

ULMACEAE

Mrs. Leena Phuphathanaphong*

KEY TO GENERA

1. Fruits dry, very flat, with a membranous wing all around; articulation in the pedicel at about the middle or little higher. Stamens extrose
2. Leaves entire, flat to sometimes wavy, the distance between lateral nerves along the midrib 7–25 mm. Fruit wing radially veined. Perianth lobes nearly free, caducous; cotyledons longitudinally folded **1. Holoptelea**
2. Leaves serrate to dentate, the distance between lateral nerves along the midrib 2–6 (rarely 11 mm). Fruit wing reticulately veined. Perianth lobes connate half way, persistent (in fruit). Cotyledons straight, long **2. Ulmus**
1. Fruits more or less fleshy, drupaceous, wingless, ovoid or slightly flattened; articulation in the pedicel near the top. Stamens introse
3. Leaves penninerved
4. Fruits flattened, with marginal ribs. Stipules longer than the petiole. Cotyledons much shorter than the radicle **3. Gironniera**
4. Fruits ovoid, without marginal rib. Stipules shorter than the petiole. Cotyledons longer than the radicle **4. Aphananthe**
3. Leaves 3-nerved or with the basal pair more prominent
5. Fruits up to 2.5 by 2 mm, many in a leaf axil; cotyledons oblong, curved, transparent in the seed **5. Trema**
5. Fruits 5–11 by 3–8 mm, 1–4 in a leaf axil; cotyledons broadly obcordate, repeatedly folded when mature, not transparent **6. Celtis**

1. HOLOPTELEA

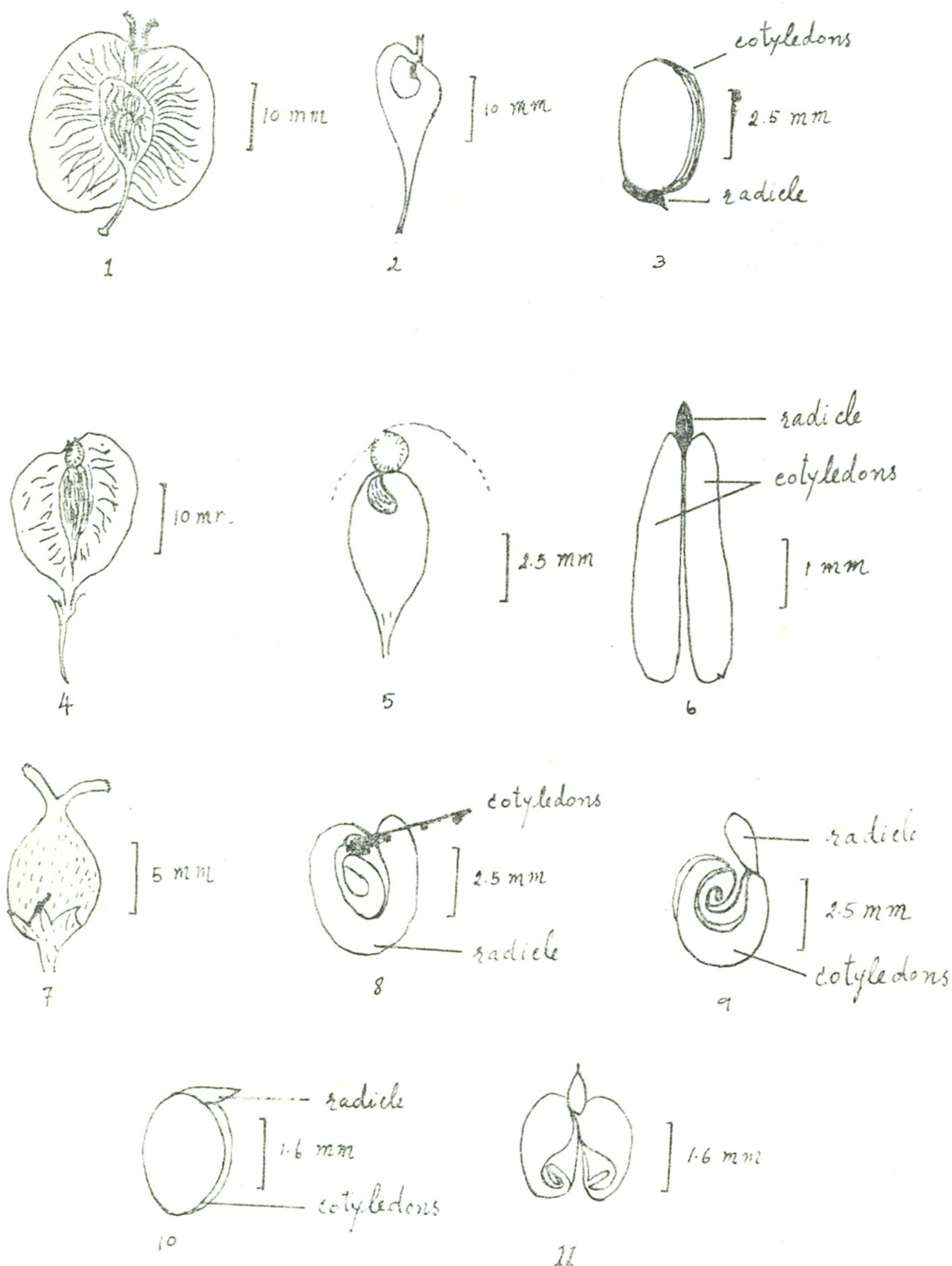
1. *Holoptelea integrifolia* (Roxb.) Planch.

