellow (*ex coll.*). Only seen ♀ buds, these depressed-globose. Sepals tomentose outside. Petals pubescent outside, apex imbricating, basal parts free, blunt, rather roundish, pale green in bud apparently smaller than in *A. callosa*. Anthers numerous ± 1 mm long, on ¹/₂–³/₄ mm long filaments, sterile hardly dehiscing. Ovary depressed-globose, densely pilose, 1¹/₂ mm high. Styles ∞, ± 2 mm long, slender-clavate, overtopping flatly the anther clump. *Berry* acorn-shaped, 3–4 by 2 cm, brown, spotted pale. Seeds broad-elliptic, ± 1³/₄–2 by more than 1 mm.

Distr. China, Indochinese Peninsula, Hongkong, ?Formosa, Hainan, in *Malaysia:* Malay Peninsula, Sumatra, Borneo.

Ecol. Hill forests, rather rare, *ca* 900–1500 m, fl. April–July.

Vern. Once noted, S. Sumatra, *wait boerah.*

Notes. There is some variability in the size of the inflor. *A. formosana* HAYATA probably belongs here. Expected to occur in the Philippines.