

## KEY TO THE SEEDS OF THE ANNUAL SPECIES OF CUCURBITA

- Sear obliquely truncate; face of seed pure white or clear brown .. *C. maxima*.  
 Sear normally squarely truncate or rounded; face of seed ashy gray or dirty white
- Margin agreeing in color with face of seed, usually smooth and not swollen..... *C. pepo*.  
 Margin darker than face of seed, rarely smooth, often swollen and corky, or roughened and stringy..... *C. moschata*.

The characters upon which this key is based are shown in the accompanying illustration (Fig. 1). The top row of seeds are of the Pie pumpkin, a good example of *C. pepo*. The middle row shows two varieties of *C. maxima*; the one at the left is the Ironbark pumpkin, from South Africa; the one at the right is the well-known Hubbard squash. Both of these show the oblique sear characteristic to *C. maxima*. The bottom row shows two varieties of *C. moschata*; the one at the left is the Faan Kwa squash, from China; the one at the right is Charles Naudin, from France.

In some cases it has been observed that immature seeds do not show the distinguishing characters, so that, for identification purposes, it is advisable to have mature seeds, and also to have several of a kind, in order to allow for unusual variations.

BOTANY.—*The genus Forchammeria*.<sup>1</sup> PAUL C. STANDLEY, U. S. National Museum.

In the course of work upon the Trees and Shrubs of Mexico, now in course of publication as volume 23 of the Contributions from the National Herbarium, the writer happened upon material of two Mexican plants belonging to distinct species but evidently congeneric, which it was impossible to refer even to a family, since they bore little general resemblance, apparently, to anything reported from Mexico. Recently, however, while examining a collection of plants obtained by O. F. Cook in Petén, Guatemala, there was discovered a fruiting specimen of a plant which was undoubtedly a relative of the Mexican ones, and their systematic position was recognized.

The Guatemalan plant was *Forchammeria trifoliata*, a species described from Yucatán, and based upon flowering material alone. The fruit had not been known previously, and proved to be so dissimilar from that of two common Mexican species of the genus that the close relationship existing between these three plants would not be apparent if their fruits were placed side by side. Study of the copious material of *Forchammeria* in the National Herbarium indicates that the species fall into two sharply marked groups, which may be

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treated as subgenera. The characters which distinguish them are indicated below in the key to species.

The difference in development of the ovary in these two groups results in fruits of two types so distinct that it might be advisable to treat *Helandra* as a generic unit; but on the other hand, the fruits are essentially the same in structure, and their final differences are due only to different modes of development. In *F. longifolia* I have seen a single fruit in which both cells developed equally, so that the seeds were vertical, and the stigma apical in a depression between the two cells, but such a condition was evidently abnormal, only one such fruit having been found among a hundred or more.

The form of the fruit in the subgenus *Helandra* is suggestive of that of the soapberry, *Sapindus saponaria*. The resemblance is so striking that at first it was believed that fruiting specimens of *Forchammeria longifolia* must belong to the family Sapindaceae.

Although placed by Bentham and Hooker in the Euphorbiaceae, *Forchammeria* is now referred to the Capparidaceae, where, however, it has no close relatives. It has had an interesting history, most of the few species having been described at long intervals. The genus is restricted, so far as now known, to Mexico, Guatemala, Salvador, and Hispaniola.

#### KEY TO SPECIES

- Ovary 2-celled, one of the cells obsolete in fruit, not apparent externally, the fruit obovoid, the stigma remaining apical; seed vertical; staminate and pistillate inflorescences racemose; leaves simple. Subgenus *Euforchammeria*.
- Leaves glabrous, oblanceolate or oblong.....1. *F. pallida*.  
 Leaves hirtellous, especially beneath, linear.
- Leaf blades emarginate at base; fruiting pedicels 3-5 mm. long; fruit 7-12 mm. broad.....2. *F. watsoni*.  
 Leaf blades usually attenuate at base; fruiting pedicels 10-15 mm. long; fruit 12-15 mm. broad.....3. *F. macrocarpa*.
- Ovary 2-celled, only one cell developing in fruit, the other, however, slightly accrescent and forming a rounded protuberance at the base of the fruit, the latter subglobose, the stigma borne at the apex of the sterile cell and thus lateral; seed horizontal; staminate and pistillate inflorescences usually racemose-paniculate; leaves compound or simple. Subgenus *Helandra* (type species, *Forchammeria trifoliata* Radlk.).
- Leaves compound, 1-3-foliolate, if unifoliolate the petiole jointed with the blade.
- Leaflets narrowly oblanceolate-oblong, more than three times as long as wide; fruit 7-8 mm. in diameter.....4. *F. longifolia*.  
 Leaflets obovate or obovate-elliptic, scarcely over twice as long as wide; fruit 10-12 mm. in diameter.
- Leaves 3-foliolate; staminate inflorescence much branched.  
 5. *F. trifoliata*.

Leaves mostly 1-foliolate, rarely 2 or 3-foliolate; staminate inflorescence nearly simple.....6. **F. sphaerocarpa.**

Leaves simple.