2. ULMUS

1. *Ulmus lancifolia* Roxb.

3. GIRONNIERA

* Forest Herbarium, Royal Forest Department, Bangkok 9, Thailand



Holoptelea integrifolia Planch. — 1. Fruit, 2. seed, 3. embryo.
Ulmus lancifolia Roxb. — 4. Fruit, 5. seed 6. embryo.
Gironniera nervosa Planch. — 7. Fruit, 8. embryo.
Aphananthe cuspidata (Bl.) Planch. — 9. embryo.
Celtis timorensis Spanoghe — 10. and 11. embryo.

KEY TO SPECIES

1. Inflorescences and infructescences clustered; fruits 4-5 (-7) by 3.5-4 (-6) mm; the outer stipule sub-opposite to the leaf, the inner one sub-axillary; leaves sharply serrate; anthers glabrous **1. *G. celtidifolia* Gaudich.**
1. Inflorescences and infructescences thyrsoid, lax; fruits (5-) 8 (-9) by (6-) 8 mm; stipules lateral; leaves mostly entire or serrulate in the upper part; anthers hairy on the back **2. *G. nervosa* Planch.**

4. APHANANTHE

KEY TO SPECIES

1. Fruits ovoid ± 1.5 by ± 0.8 cm, 2-5 mm long beaked, nearly glabrous, peduncle ± 1 cm; leaves entire or coarsely serrate in the upper part, anthers dehiscing laterally **1. *A. cuspidata* (Bl.) Planch.**
1. Fruits ellipsoid-ovoid ± 1.8 by ± 1 cm, hardly beaked, puberulous, peduncle ± 2 cm; leaves sparsely serrulate, anthers dehiscing lateroextrosely **2. *A. yunnanensis* (H.H. Hu) comb. nov.***

5. TREMA

KEY TO SPECIES

1. Leaves glabrous on both sides **1. *T. cannabina* Lour.**
1. Leaves at least hairy beneath
 2. Leaves scabrous above, velutinous or canescent beneath
 3. Petioles more than 6 mm; leaves with truncate, subcordate to cordate base; velutinous beneath; branches ascending **2. *T. orientalis* (Linn.) Bl.**
 3. Petioles up to 3 mm; leaves with rounded base, canescent beneath; branches descending **3. *T. orientalis* (Linn.) Bl. var. *bicolor* De Wit**
 2. Leaves glabrous above, densely sericeous beneath **4. *T. orientalis* (Linn.) Bl. sub. *bicornis* De Wit**

6. CELTIS

KEY TO SPECIES

1. Stipules lanceolate, with auricle; leaves all entire, coriaceous; young shoots puberulous. Flowers subsessile **1. *C. philippensis* Blanco**

* *Aphananthe yunnanensis* (H.H. Hu) comb. nov.— Basonym *Gironniera yunnanensis* H.H. Hu in Bull. Fan Mem. Inst. Biol., Bot. Ser. vol. 10: 150-152, 1940. (Type. - Wang, C.W. 79307: (Holo. A).

1. Stipules linear, without auricle; leaves at least partly serrulate to crenate, chartaceous; young shoots fulvous tomentose. Flowers peduncled
2. Leaves asymmetric, with tufted domatia, basal pair of nerves not reaching $\frac{2}{3}$ the length of lamina 2. *C. tetrandra* Roxb.
2. Leaves symmetric, without domatia, basal pair of nerves reaching beyond $\frac{2}{3}$ the length of lamina 3. *C. timorensis* Spanoghe

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