Leaves sessile or nearly so, the blades rounded or cordate at base

7. **F. sessilifolia.**

Leaves petiolate, the blades attenuate at base.....8. **F. brevipes.**

1. **Forchammeria pallida** Liebm. Nat. For. Kjöbenhavn Vid. Medd. **1853:** 94. 1854.

*Forchammeria apiocarpa* Radlk. Meth. Bot. Syst. 54. 1883.

Western coast of Mexico, from Colima to Oaxaca. The type species of the genus.

2. **Forchammeria watsoni** Rose, Contr. U. S. Nat. Herb. **1:** 302. 1895. Baja California, Sonora, and Sinaloa. Known in Baja California as *palo San Juan*.

3. **Forchammeria macrocarpa** Standl. Contr. U. S. Nat. Herb. **20:** 183. 1919.

*Forchammeria purpusii* Loesener, Repert. Sp. Nov. Fedde **16:** 204. 1919.

San Luis Tultitlanapa, Puebla. Both names are based upon the same collection.

4. **Forchammeria longifolia** Standl., sp. nov.

Shrub, about 2 m. high, with few stems, glabrous throughout; leaves partly unifoliolate and partly trifoliolate, the petioles of the former 1-2.5 cm. long, of the latter 2-3.5 cm. long; leaflets narrowly oblanceolate-oblong, 12-22 cm. long, 3-6.5 cm. wide, obtuse or acute, gradually attenuate to the cuneate base, coriaceous, the venation inconspicuous on the upper surface but slightly elevated beneath, the lateral nerves about 16 pairs; pistillate inflorescences clustered on old wood, racemose-paniculate, many-flowered, 10-15 cm. long; fruiting pedicels 3-8 mm. long; fruit yellow, subglobose, 7-8 mm. in diameter, smooth, sessile or nearly so, bearing at base a small rounded protuberance, the abortive second cell of the ovary; seed compressed-globose, 6-7 mm. in diameter.

Type in the U. S. National Herbarium, no. 568024, collected in woods, Pueblo Nuevo, Veracruz, near Tampico, Mexico, May, 1910, by Edward Palmer (no. 444). A second specimen of the same collection is mounted upon sheet no. 568025.

The leaves borne at the tips of the branches are trifoliolate, but the lower ones are unifoliolate. *Forchammeria longifolia* is evidently related to *F. trifoliata*, but is distinguished by the presence of numerous unifoliolate leaves, the long narrow leaflets, and the smaller fruit.

5. **Forchammeria trifoliata** Radlk. Field Mus. Bot. **1:** 399. 1898.

YUCATÁN: Izamal, *Gaumer* 417 (type collection).

GUATEMALA: Naranja, *Cook & Martin* 65.

SALVADOR: Ahuachapán, *Standley* 20273.

In both Yucatán and Guatemala the tree is known as *Tres Marias*. The Salvadorean specimen, taken from a sterile shrub of 2 meters, differs slightly in the shape of its leaflets, but is probably conspecific.

6. **Forchammeria sphaerocarpa** Urban, Symb. Ant. **1:** 310. 1899.

Type from Jérémie, Haiti, *Picarda* 1308. Not seen by the present writer, but from the description evidently referable to the subgenus *Helandra*.

**7. *Forchammeria sessilifolia* Standl., sp. nov.**

Tree, 6–12 m. high, glabrous throughout; leaves sessile or nearly so, the blades oblong, sometimes slightly broadest above the middle, 14–19 cm. long, 4–9 cm. wide, obtuse or acutish at apex, cordate or rounded at base, coriaceous, the venation prominulous on both surfaces, the lateral nerves about 11 pairs; staminate flowers in lax, once or twice branched, many-flowered panicles borne on old wood, the panicles pedunculate, 10–20 cm. long or larger, the flowers partly sessile, but often on pedicels 3–7 mm. long; stamens 15–20, the filaments about 3 mm. long, the anthers subglobose.

Type in the U. S. National Herbarium, no. 908024, collected on María Madre Island, Mexico, May, 1897, by E. W. Nelson (no. 4239). A second specimen of this collection is mounted upon sheet no. 569214.

This species is well marked by its sessile leaves with broad bases. Although only the staminate plant is known, the general appearance indicates that it is of this alliance rather than a species of *Euforchammeria*.

**8. *Forchammeria brevipes* Urban, Symb. Ant. 7: 225. 1912.**

Type collected in the Province of Barahona, Dominican Republic, at an elevation of 1300 meters, *Fuertes* 544.

A specimen of the type collection is in the National Herbarium, but it is in poor condition, although there is no doubt of its relationship. This is the only species of the subgenus *Helandra* in which the staminate inflorescences are not known to be paniculate, but those of the type material are so imperfect that one can not be certain as to their character.

## EXCLUDED SPECIES

*FORCHAMMERIA LANCEOLATA* Standl. Contr. U. S. Nat. Herb. 20: 183. 1919. Further study shows that this is *Drypetes crocea* Poit., of the Euphorbiaceae, a genus not reported previously from Mexico. The former name was based upon *Pringle* 3728, the locality of which was not known at the time the description was published. It is now known to have been collected in Tamasopo Canyon, San Luis Potosí.